CENTRAL

JOINT AVIATION AUTHORITIES

JOINT OPERATION EVALUATION BOARD REPORT

Boeing B777

Rev 01 14/03/05

Boeing has requested a JOEB process for evaluation of the B777-300ER. Due to the various subjects, subgroups have been set up and are:

- MMEL Subgroup
- FCL & OPS Subgroup
- EFB (Electronic Flight Bag) Subgroup
- OFCR (Overhead Flight Crew Rest) Subgroup

The enclosed report covers the activities of the FCL & OPS and OFCR subgroups. At an early stage Boeing requested that the EFB be considered as generic equipment and not specific to the B777. The request was granted and a separate Report has been issued. The MMEL will be issued as a specific report in the form of the FAA MMEL with the addition of the JAA supplement.

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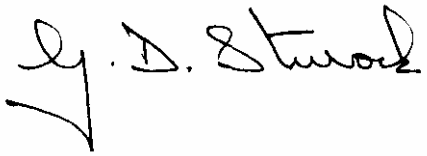
JAA Operation Evaluation Board – FCL& OPS and OFCR Subgroups

Captain Graham Sturrock
UK CAA
JOEB Chairman

Recommended for approval by:



Captain Graham Sturrock
UK CAA
JOEB Chairman

Captain Andy Stewart
UK CAA
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Preamble

This Joint Operation Evaluation has been performed using the following methods:

- Review of the FAA Flight Standardization Board (FSB) Report;
- Discussions with the FAA FSB Chairman;
- JAA Familiarization flying.
- Review of a B777-300ER Differences Training was based upon the FAA FSB report and the handout recommended by Boeing for Differences between the base Aircraft and this Variant
- Inspection of the OFCR and observations of functional tests

Since there is no JAA JOEB report available to cover the B777-200/-200ER or B777-300 aeroplane variants, this report is issued to provide the adoption of standards for all B777 variants in accordance with the JAA Process defined as the "Catch-up Procedure." Though the evaluation conducted for the purposes of this report was for the B777-300ER Variant, the subsequent B777-200LR Variant may be considered to be covered by this report.

This Report specifies the JAA type rating endorsement, the B777-300ER Differences Training requirements, the Proficiency Checking, and the Recent Experience requirements for flight crew members already qualified on the base Aircraft and requiring Differences Training to the B777-300ER variant.

This Evaluation has been made in compliance with the JAA JOEB Terms of Reference. The OE was conducted in accordance with the processes detailed in the JAA JOEB Handbook, dated December 2002.

JAR requirements as in JAR-OPS 1 (App 2 to JAR-OPS 1.430(c), 1.940, 1.945, 1.950, 1.965, 1.970 and 1.980 including associated appendices, AMCs and IEMs), JAR-FCL 1 (1.220, 1.225, 1.235, 1.240, and 1.261 including associated appendices, AMCs and IEMs) have been considered.

This report also specifies recommendations for use of the Overhead Flight Crew Rest (OFCR) facility, unique to the B777. This OFCR can be installed in any B777 variant.

JAA recommends the adoption of the Boeing-proposed Differences Training course and ODR Tables as published in this report.

JAA recommends a single licence endorsement (same type rating) for all variants of the B777.

This report is issued by Central JAA as a recommendation to the JAA National Authorities:

Fergus Woods
Licensing Division Director

Georges Rebender
Operations Division Director

Hoofddorp

Executive Summary

The process of JAA Operational Evaluation (OE) was based, partly, on the United States' Federal Aviation Administration (FAA) evaluation and determination, which was administered under the auspices of FAA Advisory Circular (AC) 120-53. Tests of the B777-300ER and previous testing on the B777-300 were done in concert with the FAA Flight Standardization Board (FSB) and have resulted in harmonized findings between the JAA and FAA. Findings relative to the B777-200 and -200ER are part of a "catch-up" process and are based on board members' previous operational experience on these variants.

