



Submission 001
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Ms Julia Morris
Committee Secretary
Standing Committee on Infrastructure and Communications
House of Representatives
Parliament of Australia
PO Box 6021
Parliament House
CANBERRA ACT 2600

Via email: ic.reps@aph.gov.au

Dear Ms Morris,

I refer to your letter of 8th March 2011 and request that the Standing Committee on Infrastructure and Communications accept this submission from Alliance Airlines regarding the Inquiry into Cabin Crew Ratios.

The aim of the submission is to outline, to the Inquiry, the processes undertaken in determining the minimum number of Cabin Crew for a commercial transport aeroplane.

The desired outcome is complete harmonisation of Australian regulations concerning Cabin Crew numbers with the regulations promulgated by the USA Federal Aviation Administration (FAA) and European Aviation Safety Agency (EASA), which are in turn already harmonised.

A second desirable outcome is the deletion from the NPRM of the requirement for a risk management study by the operators before they are authorised to operate with a ratio of one Cabin Crew for every 50 passengers or passenger seats.

In no other area of aviation is a risk management study required before operating an aircraft in compliance with its certification and manufacturer's recommended procedures.

Executive Summary

1. The world standard in current aviation safety regulatory systems is a cabin crew to passenger ratio of 1:50.
2. Cabin Crew members have the primary role of dealing with emergency or abnormal conditions in the passenger cabin. This may include dealing with security related events with the assistance of passengers and law enforcement officials.
3. The cabin crew to passenger ratio is determined by FAA and EASA design standards and the demonstrated ability to evacuate an aircraft in 90 seconds.
4. Worldwide practice for domestic and international flights is to comply with the certification standards used by the FAA and EASA, which require a cabin crew to passenger ratio of 1 in 50.
5. Future enhancement of aviation safety will be achieved through compliance with standards and practices incorporated in future amendments to the FAA and EASA regulations.
6. The 1:36 rule provides no additional safety or security benefits.
7. The 1:50 rule meets the CASA requirement of a demonstrated capability to evacuate an aircraft in 90 seconds.

Each of the specific five terms of reference in regard to the ratio of cabin crew members on aircraft, are addressed below.

1. The current aviation safety regulatory system for aircraft operators in relation to the application of the cabin crew to passenger ratio including current exemption provisions;

The Cabin Crew to passenger ratio is one element of Cabin Safety that is encapsulated in the certification process conducted before an aircraft enters airline service.

Before any large aircraft can enter into airline or charter service in Australia, it must first complete the certification process for transport aircraft.

All large passenger transport aircraft operating under Australian regulations are certified in accordance with either the USA Federal Aviation Administration (FAA) standard *Part 25 - Airworthiness Standards: Transport Category Airplanes* or the European Aviation Safety Agency (EASA) standard *CS-25 Certification Specifications for Large Aeroplanes*.

The FAA and EASA are engaged in a harmonization program and the standards for cabin safety are harmonized to the extent that they have the same regulatory numbers. The verbiage of the two sets of regulations may vary but the outcomes are the same.

The vast majority of countries and Civil Aviation Regulatory Authorities comply with the FAA and EASA requirement for a ratio of 1 Cabin Crew for every 50 passengers.

Australian Civil Aviation Safety Regulation (CASR) *Subpart 21.B Type certificates and type acceptance certificates* compels Australia to recognize and accept aircraft type certificates issued by the FAA and certain countries under the EASA umbrella.

CASR 21.012 Recognised foreign countries lists the countries whose certification processes meet Australian requirements;

Each of the following countries is a recognised country for these regulations:

- (a) Canada;
- (b) Federal Republic of Germany;
- (c) New Zealand;
- (d) The French Republic;
- (e) The Kingdom of the Netherlands;
- (f) The United Kingdom;
- (g) The United States of America.

Certification of aircraft and emergency evacuation demonstrations

The certification process follows a number of predefined steps before the minimum number of Cabin Crew for the aircraft is determined.

Aircraft Design

The aircraft manufacturer determines the passenger carrying capacity of the aircraft required to meet the target market. The passenger capacity drives the both the Emergency Exit configuration and minimum Cabin Crew numbers in accordance with the following tables from the EASA and FAA regulations.

Emergency Exit number and configuration

EASA standard *CS 25.807 Emergency Exits*.

(Note: the FAA regulation *FAR 25.807 Emergency exits* has the same requirements.)

Passenger seating configuration (crew member seats not included)	Emergency exits for each side of the fuselage			
	Type I	Type II	Type III	Type IV
1 to 9				1
10 to 19			1	
20 to 39		1	1	
40 to 79	1		1	
80 to 109	1		2	
110 to 139	2		1	
140 to 179	2	2		

Additional exits are required for passenger seating configurations greater than 179 seats in accordance with the following table:

Additional emergency exits (each side of fuselage)	Increase in passenger seating configuration allowed
Type A	110
Type I	45
Type II	40
Type III	35

Minimum Cabin Crew number

FAR 121.391- Flight Attendants

- (a) Except as specified in Federal Aviation Regulation (FAR) 121.393 and FAR121.394, each certificate holder must provide at least the following flight attendants on board each passenger-carrying airplane when passengers are on board:
- (1) For airplanes having a maximum payload capacity of more than 7,500 pounds and having a seating capacity of more than 19 but less than 51 passengers—one flight attendant.
 - (2) For airplanes having a maximum payload capacity of 7,500 pounds or less and having a seating capacity of more than 19 but less than 51 passengers—one flight attendant.
 - (3) For airplanes having a seating capacity of more than 50 but less than 101 passengers—two flight attendants.

