EUROPEAN AVIATION SAFETY AGENCY

Operational Evaluation Board Report

Boeing B757 / 767 Series
Final Report, Revision 2
25 May 2011

European Aviation Safety Agency
Postfach 10 12 53
D-50452 Köln
Germany

Boeing B757/767

Operational Evaluation Board (OEB) – OPS / FCL Subgroup

Captain Graham Pass
OEB Chairman

Captain Herbert Meyer
Section Manager, Large Aircraft
Flight Standards Department, EASA Certification Directorate

Revision Record

Rev. No.	Content	Date
0	JAA Original Issue	12 Nov 2003
1	B767-300F incorporated	30 Mar 2011
2	All	25 May 2011

1. JAA JOEB B757/767 FCL/OPS Subgroup Composition (Initial Evaluation)

Name	Capacity	Task
Capt. Terry Newman	CAA	JOEB Chairman
Capt. Olav Guldbrandsen	JAA	Team Member
Capt. Evan Nielsen	JAA	Co-ordinator
Jean Baril	JAA	Co-ordinator

2. EASA OEB B767-300F FCL/OPS Subgroup Composition

Name	Capacity	Task
Capt. Graham Pass	CAA	OEB Chairman
Capt. Graham Stokes	CAA	Team Member
Capt. Herbert Meyer	EASA	Co-ordinator

Note on references and reference texts:
Where references are made to requirements and where extracts of reference texts are provided, these are at the amendment state at the date of publication of the report. Readers should take note that it is impractical to update these references to take account of subsequent amendments to the source documents

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Acronyms

AFM .... Airplane Flight Manual
AMC................... Acceptable Means of Compliance
AP .... Autopilot
AT...................... Auto Throttle
CBT .... Computer Based Training
CCOM................ Cabin Crew Operation Manual
CPD................... Common Procedures Document
CRM .... Crew Resource Management
EASA .... European Aviation Safety Agency
EFB .... Electronic Flight Bag
EGPWS .... Enhanced Ground Proximity Warning System
ETOPS .... Extended range operations for two-engine aeroplanes
EU-OPS............. Annex III to Regulation (EEC) No 3922/91
FAA .... Federal Aviation Administration
FCL .... Flight Crew Licensing
FCOM .... Flight Crew Operating Manual
FCTM................. Flight Crew Training Manual
FFS .... Full Flight Simulator
FMA................... Flight Mode Annunciator
FMS .... Flight Management System
FSB .... FAA Flight Standardization Board
FSTD .... Flight Simulation Training Device
GPWS .... Ground Proximity Warning System
IEM .... Interpretative / Explanatory Material
JAA.................... Joint Aviation Authorities
JAR .... Joint Aviation Requirements
JOEB .... JAA Joint Operational Evaluation Board
LIFUS .... Line Flying Under Supervision
LOFT .... Line Orientated Flying Training
MCDU................ Multi-Function Control Display Unit
MCR .... Master Common Requirements
MDR .... Master Differences Requirements
MMEL .... Master Minimum Equipment List
NAA .... National Aviation Authority
ODR................... Operator Differences Requirements
OEB................... Operational Evaluation Board
PIC .... Pilot In Command
QRH .... Quick Reference Handbook
SIC .... Second In Command
TCAS .... Traffic Alert Collision Avoidance System
TRTO .... Type Rating Training Organization
ZFTT .... Zero Flight Time Training

Preamble

An initial operational evaluation of the B757/767 series was completed by the JAA JOEB in November 2003. This evaluation was based on validation of the FAA FSB evaluation in conjunction with additional investigation by the JOEB in co-operation with the Boeing Aeroplane Validation and Flight Crew Operations Division.

A subsequent evaluation to update this report and incorporate specific items related to the operation of the B767-300F was performed by an EASA OEB in August 2009.

As a result of these operational evaluations, a single license endorsement for the B757 and B767 is recommended in accordance with Appendix 1 to JAR-FCL 1.220.

This report further specifies the EASA pilot type rating, initial training course, familiarization courses, checking and currency minimum requirements, and operational recommendations for:

- an initial pilot type rating on the B757/767 series; and

- pilots already qualified on one B757/767 variant and transitioning to another variant.

It should be noted that no B767-400 transition training curriculum or "reverse" differences training curriculum from the B767-400 variant to another B757 or B767 variant has been evaluated as part of this report.

The initial evaluation was conducted in accordance with the JAA Terms of Reference and the JOEB Handbook. The B767-300F evaluation was conducted in compliance with the applicable EASA OEB Handbook and Common Procedure Document (CPD) for conducting Operational Evaluation Boards.

