U.S. Department of Transportation
Federal Aviation Administration
Washington, DC

# Flight Standardization Board Report

Revision: 7
Date: XX/XX/XXXX

## Manufacturer
## Airbus SAS

| Type Certificate Data Sheet (TCDS) | TCDS Identifier | Marketing Name | Pilot Type Rating |
|---|---|---|---|
| A28NM | A318-100 Series | A318 | A-320 |
| A28NM | A319-100 Series | A319ceo<br>A319neo | A-320 |
| A28NM | A320-200 Series | A320ceo<br>A320neo | A-320 |
| A28NM | A321-100 Series<br>A321-200 Series | A321ceo<br>A321neo | A-320 |

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# 1. RECORD OF REVISIONS

| Revision Number | Section(s) | Date |
|---|---|---|
| Original | All | 10/02/1996 |
| 1 | All | 04/27/2001 |
| 2 | All | 10/26/2005 |
| 3 | All | 05/30/2012 |
| 4 | 1, 6, Appendix 1 | 07/31/2013 |
| 5 | 5, 6, Appendix 1 | 06/10/2016 |
| 6 | All | 04/19/2019 |
| 7 | All | XX/XX/XXXX |

# 2. INTRODUCTION

The Aircraft Evaluation Division (AED) is responsible for working with aircraft manufacturers and modifiers, during the development and Federal Aviation Administration (FAA) certification of new and modified aircraft to determine:

1) The pilot type rating,
2) Flightcrew member training, checking, and currency requirements, and
3) Operational suitability.

This report lists those determinations for use by:

1) FAA employees who approve training programs,
2) FAA employees and designees who certify airmen, and
3) Aircraft operators and training providers, to assist them in developing their flightcrew member training, checking and currency.

# 3. HIGHLIGHTS OF CHANGE

The purpose of this revision is to add A321neo XLR equipped electrical rudder evaluation results, to address emphasis for the optional Autopilot (AP)/Traffic Alert and Collision Avoidance System (TCAS) function, to update the Appendix 3, Differences Tables to a more comprehensive content structure, and to update the Airbus Flightcrew Difference Requirement (DR) Table references. This revision converts this document to the new Flight Standardization Board Report (FSBR) format and complies with Section 508. Change bars are not included in this document because the entire report is revised and updated.

# 4. BACKGROUND

The Air Carrier Branch, AED (AFS-110) formed an Flight Standardization Board (FSB) that evaluated the Airbus A320 as defined in FAA Type Certificate Data Sheet (TCDS) #A28NM. The initial evaluation was conducted in 1989 at a time when there was no formal guidance such as FAA Advisory Circular (AC) 120-53, Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Under FAR Part 121, which was released in 1991. Subsequent evaluations were conducted during 1994 and 1995 to evaluate

related aircraft differences training with the Airbus A330 and Airbus A340, as well as the differences training with the A320 variations. This led to issuance of the original A320/A330/A340 combined FSB report, subsequently revised as needed.

In October 2015, the A320 FSB conducted an evaluation of the related aircraft differences training for the A320 equipped with "neo engines". The evaluation conducted used the methods described in the current edition of AC 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

For the A321neo, the FSB conducted in 2017 an evaluation by analysis, as per method described for T1 in the current edition of AC 120-53. This report captures all these results.

In October 2023, the A320 FSB conducted an evaluation of the related aircraft differences training from the A321neo ACF equipped with mechanical rudder to the A321neo XLR equipped with electrical rudder. The evaluation was conducted using the methods described in the current edition of AC 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

# 5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- ACARS Aircraft Communications Addressing and Reporting System
- AMU Audio Management Unit
- AC Advisory Circular
- AC Alternating Current
- ACF Airbus Cabin Flex
- ACS Airmen Certification Standards
- ACT Additional Center Tank
- ADF Automatic Direction Finding
- ADR Air Data Reference
- ADIRS Air Data Inertial Reference System
- AED Aircraft Evaluation Division
- AFMS Auxiliary Fuel Management System
- AOC Airline Operational Control
- APU Auxiliary Power Unit
- ARS Automatic Retraction System
- ASCT Approved Simulator Course of Training
- ATA Air Transport Association
- A/THR Auto/Thrust
- ATP Airline Transport Pilot
- AV Audiovisual Presentation
- BCM Backup Control Module
- BPS Backup Power Supply
- CAT Category
- CEO Current Engine Option

- CB Circuit Breaker
- CDA Continuous Descent Approach
- CDU Control Display Unit
- CFR Code of Federal Regulations
- CONF Configuration (Flaps/Slats)
- CPT Cockpit Procedures Trainer
- CVR Cockpit Voice Recorder
- DC Direct Current
- DH Decision Height
- DR Difference Requirements
- DT Differences Table
- EASA European Union Aviation Safety Agency
- E.U. European Union
- ECAM Electronic Centralized Aircraft Monitor
- ECMU Electronic Contactor Management Unit
- ECP ECAM Control Panel
- EFIS Electronic Flight Instrument System
- EIS Electronic Instrument System
- EMER GEN Emergency Generator
- ESS Essential Bus
- ETOC Enhanced Takeoff Configuration
- EWD Engine/Warning Display
- FAA Federal Aviation Administration
- FAC Flight Augmentation Computer
- F/CTL Flight Control(s)
- FCU Flight Control Unit
- FD Flight Director
- FE Flight Envelope
- FFS Full Flight Simulator
- FG Flight Guidance
- FIDS Fault Isolation and Detection System
- FLT CHAR Flight Characteristics
- FMA Flight Mode Annunciator
- FMGC Flight Management and Guidance Computer
- FMGS Flight Management and Guidance System
- FMS Flight Management System
- FQLS Fuel Quantity and Level System
- FSB Flight Standardization Board
- FSTD Flight Simulation Training Device
- FTD Flight Training Device
- FTIS Fuel Tank Inerting System
- FWC Flight Warning Computer
- FWD Forward
- GPWS Ground Proximity Warning System

- HF High Frequency
- HO Handout
- ICBI Interactive Computer-Based Instruction
- IDG Integrated Drive Generator
- ILS Instrument Landing System
- INIT Initial(ize)
- LOFT Line-Oriented Flight Training
- MAG Magnetic
- MCDU Multipurpose Control and Display Unit
- MDR Master Differences Requirements
- MLG Main Landing Gear
- MLW Maximum Certificated Landing Weight
- MSN Model Serial Number
- NAS National Airspace System
- NAV Navigation
- NEO New Engine Option
- NWS Nose Wheel Steering
- OE Operating Experience
- OEI One-Engine Inoperative
- pb sw Push Button Switch
- PC Proficiency Check
- PF Pilot Flying
- PIC Pilot In Command
- PM Pilot Monitoring
- POI Principal Operations Inspector
- PRED Predictive
- PRESS Pressurization
- PROC CHNG Procedural Change
- PSCU Proximity Switch Control Unit
- PTT Part Task Trainer
- PTU Power Transfer Unit
- QRH Quick Reference Handbook
- RTO Rejected Takeoff
- SD System Display
- SEC Spoiler Elevator Computer
- SFCC Slat/Flap Control Computer
- SIC Second in Command
- SOP Standard Operating Procedure
- SPD Speed
- SRS Speed Reference System
- SU Stand-Up Instruction
- SURV Surveillance
- TASE Training Areas of Special Emphasis
- TC Type Certificate

- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- THS Trimmable Horizontal Stabilizer
- TRE Type Rating Examiner
- TRI Type Rating Instructor
- UAMM Unreliable Airspeed Mitigation Means
- $V_1$ Takeoff Decision Speed
- $V_{LS}$ Lowest Selectable Speed
- $V_R$ Rotation Speed
- VENT Ventilation
- VHF Very High Frequency
- XLR eXtra Long Range
- ZFW Zero Fuel Weight
- ZFWCG Zero Fuel Weight Center of Gravity

# 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.** Describes 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.** 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 AED 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 AED 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 Airbus A318, A319, A320, and A321 type rating designation is A-320.

**7.2 Common Type Ratings.** Not applicable.

**7.3 Military Equivalent Designations.** Military aircraft that qualify for the A-320 type rating can be found on the faa.gov website under "Pilots & Airmen," "Airmen Certification," "Pilot Certificate Aircraft Type Designations." This webpage is kept up-to-date and can be found at https://registry.faa.gov/TypeRatings/.

## 8. RELATED AIRCRAFT

**8.1 Related Aircraft on Same TCDS.** The A318, A319, A320, and A321 are related aircraft on the same TCDS.

**NOTE:** All references to the A318, A319, A320, or A321 are hereafter in this report referred to as A320 or A320 Family, unless otherwise stated.

**8.1 Related Aircraft on Different TCDS.**

- The A330 is related to the A320.
- The A340 is related to the A320.
- The A350 is related to the A320.*

* Credit cannot be taken for training and checking from the A350 to the A320 because an evaluation has yet to be completed. Therefore, the A350 is related to the A320 only with respect to currency events.

# 9. PILOT TRAINING

**9.1 Airman Experience.** Airmen receiving initial A320 training should have previous operational experience in multi-engine transport turbojet aircraft, transport category avionics (e.g., EFIS, and FMS). Pilots without this experience may require additional training.

To receive A320 transition training (related aircraft differences training), A330 and A340 pilots must have specific minimum pre-qualification requirements as follows:

Case 1. For transition from the A330 to the A320:

- Qualified and current in the A330, and
- A minimum of 300 hours PIC and/or SIC line experience on the A330, or
- Specific line experience approved by the POI in coordination with the Air Carrier Branch, AED (AFS-110).

