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Federal Aviation Administration  
Washington, DC

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## Flight Standardization Board (FSB) Report

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Revision: 10  
Date: 04/26/2019

Manufacturer  
**The Boeing Company**

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
A1NM	767-200 767-300 767-300F 767-400ER	Boeing 767	B-767

**Approved by: Transport Aircraft Seattle Branch**  
Federal Aviation Administration (FAA)  
Aircraft Evaluation Division  
2200 S. 216<sup>th</sup> Street, 2<sup>nd</sup> Floor, North Wing  
Des Moines, WA 98198

Telephone: (206) 231-3950  
Email: 9-AVS-AFS-100@faa.gov

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## 1. RECORD OF REVISIONS

Revision Number	Section(s)	Page(s)	Date
Original			
1			02/12/1991
2			12/14/1995
3			09/20/2000
4			06/12/2002
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7	Cover Page, Table of Contents, 1, 3 thru 8, 10, Appendices 2, 3, and 5		01/09/2009
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10	All	All	04/26/2019

## 2. INTRODUCTION

Aircraft Evaluation Groups (AEG) are responsible for working with aircraft manufacturers and modifiers during the development and Federal Aviation Administration (FAA) certification of new and modified aircraft to determine: 1) the pilot type rating; 2) flightcrew member training, checking, and currency requirements; and 3) operational suitability.

This report lists those determinations for use by: 1) FAA employees who approve training programs; 2) FAA employees and designees who certify airmen; and 3) aircraft operators and training providers to assist them in developing their flightcrew member training, checking, and currency.

### **3. HIGHLIGHTS OF CHANGE**

The purpose of this revision is to transition to the new standardized format while deleting regulatory repetitive information. It separates the previous joint B-757, B-767 Flight Standardization Board (FSB) report into two individual reports, includes evaluations done on the large display system (LDS), and revises the Master Differences Requirements (MDR) Table in accordance with the current edition of FAA Advisory Circular (AC) 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations. No change bars will be used in this revision. It is recommended to review the entire document.

### **4. BACKGROUND**

The Transport Aircraft Seattle Branch formed an FSB that evaluated the Boeing 767-200 as defined in FAA Type Certificate Data Sheet (TCDS) #A1NM. The evaluation was conducted using the methods described in the current edition of AC 120-53.

Subsequently, the FSB evaluated the 767-300, 767-300F, and the 767-400ER as listed in TCDS #A1NM. Those models, as well as the associated Airplane Flight Manual (AFM) changes, were found to be operationally suitable.

### **5. ACRONYMS**

14 CFR	Title 14 of the Code of Federal Regulations
AC	Advisory Circular
ACFT	Aircraft
ACS	Airman Certification Standards
ADI	Attitude Direction Indicator
ADV	Advanced
AEG	Aircraft Evaluation Group
AFM	Airplane Flight Manual
AGL	Above Ground Level
AOA	Angle of Attack
AP	Autopilot
ATP	Airline Transport Pilot
AV	Audiovisual Presentation
CAT	Category
CBT	Computer-Based Training
CFD	Classic Flight Deck
CMO	Certificate Management Office
CPT	Cockpit Procedures Trainer
DH	Decision Height
EFIS	Electronic Flight Information System
EFVS	Enhanced Flight Vision System
EICAS	Engine Indicating and Crew Alerting System
ETOPS	Extended Operations

FAA	Federal Aviation Administration
FAF	Final Approach Fix
FD	Flight Director
FFS	Full Flight Simulator
FSB	Flight Standardization Board
FSTD	Flight Simulation Training Device
FTD	Flight Training Device
HGS	Head-Up Guidance System
HMG	Hydraulic Motor Generator
HO	Handout
HUD	Head-Up Display
ICBI	Interactive Computer-Based Instruction
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IS&S	Innovative Solutions and Support
LDS	Large Display System
LOFT	Line-Oriented Flight Training
LOS	Line-Operational Simulation
MDR	Master Differences Requirements
MEL	Minimum Equipment List
NAS	National Airspace System
NM	Nautical Mile
OE	Operating Experience
OpSpec	Operations Specification
PC	Proficiency Check
PF	Pilot Flying
PIC	Pilot in Command
PM	Pilot Monitoring
PPC	Partial Proficiency Check
PTS	Practical Test Standards
PTT	Part Task Trainer
RVR	Runway Visual Range
SIC	Second in Command
SLF	Supervised Line Flying
STC	Supplemental Type Certificate
TCBI	Tutorial Computer-Based Instruction
TCDS	Type Certificate Data Sheet
V <sub>1</sub>	Takeoff Decision Speed
VMC	Visual Meteorological Conditions
VOR	Very High Frequency Omni-Directional Range
V <sub>REF</sub>	Reference Landing Speed

## 6. DEFINITIONS

These definitions are for the purposes of this report only.

