

European Aviation Safety Agency

EASA TYPE-CERTIFICATE DATA SHEET

No. EASA.A.151

AIRBUS A350

Type Certificate Holder:

AIRBUS S.A.S.

1 Rond-point Maurice Bellonte
31707 BLAGNAC
FRANCE

Airworthiness Category: Large Aeroplanes

For Model(s): A350-941

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SECTION 1: A350-900 SERIES

I. GENERAL

1. Type/Model/Variant

A350-900

2. Performance Class

A

3. Certifying Authority

EASA

4. Manufacturer

AIRBUS
1 Rond-point Maurice Bellonte
31707 Blagnac
FRANCE

5. EASA Certification Application Date

A350-941: 15 November 2009

6. EASA Type Certification Date

A350-941: 30 September 2014

II. CERTIFICATION BASIS

1. EASA Certification Basis

The following EASA airworthiness standards effective on the reference date are:

- EASA Certification Specification 25, Amendment 7 – Large Aeroplanes
- EASA Certification Specification AWO, Initial Issue – All Weather Operations

2. Special Conditions

2.1 Special Conditions issued because the product has novel or unusual design features relative to the design practices on which the applicable airworthiness code is based (21A.16B(a)1) :

SC B-01	Stalling and Scheduled Operating Speeds
SC B-02	Motion and effect of cockpit controls
SC B-04	Static Directional, Lateral and Longitudinal Stability and Low Energy Awareness
SC B-05	Flight envelope protection
SC B-06	Normal Load Factor limiting System
SC B-09	Flight in Icing Condition
SC B-11	Soft Go Around Mode (post-TC)
SC C-01	Crash Survivability for CFRP Fuselage
SC C-02	Design dive speed
SC C-05	Tyre Debris vs. Fuel Leakage for CFRP Fuel Tank
SC C-06	Dynamic braking
SC C-07	Limit pilot forces
SC C-10	Design Manoeuvre Requirements
SC C-14	Pivoting Loads
SC D-04	Crew Rest Compartments (post-TC)
SC D-05	Towbarless Towing
SC D-07	Control Surface Position Awareness / Electronic Flight Control Systems
SC D-14	Application of Heat Release and Smoke Density Requirements to Seat Materials
SC D-16	In Flight Fire - Composite Fuselage Construction
SC D-20	Lateral Trim Function through Differential Flap Setting
SC D-21	Type C Passenger Exits
SC D-32	Use of Magnesium Alloys for Passenger Seat Components (post-TC)
SC E-08	Fire withstanding Capability of CFRP Wing Fuel Tanks
SC F-13	Lithium Battery Installations
SC F-26	Flight Recorders including Data Link Recording
SC F-38	Security Assurance Process to isolate or protect the Aircraft Systems and Networks from internal and external Security Threats
SC G-01	ETOPS Approval
SC G-06	Cancellation of AFM Engine Management Tables

2.2 Special Conditions issued because the intended use of the product is unconventional (21A.16B(a)2) :

SC D-06	High Altitude Operation / High Cabin Heat Load
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2.3 Special Conditions issued because experience from other products has shown that unsafe conditions may develop (21A.16B(a)3) :

SC E-12	Water / Ice in Fuel System
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SC F-12 HIRF Protection
SC F-53 Fuel System low Level Indication / Fuel Exhaustion

3. Exemptions / Deviations

None

4. Equivalent safety findings (21A.21(c)(2))

ESF C-11 Ground Loads Conditions
ESF C-12 Undercarriage Lateral Turning Loads

ESF D-11 Packs off operations
ESF D-15 Post Crash Fire - Composite Fuselage Construction
ESF D-19 Overpressure Relief Valves and Outflow Valves
ESF D-23 Indication of the Passenger Door from outside Position if the Door is not fully Closed, Latched and Locked
ESF D-28 Green Arrow and "Open" Placard for Emergency Exit Marking
ESF D-30 Installation of Angled Seats (post-TC)
ESF D-31 Application of reduced Intrusion Loads in certain Areas of the Flight Deck Boundaries
ESF D-34 APU Doors Compliance to CS 25.783(a)

ESF E-04 Thrust Reverser Testing
ESF E-07 Warning Means for Rolls Royce Engine Fuel Filters
ESF E-09 Rolls Royce Engine Turbine Overheat Detection
ESF E-13 Fire Extinguishing Agent Concentration
ESF E-14 Pressure fuelling system shut-off operation check

ESF F-22 Minimum Mass Flow of Supplemental Oxygen
ESF F-23 Landing Light Switch
ESF F-33 Pneumatic Systems – harmonised 25.1438
ESF F-52 Crew Determination of Quantity of Oxygen in Passenger Oxygen System
ESF F-63 Improved Passenger Oxygen Mask Deployment System
ESF F-69 Pitot Heat Indication Systems

ESF G-05 Engine Oil Temperature Indication

ESF K-03 Localizer Excessive Deviation Alerts (post-TC)
ESF K-04 Limit Risk (post-TC)
ESF K-08 CAT 3 Operations - Super Fail Passive Anomalies (post-TC)

5. Environmental requirements

Fuel venting and emissions:
EASA Certification Specification 34, Initial Issue.

