

FLIGHT STANDARDIZATION BOARD REPORT

AIRBUS A380

(Revision 0, Original)

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PART II - BOARD RECORD (Not attached to this Report)

(Permanent record of considerations including plans, tests, meetings, findings, and comments.)

1. PURPOSE AND APPLICABILITY

1.1 This report specifies master training, checking, and currency requirements applicable to crews operating A380 aircraft under 14 CFR Part 121. The report also addresses specific issues regarding the operation of A380 aircraft other than under 14 CFR Part 121. Provisions of this report:

- a) Defines pilot "type rating" assigned to the A380.
- b) Describes any unique requirement applicable to initial, transition, upgrade, or recurrent training.
- c) Describes "Master Differences Requirements" (MDR) for crews requiring differences qualification for transition between the A320, A330, A340 aircraft and the A380 related aircraft for transition and/or mixed fleet flying.
- d) Establishes checking and currency standards including specification of particular check items that must be administered by the FAA or operators.
- e) Provides information to the FAA field offices regarding A380 compliance with the CFR, Advisory Circulars, or other operational criteria.
- f) Includes minimum requirements (e.g. MCR, MDR, type rating designations, etc.) which must be applied by FAA field offices.
- g) Includes information which is advisory in nature (e.g. MDR footnotes, maneuvers for checking, acceptable ODR tables, etc.), but may be mandatory if the designated configurations apply and if those requirements are approved for a particular operator.
- h) Includes information which is used to facilitate operator review and approval (e.g. compliance checklists) for use of new or related aircraft.

1.2 This report addresses A380-800 series aircraft as specified in the FAA Type Certificate Data Sheet (TCDS).

1.3 The provisions of this Flight Standardization Board (FSB) report are effective until amended, superseded, or withdrawn by subsequent revisions to this report.

1.4 Determinations made in this report are based on the evaluations of specific A380-800 series aircraft equipped in a given configuration and in accordance with current regulations and guidance. Modifications and upgrades made to the models described herein, or introduction of new related aircraft, may require amendment of the findings in this report. The FSB reserves responsibility/authority to re-evaluate and modify sections of this report based on new or revised Advisory Circular material or CFR, aircraft operating experience, or the testing of new or modified aircraft under the provisions of AC 120-53, as revised.

1.5 Relationship between this FSB report and an AQP program: Differences between this FSB report and an operator's proposed training, checking, and currency requirements under an Advanced Qualification Program (AQP), must be justified and documented as part of the applicant's AQP approval process. Program approvals under AQP need to ensure the basic provisions and requirements of this report have been addressed and, where necessary, coordination with the appropriate Flight Standardization Board has been completed.

1.6 Terminology:

- a) The term "must" is used in this FSB report and certain MDR footnotes, if used, even though it is recognized that this report (as well as AC 120-53, as revised, on which it's based) provides one acceptable means, but not necessarily the only means of compliance with 14 CFR Part 121, Subparts N and O requirements. This terminology acknowledges the need for operators to fully comply with this FSB report and MDR and ODR provisions if AC 120-53, as revised, is to be used by the operator as the means of complying with 14 CFR Part 121. Operators who choose this method must comply with each applicable MDR provision, including any footnotes.
- b) The term "CROSS CREW QUALIFICATION" (CCQ) is used in this report to outline the differences training program from a given base aircraft to a specific related aircraft. The term STANDARD PROGRAM, as applied in this report, refers to the full transition program for a given aircraft type.

2. PILOT "TYPE RATING" REQUIREMENTS (In Accordance With Provisions of 14 CFR Part 61 And 121/Appendix F And AC 120-53, as Revised)

2.1 Type Rating:

2.1.1 In accordance with the provisions of 14 CFR Parts 61 and 121/Appendix F and AC 120-53, as revised, a specific "pilot type rating" is assigned to the A380 aircraft. This pilot type rating applies to the A380-800 series aircraft.

2.1.2 Airmen completing necessary checks in the A380-800 per 14 CFR Part 61, in accordance with AC 120-53, as revised, and as prescribed by this report, are assigned the A-380 pilot type rating.

3. "MASTER DIFFERENCE REQUIREMENTS" (MDR)

The A320 was the first of a series of Airbus airplanes which was designed to incorporate "fly by wire" technology and numerous flight envelope protection features. The A320, A330, A340, and A380 incorporate features not currently found on other civil transport aircraft, such as a "side stick controller" in lieu of the conventional control column (yoke) and an automatic thrust control system (A/THR) that, when engaged, controls thrust while the thrust levers remain in a fixed position. The incorporation of "fly by wire" and common cockpit design has resulted in a level of commonality in systems, procedures, and handling characteristics among all Airbus "fly by wire" aircraft.

3.1 MDR Tables: For the purposes of applying the provisions of CCQ and MFF, Master Difference Requirements for the A320, A330, A340 and A380 are shown in Appendix 1. For transition and differences programs between related aircraft and/or for conducting mixed fleet flying operations, the provisions of the MDRs apply when differences between related aircraft exist that affect crew knowledge, skills, and/or abilities (e.g. Level A differences or greater). Credit for specific maneuvers is permitted between aircraft, as specified, even though the aircraft may be assigned level E for differences and have different pilot type ratings. This is appropriate since common handling qualities and other common characteristics, such as cockpit visibility, may permit certain credit for training, checking, and currency related to takeoff and landing.

3.2 Difference Level Definitions: Difference level definitions are as specified in AC 120-53, as revised.

3.3 MDR Footnotes: Footnotes to MDR requirements define acceptable "required means" of compliance. A footnote, if used, can indicate a less (or more) restrictive provision than the basic designation, depending on the significance of the differences between particular related aircraft.

3.4 Landing Minima Categories, 14 CFR 97.3: All A380 aircraft are considered Category C aircraft for the purpose of determining "straight-in" IFR landing weather minima. For circling, the minima to be used are as specified in operation specifications for each operator as follows:

- a) For operators with Automated Standard Operations Specifications (Paragraph C075.c.), circling minima are as specified for the actual approach speed to be used for a circling maneuver, or
- b) If automated operations specifications have not been issued, circling minima are as designated by current Standard Operations Specifications and 14 CFR 97.3.

3.5 Normal Final Landing Flap Setting, 14 CFR 91.126(c): The normal final landing flap setting is considered to be "Flaps Full" (CONF Full) for all A380 aircraft. "Flaps 3" (CONF 3) is typically used only in those situations where "Flaps Full" does not provide sufficient landing climb capability.