- (4) For airplanes having a seating capacity of more than 100 passengers—two flight attendants plus one additional flight attendant for each unit (or part of a unit) of 50 passenger seats above a seating capacity of 100 passengers.
- (b) If, in conducting the emergency evacuation demonstration required under FAR121.291 (a) or (b), the certificate holder used more flight attendants than is required under paragraph (a) of this section for the maximum seating capacity of the airplane used in the demonstration, he may not, thereafter, take off that airplane -
 - (1) In its maximum seating capacity configuration with fewer flight attendants than the number used during the emergency evacuation demonstration; or
 - (2) In any reduced seating capacity configuration with fewer flight attendants than the number required by paragraph (a) of this section for that seating capacity plus the number of flight attendants used during the emergency evacuation demonstration that were in excess of those required under paragraph (a) of this section.
- (c) The number of flight attendants approved under paragraphs (a) and (b) of this section is set forth in the certificate holder's operations specifications.
- (d) During takeoff and landing, flight attendants required by this section shall be located as near as practicable to required floor level exists and shall be uniformly distributed throughout the airplane in order to provide the most effective egress of passengers in event of an emergency evacuation. During taxi, flight attendants required by this section must remain at their duty stations with safety belts and shoulder harnesses fastened except to perform duties related to the safety of the airplane and its occupants.

EASA OPS 1: Commercial Air Transportation (Aeroplanes)

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.

Emergency Evacuation Demonstration

The FAA and EASA requirements for a successful Emergency Evacuation Demonstration are both shown below to demonstrate the degree of harmonisation between the two authorities. Only one word is different, Agency instead of Administrator.

FAA - Appendix J to Part 25 - Emergency Evacuation

The following test criteria and procedures must be used for showing compliance with FAR 25.803:

FAR 25.803

- (c) For airplanes having a seating capacity of more than 44 passengers, it must be shown that the maximum seating capacity, including the number of crewmembers required by the operating rules for which certification is requested, can be evacuated from the airplane 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 part unless the Administrator finds that a combination of analysis and testing will provide data equivalent to that which would be obtained by actual demonstration.

EASA - CS 25 Appendix J Emergency Demonstration

The following test criteria and procedures must be used for showing compliance with JAR 25.803:

- (c) 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.

Australian Requirements

The Australian requirements shown below in an extract from CAO 20.11 are dependent the FAA FAR 25.803. The anomaly is that while the FAA and EASA demonstrations require a successful evacuation in 90 seconds using a cabin crew to passenger ratio of 1:50 the Australian operators are required to use more cabin crew, 1:36, to achieve the same result.

Using a 189 seat B737-800, the aircraft most commonly used in Australia, the FAA and EASA will allow the use of only 4 cabin crew for the demonstration. Current CASA rules require Australian operators to use 6 cabin crew to achieve the same target of a full evacuation of the aircraft in 90 seconds.

The current Australian standard is clearly lower than the internationally accepted and demonstrated norm.

CASA CAO 20.11

15 Demonstration of emergency evacuation procedures

15.1.2 The type and model of aircraft must be shown to have satisfied the requirements of the United States Federal Aviation Regulations 25.803 (or any other requirements that CASA accepts as being of an equivalent standard) at the time it was granted its type certificate.

15.1.3 The operator must not operate that type and model of aircraft unless the operator has satisfied CASA that the evacuation procedures and training introduced by the operator will enable crew members to achieve an evacuation capability equivalent to that achieved when the type and model of aircraft satisfied the requirements of FAR 25.803 or other requirements accepted by CASA in accordance with paragraph 15.1.2.

CASA Exemptions to CAO 20.16.3 (6)

By world standards Australia has a unique standard for cabin crew ratios, which is detailed in Civil Aviation Order (CAO) 20.16.3 paragraph 6. This standard requires the carriage 1 Cabin Crew for every 36 passengers and is known as the 1 in 36 (1:36) rule. The 1:36 rule requires the carriage of more cabin attendants than are demonstrably required to meet the safety requirements for the aircraft.

CASA personnel are neither able to provide the genesis of the current legislation nor are they able to provide a safety case for the 1:36 rule.

In 2006 CASA began issuing instruments to AOC holders allowing the operators to operate specific aircraft types to the 1:50 rule in accordance with the certification standards and procedures used in the certification of the aircraft type. A precondition to the issue of such an instrument was that the operator must demonstrate compliance with CAO 20.11 paragraph 15.1.3 (see above).

The Exemptions to CAO 20.16.3(6) are intended as an interim measure effective until new regulations covering Cabin Crew numbers can be promulgated.

