Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.A.00165

for

Boeing 747

Type Certificate Holder

The Boeing Company

The Boeing Company
737 Logan Avenue North
Renton, WA, 98057-0000

Model(s):	747-100	747-200B 747-200C 747-200F	747-300 747SP	747-400 747-400F	747-8F 747-8
Major Modification:				747-400BCF	

Issue: 1
Date of issue: 24 March 2026

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Section 1 General (All Models)

I. General

This Type-Certificate Data Sheet (TCDS) is the concise definition of the type-certificated product accepted and or approved by the CAA in the UK for the affected types and models.

This TCDS includes:

1. Details of the type design that affect the TCDS that have been approved or accepted by the CAA in the UK from 01 January 2021.
2. Details of the type design that affected the TCDS and were approved or accepted by EASA before 01 January 2021, and were incorporated into EASA TCDS EASA.IM.A.196 at Issue 17, dated 18 December 2018, and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

II. Part 26 Compliance Information

For all models, the UK CAA accepts that compliance with point 26.300(a) of UK Regulation (EU) 2015/640 Annex I (Part 26) is demonstrated by the demonstration of compliance with point 26.300(a) of Commission Regulation (EU) 2015/640 Annex I (Part 26), as amended, and EASA approval under points 26.301, 26.302, 26.303, 26.304, 26.305, 26.306, 26.307, 26.308, 26.309

Section 2 Boeing 747 (All Variants)

1. Type / Variant / Model

a) Type: Boeing 747
b) Variant or Model: All Variants

747-100
747-200B
747-200C
747-200F
747SP
747-300
747-400
747-400F
(747-400BCF)
747-8F
747-8

2. Type Certificate Holder

The Boeing Company
737 Logan Avenue North
Renton, WA, 98057-0000
United States of America

3. Manufacturer

The Boeing Company
737 Logan Avenue North
Renton, WA, 98057-0000
United States of America

4. Airworthiness Category

CS-25 Large Transport Aircraft

5. State of Design Authority

Federal Aviation Administration (USA), (FAA)
Seattle Aircraft Certification Office,
1601 Lind Avenue S.W.
Renton, WA 98055-4056
United States of America

6. Performance Category

A.

7. FAA Type Certificate Data Sheet

Refer FAA Type Certificate Data Sheet A20WE

8. Notes

1. The 747-100, -200B, -200F, -200C, SP and -300 series were not subject to a validation by JAA prior to EASA, therefore these were accepted by EASA under the provisions of EU Regulation 1702/2003, and are thereafter accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.
2. The 747-400 and -400F were validated in a cooperative effort by 4 (5) EU Nationalities. In 2003, the 747-400 and -400F models were the subject of a JAA “catch-up” validation; this TCDS provides both the information as agreed for the 4(5) Authorities validation, as the agreed “catch-up” information.

9. Type Certificate Data Sheet for Noise

Refer to Type-Certificate Data Sheet for Noise UK.TC.A.00165 for the Boeing 747.

Note: some early variants of the B747-100, -200 and -300 are accepted by UK CAA on the basis that they comply only with Chapter 2 of ICAO Annex 16, Volume I. Any such aircraft registered in the UK may not be operated within the UK.

Section 3 747-100, -200B, -200C, -200F, SP, -300 VARIANT

I. General

1. Type / Variant / Model

a) Type: Boeing 747
b) Variant or Model: 747-100, -200B, -200C, -200F, SP, -300 VARIANT

2. FAA Type Certification Date

30 December 1969 (-100)

23 December 1970 (-200B)

07 March 1972 (-200F)

17 April 1973 (-200C)

01 March 1983 (-300)

04 February 1976 (SP)

3. UK CAA Type Validation Date

03 September 1970 (-100)

16 January 1971 (-200B)

03 March 1972 (-200F)

23 February 1987 (-200C)

22 February 1984 (-300)

28 March 1996 (SP)

II. Certification Basis

1. FAA Type Certification Basis

Refer FAA Type Certificate Data Sheet No. A20WE.

2. UK CAA Airworthiness Requirements

FAA Certification Basis as listed in FAA Type Certificate Data Sheet No. A20WE.

3. Equivalent Safety Findings

Adopted FAA Special Conditions:

Refer to FAA TCDS A20WE

4. Special Conditions

Adopted FAA Special Conditions:

Refer to FAA TCDS A20WE

CRI H-01 Instructions for Continued Airworthiness (ICA) on Electrical Wiring Interconnecting Systems (EWIS)

CRI F-GEN-11 (Special Conditions) Non-rechargeable Lithium Batteries Installations

5. Exemptions

Adopted FAA Exemptions Granted:

Refer to FAA TCDS A20WE

6. Environmental Standards

Noise:	ICAO Annex 16, Volume I (Refer to TCDSN UK.TC.A.00165 for details)
Prevention of Intentional Fuel Venting:	ICAO Annex 16, Volume II, Part II, Chapter 2

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

Boeing Top Collector Drawing No. 65B00003

2. Description

Low wing jet transport with a conventional tail unit configuration, powered by four high bypass turbofan engines mounted on pylons beneath the wings.

3. Dimensions

Length	70.6 m (231 ft 10.2 ins)
Wing Span	59.6 m (195 ft 8 ins)
Height	19.3 m (63 ft 5 ins)
747SP only	
Length	56.25 m (184 ft 9.2 ins)
Wing Span	59.6 m (195 ft 8 ins)
Height	20.2 m (66 ft 4 ins)

4. Engines (Type/Model, Type Certificate, Limitations)

Type and Model

-100	4 Pratt and Whitney JT9D-3A, or JT9D-7, JT9D-7A, JT9D-7F, JT9D-7J.
-200B:	4 Pratt and Whitney JT9D-3A, JT9D-7, JT9D-7A, JT9D-7F, JT9D-7J, JT9D-70A, JT9D-7Q, JT9D-7Q3, JT9D-7R4G2, or 4 General Electric CF6-50E, CF6-50E1, CF6-50E2, CF6-80C2B1 or 4 Rolls Royce RB211-524B2-19, RB211-524C2-19, RB211-524D4-19, RB211-524D4-39.
-200F:	4 Pratt and Whitney JT9D-3A, JT9D-7, JT9D-7A, JT9D-7F, JT9D-7J, JT9D-70A, JT9D-7Q, JT9D-7Q3, JT9D- R4G2, or 4 General Electric CF6-50E, CF6-50E1, CF6-50E2 or 4 Rolls Royce RB211-524B2-19, RB211-524C2-19, RB211-524D4-19, RB211-524D4-39.
-200C:	4 Pratt and Whitney JT9D-3A, JT9D-7, JT9D-7A, JT9D-7F, JT9D-7J, JT9D-70A, JT9D-7Q, JT9D-7Q3, JT9D-7R4G2, or 4 General Electric CF6-50E, CF6-50E1, CF6-50E2, or 4 Rolls Royce RB211-524B2-19, RB211-524C2, RB211-524D4.
-300:	4 Pratt and Whitney JT9D-7R4G2 or 4 General Electric CF6-50E2, CF6-80C2B1, or 4 Rolls Royce RB211-524B2-19, RB211-524C2-19, or RB211-524D4-19, RB211-524D4-39.

SP: 4 Pratt and Whitney, JT9D-7, JT9D-7A, JT9D-7F, JT9D-7J

Note: The JT9D-3 engine model was deleted from the engine type certificate on December 29, 1986, since it is no longer in service and the manufacturer has no plans to produce any more engines of that model. It was previously fitted only to the Boeing 747-100.

Engine type certification data sheets:

FAA TCDS E20EA	Pratt and Whitney JT9D-3A, JT9D-7,JT9D-7A, JT9D-7F, JT9D-7J.
FAA TCDS E3NE	Pratt and Whitney JT9D-70A,JT9D-7Q, JT9D-7Q3, JT9D-7R4G2
FAA TCDS E23EA	General Electric CF6-50E, CF6-50E1,CF6-50E2
UK.TC.E.00120	General Electric CF6-80C2B1,
EASA TCDS EASA.E.062	Rolls Royce RB211-524B2-19, RB211-524C2-19, or RB211-524D4-19, RB211-524D4-39

Limitations

See NOTE 6 after section XIV of FAA TCDS A20WE regarding intermixing of engines.

For limitations see engine datasheets or Airplane Flight Manual

5. Auxiliary Power Unit

Garret Turbine Engine Co. Model GTCP660-4 and 4R

6. Propellers

N/A

7. Fluids (Fuel, Oil, Additives, Hydraulics)

Fuel: See approved Airplane Flight Manual and NOTE 4 after section XIV of FAA TCDS A20WE.

Oil: Refer to applicable approved manuals

8. Airspeed Limitations

VMO/MMO 375/0.92 (KCAS). For other airspeed limits see the appropriate FAA Approved Airplane Flight Manual.

9. Flight Envelope

Maximum Operating Altitude: 13,750m (45,100 ft) pressure altitude.

10. All Weather Capabilities

See approved FAA Airplane Flight Manual

11. Maximum Masses

-100

	Kilograms	Pounds
MTW	334,750	738,000

MTOW	333,400	735,000
MLW	265,350	585,000
MZFW	238,816	526,500

-200B

	Kilograms	Pounds
MTW	379,202	836,000
MTOW	377,842	833,000
MLW	285,762	630,000
MZFW	247,207	545,000

-200F

	Kilograms	Pounds
MTW	379,202	836,000
MTOW	377,842	833,000
MLW	285,762	630,000
MZFW	272,154	600,000

-200 C

	Kilograms	Pounds
MTW	379,202	836,000
MTOW	377,842	833,000
MLW	285,762	630,000
MZFW	256,279	565,000

SP

	Kilograms	Pounds
MTW	318,875	703,000
MTOW	315,700	696,000
MLW	215,465	475,000
MZFW	192,776	425,000

-300

	Kilograms	Pounds
MTW	379,202	836,000
MTOW	377,842	833,000
MLW	285,762	630,000
MZFW	247,207	545,000

See Airplane Flight Manual for actual approved maximum weights.

12. Centre of Gravity Range

See Airplane Flight Manual .

13. Datum

See Weights and Balance Manual and FAA TCDS A20WE.

14. Mean Aerodynamic Chord (MAC)

See Weights and Balance Manual.

15. Levelling Means

See Airplane Flight Manual and FAA TCDS A20WE.

16. Minimum Flight Crew

Three (3): Persons (Pilot, Co-pilot, and flight Engineer).

17. Minimum Cabin Crew

When passengers are being carried, one attendant is required at each No. 3 over-wing exit. At least one flight attendant is required on the upper deck during taxi, takeoff and landing when passengers occupy the upper deck.

18. Maximum Seating Capacity

The maximum number of passengers approved for emergency evacuation is dependant on door configuration, see section 20 below. See interior layout drawing for the maximum passenger capacities approved for each aeroplane delivered. All cabin interior and seating configurations have to be approved.

19. Baggage / Cargo Compartment

See appropriate Weight and Balance Control and Loading Manual: D6-13700 (for 747-100, -200B, -200C, -200F, -300 Variant and D6-33800 for 747SP variant

20. Emergency Exits

For 747-100, -200B, -200C airplanes the total passenger capacity is limited to:

550 with 5 pair of Type "A" exits on main deck 440 with 4
pair of Type "A" exits on main deck

Upper deck passenger capacity is limited to:

8 with one exit on the upper deck 16 with one exit, improved slide and smoke barrier.