Case 2. For transition from the A340 to the A320:

- Qualified and current in the A340, and
- A minimum of 300 hours PIC and/or SIC line experience on the A340, or
- Specific line experience approved by the POI in coordination with the Air Carrier Branch, AED (AFS-110).

**NOTE:** Airmen qualified, but no longer current in the base aircraft (A330 or A340, as appropriate) must reestablish currency in the base aircraft before beginning a transition course to the A320.

The FSB evaluated the A321neo XLR using pilots with the following qualifications:

| Position | Licensing Level | Licensing Country | Experience |
|---|---|---|---|
| Captain | ATP/TRI/TRE | E.U. (Denmark) | A320 Family 9,300 hrs. A321neo 350 hrs. |
| First Officer | ATP | E.U. (Germany) | A320 Family 6,600 hrs. |
| Captain | ATP | U.S.A. | A320 Family 3,530 hrs. A321neo 255 hrs. |
| First Officer | ATP | U.S.A. | A320 Family 2,017 hrs. A321neo 314 hrs. |

## 9.2 Special Emphasis Areas.

9.2.1 Pilots must receive special emphasis on the following areas during initial, upgrade, transition, differences, and recurrent ground training:

a) 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) A321neo XLR model aircraft flight control law reconfigurations due to the removal of the FACs and SEC 3, and the installation of eRudder.

c) Use of the sidestick controller, and the relationship between the two sidestick controllers, and transfer of controls.

d) Mode awareness and mode transitions (e.g., FMA, FCU, configuration), regardless of whether initiated by the flightcrew or by a system response to design logic.

e) Normal, alternate, and emergency braking systems and the means to transition from one system to the other.

f) When utilized, awareness and knowledge of Continuous Descent Approach concepts (e.g., FMS vertical profile principles, DES guidance modes, and use of FLAP 1/2 pseudo waypoints).

9.2.2 Pilots must receive special emphasis on, and perform the following areas during initial, upgrade, transition, differences, and recurrent flight training:

a) 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.

**NOTE:** For the A321neo XLR model aircraft, when any of the following three annunciated conditions occur, the aircraft immediately reverts to Direct Law regardless of landing gear position:

- NAV – ADR 1+2+3 FAULT.
- NAV – ALL SPD UNCERTAIN.
- F/CTL – SLATS FAULT/LOCKED (as caused by SFCC 1 + 2 failure).

b) Use of the sidestick controller, the relationship between the two sidestick controllers, and transfer of controls.

c) Mode awareness and mode transitions (e.g., FMA, FCU, configuration), regardless of whether initiated by the flightcrew or by a system response to design logic.

d) 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) Steep turns trained in normal law by intentional exceedance of roll stability thresholds using the sidestick controller to achieve the desired bank angle.

f) Airplane upset recovery in modes other than normal law.

g) Stall prevention and recovery from an impending stall trained in normal, alternate, and direct law.

**NOTE:** Flight envelope protections are designed to prevent an aircraft from stalling in normal law; however, the aircraft may experience buffet indicative of an impending stall. In alternate and direct law, the aircraft can stall.

h) When AP/FD TCAS is utilized, manual TCAS procedure used in the event of an AP/FD TCAS failure.

**9.3 Specific Flight Characteristics.** Maneuvers/procedures required to be checked as referenced in the ATP and Type Rating for Airplane Category ACS and/or 14 CFR part 121 appendix F.

There are no specific flight characteristics.

**9.4 Seat-Dependent Tasks.** There are no seat-dependent tasks.

**9.5 Regulatory Training Requirements Which Are Not Applicable to the A320.**

9.5.1 Part 121, Appendix E:

a) Tuck and Mach buffet. A320 does not exhibit any Mach tuck tendency and therefore no training is required for this maneuver. Demonstration of the aircraft's overspeed protection capabilities are an acceptable substitution.

b) Operation of systems and controls at the Flight Engineer (FE) station. The FE is not required for the operation of the aircraft.

c) Recovery from specific flight characteristics that are peculiar to the airplane type. No specific flight characteristics are identified for the A320.

**9.6 Flight Simulation Training Devices (FSTD).** There are no specific systems, procedures, or maneuvers that are unique to the A320 that require a specific FSTD for training.

**9.7 Training Equipment.** There are no specific systems or procedures that are unique to the A320 that require specific training equipment.

**9.8 Differences Training Between Related Aircraft.** See Appendix 2, Master Differences Requirements (MDR) Table, and Appendix 3, Differences Tables.

9.8.1 Differences Training - Same TCDS:

- Pilots must receive differences training between the A318, A319, A320, and A321.
- Pilots must receive differences training for different engine makes and models.

9.8.2 Related Aircraft Differences Training - Different TCDS:

- Pilots must receive related aircraft differences training between the A330 and A320.
- Pilots must receive related aircraft differences training between the A340 and A320.

**9.9 Recurrent Training for Designated Related Aircraft in Mixed Fleet Operations - Different TCDS.** For mixed fleet flying operations of designated related aircraft on different TCDS, an alternating plan for recurrent flight training and checking may be developed. See Appendix 6, Related Aircraft on Different TCDS Training and Checking Plans for Mixed Fleet Flying Operations, for examples.

## 10. PILOT CHECKING

**10.1 Landing from a No-Flap or Nonstandard Flap Approach.** The probability of flap extension failure on the A320 is not extremely remote due to system design. Therefore, demonstration of a no-flap approach and landing during pilot certification or a 14 CFR part 121, § 121.441 proficiency check is required. Refer to FAA Order 8900.1, Volume 5, Airman Certification, when the test or check conducted in an aircraft versus an FFS.

The control laws to be used for a no-flap landing are the control laws dictated by the particular failure condition simulated (e.g., by a dual hydraulic failure). Due to system logic, if the maneuver is conducted in an aircraft, a CONF 1 approach to a missed approach will be used. If in the aircraft, systems must not be deactivated to create the failed condition. If the maneuver is conducted in an FFS, the approach should be continued to a landing.

**10.2 Specific Flight Characteristics.** Maneuvers/procedures required to be checked as referenced in the ATP and Type Rating for Airplane Category ACS and/or 14 CFR part 121 appendix F.

There are no specific flight characteristics.

**10.3 Seat-Dependent Tasks.** There are no seat-dependent tasks.

**10.4 Other Checking Items.** Not applicable.

**10.5 Flight Simulation Training Devices (FSTD).** There are no specific systems or procedures that are unique to the A320 that require a specific FSTDs for checking.

**10.6 Equipment.** There are no specific systems or procedures that are unique to the A320 that require specific equipment.

**10.7 Differences Checking Between Related Aircraft.** See Appendices 2 and 3.

10.7.1 Differences checking between related aircraft on same TCDS:

- There are no differences checking required between the A318, A319, A320, and A321.

10.7.2 Differences checking between related aircraft on different TCDS:

- Pilots must receive differences checking between the A320 and A330. The level of checking is specified in the relevant Differences Tables.
- Pilots must receive differences checking between the A320 and A340. The level of checking is specified in the relevant Differences Tables.

**NOTE:** Examples of related aircraft differences checks after related aircraft differences training are included in Appendix 5, Type Rating Checks After Related Aircraft Differences Training.

**10.8 Recurrent Checking for Designated Related Aircraft in Mixed Fleet Operations - Different TCDS.** For mixed fleet flying operations of designated related aircraft on different TCDS, an alternating plan for recurrent training and checking may be developed. See Appendix 6, Related Aircraft on Different TCDS Training and Checking Plans for Mixed Fleet Flying Operations, for examples.

## 11. PILOT CURRENCY

There are no additional currency requirements for either the A318, A319, A320, or A321 other than those already specified in 14 CFR part 61 or 121, as applicable. Meeting the currency requirements in either the A318, A319, A320, or A321 satisfies all currency requirements for either of the other aircraft.

**11.1 Differences Currency Between Related Aircraft on Different TCDS.**

11.1.1 Mixed Fleet Flying on A320 and A330.

Pilots must receive differences currency for mixed fleet flying of the A320 and A330 in the relevant airplanes or approved FFS every 90 days as follows:

a) Three takeoffs total as pilot flying (PF):
   - In either the A320 or A330, or
   - In a combination of the A320 and A330, and

b) Three landings total as PF:
   - One manually flown in the A320,
   - One manually flown in the A330,
   - One manually flown or AP flown in either the A320 or A330, and

c) Two line segments (see subparagraph 11.1.5 for line segment currency criteria):
   - One completed in the A320, and
   - One completed in the A330.

11.1.2 Mixed Fleet Flying on A320 and A340.

Pilots must receive differences currency for mixed fleet flying of the A320 and A340 in the relevant airplanes or approved FFS every 90 days as follows:

a) Three takeoffs total as PF:
   - In either the A320 or A340, or
   - In a combination of the A320 and A340, and

b) Three landings total as PF:
   - One manually flown in the A320,
   - One manually flown in the A340,
   - One manually flown or autopilot flown in either the A320 or A340, and

c) Two line segments (see subparagraph 11.1.5 for line segment currency criteria):
   - One completed in the A320, and
   - One completed in the A340.