- 6.1. **Base Aircraft.** An aircraft identified for use as a reference to compare differences with another aircraft.
- 6.2. **Current.** A crewmember meets all requirements to operate the aircraft under the applicable operating part.
- 6.3. **Differences Tables.** Describe the differences between a pair of related aircraft and the minimum levels operators must use to conduct differences training and checking of crewmembers. Difference levels range from A to E.
- 6.4. **Master Differences Requirements (MDR).** Specifies the highest training and checking difference levels between a pair of related aircraft derived from the Differences Tables.
- 6.5. **Mixed Fleet Flying.** The operation of a base aircraft and one or more related aircraft for which credit may be taken for training, checking, and currency events.
- 6.6. **Operational Evaluation.** An AEG process to determine pilot type rating, minimum crewmember training, checking, and currency requirements, and unique or special airman certification requirements (e.g., specific flight characteristics, no-flap landing).
- 6.7. **Operational Suitability.** An AEG determination that an aircraft or system may be used in the National Airspace System (NAS) and meets the applicable operational regulations (e.g., Title 14 of the Code of Federal Regulations (14 CFR) parts 91, 121, 133, 135).
- 6.8. **Qualified.** A crewmember holds the appropriate airman certificate and ratings as required by the applicable operating part.
- 6.9. **Related Aircraft.** Any two or more aircraft of the same make with either the same or different type certificates that have been demonstrated and determined by the Administrator to have commonality.
- 6.10. **Seat Dependent Tasks.** Maneuvers or procedures using controls that are accessible or operable from only one flightcrew member seat.
- 6.11. **Special Emphasis Area.** A training requirement unique to the aircraft, based on a system, procedure, or maneuver, which requires additional highlighting during training. It may also require additional training time, specialized training devices, or training equipment.
- 6.12. **Specific Flight Characteristics.** A maneuver or procedure with unique handling or performance characteristics that the FSB has determined must be checked.

## **7. PILOT TYPE RATING**

- 7.1.** Type Rating. The Boeing 767 type rating designation is B-767.
- 7.2.** Common Type Ratings. In accordance with the provisions of FAA Order 8900.1 and the current edition of AC 120-53, the B-757 and the B-767 are separate type ratings that have been determined to have commonality.
- 7.3.** Military Equivalent Designations. Military aircraft that qualify for the B-767 type rating can be found on the faa.gov website under Licenses and Certificates, Airmen Certification, Online Services, Aircraft Type Rating Designators. This webpage is kept up-to-date and can be found at [http://www.faa.gov/licenses\\_certificates/airmen\\_certification](http://www.faa.gov/licenses_certificates/airmen_certification).

**NOTE:** As of this revision, the Boeing 767-2C/KC-46 has not been evaluated by the FSB for a pilot type rating determination.

## **8. RELATED AIRCRAFT**

### **8.1.** Related Aircraft on Same TCDS.

The Boeing 767-200, 767-300, 767-300F, and the 767-400ER are related aircraft. In this report, classic flight deck (CFD) refers to the original flight displays of the Boeing 767-200, 767-300, and 767-300F as listed on the TCDS. In this report, advanced (ADV) refers to the B-767 with the Innovative Solutions and Support (IS&S) displays installed under Supplemental Type Certificate (STC) ST02165NY. In this report, LDS refer to the B-767 with the Rockwell Collins displays installed under STCs ST01750WI, ST09889AC, or ST01882WI.

### **8.2.** Related Aircraft on Different TCDS.

The B-767 is related to the B-757. In this report, CFD also refers to the original flight displays of the Boeing 757-200, 757-300, and 757-300F as listed on TCDS #A2NM. In this report, ADV also refers to the B-757 with the IS&S displays installed under STC ST02372CH. In this report, LDS also refers to the B-757 with the Rockwell Collins displays installed under STC ST01876WI.

**NOTE:** A part 121 air carrier desiring to deviate from 14 CFR when conducting B-757 and B-767 mixed fleet flying operations must first obtain appropriate designations of related aircraft in accordance with part 121, as well as approval for deviations to applicable sections based upon designations of related aircraft.

## **9. PILOT TRAINING**

### **9.1. Airman Experience.**

The provisions of this section apply to all B-767 training programs, and assume the training will be given to airmen with previous experience. Examples of applicable previous experience may include any of the following: experience in 14 CFR parts 121, 125 or 135 operations, former military, commuter, or corporate pilots with turbine powered aircraft experience, etc. Pilots without this experience may require additional training.

### **9.2. Special Emphasis Areas.**

Pilots must receive special emphasis on the following areas during ground training, if applicable:

- Hydraulic motor generator (HMG), if installed. The use and operation of the HMG following total AC electrical failure must be emphasized in initial, upgrade, transition, and recurrent ground training.
- Head-Up Display (HUD). Training must address appropriate ground training elements for both HUD and non-HUD operations as specified in Appendix 4, Head-Up Display Training Program. This item must be included in initial, upgrade, transition, differences, and recurrent training.

Pilots must receive special emphasis on and perform the following areas during flight training, if applicable:

- Automatic landings. Initial, upgrade, transition, differences, and recurrent flight training must occur with the appropriate autopilot (AP) autoland systems (e.g., fail operational vs. fail passive). This training can occur in either a full flight simulator (FFS) or airplane. Flight training must ensure appropriate AFM limitations are addressed and complied with.
- HUD. Training must address appropriate flight training elements for both HUD and non-HUD operations as specified in Appendix 4. This item must be included in initial, upgrade, transition, differences, and recurrent training.

