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Flight Standardization Board Report

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Manufacturer The Boeing Company

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
A2NM	757-200 757-200PF 757-200CB 757-300	Boeing 757	B-757

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1. RECORD OF REVISIONS

Revision Number	Section(s)	Date
1	No Record	02/12/1991
2	No Record	12/14/1995
3	No Record	09/20/2000
4	No Record	06/12/2002
5	No Record	04/14/2006
6	No Record	04/10/2007
7	1, 3 thru 8, 10, Appendices 2, 3, and 5	01/09/2009
8	1 thru 4, 6 thru 10, 12, Appendices 1 thru 4, 8, Part II	02/06/2014
9	1, 3 thru 10, Appendices 1 thru 4	10/06/2014
10	All	04/26/2019
11	All	12/07/2020

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

Subparagraph 10.1, Landing from a No-Flap or Nonstandard Flap Approach, was revised to correct the partial flap approach requirement. Minor editorial changes were made throughout this document. Change bars are not included because the entire report is in a new format.

4. BACKGROUND

The Transport Aircraft Seattle AEG formed a Flight Standardization Board (FSB) that evaluated the Boeing 757 as defined in FAA Type Certificate Data Sheet (TCDS) No. A2NM. The evaluation was conducted using the methods described in the current edition of FAA Advisory Circular (AC) 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

In April 2018, the B-757 FSB conducted an evaluation of the Rockwell Collins LDS. The LDS and its associated Airplane Flight Manual (AFM) change were found to be operationally suitable. The evaluation was conducted using the methods described in the current edition of AC 120-53.

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- ACFT Aircraft
- ACS Airman Certification Standards
- 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
- ER Extended Range
- ETOPS Extended Operations
- FAA Federal Aviation Administration
- FAF Final Approach Fix
- FD Flight Director
- FFS Full Flight Simulator
- FPD Flat Panel Display
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report
- FSIMS Flight Standards Information Management System
- 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
- MFF Mixed Fleet Flying
- NAS National Airspace System
- NM Nautical Mile
- ODR Operator Differences Requirements
- OE Operating Experience
- OpSpecs Operations Specifications
- PF Pilot Flying
- PIC Pilot in Command
- PM Pilot Monitoring
- PTT Part Task Trainer
- RVR Runway Visual Range
- SIC Second in Command
- SLF Supervised Line Flying
- SMGCS Surface Movement Guidance and Control System
- STC Supplemental Type Certificate
- SU Stand-Up Instruction
- TC Type Certificate
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- V₁ Takeoff Decision Speed
- VMC Visual Meteorological Conditions
- VOR Very High Frequency Omni-Directional Range
- V_{REF} 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 flightcrew members. Differences levels range from A to E.
- 6.4 Master Differences Requirements (MDR).** Specifies the minimum levels of training and checking required between a pair of related aircraft, derived from the highest level in the Differences Tables.
- 6.5 Mixed Fleet Flying (MFF).** 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.** The AEG process to determine pilot type rating, minimum flightcrew member training, checking, and currency requirements, and unique or special airman certification requirements (e.g., specific flight characteristics, no-flap landing).
- 6.7 Operational Suitability.** The 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, and 135).
- 6.8 Qualified.** A flightcrew member 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 (TC) 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 flight simulation training devices (FSTD), 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 757 type rating designation is B-757.
- 7.2 Common Type Ratings.** In accordance with the provisions of FAA Order 8900.1, Flight Standards Information Management System (FSIMS) 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-757 type rating can be found at www.faa.gov under “Licenses & Certificates,” “Airmen Certification,” “Online Services,” “Aircraft Type Rating Designators.” This webpage is kept up-to-date and can be found at https://www.faa.gov/licenses_certificates/airmen_certification/.