11.1.3 Mixed Fleet Flying on A320 and A350.

Pilots must receive differences currency for mixed fleet flying of the A320 and A350 in the relevant airplanes or approved FFS every 90 days as follows:

a) Three takeoffs total as PF:
   - In either the A320 or A350, or
   - In a combination of the A320 and A350, and

b) Three landings total as PF:
   - One manually flown in the A320,
   - One manually flown in the A350,

- One manually flown or autopilot flown in either the A320 or A350, and

c) Two line segments (see subparagraph 11.1.5 for line segment currency criteria):
   - One completed in the A320, and
   - One completed in the A350.

11.1.4 Mixed Fleet Flying on A320, A330, and A340.

Pilots must receive differences currency for mixed fleet flying of the A320, A330, and A340 in the relevant airplanes or approved FFS every 90 days as follows:

a) Three takeoffs total as PF:
   - In either the A320, A330, or A340, or
   - In a combination of the A320, A330, and A340, and

b) Three landings total as PF:
   - One manually flown in the A320,
   - One manually flown in the A330, and
   - One manually flown in the A340, and

c) Two line segments (see subparagraph 11.1.5 for line segment currency criteria):
   - One completed in the A320, and
   - One completed in the A330 or A340.

11.1.5 Line Segment Currency.

For the purposes of this report, line segment currency consists of the completion of all procedural phases of a flight from cockpit preflight through postflight but does not require flight maneuvers such as takeoff and landing. A pilot performing the duties of either required flightcrew member position may count the performance of those duties toward the completion of a line segment. A line segment may be completed in one flight, or by cumulatively completing the necessary phases in more than one flight. A line segment may also be completed in a qualified FFS or FTD, Level 5 or higher, using a line flight scenario where all segment procedural phases are completed.

**11.2 Related Aircraft Operating Experience (OE) - Different TCDS.** Separate OE applies to the A320 and other designated related aircraft (e.g., an A330 and A340 aircraft). For FSB OE recommendations, see Appendix 4, Qualification and Currency Plans for Related Aircraft Transition.

## 12. OPERATIONAL SUITABILITY

The A318, A319, A320, and A321 are operationally suitable for operations under 14 CFR parts 91 and 121. The A320 FSB determined operational compliance by conducting an evaluation of A320 aircraft MSN31. The list of operating rules evaluated is on file at the Air Carrier Branch, AED (AFS-110).

## 13. MISCELLANEOUS

**13.1 Observer Seat.** The A320 center observer seat (referred to as the third occupant seat), as installed by TCDS #A28NM, has been evaluated and determined to meet requirements of 14 CFR § 121.581(a) and the current edition of FAA AC 120-83, Flight Deck Observer Seat and Associated Equipment, for use by the FAA for the purpose of conducting enroute inspections. The third occupant seat is considered as the primary observer seat.

**13.2 Aircraft Approach Category.** (Reference 14 CFR part 97, § 97.3):

- The A318, A319, and A320 are considered Category C aircraft for the purposes of determining "straight-in landing weather minima."
- The A321 is considered Category C or D aircraft, as dependent upon the maximum certificated landing weight (MLW) of the various related A321 aircraft models for the purposes of determining "straight-in landing weather minima."

**13.3 Emergency Evacuation.**

**NOTE:** Refer to TCDS #A28NM for maximum passenger seating capacities certified for each Model in the A320 Family.

13.1.1 A320.

An actual emergency evacuation demonstration was successfully completed on the A320 model aircraft by Airbus on October 18, 1987. The demonstration was conducted in compliance with 14 CFR part 25, § 25.803(c) and was thus credited compliance with 14 CFR § 121.291(a).

13.1.2 A318.

An emergency evacuation demonstration was successfully completed by analysis on the A318 model aircraft. The analysis has shown compliance with 14 CFR § 25.803(c) and was thus credited compliance with 14 CFR § 121.291(a).

13.1.3 A319.

An emergency evacuation demonstration was successfully completed by analysis on the A319 model aircraft. The analysis has shown compliance with 14 CFR § 25.803(c) and was thus credited compliance with 14 CFR § 121.291(a).

13.1.4 A321.

An emergency evacuation demonstration was successfully completed by analysis on the A321 model aircraft. The analysis has shown compliance with 14 CFR § 25.803(c) and was thus credited compliance with 14 CFR § 121.291(a).

**13.4 Ditching Demonstration.** A full-scale ditching demonstration, in accordance with 14 CFR part 121 and FAA Order 8900.1, has been completed.

**13.5 Normal Landing Flaps.** The A320 normal "final landing flap settings" per 14 CFR § 91.126(c) are CONF 3 and CONF FULL.

# APPENDIX 1. DIFFERENCES LEGEND

**Training Differences Legend**

| Differences Level | Type | Training Method Examples | Conditions |
|---|---|---|---|
| A | Self-Instruction | • Operating manual revision (handout (HO))<br>• Flightcrew operating bulletin (HO) | • Crew has already demonstrated understanding on base aircraft (e.g., updated version of engine).<br>• Minor or no procedural changes required.<br>• No safety impact if information is not reviewed or is forgotten (e.g., different engine vibration damping mount).<br>• Once called to attention of crew, the difference is self-evident. |
| B | Aided Instruction | • Audiovisual presentation (AV)<br>• Tutorial computer-based instruction (TCBI)<br>• Stand-up instruction (SU) | • Systems are functionally similar.<br>• Crew understanding required.<br>• Issues need emphasis.<br>• Standard methods of presentation required. |
| C | Systems Devices | • Interactive (full-task) computer-based instruction (ICBI)<br>• Cockpit Procedures Trainers (CPT)<br>• Part task trainers (PTT)<br>• Level 4 or 5 flight training device (FTD 4-5) | • Training can only be accomplished through systems training devices.<br>• Training objectives focus on mastering individual systems, procedures, or tasks versus highly integrated flight operations or “real-time” operations.<br>• 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 | • Level 6 or 7 flight training device (FTD 6-7)<br>• Level A or B full flight simulator (FFS A-B) | • Training can only be accomplished in flight maneuver devices in a real-time environment.<br>• Training requires mastery of interrelated skills versus individual skills.<br>• Motion, visual, control-loading, and specific environmental conditions may be required. |
| E | Level C/D FFS or Aircraft | • Level C or D full flight simulator (FFS C-D)<br>• Aircraft (ACFT) | • Motion, visual, control-loading, audio, and specific environmental conditions are required.<br>• Significant full-task differences that require a high fidelity environment.<br>• Usually correlates with significant differences in handling qualities. |

**Checking Differences Legend**

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

**Related Aircraft MDR Table – Same TCDS**

| To Related Aircraft ↓ | From Base Aircraft → | A318 | A319 | A320 | A321 |
|---|---|---|---|---|---|
| **A318** | | Not applicable | B/A | B/A | B/A |
| **A319** | | B/A | Not applicable | B/A | B/A |
| **A320** | | B/A | B/A | Not applicable | B/A |
| **A321** | | B/A<br>(1) B/B | B/A<br>(1) B/B | B/A<br>(1) B/B | (1) B/B |

**Related Aircraft MDR Table – Different TCDS**

| To Related Aircraft ↓ | From Base Aircraft → | A320 | A330 | A340 | A350 |
|---|---|---|---|---|---|
| **A320** | | (2) Same TCDS | E/E | E/E | Not evaluated |

**NOTES:** (1) Level B training and checking for the A321neo ACF and A321neo XLR.
(2) Refer to Related Aircraft MDR Table – Same TCDS.

# APPENDIX 3. DIFFERENCES TABLES

This Design Differences Table, from the Airbus A320 to the A318, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

> **NOTE:** The differences Remarks are very generally stated. For a detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

| FROM BASE AIRCRAFT: A320<br><br>TO RELATED AIRCRAFT: A318 | DESIGN | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | General | Dimensions. | No | No | A | A |
| | Cabin | Maximum passenger capacities. | No | No | A | A |
| | Cargo | Maximum Cargo Loads.<br><br>Bulk cargo door. | No | No | A | A |
| | Limitations | Weights.<br><br>Center of gravity envelope.<br><br>Speeds.<br><br>Autoflight. | No | No | A | A |

| FROM BASE AIRCRAFT: A320<br><br>TO RELATED AIRCRAFT: A318 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 21<br>Air Conditioning | Controls and indicating. | No | No | B | A |
| | ATA 27<br>Flight Controls | Design: Speedbrakes, spoilers. | No | No | A | A |
| | ATA 52<br>Doors | Design: Emergency exit doors, cargo compartment doors, bulk cargo door.<br><br>Controls and indicating: ECAM. | No | No | B | A |
| | ATA 70<br>Engines (CEO) | Design: Architecture, power settings. | No | No | A | A |
| | ATA 70<br>Engines (CEO) | Controls and indicating. | No | No | B | A |

This Maneuver Differences Table, from the Airbus A320 to the A318, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

> **NOTE 1:** The differences Remarks are very generally stated. For a more detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.
>
> **NOTE 2:** Criteria used to identify differences, as indicated in the Maneuver Differences Table, does not take into consideration training differences that may exist between related aircraft for maneuvers required by Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.423.

| **FROM BASE AIRCRAFT: A320**<br><br>**TO RELATED AIRCRAFT: A318** | **MANEUVER**<br>Normal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | Special Operations | High/hot airport operations. | No | Yes | A | A |
| | SOP – Engine Start (CEO) | Controls and indicating. | No | No | B | A |
| | SOP – Takeoff (CEO) | Controls and indicating: Thrust setting indications. | No | No | B | A |