Under JAA Rules, Boeing proposed that the B777-300ER variant and the B777-200, -200ER, -200LR and -300 variants were eligible to share the "same" type rating, and should therefore have a single type-rating license endorsement, namely "B777", which would cover all variants within the B777 fleet family (B777-200, -200ER, -200LR, -300, and -300ER). The base aircraft variants for comparison purposes for the OE were the B777-200/200ER and B777-300.

The B777 Differences Training Handout and Video Program (familiarization training) proposed by Boeing assumes the applicant has previously obtained an initial B777 Type Rating on a -200/-200ER or -300 variant and would be acceptable for differences training between any of these variants.

The JOEB recommends that Central JAA adopt the Boeing-proposed familiarization training and ODR Tables, as published in this Report. Further, the JOEB recommends the Boeing-proposed MDR, also contained in this Report, be adopted, serving as a "catch-up" basis for earlier variants not formally evaluated by the JOEB but based upon the previous experience of JOEB members who have operated these variants. The JOEB recommends all B777 variants, including the -300ER, be included in the "B777" license endorsement.

The report contains recommendations on the operational use of the B777 Overhead Flight Crew Rest (OFCR) facility.

Operational Evaluation Report / FCL & OPS and OFCR Subgroups

OEB Report

1. Purpose and Applicability

This report:

- Defines the Type Rating assigned to the B777 models.
- Proposes Master Common Requirements (MCR).
- Describes Master Differences Requirements (MDR) for crews requiring differences training
- Provides reference of acceptable Operator Difference Requirements (ODR tables).
- Provides recommendations for Differences Training
- Provides recommendations for Checking
- Provides recommendations for Currency
- Provides recommendations for the use of the Overhead Flight Crew Rest (OFCR)

2. Pilot Type Rating Requirements

In reference to JAR FCL1 Subpart F and to the JOEB evaluation procedure, the same Type Rating and, consequently the same Licence Endorsement may be assigned to the B777-200, B777-200ER, -200LR, B777-300, and B777-300ER variants. The licence endorsement should be assigned "**B777**".

3. Master Common Requirements

These Master Common Requirements have been determined through the evaluation process.

MCRs are requirements common to the B777-200/-200ER, -200LR and B777-300/-300ER variants.

The B777-200/-200ER, -200LR and B777-300/-300ER variants have been designed with a very high level of commonality in terms of:

1) Cockpit layout
2) System definition and operation, and
3) Handling characteristics

This level of commonality has a direct and significant impact on the definition of the training programmes.

3.1 Aircraft Approach and Circling Categories

Aircraft	Category
B777-200, B777-200ER	C
B777-200LR B777-300, B777-300ER	D

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4. Master Differences Requirements Table

Master Difference Requirements for the B777 aircraft are shown in the table below and represent the result of work performed in the evaluation.

Definitions of the various levels for Training/Checking/Currency are the ones from the JOEB handbook, and the relevant definitions are included after the table for reference.

MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE				
AEROPLANE TYPE RATING: B777		**FROM AEROPLANE**		
		B777-200/-200ER/-200LR	B777-300	B777-300ER
TO AEROPLANE	B777-200/ 200ER/-200LR		**A/A/A** (1) SATCOM **B/A/A** (2) FANS/ DATALINK/RNP **B/A/A**	**A/A/A** (1) SATCOM **B/A/A** (2) FANS/ DATALINK/RNP **B/A/A**
	B777-300	**B/A/A** (1) SATCOM **B/A/A** (2) FANS/ DATALINK/RNP **B/A/A**		**A/A/A** (1) SATCOM **B/A/A** (2) FANS/ DATALINK/RNP **B/A/A**
	B777-300ER	**B/A/A** (1) SATCOM **B/A/A** (2) FANS/ DATALINK/RNP **B/A/A**	**A/A/A** (1) SATCOM **B/A/A** (2) FANS/ DATALINK/RNP **B/A/A**	

Notes:
1) Addition of SATCOM may require additional training
2) Addition of FANS/DATA LINK may require additional training

Level A Training. Level A difference training is applicable to functionally equivalent aircraft with differences that can adequately be addressed through self instruction. Level A training represents a knowledge requirement such that, once appropriate information is provided, understanding and compliance can be assumed to take place. Compliance with Level A training is typically achieved by methods such as issuance of operating manual page revisions, dissemination of flight crew operating bulletins or differences handouts to describe minor differences between aircraft.