### **9.3. Specific Flight Characteristics.**

Maneuvers/procedures required to be checked as referenced in the airline transport pilot (ATP) and type rating practical test standards (PTS) or Airman Certification Standards (ACS), as applicable, and/or part 121 appendix F. There are no specific flight characteristics.

#### **9.4. Seat Dependent Tasks.**

Pilots must receive initial, transition, upgrade, and recurrent training in these seat dependent tasks:

- HUD (left seat).
- Nose wheel steering (left seat when a tiller is not installed on the right side).

#### **9.5. Regulatory Training Requirements which are Not Applicable to the B-767.**

Tuck and Mach buffet training: B-767 series aircraft do not exhibit a Mach tuck tendency and therefore no training is required for this flight maneuver. Demonstration of the aircraft's overspeed protection capabilities is an acceptable substitute.

#### **9.6. Flight Simulation Training Devices (FSTD).**

There are no specific systems, procedures, or maneuvers that are unique to the B-767 that require a specific FSTD for training.

#### **9.7. Training Equipment.**

There are no specific systems or procedures that are unique to the B-767 that require specific training equipment.

#### **9.8. Differences Training between Related Aircraft.**

Pilots must receive differences training between the variations of B-767. The level of training is specified in Appendix 2, Master Differences Requirements (MDR) Table.

Pilots must receive related aircraft differences training between B-757 aircraft and B-767 aircraft. The level of training is specified in Appendix 2.

Reference Appendix 5, Boeing 767-400ER Differences Training Curriculum Options Table, for FSB evaluated Boeing 767-400ER differences training curriculum options.

### **10. PILOT CHECKING**

#### **10.1. Landing from a No-Flap or Nonstandard Flap Approach.**

The probability of flap extension failure on the B-767 is extremely remote due to system design. Therefore, demonstration of no-flap/no-slat approaches are not required for B-767 variations if flap non-normal procedures are addressed. Demonstration of partial flap approach and landing, using full slats and less than flaps 20 during pilot certification or a 14 CFR part 61, § 61.58 proficiency check, part 121, § 121.441 proficiency check, or part 125, § 125.287 competency check is required. Refer to FAA Order 8900.1, Volume 5 when the test or check is conducted in an aircraft versus an FFS.

## **10.2. Specific Flight Characteristics.**

Maneuvers/procedures required to be checked as referenced in the ATP and aircraft type rating PTS for airplane or ACS, as applicable, and/or part 121 appendix F. There are no specific flight characteristics.

## **10.3. Seat Dependent Tasks.**

During initial, transition, and upgrade checking, pilots must be checked in these seat dependent tasks:

- HUD (left seat, if installed). Precision approach using HUD and enhanced flight vision system (EFVS). Use of HUD for modes and phases of flight authorized including HUD vs. flight director (FD) and raw data.
- Nose wheel steering (left seat when a tiller is not installed on the right side).

## **10.4. Other Checking Items.**

Precision approach using HUD and EFVS. When HUD and/or HUD with EFVS use is approved, checking must include suitable demonstration of HUD and/or HUD with EFVS use for modes and phases of flight authorized.

HUD vs. FD and raw data. When HUD and/or HUD with EFVS is installed, Proficiency Check (PC) maneuvers, Line-Oriented Flight Training (LOFT), Line-Operational Simulation (LOS) or other demonstrations may be completed using HUD and/or HUD with EFVS at the check pilot/inspector's discretion. However, periodic assessment of non-HUD skills should be demonstrated, and at any time a check pilot/inspector may request that authorized maneuvers be performed without use of HUD (e.g., if manual Category (CAT) I FD operations are authorized, the airman being checked may be requested to perform the maneuver without HUD).

## **10.5. FSTDs.**

There are no specific systems, procedures, or maneuvers that are unique to the B-767 that require a specific FSTD for checking.

Proficiency checks which may be required in accordance with § 61.58, but do not pertain to part 121 operations, should be administered using the same variation intended to be flown.

## **10.6. Equipment.**

There are no specific systems or procedures that are unique to the B-767 that require specific equipment.

## **10.7. Differences Checking between Related Aircraft.**

Pilots must receive differences checking between the variations of the B-767. The level of checking is specified in Appendix 2. For mixed fleet flying of the B-767 with different flight displays (CFD/ADV/LDS), proficiency checks should alternate between variations. When alternating checks are accomplished, differences need not be addressed.

Pilots must receive related aircraft differences checking between the B-757 aircraft and B-767 aircraft. The level of checking is specified in Appendix 2. Except as otherwise specified in this report, demonstration of checking items need only be accomplished in either a B-757 or a B-767 to qualify in both aircraft types if a deviation has been granted by the Administrator. The preflight and equipment examination portion of initial and recurrent proficiency checks should address each variation of the B-757 and B-767 being operated by the crewmember. For mixed fleet flying of the B-757 and B-767, proficiency checks should alternate between aircraft types. When alternating checks between types are accomplished, differences need not be addressed.

## **11. PILOT CURRENCY**

There are no additional currency requirements for the B-767 other than those already specified in parts 61, 121, 125, and 135.