Noise:
EASA Certification Specification 36, Amendment 3.

6. Elect to comply

EASA Certification Specification 25, Amendment 8.

EASA Certification Specification 25, paragraph 25.795, Amendment 9, except CS 25.795(b)(3)(iii).

EASA Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance CS ACNS Initial Issue dated 17 December 2013, Subpart D Sections 2/3/4

III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. A350-900 powered by RR engines

1.1 Type Design Definition

A350-941 Type Design Definition: 00 V 000 A0941 / C90 Issue 2
Note: The MOD 107279 need to get EASA approval Post-TC before EIS.

1.2 Engines

A350-941: Two (2) Rolls Royce Trent XWB-84 turbofan engines

ENGINE LIMITS DATA SHEET EASA E-111	A350-941 RR Trent XWB-84
Net Take-off (5 minutes)	374.5 kN (84,200 lbf)
Net Maximum Continuous	317.6 kN (71,400 lbf)

The take-off thrust, with the associated limits, shall not be used continuously more than 5 minutes. The duration may be extended to 10 minutes in case of engine failure in multi-engine aircraft. If the duration exceeds 5 minutes, this shall be recorded in the engine log book.

Other engine limitations: See the relevant Engine Type Certificate Data Sheet.

1.3 Fuel and fuel additives

The fuel system has been certified with: JET A, JET A1, JP5, JP8, N° 3 Jet Fuel, RT and TS-1.

Refer to applicable engine "Operating Instructions" document for additives.

1.4 Oil

Refer to applicable engine "Operating Instructions" document.

1.5 Limit Speeds

Refer to approved Airplane Flight Manual.

1.6 Centre of Gravity Range

Refer to approved Airplane Flight Manual.

1.7 Maximum Certified Weights

VARIANT (Mod number)	000 (Basic)	001 (104052)
MTOW (t)	268	275
MLW (t)	205	207
MZFW (t)	192	195.7

1.8 Notes

None

2. Data pertinent to all A350-900 series

2.1 Description

Two turbo-fan, long range, twin-aisle, large category airplane

2.2 Fuel quantity

Tanks	Usable Fuel (l)	Usable Fuel (kg)
Wing	29,963	23,520
Center	81,052	63,625
Total	140,978	110,665

Fuel density is 0.785 kg/l

2.3 Minimum Flight Crew

Two (2): Pilot and Co-pilot

2.4 Maximum Seating Capacity

The maximum number of passengers approved for emergency evacuation is:

- 385 for the basic passenger emergency exit configuration C-A-A-A and A-A-C-A,
- 330 for the optional passenger emergency exit configuration C-A-C-A,
- 440 for the optional passenger emergency exit configuration A-A-A-A.

See interior layout drawing for the maximum passenger capacities approved for each aeroplane when delivered.

2.5 Cargo compartment loading

Cargo compartment	Maximum load (kg)
Forward	22,000
Aft	19,000
Rear (bulk)	3,468

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weights), see Weight and Balance Manual Chapter 1.10 ref. 00 V 080 A0001 / C9S.

2.6 Environmental Flight Envelope

Maximum operating altitude is 43,100 ft.

Refer to approved Airplane Flight Manual.

2.7 Other Limitations

Refer to approved Airplane Flight Manual.

2.8 Auxiliary Power Unit (APU)

One APU, Honeywell HGT1700.

Fuel and Oil: Refer to applicable approved Manuals.

2.9 Equipment

The equipment required by the applicable requirements shall be installed.

Cabin seats shall conform to the "Passenger Seat Frame Specification" document ref. 00V252K0005/C91 Issue 4.

2.10 All Weather Capabilities

The aircraft has no All Weather Capabilities at TC.

2.11 Wheels and Tyres

Gear	Quantity	Wheel size	Tyre size
NLG	2	16"	1050 x 395R16 28PR
MLG	8	23"	1400 x 530R23 42PR

2.12 Hydraulics

Fluid specifications: TYPE IV LD and TYPE V LD, as per NSA 307-110, or any mixture of both.

2.13 Electrical Power Center Configuration Data File Tool

An Airline Configuration Tool (EPDS* Tool Suite) is being developed and qualified to allow airlines to manage the Configuration Data Files of Secondary Power Distribution Boxes (SPDB). This tool will be available for A350 Entry Into Service.