Level A training is normally limited to situations such as the following:

a. The change introduces a different version of a system/component for which the flight crew has already shown the ability to understand and use (e.g. an updated version of an engine).

b. The change results in minor or no procedural changes and does not result in adverse safety effects if the information is not reviewed or is forgotten (e.g. a different vibration damping engine mount is installed; expect more vibration in descent; logo lights are installed use is optional).

c. Information highlighting a difference that, once called to the attention of a crew, is self-evident, inherently obvious, and easily accommodated (e.g., different location of a communication radio panel, a different exhaust gas temperature limit which is placarded, or changes to abnormal/non-normal "read and do" procedures).

Level B Training. Level B difference training is applicable to functionally similar aircraft with system or procedure differences that can adequately be addressed through aided instruction. At Level B aided instruction is appropriate to ensure crew understanding, emphasize issues, provide a standardized method of presentation of material, or to aid retention of material following training. Level B aided instruction typically employs means such as slide/tape presentations, computer based training (CBT), stand-up lectures, or videotapes. Situations not covered under the provisions of level A, shown by items a through c immediately above, may require Level B (or higher levels) if certain tests described later are failed.

4. Acceptable Operator Differences Requirements Tables

ODR tables are used to show an operator's compliance method. Detailed Boeing generic ODR tables are on file with the Central JAA. Copies are available on request. These ODR tables are provided as Boeing generic, and therefore may not include optional features that are applicable to specific operators. The ODR tables assume that flight crewmembers are qualified, current, and experienced in operating the base aircraft.

The Boeing ODR tables have been developed in accordance with AMC 1.980(b) & IEM 1.980(b) of JAR-OPS 1 Subpart N. These ODR tables have been found acceptable by JAA. They represent an acceptable means of compliance with MDR provisions for the aircraft evaluated based on those differences and compliance methods shown. These tables do not necessarily represent the only means of compliance for operators with aircraft having other differences.

Operators flying more than one B777 variant within a fleet must have approved ODR tables pertinent to their fleet.

5. Specification for Training

5.1 B777-300ER Differences Training

Familiarization training is required as follows:

- Relative to the base Aircraft, recommended training would be a training handout for the system differences and a video program to address taxi differences including the use of the taxi manoeuvre camera system. The video program is one already developed for the 777–300 introduction.

- Relative to the 777-300, recommended training would be a training handout for the system differences.

No simulator or device training is required between B777 variants.

5.2 Recurrent Training and Operation of B777 Variants

The recurrent training program, when flying different variants within a single licence endorsement, must comply with JAR-OPS 1.965 and with the ODR tables, defined under JAR-OPS 1.980. All B777 variants are recommended under the same license endorsement.

6. Specifications for Checking

6.1 Skill Test Following Differences Training

No skill testing is required.

6.2 Recurrent Checking - Proficiency Checks and Operator Proficiency Checks (OPC)

Proficiency Check and OPC must be conducted in compliance with JAR-FCL 1.245 and JAR-OPS 1.965, respectively.

6.2.1. Proficiency Check.

Proficiency Checks may be conducted on any B777 variant and will be valid for any other B777 variant once Differences training has been completed.

6.2.2 Operator Proficiency Check.

OPCs may be conducted on any B777 variant and will be valid for any other B777 variant once Differences training has been completed.

6.3 Line checks

Line checks must be conducted in compliance with JAR-OPS 1.965(c). Line checks may be conducted on any B777 variant and will be valid for any other B777 variant once Differences training has been completed.