This Design Differences Table, from the Airbus A320 to the A319, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE:** The differences Remarks are very generally stated. For a detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

| **FROM BASE AIRCRAFT: A320**<br><br>**TO RELATED AIRCRAFT: A319** | **DESIGN** | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | General | Dimensions. | No | No | A | A |
| | Cabin | Maximum passenger capacities. | No | No | A | A |
| | Cargo | Maximum Cargo Loads.<br><br>Bulk cargo door. | No | No | A | A |
| | Limitations | Weights.<br><br>Center of gravity limits.<br><br>Maximum altitude. | No | No | A | A |

| FROM BASE AIRCRAFT: A320<br><br>TO RELATED AIRCRAFT: A319 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 27<br>Flight Controls | Design: Speedbrakes, spoilers. | No | No | A | A |
| | ATA 52<br>Doors | Design: Emergency exit doors.<br>Controls and indicating: ECAM. | No | No | B | A |
| | ATA 70<br>Engines (CEO) | Design: Architecture, power settings. | No | No | A | A |
| | ATA 70<br>Engines (CEO) | Controls and indicating. | No | No | B | A |

This Maneuver Differences Table, from the Airbus A320 to the A319, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE 1:** The differences Remarks are very generally stated. For a more detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

**NOTE 2:** Criteria used to identify differences, as indicated in the Maneuver Differences Table, does not take into consideration training differences that may exist between related aircraft for maneuvers required by Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.423.

| **FROM BASE AIRCRAFT: A320**<br><br>**TO RELATED AIRCRAFT: A319** | **MANEUVER**<br>Normal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | SOP - Engine Start (CEO) | Controls and indicating. | No | No | B | A |
| | SOP - Takeoff (CEO) | Controls and indicating: Thrust setting indications. | No | No | B | A |

This Design Differences Table, from the Airbus A320 to the A321, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

> **NOTE:** The differences Remarks are very generally stated. For a detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

| **FROM BASE AIRCRAFT: A320**<br><br>**TO RELATED AIRCRAFT: A321** | **DESIGN** | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | General | Dimensions. | No | No | A | A |
| | Cabin | Maximum passenger capacities. | No | No | A | A |
| | Limitations | Weights.<br><br>Center of gravity limits.<br><br>Autopilot. | No | No | A | A |

| FROM BASE AIRCRAFT: A320<br><br>TO RELATED AIRCRAFT: A321 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 23<br>Communications | Controls and indicating: Overhead panel. | No | No | A | A |
| | ATA 26<br>Fire Protection | Design: Cargo compartment smoke detectors. | No | No | A | A |
| | ATA 27<br>Flight Controls | Design: Flaps, flaps position, speedbrakes. | No | No | A | A |
| | ATA 28<br>Fuel | Design: Fuel tanks.<br><br>Controls and indicating: ECAM. | No | Yes | B | A |
| | ATA 52<br>Doors | Design: Emergency exit doors, slides.<br><br>Controls and indicating: ECAM. | No | No | B | A |
| | ATA 70<br>Engines (CEO) | Design: Architecture, power settings. | No | No | A | A |
| | ATA 70<br>Engines (CEO) | Controls and indicating. | No | No | B | A |

This Maneuver Differences Table, from the Airbus A320 to the A321, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE 1:** The differences Remarks are very generally stated. For a more detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

**NOTE 2:** Criteria used to identify differences, as indicated in the Maneuver Differences Table, does not take into consideration training differences that may exist between related aircraft for maneuvers required by 14 CFR part 121, § 121.423.

| **FROM BASE AIRCRAFT: A320**<br><br>**TO RELATED AIRCRAFT: A321** | **MANEUVER**<br>Normal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | SOP - Engine Start (CEO) | Controls and indicating. | No | No | B | A |
| | SOP - Takeoff (CEO) | Controls and indicating: Thrust setting. | No | No | B | A |

This Design Differences Table, from the Airbus A320 to the A321neo ACF, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

> **NOTE:** The differences Remarks are very generally stated. For a detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

| **FROM BASE AIRCRAFT: A320 Family**<br><br>**TO RELATED AIRCRAFT: A321neo ACF** | **DESIGN** | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | General | Flexibility in cabin arrangements. | No | No | A | A |
| | Cabin | Maximum passenger capacity and multiple cabin layouts. | No | No | A | A |
| | Cargo | Bulk cargo loading capacity. | No | No | A | A |
| | Limitations | Weights. | No | No | A | A |

| FROM BASE AIRCRAFT: A320 Family<br><br>TO RELATED AIRCRAFT: A321neo ACF | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 26<br>Fire Protection | Architecture: Fire extinguishing system.<br><br>Controls and indications: Cargo smoke panel. | No | No | A | B |
| | ATA 28<br>Fuel | Architecture: ACT, AFMS<br><br>Controls and indicating: Overhead panel, SD Fuel page. | No | No | B | A |
| | ATA 52<br>Doors | Architecture: Door activation, deactivation, and functions.<br><br>Controls and indicating: SD Door page. | No | No | A | A |

This Design Differences Table, from the Airbus A321neo ACF to the A321neo XLR, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE:** The differences Remarks are very generally stated. For a detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

| **FROM BASE AIRCRAFT: A321neo ACF**<br><br>**TO RELATED AIRCRAFT: A321neo XLR** | **DESIGN** | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | General | Extended range. | No | No | A | A |
| | Cabin | Multiple cabin layouts. | No | No | A | A |
| | Limitations | Weights, tire speed, takeoff temperature. | No | No | A | A |
| | Limitations | Maximum crosswind and flaps/slats speeds. | No | Yes | A | A |

| FROM BASE AIRCRAFT: A321neo ACF<br><br>TO RELATED AIRCRAFT: A321neo XLR | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 21<br>Air Conditioning | Ventilation functions: Air intakes, FWD CABIN zone configuration, foot heaters.<br><br>Controls and indicating. Heater switches on air conditioning panel. | No | No | A | A |
| | ATA 22<br>Autoflight | Architecture: FMGC functions, ILS frequency tuning, UAMM, FACs removal.<br><br>Functions: FMGC, FIDS.<br><br>Controls and indicating: AOC messages, DH/RADIO value, MCDU Arrival page, SURV CONTROLS page, INIT FUEL PRED page, DATA INDEX page. | No | No | B | A |
| | ATA 23<br>Communications | Architecture: Digital audio. | No | Yes | B | A |
| | ATA 25<br>Equipment/Furnishings | Controls and indicating: Overhead panel. | No | No | A | A |

| FROM BASE AIRCRAFT: A321neo ACF<br><br>TO RELATED AIRCRAFT: A321neo XLR | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 26<br>Fire Protection | Architecture: Fire extinguishing system. | No | No | A | A |
| | ATA 27<br>Flight Controls | Architecture: Spoilers control, flight control computers, rudder trim control, low energy aural alert, sideslip target.<br><br>Function: Pitch trim, flare mode, autopilot disconnection, speedbrakes, aileron droop, mechanical reconfiguration law, flight control laws.<br><br>Controls and indicating: Overhead panel, F/CTL SD page, ETOC, EWD. | No | No | B | A |
| | ATA 27<br>Flight Controls | Function: Flaps, control laws, ETOC, eRudder. | No | Yes | B | A |
| | ATA 28<br>Fuel | ECAM Fuel system page, fuel transfer sequence. | No | No | B | A |

| FROM BASE AIRCRAFT: A321neo ACF<br><br>TO RELATED AIRCRAFT: A321neo XLR | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 28<br>Fuel | Architecture: Tank arrangement, fuel capacity, FQLS, AFMC, FTIS. | No | Yes | B | A |
| | ATA 29<br>Hydraulic Power | Architecture: BCM, BPS. | No | No | A | A |
| | ATA 30<br>Ice and Rain Protection | Architecture: Ice detection system. | No | No | A | A |
| | ATA 31<br>Indicating/Recording Systems | Architecture: FMGC computations, FWC standard, EIS standard. | No | No | A | A |
| | ATA 31<br>Indicating/Recording Systems | Controls and indicating: ARS indication, ECAM SD FUEL page, EWD, WINDSHEAR warning indication, FD pitch bar. | No | No | B | A |
| | ATA 32<br>Landing Gear | Architecture: Autobrake activation. | No | No | A | A |

| FROM BASE AIRCRAFT: A321neo ACF<br><br>TO RELATED AIRCRAFT: A321neo XLR | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 33<br>Lights | Architecture: Muti-function runway lights (MFRL). | No | No | A | A |
| | ATA 34<br>Surveillance | Controls and indicating: WINDSHEAR warning. | No | No | A | A |

This Maneuver Differences Table, from the Airbus A321neo ACF to the A321neo XLR, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE 1:** The differences Remarks are very generally stated. For a more detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

**NOTE 2:** Criteria used to identify differences, as indicated in the Maneuver Differences Table, does not take into consideration training differences that may exist between related aircraft for maneuvers required by 14 CFR part 121, § 121.423.