25 May 2011

Evan Nielsen
Head of Flight Standards Department
Certification Directorate

Executive Summary

1. Background

1.1   An initial B757/767 series operational evaluation was conducted in November 2003 by the Joint Aviation Authorities (JAA) in accordance with JAA JOEB procedures, 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
- Attendance at a B767-400 Differences Training course recommended by Boeing, with a subsequent Proficiency Check (PC)
- Interviews and observations with two US B767-400 fleet operators
- Conduct of a flight and simulator programme to evaluate the elements of an Operator Proficiency Check (OPC)

As no JAA JOEB report was available to cover the B757 and B767 "classic" aeroplane variants, the initial report was issued to provide adoption of standards for the B767-400 in accordance with the JAA Process defined as the "Catch-up Process".

The Boeing B757-200, B757-300, B767-200, or B767-300 aeroplane variants are referred to as the "classic" variants in this report.
Further details regarding the initial JOEB evaluation are contained in Appendix 1.

1.2   A subsequent B767-300F operational evaluation was conducted by the European Aviation Safety Agency (EASA) in accordance with EASA OEB requirements and was completed in February 2011. This evaluation was performed as a "Catch-up Process" consisting of review meetings with Boeing, taking into account the following documents:

- Boeing 757/767 Qualification Loft (TBC-757/767-O3, Nov 1, 2001)
- Boeing 767-300ER ETOPS Training (TBC-767-O14, Aug 5, 2005)
- Boeing 757/767 Recurrent Training FAR PART 61 (R2 Rev 5, Dec 10, 2008)
- Boeing 757-200/300 or 767-200/300 to 767-400ER PFD/ND Differences Training (D2 Rev 2, Apr 1, 2002)
- Flight Standardisation Board Report (Revision 7, Jan 9, 2009)
- Boeing 767 Syllabus Transition Training (T1, Rev 9 April 10, 2008)
- Boeing 767 Flight Crew Training Manual (Rev 8, October 31, 2008)
- Differences Training D1 (JAA/EASA) B757-200P to B767-300P/F; B767-300P/F to B757-200P. Rev 3.0 July 23, 2009
- Flight Training Record sample
- DHL Form Air FP3 B767 Differences course

- DHL Air B767 Differences & OPC 4 Crew notes
- DHL Air B767 Differences & OPC 4 Instructor notes
- DHL Air B767 Differences & OPC Reference notes
- Design B767-300ER to B767-300F ODR tables
- B767-400ER JOEB Report (V0912, dated 12 Nov 2003)
- B767 QRH (D632T001-TA4DHI, dated August 19, 2009)

2. Scope of the evaluation

2.1   Boeing requested confirmation that the B757 and B767 share the same type rating and should therefore have a single type rating licence endorsement "**B757/767**" for all variants.

3.   Evaluation Process

3.1   **Initial evaluation of the B757/767**

During this evaluation, JAA JAR requirements of JAR-OPS 1 (§ 1.940, 1.945, 1.950, 1.965, 1.970 and 1.980 including associated appendices, AMCs and IEMs) and JAR-FCL 1 (§1.215, 1.220, 1.225, 1.230 1.235, 1.240 and 1.261 including associated appendices, AMCs and IEMs) have been considered.

3.2   **Subsequent evaluation of the B767-300F**

During this evaluation, the requirements contained in EU-OPS (§ 1.940, 1.945, 1.950, 1.965, 1.970 and 1.980 including associated appendices and Temporary Guide Leaflet TGL 44) and JAR-FCL 1 (§1.215, 1.220, 1.225, 1.230 1.235, 1.240 and 1.261 including associated appendices, AMCs and IEMs) have been considered.

System differences were reviewed and Normal and Non-normal procedures compared between the B767-300F and the B767-300. Boeing provided ODR tables were used as a basis for the evaluation.

4.   Results

4.1   **Initial evaluation of the B757/767**

The original JOEB concluded that the B767-400 was suitable for inclusion under the "**B757/767**" same type rating endorsement, provided that the initial type rating was accomplished on a B757/767 "classic" variant (i.e. the B757-200, -300 and B767-200, -300).

A B767-400 full transition training course or a "reverse" differences training course from the B767-400 variant to another B757 or B767 variant has not been evaluated within the scope of this report.

Consequently, the OEB currently recommends a separate licence endorsement in those cases, pending the outcome of such an evaluation.

4.2 **Subsequent evaluation of the B767-300F**

The OEB concluded that only Level A differences (aircraft are functionally similar) exist between the B767-300 and the B767-300F.

Ground courseware using CBT/Video/Transparencies is adequate to cover these differences when transitioning from:

- the B767-300 variant to the B767-300F variant; and
- the B767-300F variant to the B767-300 variant.

5. **Conclusion**

EASA recommends the approval of the Boeing proposed training courses for initial type rating on the B757/767 and familiarization training for variants.