4. ACCEPTABLE "OPERATOR DIFFERENCE REQUIREMENTS" (ODR) TABLES

4.1 ODR Tables: ODR tables are used to show an operator compliance methods. Detailed Airbus generic sample ODR tables are on file with the Seattle AEG. Copies are available on request. These ODR tables are provided as Airbus generic, and therefore may not include items that are applicable to particular operators.

4.2 Operator Preparation of ODR Tables: Operators flying a "mixed fleet" of A380 and other Airbus related aircraft must have approved ODR tables pertinent to their fleet.

4.3 ODR Table Coordination: Unless identical or equivalent ODR tables have been previously approved by the FAA, new ODR tables proposed by operators should be coordinated with the FSB prior to FAA approval and implementation. FSB coordination ensures consistent treatment of related A380 aircraft between various operators, and compatibility of each ODR table with MDR provisions.

4.4 ODR Table Distribution: Original FAA approved ODR tables are to be retained by the operator. Copies of FAA approved ODR tables are to be retained by the Certificate Holding District Office (CHDO) and should be provided to the A380 FSB Chairman, Seattle AEG.

4.5 Credit Permitted By ODR Tables:

4.5.1 Prerequisite: The ODR tables and associated CCQ credits assume that pilots are qualified, current, and experienced in operating the base aircraft and meet the specific pre-qualification requirements as outlined in paragraph 5.1.1.

Note: Waiver and special provisions for designated and regulatory check airmen may be approved by the POI on a case by case basis.

4.5.2 Training: ODR tables describe differences between one aircraft (base aircraft) and another aircraft (difference aircraft) in summary form and are categorized by differences in design features, systems, and maneuvers. ODR tables allow credit for training in areas where insignificant differences exist between aircraft. Specific training requirements are listed in Section 5.

4.5.3 Operating Experience (OE): Credit for OE in one type of aircraft may be applied to a related aircraft as outlined in Section 5.

4.5.4 Checking: ODR tables specify minimum levels of checking that satisfy differences requirements or type rating requirements. Credit for checking is authorized when insignificant differences are specified by ODR tables. Checking provisions are outlined in Section 6.

4.5.5 Currency-Recency of Experience: Currency credit is authorized as outlined in Section 7 and as specified by ODR tables.

4.5.6 A330, A340, and A380 MFF: For mixed fleet flying of A330, A340, and A380 aircraft, operators may apply for approval under the provisions of AC 120-53, as revised. Operators flying a "mixed fleet" of related aircraft, must have approved ODR tables consistent with the provisions of this report. A330, A340, and A380 MFF includes crews alternately flying different assigned types or between PC/PT events. Examples:

A330 and A380
A340 and A380

5. FSB SPECIFICATIONS FOR TRAINING

5.1 General

5.1.1 Assumptions Regarding Airmen's Previous Experience: The provisions of this Section apply to programs for airmen who have experience in both CFR Part 121 air carrier operations and multi-engine transport turbojet aircraft including glass cockpit and FMS experience. For airmen not having this experience, additional requirements may be appropriate as determined by the POI, FSB, and/or AFS-200.

In addition, the following pre-qualification requirements must be met by all CCQ program participants:

Case 1: Between single aisle or long range aircraft and A380 aircraft:

- A minimum of 100 hours of line experience on the base aircraft within 120 days IAW 14 CFR 121.434 (Operating experience, operating cycles, and consolidation of knowledge and skills);
- A minimum of 300 hours of line experience on the base aircraft; or
- Specific line experience deemed acceptable and approved by the POI, FSB, or AFS 200.

Note: Single aisle aircraft include: A318, A319, A320, and A321. Long range aircraft include: A330 and A340

Case 2: Prerequisite for airmen qualified, but not current in the base aircraft:

- Airmen must complete an approved refresher program on the base aircraft before beginning a CCQ course. If the time since an airman's last flight on the base aircraft exceeds 48 months, the candidate should complete a standard training program (full course).

5.1.2 Training for Seat Dependent Tasks: Accomplishment of certain tasks, procedures, or maneuvers requires training of a crewmember for a particular crew position (e.g. captain, first officer, international relief officer, check airman, etc.). Training programs should recognize and address the necessary seat/position related tasks for the applicable crewmember. Accordingly,

training programs should address seat dependent tasks or maneuvers to the extent necessary to satisfy crew qualification objectives and should be in accordance with ODR tables when applicable.

5.1.3 Training Areas of Special Emphasis: Advanced features of the electronic flight control system and its associated “side stick controller” and the A/THR system are all training areas warranting special emphasis. These features have an impact on current industry pilot qualification practices. For these reasons, training areas of special emphasis are recommended for the A380 and related A380 aircraft. Such training should be conducted to improve basic crew member understanding and confidence regarding aircraft handling qualities, options, and procedures as they relate to design characteristics and limitations. Examples of this training include the following:

- a) Knowledge and demonstration of the flight characteristics and the degree of flight envelope protection provided by the various flight control laws for both pitch and roll control and the normal events which result in changes in the various modes within these laws for the various phases of flight.
- b) Knowledge and demonstration of the flight characteristics for taxi, takeoff, and landing, and the ability of flight crews to maintain runway centerlines and to safely maneuver on taxiways and ramp areas.
- c) Knowledge and demonstration of the use of the "side stick controller", the relationship between the two “side stick controllers”, and transfer of controls.
- d) Knowledge and demonstration of the automatic thrust control system including thrust lever position, use of speed trend information, and the FMA/FCU annunciations related to the various modes of normal/abnormal operation.
- e) Knowledge and demonstration of mode awareness and mode transitions (e.g. FMA, FCU, configuration, etc.) regardless of whether initiated by the flight crew or by a system response to design logic.
- f) Knowledge of the Brake Control System (Normal and Alternate Modes) and the Emergency Brake Control Unit (Emergency and Ultimate Modes) and the means to transition from one system to the other.
- g) Knowledge and demonstration of recovery from a low energy state.

5.1.4 Future Air Navigation Systems (FANS)/RNP/ANP/CNS/CPDLC/ADS: Flight Crews operating aircraft equipped with FANS software should receive appropriate instruction in its general operational functions, appropriate uses for areas of operation, routes, or procedures to be flown. General training should address communications, navigation, and surveillance (CNS) functions covered by FANS, RNP, and ANP. In addition, sufficient training in use of data link communication and Automatic Dependent Surveillance (ADS) to ensure adequate knowledge,

skill, and proficiency for flight crews to operate the above system(s) in typical daily operations (requiring their use) should be provided.