| **FROM BASE AIRCRAFT: A321neo ACF**<br><br>**TO RELATED AIRCRAFT: A321neo XLR** | **MANEUVER**<br>Normal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | Supplemental Procedure | Revenue Flight with Landing Gear Down. | No | No | A | A |
| | Preliminary Cockpit Preparation | APU Fire Test/APU Start. | No | Yes | A | A |
| | Exterior Walkaround | System differences. | No | Yes | B | A |
| | Cockpit Preparation | Overhead panel: AUDIO SWITCHING, XFR, PA knob. | No | Yes | B | A |
| | Before Push Back and Start | ZFW/ZFWCG: ZFWCG area. | No | No | A | A |

| FROM BASE AIRCRAFT: A321neo ACF<br><br>TO RELATED AIRCRAFT: A321neo XLR | MANEUVER<br>Normal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | Takeoff | Gear retraction. | No | Yes | A | A |
| | Cruise | Fuel transfer sequence. | No | Yes | B | A |
| | Go Around | FD procedure, SOFT GO AROUND function. | No | Yes | B | A |

| FROM BASE AIRCRAFT: A321neo ACF<br><br>TO RELATED AIRCRAFT: A321neo XLR | MANEUVER<br>Abnormal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | Cruise | Mach. | No | Yes | A | A |
| | Approach | Overweight landing procedure. | No | Yes | A | A |
| | Approach | Landing with Slats or Flaps jammed procedure. | No | Yes | B | A |
| | ATA 22<br>Auto Flight | ECAM alert. | No | Yes | A | A |
| | ATA 26<br>Fire Protection | MLG bay fire procedure. | No | Yes | A | A |
| | ATA 27<br>Flight Controls | Flaps jammed procedure, RUDDER PEDAL JAM QRH procedure, ECAM alerts degraded or modified. | No | Yes | B | A |
| | ATA 28<br>Fuel | Controls and indicating: Overhead panel, ECAM Fuel system page, ECAM fuel transfer sequence. | No | No | B | A |

| FROM BASE AIRCRAFT: A321neo ACF<br><br>TO RELATED AIRCRAFT: A321neo XLR | MANEUVER<br>Abnormal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 28<br>Fuel | Architecture: Tank arrangement, fuel capacity, fuel quantity indication and level sensing (FQLS), auxiliary fuel management computer (AFMC), fuel tank inerting system (FTIS). | No | Yes | B | A |
| | ATA 29<br>Hydraulic Power | ECAM alert: Flight control laws. | No | Yes | B | A |
| | ATA 34<br>Navigation | ECAM alerts: Flight control laws. | No | Yes | B | A |

This Design Differences Table, from the Airbus A330 to the A320, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE:** The differences Remarks are very generally stated. For a detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

| **FROM BASE AIRCRAFT: A330**<br><br>**TO RELATED AIRCRAFT: A320** | **DESIGN** | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | General | Range.<br><br>Dimensions. | Yes | No | A | A |
| | Cabin | Maximum passenger capacities. | No | No | A | A |
| | Cargo | Maximum cargo loads. | No | No | A | A |
| | Limitations | Weights.<br><br>Center of gravity limits.<br><br>Speeds.<br><br>Altitude. | Yes | Yes | B | B |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 21<br>Air Conditioning | Design: Pack flow control valves, outflow valves, pack bay ventilation.<br><br>Controls and indicating: Cabin temperature, outflow valves. | No | No | A | A |
| | ATA 21<br>Air Conditioning | Design: Air conditioning system controller. | No | No | B | A |
| | ATA 21<br>Air Conditioning | Controls and indicating: ECAM. | No | No | B | B |
| | ATA 21<br>Air Conditioning | Design: Trim air system, avionics ventilation, cargo ventilation.<br><br>Control and indicating: Cabin temperature, ECAM. | No | Yes | B | B |
| | ATA 21<br>Air Conditioning | Control and indicating: AIR panel, PRESS panel, VENT panel. | No | Yes | C | C |
| | ATA 22<br>Autoflight | Design: FMGC architecture, FG, FM. | No | No | A | A |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 22<br>Autoflight | Design: FM. | No | Yes | A | A |
| | ATA 22<br>Autoflight | Design: FMGS architecture, FE. | No | No | B | B |
| | ATA 22<br>Autoflight | Design: FMGS architecture, FG, AP/FD.<br><br>Controls and indicating: FMGS. | No | Yes | B | B |
| | ATA 22<br>Autoflight | Design: FM. | No | No | C | C |
| | ATA 22<br>Autoflight | Design: FM. | No | Yes | C | A |
| | ATA 22<br>Autoflight | Design: FMGS.<br><br>Controls and indicating: FG. | No | Yes | C | C |
| | ATA 22<br>Autoflight | Design: FG. | No | No | D | A |
| | ATA 23<br>Communications | Design: Call panel, VHF3, HF1, HF2. | No | No | A | A |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 23<br>Communications | Design: CVR. | No | Yes | B | A |
| | ATA 23<br>Communications | Design: ACARS. | No | Yes | B | B |
| | ATA 23<br>Communications | Design: AMU. | No | Yes | C | C |
| | ATA 24<br>Electrical Power | Design: ECMU.<br><br>Controls and indicating: APU, IDG, ECAM. | No | No | A | A |
| | ATA 24<br>Electrical Power | Design: AC generation, DC generation, emergency generation, AC ESS. | No | Yes | B | B |
| | ATA 24<br>Electrical Power | Design: Emergency generation. | Yes | Yes | B | B |
| | ATA 24<br>Electrical Power | Controls and indicating: Overhead panel, ECAM. | No | Yes | C | C |
| | ATA 25<br>Equipment/Furnishings | Design: Cockpit general arrangement. | No | No | A | A |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 25<br>Equipment/Furnishings | Design: Pilot eye height (see Maneuvers DT). | Yes | No | A | A |
| | ATA 25<br>Equipment/Furnishings | Design: RESET panels/CB panels. | No | Yes | B | B |
| | ATA 26<br>Fire Protection | Design: Avionic fire detection. | No | No | A | A |
| | ATA 26<br>Fire Protection | Design: Cargo fire detection extinguishing.<br><br>Procedure: Avionics fire detection.<br><br>Controls and indicating: Engine fire test. | No | Yes | B | B |
| | ATA 26<br>Fire Protection | Design: Engine fire extinguishing.<br><br>Controls and indicating: Avionics fire detection. | No | Yes | C | B |
| | ATA 26<br>Fire Protection | Controls and indicating: APU fire. | No | No | C | C |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 27<br>Flight Controls | Design: BCM architecture, yaw damper function. | No | No | A | A |
| | ATA 27<br>Flight Controls | Design: Speedbrakes architecture, flaps and slats, flight control laws.<br><br>Controls and indicating: ECAM. | No | No | B | B |
| | ATA 27<br>Flight Controls | Design: THS. | No | Yes | B | A |
| | ATA 27<br>Flight Controls | Design: Architecture, flaps and slats. | No | Yes | B | B |
| | ATA 27<br>Flight Controls | Design: Surfaces, flight control laws, flaps and slats. | Yes | No | B | B |
| | ATA 27<br>Flight Controls | Controls and indicating: Overhead panel. | No | Yes | C | C |
| | ATA 28<br>Fuel | Design: Tanks, fuel transfer, APU, system control.<br><br>Controls and indicating. | No | No | A | A |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 28<br>Fuel | Controls and indicating: ECAM. | No | No | B | B |
| | ATA 28<br>Fuel | Design: Tanks, fuel pumps, fuel transfer, all engine out. | No | Yes | B | B |
| | ATA 28<br>Fuel | Design: Fuel pumps. | No | Yes | C | B |
| | ATA 28<br>Fuel | Controls and indicating. | No | Yes | C | C |
| | ATA 29<br>Hydraulic Power | Design: Electric pumps, fire shut off valves. | No | No | A | A |
| | ATA 29<br>Hydraulic Power | Design: Engine pumps, electric pumps, ram air turbine.<br><br>Distribution. PTU, EMER GEN, alternate braking.<br><br>Controls and indicating: ECAM. | No | Yes | B | B |
| | ATA 29<br>Hydraulic Power | Controls and indicating: Overhead panel, maintenance panel. | No | Yes | C | C |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 30<br>Ice and Rain Protection | Design: Wing anti-ice, ice detection system. | No | No | A | A |
| | ATA 31<br>Indicating/Recording Systems | Design: PFD, ND.<br><br>Controls and indicating: EFIS, ECAM. | No | No | A | A |
| | ATA 31<br>Indicating/Recording Systems | Controls and indicating: ECP, EFIS, PFD. | No | No | B | B |
| | ATA 31<br>Indicating/Recording Systems | Design: DMC architecture.<br><br>Controls and indicating: DMC, ECAM. | No | Yes | B | B |
| | ATA 31<br>Indicating/Recording Systems | Design: Computer reset panel.<br><br>Controls and indicating: Switching. | No | Yes | C | C |
| | ATA 32<br>Landing Gear | Architecture: MLG bogie, hydraulic system, brakes/NWS. | No | No | A | A |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 32<br>Landing Gear | Design: MLG. | No | Yes | A | A |
| | ATA 32<br>Landing Gear | Design: Brakes/NWS.<br><br>Controls and indicating: Indications. | No | No | B | B |
| | ATA 32<br>Landing Gear | Design: Gravity extension control. | No | Yes | B | B |
| | ATA 32<br>Landing Gear | Controls and indicating: Brakes/NWS. | No | No | C | C |
| | ATA 32<br>Landing Gear | Design: Landing gear extension control. | No | Yes | C | C |
| | ATA 33<br>Lights | Design: Side consoles. | No | No | A | A |
| | ATA 33<br>Lights | Design: Seat belts, dome, cabin lighting. | No | No | B | B |
| | ATA 33<br>Lights | Design: Panel.<br><br>Controls and indicating. | No | No | C | C |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 33<br>Lights | Design: Land lighting. | No | Yes | C | C |
| | ATA 34<br>Navigation | Design: ADF, weather radar.<br><br>Controls and indicating: MAG/TRUE pb sw. | No | No | A | A |
| | ATA 34<br>Navigation | Controls and indicating: ADIRS CDU, GPWS. | No | Yes | C | C |
| | ATA 35<br>Oxygen | Design: Cabin general, cockpit general. | No | No | A | A |
| | ATA 36<br>Pneumatic | Design: Generation. | No | No | A | A |
| | ATA 36<br>Pneumatic | Design: Generation.<br><br>Controls and indicating: ECAM. | No | No | B | B |
| | ATA 36<br>Pneumatic | Controls and indicating: Cross Bleed. | No | Yes | C | C |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 45<br>Central Maintenance System | General. | No | No | A | A |
| | ATA 47<br>Inert Gas System | General. | No | No | A | A |
| | ATA 49<br>Airborne Auxiliary Power | Controls and indicating:<br>Refuel/Defuel panel. | No | No | A | A |
| | ATA 49<br>Airborne Auxiliary Power | Design: APU. | No | No | B | B |
| | ATA 49<br>Airborne Auxiliary Power | Design: APU. | No | Yes | B | B |
| | ATA 52<br>Doors | Design: PSCU. | No | No | A | A |
| | ATA 52<br>Doors | Design: Configurations. | No | No | B | B |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 70<br>Engines | General: Models. | Yes | Yes | B | B |