### **11.1. Differences Currency between Related Aircraft.**

#### **11.1.1 Operating Experience (OE).**

For mixed fleet flying of the B-757 and B-767, OE required by § 121.434 completed in one type may not have to be repeated in the other if a deviation has been granted by the Administrator. However, at least one leg of OE must be completed in each type.

#### **11.1.2 Segment currency for mixed fleet flying of B-767 variations.**

Segment currency for mixed fleet flying of the B-767CFD and B-767-400, B-767CFD and B-767ADV, B-767ADV and B-767LDS, or B-767CFD and B-767LDS aircraft requires a minimum of two line segments in the aircraft or approved FFS of each cockpit configuration during a 90-day period. When two segments cannot be accomplished in a 90-day period due to unusual circumstances, currency can be accomplished via manual reviews before flight, checklist references during flight, and computer-based training (CBT) with practice exercises. The intent is that two segments are accomplished every 90 days. Therefore, accomplishing segment currency through manual review, etc., should not be used in consecutive 90-day periods.

### 11.1.3 Segment currency for mixed fleet flying of B-767 and B-757.

Segment currency for mixed fleet flying between various combinations of B-767 and B-757 with different cockpit displays (CFD/ADV/LDS) requires a minimum of two line segments in the aircraft or approved FFS of each cockpit configuration during a 90-day period. When two segments cannot be accomplished in a 90-day period due to unusual circumstances, currency can be accomplished via manual reviews before flight, checklist references during flight, and CBT with practice exercises. The intent is that two segments are accomplished every 90 days. Therefore, accomplishing segment currency through manual review, etc. should not be used in consecutive 90-day periods.

Segment currency is not required for mixed fleet flying of the B-767 and B-757 with similarly configured cockpit displays (CFD or ADV or LDS).

Segment requirements may be increased by the certificate management office (CMO) if mission and operational procedures are assessed to be different (e.g., oceanic, polar, Extended Operations (ETOPS) vs. short haul domestic routes/operations).

**NOTE:** For the purposes of this report, a segment consists of the following flight phases or maneuvers: preflight, start, takeoff, climb, cruise, descent, approach, landing, and shutdown. Credit for a segment requires that a crewmember operate as the pilot flying (PF) or pilot monitoring (PM). Credit for the cruise phase is achieved by serving in a crew position during any part of cruise. It is not necessary to serve in a crew position for the entire cruise time, as long range flights may require crew relief. Pilots may not take credit for a segment by observation from an observer's seat or by serving in a relief capacity during the cruise phase of flight only, regardless of flight time accrued in cruise. Cumulative completion of a segment is permitted. A segment may be completed in one flight or by cumulatively completing the necessary phases and maneuvers in more than one flight. For example, a takeoff, departure, and initial cruise may be performed on one long range flight, and descent, approach, and landing on the next, allowing credit for a single segment. This would be possible provided an acceptable means of tracking these events is used. Segments may also be completed in an approved FFS utilizing an approved LOFT scenario.

### 11.1.4 Recency of experience.

Takeoff and landing credit may be permitted between the B-757 and B-767 if a deviation has been granted by the Administrator. Takeoffs and landings performed in one aircraft type are equivalent to those performed in the other aircraft type.

## **12. OPERATIONAL SUITABILITY**

The B-767 aircraft is operationally suitable for operations under parts 91, 121, 125, and 135. The list of operating rules evaluated is on file at the Transport Aircraft Seattle Branch.

## **13. MISCELLANEOUS**

### **13.1. Forward Observer Seat.**

The B-767 forward observer seat has been evaluated and determined to meet requirements of §§ 121.581(a), 125.317(b), and 135.75(b), and the current edition of FAA AC 120-83, Flight Deck Observer Seat and Associated Equipment. On aircraft with two observer seats installed, either seat satisfies these requirements and may be used by FAA inspectors at their discretion.

### **13.2. Approach Category.**

All operators should reference 14 CFR part 97, § 97.3 and use an approach category appropriate to the reference landing speed ( $V_{REF}$ ) at maximum certificated landing weight. Air carriers may be further restricted by their operations specifications (OpSpec) for circling approaches.

### **13.3. Emergency Evacuation.**

A full-scale emergency evacuation was successfully completed on the B-767-200 by the Boeing Company. The aircraft was configured with passenger seats and flight attendants as specified in FAA Order 8900.1 Volume 3, Chapter 30, Section 9, Maximum Passenger Seating Capacity for Airplanes Used in 14 CFR Part 121 or 125 Operations.

A full-scale emergency evacuation was successfully completed by simulation on the B-767-300 by the Boeing Company in April 1996. The aircraft was configured up to and including maximum passenger capacity of 351. The demonstration complied with § 121.291(a).

The B-767-400ER was certified using evacuation analysis data. A partial demonstration may be required per the provisions of § 121.291 and FAA Order 8900.1.

### **13.4. Normal Landing Flaps.**

The B-767 normal “final landing flap setting” per § 91.126(c) are flaps 25 or flaps 30. When conditions permit, use flaps 30 to minimize landing speed and landing distance. Flaps 25 provides better noise abatement and reduced flap wear/loads.