5.2 Pilots Initial, Upgrade, and Transition Training:

5.2.1 Pilots Initial, Upgrade, and Transition Ground Training (14 CFR 121.419): Pilots Initial, Upgrade, and Transition Ground Training is accomplished in accordance with 14 CFR 121.419, 14 CFR Part 121, Subpart Y (Advanced Qualification Program (AQP)), or under the provisions of a training center approved under 14 CFR Part 142. When more than one related aircraft is to be flown or when transition from one related aircraft to another is to be accomplished, appropriate ground instruction in differences is required for each related aircraft consistent with approved MDR/ODR tables. Training program hours may be reduced as specified in 14 CFR 121.405. Proposed reduction in training program hours should ensure that key elements critical to crew knowledge/proficiency are not compromised.

5.2.2 Pilots Initial, Upgrade, and Transition Flight Training (14 CFR 121.424): Pilots Initial, Upgrade, and Transition Flight Training is accomplished in accordance with 14 CFR 121.424, or 14 CFR Part 121, Subpart Y (AQP), or under the provisions of a training center approved under 14 CFR Part 142. When flight training is accomplished, and several related aircraft are to be flown, flight training should suitably address each related aircraft consistent with MDR/ODR tables. Training program hours may be reduced as specified in 14 CFR 121.405, but not in a manner or in areas which invalidate compliance with provisions of applicable MDR and ODR tables. Proposed reduction in training program hours should ensure that key elements critical to crew knowledge and proficiency are not compromised.

Ground training must include the following minimum subjects:

- a) Aircraft general description (interior/exterior).
- b) Limitations and performance.
- c) Powerplant.
- d) Aircraft systems (e.g., flight controls, electrical, etc.).
- e) Flight management system.
- f) Autoflight system (including A/THR).
- g) Normal, supplementary, abnormal, and emergency systems operations.

Flight training must include the following minimum events and maneuvers:

- a) Preflight inspection (interior/exterior) (may be provided by approved audio/visual presentation).
- b) Taxi.
- c) Normal takeoff/Landing.
- d) Area departure (SID, radar vectors, MFD use, and FMS functions understanding).
- e) Airwork (approach to stalls and recovery, steep turns).**
- f) Normal, abnormal, and emergency procedures
- g) Area arrival/holding (STAR, radar vectors, MFD use, and FMS functions understanding).
- h) Instrument approaches.

- i) Missed approaches.
- j) Sidestick utilization/authority.
- k) Autoflight system (including A/THR).
- l) Flight Control Laws and Protections.

** The requirement to train certain traditional maneuvers to proficiency (such as steep turns and stalls) may be addressed as training proficiency items for initial, transition, and qualification training. No requirement exists to "check" steep turns and stalls as a part of the A380 qualification process.

5.2.3 Automatic Landings. If an operator conducts automatic landings in the A380 then appropriate training must occur. This training must be conducted either in an A380 simulator approved for autoland training or in the actual airplane.

5.2.4 Flight Crew Rest Compartment: Not evaluated by the FSB.

5.3 Differences Training (14 CFR 121.418) & Cross Crew Qualification (CCQ):

5.3.1 General. Unless an initial or standard transition program is completed for each related aircraft, differences training is necessary for each related aircraft or type, as provided in MDR and ODR tables. Detailed Airbus generic sample ODR tables may be obtained through the Seattle AEG. Copies are available on request. These ODR tables are provided as Airbus generic, and therefore may not include items that are applicable to particular operators.

- a) A Differences Training Program prerequisite is that a trainee has completed initial, upgrade, or transition training in one related aircraft and will receive differences training for the other related aircraft.
- b) When a Differences Training Program involves related aircraft having the same Pilot Type Rating, coverage of differences may be completed either coincident with each phase of an initial, upgrade, or transition training course, or following completion of that training course. The differences training must be consistent with the provisions of the approved applicable MDR/ODR Tables.
- c) When a Differences Training Program involves related aircraft having different Pilot Type Ratings, coverage of differences for a CCQ course must be completed in accordance with the prerequisites defined in 5.1.1, and applicable MDR/ODR provisions.

5.3.2 Differences Ground Training: Differences ground training is required on the topics applicable to the pertinent related aircraft and is shown by applicable ODR tables.

5.3.3 Differences Flight Training: Difference flight training is required in the topics and maneuvers applicable to the pertinent related aircraft that is shown by applicable ODR tables. For an Advanced Qualification Program (14 CFR Part 121, Subpart Y), "flight qualification events" must be consistent with items specified by the applicable ODR tables.

5.3.4 Fleets with Different Engine Types: Mixed-flying of A380 fleets with different engine types (e.g. A380 fleet with RR and EA engines) requires additional training as shown by applicable MDR/ODR tables.

5.4 Recurrent Training:

5.4.1 Recurrent Ground Training: Courses must include appropriate training in accordance with 14 CFR 121.427 or an approved AQP program for each related A380 aircraft as specified by MDR and ODR tables for differences training.

5.4.2 Recurrent Flight Training: Courses require appropriate maneuvers and procedures identified in 14 CFR Part 121, Appendix F, or as otherwise described in this report or approved for an AQP in accordance with 14 CFR Part 121, Subpart Y. Maneuvers and procedures must account for differences between each related A380 aircraft operated. The ODR table(s) must identify the differences.

5.4.3 Recurrent training consideration for Mixed Fleet Flying Operations: When different pilot type ratings are assigned between the various related aircraft, an alternate plan for recurrent training and checking as outlined in Appendix 3 is acceptable.

5.4.4 Training program hours for Recurrent Training may be reduced as specified in 14 CFR 121.405.

5.5 Operating Experience (14 CFR 121.434 and AC 120-53, as revised):

5.5.1 Operating Experience Pertinent to Each Flight Crewmember: Operating experience must be obtained while serving in a primary crew position.

5.5.2 Separate Operating Experience for Single Fleet Operations: Operating experience for the A380 may be accomplished in any related A380 aircraft.

5.5.3 Operating experience for Mixed Fleet Flying Operations: Separate operating experience applies to the A380 and other related Airbus aircraft.

5.6 Other Training:

5.6.1 LOFT Programs (14 CFR 121.409(b)(3)): When operators have LOFT programs and several related A380 aircraft, POIs should review LOFT credits to assure suitability for each related A380 aircraft.

5.6.2 Instrument Approaches: When flight crews simultaneously qualify for use of CAT II and/or CAT III approaches, credit, as permitted by ODR tables, may apply.