This Maneuver Differences Table, from the Airbus A330 to the A320, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE 1:** The differences Remarks are very generally stated. For a more detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

**NOTE 2:** Criteria used to identify differences, as indicated in the Maneuver Differences Table, does not take into consideration training differences that may exist between related aircraft for maneuvers required by 14 CFR part 121, § 121.423.

**NOTE 3:** "Yes (P)" entered in the "FLT CHAR" (Flight Characteristics) column indicates that the difference in flight characteristics only pertains to performance and not handling characteristics.

| **FROM BASE AIRCRAFT: A330**<br><br>**TO RELATED AIRCRAFT: A320** | **MANEUVER**<br>Normal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | Preparation | Visual inspection. | No | Yes | B | B |
| | Preparation | Preflight, flight planning. | No | No | B | B |
| | Surface Operation | Starting: Sequence. | No | Yes | B | B |
| | Surface Operation | Taxi: Eye height, turn radius. | Yes | No | D | D |
| | Surface Operation | Taxi: One engine taxi. | No | No | A | A |
| | Surface Operation | Pre-takeoff checks. | No | No | C | C |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Normal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | Takeoff | Flap load relief, performance. | No | No | A | A |
| | Takeoff | Rotation, target pitch. | Yes | No | B | B |
| | Takeoff | Ground law, crosswind. | Yes | No | E | E |
| | In Flight Operation | Climb: Rate. | Yes (P) | No | A | A |
| | In Flight Operation | Enroute navigation. | No | Yes | C | C |
| | In Flight Operation | Descent: Rate. | Yes (P) | No | A | A |
| | In Flight Maneuver | High angle of attack: Direct law. | Yes | No | D | A |
| | In Flight Maneuver | Traffic patterns: Inertia, turn radius. | Yes | No | D | D |
| | En Route Terminal Ops | Non precision IFR approaches. | No | No | C | A |
| | En Route Terminal Ops | Visual segment landing special performance. | No | Yes | D | A |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Normal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | En Route Terminal Ops | Visual segment landing: Traffic pattern, non-precision approach, circling, CAT I approach with and without crosswind. | Yes | No | E | E |
| | Surface Operation | Post landing checks. | No | No | C | C |
| | Surface Operation | Parking. | Yes | No | B | B |
| | Surface Operation | Shutdown. | No | No | B | B |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Abnormal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | Surface Operation | Starting. | No | No | A | A |
| | Surface Operation | Emergency evacuation. | No | Yes | D | D |
| | RTO | Rejected takeoff/ engine failure before $V_1$ with and without crosswind: Performance. | Yes (P) | No | B | B |
| | RTO | Rejected takeoff/ low visibility. | No | No | D | D |
| | RTO | Rejected takeoff/engine failure before $V_1$ with and without crosswind: Reverser actuation logic. | Yes | No | E | E |
| | Takeoff | Engine failure with and without crosswind: SRS and Beta target. | No | No | A | A |
| | Takeoff | Engine failure with and without crosswind: Pitch attitude/lateral control. | Yes | No | B | A |
| | Takeoff | Engine failure with and without crosswind: $V_1/V_R$ split. | Yes (P) | No | B | B |

| **FROM BASE AIRCRAFT: A330**<br><br>**TO RELATED AIRCRAFT: A320** | **MANEUVER**<br>Abnormal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | In Flight Operation | Climb or cruise with failure of critical power plant: Drift down, cruise management. | Yes | No | A | A |
| | In Flight Operation | Initial climb after takeoff and climb or cruise with failure of critical power plant: Performance. | Yes (P) | No | B | B |
| | In Flight Operation | Enroute navigation. | No | Yes | C | C |
| | In Flight Operation | Maximum rate of descent: Performance. | Yes (P) | No | D | A |
| | In Flight Maneuver | All engine flame out. | Yes (P) | Yes | D | A |
| | In Flight Maneuver | Total loss of electrical power, emergency electrical configuration. | Yes | Yes | D | A |
| | En Route Terminal Ops | Approaches – One engine failed: Go around/missed approach. | No | No | A | A |
| | En Route Terminal Ops | Slat/flaps malfunction: $V_{LS}$ computation. | Yes | No | B | A |

| FROM BASE AIRCRAFT: A330<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Abnormal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | En Route Terminal Ops | Visual segment landing: Rejected landings. | Yes | No | E | A |
| | En Route Terminal Ops | Visual segment and landing: Landing with TRIM malfunction.<br><br>Landing: Alternate law/direct law. | Yes | Yes | E | E |
| | Surface Operation | Shutdown. | No | No | A | A |

This Design Differences Table, from the Airbus A340 to the A320, was developed by the FSB based on the detailed DR Tables proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE:** The differences Remarks are very generally stated. For a detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