### **13.5. ETOPS.**

Certain B-767 variations have been shown to meet type design requirements for ETOPS as specified by their respective AFM.

## APPENDIX 1. DIFFERENCES LEGEND

### Training Differences Legend

Differences Level	Type	Training Method Examples	Conditions
A	Self-Instruction	<ul style="list-style-type: none"> <li>• Operating manual revision (HO)</li> <li>• Flightcrew operating bulletin (HO)</li> </ul>	<ul style="list-style-type: none"> <li>• Crew has already demonstrated understanding on base aircraft (e.g., updated version of engine).</li> <li>• Minor or no procedural changes required.</li> <li>• No safety impact if information is not reviewed or is forgotten (e.g., different engine vibration damping mount).</li> <li>• Once called to attention of crew, the difference is self-evident.</li> </ul>
B	Aided Instruction	<ul style="list-style-type: none"> <li>• Audiovisual presentation (AV)</li> <li>• Tutorial computer-based instruction (TCBI)</li> <li>• Stand-up instruction (SU)</li> </ul>	<ul style="list-style-type: none"> <li>• Systems are functionally similar.</li> <li>• Crew understanding required.</li> <li>• Issues need emphasis.</li> <li>• Standard methods of presentation required.</li> </ul>
C	Systems Devices	<ul style="list-style-type: none"> <li>• Interactive (full-task) computer-based instruction (ICBI)</li> <li>• Cockpit procedures trainers (CPT)</li> <li>• Part task trainers (PTT)</li> <li>• Level 4 or 5 flight training device (FTD 4–5)</li> </ul>	<ul style="list-style-type: none"> <li>• Training can only be accomplished through systems training devices.</li> <li>• Training objectives focus on mastering individual systems, procedures, or tasks versus highly integrated flight operations or “real-time” operations.</li> <li>• Training devices are required to assure attainment or retention of crew skills to accomplish more complex tasks usually related to aircraft systems.</li> </ul>
D	Maneuvers Devices	<ul style="list-style-type: none"> <li>• Level 6 or 7 flight training device (FTD 6–7)</li> <li>• Level A or B full flight simulator (FFS A–B)</li> </ul>	<ul style="list-style-type: none"> <li>• Training can only be accomplished in flight maneuver devices in a real-time environment.</li> <li>• Training requires mastery of interrelated skills versus individual skills.</li> <li>• Motion, visual, control loading, and specific environmental conditions may be required.</li> </ul>
E	Level C/D FFS or Aircraft	<ul style="list-style-type: none"> <li>• Level C or D full flight simulator (FFS C–D)</li> <li>• Aircraft (ACFT)</li> </ul>	<ul style="list-style-type: none"> <li>• Motion, visual, control loading, audio, and specific environmental conditions are required.</li> <li>• Significant full task differences that require a high fidelity environment.</li> <li>• Usually correlates with significant differences in handling qualities.</li> </ul>

### Checking Differences Legend

Differences Level	Checking Method Examples	Conditions
A	None	None
B	<ul style="list-style-type: none"> <li>• Oral or written exam</li> <li>• Tutorial computer-based instruction self-test (TCBI)</li> </ul>	<ul style="list-style-type: none"> <li>• Individual systems or related groups of systems.</li> </ul>
C	<ul style="list-style-type: none"> <li>• Interactive (full-task) computer-based instruction (ICBI)</li> <li>• Cockpit procedures trainers (CPT)</li> <li>• Part task trainers (PTT)</li> <li>• Level 4 or 5 flight training device (FTD 4–5)</li> </ul>	<ul style="list-style-type: none"> <li>• Checking can only be accomplished using systems devices.</li> <li>• Checking objectives focus on mastering individual systems, procedures, or tasks.</li> </ul>
D	<ul style="list-style-type: none"> <li>• Level 6 or 7 flight training device (FTD 6–7)</li> <li>• Level A or B full flight simulator (FFS A–B)</li> </ul>	<ul style="list-style-type: none"> <li>• Checking can only be accomplished in flight maneuver devices in a real-time environment.</li> <li>• Checking requires mastery of interrelated skills versus individual skills.</li> <li>• Motion, visual, control loading, and specific environmental conditions may be required.</li> </ul>
E	<ul style="list-style-type: none"> <li>• Level C or D full flight simulator (FFS C–D)</li> <li>• Aircraft (ACFT)</li> </ul>	<ul style="list-style-type: none"> <li>• Significant full task differences that require a high fidelity environment.</li> </ul>

## APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE

These are the minimum levels of training and checking required, derived from the highest level in the Differences Tables. Differences levels are arranged as training/checking.