EASA recommends that the same type rating, "**B757/767**" (as single licence endorsement) is applied to all variants.

| 1
Manufacturer | 2 **Aeroplanes** | | 3 | 4
Licence endorsement |
	Model	**Name**		
Boeing		B757 - 200 series - 300 series	D	B757/767
		B767 - 200 series - 300 series - 300 F series		
		B767 - 400 ER (1)		
	(1) The differences training course is valid from the B757/767 "classic" to the B767-400ER for crew members previously qualified on the B757/767 "classic" variants. The B767-400ER to B757/767 "classic" differences training shall be evaluated or the full type rating training shall be accomplished.			

Operational Evaluation Report – FCL & OPS Subgroup

1. Purpose and Applicability

This report

- defines the Type Rating assigned to the Boeing B757/767 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;
- makes recommendations for initial training;
- makes recommendations for familiarization training courses;
- makes recommendations for checking; and
- makes recommendations for currency.

2. Pilot Type Rating requirements

In reference to JAR FCL 1 Subpart F and to the OEB evaluation procedures, the same Type Rating and, consequently the same Licence Endorsement may be assigned to all variants of the B757 and the B767 which have been evaluated in this report, provided that an initial B757/767 Type Rating endorsement has been obtained on a "classic" variant with subsequent successful completion of an approved B767-400 Differences Training Course. The licence endorsement should be assigned "**B757/767**".

If, at some time in the future, it becomes possible, due to the formulation of a suitable course, for a pilot to complete initial qualification on the B767-400 variant, per JAR- FCL 1 Subpart F, the licence endorsement "**B767-400**" should be assigned. With a licence endorsement of "B767-400", if the flight crew member subsequently completes an approved "B767-400" to B757/B767 "classic" Differences Training course, the "B767-400" endorsement can be replaced with a "B757/767" license endorsement.

3. Master Common Requirements

MCRs are requirements common to the B757/767-"Classic" variants and the B767-400.

Although they have a very high level of commonality in terms of airframe systems architecture and operation and handling characteristics, there is a major difference to the flight deck of the B767-400, which has a direct and significant impact on the definition of the training programmes. Boeing introduced a Flight Deck Upgrade (FDU) on the B767-400, which incorporates many B777-style flight instrument displays, Thrust Management functionality, FMC operation, and automatic Radio Tuning capability. The FDU incorporates significantly more system automation than is inherent on the "Classic" B757 and B767 variants.

3.1 Aircraft Approach Categories

With reference to EU-OPS Appendix 2 to 1.430(c) the approach categories are as follows:

Aircraft	Category
B757-200	
B757-300	C
B767-200	
B767-200 IGW	
B767-300	D
B767-400	

4. Master Differences Requirements tables

4.1   Master Difference Requirements for the B757/767 aircraft are shown in the table below and represents the result of work performed in the evaluation. Definitions of the various levels for Training/ Checking/ Currency are the ones from the Common Procedures Document (CPD), and the relevant definitions are included after the table for reference.

Aeroplane Type Rating B757/767		FROM AEROPLANE							
		B757 200	B757 200PF	B757 300	B767 200	B767 300	B767 300F	B767 300GMF	B767 400ER
TO AEROPLANE	B757-200	---	B*/A/B (1)(2)(3) (4)(5)(6)	A/A/B (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	(TBD)
	B757-200PF	B*/A/B (1)(2)(3) (4)(5)(6)	---	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	(TBD)
	B757-300	A/A/B (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	---	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	(TBD)
	B767-200	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	---	A/A/B (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	(TBD)
	B767-300	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	A/A/B (4)(5)(6)	---	B*/A/B (1)(2)(3) (4)(5)(6)	B*/A/B (1)(2)(3) (4)(5)(6)	(TBD)
	B767-300F	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	--- (5)(6)	A/A/B (5)(6)	(TBD)
	B767-300GMF	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	B*/A/B (1)(2)(3) (4)(5)(6)(7)	A/A/B (5)(6)	--- (5)(6)	(TBD)
	B767-400ER	D/C/C (5)(6)(7) (8)(9)(10)	D/C/C (5)(6)(7) (8)(9)(10)	D/C/C (5)(6)(7) (8)(9)(10)	D/C/C (5)(6)(7) (8)(9)(10)	D/C/C (5)(6)(7) (8)(9)(10)	D/C/C (5)(6)(7) (8)(9)(10)	D/C/C (5)(6)(7) (8)(9)(10)	(TBD)

NOTES:

(1) B* training may be accomplished via a home study course which can be demonstrated to produce results equivalent to a formal (e.g. Classroom, CBT) academic training course. A means must be included for the crew member to certify that they have complied with the required training and fully understand the differences between variants flown (written test, etc.).

(2) Training in general is set at Level B and assumes that crew members receive exposure to operation of doors/emergency exits on static aircraft or other suitable means. If this is not accomplished, then C/A/B applies, where C is based on an ODR-specified item for emergency equipment/doors.