24 with one exit, straight stairway, smoke barrier, and escape slide capable of operation in 25kt. wind.

32 if in compliance with the requirements of Special Condition No. 25-61-NW-1
45 if in compliance with the requirements of Special Condition No. 25-71-NW-3
5 persons on upper deck per Exemption 1870D.
(747-100 and 747-200)

For 747SP the total passenger capacity is limited to:

400 passengers with the same upper deck limits as listed above

For 747-200F the total passenger capacity is limited to:

19 passengers on upper deck with 2 doors, 25 knot slides, C.G. Limitation, and compliance shown with AD 93-07-15; or 19 persons on upper deck equipped with emergency descent reels and harnesses, 2 doors and 25 knot slides.

5 persons on upper deck per Exemption 1870D.

For 747-300 the total passenger capacity is limited to:

660 passengers with 5 pair of Type "A" exits on the main deck plus one pair of Type "A" exits on the upper deck. Main deck limited to 550 and upper deck limited to 110 if in compliance with the requirements of modified Special Condition No. 25-71-NW-3, transmitted to Boeing by FAA letter dated August 3, 1981.) See NOTE 10 after section XIV of FAA TCDS A20WE.

550 passengers with 4 pair of Type "A" exits on the main deck limited to 440 and upper deck limited to 110 if in compliance with the requirements of modified Special Condition No. 25-71-NW-3, transmitted to Boeing by FAA letter dated August 3, 1981.

21. Wheels and Tyres

See appropriate Airplane Flight Manual for details.

IV. Operating and Service Instructions

1. Aircraft Flight Manual

The FAA approved Airplane Flight Manuals, as listed in FAA TCDS A20WE, are considered to be the UK approved Airplane Flight Manuals for the applicable models. Airplane Flight Manuals that were specifically approved for some individual Member States are also considered to be UK approved in combination with the design details as specified by these authorities for the applicable models. Information on these latter Airplane Flight Manuals can be obtained by the responsible Member States authorities.

2. Aircraft Maintenance Manual / Instructions for Continued Airworthiness and Airworthiness Limitations

Scheduled Maintenance	Scheduled Maintenance Checks: DOT/FAA Maintenance Review Board Report Boeing 747/747SP (MRB) July 1978.
Life Limited Parts:	NOTE 3 after section XIV of FAA Type Certificate Data Sheet A20WE.

3. Structural Repair Manual

Structural Repairs: “Structural Repair Manual" Boeing Reports D6-13592 (except for 747SP)

“Structural Repair Manual" Boeing Reports D6-34024 (for 747 SP)

4. Service Letters and Service Bulletins

As published by Boeing and approved by FAA.

5. Required Equipment

All equipment as prescribed in Section II (Certification Basis) above must be installed in the aircraft.

V. Notes

1. See also FAA TCDS A20WE for additional notes, applicable for all models unless otherwise specified.

Section 4 747-400 VARIANT

I. General

1. Type / Variant / Model

a) Type: Boeing 747
b) Variant or Model: 747-400 VARIANT

2. FAA Type Certification Date

10 January 1989

3. UK CAA Type Validation Date

12 June 1989 (First TC issued within EU MS by Austro Control)

II. Certification Basis

1. FAA Type Certification Basis

FAA Certification Basis as listed in FAA Type Certification Data Sheet No. A20WE

2. UK CAA Airworthiness Requirements

Certification Basis following the JAA Catch-Up exercise:

It was agreed within the JAA that for the B747-400 the Certification basis as defined by the FAA in their Type Certification data Sheet A20WE, is acceptable to the JAA with the addition of two special conditions:

Special Condition 1; JAR 25.365(e)(2), Change 13, on the subject of the Presurized cabin Loads. Installation of floor venting ports in the upper cabin floor is required;

Special Condition 2: JAR 25.1309, on the subject of attitude Comparison. Installation of a Comparator Warning that is not inhibits during any phase of the flight is required.

The Catch-up exercise for the 747-400 was finalized on 26 September 2003, when the recommendation by the JAA for the issuance of national type certificates was issued, followed by the issuance of the Netherlands Type Certificate on the same day.

Certification Basis following the joint validation exercises of the UK, French, German and Dutch aviation authorities:

A. JAR 25 at Change 10 plus amendments 84/11, 84/2 and 84/13, of which the Following National Variants have been deleted: JAR 25.341 (a) and ACJ 25.341(a)(4). JAR 1 JAR/AWO at Change 1.

Plus for the purposes of deleting National Variants and thus harmonizing requirements to a maximum extent, the following paragraphs of specified later JAR 25 amendments.

(a) Amendment 87/2:
JAR 25.107 (d)
JAR (BB) 25.107 (d)
JAR 25 X 519 (a)
JAR 25.735 (f) (1) and (h) (1)
JAR 25.1303 (b) (4) and (c) (1)
JAR 25 X 1328
JAR 25.1333 (b)
JAR 25.1459 (b)

(b) JAR 25 Change 12:
JAR 25.341 (a)
(c) Notices of Proposed Amendment: NPA
258, G -1 94 to JAR 25
NPA 25C-211 (Improved Seat Safety Standards)

b) Plus, for the purposes of reflecting current thinking JAR 25 Change 12: JAR 25.149 (e)

c) Excepting the following paragraphs of JAR 25 where, for features Unchanged in design and usage with respect to earlier variants and having a satisfactory service record, compliance with the stated requirements have been accepted instead:

JAR 25.107 (a)	Replaced by FAR 25.107 (a) at amendment 41.
JAR 25.109 (a)	Replaced by FAR 25.109 (a) at amendment 41.
JAR 25.149 (e)	Replaced by FAR 25.149 (el at amendment 41.
JAR 25.345 (g)	Not applicable
JAR 25.479 (c) (4) and JAR 25.483	Replaced by FAA Special Condition A-4.
JAR 25.499 (e)	Replaced by FAR 25.499 (e) at amendment 59.
JAR 25.561 (b) (3)	With respect to the interface loads at the airplane Side of the seats and commercial equipment installed in the passenger cabin. Compliance to the following requirement has been accepted: All combinations up to a maximum of 8g at the following Conditions: 4.5g downwards 2.0g upwards 8.0g forwards 1.5g rearwards 2.25g sidewards
JAR 25.571 (a)	On the basis of compliance with FAR 25.571 through (d) amendment 9 and acceptance of the initial maintenance program and sublet 3 to the introduction of an acceptable structural inspection program by January 1. 1994 full compliance with JAR 25.57 l(a) through (d) may be waived until January 1.1994.
JAR 25.675	Replaced by BCAR Section D for UK certification and by FAR 25.675 amendment 37 for CAA-NL, DGAC and LBA.
JAR 25.683 (b)	Not applicable to unchanged parts of and (c) control systems.
JAR 25.729(f)	Replaced by FAR 25.729(f) at amendment 59. JAR 25.772 Replaced by FAR 25.772 amendment 46.
JAR 25.785 (i)	As for JAR 25.561 (b) (3)
JAR 25.787 (a)	With respect to the open closets located on the upper deck (normally at Station no. 956) and just aft of door 5 (normally at Station no. 2300), replaced by FAR 25.787 (a) at amendment 31.
JAR 25.812 (g) (1)	Replaced by FAR 25.812 (g) at amendment 31. JAR 25.903 (dl (1) With respect to the provision of separate Power supplies to the engine shut-off valve close coils, replaced by FAR 25.903 (d) (1) at amendment 31.
JAR 25.1309	Not applicable to parts of a/c that are unchanged in both design and usage from earlier models and that have shown satisfactory service experience.
JAR 25.1435 (a) (1)	Replace by BCAR Section D, Chapter 06-2; 6 for UK certification and FAR 25.1435 (a)(l) at amendment 59 for CAA-NL, DCAC and L8A.

Note: references to FAR 25 imply the FAA interpretations of FAR 25.

3. Equivalent Safety Findings

CRI G-GEN-2 (Equivalent Safety Finding) Engine and APU Fire Switch Handle Design

Equivalent safety findings against the following requirements based on

Boeing applications:

Due to the use of Vs1g as the basis for Reference Speeds:

JAR 25.21 (c), 103, 107, 119, 121, 125, 145, 147, 149, 161, 175, 177, 201, 207, 233, 237.

JAR 25.101(c)	See Joint Evaluation summary Part 4
JAR 25.X 132	See Joint Evaluation summary Part 4
JAR 25.X.745	See Joint Evaluation summary Item 3.4(10)
JAR25.783(e)	See Boeing Letter B-221T-89-2569
JAR 25.785(c)	See Joint Evaluation summary Part 4
JAR 25.809(f)(1)(iii)	See Boeing Letter B-221T-89-1744 E.S. item 3.21(6)
JAR25.863(a)	See Boeing Letter B-221T-89-1541
JAR 25.1303(c)(1))	See Joint Evaluation summary Part 4
JAR25.1389(b)(3)	See Boeing Letter B-221T-89-639
JAR 25.1435(a)(2)	See Joint Evaluation summary Part 4
JAR25.1438	See Boeing Letter B-221T-89-1493
JAR25.1447(c)(3)	See Boeing Letter B-221T-89-991
JAR25.1453(a)	See Boeing Letter B-221T-89-0694
JAR 25.101(c)	See Joint Evaluation summary Part 4
JAR25.A1103(b)(2)	See Boeing Letter B-221T-89-1019
JAR25.A1193(e)(3)	See Boeing Letter B-221T-89-1254

4. Special Conditions

CRI F-GEN-11 (Special Conditions) Non-rechargeable Lithium Batteries Installations

Special Condition 1; JAR 25.365(e)(2), Change 13, on the subject of the Presurized cabin Loads.

Installation of floor venting ports in the upper cabin floor is required;

Special Condition 2: JAR 25.1309, on the subject of attitude Comparison. Installation of a

Comparator Warning that is not inhibits during any phase of the flight is required.

5. Exemptions

Exemptions have been granted against compliance with the following

paragraphs of JAR 25:

JAR 25.671 (c) (3)

JAR 25.561 (d) with respect to the wing fuel tanks

JAR 25.1529 based upon manual system that meets the intent of FAR 25.1529 at Amendment 21 and the data presentation and accuracy equivalent safety to FAR 25.1629 at Amendment 21

6. Operational Suitability Data Certification Basis

CRI H-01 Instructions for Continued Airworthiness (ICA) on Electrical Wiring Interconnecting

Systems (EWIS)

7. Environmental Standards

Noise:	ICAO Annex 16, Volume I, Chapter 3 (Refer to TCDSN UK.TC.A.00165 for details)
Prevention of Intentional Fuel Venting:	ICAO Annex 16, Volume II, Part II, Chapter 2

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

Design Standards identified as the basis for this Type Certificate is that of the Series Design defined by Top Drawing No. 65 B00002 747 Final Assembly

2. Description

Low wing jet transport with a conventional tail unit configuration, powered by four high bypass turbofan engines mounted on pylons beneath the wings.

3. Dimensions

Length	70.66 m (231 ft 10 ins)
Wing Span	64.44 m (211ft 5 ins)
Height	19.33 m (63 ft 5 ins)

4. Engines (Type/Model, Type Certificate, Limitations)

Type and Model

747-400F: 4 Pratt and Whitney PW4056,PW4062A

or 4 General Electric CF6-80C2B1F, CF6-80C2B5F;

or 4 Rolls Royce RB211-524G2-19, RB211-524G3-19, RB211-524H2-19, RB211-524G2-T-19, RB211-524G3-T-19, RB211-524H2-T-19.