Civil Aviation Act

Section 9 CASA's functions paragraph (c) states one of CASA's functions is developing and promulgating appropriate, clear and concise aviation safety standards. In accordance with the Paragraph 9 (c) of the Civil Aviation Act CASA commenced the process to align Australian standards for cabin crew numbers with the international standards.

Notice of Proposed Rule Making (NPRM)

As part of the Regulatory Reform process a *Notice of Proposed Rule Making - Cabin Crew Ratios - Proposed Amendment to Civil Aviation Order (CAO) Section 20.16.3* was issued in February, 2010. For reasons unexplained this process was halted and remains in stasis to this present day.

The Foreword to the NPRM contains the following CASA statement;

Following further consideration and reviews of implementation of safety performance under the revised number of cabin crew members, CASA believes that passenger safety can be maintained by formally adopting standardised international requirements and associated performance standards for aircraft evacuation capability.

The mechanism by which a revised standard will be offered to air operators is proposed to be an amendment to the relevant CAO allowing a revised number of cabin crew determined by a ratio of 1 cabin crew member up to a maximum of 50 passenger seats.

This is the same standard as that used by aircraft manufacturers in aircraft design and subsequent evacuation certification of the aircraft type.

2. The role of cabin crew in managing both passenger safety and security;

Passenger Safety

The Cabin Crew members have the primary role of dealing with emergency or abnormal conditions in the passenger cabin. Included in the events cabin crew are trained to manage are;

- Emergency evacuation
- Ditching or landings on water
- Hijacking
- Cabin fires
- Dangerous Goods spillage
- Medical emergencies
- Survival. Knowledge of survival methods on land and water, including stowage location of survival beacons, etc.
- Control of passengers during emergencies including emergency evacuation:
 - (a) methods of control, e.g. psychological, physical; and
 - (b) stowage location and correct use of restraint equipment; and
 - (c) handling of disabled passengers; and

(d) handling of deranged passengers and others whose conduct might jeopardise the safety of the aircraft; and

- action to be taken in the event of a hijack or attempted hijack.

Security

Cabin Crew have the responsibility to report any suspicious activity or objects to the aircraft commander.

Cabin Crew are trained how to manage a person in an aircraft who behaves in an offensive and disorderly manner. This is overt behaviour and easily observed. The current security threats to aircraft are covert and far more difficult to detect.

The nature of security threats in the passenger cabin in flight changed following the events of 9 September, 2001 commonly known as 9/11.

Prior to 9/11 the principal threat was hijacking where the desired outcome for the hijacker was to have the aircraft land safely where a negotiated settlement and publicity could be obtained. The policy and training at the time was for compliance with the hijacker's demands in order to ensure the safety of the aircraft and its occupants. In these events the Cabin Crew were often used as hostages in order to gain access to the pilots and subsequent control over the aircraft's final destination. The Cabin Crew were unaware of the threat and unable to prevent the successful hijacking of the aircraft.

In the years since 9/11 the attacks on aircraft have been planned to result in the destruction of the aircraft, in flight, through the use of explosive devices. Execution of these plans does not require any interaction with the Cabin Crew or the pilots. Because of the nature of their in-flight duties and their position in the cabin the Cabin Crew are poorly placed to notice the threat and intervene.

There is no correlation between the selection of the target aircraft and cabin crew ratio.

The passengers are now the front line of the defence against the bombers as it is the passengers who are better placed to observe any aberrant behaviour by one of their fellow travellers as well as to provide assistance to the Cabin Crew.

The events of 9/11 highlighted to the travelling public that their lives may be in peril and that they must be proactive in preventing the detonation of the explosive device. In the years since 9/11 there have been at least four attempts to destroy an aircraft in flight and it has been the combined efforts of the passengers and crew that has successfully foiled the attack.

"Aggressive intervention has become the new societal norm," said Bill Voss, an expert at the Flight Safety Foundation in Alexandria, Virginia.

3. The factors that determine the cabin crew to passenger ratio;

These factors have been dealt with in the sections above and can be summarised as;

- Design standards
- Aircraft configuration including number and type of exits
- Certification standards including the demonstrated ability to evacuate the passengers in 90 seconds using the available cabin crew members
- Number of cabin compartments - there must be not less than 1 cabin crew member in each separate compartment occupied by passengers
- Local regulations such as CAO 20.16.3(6)

4. Domestic and international practice in respect of cabin crew to passenger ratios;

International practice is to comply with certification standards used by the FAA and EASA which require a cabin crew to passenger of 1 in 50.

5. Measures to enhance aviation safety that may be considered in future requirements on aircraft operators for a safety risk management plan covering the cabin crew to passenger ratio.

The body of knowledge and subject matter expertise regarding Cabin Safety Standards and Recommended Practices (SARPS) lies with the FAA and EASA who are responsible for the certification standards and the actual certification of all large transport aircraft used in the western world.

Continuing compliance with FAA and EASA standards and regulations, as amended from time to time, will ensure the highest levels of Cabin Safety in Australian airline operations.

In closing, Alliance Airlines is prepared to stand in front of the Committee as and when required.

Yours faithfully

Scott McMillan
Managing Director