(3) B/A/B is based on equivalent operating policies for both aircraft. If policies differ, e.g. only one variant is used for single-engine taxi, Cat III fail passive operations, etc., then level C/A/B may be needed to address specified manoeuvres identified by ODR tables.

(4) Additional training/checking/currency requirements may exist (B/A/B) for mixed flying of ER and non-ER aeroplanes due to system and operational differences.

(5) Installation of FANS/ Data Link/RNP requires additional training, checking and currency as specified in MDR table.

(6) Predictive Windshear (PWS) training, checking and currency has been assessed by the OEB at B/B/B. Enhanced ground proximity warning system (EGPWS) training, checking and currency has also been assessed B/B/B.

(7) Training on emergency egress and emergency equipment is required.

(8) Level D training requirements may be satisfied by an approved training curriculum consistent with the provisions of this OEB report and accomplished in a Level 2 flight training device (FTD 2) or higher. Reductions in the number of LIFUS sectors may be authorized if a full flight simulator is used to conduct training.

(9) Level C checking involving **systems differences only** may be satisfied by "interactive CBT". Level C checking in an FTD 2 or higher requires a proficiency check (PC) by an authorized flight examiner.

(10) Level C currency for the B767-400 and other B757/767 variants requires two line sectors in relevant aeroplanes or approved simulator(s) every 90 days for the purpose of route sector currency. Take-off and landing currency may be satisfied in any variant (reference paragraphs 6.5.1, 6.5.2, and 8 of this report).

4.2   Excerpts from the CPD

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 hand-outs 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 indicated by a placard, 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 video tapes. 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.*

Level D Training. *Level D training can only be accomplished with devices capable of performing flight manoeuvres and addressing full task differences affecting knowledge, skills, and/or abilities. Devices capable of flight manoeuvres address full task performance in a dynamic "real time" environment and enable integration of knowledge, skills and abilities in a simulated flight environment, involving combinations of operationally oriented tasks and realistic task loading for each relevant phase of flight. At Level D knowledge and skills to complete necessary normal/ abnormal/emergency procedures are fully addressed for each variant. Level D training requires mastery of interrelated skills that cannot be adequately addressed by separate acquisition of a series of knowledge areas or skills that are interrelated. The differences are not, however, so significant that a full transition training course is required. If demonstrating interrelationships between the systems is important, use of a series of separate devices for systems training would not suffice. Training for Level D differences requires a training device that has correct integration of systems and controls and realistic instrument indications but for some manoeuvres visual cues, motion cues, dynamics, control loading or environmental conditions may be required. Weather phenomenon such as low visibility, Cat III, or wind shear may or may not be incorporated. Where simplified or generic characteristics of a type are used in devices used to satisfy difference training Level D, significant negative training must not occur as a result of the simplification. Devices acceptable to satisfy Level D training range from those devices where relevant elements of aircraft flight manoeuvring, performance, and handling qualities are incorporated, even though in a simplified or generic fashion, such as fixed base non-visual simulation, and fixed base visual simulation to Level C/D simulators at the upper end.*
Devices acceptable for Level D training:
a. or FTD2 (JAA) is the minimum acceptable training media. Remark: FTD level 6 or level 7 (FAA, TCCA);
b. FFS certified to Level D or lower may also be necessary to satisfy manoeuvre/handling differences.
c. At the discretion of the OEB, FS or aircraft training may be specified within level D training for the conduct of a specific manoeuvre. Examples: HUD training or a single manoeuvre such as a no-flap landing when T2 is otherwise successfully completed.

Use of Devices Exceeding Requirements. *Training differences levels represent minimum requirements. Operators may always use a device normally associated with a higher difference level to satisfy a training differences requirement. For example, if Level C differences have been assessed due to installation of a different FMS, operators may train pilots using the FMS installed in a FFS as a system trainer if a dedicated part task FMS training device is not available.*

Level A Checking. *Level A checking indicates that no check related to differences is required at the time of differences training. A crew member is, however, responsible for knowledge of each variant flown, and differences items may (and should) be included as an integral part of subsequent recurring proficiency checks.*

Level C Checking. *Level C checking indicates a partial check using a device suitable for meeting Level C differences training requirements (or higher) is required following transition and recurring differences training. The partial check is conducted relative to particular manoeuvres or systems designated by the OEB. An example of a Level C check would be evaluation of a sequence of manoeuvres demonstrating a pilot's ability to use a flight guidance control system or flight management system. An acceptable scenario would include each relevant phase of flight but would not necessarily address manoeuvres that do not relate to set up or use of the FGCS or FMS.*

*Line Flying Under Supervision (**LIFUS**). Credits or Constraints. LIFUS may be specified for variants in conjunction with any difference checking level and may be tailored to specific difference level objectives. Credit for common systems, procedures, or manoeuvres with other variants is permitted. Credit toward LIFUS may also be permitted for certain LOFT experience. Simplified or reduced time may be administered and constrained only by OEB requirements. At levels D and E LIFUS is required and is specified by the OEB. When differences training is approved by the process in this document, credit for LIFUS between aircraft evaluated may be granted by the OEB.*

Difference Currency Levels.
The term "currency" as used in this document addresses recent experience necessary for safe operation of aircraft types or variants as designated by the OEB. It is equivalent to the term "recency of experience" or "recent experience". The currency requirements specified by the OEB generally relates to 90 day take-off and landing, system or flight segment currency. Currency issues not specified by the OEB are covered by regulation.