Engine type certification data sheets:

EASA TCDS EASA.IM.E.050	Pratt and Whitney 4056
UK.TC.E.00120	General Electric CF6-80C2B1F, CF6-80C2B5F
EASA TCDS EASA.E.062	Rolls Royce RB211-524G2-19, RB211-524G3-19, RB211-524G2-T-19, RB211-524G3-T-19
EASA TCDS EASA.E.062	Rolls Royce RB211-524H2-19, RB211-524H2-T-19

WARNING: To prevent unsafe airplane handling characteristics, PW4000 series engines with electronic engine control (EEC) part number 791100-14-102 (Pratt & Whitney part number 54D043) must not be installed on the same airplane as PW4000 series engines that have the ring case compressor configuration. This combination of engine configurations is not approved because of a significant difference in engine acceleration rates and the effect of that difference on airplane handling characteristics. Ring case compressor equipped engines were approved with the same engine model number as previously approved PW4000 configurations, and must be identified by the presence of a “/A5” marked at the end of the “INSTL ARR” block on the engine data plate.

See FAA TCDS A20WE NOTE 6 after section XIV for further information regarding intermixing engines.

5. Auxiliary Power Unit

Pratt and Whitney of Canada Type PW901A

6. Propellers

N/A

7. Fluids (Fuel, Oil, Additives, Hydraulics)

Fuel: See approved Airplane Flight Manual and FAA TCDS A20WE see NOTE 4.

Oil: Refer to applicable approved manuals.

8. Airspeed Limitations

VMO/MMO 375/0.92 (KCAS) For other airspeed limits see the appropriate FAA Approved Airplane Flight Manual.

9. Flight Envelope

Maximum Operating Altitude: 13,750m (45,100 ft) pressure altitude.

10. All Weather Capabilities

See approved FAA Airplane Flight Manual.

11. Maximum Masses

747-400

	Kilograms	Pounds
MTW	379,800	877,000
MTOW	396,893	875,000
MLW	285,762	630,000
MZFW	246,754	544,000

(At Type Certification) See approved Airplane Flight Manual for the appropriate weights.

12. Centre of Gravity Range

See Airplane Flight Manual.

13. Datum

See Weights and Balance Manual.

14. Mean Aerodynamic Chord (MAC)

See Weights and Balance Manual.

15. Levelling Means

See Airplane Flight Manual.

16. Minimum Flight Crew

Two (2): Persons (Pilot and Co-pilot).

17. Minimum Cabin Crew

When passengers are being carried, one attendant is required at each No. 3 over-wing exit. At least one flight attendant is required on the upper deck during taxi, takeoff and landing when passengers occupy the upper deck. These are minimum Cabin Crews, See below for minimum cabin crew with higher passenger numbers on each deck.

The table below provides the certified Maximum Passenger Seating Capacities (MPS), the corresponding cabin configuration (exit arrangement and modifications) and the associated numbers of cabin crew members used to demonstrate compliance with the evacuation certification requirements of JAR 25.803. Additional cabin crew members may be required to comply with other regulatory requirements (e.g., cabin attendant direct view or ditching).

Passenger Deck	Passenger Seating Capacity & Cabin Configuration	Cabin crew
Main	550 passengers: (A, A, A, A, A) exit arrangement	11
Upper	110 passengers: (A) exit arrangement	3
Upper	100 passengers: (A) exit arrangement	2
Upper	45 passengers: (I) exit arrangement	1

18. Maximum Seating Capacity

Maximum Seating Capacity:

The maximum number of passengers approved for emergency evacuation is: 660

Upper deck: 110 persons

Main deck: 550 persons

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

19. Baggage / Cargo Compartment

See the appropriate FAA approved Weight and Balance Control manual (D043U400).

20. Emergency Exits

For 747-400 the total passenger capacity is limited to:

660 passengers with 5 pair of Type "A" exits on the main deck plus one pair of Type "A" exits on the upper deck. Main deck limited to 550 and upper deck limited to 110 if in compliance with the requirements of modified Special Condition No. 25-71-NW-3, transmitted to Boeing by FAA letter dated August 3, 1981.) See NOTE 10 after section XIV of FAA TCDS A20WE.

21. Wheels and Tyres

See appropriate Airplane Flight Manual for details.

IV. Operating and Service Instructions

1. Aircraft Flight Manual

FAA Approved Flight Manuals: D6-U10001, D6-U10002 and D6-U10003.

For airplanes delivered according the JAA Certification Basis (3 A), JAA approved supplements are applicable.

2. Aircraft Maintenance Manual / Instructions for Continued Airworthiness and Airworthiness Limitations

Scheduled Maintenance	Scheduled Maintenance Checks as for Boeing MRB Report Boeing Maintenance Manual Doc. D633U101-05 and D633U101-54
Life Limited Parts:	Life Limited Parts and required inspection intervals are listed in the FAA approved Airworthiness Limitations Section of the Boeing Maintenance Planning Data Document D621U400.

3. Structural Repair Manual

Structural Repair Manual – Boeing Document D634U102.

4. Service Letters and Service Bulletins

As published by Boeing and approved by FAA.

5. Required Equipment

All equipment as prescribed in Section II (Certification Basis) above must be installed in the aircraft.

V. Operational Suitability Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.196 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014, and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

1. Master Minimum Equipment List

Not required.

2. Flight Crew data

The Operational Suitability Data for Flight Crew are contained in Boeing Document

Reference D926U004-01, dated December 7, 2015 or later approved revisions.

FC OSD certification basis is CS-FCD, Initial Issue, dated 31 January 2014.

3. Cabin Crew Data

Not required.

4. SIM Data

Not required.

5. Maintenance Certifying Staff Data

Not required.

6. Other

Not applicable.

VI. Notes

See also FAA TCDS A20WE for additional notes, applicable for all models unless otherwise specified.

Section 5 747-400F VARIANT

I. General

1. Type / Variant / Model

(a) Type: Boeing 747
(b) Variant or Model: 747-400F VARIANT

2. FAA Type Certification Date

14 October 1993

3. UK CAA Type Validation Date

01 November 1993

II. Certification Basis

1. FAA Type Certification Basis

FAA Certification Basis as listed in FAA Type Certification Data Sheet No. A20WE

2. UK CAA Airworthiness Requirements

Certification Basis following the JAA Catch-Up exercise:

It was agreed within the JAA that for the B747-400 the Certification basis as defined by the FAA in
their Type Certification data Sheet A20WE, is acceptable to the JAA with the addition of two special conditions:

Special Condition 1; JAR 25.365(e)(2), Change 13, on the subject of the Presurized cabin Loads. Installation of floor venting ports in the upper cabin floor is required;

Special Condition 2: JAR 25.1309, on the subject of attitude Comparison. Installation of a Comparator Warning that is not inhibits during any phase of the flight is required.

The Catch-up exercise for the 747-400 was finalized on 26 September 2003, when the recommendation by the JAA for the issuance of national type certificates was issued, followed by the issuance of the Netherlands Type Certificate on the same day.

Certification Basis following the joint validation exercises of the UK, French, German and Dutch aviation authorities:

a) The reference certification basis for the B747-400 series (See "Boeing 747-400 Joint Certification Basis and Additional Requirements for certification in Germany, France, United Kingdom and the Netherlands" issue 2 of April 14. 1992), plus

For the components or areas affected by the change: JAR 25, Change 12 and Amendment 88/1.

Exceptions listed in the 747-400 series Joint Certification basis apply to the 747-400F, except for the following two which are modified as follows:

JAR 25.365 Boeing has committed to comply with the intent of FAR 25.365, Amendment 25-54 by assuring continued safe flight and landing with a 20 square foot hole in the main deck cargo compartment or lower lobe cargo compartment or upper deck (exclusive of flight deck). Boeing will provide protection for systems critical for continued safe flight and landing and allow miscellaneous structure to fail as long as these failures do not affect flight safety. These miscellaneous structure components are main deck floor in Section 46, partitions and lavatory walls. This is the compliance method for JAR 25.365 used for the 747-400 series airplane and will also be used for the 747-400F (Reference. FAA 747-400F Certification Basis issue Paper G-1, Stage 5 and CRI C-5, stage 3).

JAR 25.571(a) through (d): On the basis of compliance with FAR 25.571, Amendment 9, and acceptance of the initial maintenance program and subject to the introduction of an acceptable structural inspection program by January I , 1999 full compliance with JAR 25.571 (a) through (d) may be waived until January 1. 1999. (Ref. CRI C-3. stage 3).

3. Equivalent Safety Findings

CRI G-GEN-2	Engine and APU Fire Switch Handle Design	
CRI D-1	Nose Cargo door Locking	JAR 25.783
CRI F-11	Oxygen Dispensing Units	JAR 25.1447(c)(3)

Note 1:
For the purpose of showing compliance to this type certification basis, Compliance must be demonstrated with the FAA certification basis (see FAA IP G-1, stage 5) and the Additional Technical conditions of the AA as defined in CRI A-8.

Note 2:
Some AA countries have issued Additional National requirements to be complied with for the issue of a Type Certificate. These requirements are laid down in:

CRI A-2	Additional National Design standards for type certification
CRI A-3	National Environmental Standards

4. Special Conditions

CRI F-GEN-11 (Special Conditions) Non-rechargeable Lithium Batteries Installations

Special Condition 1; JAR 25.365(e)(2), Change 13, on the subject of the Presurized cabin Loads.

Installation of floor venting ports in the upper cabin floor is required;

Special Condition 2: JAR 25.1309, on the subject of attitude Comparison. Installation of a

Comparator Warning that is not inhibits during any phase of the flight is required.

Special Conditions related to novel or unusual design features or unconventional usage (ref. draft JAR 21 .I6 (a) (1) and (2)). None identified

Special conditions related to general experience (ref. Draft JAR 21.16(a)(3))

CRI D-4	Cargo and Service Doors
CRI F-7	Lightning protection, indirect effects
CRI F-8	HIRF

5. Exemptions

Exemptions (ref. Draft JAR 21.17(a)(1)(i))

CRI F-1	Crew Slide	JAR 25.809(f)(1)(v)
CRI F04	Fireworthiness requirements for Ceiling and sidewall panels in the Lower lobe cargo compartments	JAR 25.855(a)(1)(i)
CRI F-5	Maindeck Cargo Compartment Firedetection response time	JAR 25.858
CRI F-10	Upper Deck occupancy	JAR 25.807, 25.809, 25.813
CRI F-12	Floor proximity escape path Marking	JAR 25.812(e)

6. Elect to Comply

AA Airworthiness Standards for which Boeing elected to comply (ref. Draft JAR 21.17.1a)(1)(ii) and JAR 21.17 (e))

5.1	The later effective amendments to JAR that Boeing has chosen to comply with : JAR 25 Change 13, except NPA 25C, D-211
5.2	AA approved NPAs NPA 25B,D,G-244 Accelerate-Stop Distance

7. Operational Suitability Data Certification Basis

CRI H-01 Instructions for Continued Airworthiness (ICA) on Electrical Wiring Interconnecting Systems (EWIS)

8. Environmental Standards

Noise: ICAO Annex 16, Volume I, Chapter 3 (Refer to TCDSN UK.TC.A.00165 for details)

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

Design Standards identified as the basis for this Type Certificate is that of the Series Design defined by Top Drawing No. 65 B00002 747 Final Assembly

2. Description

Low wing jet transport with a conventional tail unit configuration, powered by four high bypass turbofan engines mounted on pylons beneath the wings.