8. RELATED AIRCRAFT

8.1 Related Aircraft on Same TCDS. The Boeing 757-200, -200PF, -200CB, and -300 are related aircraft. For this report, B-757 advanced (ADV) refers to a B-757 with an Innovative Solutions and Support (IS&S) flat panel display (FPD) modification installed under STC No. ST02372CH. “B-757LDS” in this report refers to a B-757 with a Rockwell Collins FPD modification installed under STC No. ST01876WI. Classic flight deck (CFD) refers to all other B-757s with the original flight displays listed on the TCDS. The Boeing 757-200PF refers to the Boeing 757-200 Package Freighter.

8.2 Related Aircraft on Different TCDS. The B-757 is related to the B-767. For this report, “B-767ADV” refers to a B-767 with the IS&S FPD modification installed under STC No. ST02165NY. “B-767LDS” in this report refers to a B-767 with the Rockwell Collins LDS modification installed under STC No. ST01750WI, ST09889AC, or ST01882WI. CFD refers to the original flight displays of the Boeing 767-200, 767-300, and 767-300F as listed on the TCDS.

NOTE: A part 121 air carrier desiring to deviate from 14 CFR when conducting B-757 and B-767 MFF operations must first obtain an appropriate designation 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. Airmen receiving initial, differences, upgrade, or transition training are assumed to have previous airman experience. Examples of applicable previous experience may include any of the following: experience in 14 CFR part 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.

9.2.1 Pilots must receive special emphasis on the following areas during ground training, as applicable to an operator’s fleet of aircraft:

- a) 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.

- b) 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.

9.2.2 Pilots must receive special emphasis on and perform the following areas during flight training, as applicable to an operator's fleet of aircraft:

- a) Automatic landings. Initial, upgrade, transition, differences, and recurrent flight training must occur with the appropriate autoland systems (e.g., fail operational versus fail passive). This training can occur in either a full flight simulator (FFS) or an airplane. Flight training must ensure appropriate AFM limitations are addressed and complied with.
- b) 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 or procedures required to be checked as referenced in the Airline Transport Pilot (ATP) and Type Rating for Airplane 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, when installed).
- Nosewheel 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-757.

- a) Tuck and Mach buffet training. B-757 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.
- b) Fuel jettisoning. The B-757 series does not have fuel-jettisoning capability. No substitute required.

9.6 FSTDs. There are no specific systems, procedures, or maneuvers that are unique to the B-757 that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the B-757 that require specific training equipment.

9.8 Differences Training Between Related Aircraft.

- a) Pilots must receive differences training between the variations of B-757. The level of training is specified in Appendix 2, Master Differences Requirements (MDR) Table.
- b) Pilots must receive related aircraft differences training between B-757 aircraft and B-767 aircraft. The level of training is specified in Appendix 2.

10. PILOT CHECKING

10.1 Landing From a No-Flap or Nonstandard Flap Approach. The probability of flap extension failure on the B-757 is extremely remote due to system design therefore, demonstration of a no-flap approach and landing is not required. However, a partial flap approach and landing is required during pilot certification. During a § 61.58 proficiency check, § 91.1065 competency check, § 121.441 proficiency check, § 125.287 competency check, or § 135.293 competency check, this task may be required. Refer to Order 8900.1, Volume 5, Airman Certification, when the test or check is conducted in an aircraft versus an FFS.

10.2 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the ATP and Type Rating For Airplane 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:

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

10.4 Other Checking Items.

10.4.1 Precision Approach Using HUD and Enhanced Flight Vision System (EFVS). When HUD and/or HUD with EFVS use are approved, checking must include suitable demonstration of HUD and/or HUD with EFVS use for modes and phases of flight authorized.

10.4.2 HUD vs. Flight Director (FD) and Raw Data. When HUD and/or HUD with EFVS is installed, proficiency check 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's or inspector's discretion. However, periodic assessment of non-HUD skills should be demonstrated, and at any time a check pilot or 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-757 that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the B-757 that require specific equipment.

10.7 Differences Checking Between Related Aircraft.

10.7.1 Pilots must receive differences checking between variations of the B-757. The level of checking is specified in Appendix 2. For MFF of B-757 with different flight displays (CFD, ADV, or LDS), proficiency checks should alternate between variations. When alternating checks are accomplished, differences need not be addressed.