Level B Currency. *Level B currency is "knowledge related" currency, typically achieved through self-review by individual crew members for a particular variant. Self-review is usually accomplished by review of material provided by the operator to crew members for that purpose. It may be undertaken at an individual crew member's initiative, but the operator must identify the material and the frequency or other situations in which the material should be reviewed. Self-review may be based on manual information, bulletins, aircraft placards, memos, class hand-outs, video tapes, or other memory aids that describe the differences, procedures, manoeuvres, or limits for pertinent variant(s) that crews are flying.*
An example of acceptable compliance with level B currency would be issuance of a bulletin which directs crews to review specific operating manual information before flying a variant if that variant has not been flown within a specified period (e.g., fly that variant or have completed a review of the differences in limitations and procedures within the past 90 days). Another method of compliance would be crew certification on a dispatch release that they have reviewed pertinent information for a particular variant to be flown on that trip. Level B currency cannot, however, be achieved solely by review of class notes taken by and at the initiative of an individual crewmember unless the adequacy of those notes is verified by the operator.

Level C Currency. *Level C currency is applicable to one or more designated systems or procedures, and relates to skill as well as knowledge requirements. An example would be establishment of INS currency, FMS currency, flight guidance control system currency, or other particular currency that is necessary for safe operation of a variant. Establishment of Level C for a variant with a flight management system (FMS) would typically require a crewmember to fly that variant within the specified period or re-establish currency. Currency constraints for level C typically are 90 days. However, some systems or procedures may require shorter time limits while others may be longer than the normal interval for proficiency checks if the pertinent items are not always addressed by these checks. When level C currency applies, any pertinent lower level currency also is addressed. Examples of methods acceptable for addressing level C currency are:*
a. Crew scheduling practices resulting in a crewmember being scheduled to fly a variant with the pertinent system/procedure within the specified period;
b. Tracking of an individual crewmember's flying of variants having the particular system/procedure within the specified period;
c. Use of a higher level method (level D or E currency); or
d. Other methods as designated or found acceptable by the OEB.

Re-establishing Level C Currency: *When currency is lost, currency may be re-established by completing required items using a device equal to or higher than that specified for Level C differences training and checking. Other means to re-establish currency include flight with an appropriately qualified check airman, completion of proficiency training, or a proficiency check. In some instances, a formal re-familiarization period in the actual aircraft with the applicable system operating while on the ground may be acceptable if permitted by the OEB.*

Competency Regarding Abnormal/Non-Normal/Emergency Procedures. Competency for non-normal manoeuvres or procedures is generally addressed by checking requirements. Consistent with EU-OPS and JAR-FCL, credit for specified abnormal/non-normal/emergency procedures may be granted by the OEB. However in certain instances, particular abnormal/non normal/ emergency manoeuvres or procedures may not be considered mandatory for checking or training. In this situation, it may be necessary to periodically practice or demonstrate those manoeuvres or procedures even though it is not necessary to complete them during each check. In such instances, the OEB may specify a currency requirement for training or checking applicable to abnormal/non normal/emergency manoeuvres or procedures that are to be performed. This is to assure that extended periods of time do not elapse in a series of repeated training and checking events in which significant manoeuvres or procedures may never be accomplished. Thus, when an abnormal/non normal/ emergency manoeuvre or procedure is not mandatory and is not accomplished during each proficiency training (PT) or proficiency check (PC), but is still important to be occasionally practiced or demonstrated, the OEB may establish a currency requirement. When designated, these currency requirements identify each abnormal/non-normal/emergency manoeuvre or procedure, the currency level applicable, and an applicable time period (e.g., within 36 months) or any other necessary constraints (e.g., within the previous three PT or PC events).

5. Operator Differences Requirements Tables

ODR tables are used to show an operator's compliance method. Boeing generic ODR tables are on file with EASA. Copies are available on request. These ODR tables are provided as Boeing generic and therefore may not include items that are applicable to particular operators. The ODR tables assume that pilots are qualified, current and experienced in operating the base aircraft.

The ODR tables have been found acceptable during the evaluations. 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 using more than one B757/767 variant must have approved ODR tables pertinent to their fleet.