3. Dimensions

Length	70.66 m (231 ft 10 ins)
Wing Span	64.44 m (211ft 5 ins)
Height	19.4 m (63 ft 8 ins)

4. Engines (Type/Model, Type Certificate, Limitations)

Type and Model

747-400: 4 Pratt and Whitney PW4056,

or 4 General Electric CF6-80C2B1F, CF6-80C2B5F;

or 4 Rolls Royce RB211-524G2-19, RB211-524G3-19, RB211-524H2-19, RB211-524G2-T-19, RB211-524G3-T-19, RB211-524H2-T-19.

Engine type certification data sheets:

EASA TCDS EASA.IM.E.050	Pratt and Whitney 4056
UK.TC.E.00120	General Electric CF6-80C2B1F, CF6-80C2B5F
EASA TCDS EASA.E.062	Rolls Royce RB211-524G2-19, RB211-524G3-19, RB211-524G2-T-19, RB211-524G3-T-19

WARNING: To prevent unsafe airplane handling characteristics, PW4000 series engines with electronic engine control (EEC) part number 791100-14-102 (Pratt & Whitney part number 54D043) must not be installed on the same airplane as PW4000 series engines that have the ring case compressor configuration. This combination of engine configurations is not approved because of a significant difference in engine acceleration rates and the effect of that difference on airplane handling characteristics. Ring case compressor equipped engines were approved with the same engine model number as previously approved PW4000 configurations, and must be identified by the presence of a "/A5" marked at the end of the "INSTL ARR" block on the engine data plate.

5. Auxiliary Power Unit

Pratt and Whitney of Canada Type PW901A

6. Propellers

N/A

7. Fluids (Fuel, Oil, Additives, Hydraulics)

Fuel: See approved Airplane Flight Manual and FAA TCDS A20WE see Note 3

Oil: Refer to applicable approved manuals

8. Airspeed Limitations

VMO/MMO 375/0.92 (KCAS) For other airspeed limits see the appropriate FAA Approved Airplane Flight Manual.

9. Flight Envelope

Maximum Operating Altitude: 13,750m (45,100 ft) pressure altitude

10. All Weather Capabilities

See approved FAA Airplane Flight Manual

11. Maximum Masses

747-400F Maximum Certified Weights: (At Type Certification)

	Kilograms	Pounds
MTW	379,800	877,000
MTOW	396,894	875,000
MLW	302,092	666,000
MZFW	288,030	635,000

747-400ERF, 747-400F (910K) Version: (Increased Gross Weight)

	Kilograms	Pounds
MTW	414,129	913,000

MTOW	412,769	910,000
MLW	302,092	666,000
MZFW	288,j030	635,000

See approved Airplane Flight Manual for the appropriate weights.

12. Centre of Gravity Range

See Airplane Flight Manual

13. Datum

See Weights and Balance Manual

14. Mean Aerodynamic Chord (MAC)

See Weights and Balance Manual

15. Levelling Means

See Airplane Flight Manual

16. Minimum Flight Crew

Two (2): Persons (Pilot and Co-pilot)

17. Maximum Seating Capacity

For 747-400F airplanes the total persons capacity is limited to: Six (6) persons on the upper deck, per FAA Exemption 1870E.

18. Baggage / Cargo Compartment

See the appropriate FAA approved Weight and Balace Control manual (D043U550)

19. Wheels and Tyres

See approved FAA Airplane Flight Manual for details

IV. Operating and Service Instructions

1. Aircraft Flight Manual

Flight Manual:

FAA Approved flight Manuals: D6-U10001, D6-U10002 and D6-U10003.

For airplanes delivered according the JAA Certification Basis (3 A), JAA approved supplements are applicable.

2. Aircraft Maintenance Manual / Instructions for Continued Airworthiness and Airworthiness Limitations

Scheduled Maintenance	Scheduled Maintenance Checks as for Boeing MRB Report Boeing Maintenance Manual Doc. D633U101-05 and D633U101-54
Life Limited Parts:	Life Limited Parts and required inspection intervals are listed in the FAA approved Airworthiness Limitations Section of the Boeing Maintenance Planning Data Document D621U400.

3. Structural Repair Manual

Structural Repair Manual – Boeing Document D634U102

4. Service Letters and Service Bulletins

As published by Boeing and approved by FAA

5. Required Equipment

All equipment as prescribed in Section II (Certification Basis) above must be installed in the aircraft.

V. Operational Suitability Data

The Operational Suitability Data Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.196 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014, and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreementconstituents 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

Not required.

2. Flight Crew data

The Operational Suitability Data for Flight Crew are contained in Boeing Document Reference D926U004-01, dated December 7, 2015 or later approved revisions.

FC OSD certification basis is CS-FCD, Initial Issue, dated 31 January 2014.

3. Cabin Crew Data

Not required.

4. SIM Data

Not required.

5. Maintenance Certifying Staff Data

Not required.

6. Other

Not applicable.

Section 6 747-400BCF VARIANT

I. General

1. Type / Variant / Model

(c) Type: Boeing 747
(d) Variant or Model: 747-400BCF VARIANT
(Boeing Converted Freighter)

2. FAA Type Certification Date

13 December 2005

3. UK CAA Validation Application Date

Original EASA Validation 09 September 2005.

4. UK CAA Type Validation Date

Original EASA Validation 03 May 2007.

II. Certification Basis

1. FAA Type Certification Basis

FAA Certification Basis as listed in FAA Type Certification Data Sheet No. A20WE

2. UK CAA Airworthiness Requirements

The basic aircraft as defined by the JAA Type Certification Data Sheet, JAA/25/03-28, for unaffected areas and CS 25 @ initial issue for changed areas except for the following:

Passenger to Freighter Modification (Significant change per Part 21A.101(a)).

Paragraph (FAR)	Title	Amendment
25.305 (a)(b)	Strength and Deformation	25-22
25.365	Pressurized Compartment Loads	25-53 (Affected areas comply with the intent of the applicable parts of Amendment 25-54 or 25-71/-72)
25.561	Emergency Landing Conditions	Compliance demonstrated with Amendment 25-91.
25.561(b)(c)(1)(ii)		25-59
25.571	Damage - Tolerance and Fatigue Evaluation of Structure	25-22 (and the intent of compliance with Amendment 25-54)
25.831(a)	Ventilation	25-41
25.787(a)	Protection of upper deck occupants	25-91, limited to 2g upwards, special condition C-01

NPA 25D-301 Revision 1

Upper Deck Interior Reconfiguration (Non-Significant change per Part 21A.101(a))

The validation basis for the changed aspects associated with the upper deck interior configuration rearrangement is unchanged from the 747-400 Series in accordance with Part 21A.01(b)(1).

The details of the Certification basis are documented in CRI A-01 for the B747-400BCF.

Means of Compliance:
CRI D-01 Requirements for fuselage doors (NPA 25D-301 revision 1)

Reversion request:
CRI C-01 Crash loads 2G upwards for Emergency Landing Condition

3. Equivalent Safety Findings

CRI G-GEN-2 (Equivalent Safety Finding) Engine and APU Fire Switch Handle Design.Special Conditions

CRI D-02 Carriage of Couriers without complying with specified passenger-carrying requirements

CRI F-GEN-11 (Special Conditions) Non-rechargeable Lithium Batteries Installations

CRI H-01 (Special Conditions) Instructions for Continued Airworthiness (ICA) on Electrical Wiring Interconnecting Systems (EWIS)

4. Operational Suitability Data Certification Basis

Not Applicable

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

Major Change Design Definition: Boeing Service Bulletin 747-00-2004

2. Description

A 747-400 SF (Special Freighter), or optionally known as a 747-400 BCF (Boeing Converted Freighter), is a 747-400 Series passenger airplane that has been modified in accordance with FAA-approved Boeing Service Bulletin 747-00-2004 to operate in a freighter configuration.

3. Operating Limitations

Refer to approved Airplane Flight Manual.

4. Maximum Masses

747-400BCF Maximum Certified Weights:

	Kilograms	Pounds
MTW	395,986	873,000
MTOW	394,625	870,000
MLW	295,742	652,000
MZFW	276,691	610,000

5. Maximum Seating Capacity

Maximum number of Passengers

There are no provisions for the carriage of passengers. A maximum of 19 couriers can occupy the aft cabin of the upper deck as defined in AFM.

6. Service Letters and Service Bulletins

A 747-400 SF (Special Freighter), or optionally known as a 747-400 BCF (Boeing Converted Freighter), is a 747-400 Series passenger airplane that has been modified in accordance with FAA-approved Boeing Service Bulletin 747-00-2004 to operate in a freighter configuration.

These aircraft remain as 747-400 Series aircraft for documentation purposes on this TCDS and with regard to the applicability of airworthiness directives.

IV. Notes

1. Other

Special conditions, Exemptions and Equivalent Safety Findings that are part of the certification basis for the 747-400 Series apply to the airplane operating in the 747-400 SF (and BCF) configuration, unless otherwise noted in FAA Type Certificate data sheet A20WE.

Section 7 747-8F VARIANT

I. General

1. Type / Variant / Model

(a) Type: Boeing 747
(b) Variant or Model: 747-8F VARIANT

2. FAA Type Certification Date

19 August 2011

3. UK CAA Validation Application Date

Original EASA Validation 05 March 2007.

4. UK CAA Type Validation Date

Original EASA Validation 19 August 2011.

II. Certification Basis

1. Reference Application Date for FAA Certification

FAA Certification Reference Date 31 December 2006.

2. FAA Type Certification Basis

Part 25 through Amendment 25-120

Part 26, as amended at the time of certification

Part 34, as amended at the time of certification

Part 36, Stage 4, through Amendment 36-28

For details of Exceptions, Exemptions, Special Conditions and Equivalent Safety Findings granted by FAA, refer to FAA TCDS A20WE

3. UK CAA Airworthiness Requirements

CS 25 at Amendment 2 and, for unaffected areas, Boeing 747-400F UK Type Certification Data Sheet UK.TC.A.00165.