10.7.2 Pilots must receive related aircraft differences checking between the B-757 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 aircraft being operated by the crewmember. For MFF of the B-757 and B-767 aircraft, proficiency checks should alternate between aircraft types. When alternating checks are accomplished, the differences between types need not be addressed.

11. PILOT CURRENCY

There are no additional currency requirements for the B-757 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 MFF of the B-757 and B-767 aircraft, 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 MFF of B-757 Variations. Segment currency for MFF of B-757 aircraft with CFD, ADV, or 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 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 MFF of B-757 and B-767 Aircraft.

- 11.1.3.1 Segment currency for MFF between various combinations of B-767 and B-757 aircraft with different cockpit displays (CFD, ADV, or 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.
- 11.1.3.2 Segment currency is not required for MFF of the B-757 and B-767 aircraft with similarly configured cockpit displays (CFD, ADV, or LDS).
- 11.1.3.3 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 or operations).
- 11.1.3.4 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, 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 aircraft 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-757 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 AEG.

13. MISCELLANEOUS

- 13.1 Forward Observer Seat.** The B-757 left forward observer seat (as installed) or the center forward observer seat satisfies the 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 B-757 variations with two observer seats installed, the center forward observer seat is considered primary, but either seat 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 the maximum certificated landing weight. Air carriers may be further restricted by their operations specifications (OpSpecs) for circling approaches.
- 13.3 Emergency Evacuation.** A simulated emergency evacuation was successfully demonstrated on the Boeing 757-200 under § 121.291 for configurations and passenger capacities 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.
- 13.4 Normal Landing Flaps.** The B-757 normal “final flap setting” per § 91.126(c) is flaps 25 or flaps 30. It is recommended to use flaps 30 when conditions permit to obtain the minimum landing speed and minimum landing distance. It is recommended to use flaps 25 when necessary for noise abatement procedures or reduced flap wear.
- 13.5 ETOPS.** Certain B-757 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"> • Operating manual revision (handout (HO)) • Flightcrew operating bulletin (HO) 	<ul style="list-style-type: none"> • Crew has already demonstrated understanding on base aircraft (e.g., updated version of engine). • Minor or no procedural changes required. • No safety impact if information is not reviewed or is forgotten (e.g., different engine vibration damping mount). • Once called to attention of crew, the difference is self-evident.
B	Aided Instruction	<ul style="list-style-type: none"> • Audiovisual presentation (AV) • Tutorial computer-based instruction (TCBI) • Stand-up instruction (SU) 	<ul style="list-style-type: none"> • Systems are functionally similar. • Crew understanding required. • Issues need emphasis. • Standard methods of presentation required.
C	Systems Devices	<ul style="list-style-type: none"> • Interactive (full-task) computer-based instruction (ICBI) • Cockpit Procedures Trainers (CPT) • Part task trainers (PTT) • Level 4 or 5 flight training device (FTD 4-5) 	<ul style="list-style-type: none"> • Training can only be accomplished through systems training devices. • Training objectives focus on mastering individual systems, procedures, or tasks versus highly integrated flight operations or “real-time” operations. • Training devices are required to assure attainment or retention of crew skills to accomplish more complex tasks usually related to aircraft systems.
D	Maneuvers Devices	<ul style="list-style-type: none"> • Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B) 	<ul style="list-style-type: none"> • Training can only be accomplished in flight maneuver devices in a real-time environment. • Training requires mastery of interrelated skills versus individual skills. • Motion, visual, control-loading, and specific environmental conditions may be required.
E	Level C/D FFS or Aircraft	<ul style="list-style-type: none"> • Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT) 	<ul style="list-style-type: none"> • Motion, visual, control-loading, audio, and specific environmental conditions are required. • Significant full-task differences that require a high fidelity environment. • Usually correlates with significant differences in handling qualities.

Checking Differences Legend

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

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 in Appendix 3. Differences levels are arranged as training/checking.