6. Specifications for Training

6.1 B767-400 Differences Training Course

6.1.1 Curriculum Scope and Purpose

The B767-400 differences training course is designed to familiarize the B757-200, B757-300, B767-200, and/or B767-300 type-rated and qualified flight crew member with the differences incorporated in the B767-400 aeroplane variant with the Flight Deck Upgrade (FDU) configuration with Primary Flight Display (PFD) / Navigation Display (ND) flight instrument format. The only differences training regarding the B767-400 which has been evaluated in this report applies to type rated and qualified B757 or B767 flight crew members requiring differences training to the B767-400 aeroplane variant.

NOTE: A full B767-400 transition training course, or a differences training course applicable to B767-400 type rated and qualified flight crew members requiring qualification to the B757-200, B757-300, B767-200, or B767-300 "Classic" aeroplane variants has not been evaluated in this report.

6.1.2   Areas of special training emphasis

In light of the unique features of the B767-400 FDU configuration, the following areas of knowledge, skills, and abilities must be emphasized during the B757/B767 "Classic" to B767-400 differences training:

- Normal operating procedures and checklists
    - knowledge by memory of preliminary pre-flight, pre-flight, before engine start, engine start, after engine start, before takeoff, takeoff, after takeoff, climb and cruise, descent and approach, landing and rollout, taxi-in and parking, shutdown, and securing procedures
    - familiarization of normal checklists' usage

- Airframe systems
    - flight deck lighting, IRS, electrical, fuel jettison, equipment cooling, pneumatic, air conditioning

- Communications and navigation radio and audio control panel
    - automation of communications radio and navigation radio systems and audio control panel functionality

- Flight crew oxygen mask and boom/mask microphone switching
    - full-face oxygen mask functionality and operation
    - automation of boom/mask microphone switching

- Pegasus FMC/MCDU
    - navigation radio tuning: ILS (auto, manual), VOR (auto, manual, procedure, route), ADF via MCDU
    - thrust management functions
    - Pegasus FMC functionality for large display formats (as required, depending upon previous FMC versions' experience level)

- EFIS control panel location, format, and functionality
    - PFD/ND display format
    - airspeed tape format/symbology
    - altitude tape format/symbology
    - flight mode annunciation location and format
    - autoland status location and format
    - Instrument scan

- multi-function display units format and functionality
- display unit switching
- display unit failures

- EICAS display format
    - engine indication/alert message field relocation
    - assumed temperature and climb de-rate indications and functionality
    - status page format
    - synoptic displays' format
    - display select panel (DSP) location and function
    - cancel/recall function
    - display unit switching
    - display unit failures

6.1.3 Qualification to the B767-400 aeroplane variant

For a flight crew member to achieve endorsement to operate the B767-400, the following standard has been endorsed:

- the flight crew member possesses a B757 or B767 "Classic" type rating endorsement (i. e. B757-200, B757-300, B767-200, B767-300)
- 8hours (minimum) "Interactive" Computer-Based Training (CBT) systems differences knowledge training
- 2 four-hour flight training sessions proceeded by appropriate lesson briefing and succeeded by appropriate de-briefing.

The minimum approved training device is a Flight Training Device Level 2 (FTD2)*. "Interactive" CBT is defined as a student-interactive compliant CBT, i.e. touch-screen or similar interactive capability with student-controlled lesson pacing allowing question testing and answer recording capability, etc.). The FTD must be of the configuration inherent to the operator's B767-400 FDU configuration. Flight training in a B757 or B767 "Classic" FTD or simulator is <u>not</u> endorsed for use in training a B767-400 flight crew member applicant.

*NOTE: FTD-2 (JAA) is equivalent to FTD Level 6 (FAA).

6.2 B767-300F Differences Training Course

The main differences between the B767-300 and the B767-300F are in the aircraft equipment and furnishings. The FAA FSB report, B757/767 Revision 7, 9 January 2009 and additional information from EASA flight test data supplied by United Kingdom Civil Aviation Authority Test pilots was reviewed.

The following proposed B757-200 to B767-300F differences training was reviewed:

- ➢ 2 days ground school and 2 days simulator, broken down as follows;
  - 1 day ground school delivered by the operator
  - 1 day ground school CBT delivered by TRTO, including FBS
  - 4 hours differences simulator conducted by TRTO
  - Differences LOFT/OPC conducted by operator.

This proposed training includes a written exam, SEP Training, 2 sectors line training and a 2 sector Line Check.

This training is compliant with B757-200P to B767-300P/F D1 (JAA/EASA) Differences Training Manual, Appendix B.