Note: Further details may be seen under CRI A-01 “EASA Certification Basis”

Reversions from CS 25 Amendment 2

Area/System Components	Applicable Part 25 Section	Title	Reversion Amdt Level
Aero - Configurations	25.1323(b) and (c)	Airspeed indicating system.	CFR 25-108
	25.1325(b) and (e)	Static air vent and pressure altimeter systems.	CFR 25-108
Airframe - Empennage: Outboard Elevator Balance Weight Tower	25.305(b)	Strength and deformation.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.613	Material strength properties and design values.	CFR 25-46
	25.615	Design properties.	CFR 25-23
Airframe - Empennage: Forward fin box of vertical stab - unpressurized area	25.365(e)(2)	Pressurized compartment loads.	CFR 25-54
Airframe - Fuselage: Section 41 lower lobe skin panels and flight deck skin panels - pressurized area only, below WL 200, between STA 140 and 460	25.365(e)(2)	Pressurized cabin loads.	CFR 25-54
Airframe - Fuselage: Section 41 main deck floor side of body shear trusses and side of body shear webs.	25.365(e)(2)	Pressurized compartment loads.	CFR 25-54
Airframe - Fuselage: ECS pack bay access panels	25.783	Doors.	CFR 25-23
Airframe - Fuselage Doors: Bulk Cargo Door	25.783(f)	Doors.	CFR 25-23
Airframe - Fuselage and Floors: Section 41 Lower Lobe	25.365(e)(2)	Pressurized Compartment Loads.	CFR 25-54
Airframe - Fuselage and Floors: Section 46 Floor Beams and Frames	25.561(c)(1)(ii)	General.	CFR 25-64
Airframe - Landing Gear: Main Gear The main landing gears shall comply with 747-8F/-8 Special Condition CRI C-05.	25.471 through 25.511, and 25.723	Structural Design Requirements for Four-Post Main Landing Gear System.	Equivalent to CS 25-2
Compliance to be shown to CFR25.573 Amdt 25-0 in lieu of CS25.571 Amdt 2, per CRI C-12.	25.571 (25.573(a) and (c))	Damage-tolerance and fatigue evaluation of structure.	CFR 25-0
Airframe - Loads	25.341	Gust and turbulence loads	CS 25-0
	25.343(b)(1)(ii)	Design fuel and oil loads	CS 25-0
	25.371	Gyroscopic loads	CS 25-0
	25.373	Speed control devices	CS 25-0
Airframe - Stowage Compartments: Main and Upper Deck	25.787(a)	Cargo and baggage compartments.	CFR 25-51

Area/System Components	Applicable Part 25 Section	Title	Reversion Amdt Level
Airplane Systems and Equipment: Compliance to be shown to CFR25.1301 and CFR25.1309 in lieu of CS25.1301, CS25.1309, and CS25.1310, per CRI F-17.	25.1301	Function and installation	CFR 25-0
	25.1309	Equipment, systems and installations.	CFR 25-41
	25.1310 (25.1309)	Power source capacity and distribution.	CFR 25-41
Payloads - Escape Systems	25.810(a)(1)(v)	Escape Slide	CFR 25.809(f)(1)(v) at 25-34
Payloads - Supernumerary Area: Galley and Lavatory	25.365(e),(f), and (g)	Pressurized cabin loads.	CFR 25-0
Payloads - Supernumerary Area Compliance to be shown to CFR25.785(a), (b), (c), (d), (e) and (j) Amdt 25-64 in lieu of CS25.785(b), (c), (d), (f), (j) and (k) Amdt 2.	25.562	Emergency landing dynamic conditions.	N/A
	25.785 (b), (c), (d), (f), (j) and (k) (25.785(a), (b), (c), (d), (e) and (j)	Seats, berths, safety belts, and harnesses.	CFR 25-64
	25.785(i) (25.1413)	Seats, berths, safety belts, and harnesses.	CFR 25-51
Compliance to be shown to CFR25.1413 Amdt 25-51 in lieu of CS25.785(i) Amdt 2.	25.811(a),(b),(d), (e), and (g)	Emergency exit marking.	CFR 25-46
	25.812	Emergency Lighting	CFR 25-28
	25.1439	Protective breathing equipment.	CFR 25-38
Compliance to be shown to CFR25.1447(a), (c)(1), (c)(3)(i) and (c)(3)(ii) Amdt 25-41 in lieu of CS25.1447(a), (c)(1) and	25.1447(a), (c)(1) and (c)(3) (25.1447(a), (c)(1), (c)(3)(i), and (c)(3)(ii))	Equipment standards for oxygen dispensing units.	CFR 25-41
Propulsion - APU Compliance to be shown to the 747-400F TCDS Title 14 Part 25 of the CFR APU specific requirements in lieu of the CS25 Subpart J APU specific requirements.	25.1353(a)	Electrical equipment and installations.	CFR 25-42
	25J901 (25.901(b)(2), (b)(3), (b)(4), and (d))	Installation.	CFR 25-46
	25J903 (25.903(c))	Auxiliary power unit.	CFR 25-57
	25J903 (25.903(d), (e)(1), (e)(2), and (f)) (25.1142)	Auxiliary power unit.	CFR 25-100
	25J939 (25.939(a) and (c))	APU operating	CFR 25-40
		characteristics.	
	25J943 (25.943)	Negative	CFR 25-40
		acceleration.	
	25J951 (25.951(a),(b)(2),(c))	General.	CFR 25-73
	25J952 (25.952(a))	Fuel system analysis and test.	CFR 25-40
	25J955 (25.955(a) and (b)(2))	Fuel flow.	CFR 25-11

Area/Systm Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
	25J1011 (25.1011(a) and (b))	Oil system general.	CFR 25-0
	25J1017 (25.1017)	Oil lines and fittings.	CFR 25-0
	25J1019 (25.1019(a)(1))	Oil filter.	CFR 25-57
	25J1021 (25.1021)	Oil system drains.	CFR 25-57
	25J1023 (25.1023(a))	Oil radiators.	CFR 25-0
	25J1041 (25.1041)	General.	CFR 25-38
	25J1043 (25.1043(a)(1), (a)(2), (b), and (c))	Cooling tests.	CFR 25-42
	25J1045 (25.1045(a), (b), and (c))	Cooling test procedures.	CFR 25-57
	25J1091 (25.1091(a)(1), (c)(1), and (d)(2))	Air intake.	CFR 25-100
	25J1093 (25.1093(b)(1)	Air intake system icing protection.	CFR 25-57
	25J1103 (25.1103(b)(2))	Air intake system ducts.	CFR 25-23
	25J1103 (25.1103(a), (b)(1), (c), and (f))	Air intake system ducts.	CFR 25-46
	25J1106 (25.1103(c) and (d))	Bleed air duct systems.	CFR 25-46
	25J1121 (25.1121(a), (b), (c), (d), (f), and (g))	General.	CFR 25-40
	25J1123 (25.1123)	Exhaust piping.	CFR 25-40
	25J1141 (25.1141(f)(2))	APU controls.	CFR 25-40
	25J1141 (25.1141(a), (b), (c), and (d)) (25.1142)	APU controls.	CFR 25-72
	25J1163 (25.1163(a)(1), (a)(2), and (b))	APU accessories.	CFR 25-57
	25J1181 (25.1181(b))	Designated fire zone.	CFR 25-23
	25J1181 (25.1181(a)(4))	Designated fire zone.	CFR 25-72
	25J1183 (25.1183)	Lines, fittings and components.	CFR 25-57
	25J1185 (25.1185(c))	Flammable fluids.	CFR 25-94

Reversions from CS 25 Amendment 2 Continue over page

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
	25J1187 (25.1187)	Drainage and ventilation of fire zones.	CFR 25-0
	25J1189 (25.1189)	Shut-off means.	CFR 25-57
	25J1193 (25.1193(d) and (e))	APU compartment.	CFR 25-0
	25J1195 (25.1195)	Fire extinguishing systems.	CFR 25-46
	25J1197 (25.1197)	Fire extinguishing agents.	CFR 25-40
	25J1201 (25.1201)	Fire extinguishing system materials.	CFR 25-0
	25J1203 (25.1203(b)(2) and (b)(3))	Fire-detector system.	CFR 25-26
	25J1207 (25.1207)	Compliance.	CFR 25-46
	25J1305 (25.1305(a)(7))	APU instruments.	CFR 25-54
	25J1305 (25.1305(a)(3), (a)(4), (a)(5), (a)(6), (c)(1), (c)(3), (c)(6), and (c)(7))	APU instruments.	CFR 25-72
	25J1337 (25.1337(a) and (d))	APU instruments.	CFR 25-40
	25J1521 (25.1522)	APU Limitations.	CFR 25-46
	25J1549 (25.1549)	APU instruments.	CFR 25-40
	25J1551 (25.1551)	Oil quantity indicator.	CFR 25-0
	25J1557 (25.1557(b)(2))	Miscellaneous markings and placards.	CFR 25-72
Propulsion - APU: Electrical Subsystems	25.1353(a)	Electrical equipment and installations.	CFR 25-42
	25.1431(d)	Electronic equipment	CFR 25-0
Propulsion - APU Compliance to be shown to the 747-400F TCDS Title 14 Part 25 of the CFR APU specific requirements in lieu of the CS25 Subpart J APU specific requirements.	25J1191 (25.1191)	Firewalls.	CFR 25-0
	25J1199 (25.1199(a), (b), and (d)(2))	Extinguishing agent containers.	CFR 25-40

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Systems - Avionics: ADIRS	25.1323(b), (c), (d), (e), and (f)	Airspeed indicating system.	CFR 25-108
	25.1325(a), (b), (c), (d), and (e)	Static air vent and pressure altimeter systems.	CFR 25-108
Systems - Flight Controls Elevator and Lateral Control: Control Wheels, Left and Right Forward Cable Quadrants, Forward Load Limiter Device, Right and Left Cable Systems, Aileron Feel and Centering Unit, Aileron Trim System, Lateral Central Control Actuator, Third Autopilot Servo, Aileron Programmer, Wing Cable System to Inboard Aileron PCU, No-back Brake Assembly, Autospeedbrake System to drive Speedbrake Lever, Elevator Control System components, Control Columns, Cable Tension Regulator, Cable System, Aft Quadrant, Elevator Control Rods, Inboard and Outboard Elevator PCUs, Outboard Elevator PCU Input Linkage, Elevator Feel Computer.	25.607	Self-locking nuts.	CFR 25-0
	25.671(a), (b), (c), and (d)	General.	CFR 25-23
	25.675(a) and (b)	Stops.	CFR 25-0
	25.677(a), (b), (c), and (d)	Trim systems.	CFR 25-23
	25.685(a), (b), and (c)	Control system details.	CFR 25-0
	25.863(a) and (b)	Flammable fluid fire protection.	CFR 25-0
	25.865	Fire protection of flight controls.	CFR 25-23
	25.1309(a) and (b)	Equipment systems and installations.	CFR 25-0
	25.1329(f)	Flight Guidance system.	CFR 25-46
	25.1435(a) and (b)	Hydraulic systems.	CFR 25-0
Systems - Flight Controls Flight Deck Instrumentation: Integrated Standby Flight Display	25.1323(a), (b), and (c)	Airspeed indicating system.	CFR 25-108
	25.1325(d) and (e)	Static air vent and pressure altimeter systems.	CFR 25-108
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23
Systems - Flight Controls Lift Compliance to be shown to CFR25.1359(d) Amdt lieu of CS25.869(a)(4) Amdt 2	25.581	Lightning Protection	CFR 25-23
	25.607	Self-locking nuts.	CFR 25-0
	25.671(a), (b), (c), and (d)	General.	CFR 25-23
	25.675(a) and (b)	Stops.	CFR 25-0
	25.701(a)	Flap	CFR 25-23
	25.869(a)(4) (25.1359(d))	Fire Protection. (Electrical system and smoke penetration.)	CFR 25-32
	25.1353(a)	Electrical equipment and installations.	CFR 25-42
	25.1435(a)(1), (a)(6), (a)(7), and (b)(2)	Hydraulic systems.	CFR 25-41