To Aircraft ↓	From Aircraft →	767-200	767-300	767-300F	767-400ER	767ADV	767LDS	757CFD	757ADV	757LDS
<b>767-200</b>		Not applicable	A/A (2)(3)	B/B (1)(2)(3)	Not evaluated	Not evaluated	Not evaluated	B/B (1)(2)(3)	B/B (1)(2)(3)(4)	Not evaluated
<b>767-300</b>		A/A (2)(3)	Not applicable	B/B (1)(2)(3)	Not evaluated	Not evaluated	Not evaluated	B/B (1)(2)(3)	B/B (1)(2)(3)(4)	Not evaluated
<b>767-300F</b>		B/B (1)(2)(3)	B/B (1)(2)(3)	Not applicable	Not evaluated	Not evaluated	Not evaluated	B/B (1)(2)(3)	B/B (1)(2)(3)(4)	Not evaluated
<b>767-400ER</b>		D/C	D/C	D/C	Not applicable	Not evaluated	Not evaluated	D/C	Not evaluated	Not evaluated
<b>767ADV</b>		B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	Not evaluated	Not applicable	Not evaluated	B/B (1)(2)(3)(4)	Not evaluated	Not evaluated
<b>767LDS</b>		B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	Not evaluated	Not evaluated	Not applicable	B/B (1)(2)(3)(4)	B/B (1)(2)(3)	Not evaluated

- NOTES:**
- (1) B/B is based on equivalent operating policies for both aircraft. If policies differ (e.g., only one aircraft variation is used for single engine taxi, Category (CAT) III fail passive operations), then Level C/B may be needed to address specified maneuvers identified by Differences Tables.
  - (2) Additional training/checking requirements may exist for mixed flying of ER and non-ER airplanes due to system and operational differences.
  - (3) When different engine indicating and crew alerting system (EICAS) engine display formats are used, due to operation with different engine types (B-767 GE, CF6, PW, and B-757 RR, PW), in addition to flight training on one aircraft variation, crews should be exposed to the alternate EICAS presentations by some means (e.g., photos, drawings) adequate to assure proper display interpretation and use.
  - (4) A minimum of two Operating Experience (OE)/supervised line flying (SLF) segments must be conducted upon successful completion of an approved differences training course.

### APPENDIX 3. DIFFERENCES TABLES

This Design Differences table, from the B-757 to the B-767, was validated by the Flight Standardization Board (FSB). It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: B-757	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
TO RELATED AIRCRAFT: B-767						
	Dimensions		No	No	B	B
	Limitations		No	No	B	B
	Landing Gear		No	No	B	B
	Panel Layout	Applies to B-767 to B-757 with same cockpit displays	No	No	A	A
	Panel Layout	Applies to B-767 to B-757 with different cockpit displays (CFD, ADV, or LDS)	No	Yes	B	B
	ATA 21 Air Conditioning	General Controls and indicating	No	Yes	B	B
	ATA 22 Autoflight	Controls and indicating Applies to B-767 to B-757 with same cockpit displays	No	No	A	A

FROM BASE AIRCRAFT: B-757  TO RELATED AIRCRAFT: B-767	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 22 Autoflight	Controls and indicating  Applies to B-767 to B-757 with different cockpit displays (CFD, ADV, or LDS)	No	Yes	B	B
	ATA 23 Communications	Controls and indicating	No	No	B	B
	ATA 24 Electrical Power	General	No	No	B	B
	ATA 26 Fire Protection	DC and STBY power systems  ER ops/ETOPS equipment	No	Yes	B	B
	ATA 27 Flight Controls	Flap/slat control system  Inboard ailerons  Pitch enhancement system	No	Yes	B	B
	ATA 28 Fuel	Fuel jettison system  Dual filter crossfeed valves	No	Yes	B	B

FROM BASE AIRCRAFT: B-757  TO RELATED AIRCRAFT: B-767	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 29 Hydraulic Power	System architecture  Flight controls  Air demand pump	No	Yes	B	B
	ATA 30 Ice and Rain Protection	Leading edge device systems	No	No	B	B
	ATA 31 Indicating/Recording Systems	EICAS	No	No	B	B
	ATA 32 Landing Gear	Reserve brakes  Tail skid  Structure  EICAS messages  Truck tilt	No	Yes	B	B
	ATA 36 Pneumatic	Capacity  Structure	No	Yes	B	B

FROM BASE AIRCRAFT: B-757  TO RELATED AIRCRAFT: B-767	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 49 Airborne Auxiliary Power	Capacity	No	No	B	B
	ATA 73 Engine Fuel and Control	Thrust  Engines  Operating limitations  Controls and indicating	No	Yes	B	B
	ATA 74 Ignition	Controls and indicating	No	Yes	B	B
	ATA 77 Engine Indicating	Controls and indicating	No	Yes	B	B
	ATA 80 Starting	Controls and indicating	No	Yes	B	B

This Maneuver Differences table, from the B-757 to the B-767, was validated by the FSB. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members. This Maneuver Differences table only applies from the B-757 to B-767 with different cockpit displays (classic flight deck (CFD), advanced (ADV), or large display system (LDS)).

FROM BASE AIRCRAFT: B-757  TO RELATED AIRCRAFT: B-767	MANEUVER	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Preflight Inspection	ADI test patterns  Controls and indicating, data entry	No	Yes	B	A
	Taxi	Controls and indicating, data entry	No	Yes	B	A
	Climb	Controls and indicating, data entry, EFIS	No	Yes	B	A
	Approach	Controls and indicating, data entry, EFIS	No	Yes	B	A
	Non-Normal Maneuvers	Controls and indicating, data entry, EFIS	No	Yes	B	A

## APPENDIX 4. HEAD-UP DISPLAY (HUD) TRAINING

The Head-Up Display (HUD) pilot training requirements consist of those related to initial and recurrent ground and flight training. Unless covered during an initial or transition type rating course, a prerequisite for beginning HUD training is prior training, qualification, and currency in the B-767.