6.3   Line Flying Under Supervision (LIFUS)

6.3.1   Purpose of Line Flying Under Supervision (LIFUS)

There are a variety of reasons why the OEB may specify LIFUS in conjunction with Master Difference Requirements (MDRs). One or more of the reasons described below may apply:

a.   Introduction of new aircraft types or variants;

b.   Introduction of new systems (e.g. FMS, TCAS);

c.   Introduction of new operations (e.g. oceanic operations);

d.   Experience for a particular crew position (e.g. PIC, SIC, F/E);

e.   Post qualification skill refinement (e.g. refining alternate or multiple ways to use particular equipment to increase operating efficiency, operating flexibility, or convenience);

f.   Special characteristics (e.g. unique airports, mountainous areas, unusual weather, special air traffic control procedures, non-standard runway surfaces, etc.).

6.3.2   LIFUS in conjunction with B767-400 Differences Training

In the case of Differences Training to the B767-400 variant, a minimum of 1 sector (which may include a line check) is recommended for LIFUS. LIFUS may be increased to 3 sectors (of which one sector may include a line check) depending upon the type of flight training device used.

A minimum of 3 sectors of LIFUS is recommended, of which one sector may include a line check, if a B767-400 FTD2 device is used for the flight training. In the event one lesson is conducted in a B767-400 FFS device and another lesson and/or PC event is conducted in a B767-400 FTD2 device, then 3 sectors LIFUS is recommended, due to the reduction in simulation fidelity for the portion of training, or PC, conducted in the FTD2 device.

A minimum of 1 sector of LIFUS is recommended which may include a line check, if a B767-400 Full Flight Simulator is used for the flight training.

6.4   Differences Training Courses & Familiarization Flights

6.4.1   Differences Training courses

This report recommends the approval of the Boeing B767-400 Differences Training courses, as follows:

- between the B757-200 variant and the B767-400 variant at Level D
- between the B757-300 variant and the B767-400 variant at Level D
- between the B767-200 variant and the B767-400 variant at Level D
- between the B767-300 variant and the B767-400 variant at Level D

Boeing Differences Training courseware provided under "Interactive" CBT (Computer based training), as well as flight training lesson and proficiency check profiles have been assessed and found acceptable.

6.4.2   Familiarization flights

The handling characteristics of the B767-400 variant have been evaluated to be within the scope of minor handling differences between the existing B757-200, B757-300, B767-200, and B767-300 variants. Therefore, no familiarization flights are recommended.

6.5   Recurrent Training and Operation of B757 or B767 "Classic" Variant and the B767-400 Variant

The recurrent training programme, when flying different variants within a single licence endorsement, must comply with EU-OPS 1.965 and with the ODR tables, defined under EU-OPS 1.980. All B757 and B767 variants are recommended under the same license endorsement.

6.5.1   Landing currency

The B767-400 pilot qualification endorsement is under the same-type rating, and is considered equivalent to the B757-200, B757-300, B767-200, and B767-300 variants. Accordingly, any three landings in a 90-day period in any B757 or B767 aeroplane variant, including the B767-400ER variant, is considered acceptable for meeting landing currency provisions on all other B757 and B767 aeroplane variants.

6.5.2   Route sector currency

B757 and B767 "classic" variants do not require separate route sector currency. Recent experience in the B767-400 and B757 and B767 "classic" aeroplane variants requires that a minimum of two sectors be flown in the B767-400 variant (aeroplane or approved simulator) and two sectors in either a B757 or B767 "classic" aeroplane variant (aeroplane or approved simulator) during a 90-day period. Route sector requirements may be increased if mission and operational procedures are assessed to be different (e.g., oceanic, polar, ETOPS, etc. vs. short haul domestic routes/operations).

NOTE: Reference JAR-FCL 1.001 for definition of route sector.

7.   Specification for Checking

7.1   Skill Test Following Differences Training Course

In addition to the mandatory items from the skill test as per Appendix 2 to of JAR-FCL 1.240, the areas of special training emphasis described in this report must be included during the Proficiency Check (PC). The minimum training device requirement for the PC is an FTD2.

7.2   Recurrent Checking - Licence Proficiency Checks (LPC) and Operator Proficiency Checks (OPC)

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

7.2.1. Licence Proficiency Check

LPCs may be conducted on either a B757/B767"classic" variant or the B767-400 variant.

7.2.2   Operator Proficiency Check

OPCs should alternate for all flight crew members between "classic" aeroplane variants and the B767-400 variant. The B767-400 variant OPC should be accomplished on an annual basis with the "classic" variants alternated between a B757/B767"classic" variant, also on annual basis, if applicable to the operator's fleet constituency.

- *Example: Fleet of B757-200 and B767-400 only*
  OPC Event 1: B757-200 aeroplane or approved simulator
  OPC Event 2: B767-400 aeroplane or approved simulator
  OPC Event 3: B757-200 aeroplane or approved simulator
  …

- *Example: Fleet of B757-200, B767-200, and B767-400*
  OPC Event 1: B757-200 aeroplane or approved simulator
  OPC Event 2: B767-400 aeroplane or approved simulator
  OPC Event 3: B757-200 aeroplane or approved simulator
  OPC Event 4: B767-400 aeroplane or approved simulator
  OPC Event 5: B757-200 aeroplane or approved simulator
  …

7.3   Line checks

Line checks must be conducted in compliance with EU-OPS 1.965(c). Line checks may be accomplished on any B757 or B767 variant.