7. Specifications for Currency / Recent Experience

Concerning the B777 family, JOEB concluded that take off and landings performed on any B777 variant are valid for all variants, including the B777-300ER variant. This means that for flight crew members operating a fleet intermix of any B777 variant, the recent experience requirement is satisfied as soon as they achieve 3 take-offs and 3 landings, as handling pilot, regardless of the variant flown.
The B777-300ER pilot qualification endorsement is under the same-type rating, and is considered equivalent to all other B777 variants. Accordingly, any three landings in a 90-day period in any B777 aeroplane variant, including the B777-300ER variant, is considered acceptable for meeting landing currency provisions on all other B777 aeroplane variants.
B777 variants do not require separate route sector currency. NOTE: Reference JAR-FCL 1.001 for definition of route sector.

8. Specifications for IOE/SLF/Line Indoc/LIFUS

Provided the crewmember is current and qualified on previous B777 variants, there are no unique IOE/SLF/LIFUS or line indoctrination requirements associated with the introduction of the B777-300ER.

9. Additional OEB Findings and Recommendations

9.1 Cockpit configuration commonality:

JOEB recommends operator fleets of different B777 variants use, whenever possible, a common cockpit configuration for the following safety related items:

- Unit system (metric or non-metric) on all displays.
- Altimeter settings (QNH/QFE)
- GPWS Voice Callouts

10. B777 Overhead Flight Crew Rest (OFCR) Recommendations

10.1 Occupancy

Only approved crewmembers, trained in OFCR evacuation procedures, may occupy the OFCR. A clear definition of "crewmembers" allowed to occupy the OFCR must be specified in the operational approval to use this facility, and, in drawing up this definition, NAAs should consider the legal status of any occupant who is not part of the operating crew.

Depending on the version installed, the OFCR may be certified for occupancy during taxi, takeoff and landing (TTL) and the guidance that follows relating specifically to occupancy during these flight phases will apply in addition to the generalised guidance. If the compartment is not certified for taxy, takeoff and landing, the compartment may not be occupied at any time while the aeroplane is below 25,000 feet and only the generalised guidance will apply.

Note: The Operators are requested to expand into their Operating Manual the relevant approved AFM procedures.

10.2 Approval for Use

The JAA has evaluated the B777 OFCR; however specific operational approval from the operator's NAA is required. Where NAAs have approved occupancy by crew members other than operating crew members, careful consideration should be given to the potential impact on the quality of rest achievable by the operating crew members when simultaneous occupancy by both types of occupant has been permitted. No additional credit should be given for the use of this facility towards the extension of a flight duty period beyond that normally allowed.

Approval will be based on the following guidance:

10.2.1 Rescue and Emergency Evacuation

Operators should have written procedures in the Operations Manual regarding rescue and evacuation pertaining to occupants of the OFCR compartment. As a minimum the following is needed:

- For planned evacuations, OFCR occupants should be relocated to the main deck passenger cabin, the flight deck or non-required cabin crew positions prior to landing if seats are available and time permits.
- If an in-flight emergency occurs where an evacuation is possible, and the situation permits, the crew should inform the appropriate Air Traffic Services Unit that there is an occupied OFCR on board. This information should include the number of occupants and the location of the OFCR.
- At least one cabin crew member should be given responsibility to ensure occupants of the OFCR are evacuated if an evacuation command is given.

10.2.2 Training – Occupants

Training for the use of the OFCR should be specified in the Operators Operatiions Manual ''Part D''
As a minimum, prior to occupying the OFCR, crew members should be trained in the conditions for occupancy and the safety provisions and equipment of the OFCR facility, to include the following:

- Maximum allowable occupancy for TTL and in flight
- Fire extinguishers and smoke hoods (fire fighting procedures)
- Emergency oxygen (decompression procedures)
- Primary and secondary escape routes (evacuation procedures)
- Reminder that cabin crew will provide further direction after reviewing the outside conditions.
- Communication system
- Occupant use of seat and ancillary equipment, seat belts and bunk restraints during turbulence and critical phases of flight

- Restrictions prohibiting bunk use during takeoff and landing
- Any other equipment and systems installed

10.2.3 Procedures and Training – Cabin Crew

OFCR procedures should also be included in cabin crew training to include the above items and additional responsibilities for ensuring the OFCR is evacuated during an aeroplane evacuation.