Note: Operators should assure that flight crews are familiar with appropriate use of the FCU and FMS, including modes to be used, for the types of instrument approaches to be flown, when using FLS methods in lieu of or in conjunction with NDB, VOR, localizer, or back course

localizer procedures. This emphasis is also appropriate for aircraft that do not have certain navigation system sensors, such as ADF, installed.

5.6.3 Aircraft Dispatchers: Initial and transition training should be conducted in accordance with 14 CFR 121.422.

5.6.4 Flight Attendants: Initial and transition ground training should be conducted in accordance with 14 CFR 121.421. The objective of aircraft ground training is to provide flight attendants with an understanding of the A380 aircraft. This knowledge is necessary for the flight attendant to perform the duties and procedures required in normal, abnormal, and emergency situations.

5.6.4.1 Aircraft ground training includes instruction in two distinct subject areas: A380 general operational subjects training and A380 aircraft-specific emergency subjects training. The A380 aircraft-specific emergency subjects training is addressed in Appendix 4.

5.6.4.2 A380 general operational subjects training consists of instruction in the general description of the aircraft, aircraft equipment, furnishings, and systems; routine crewmember communication and coordination procedures; routine crewmember duties and procedures during each phase of flight, and passenger handling responsibilities for A380 aircraft.

5.6.4.3 As part of an approved training program, an operator may use many methods when conducting aircraft ground training, including classroom instruction, pictures, videotape, ground training devices, computer-based instruction, and static aircraft training.

5.6.4.4 Initial and Transition Ground Training must include a competence check to determine flight attendant ability to perform assigned duties and procedures on the A380 aircraft. The competence check should cover each piece of emergency equipment and each emergency procedure unique to A380 aircraft.

5.6.4.5 Training program hours for Initial Ground Training may be reduced as specified in 14 CFR 121.405. There are no specified training program hours for Transition Ground Training. Specific design features of the A380 aircraft, combined with the various types of operations to be conducted should be considered when approving A380 Transition Ground Training. This training should include provisions of Appendix 4.

6. FSB SPECIFICATIONS FOR CHECKING

Checks and/or evaluations are specified by 14 CFR Part 61, FAA Order 8900.1, FAA Practical Test Standards (PTS), 14 CFR Part 121 - Subpart Y (AQP) and Appendix F (Proficiency Check Requirements), and, in conjunction with procedural proficiency, flight planning, crew coordination, crew interaction, and aircraft handling skills. Evaluations apply separately to related A380 aircraft unless otherwise permitted by MDRs and ODRs. Checks must be conducted in a training device, visual simulator, non-visual simulator, and/or in the aircraft, as appropriate, and must include a demonstration of competency covering an oral or written exam

and a demonstration of flying and procedural proficiency, as applicable. Checking is to be completed following training.

6.1 Type Ratings:

6.1.1 Type Rating Following Standard Program:

- a) Oral and/or Written Tests: Unless otherwise specified by ODR tables, an oral and/or written portion of a type rating practical test need only address the A380 aircraft to be flown or to be used for the conduct of the flight test. If information related to other related A380 aircraft are a factor in conducting an oral or written test, the applicant should be advised as to which other related aircraft may be addressed by the test.
- b) Practical Tests: This is not an all inclusive list of items, which are required to be evaluated. The purpose of this list is to supplement the basic requirements and provide additional guidance where appropriate. This list does not preclude the authority to waive individual items in accordance with 14 CFR Part 61, FAA order 8900.1, FAA Practical Test Standards (PTS), nor 14 CFR Part 121, Appendix F, if appropriate conditions are met.
 - 1) Area Departure and Arrival using the appropriate level of automation for a given situation:
 - Using normal features of the FMS
 - Using autothrust
 - Using flight director
 - Using autopilot
 - 2) Approaches:
 - Other than ILS, GLS, or MLS: At the discretion of the inspector/examiner, one non precision approach using either FLS function or lateral managed mode with “selected” vertical mode may be requested
 - Normal ILS/MLS/GLS (All Engine Flight Director or Coupled Approach): At the discretion of the inspector/examiner, a demonstration of ILS/MLS/GLS approaches may be requested with use of the FPV (if authorized).
 - One-Engine Inoperative CAT I ILS/MLS/GLS Approach to DA(H): to be flown using normal control law.
 - 3) Landings:
 - Autoland (if authorized)

Note: Approach to Stall and Steep Turns: The performance of approach to stalls and steep turns can only be accomplished by overriding the protections that have been incorporated into the design of the A380 aircraft. Therefore, approach to stalls and steep turns are not maneuvers that are required to be evaluated.

6.1.2 Type Rating Checks Following CCQ Programs: Under the CCQ concept, and IAW the provisions of AC 120-53, as revised, type rating checks need only test the differences as identified in the ODR tables, provided the airman is current in the base aircraft. However, credits applied to the A380 for initial or recurrent checking following differences training from the A320, A330, or A340, shall not be permitted and a complete A380 evaluation must be completed.

6.1.3 Recommendations for Sequential Evaluation under AQP: (Reserved)

6.1.4 Line Operational Evaluation (LOE) Provisions of AQP: (Reserved)

6.2 Proficiency Checks/Evaluations:

6.2.1 Proficiency Checks Same Type (Standard): Proficiency checks are administered as required in 14 CFR 121.441 and 14 CFR Part 121 Appendix F or IAW an approved AQP program. These checks must be administered by an authorized check airman or qualified FAA Safety Inspector. Checking requirements address each related A380 aircraft flown. When a proficiency check/evaluation addresses qualification in different related A380 aircraft, the check may primarily address one related aircraft. However, portions of the check should be accomplished in relevant combinations of training devices, simulators, or aircraft to ensure assessment of competency related to other related aircraft flown. Except as specified in approved ODR tables, proficiency checks/evaluations are administered separately for each type certificated aircraft.

6.2.2 Alternating Proficiency Checks in MFF Operations: For MFF between A330 or A340 and A380 related aircraft, Proficiency Checks should alternate for PICs and other flight crew members, as outlined in Appendix 3.

Note: Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in 14 CFR 121.433(c) for any A380 aircraft.

6.3 Line Checks:

6.3.1 In MFF operations, line checks completed for either of any A330, A340, or A380 aircraft may satisfy the requirement for the other related aircraft.

7. FSB SPECIFICATIONS FOR CURRENCY AND RECENCY OF EXPERIENCE (AC 120-53, as revised)

7.1 Recency of Experience Required by 14 CFR 121.439: Each aircraft type is addressed separately unless otherwise approved. Recency of experience must include operation/programming of the FMS, FCU, and ECAM for both arrival and departure.