8.   Currency / Recent Experience

Compliance with EU-OPS 1.970 or JAR-FCL 1.026 as appropriate is required for recent experience.

Concerning the B757 and B767 family, take off and landings performed on one B757 or B767 variant are valid for all variants, <u>including</u> the B767-400 variant. This means that for flight crew members operating a fleet intermix of any B757 or B767 variant, the recent experience requirement is satisfied as soon as 3 take-offs and 3 landings, as handling pilot have been achieved, regardless of the variant flown.

9.   Operational Recommendations

The OEB recommends operator fleets of different B757 and B767 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
- FMS specifications and functions (software and hardware)

10.   Additional operational recommendations specific to the B757/767Freighter variants

10.1   Weight and Balance / Cargo Considerations

The familiarization briefing should emphasize the weight and balance characteristics for the operation of the freighter variant, including reference to MLW, cg limits, loading and load sheet application(s), as well as cargo securing.

Appendix 1 – Initial JOEB Evaluation Process and Findings

The first phase of the evaluation of the Boeing B767-400 aircraft by the JAA was accomplished by a review of the FAA Flight Standardization Board (FSB) Report. Boeing provided the OE team with proposed Master Difference Requirements (MDR) and Operator Differences Requirements (ODR) tables to be used as a basis for the evaluation. One JOEB member had conducted a series of familiarization flights, as part of the JAA validation of the FAA Type Certificate. B767-400 Airframe Systems' differences, Normal and Supplementary procedures, the Normal and Non-Normal checklists were reviewed and compared between the B757/B767 "classic" variants and the B767-400 variant. Sample ODR Tables were examined as proposed by The Boeing Company, and proposed optional methods of training were reviewed. No additional B767-400 flying was considered necessary to determine any differences that might have existed in the handling qualities. These handling qualities were considered to be sufficiently similar to the existing B767 "classic" variants, which are already approved under the B757/B767 same type rating.

The second phase of the evaluation of the Boeing B767-400 aircraft by the JAA was conducted during June 2001 by one JOEB member qualified on both 767-"classic" variants. Together with an FAA pilot test subject, the JOEB member completed the Boeing-proposed B767-400 Differences Training curriculum. In January 2003, the JOEB member visited and conducted a flight operations observation at the home bases of Delta Air Lines and Continental Airlines. Delta Air Lines and Continental Airlines are the two U. S. operators of the B767-400, at the time of issuing this report. In addition, the JOEB member visited and interviewed the FAA Aircrew Program Manager (APM) at the FAA field office in Houston, Texas.

The third phase of the evaluation was conducted in April 2003. The two aforementioned pilot test subjects (one FAA; one JAA) still qualified and current on either or both the B757/B767 "classic" aeroplane variants shared an agreed simulator program to evaluate the elements of an Operator Proficiency Check (OPC). Neither pilot test subject had received any prior recurrent training or other exposure to the B767-400 in the preceding 21-months. The evaluation was administered by the B767 FAA FSB Chairman (FAA Aircrew Inspector) and observed by a JAA flight examiner and the other member of the JOEB. This exercise served to confirm to the JOEB that the B767-400 was suitable for inclusion under the "B757/767" same type rating endorsement only if the initial type rating was accomplished on a B757/767 "classic" variant. If a future B767-400 Transition Training course is developed and approved, any flight crew member completing it would only be entitled to receive a licence endorsement of "B767-400".   At the time of drafting of this report, no B767-400 Transition Training curriculum or "reverse" Differences Training Curriculum from the B767-400 variant to a B757/767 "classic" variant has been developed or approved either by the United States FAA or European JAA.

The OE Team noted the Boeing recommended 7 optional methods for achieving the required Differences training; however the team considered that, despite the flexibility offered, there was a potential for creating confusion in selecting the combinations of training device and flight familiarization for training and checking. Therefore, the Team recommends that only two alternatives be permitted:

a. If a Full Flight Simulator (FFS) is Used: Two 4-hour training sessions would be required, followed by a proficiency check in an approved B767-400 FFS, and one Line Flight Under Supervision (LIFUS).

b. If a Flight Training Device – Level 2 (FTD-2) is Used: Two 4-hour training sessions would be required, followed by a proficiency check in an FTD-2, and three Line Flights Under Supervision (LIFUS).

Finally, the JOEB members have determined the Boeing-proposed and FAA FSB-endorsed training/checking/currency levels were correctly assigned at D/C/C, respectively.