### 1 HUD General.

- 1.1. INITIAL GROUND TRAINING: For all operators, the initial ground training program should include the following elements:
  - 1.1.1. Classroom instruction covering HUD operational concepts, crew duties and responsibilities, and operational procedures including preflight, normal, and non-normal pilot activities. For operators wishing credit for low visibility operations predicated on use of the HUD, information should be provided on the operational characteristics, capabilities, and limitations of the ground facilities (surface movement guidance control system) and airborne Category (CAT) III system. Airline policies and procedures concerning low visibility operations should include a reporting process, minimum equipment list (MEL) issues, operation following a missed approach, Operating Experience (OE), and currency requirements.
  - 1.1.2. Classroom instruction (or computer-based training (CBT)) on the HUD symbology set and its interrelationship with airplane aerodynamics, inertial factors, and environmental conditions.
  - 1.1.3. A HUD pilot training manual or equivalent material in the Operations Manual must explain all modes of operation, use of various HUD controls, and clear descriptions of HUD symbology including limit conditions and failures. The manual must also incorporate a crew procedures guide clearly delineating pilot flying (PF) and pilot monitoring (PM) duties, responsibilities, and procedural callouts and responses during all phases of flight for which HUD operations are anticipated. Emphasis should be placed on the availability and limitations of visual cues encountered on approach both before and after decision height (DH). This would include:
    - 1.1.3.1. Procedures for unexpected deterioration of conditions to less than authorized minimums encountered during approach, flare, and rollout.
    - 1.1.3.2. Demonstration of expected visual references with weather at authorized minimum conditions.
    - 1.1.3.3. Expected sequence of visual cues during an approach in which visibility is at or above landing minima.
  - 1.1.4. An audiovisual presentation (AV) of all modes of operation. For operators wishing credit for low visibility operations predicated on use of the HUD, this should include narrative descriptions and several low weather approach demonstrations with procedural callouts and responses. All critical procedural callout possibilities should be covered.
  - 1.1.5. If the HUD is used to conduct CAT II/CAT III landings, emphasis on the need for rigorous crew discipline, coordination, and adherence to procedural guidelines is required.

1.2. **INITIAL FLIGHT TRAINING:** Unless integrated with initial or transition type rating training, flight training dedicated to HUD familiarization and proficiency is in addition to other required training. When a full flight simulator (FFS) is used, only an FAA-approved B-767 FFS with both a visual and the HUD installed may be used. For FFS training, all required approaches should be flown from no closer than the final approach fix (FAF) for instrument approaches and from no closer than approximately 1,000 feet above ground level (AGL) (3–4 nautical miles (NM)) to the runway threshold for visual approaches.

1.2.1. Flight training should include at least the following:

1.2.1.1. In-flight maneuvers. In-flight maneuvers should include:

- Straight and level flight, accelerations, and decelerations.
- Normal and steep turns, climbs, and descents.
- Stall prevention and recovery.
- Unusual attitudes.
- Vectors to intercept and track selected very high frequency omni-directional range (VOR) courses.

**NOTE:** Emphasis should be placed on HUD unique symbology (i.e., flight path, flight path acceleration, airspeed error tape, angle of attack (AOA) limit bracket, and excessive pitch chevrons). When this training is complete, the trainee should have a thorough understanding of the relationship between aircraft flight path parameters and the HUD symbology.

1.2.1.2. Visual approaches (visual meteorological conditions (VMC) mode):

- Perform one approach showing deviations above and below glideslope for symbology/runway relationship.
- Straight-in landings, no wind, repeat with 10-knot crosswind, and at night.
- Circling approaches and landing with 10-knot crosswind, if applicable.

**NOTE:** It is desirable to fly half of these approaches at different airports that have dissimilar approach and runway lighting systems. Special emphasis should be placed on optimizing circling approach techniques and procedures. Approaches with the aircraft in a non-normal flap configuration should be included.

1.2.2. Instrument approaches.

1.2.2.1. For all operators:

- Perform a CAT I approach to 200-foot DH, 2400 Runway Visual Range (RVR), wind calm.
- Demonstrate failures and incorrect settings on approach (i.e., miss set runway elevation, airspeed, selected course).
- Illustrate unique characteristics of symbology in wind shear conditions (i.e., erratic wind speed and direction, flight path, flight path acceleration, and speed error).
- Nonprecision approach, VOR approach, 600-2, 15-knot crosswind.

1.2.2.2. For operators wishing credit for low visibility operations predicated on use of the HUD:

- Perform a CAT II approach to 100-foot DH, 1200 RVR, 5–10-knot crosswind.
- Perform a CAT IIIa instrument landing system (ILS) approach and landing starting on a 30-degree intercept to the ILS, below glideslope, weather clear and calm.
- CAT IIIa ILS with 700 RVR, wind calm - another ILS with a 10-knot crosswind.
- CAT IIIa ILS with various reasons for a missed approach (system downgrade, “APCH WARN”, etc.).
- CAT IIIa ILS with various RVRs and crosswinds, including light turbulence.