7.2 Currency/Recency of Experience Criteria for Mixed Fleet Flying Operations: These are shown in MDR/ODR tables. The following recency of experience provisions apply to mixed fleet flying programs approved through ODR tables:

MIXED FLEET AIRCRAFT TYPES	RECENCY OF EXPERIENCE REQUIREMENTS (90 DAYS)
A380 with either A330 or A340	<p>-3 TAKE-OFFS AND LANDINGS IN THE A380 AND EITHER A330 OR A340</p> <p>-1 SEGMENT IN EACH TYPE EVERY 45 DAYS</p> <p>-1 MANUAL LANDING AS PF IN THE A380 AND EITHER A330 OR A340</p> <p>** Number of segments should be increased if mission and operational procedures are assessed to be different (e.g., oceanic, polar, ETOPS, etc.)</p>

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. A segment may be completed in one flight, or by cumulatively completing the necessary phases and maneuvers in more than one flight. A segment may be completed in an approved simulator under an approved LOFT scenario.

7.3 Methods for Re-Establishing Currency:

- a) Re-establishing Mixed Fleet Flying Currency at level A, B, or C: Flight crewmembers re-establishing currency at difference levels A, B or C is as provided in AC 120-53, as revised.
- b) Re-establishing Mixed Fleet Flying Currency at level D or level E: Flight crewmembers re-establishing currency at level D or E is as specified in 14 CFR 121.439(b), or as specified by ODR tables and IAW AC 120-53, as revised. During line operation, currency may be re-established under the supervision of an appropriately qualified check airman serving as PIC. Currency may also be re-established by a simulator proficiency check, or by attending an approved recurrent training course.
- c) Re-establishing Single Fleet Currency: Flight crewmembers re-establishing currency is as specified in 14 CFR 121.439(b). During line operation, currency may be re-established under the supervision of an appropriately qualified check airman serving

as PIC. Currency may also be re-established by a simulator proficiency check, or attending an approved recurrent training course.

8. AIRCRAFT REGULATORY COMPLIANCE CHECKLIST

8.1 General: Compliance checklists are provided as an aid to FAA Certificate Holding District Offices (CHDO) in identifying those specific rules or policies for which compliance has already been demonstrated to the FAA for aircraft having a particular aircraft type certificate. The checklist also notes rules or policies not demonstrated to the FSB, which must be demonstrated to CHDOs by operators.

8.2 A380 Compliance Checklist: An aircraft compliance checklist for the A380 will be provided after an A380 of United States registry has become available.

8.3 Discussion of Specific Compliance Items:

8.3.1 Emergency Evacuation: An actual full scale demonstration of emergency evacuation procedures in accordance with 14 CFR 121.291 was successfully completed for the A380, up to a maximum passenger capacity of 853, including 538 on the main deck and 315 on the upper deck. Accordingly, an actual full scale evacuation demonstration required by 14 CFR 121.291 for individual operators is not required unless a passenger capacity greater than 853 is requested. However, a partial demonstration evacuation, as required by 121.291(b), is required for each new A380 operator.

8.3.2 Ditching Demonstration (14 CFR 121.291): A full scale ditching demonstration in accordance with 14 CFR 121.291(d) and FAA Order 8900.1, Vol III, Chapter 30, Section 4, Ditching Demonstrations has not been completed.

8.3.3 Proving Runs (14 CFR 121.163): Initial 14 CFR 121 proving runs in accordance with provisions of 14 CFR 121.163 (a) have not been completed.

8.3.4 Primary Observer Seat: The seat referred to as the "third occupant seat" (center seat) is considered to have met 14 CFR 121.581 requirements. The seats referred to as the "fourth and fifth occupant seats" (left and right seats) may be used by FAA inspectors at their discretion.

9. FSB SPECIFICATIONS FOR DEVICES AND SIMULATORS

9.1 Flight Training Device and Simulator Characteristics: Flight training device (FTD) and simulator characteristics are as specified by 14 CFR 121.407, 14 CFR Part 121 Appendix H, and ACs 120-40, 120-45, 120-46, and 120-53, as revised.

10. APPLICATION OF FSB REPORT

10.1 Relevant parts of this report (e.g. Type Rating Designation, checking maneuvers, etc.) are effective when the report is approved by the FAA.

11. ALTERNATE MEANS OF COMPLIANCE

11.1 Approval Level and Approval Criteria: Alternate means of compliance to differences requirements of 14 CFR Part 121, Subparts N and O, for mixed fleet operations other than as specified in provisions of this report or as approved under an AQP, must be approved by the Flight Standards, Air Transportation Division (AFS-200). Any differences petitioned under AQP must be coordinated with AFS-230, the POI, and the FSB. If alternate means of compliance is sought, operators will be required to establish that the proposed alternate means provides an equivalent level of safety to the provisions of AC 120-53, as revised, and this FSB report. Analysis, demonstrations, proof of concept testing, differences documentation, or other evidence may be required.

11.2 Equivalent Safety: In the event alternate means of compliance is sought, training program hour reductions, simulator approvals, and device approvals, may be significantly limited and reporting requirements may be increased to assure equivalent safety. AFS-200 will generally not consider relief by alternate means of compliance unless sufficient lead time has been planned by an operator to allow for any necessary testing and evaluation.

11.3 Interim Programs: In the event unforeseen circumstances make it impossible for an operator to comply with MDR provisions, the operator may seek interim program approval rather than a permanent, alternate compliance method. Financial arrangements, scheduling adjustments, and similar justifications are not considered to be "unforeseen circumstances" for the purposes of this provision.