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Systems - Flight Controls Rudder: Rudder cables, Rudder PCMs, Rudder PCAs, Press to Center	25.671(a), (b), (c), and (d)	General.	CFR 25-23
	25.675(a), (b), and (c)	Stops.	CFR 25-0
function, Remote compensators, Rudder Anti-cav/relief valves. Systems - Flight Controls Stabilizer: Trim arm and control wires	25.677(a), (b), and (c)	Trim systems.	CFR 25-23
	25.865	Fire protection of flight controls.	CFR 25-23
	25.1435(a) and (b)	Hydraulic systems.	CFR 25-41
Systems - Flight Controls Rudder: Primary control linkage aft of aft quadrant, secondary linkage (buss linkage).	25.671(a), (b), (c), and (d)	General.	CFR 25-23
	25.675(a), (b), and (c)	Stops.	CFR 25-0
	25.865	Fire protection of flight controls.	CFR 25-23
	25.1435(a) and (b)	Hydraulic systems.	CFR 25-41
Systems - Flight Controls Stabilizer: Stabilizer trim and greenband indication display on EICAS.	25.677(b)	Trim systems.	CFR 25-23
Systems - Hydraulics (except RAT and hydraulics assoc. with engine installations)	25.607	Self-locking nuts.	CFR 25-0
	25.1435(a)(1), (a)(2), (a)(4), (a)(5), (a)(6), (a)(7), (a)(8), (b)(1), (b)(2), and (c)	Hydraulic systems.	CFR 25-41
Systems - Hydraulics: Reservoir pressurization system.	25.1438	Pressurization and pneumatic systems.	N/A
Systems - Hydraulics: Hydraulic reservoirs and air drive units.	25.1438	Pressurization and pneumatic systems.	CFR 25-41
Systems - Hydraulics Electrical: Hydraulics system fire shutoff valve and flight control shutoff valve, and Air Drive Unit Compliance to be shown to CFR25.1359(d) Amdt 25-32 in lieu of CS25.869(a)(4) Amdt 2.	25.869(a)(1)	Fire Protection.	N/A
	25.869(a)(4) (25.1359(d))	Fire Protection. (Electrical system fire and smoke penetration.)	CFR 25-32
	25.1353(a)	Electrical equipment and installations.	CFR 25-42
Systems - Hydraulics- Electrical: Hydraulic fluid quantity probe in each reservoir	25.1431(d)	Electronic equipment.	CFR 25-0

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Systems - Hydraulics-Electrical: Ground Fault Interrupt Compliance to be shown to CFR25.1359(d) Amdt 25-32 in lieu of CS25.869(a)(4) Amdt 2.	25.869(a)(4) (25.1359(d))	Fire Protection. (Electrical system fire and smoke protection.)	CFR 25-32
Systems Stress - Flight Controls Rudder Control: Cables, mech components	25.305(b)	Strength and deformation.	CFR 25-0
	25.395(a), (b) and (c)	Control system.	CFR 25-23
installations, upper/lower actuator installation. Systems Stress - Flight Controls Elevator Control: Cables, mech components installations, Elevator Feel computer. Horizontal stabilizer trim actuator - trim arm switch and control wire. Systems Stress - Flight Controls High Lift: Flap Detents vs Dspeed, LE/TE components, flap drive stroke, flap skew detection.	25.397	Control system loads.	CFR 25-38
	25.415	Ground gust conditions.	CFR 25-0
	25.571(a) and (c)	Damage-tolerance and fatigue evaluation of structure.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23
	25.675(c)	Stops.	CFR 25-0
	25.683	Operation tests.	CFR 25-0
	25.693	Joints.	CFR 25-0
Systems Stress - Hydraulics: Hydraulic reservoirs, hydraulic line, Rudder PCA tubing, LG retract actuators, aileron and spoiler PCUs, Hydraulic Systems 1 and 4 electric pump , PACS actuator and elevator feel shift module hydraulic tubing, Aft strut hydraulic installations.	25.305(b)	Strength and deformation.	CFR 25-0
Systems Stress - Landing Gear Systems: Landing gear alternate extend cables and brake cables, Body gear truck positioner mounting features	25.305(b)	Strength and deformation.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23
Systems Stress - Landing Gear Systems: Nose landing gear steering system and actuators	25.745	Nose-wheel steering.	N/A

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Systems Stress - Flight Controls: Rudder input linkage	25.305(b)	Strength and deformation.	CFR 25-0
	25.395(a), (b), and (c)	Control system.	CFR 25-23
	25.397	Control system loads.	CFR 25-38
	25.415	Ground gust conditions.	CFR 25-0
	25.571(a) and (c)	Fatigue evaluation of flight structure.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23
	25.675(c)	Stops.	CFR 25-0
	25.683	Operation tests.	CFR 25-0
	25.693	Joints.	CFR 25-0
Systems Stress - Flight Deck: Linings, stowages, and latches,	25.365(e), (f), and (g)	Pressurized cabin	CFR 25-0
oxygen mask stowage box		loads.	

4. Equivalent Safety Findings

CRI G-GEN-2 (Equivalent Safety Finding) Engine and APU Fire Switch Handle Design

CRI	Project	Title	Applicable Part 25 Section
B-11	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Transition Speed of Ground Proximity Warning System (EGPWS) Mode 4 Alerts; Too Low Flaps/Too Low Terrain Alert	CFR 25.1301(a)(c); CFR 25.1309(a)(d)
B-12	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Standby Air Data	25.1325
B-13	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Longitudinal Trim	25.161
D-01	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fuselage Doors	25.783 NPA 25D-301, Issue 1
D-10	P.EASA.IM.A.164 747-8F	Inadvertent Smoke Detection in Lower Lobe Class C Cargo Compartments	25.857(c)(1)
D-14	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Control Cables	25.689(a)(1)
D-17	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Ventilation Pack off Takeoff	25.831(a)
D-24	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Exterior Exit Markings	25.811(f)
D-25	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Door Sill Reflectance	25.811(f)
D-31	P.EASA.IM.A.164 747-8F	Escape Slide Auto Deploy and Length	25.810(a)(1)(i) and (a)(1)(iii)

CRI	Project	Title	Applicable Part 25 Section
D-32	P.EASA.IM.A.164 747-8F	Inertia Reels Use on Freighters	25.810(a)(1)(i) and (a)(1)(iii)
E-03	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Powerplant Fire Protection	25.1181(a)(6)
E-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Ignition Switches	25.1145(a) and (b)
E-09	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Nacelle Areas Behind Firewalls and Flammable Fluid Carrying Components for PDOS	25.1182(a) 25.1183(a)
E-12	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Engine Fuel Filter Location	25.997(d) 25.1305(c)(6)
E-13	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Engine Thrust Reverser Endurance Test	25.934
E-15	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Nacelle Areas Behind Firewalls for Thrust Reverser Directional Control Valve (DCV)	25.1182(a) 25.1183(a)
E-19	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Hydraulic Components in Engine Aft Fairing Compartment	25.1182(a) 25.1183(a)
F-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Reset Switch for Overspeed Warning	25.1303(c)(1)
F-21	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Overspeed Warning Aural	25.1303(c)(1)

5. Special Conditions

CRI F-GEN-11 (Special Conditions) Non-rechargeable Lithium Batteries Installations

CRI	Project	Title	Special Condition Number
B-02	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Human Factors	SC B747-8F/B-02
C-02	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fuel Tank Pressure Loads	SC B747-8F/C-02
C-05	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Landing Gear Criteria	SC B747-8F/C-05
C-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Sustained Engine Imbalance	SC B747-8F/C-06
C-16	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Design Roll Maneuver	SC B747-8F/C-16
C-18	P.EASA.IM.A.164 (747-8F)	Installation of Flutter Suppression System	SC B747-8F/C-18
D-02	P.EASA.IM.A.164 (747-8F)	Fire Protection of Essential Systems/Equipment within Class E Cargo Compartments	SC B747-8F/D-02

CRI	Project	Title	Special Condition Number
D-03	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	High Altitude Operation/ High Cabin Heat Load	SC B747-8F/D-03
D-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fire Resistance of Thermal Insulation Material	SC B747-8F/D-06
D-07	P.EASA.IM.A.164 (747-8F)	Installation of Courier Area on an all Freighter Aircraft	SC B747-8F/D-07
D-13	P.EASA.IM.A.164 (747-8F)	Access to Class E Compartment in Flight	SC B747-8F/D-13
D-18	P.EASA.IM.A.164 (747-8F)	Design for Security	SC B747-8F/D-18
E-14	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fuel Quantity Indication System	SC B747-8F/E-14
F-01	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	HIRF Protection	SC B747-8F/F-01
F-22	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Security Assurance Process to Isolate or Protect the Aircraft Systems and Networks from Internal and External Security Threats	SC B747-8F/F-22
H-01	P.EASA.IM.A.164 (747-8F) P.EASA.IM.A.165 (747-8F/747-8)	Instructions for Continued Airworthiness for Electrical Wiring Interconnection Systems (EWIS)	SC B747-8F/H-01
N/A	TCDS EASA.IM.A.196 (B747-400F, Section 4, 3A)	Attitude Comparison	Special Condition2: JAR 25.1309

6. Exemptions

No exemptions have been granted

7. Elect to Comply

Area or System - Comments	Applicable Part 25 Section	Title	Proposed Compliance Amdt Level
Airframe – Wing (CRI C-11)	25.963(e)	Fuel Tank Access Covers	CS 25-3
Propulsion - Engine/APU Structures (CRI C-09)	25.361	Engine and APU Load Conditions	NPA 25C-305
Fuels (CRI E-11)	25.981	Fuel Tank Ignition	CS 25-6
Airframe – Empennage (Inboard Elevator)	25.571(a) and (b)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
	25.571(d) and (e)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
Airframe – Fuselage	25.305(a), (b), and (c)	Strength and deformation.	CS 25-2

Area or System - Comments	Applicable Part 25 Section	Title	Proposed Compliance Amdt Level
(Not Affected portions of the fuselage, floors and doors, as defined in CRI A-01,Table 2.3)	25.571(a) and (b)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
	25.571(d) and (e)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
Airframe - Fuselage: Flight deck floor beams/frames (not affected from decompression standpoint)	25.365(e)	Pressurized cabin loads.	CFR 25-54
Airframe - Fuselage: #2 and #3 flight deck windshield, window for main entry door #1, window for upper deck crew door,	25.303	Factor of safety.	CS 25-2
	25.305(a), (b), and (c)	Strength and Deformation	CS 25-2
fuselage viewport windows, and supernumerary compartment windows	25.307(a) and (d)	Proof of structure.	CS 25-2
	25.365(a), (b), and (d)	Pressurized cabin loads.	CS 25-2
	25.571(b)(5)(ii)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
	25.601	Design & Construction - General.	CS 25-2
	25.603	Materials.	CS 25-2
	25.605	Fabrication methods.	CS 25-2
	25.609	Protection of structure.	CS 25-2
	25.611	Inspection provisions.	CS 25-2
	25.775	Windshields and windows.	CS 25-2

8. All Weather Capabilities

CS AWO Initial Issue, effective 17 October 2003.

9. Environmental Standards

Noise: ICAO Annex 16, Volume I, 5th Edition, Chapter 4, Amendment 9 (Refer to TCDSN UK.TC.A.00165 for details)

Emissions: ICAO Annex 16, Volume II, 3rd Edition, Amendment 6

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

Design Standard identified as the basis for this Type Certificate is that of the Series Design defined by "Submittal of Descriptive Data List(DDL) for the 747-8F Amended Type Design Configuration, Rev D," as enclosed in Boeing Internal Letter B-H320-2011-01283, dated August 10, 2011.