IV. OPERATING AND SERVICE INSTRUCTIONS

1. Aircraft Flight Manual

A350 Aircraft Flight Manual: STL 35000 (certification reference for TC: 00 V 101 A0941 / C9S Issue 4).

The document "A350 Operations Engineering Bulletins – Applicable to TC only", reference STL D14029252 Issue 2, is providing a temporary list of Operations Engineering Bulletins (OEB) applicable to the A350 at time of TC and until further notice.

2. Maintenance Instructions and Airworthiness Limitations

- Safe Life Airworthiness Limitation Items are provided in the A350 Airworthiness Limitations Section (ALS) Part 1, Revision 00 (Document 00 V 050 ALS01 / C01 Issue 1, approved by EASA [1]);
- Damage-Tolerant Airworthiness Limitation Items are provided in the A350 Airworthiness Limitations Section (ALS) Part 2, Revision 00 (Document 00 V 050 ALS02 / C01 Issue 1, approved by EASA [1]);
- Certification Maintenance Requirements are provided in the A350 Airworthiness Limitations Section (ALS) Part 3, Revision 00 (Document 00 V 050 ALS03 / C01 Issue 2, approved by EASA [1]);
- A350 System Equipment Maintenance Requirements are provided in the A350 Airworthiness Limitations Section (ALS) Part 4, Revision 00 (Document 00 V 050 ALS04 / C01 Issue 1, approved by EASA [1]);
- A350 Fuel System Airworthiness Limitations are provided in the A350 Airworthiness Limitations Section (ALS) Part 5, Revision 00 (Document 00 V 050 ALS05 / C01 Issue 2, approved by EASA [1]);
- Maintenance Review Board Report 00 V 050 AMRBR / C01.

The document "A350-900 Temporary TC limitations document", reference 00 V 050 T TCLD / C91 Issue 3, is recording the temporary limitations identified at TC, that are not published within the A350 ALS Part 3 and Part 4. This document is applicable to the A350 at TC and until further notice.

Note: Only ALS part 3 impacts have been identified in chapter 5.4 of this document.

The document "A350-900 - Temporary TC Limitation Document not ALS related and to be removed before EIS", reference 00 V 207 A TTCL / C91 Issue 1, is recording an additional temporary limitation identified at TC, that is not ALS related. This document is applicable to the A350 at TC and until further notice.

Note [1]: Including last approved revision and ALS variations

3. ETOPS

The Type Design, system reliability and performance of the following A350 model(s) were found capable for Extended Range Operations (ETOPS) when configured, maintained and operated in accordance with the current revision of the ETOPS Configuration, Maintenance and Procedures (CMP) document, XWB/EASA: CS 25.1535/CMP.

This finding does not constitute an approval to conduct Extended Range Operations (operational approval must be obtained from the responsible Authority).

The following table provides details on the ETOPS approvals.

Model	Engine Type	180 min. Approval date	Beyond 180 min. Approval date
A350-941	Trent XWB-84	-	-

V. OPERATIONAL SUITABILITY DATA (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate [original TC number] as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

- a. The MMEL is in the process of being approved as per the defined Operational Suitability Data Certification Basis until aircraft entry into service.
- b. Required for entry into service by EU operator *

2. Flight Crew Data

- a. The Flight Crew data is in the process of being approved as per the defined Operational Suitability Data Certification Basis until aircraft entry into service.
- b. Required for entry into service by EU operator *
- c. Pilot Type Rating: The licence endorsement for the A350-900 series aircraft is "A330/A350". The A350-900 and the A330 series aircraft are variants of the same type of aircraft.

3. Cabin Crew Data

- a. The Cabin Crew data is in the process of being approved as per the defined Operational Suitability Data Certification Basis until aircraft entry into service.
- b. Required for entry into service by EU operator *
- c. The A350-900 is determined to be a variant of the A330/A340 series aircraft. Based on the comparison conducted using the aircraft differences table ADT (as per Appendix 1 of CS CCD.200(b)(1)) it has been concluded that the A350-941 is to be considered a variant of the A330-200.
- d. The minimum required cabin crew number resulting from the certification evacuation evaluation of the A350-900 is 8 for all of the emergency exit configurations shown in section 2.4, irrespective of the Maximum Operational Passenger Seating Capacity (MOPSC) for the concerned aeroplane.

- However, in accordance with operational rules, if the MOPSC for the concerned aeroplane exceeds 400, the minimum required cabin crew number becomes 9.
- e. The document "A350-900 Cabin Areas of Special Emphasis" (CASE), reference V01RP1428088 Issue 2.2 is the mean to provide "special instructions" to the Operators.