Procedures should be developed and included in training for the following:

- Pre-flight check of the safety equipment installed in the OFCR
- Checking/confirming the OFCR is secure for takeoff and landing
- Closing the OFCR door after takeoff, and opening the door prior to landing.
- Monitoring the OFCR during flight commensurate with the requirement to minimize rest disruptions when it is occupied
- Prevention of unauthorized entry to the OFCR compartment

11. Aircraft Regulatory Compliance Checklist

(to be added by the JAA)

12. Specifications for Training Devices and Simulators

No devices or simulators are required for familiarization training from one B777 variant to any other B777 variant.

13. Application of OEB Report

This OEB report should be used by JAR-OPS 1 operators and their respective National Authorities to determine crew qualification requirements (training, checking, and currency) in support of B777 operations.

14. Alternate Means of Compliance

Operators proposing alternate means of complying with the recommendations herein will be required to demonstrate to their authority an equivalent level of safety will be achieved.

15. Miscellaneous (Reserved)

OEB Report Part II

Background

Boeing requested a JOEB process for evaluation of the B777-300ER. Due to the various subjects, subgroups were established as follows:

- MMEL Subgroup
- FCL & OPS Subgroup

The enclosed report only covers the activities of the FCL & OPS subgroup. No specific report will be issued for the MMEL, as the MMEL is the actual document recommended for approval by the JAA.

This Joint Operation Evaluation has been performed using the following methods:

- Review of the FAA Flight Standardization Board (FSB) Report;
- Discussions with the FAA FSB Chairman;
- JAA Familiarization flying for validation of the FAA Type Certificate;
- Review of a B777-300ER Differences Training handout recommended by Boeing

Since there is no JAA JOEB report available to cover the -200/-200ER or -300 aeroplane variants, this report is issued to provide adoption of standards for all B777 variants in accordance with the JAA Process defined as the "Catch-up Procedure."

The report specifies the JAA type rating endorsement, the B777-300ER Differences Training requirements, the Proficiency Checking, and the Recent Experience requirements for flight crew members already qualified on any B777 variant and requiring Differences Training to the B777-300ER variant. This report also specifies recommendations for use of the Overhead Flight Crew Rest (OFCR) facility, unique to the B777. This OFCR can be installed in any B777 variant.

This Evaluation has been made in compliance with the JAA JOEB Terms of Reference. The OE was conducted in accordance with the processes detailed in the JAA JOEB Handbook, dated December 2002.

JAR requirements as in JAR-OPS 1 (App 2 to JAR-OPS 1.430(c), 1.940, 1.945, 1.950, 1.965, 1.970 and 1.980 including associated appendices, AMCs and IEMs), JAR-FCL 1 (1.220, 1.225, 1.235, 1.240, and 1.261 including associated appendices, AMCs and IEMs) have been considered.

Board Composition

Captain Graham Sturrock, UK CAA

Captain Andy Stewart, UK CAA

Applicant's Proposal and Board Issue/Review Items

Boeing proposes to add the 777-300ER to the "B777" type rating endorsement via A or B level training. Based on their preliminary assessment, Boeing proposes that familiarization training is all that is required because no significant skills or handling qualities will need to be addressed for pilots with experience in other B777 variants.

Type Rating and Crew Qualification Tests and Board Determination

The first phase of the evaluation consisted of Board members' previous experience on earlier B777 variants to include the -200, -200ER and -300. Captain Stewart participated in the B777-300 T1/T2 aeroplane testing in 2002 jointly with the US FAA FSB members and has operational experience in the B777-200/-200ER variants. Captain Sturrock also has operational experience in the B777-200/-200ER variants and has received B777-300 differences training previously.