**NOTE:** Several of the instrument approaches should include a variety of ground and airborne system failures requiring pilot recognition and appropriate procedural actions. Demonstrated system/component failures should include flap asymmetry problems, engine out operations, HUD sensor failures, etc. Demonstrate how HUD failure modes can reduce precision and increase pilot workload unless PF/PM duties and responsibilities are clearly delineated and understood.

1.2.3. Takeoff. For operators wishing credit for low visibility takeoff operations predicated on use of the HUD:

- Normal takeoff, clear and calm, repeated with gusty winds.
- Takeoff, 600-foot RVR, 5-knot crosswind.
- Takeoff, 300-foot RVR, 5-knot crosswind, engine failure prior to takeoff decision speed ( $V_1$ ).
- Takeoff, 300-foot RVR, 5-knot crosswind, engine failure after  $V_1$ .
- Takeoff with Head-Up Guidance System (HGS) failure, 300-foot RVR.

1.2.4. For Title 14 of the Code of Federal Regulations (14 CFR) part 121 operators, pilots who have completed HUD training as part of an initial, transition, or upgrade course should complete their OE for HUD CAT II/IIIa operations within 60 days. Seconds in command (SIC) should be certified to perform CAT II/IIIa PM duties upon satisfactory completion of the HUD training program.

1.2.5. Check pilots must certify the satisfactory completion of OE for pilots in command (PIC) completing initial, transition, and upgrade training. This requirement should include three HUD assisted takeoffs, one visual approach, and three instrument approaches in conditions not less than RVR 1800.

1.2.6. For all operators: prior to utilizing the HUD in instrument meteorological conditions (IMC) below RVR 1800, each PIC must accomplish at least 25 manually flown HUD approaches to CAT II/IIIa minima in VMC. Each approach must terminate in a manually controlled HUD assisted landing or HUD assisted go-around. In addition, each PIC must accomplish at least 25 HUD assisted takeoffs in VMC prior to using the HUD mode in IMC. Upon completion of this requirement, the HUD qualified pilot would then be observed to conduct HUD approaches to company authorized minima as set forth in their operations specifications (OpSpec).

1.3. RECURRENT TRAINING AND CHECKING: For operators wishing credit for low visibility operations on use of the HUD, during the 6-month recurrent training and Proficiency Check (PC), the following low visibility operations should be performed in addition to regular requirements:

- Approach and landing, 700-foot RVR, 10-knot crosswind.
- Approach, 700-foot RVR, 10-knot crosswind, light turbulence with missed approach.
- Takeoff, 300-foot RVR, 10-knot crosswind.
- Takeoff, 300-foot RVR, engine failure either before or after  $V_1$ .
- Selected ground training subjects should be reviewed annually.

**APPENDIX 5. BOEING 767-400ER DIFFERENCES TRAINING CURRICULUM OPTIONS TABLE**

<b>Option</b>	<b>Lessons 1A and 1B (4 hours)</b>	<b>Lessons 2A and 2B (4 hours)</b>	<b>Partial Proficiency Check (PPC) (1.5 hours)</b>	<b>Line-Oriented Flight Training (LOFT) (4 hours)</b>	<b>Supervised Line Flights (SLF)</b>
<b>A</b>	FSTD	FSTD	*FSTD	FSTD (No PPC)	*3
<b>B</b>	FSTD	FSTD	Not required	*FSTD (PPC)	*3
<b>C</b>	FSTD	FSTD	Not required	*FFS (PPC)	*2
<b>D</b>	FSTD	FSTD	*FFS	Not required	*2
<b>E</b>	FFS	FFS	*FFS	Not required	*1
<b>F</b>	FFS	FFS	Not required	*FFS (PPC)	*1
<b>G</b>	FFS	FFS	*FFS	FFS (No PPC)	Not required

**\*NOTE:** A Boeing 767-400ER qualified check pilot must observe one of the following prior to releasing an airman to the line: PPC, LOFT/PPC, or SLF.

Even though a Level 6 flight simulation training device (FSTD) is the approved minimum FSTD, for airline planning purposes, alternate methods of satisfying the airplane Operating Experience (OE) requirement are provided as options A through G in the table above. These alternate methods involve the benefit of training in a higher level FSTD and gaining the flexibility of customizing each individual airline’s training operation (e.g., utilizing a full flight simulator (FFS)).

The type and amount of airplane OE requirements are satisfied depending upon the level of FSTD in which the training is conducted. Referencing the 767-400ER Differences Training Curriculum Options Table, option A requires a Level 6 FSTD for lessons 1A, 1B, 2A, and 2B; a PPC; and LOFT. Therefore, if an operator elects option A, then three legs of SLF is required to satisfy the airplane OE. Conversely, if an operator elects option G, which requires an FFS for lessons 1A, 1B, 2A, and 2B; a PPC; and LOFT, then no SLF is required.