2. Description

Low wing jet transport with a conventional tail unit configuration, powered by four high bypass turbofan engines mounted on pylons beneath the wings.

3. Production Basis

Manufactured under Production Certificate 700

4. Dimensions

Length	70.3 m (250 ft 2 ins)
Wing Span	68.5 m (224ft 7 ins)
Height	19.4 m (63 ft 8 ins)

5. Engines (Type/Model, Type Certificate, Limitations)

Type and Model

747-8F: 4 General Electric GEnx-2B67, GEnx-2B67B, GEnx-2B67/P

Engine type certification data sheets:

UK.TC.E.00121 General Electric GEnx-2B67, GEnx-2B67B, GEnx-2B67/P

WARNING: To prevent unsafe airplane handling characteristics, electronic engine control (EEC) software C060 (or newer) cannot be intermixed on the same aircraft with older EEC software: C032, C040, or C045. The idle selection logic is different in GE C060 software compared to older versions of EEC software. This difference can potentially provide large unsafe thrust asymmetries during acceleration from lower power if C060 EEC software is mixed with older EEC software (i.e. one or more engine at a high idle, while the rest are at minimum idle. The engines at high idle will respond much quicker if there is a rapid throttle advance). See Boeing Service Bulletin 747-73A2083

See FAA TCDS A20WE NOTE 6 (after section XVI) for further information regarding intermixing engines

6. Auxiliary Power Unit

Pratt and Whitney of Canada Type PW901C

7. Propellers

N/A

8. Fluids (Fuel, Oil, Additives, Hydraulics)

Fuel:	Refer approved Airplane Flight Manual
Oil:	Refer approved Airplane Flight Manual

9. Airspeed Limitations

VMO/MMO 365/0.9 (KCAS)

For other airspeed limits see the appropriate FAA Approved Airplane Flight Manual

10. Operating Limitations

Maximum Operating Altitude: 12,832 m (42,100 ft)

Maximum Airfield Elevation 2.896 m (9,500 ft)

for take-off

11. All Weather Capabilities

See Airplane Flight Manual

12. Maximum Masses

747-8F Maximum Certified Weights: (At Type Certification)

	Kilograms	Pounds
MTW	449,056	990,000
MTOW	447,695	987,000
MLW	350,626	773,000
MZFW	334,297	737,000

See approved Airplane Flight Manual for the appropriate weights.

13. Centre of Gravity Range

See Airplane Flight Manual

14. Datum

See Weights and Balance Manual

15. Mean Aerodynamic Chord (MAC)

See Weights and Balance Manual

16. Levelling Means

See Airplane Flight Manual

17. Minimum Flight Crew

Two (2): Persons (Pilot and Co-pilot)

18. Maximum Seating Capacity

For 747-8F airplanes the total passenger capacity is limited to eight (8) persons on the upper deck

19. Baggage / Cargo Compartment

See the appropriate FAA approved Weight and Balance Control Manual

20. Wheels and Tyres

See approved FAA Airplane Flight Manual

IV. Operating and Service Instructions

1. Aircraft Flight Manual

FAA Approved Flight Manual: D631U004.

For airplanes delivered according to the UK Certification Basis, UK approved supplements are applicable.

2. Aircraft Maintenance Manual / Instructions for Continued Airworthiness and Airworthiness Limitations

Scheduled Maintenance	Scheduled Maintenance Checks as per Boeing MRB Report Boeing Maintenance Manual Doc. D633U8101.
Life Limited Parts:	Life Limited Parts and required inspection intervals are listed in the FAA approved Airworthiness Limitations Section of the Boeing Maintenance Planning Data Document D011U721-02.

3. Structural Repair Manual

Structural Repair Manual – Boeing Document D634U210

4. Service Letters and Service Bulletins

As published by Boeing and approved by FAA

5. Required Equipment

All equipment as prescribed in Section II (Certification Basis) above must be installed in the aircraft.

V. Operational Suitability Data

The Operational Suitability Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.196 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014, and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

1. Master Minimum Equipment List

EASA 747-8 MMEL D639U200-ESEM. MMEL OSD certification basis is JARMMEL Section 1 Subpart A and Subpart B at Amendment 1 (01 August 2005) with the MoC specified in applicant position as recorded in Boeing ORI 4.

2. Flight Crew data

The Operational Suitability Data for Flight Crew are contained in Boeing Document Reference D926U004-01, dated December 7, 2015 or later approved revisions. FC OSD certification basis is CS-FCD, Initial Issue, dated 31 January 2014.

3. Cabin Crew Data

Not required.

4. SIM Data

Not required.

5. Maintenance Certifying Staff Data

Not required.

6. Other

Not applicable

VI. Notes

1. Boeing and GE have determined that the GEnx engines on these aircraft intermittently emit a sometimes clearly visible fuel vapor fog after shutdown, as a result of a small quantity of fuel being released from the engine's fuel system. These emissions do not present a safety issue or appreciable environmental impact. Boeing and GE will modify the design of the aircraft and engines by December 31, 2012 to completely eliminate this fuel venting on new aircraft. Boeing has included an airworthiness limitation in the instructions for continued airworthiness for the affected aircraft requiring incorporation of the modified design by December 31, 2014.

Section 8 747-8 VARIANT

I. General

1. Type / Variant / Model

(c) Type: Boeing 747
(d) Variant or Model: 747-8 VARIANT

2. FAA Type Certification Date

14 December 2011

3. Reference Application Date for FAA Type Certification

31 December 2006

4. UK CAA Validation Application Date

Original EASA Validation Application 05 March 2007.

5. UK CAA Type Validation Date

Original EASA Validation Date 15 December 2011.

II. Certification Basis

1. FAA Type Certification Basis

Part 25 through Amendment 25-120

Part 26, as amended at the time of certification

Part 34, as amended at the time of certification

Part 36, Stage 4, through Amendment 36-28

For details of Exceptions, Exemptions, Special Conditions and Equivalent Safety Findings granted by FAA, refer to FAA TCDS A20WE

2. UK CAA Airworthiness Requirements

CS 25 at Amendment 2 and, for unaffected areas, Boeing 747-400 UK Type Certification Data Sheet UK.TC.A.00165.

Note: Further details may be seen under CRI A-01 “EASA Certification Basis”

(Reversions over Page)

Reversions from CS 25 Amendment 2:

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Aero - Configurations	25.1323(b) and (c)	Airspeed indicating system.	CFR 25-108
	25.1325(b) and (e)	Static air vent and pressure altimeter systems.	CFR 25-108
Airframe - Empennage: Outboard Elevator Balance Weight Tower	25.305(b)	Strength and deformation.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.613	Material strength properties and design values.	CFR 25-46
	25.615	Design properties.	CFR 25-23
Airframe - Empennage: Forward fin box of vertical stab - unpressurized area	25.365(e)(2)	Pressurized compartment loads.	CFR 25-54
Airframe - Fuselage: Section 41 lower lobe skin panels and flight deck skin panels - pressurized area only, below WL 200, between STA 140 and 460 Section 41 main deck floor side of body shear trusses and side of body shear webs	25.365(e)(2)	Pressurized cabin loads.	CFR 25-54
Airframe - Fuselage: ECS pack bay access panels	25.783	Doors.	CFR 25-23
Airframe - Fuselage Doors: Passenger entry doors 1 – 5, Bulk cargo door	25.783	Doors.	CFR 25-23
Airframe - Fuselage and Floors: Section 41 Lower Lobe DNCMLS reversion granted on the 747-8F and proposed to be carried over for application to the 747-8.	25.365(e)(2)	Pressurized Compartment Loads.	CFR 25-54

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Airframe - Landing Gear: Main Gear The main landing gears shall comply with 747-8F/-8 Special Condition CRI C-05. Compliance to be shown to CFR25.573 Amdt 25-0 in lieu of CS25.571 Amdt 2, per CRI C-12.	25.471 through 25.511, and 25.723	Structural Design Requirements for Four-Post Main Landing Gear System.	Equivalent to CS 25-2
	25.571 (25.573(a) and (c))	Damage-tolerance and fatigue evaluation of structure.	CFR 25-0
Airframe - Loads	25.341	Gust and turbulence loads	CS 25-0
	25.343(b)(1)(ii)	Design fuel and oil loads	CS 25-0
	25.371	Gyroscopic loads	CS 25-0
	25.373	Speed control devices	CS 25-0
Airplane Systems and Equipment: Compliance to be shown to CFR25.1301 and CFR25.1309 in lieu of CS25.1301, CS25.1309, and CS25.1310, per CRI F-17.	25.1301	Function and installation	CFR 25-0
	25.1309	Equipment, systems and installations.	CFR 25-41
	25.1310 (25.1309)	Power source capacity and distribution.	CFR 25-41
Flight Deck: Wall mounted flight deck crew rest seat	25.561	General.	CFR 25-23
	25.562	Emergency landing dynamic conditions.	NA
	25.785	Seats, berths, safety belts and harnesses.	CFR 25-32

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Flight Deck: Flight Deck Seats Compliance to be shown to CFR 25.785(a) Amdt 25-32 in lieu of CS 25.785(b) Amdt 25-2	25.562	Emergency Landing Dynamic Conditions.	N/A
	25.785(b) (25.785(a))	Seats, berths, safety belts, and harnesses.	CFR 25-32
Propulsion - APU Compliance to be shown to the 747-400 TCDS Title 14 Part 25 requirements in lieu of the CS25 Subpart J APU specific requirements.	25.865	Fire protection of flight controls.	CFR 25-23
	25.1353(a)	Electrical equipment and installations.	CFR 25-42
	25J901 (25.901(b)(2), (b)(3), (b)(4), and (d))	Installation.	CFR 25-46
	25J903 (25.903(c))	Auxiliary power unit.	CFR 25-57
	25J903 (25.903(d), (e)(1), (e)(2), and (25.1142)	Auxiliary power unit.	CFR 25-100
	25J939 (25.939(a) and (c))	APU operating	CFR 25-40
	25J943 (25.943)	Negative acceleration.	CFR 25-40
	25J951 (25.951(a), (b)(2), and (c))	General.	CFR 25-73
	25J952 (25.952(a))	Fuel system analysis and	CFR 25-40
	25J955 (25.955(a) and (b)(2))	Fuel flow.	CFR 25-11
	25J961 (25.961(a),(a)(2), (a)(5), and (b))	Fuel system hot weather operation.	CFR 25-57
	25J993 (25.993)	Fuel system lines and	CFR 25-15
	25J1011 (25.1011(a) and (b))	Oil system general.	CFR 25-0
	25J1017 (25.1017)	Oil lines and fittings.	CFR 25-0
	25J1019 (25.1019(a)(1))	Oil filter.	CFR 25-57
	25J1021 (25.1021)	Oil system drains.	CFR 25-57
	25J1023 (25.1023(a))	Oil radiators.	CFR 25-0
	25J1041 (25.1041)	General.	CFR 25-38
	25J1043 (25.1043(a)(1), (a)(2), (b),	Cooling tests.	CFR 25-42