The second phase of the evaluation of the Boeing B777-300ER aircraft by the JAA was conducted during September 2003 by Captains Sturrock and Stewart. A combined T1/T2 test was conducted, to include functional comparisons and handling qualities during typical training manoeuvres, taxying and several takeoffs and landings.

The third phase of the evaluation was a review of the proposed differences training material. This was a differences training handout describing significant differences between all the B777 variants. In the previous informal evaluation of the B777-300 variant, Captain Stewart evaluated the proposed taxi video programme which addresses taxi manoeuvre techniques which may be used commonly between all B777 variants and use of the Ground Manoeuvre Camera System which is common to the -300 and -300ER variants. Capt. Sturrock had received training by means of this programme during his B777-300 differences training.

The JOEB recommends that Central JAA adopt the Boeing-proposed familiarization training and ODR Tables, as published in this report. Further, the JOEB recommends the Boeing-proposed MDR, also contained in this report, be adopted, serving as a "catch-up" basis for earlier variants not formally evaluated by the JOEB but based upon the previous experience of JOEB members who have operated these variants. The JOEB recommends all B777 variants, including the -300ER, be included in the "B777" license endorsement.

As part of this evaluation the JOEB also evaluated the B777 Overhead Flight Crew Rest (OFCR) facility for operational use by JAA operators in-flight and during taxi, takeoff and landing and provides recommendations in Part I, Section 10 of this report.

Summary and Conclusions

To be completed

Attachments

BOEING 777 Applicability: B777-300ER

OPERATIONAL REVIEW ITEM

SPECIAL CONDITION

SUBJECT:	Overhead Flight Crew Rest (OFCR) for Occupancy Capability During Taxi, Take-off and Landing	IDENTIFICATION No:	ORI 8
		STAGE:	1
		ISSUE:	3
		STATUS:	Closed
		DATE:	05 April 2004

REQUIREMENTS:

PRIMARY PANEL:	B777 JOEB
SUPPORT PANEL:	None

Statement of Issue:

Boeing has applied for the airworthiness approval of an Overhead Flight Crew Rest (OFCR) that may be occupied during the taxi, take-off and landing (TT&L) phases of flight. The provision of this facility with TT&L capability is intended to give operators the flexibility to relocate off-duty flight crew from revenue seats on the main deck to non-revenue seats and still provide an environment that is conducive to rest.

Previous versions of the OFCR have not been approved for occupancy during TT&L so this facility presents novel issues particularly related to the TT&L phases of flight. Consequently, this ORI has been produced to address the operational issues arising from the installation of such a facility. Although it is recognised that Certification and Operational Approval are closely linked, this ORI will only deal with operational issues.

The majority of the operational issues concerned with the use of a facility such as that proposed can be dealt with under existing Special Conditions established for facilities similar to this. However, the following issues have particular connotations for rest facilities approved for occupancy during take-off and landing.

1. Nature of Intended Occupants

JAA Position (1):

Though it would appear that Boeing's position is that the facility is intended to be used by "off-duty crew members" i.e. those additional crew members carried to extend the allowable duty period (see the Position Paper attached to Boeing letter B-H360-02-4852 dated August 09 2002), it is likely that an

operator may attempt to utilise the facility for the carriage of personnel other than these additional flight crew. It should be established exactly who may be permitted to occupy the facility during TT&L phases of flight and the level of training and familiarisation they should receive. Any limitation on the nature of the occupants should be published in an appropriate place.