To Related Aircraft ↓	From Base Aircraft →	757-200	757-200PF	757-300	757ADV	757LDS	767CFD	767ADV	767LDS	767-400ER
757-200		Not applicable	B/B (1)(2)(3)	A/A (2)(3)	B/B (1)(2)(3)(4)	Not evaluated	B/B (1)(2)(3)	Not evaluated	Not evaluated	Not evaluated
757-200PF		B/B (1)(2)(3)	Not applicable	B/B (1)(2)(3)	B/B (1)(2)(3)(4)	Not evaluated	B/B (1)(2)(3)	Not evaluated	Not evaluated	Not evaluated
757-300		A/A (2)(3)	B/B (1)(2)(3)	Not applicable	B/B (1)(2)(3)(4)	Not evaluated	B/B (1)(2)(3)	Not evaluated	Not evaluated	Not evaluated
757ADV		B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	Not applicable	Not evaluated	Not evaluated	Not evaluated	B/B (1)(2)(3)	Not evaluated
757LDS		B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	B/B (1)(2)(3)(4)	Not evaluated	Not applicable	Not evaluated	Not evaluated	Not evaluated	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, 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 Extended Range (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 while operating with different engine types (e.g., B-767 GE, CF6, PW, and B-757 RR, PW), crews should be exposed to the alternate EICAS presentations by some adequate means (e.g., photos and drawings) to assure proper display interpretation and use.
 - (4) A minimum of two 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-767 to the B-757, was validated by the FSB. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: B-767 TO RELATED AIRCRAFT: B-757	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	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-767 TO RELATED AIRCRAFT: B-757	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-767 TO RELATED AIRCRAFT: B-757	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 29 Hydraulics	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-767 TO RELATED AIRCRAFT: B-757	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-767 to the B-757, 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-767 to B-757 with different cockpit displays (CFD, ADV, or LDS).

FROM BASE AIRCRAFT: B-767 TO RELATED AIRCRAFT: B-757	MANEUVER	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Preflight Inspection	Attitude Direction Indicator (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, Electronic Flight Information System (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 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 this course of training is prior training, qualification, and currency on the B-757 aircraft.

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 and Control System (SMGCS)) and airborne 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, OE, and currency requirements.
- 1.1.2 Classroom instruction (or 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 PF and 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 the 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 the weather at lowest authorized landing minimums.
 - 1.1.3.3 Expected sequence of visual cues during an approach in which visibility is at or above landing minimums.
- 1.1.4 An 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/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 FFS is used, only an FAA-approved B-757 FFS with both a visual system 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 ft above ground level (AGL) (3 to 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., flightpath, flightpath 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 flightpath 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 ft DH, 2,400 ft 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, flightpath, flightpath acceleration, and speed error).
- Nonprecision approach, VOR approach, weather 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 ft DH, 1,200 ft RVR, 5 to 10-knot crosswind.
- Perform a CAT IIIa instrument landing system (ILS) approach and landing starting on a 30° intercept to the ILS, below glideslope, weather clear and calm.
- CAT IIIa ILS with 700 ft 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 or 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 or 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 ft RVR, 5-knot crosswind.
- Takeoff, 300 ft RVR, 5-knot crosswind, engine failure prior to takeoff decision speed (V_1).

- Takeoff, 300 ft RVR, 5-knot crosswind, engine failure after V₁.
- Takeoff with Head-Up Guidance System (HGS) failure, 300 ft RVR.

1.2.4 For 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 1,800 ft.

1.2.6 For all operators, prior to utilizing the HUD in instrument meteorological conditions (IMC) below RVR 1,800 ft, 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 OpSpecs.

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, the following low visibility operations should be performed in addition to regular requirements:

- Approach and landing, 700 ft RVR, 10-knot crosswind.
- Approach, 700 ft RVR, 10-knot crosswind, light turbulence with missed approach.
- Takeoff, 300 ft RVR, 10-knot crosswind.
- Takeoff, 300 ft RVR, engine failure either before or after V₁.
- Selected ground training subjects should be reviewed annually.