12. MISCELLANEOUS (Reserved)

APPENDIX 1

MASTER DIFFERENCE REQUIREMENTS (MDR) TABLE

FROM \ TO	A320	A330	A340	A380
A320	Refer to A320/A330/A340 FSB Report			E/E/E
A330				E/E/D
A340				E/E/D
A380	TBD	TBD	TBD	See Below

FROM \ TO	A380-800 Series RR	A380-800 Series EA
A380-800 Series RR	/	B/A/A
A380-800 Series EA	B/A/A	/

APPENDIX 2

ACCEPTABLE OPERATOR DIFFERENCE REQUIREMENTS (ODR) TABLES

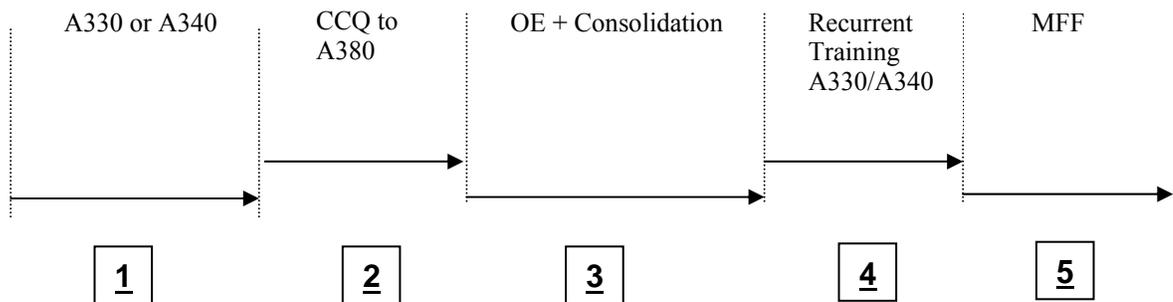
Contact the Seattle Aircraft Evaluation Group (SEA AEG) for Sample ODR Tables.

APPENDIX 3

MIXED FLEET FLYING CONSIDERATIONS

OPERATING EXPERIENCE FOR MIXED FLEET FLYING OPERATIONS

Example of acceptable operating experience plan for mixed fleet flying



1 Prerequisite as defined under paragraph 5.1.1, Case 1 for long range aircraft.

2 CCQ in approximately 13 days

3 Following CCQ, 4 segments of operating experience (OE) are required (Last one may be a line check as PF). Then 50 hours of consolidation flying within 90 days is required on the difference aircraft before starting mixed fleet flying.

4 Recurrent training A330 or A340

5 Acceptable to conduct MFF with A330 and A380 or A340 and A380

**ALTERNATING RECURRENT PROFICIENCY CHECKS UNDER MIXED FLEET
 FLYING OPERATIONS**

**A330 – A380
 A340 – A380**

Example of an acceptable alternating recurrent plan

PT/PC MFF 2 TYPES

A330 or A340 with A380

Alternating checking

Period	Year 1		Year 2		Year 3	
	6 months					
Ground Training	X	X	X	X	X	X
Simulator Training	A380 and A330 or A340	A380 and A330 or A340	A380 and A330 or A340	A380 and A330 or A340	A380 and A330 or A340	A380 and A330 or A340
Simulator Checking	A380	A330 or A340	A380	A330 or A340	A380	A330 or A340

APPENDIX 4

FLIGHT ATTENDANT TRAINING

Description of the A380-800 “baseline” Cabin Crew Training used by Airbus for the Full Scale Evacuation Demonstration (14 CFR 25.803).

In March 2006 Airbus conducted training for the cabin crew scheduled to participate in the A380-800 Full Scale Evacuation demonstration at the Airbus Training Center in Toulouse.

The total time of the training was 14 hours spread over 3 days for logistical reasons. The theoretical part of the training took 8 hours and 10 minutes, and the practical part was performed within 5 hours and 50 minutes.

A written test was performed and successfully accomplished by all 41 trainees.

An aircraft visit was completed in Hamburg.

Representatives from the National Aviation Authorities were present during the entire training and aircraft visit.

Airbus training was conducted in agreement with Advisory Circular 25.803, entitled “Emergency Evacuation Demonstrations,” dated November 13, 1989, and with 14 CFR 121 for operational requirements. This training should be considered the “baseline” training against which all operators’ emergency evacuation training for crewmembers, who will operate on the A380-800 aircraft, should be compared.

The Airbus training program was derived from the standard Airbus “A380-800 Type Training for cabin crew” to address only the topics that were relative for the A380-800 Full Scale Evacuation Demonstration. This training alone may not be adequate for an operators flight attendant training program. The evacuation actions and commands outlined in the training were typical of standard industry practice.

The topics were the following:

- A380 Aircraft And Cabin Presentation
- A380 Doors And Slides/Rafts
- A380 Communications/Lights
- A380 Emergency Equipment
- A380 Standard Operating Procedures
- A380 Emergency Procedures
- A380 Crowd Control
- A380 Aircraft Visit

A380 Aircraft And Cabin Presentation

During this session a general aircraft presentation was provided describing the aircraft characteristics, the layout, and configuration of the cabin.

- Description of the aircraft dimensions & performances.
- Description of the location and sill height of the doors.
- Description of the main deck and the upper deck cabin layout.
- Description of the location of the emergency equipment.
- Description, location and the operation of the cabin crew seats.
- Description of the stairs, passenger seats and stowage.

A380 Doors And Slides/Rafts

During this session the cabin crewmember received information and practical training on how to safely operate the doors and the slide/rafts.

- Description on the MD and UD doors.
- Controls and indicating panels.
- Door arming and disarming procedures.
- Door operation in normal (electrical), manual and emergency mode.
- Where and how to check outside conditions.
- Protective position and dedicated assist space.
- Recognition of door failures and unusable exit and how to deal with this.
- Use and location of the FAP door page.
- Description and location of the different slides/rafts.
- Operation of the slides.
- Deployment sequences of the different slides/rafts.
- Operation of the Manual Inflation Push button (MIP) and when to use it.
- Recognition of unusable slide attitudes and failures.
- Slide monitoring during the entire evacuation and actions to take if slide becomes unusable.
- Commands when using UD, MD slide/rafts.
- Slide descent techniques.

A380 Communications/Lights

During this training module the location and the use of the A380-800 communication and light systems was conducted.

- Location and use of the handset.
- Description of the different options on the use of the interphone and PA system.
- Interphone priorities.
- Attendant Information Panel and Area Control Panel indications.
- Cabin light description.
- Cabin light controls, location and operation on the FAP.
- Emergency light controls, location and operation.

A380 Emergency Equipment

This training focused on the location, description of the following emergency equipment: fire extinguishers, torches, first aid kit, megaphone, demo kit and fixed oxygen.

A380 Standard Operating Procedures

During this topic information was given on pre-flight checks, boarding and door arming procedures with cross-checking and door arming. Topics also addressed during this session included the number and the positions of the cabin crew during the passenger safety briefing, how to perform the safety demonstration, how to secure the cabin and the cabin ready procedures.

A380 Emergency Procedures

Items addressed during this training session:

- Cabin crew locations and duties during an on ground evacuation.
- Communication during the evacuation.
- Re-direction of passengers and control of passenger flow to exits.
- The use of crowd control techniques.