| **FROM BASE AIRCRAFT: A340**<br><br>**TO RELATED AIRCRAFT: A320** | **DESIGN** | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | General | Range. | No | No | A | A |
| | General | Dimensions. | Yes | No | A | A |
| | Cabin | Maximum passenger capacities. | No | No | A | A |
| | Cargo | Maximum cargo loads. | No | No | A | A |
| | Limitations | Weights.<br><br>Center of gravity limits.<br><br>Speeds.<br><br>Altitude. | Yes | Yes | B | B |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 21<br>Air Conditioning | Design: Pack flow control valves, outflow valves, pack bay ventilation.<br><br>Controls and indicating: Cabin temperature, outflow valves. | No | No | A | A |
| | ATA 21<br>Air Conditioning | Design: Air conditioning system controller. | No | No | B | A |
| | ATA 21<br>Air Conditioning | Controls and indicating: ECAM. | No | No | B | B |
| | ATA 21<br>Air Conditioning | Design: Trim air system, avionics ventilation, cargo ventilation.<br><br>Control and indicating: Cabin temperature, ECAM. | No | Yes | B | B |
| | ATA 21<br>Air Conditioning | Control and indicating: AIR panel, PRESS panel, VENT panel. | No | Yes | C | C |
| | ATA 22<br>Autoflight | Design: FMGC architecture, FG, FM. | No | No | A | A |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 22<br>Autoflight | Design: FM. | No | Yes | A | A |
| | ATA 22<br>Autoflight | Design: FMGS architecture, FE.<br><br>A/THR: Thrust management, one engine out. | No | No | B | B |
| | ATA 22<br>Autoflight | Design: FMGS architecture, FG, AP/FD.<br><br>Controls and indicating: FMGS. | No | Yes | B | B |
| | ATA 22<br>Autoflight | Design: FM. | No | No | C | C |
| | ATA 22<br>Autoflight | Design: FM. | No | Yes | C | A |
| | ATA 22<br>Autoflight | Design: FMGS.<br><br>Controls and indicating: FG. | No | Yes | C | C |
| | ATA 22<br>Autoflight | Design: FG. | No | No | D | A |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 23<br>Communications | Design: Call panel, VHF3, HF1, HF2. | No | No | A | A |
| | ATA 23<br>Communications | Design: CVR. | No | Yes | B | A |
| | ATA 23<br>Communications | Design: ACARS. | No | Yes | B | B |
| | ATA 23<br>Communications | Design: AMU. | No | Yes | C | C |
| | ATA 24<br>Electrical Power | Design: ECMU.<br><br>Controls and indicating: APU, IDG, ECAM. | No | No | A | A |
| | ATA 24<br>Electrical Power | Design: AC generation, DC generation, emergency generation, AC ESS. | No | Yes | B | B |
| | ATA 24<br>Electrical Power | Design: Emergency generation. | Yes | Yes | B | B |
| | ATA 24<br>Electrical Power | Controls and indicating: Overhead panel, ECAM. | No | Yes | C | C |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 25<br>Equipment/Furnishings | Design: Cockpit general arrangement. | No | No | A | A |
| | ATA 25<br>Equipment/Furnishings | Design: Pilot eye height (see Maneuvers DT). | Yes | No | A | A |
| | ATA 25<br>Equipment/Furnishings | Design: RESET panels/CB panels. | No | Yes | B | B |
| | ATA 26<br>Fire Protection | Design: Avionic fire detection.<br><br>Engine fire extinguishing. | No | No | A | A |
| | ATA 26<br>Fire Protection | Design: Cargo fire detection extinguishing.<br><br>Procedure: Avionics fire detection.<br><br>Controls and indicating: Engine fire test. | No | Yes | B | B |
| | ATA 26<br>Fire Protection | Design: Engine fire extinguishing.<br><br>Controls and indicating: Avionics fire detection. | No | Yes | C | B |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 26<br>Fire Protection | Controls and indicating: APU fire. | No | No | C | C |
| | ATA 27<br>Flight Controls | Design: BCM architecture, yaw damper function (see Maneuvers DT). | No | No | A | A |
| | ATA 27<br>Flight Controls | Design: Speedbrakes architecture, flaps and slats, flight control laws.<br><br>Controls and indicating: ECAM | No | No | B | B |
| | ATA 27<br>Flight Controls | Design: Architecture, flaps and slats. | No | Yes | B | B |
| | ATA 27<br>Flight Controls | Design: Surfaces, flight control laws, flaps and slats. | Yes | No | B | B |
| | ATA 27<br>Flight Controls | Controls and indicating: Overhead panel. | No | Yes | C | C |
| | ATA 28<br>Fuel | Design: Tanks, fuel transfer, APU, system control.<br><br>Controls and indicating. | No | No | A | A |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 28<br>Fuel | Controls and indicating: ECAM. | No | No | B | B |
| | ATA 28<br>Fuel | Design: Tanks, fuel pumps, fuel transfer, all engine out. | No | Yes | B | B |
| | ATA 28<br>Fuel | Design: Fuel pumps. | No | Yes | C | B |
| | ATA 28<br>Fuel | Controls and indicating. | No | Yes | C | C |
| | ATA 29<br>Hydraulic Power | Design: Electric pumps, fire shut off valves. | No | No | A | A |
| | ATA 29<br>Hydraulic Power | Design: Engine pumps, electric pumps, ram air turbine.<br><br>Distribution. PTU, EMER GEN, alternate braking.<br><br>Controls and indicating: ECAM. | No | Yes | B | B |
| | ATA 29<br>Hydraulic Power | Controls and indicating: Overhead panel, maintenance panel. | No | Yes | C | C |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 30<br>Ice and Rain Protection | Design: Wing anti-ice, ice detection system. | No | No | A | A |
| | ATA 31<br>Indicating/Recording Systems | Design: PFD, ND.<br><br>Controls and indicating: EFIS, ECAM. | No | No | A | A |
| | ATA 31<br>Indicating/Recording Systems | Controls and indicating: ECP, EFIS, PFD. | No | No | B | B |
| | ATA 31<br>Indicating/Recording Systems | Design: DMC architecture.<br><br>Controls and indicating: DMC, ECAM. | No | Yes | B | B |
| | ATA 31<br>Indicating/Recording Systems | Design: Computer reset panel.<br><br>Controls and indicating: Switching. | No | Yes | C | C |
| | ATA 32<br>Landing Gear | Architecture: MLG bogie, hydraulic system, brakes/NWS. | No | No | A | A |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 32<br>Landing Gear | Design: MLG. | No | Yes | A | A |
| | ATA 32<br>Landing Gear | Design: Brakes/NWS.<br><br>Controls and indicating: Indications. | No | No | B | B |
| | ATA 32<br>Landing Gear | Design: Gravity extension control. | No | Yes | B | B |
| | ATA 32<br>Landing Gear | Controls and indicating: Brakes/NWS. | No | No | C | C |
| | ATA 32<br>Landing Gear | Design: Landing gear extension control. | No | Yes | C | C |
| | ATA 33<br>Lights | Design: Side consoles. | No | No | A | A |
| | ATA 33<br>Lights | Design: Seat belts, dome, cabin lighting. | No | No | B | B |
| | ATA 33<br>Lights | Design: Panel.<br><br>Controls and indicating. | No | No | C | C |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 33<br>Lights | Design: Land lighting. | No | Yes | C | C |
| | ATA 34<br>Navigation | Design: ADF, weather radar.<br><br>Controls and indicating: MAG/TRUE pb sw. | No | No | A | A |
| | ATA 34<br>Navigation | Controls and indicating: ADIRS CDU, GPWS. | No | Yes | C | C |
| | ATA 35<br>Oxygen | Design: Cabin general, cockpit general. | No | No | A | A |
| | ATA 36<br>Pneumatic | Design: Generation. | No | No | A | A |
| | ATA 36<br>Pneumatic | Design: Generation.<br><br>Controls and indicating: ECAM. | No | No | B | B |
| | ATA 36<br>Pneumatic | Design: Generation, distribution. | No | Yes | B | B |
| | ATA 36<br>Pneumatic | Controls and indicating: Cross Bleed. | No | Yes | C | C |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | DESIGN<br>Systems | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | ATA 45<br>Central Maintenance System | General. | No | No | A | A |
| | ATA 47<br>Inert Gas System | General. | No | No | A | A |
| | ATA 49<br>Airborne Auxiliary Power | Controls and indicating: Refuel/Defuel panel. | No | No | A | A |
| | ATA 49<br>Airborne Auxiliary Power | Design: APU. | No | No | B | B |
| | ATA 49<br>Airborne Auxiliary Power | Design: APU. | No | Yes | B | B |
| | ATA 52<br>Doors | Design: PSCU. | No | No | A | A |
| | ATA 52<br>Doors | Design: Configurations. | No | No | B | B |
| | ATA 70<br>Engines | General: Models. | Yes | Yes | B | B |

This Maneuver Differences Table, from the Airbus A340 to the A320, was developed by the FSB based on the detailed DR Table proposed by Airbus. The Differences Table lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

**NOTE 1:** The differences Remarks are very generally stated. For a more detailed overview of item-specific training/checking differences, refer to the Airbus Difference Requirement (DR) Tables as referenced at the end of this appendix.

**NOTE 2:** Criteria used to identify differences, as indicated in the Maneuver Differences Table, does not take into consideration training differences that may exist between related aircraft for maneuvers required by 14 CFR part 121, § 121.423.

**NOTE 3:** "Yes (P)" entered in the "FLT CHAR" (Flight Characteristics) column indicates that the difference in flight characteristics only pertains to performance and not handling characteristics.

| **FROM BASE AIRCRAFT: A340**<br><br>**TO RELATED AIRCRAFT: A320** | **MANEUVER**<br>Normal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | Preparation | Visual inspection. | No | Yes | B | B |
| | Preparation | Preflight, flight planning. | No | No | B | B |
| | Surface Operation | Starting: Sequence. | No | Yes | B | B |
| | Surface Operation | Taxi: Eye height, turn radius. | Yes | No | D | D |
| | Surface Operation | Taxi: One engine taxi. | No | No | A | A |
| | Surface Operation | Pre-takeoff checks. | No | No | C | C |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Normal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | Takeoff | Flap load relief, performance. | No | No | A | A |
| | Takeoff | Rotation, target pitch. | Yes | No | B | B |
| | Takeoff | Ground law, crosswind. | Yes | No | E | E |
| | In Flight Operation | Climb: Rate. | Yes (P) | No | A | A |
| | In Flight Operation | Enroute navigation. | No | Yes | C | C |
| | In Flight Operation | Descent: Rate. | Yes (P) | No | A | A |
| | In Flight Maneuver | High angle of attack: Direct law. | Yes | No | D | A |
| | In Flight Maneuver | Traffic patterns: Inertia, turn radius. | Yes | No | D | D |
| | En Route Terminal Ops | Non precision IFR approaches. | No | No | C | A |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Normal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | En Route Terminal Ops | Visual segment landing special performance. | No | Yes | D | A |
| | En Route Terminal Ops | Visual segment landing: Traffic pattern, non-precision approach, circling, CAT I approach with and without crosswind. | Yes | No | E | E |
| | Surface Operation | Post landing checks. | No | No | C | C |
| | Surface Operation | Parking. | Yes | No | B | B |
| | Surface Operation | Shutdown. | No | No | B | B |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Abnormal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | Surface Operation | Starting. | No | No | A | A |
| | Surface Operation | Emergency evacuation. | No | Yes | D | D |
| | RTO | Rejected takeoff/ engine failure before $V_1$ with and without crosswind: Performance. | Yes (P) | No | B | B |
| | RTO | Rejected takeoff/ low visibility. | No | No | D | D |
| | RTO | Rejected takeoff/engine failure before $V_1$ with and without crosswind: Reverser actuation logic. | Yes | No | E | E |
| | Takeoff | Engine failure with and without crosswind: SRS and Beta target. | No | No | A | A |
| | Takeoff | Engine failure with and without crosswind: Pitch attitude/lateral control. | Yes | No | B | A |
| | Takeoff | Engine failure with and without crosswind: $V_1/V_R$ split. | Yes (P) | No | B | B |

| **FROM BASE AIRCRAFT: A340**<br><br>**TO RELATED AIRCRAFT: A320** | **MANEUVER**<br>Abnormal Operations | **REMARKS** | **FLT CHAR** | **PROC CHNG** | **TRAINING** | **CHECKING** |
|---|---|---|---|---|---|---|
| | In Flight Operation | Climb or cruise with failure of critical power plant: Drift down, cruise management. | Yes | No | A | A |
| | In Flight Operation | Initial climb after takeoff and climb or cruise with failure of critical power plant: Performance. | Yes (P) | No | B | B |
| | In Flight Operation | Enroute navigation. | No | Yes | C | C |
| | In Flight Operation | Maximum rate of descent: Performance. | Yes (P) | No | D | A |
| | In Flight Maneuver | All engine flame out. | Yes (P) | Yes | D | A |
| | In Flight Maneuver | Total loss of electrical power, emergency electrical configuration. | Yes | Yes | D | A |
| | En Route Terminal Ops | Approaches – One engine failed: Go around/missed approach. | No | No | A | A |
| | En Route Terminal Ops | Slat/flaps malfunction: $V_{LS}$ computation. | Yes | No | B | A |

| FROM BASE AIRCRAFT: A340<br><br>TO RELATED AIRCRAFT: A320 | MANEUVER<br>Abnormal Operations | REMARKS | FLT CHAR | PROC CHNG | TRAINING | CHECKING |
|---|---|---|---|---|---|---|
| | En Route Terminal Ops | Visual segment landing: Rejected landings. | Yes | No | E | A |
| | En Route Terminal Ops | Visual segment and landing: Landing with TRIM malfunction.<br><br>Landing: Alternate law/direct law. | Yes | Yes | E | E |
| | Surface Operation | Shutdown. | No | No | A | A |

Airbus Difference Requirement (DR) Tables and Training Areas of Special Emphasis (TASE) for Flight Crew are available from Airbus. Listed below are document references to applicable EASA Approved DR Tables and TASE documents provided by Airbus.