Boeing Position:

The intent is to provide a facility conducive for rest to "whomever" goes in there, with the practical usage being for all "approved/trained" crew members (i.e., Flight Crew or Flight Attendants). "Off-duty" to Boeing includes those additional crew members that are necessary to extend the allowable duty period, as well as any "dead-heading" crew members as long as they are properly trained in evacuation, decompression, and fire fighting procedures from the 777 OFCR and as long as the "pilot in command" has also approved those individuals. It should be left up to the individual operators and their respective NAAs to determine/allow occupancy beyond crew members/dead-heading crew members. The requirements should only establish what is necessary for safety (i.e., all crew members must be trained in OFCR procedures, with the "pilot in command" having the final authority)

JAA Position (2):

The JAA accepts Boeing's position that permitted occupancy should be the decision of individual NAAs depending on local legal issues related to the status of "off-duty" crew members and subject to the limitations of the Type Design.

2. Training of Intended Occupants

JAA Position (1):

Both the normal and emergency use of the OFCR require procedures that are novel or at variance with those used at other locations on the aircraft. An appropriate level of training should be established for persons intended as approved occupants of the OFCR, and provision should be made for the approval of procedures and training within the overall approval process of the facility.

Boeing Position:

Agreed.

3. Maximum Number of Occupants

JAA Position (1):

The purpose of the facility is to provide rest for flight crew carried for the purpose of extending the allowable duty period when they are off-duty. Current Flight Time Limitation rules indicate that the number of off-duty flight crew would not normally exceed two and, for TT&L, only the seats are acceptable for occupancy. These considerations provide a natural limitation on the number of occupants during TT&L. However, during other phases of flight, occupancy by more than two persons might be considered.

It should be established, therefore, what the maximum permitted number of occupants should be in respect of considerations such as the ability to obtain the rest for which the facility was designed when

being used for that purpose, security during turbulence, the provision of oxygen in the event of decompression and the impact on the ability to fight fire in the OFCR and evacuate the facility if required.

Boeing Position:

Boeing agrees that the maximum number of occupants during TT&L should be limited to the number of seats installed (2), and Boeing notes that the FAA and JAA have already approved the OFCR for a maximum of four (4) occupants during other phases of flight.

4. Minimum Number of Occupants

JAA Position (1):

The evacuation procedure for this facility requires the use of additional persons to facilitate the egress of an incapacitated person from the OFCR. It should be established, therefore, whether a minimum number of occupants should be defined in order to ensure that the requisite number of persons involved in the evacuation of an incapacitated person could be available inside the facility in any abnormal situation that might reasonably be expected to arise during its occupancy.

Boeing Position:

Boeing has already successfully demonstrated that the evacuation of a single incapacitated occupant during "in-flight" scenarios is possible with an additional occupant available within the crew rest. It has also been shown by analysis (Reference Boeing Document D926W083-02 as submitted in Boeing Letter B-H360-04-0257 dated January 16, 2004) that the primary evacuation route (i.e., stairway) will still be available and accessible for use during an emergency evacuation under all foreseeable survivable emergency landing scenarios. Therefore, a minimum occupancy restriction in the overhead flight crew rest during the TT&L phases of flight is not required. The evacuation access to an incapacitated occupant in the overhead flight crew rest is equivalent to that available to an incapacitated occupant on the main deck.

JAA Position (2):

The JAA's own analysis of the referenced Boeing document supports the Boeing position. The Boeing position is therefore accepted.

5. Observation of the OFCR

JAA Position (1):

It should be recognised that the OFCR is not within the area normally under the observation of cabin crew and non-intrusive procedures should be specified to ensure that the incapacitation of a person occupying the OFCR is discovered within a reasonable period.

Boeing Position:

It should be left up to the individual operators and their respective NAAs to determine the appropriate non-intrusive procedures to ensure that the incapacitation of a person occupying the OFCR is discovered within a reasonable period of time.

JAA Position (2):

The JAA accepts the Boeing position that the development of suitable non-intrusive procedures should be the responsibility of individual operators subject to the acceptance of their NAA.

Conclusion:

All the issues raised by the JAA within this ORI have been satisfactorily addressed and the ORI may be considered to be closed.

Applicant's Proposal

Tests Used