Basic evacuation principles:

After the evacuation signal is received, each cabin crew has to:

- Unfasten seat belt and shoulder harness.
- Stand up and shout, “EVACUATE, EVACUATE, SEATBELTS OFF”.
- Check the outside conditions and hold on to the frame assist handle.

If exit operative:

- Guard the exit while commanding passengers to stand back until the slide is safe to use.
- If automatic slide inflation fails, inflate manually by pushing MIP.
- Hold on to the frame assist handle and stand in assist space.
- Shout: “LEAVE EVERYTHING, COME THIS WAY”.
- Continue verbal contact to approaching passengers to speed the evacuation. Shout: “HURRY, TWO BY TWO, RUN & JUMP”.
- Passengers sitting down on the doorsill or hesitating to leave the aircraft must be firmly assisted out.
- When the passenger flow is depleted, call waiting passengers from another cabin section or nearby exit toward that exit. Both aisles should be used.

- When assigned area is clear and no problem on other exits occur leave the aircraft through the nearest available exit.

Note: Monitor the slide during the entire evacuation to make sure it remains safe to use.

If exit is inoperative:

- The cabin crewmember must stand in front to block the exit and shout: “EXIT BLOCKED, GO THAT WAY”.
- Redirect the passengers to the nearest available, usable exits.
- When flow toward the usable exits is established, manage the passenger flow.
- When the flow of evacuees decreases, direct passengers to proceed to usable exits to achieve a good dense flow of evacuees. Both aisles should be used if possible.
- Assist other cabin crew members if necessary.
- When assigned area is clear and no problem occurs at other exits leave the aircraft through the nearest available exit.

For M3 doors (exits) only: Due to the design of the slide (ramp slide) at the M3 doors, the evacuation flow rate may be slower compared to the other exits. The Cabin Crew member positioned at these doors should perform sequencing; this means in order to keep a constant flow on the ramp the cabin crewmember should limit the number of passengers on the ramp.

Aft stairs handling: The cabin crewmember seated at door M5L and the cabin crewmember seated at door U3R is responsible for the aft stairs. Before leaving the aircraft they must visually check if stairs are empty (double check).

Forward stairs handling: The cabin crewmember seated on the main deck by door M1R inboard (M1S CC) is responsible for the main deck forward cabin and forward stairs. The primary task is to handle the passenger management and the forward stairs. The cabin crewmember must immediately move into the M1 cross-aisle in order to direct the passenger flow and to coordinate the evacuation with the other cabin crewmember as situation dictates. The cabin crewmember checks if her/his assigned area is clear and leaves the aircraft through the nearest, available usable exit.

The cabin crewmember seated on the upper deck at the forward stairs (US CC) is responsible for the forward upper deck area and the forward stairs. The primary task is to handle the passenger management and the forward stairs. The cabin crewmember guards the top of the stairs and directs the passengers to the upper deck exits, which are located behind them. When the forward area is clear, the cabin crewmember coordinates evacuation with the other cabin crewmembers of the forward/mid cabin section. When the area is clear leave through the nearest, available exit.

A380 Crowd Control

During this session the cabin crew received information on crowd control techniques. Training on how to be loud, clear and assertive in their commands, on how to do things simultaneously and how to increase the speed of actions. Also attention was given to the stair management and the importance of knowing the cabin layout and configuration and what can be seen and heard when standing in their assist space.

- Actions and commands when a door is operative.
- Actions and commands when a door is blocked.
- Actions and commands at the M3 over wing exits.

A380 Aircraft Visit

An aircraft visit was conducted to familiarize the cabin crew with the aircraft layout and the cabin crew stations.

APPENDIX 5

AIRCRAFT COMPLIANCE CHECK LIST

(Reserved)

APPENDIX 6

AIRBUS A380 AND OTHER ACRONYMS AND ABBREVIATIONS

A/THR	Autothrust	CMS	Central Maintenance System
ABN	Not Sensed Procedures	CMV	Concentrator and Multiplexer for Video
AC	Advisory Circular	CP	Control Panel
AC	Alternating Current	CPC	Cabin Pressure Controller
ACMS	Aircraft Conditioning Monitoring System	CPIOM	Core Processing Input/Output Module
ACUTE	Airbus Cockpit Universal Thrust Emulator	CRM	Crew Resource Management
AD	Airworthiness Directive	CRZ	Cruise
ADIRS	Air Data and Inertial Reference System	CSTR	Constraint
ADIRU	Air Data and Inertial Reference Unit	CVMS	Cabin Video Monitoring System
ADS	Automatic Dependent Surveillance	CVR	Cockpit Voice Recorder
AEG	Aircraft Evaluation Group	DA(H)	Decision Altitude (Height)
AES	Auto Extension System	DC	Direct Current
AFM	Aircraft Flight Manual	DCLB	Derated Climb
AFS	Auto Flight System	DES	Descent
AFS CP	AFS Control Panel	DLCS	Data Load and Configuration System
AFT	Aft	DME	Distance Measuring Equipment
AGL	Above Ground Level	DU	Display Unit
A-ICE	Anti-Ice	EBCU	Emergency Brake Control Unit
ALT	Altitude	EBHA	Electrical Backup Hydraulic Actuator
AOA	Angle-of-Attack	ECAM	Electronic Centralized Aircraft Monitoring
AOC	Airline Operations Communications	ECB	Electronic Control Box
AP	Autopilot	ECP	ECAM Control Panel
APPR	Approach	EFB	Electronic Flight Bag
APU	Auxiliary Power Unit	EFF	Electronic Flight Folder
AQP	Advanced Qualification Program	EFIS	Electronic Flight Instrument System
ARS	Auto Retraction System	EFOB	Estimated Fuel On Board
ATC	Air Traffic Control	EHA	Electro-Hydrostatic Actuator
B/C	Back Course	EIS	Entry Into Service
BAT	Battery	E-Logbook	Electronic Logbook
BCS	Brake Control System	ELT	Emergency Locator Transmitter
BITE	Built-In Test Equipment	EPU	Estimated Position Uncertainty
BLG	Body Landing Gears	ETA	Estimated Time of Arrival
BWS	Body Wheel Steering	ETACS	External And Taxiing Camera System
CAPT	Captain	ETOPS	Extended Range Operations with Two-Engine Airplanes
CAT	Category	EVAC	Evacuation
C/B	Circuit Breaker	EVAL	Evaluation
CBT	Computer Based Training	E/WD	Engine Warning Display
CCOM	Cabin Crew Operating Manual	EXT	External
CCQ	Cross Crew Qualification	F	Minimum Flap Retraction Speed
CDL	Configuration Deviation List	FADEC	Full Authority Digital Engine Control
CDS	Control and Display System	FAP	Flight Attendant Panel
CDSS	Cockpit Door Surveillance System	FAR	Federal Aviation Regulations
CFIT	Controlled Flight Into Terrain	FCDC	Flight Control Data Concentrator
CG	Center of Gravity	FCOM	Flight Crew Operating Manual
CHDO	Certificate Holding District Office	F/CTL	Flight Controls
CI	Cost Index	FCTM	Flight Crew Training Manual
CL	Climb	FCU	Flight Control Unit
C/L	Checklist	FD	Flight Director