> **NOTE:** Information within these reference documents is provided as a more detailed overview of related aircraft design and maneuver differences as specified in this appendix. Other DR Table and TASE information contained therein that is not specifically addressed in this appendix should not be construed as accepted by the FSB.

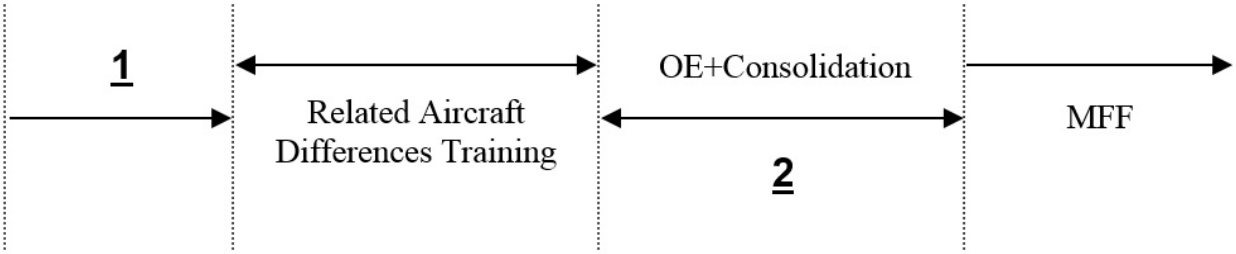
Flightcrew DR Tables between A320 Series variations on same TCDS:

- A320 to A318 DR Table and TASE reference SA01D17015784 as found in document reference SA01R1712258.
- A320 to A319 DR Table and TASE reference SA01D17015784 as found in document reference SA01R1712258.
- A320 to A321 DR Table and TASE reference SA01D17015784 as found in document reference SA01R1712258.
- A320 Family DR Table and TASE - CEO Engines reference SA01D18030216 as found in document reference SA01R1712258.
- A320 Family DR Table and TASE - A321neo ACF reference SA01D18001283 as found in document reference SA01R1712258.
- A321 DR Table and TASE - A321neo XLR reference SA01D22011234 as found in document reference SA01R1712258.
- DR Table and TASE – Continuous Descent Approach reference X01D18013609 as found in document reference SA01R1712258.

Flightcrew DR Tables between A320 and related aircraft on different TCDS:

- A320 DR Table and TASE - A330 to A320 reference SA01RP1542266 as found in document reference SA01RP1911559.
- A320 DR Table and TASE - A340 to A320 reference SA01RP1542271 as found in document reference SA01RP1911559.

# APPENDIX 4. QUALIFICATION AND CURRENCY PLANS FOR RELATED AIRCRAFT TRANSITION




From the A330 to the A320 Aircraft

1. Prerequisite as defined under paragraph 9.1, Case 1.

2. Following related aircraft differences training from A330 to the A320 aircraft, a minimum of two line operating cycles of Operating Experience (OE), one as pilot flying (PF) and one as pilot monitoring (PM), on the A320 is recommended. It is also recommended that a minimum of 50 hours of line operating flight time for consolidation of knowledge and skills is completed within 90 days on the A320 aircraft before starting mixed fleet flying.

From the A340 to the A320 Aircraft

1. Prerequisite as defined under paragraph 9.1, Case 2.

1. Following related aircraft differences training from the A340 to the A320 aircraft, a minimum of two line operating cycles of OE, one as PF and one as PM, on the A320 is recommended. It is also recommended that a minimum of 50 hours of line operating flight time for consolidation of knowledge and skills is completed within 90 days on the A320 aircraft before starting mixed fleet flying.

# APPENDIX 5. TYPE RATING CHECKS AFTER RELATED AIRCRAFT DIFFERENCES TRAINING

Example of a Related Aircraft Proficiency Check (PC) for an A320 Type Rating from an A330 or A340

EVALUATION SUMMARY

The evaluation flight profile includes those procedures and representative maneuvers that will be evaluated in a FFS with emphasis on the differences between the A330 or A340 and the A320. The sequence of events and the abnormal and emergency procedures used may be modified at the discretion of the evaluator.

ORAL AND/OR WRITTEN TEST

- In accordance with 14 CFR part 121 and ACS, as appropriate.

PRACTICAL TEST (FFS)

- GROUND OPERATIONS:
  - Taxi.
- TAKEOFFS:
  - Normal.
  - Crosswind.
  - Instrument.
  - Rejected with engine failure before $V_1$.
  - With engine failure after $V_1$.
- INSTRUMENT PROCEDURES:
  - Area departure, climb, cruise, and descent.
- LANDINGS:
  - Normal.
  - Crosswind.
  - Rejected
  - With OEI.
  - With slat/flaps malfunction.
  - Alternate/direct law.
- NORMAL, ABNORMAL, AND EMERGENCY PROCEDURES:
  - As appropriate per approved differences requirements.

# APPENDIX 6. RELATED AIRCRAFT ON DIFFERENT TCDS TRAINING AND CHECKING PLANS FOR MIXED FLEET FLYING OPERATIONS

The tables below provide examples of alternating training and checking plans for mixed fleet flying operations (A320 and A330, A320 and A340, A320 and A350, A320 and A330 and A340) after related aircraft differences training and qualification. The components of these plans consist of an Approved Simulator Course of Training (ASCT) with a Proficiency Check (PC) and an ASCT Line-Oriented Flight Training (LOFT) with a PC.

> **NOTE:** Recurrent differences training for variations of aircraft having the same type certificate (TC) are to be addressed during recurrent training.

Examples of Alternating ASCT/LOFT/PC Plan for Two Designated Related Aircraft Types

A320 and A330
Example

| | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | |
|---|---|---|---|---|---|---|---|---|
| **Period** | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months |
| **Checking** | A330 PC | A320 PC | A330 PC | A320 PC | A330 PC | A320 PC | A330 PC | A320 PC |
| **Training** | A320 ASCT | A330 LOFT | A320 LOFT | A330 ASCT | A320 ASCT | A330 LOFT | A320 LOFT | A330 ASCT |

A320 and A340
Example

| | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | |
|---|---|---|---|---|---|---|---|---|
| **Period** | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months |
| **Checking** | A340 PC | A320 PC | A340 PC | A320 PC | A340 PC | A320 PC | A340 PC | A320 PC |
| **Training** | A320 ASCT | A340 LOFT | A320 LOFT | A340 ASCT | A320 ASCT | A340 LOFT | A320 LOFT | A340 ASCT |

A320 and A350
Example

| | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | |
|---|---|---|---|---|---|---|---|---|
| **Period** | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months |
| **Checking** | A350 PC | A320 PC | A350 PC | A320 PC | A350 PC | A320 PC | A350 PC | A320 PC |
| **Training** | A320 ASCT | A350 LOFT | A320 LOFT | A350 ASCT | A320 ASCT | A350 LOFT | A320 LOFT | A350 ASCT |

Examples of Alternating ASCT/PC Plan for Three Designated Related Aircraft Types

A320 and A330 and A340

Example 1

| | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | |
|---|---|---|---|---|---|---|---|---|
| **Period** | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months |
| **Checking** | A320 PC | A330 PC | A320 PC | A340 PC | A320 PC | A330 PC | A320 PC | A340 PC |
| *** Additional Check Items** | | A340 (Level E) | | A330 (Level B) | | A340 (Level E) | | A330 (Level B) |
| **Training** | A320 ASCT | A340 ASCT | A320 ASCT | A330 ASCT | A320 ASCT | A340 ASCT | A320 ASCT | A330 ASCT |

* Additional check item: As A330 and A340 are different type ratings, an additional check at Level B or Level E, as defined by Differences Tables, is required under an alternate recurrent plan for three types.

Example 2

| | **Year 1** | | **Year 2** | | **Year 3** | | **Year 4** | |
|---|---|---|---|---|---|---|---|---|
| **Period** | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months | 6 months |
| **Checking** | A320 PC | A340 PC | A320 PC | A340 PC | A320 PC | A340 PC | A320 PC | A340 PC |
| *** Additional Check Items** | | A330 (Level B) | | A330 (Level B) | | A330 (Level B) | | A330 (Level B) |
| **Training** | A320 ASCT | A340 ASCT | A320 ASCT | A330 ASCT | A320 ASCT | A340 ASCT | A320 ASCT | A330 ASCT |

* Additional check item: As A330 and A340 are different type ratings, an additional check at Level B, as defined by Differences Tables, is required under an alternate recurrent plan for three types.