FDRS	Flight Data Recording System	LGERS	Landing Gear Extension and Retraction System
FDU	Fire Detection Unit	LOC	Localizer
FE	Flight Envelope	LOE	Line Operational Evaluation
FFCM	Free Fall Control Module	LOFT	Line Oriented Flight Training
FFS	Full Flight Simulator	LP	Low Pressure
FFU	Flight Follow Up	LRU	Line Replacement Unit
FG	Flight Guidance	LVL	Level
FL	Flight Level	LVR	Lever
FLRS	Flap Load Relieve System	MAP	Missed Approach Point
FLS	FMS Landing System	MCR	Master Common Requirements
FMA	Flight Mode Annunciator	MCT	Maximum Continuous Thrust
FMC	Flight Management Computer	MDA(H)	Minimum Descent Altitude (Height)
FMS	Flight Management System	MDR	Master Differences Requirements
FO	First Officer	MEL	Minimum Equipment List
FOEB	Flight Operations Evaluation Board	MFD	Multi-Function Display
FOM	Flight Operations Manual	MFF	Mixed Fleet Flying
FPA	Flight Path Angle	MFP	Multi-Function Probe
FPV	Flight Path Vector	MIX LOC/ VNAV	Mix Localizer/Vertical Navigation
FQMS	Fuel Quantity and Management System	MLG	Main Landing Gear
FTD	Flight Training Device	MLS	Microwave Landing System
FWD	Forward	MMEL	Master Minimum Equipment List
FWS	Flight Warning System	MMO	Maximum Operating Mach
GA	Go Around	MMR	Multi-Mode Receiver
GEN	Generator	MNPS	Minimum Navigation Performance Specifications
GLS	GPS Landing System	MSG	Message
GPS	Global Positioning System	MTOW	Maximum Take-Off Weight
GPWS	Ground Proximity Warning System	NAV	Navigation
G/S	Glide Slope	NAVAID	(Radio) Navigation Aid
HBAT	Handbook Bulletin for Air Transportation	ND	Navigation Display
HDG	Heading	NDB	Non Directional Beacon
HF	High Frequency	NLG	Nose Landing Gear
HMI	Human Machine Interface	NSET	National Simulator Evaluation Team
HP	High Pressure	NSS	Network Server System
HSMU	Hydraulic System Monitoring Unit	NWS	Nose Wheel Steering
HUD	Head-Up Display	O	Green Dot Speed (best lift to drag ratio)
IAW	In Accordance With	OANS	Onboard Airport Navigation System
IFE	In-Flight Entertainment	ODR	Operator Difference Requirements
IFR	Instrument Flight Rules	OE	Operating Experience
ILS	Instrument Landing System	OEB	Operations Engineering Bulletin
IMA	Integrated Modular Avionics	OIS	Onboard Navigation System
INR	Inner	OIT	Onboard Information Terminal
IOM	Input/Output Module	OMS	Onboard Maintenance System
IP	Intermediate Pressure	OMT	Onboard Maintenance Terminal
ISA	International Standard Atmosphere	OUTR	Outer
ISIS	Integrated Standby Instrument System	pb	Pushbutton
ISP	Integrated Static Probe	PBE	Protective Breathing Equipment
KCCU	Keyboard and Cursor Control Unit	PF	Pilot Flying
LA XFR	Load Alleviation Transfer	PFD	Primary Flight Display
LAF	Load Alleviation Function	PIC	Pilot in Command
LCD	Liquid Crystal Display	PIO	Pilot Induced Oscillation
LEHGS	Local Electro-Hydraulic Generation System	PM	Pilot Monitoring
LGCIS	Landing Gear Control and Indicating System	PMAT	Portable Multipurpose Access Terminal

PNF	Pilot Not Flying	TCDS	Type Certificate Data Sheet
POI	Principal Operations Inspector	TCF	Terrain Clearance Floor
PRIM	Primary Flight Control Computer	T/D	Top of Descent
Ps	Static Pressure	THR	Thrust
Pt	Total Pressure	THS	Trimmable Horizontal Stabilizer
PWS	Predictive Windshear	TK	Tank
RA	Radio Altimeter/Altitude	TO	Takeoff
RAT	Ram Air Turbine	TR	Transformer Rectifier
RMP	Radio Management Panel	TRANS	Transition
RNAV	Area Navigation	TRK	Track
RNP	Required Navigation Performance	V1	Decision Speed
RTO	Rejected Takeoff	VAPP	Final Approach Speed
RVR	Runway Visual Range	VD	Vertical Display
RWY	Runway	VFR	Visual Flight Rules
S	Minimum Slat Retract Speed	VHF	Very High Frequency
SATCOM	Satellite Communication	VLS	Lower Selectable Speed
SCS	Steering Control System	VMO	Maximum Operating Speed
SD	System Display	VOR	VHF Omnidirectional Range
SDF	Smoke Detection Function	V/S	Vertical Speed
SEC	Secondary Flight Control Computer	VV	Velocity Vector
sel	Selector	W & B	Weight and Balance
SFAR	Special Federal Aviation Regulation	WLAN	Wireless Local Area Network
SFD	Standby Flight Display	WLG	Wing Landing Gears
SID	Standard Instrument Departure	WTB	Wing Tip Brakes
SND	Standby Navigation Display	WXR	Weather Radar
SQWK	Squawk	XFR	Transfer
SRS	Speed Reference System	ZFCG	Zero Fuel Center of Gravity
SSA	Side Slip Angle	ZFW	Zero Fuel Weight
STAR	Standard Terminal Arrival Route		
STBY	Standby		
SURV	Surveillance System		
sw	Switch		
TAD	Terrain/Obstacle Awareness and Display		
TAT	Total Air Temperature		
TAWS	Terrain Awareness and Warning System		
TBD	To Be Determined		
T/C	Top of Climb		
TCAS	Traffic Alert and Collision Avoidance System		