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Propulsion - APU (cont.) Compliance to be shown to the 747-400 TCDS Title 14 Part 25 of the CFR APU specific requirements in lieu of the CS25 Subpart J APU specific requirements.	25J1045 (25.1045(a), (b), and (c))	Cooling test procedures.	CFR 25-57
	25J1091 (25.1091(a)(1), (c)(1), and (d)(2))	Air intake.	CFR 25-100
	25J1093 (25.1093(b)(1)	Air intake system icing protection.	CFR 25-57
	25J1103 (25.1103(b)(2))	Air intake system ducts.	CFR 25-23
	25J1103 (25.1103(a), (b)(1), (c), and (f))	Air intake system ducts.	CFR 25-46
	25J1106 (25.1103(c) and (d))	Bleed air duct systems.	CFR 25-46
	25J1121 (25.1121(a), (b), (c), (d), (f), and (g))	General.	CFR 25-40
	25J1123 (25.1123)	Exhaust piping.	CFR 25-40
	25J1141 (25.1141(f)(2))	APU controls.	CFR 25-40
	25J1141 (25.1141(a), (b), (c), and (d)) (25.1142)	APU controls.	CFR 25-72
	25J1163 (25.1163(a)(1), (a)(2), and (b))	APU accessories.	CFR 25-57
	25J1181 (25.1181(b))	Designated fire zone.	CFR 25-23
	25J1181 (25.1181(a)(4))	Designated fire zone.	CFR 25-72
	25J1183 (25.1183)	Lines, fittings and components.	CFR 25-57
	25J1185 (25.1185(c))	Flammable fluids.	CFR 25-94
	25J1187 (25.1187)	Drainage and ventilation of fire zones.	CFR 25-0
	25J1189 (25.1189)	Shut-off means.	CFR 25-57
	25J1191 (25.1191)	Firewalls.	CFR 25-0
	25J1193 (25.1193(d) and (e))	APU compartment.	CFR 25-0

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Propulsion - APU (cont.) Compliance to be shown to the 747-400 TCDS Title 14 Part 25 of the CFR APU specific requirements in lieu of the CS25 Subpart J APU specific requirements.	25J1195 (25.1195)	Fire extinguishing systems.	CFR 25-46
	25J1197 (25.1197)	Fire extinguishing agents.	CFR 25-40
	25J1199 (25.1199(a), (b), and (d)(2))	Extinguishing agent containers.	CFR 25-40
Propulsion - APU (cont.)	25J1201 (25.1201)	Fire extinguishing system materials.	CFR 25-0
	25J1203 (25.1203(b)(2) and (b)(3))	Fire-detector system.	CFR 25-26
	25J1207 (25.1207)	Compliance.	CFR 25-46
	25J1305 (25.1305(a)(7))	APU instruments.	CFR 25-54
	25J1305 (25.1305(a)(3), (a)(4), (a)(5), (a)(6), (c)(1), (c)(3), (c)(6), and (c)(7))	APU instruments.	CFR 25-72
	25J1337 (25.1337(a) and (d))	APU instruments.	CFR 25-40
	25J1521 (25.1522)	APU Limitations.	CFR 25-46
	25J1549 (25.1549)	APU instruments.	CFR 25-40
	25J1551 (25.1551)	Oil quantity indicator.	CFR 25-0
	25J1557 (25.1557(b)(2))	Miscellaneous markings and placards.	CFR 25-72
Systems - Avionics: ADIRS	25.1323(b), (c), (d), (e), and (f)	Airspeed indicating system.	CFR 25-108
	25.1325(a), (b), (c), (d), and (e)	Static air vent and pressure altimeter systems.	CFR 25-108
	25.1333(a), (b), and (c)	Duplicate instrument systems.	CFR 25-41

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Systems - Electrical Subsystems: APU	25.1353(a)	Electrical equipment and installations.	CFR 25-42
	25.1431(d)	Electronic equipment.	N/A
Systems - Flight Controls Elevator and Lateral Control: Control Wheels, Left and Right Forward Cable Quadrants, Forward Load Limiter Device, Right and Left Cable Systems, Aileron Feel and Centering Unit, Aileron Trim System, Lateral Central Control Actuator, Third Autopilot Servo, Aileron Programmer, Wing Cable System to Inboard Aileron PCU, Elevator Feel Computer and Autospeedbrake system to drive speedbrake lever.	25.607	Self-locking nuts.	CFR 25-0
	25.671(a), (b), (c), and (d)	General.	CFR 25-23
	25.675(a), (b), and (c)	Stops.	CFR 25-0
	25.677(a), (b), (c), and (d)	Trim systems.	CFR 25-23
	25.685(a), (b), and (c)	Control system details.	CFR 25-0
	25.863(a) and (b)	Flammable fluid fire protection.	CFR 25-0
	25.865	Fire protection of flight controls.	CFR 25-23
	25.1309(a), (b), (c), and (d)	Equipment systems and installations.	CFR 25-0
	25.1329(f)	Flight Guidance system.	CFR 25-46
	25.1435(a) and (b)	Hydraulic systems.	CFR 25-0
Systems - Flight Controls Flight Deck Instrumentation: Integrated Standby Flight Display	25.1323(a), (b), and (c)	Airspeed indicating system.	CFR 25-108
	25.1325(d) and (e)	Static air vent and pressure altimeter systems.	CFR 25-108
Systems - Flight Controls High Lift Compliance to be shown to CFR25.1359(d) Amdt 25-32 in lieu of CS25.869(a)(4) Amdt 2.	25.581	Lightning Protection	CFR 25-23
	25.607	Self-locking nuts.	CFR 25-0
	25.671(a), (b), (c),	General.	CFR 25-23
	25.675(a) and (b)	Stops.	CFR 25-0
	25.701(a)	Flap interconnection.	CFR 25-23
	25.869(a)(4) (25.1359(d))	Fire Protection. (Electrical system fire and smoke penetration.)	CFR 25-32
	25.1353(a)	Electrical equipment and installations.	CFR 25-42
	25.1435(a)(1), (a)(5), ((a)(6), (a)(7), and (b)(2)	Hydraulic systems.	CFR 25-41
Systems - Flight Controls Rudder: Primary control linkage aft of aft quadrant, secondary linkage (buss linkage).	25.671(a), (b), (c), and (d)	General.	CFR 25-23
	25.675(a), (b), and (c)	Stops.	CFR 25-0
	25.865	Fire protection of flight controls.	CFR 25-23
	25.1435(a) and (b)	Hydraulic systems.	CFR 25-41

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Systems - Flight Controls Rudder: Primary control linkage aft of aft quadrant, secondary linkage	25.671(a), (b), (c), and (d)	General.	CFR 25-23
	25.675(a), (b), and (c)	Stops.	CFR 25-0
	25.677(a), (b), and (c)	Trim systems.	CFR 25-23
	25.865	Fire protection of flight controls.	CFR 25-23
	25.1435(a) and (b)	Hydraulic systems.	CFR 25-41
Systems - Flight Controls Stabilizer: Stabilizer trim and greenband indication display on EICAS.	25.677(b)	Trim systems.	CFR 25-23
Systems - Hydraulics (except for the portions associated with the RAT and engine installations)	25.607 25.1435(a)(1), (a)(2), (a)(4), (a)(5), (a)(6), (a)(7), (a)(8), (b)(1), (b)(2), and (c)	Self-locking nuts. Hydraulic systems.	CFR 25-0 CFR 25-41
Systems - Hydraulics: Reservoir pressurization system.	25.1438	Pressurization and pneumatic systems.	N/A
Systems - Hydraulics: Hydraulic reservoirs and air drive units.	25.1438	Pressurization and pneumatic systems.	CFR 25-41
Systems - Hydraulics Electrical: Hydraulics system fire shutoff valve and flight control shutoff valve.	25.869(a)(1)	Fire Protection.	N/A
	25.869(a)(4) (25.1359(d))	Fire Protection. (Electrical system fire and smoke penetration.)	CFR 25-32
Compliance to be shown to CFR25.1359(d) Amdt 25-32 in lieu of	25.1353(a)	Electrical equipment and installations.	CFR 25-42
CS25.869(a)(4) Amdt 2.			
Systems - Hydraulics-Electrical:	25.1431(d)	Electronic equipment.	N/A
Hydraulic fluid quantity probe in each reservoir.			
Systems - Hydraulics-Electrical: Ground Fault Interrupt Compliance to be shown to CFR25.1359(d) Amdt 25-32 in lieu of CS25.869(a)(4) Amdt 2.	25.869(a)(4) (25.1359(d))	Fire Protection. (Electrical system fire and smoke penetration.)	CFR 25-32

Reversions from CS 25 Amendment 2 Continued..

Area/System Comments	Applicable Part 25 Section	Title	Reversion Amdt Level
Systems Stress - Flight Controls: Rudder input linkage	25.305(b)	Strength and deformation.	CFR 25-0
	25.395(a), (b), and (c)	Control system.	CFR 25-23
	25.397	Control system loads.	CFR 25-38
	25.415	Ground gust conditions.	CFR 25-0
	25.571(a) and (c)	Fatigue evaluation of flight structure.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23
	25.675(c)	Stops.	CFR 25-0
	25.683	Operation tests.	CFR 25-0
	25.693	Joints.	CFR 25-0
Systems Stress - Flight Controls Rudder Control: Cables, mechanical component installations, upper/lower actuator installation. Systems Stress - Flight Controls Elevator Control: Cables, mechanical component installations, Elevator Feel computer. Horizontal stabilizer trim actuator - trim arm switch and control wire. Systems Stress - Flight Controls High Lift: Flap Detents vs Dspeed, LE/TE components, flap drive stroke, flap skew detection.	25.305(b)	Strength and deformation.	CFR 25-0
	25.395(a), (b), and (c)	Control system.	CFR 25-23
	25.397	Control system loads.	CFR 25-38
	25.415	Ground gust conditions.	CFR 25-0
	25.571(a) and (c)	Damage-tolerance and fatigue evaluation of structure.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23
	25.675(c)	Stops.	CFR 25-0
	25.683	Operation tests.	CFR 25-0
	25.693	Joints.	CFR 25-0
Systems Stress - Flight Deck: Linings, stowages, and latches, oxygen mask stowage box	25.365(e), (f), and (g)	Pressurized cabin loads.	CFR 25-0
Systems Stress - Hydraulics: Hydraulic reservoirs, hydraulic lines, Rudder PCA tubing, LG retract actuators, aileron and spoiler PCUs, Hydraulic Systems 1 and 4 electric pumps, PACS actuator and elevator feel shift module hydraulic tubing, Aft strut hydraulic installations.	25.305(b)	Strength and deformation.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23
Systems Stress - Landing Gear Systems: Landing gear alternate extend cables and brake cables, Body gear truck positioner mounting features	25.305(b)	Strength and deformation.	CFR 25-0
	25.607	Self-locking nuts.	CFR 25-0
	25.625(a), (b), and (c)	Fitting factors.	CFR 25-23

3. Equivalent Safety Findings

CRI D-GEN-7 (Equivalent Safety Finding) Flammability Testing Hierarchy

CRI G-GEN-2 (Equivalent Safety Finding) Engine and APU Fire Switch Handle Design

CRI	Project	Title	Applicable Part 25 Section
B-12	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Standby Air Data	25.1325
B-13	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Longitudinal Trim	25.161
D-01	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fuselage Doors	25.783 NPA 25D-301, Issue 1
D-14	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Control Cables	25.689(a)(1)
D-17	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Ventilation Pack off Takeoff	25.831(a)
D-19	P.EASA.IM.A.165 (747-8)	Slide Raft Pressure Vessels	25.1436
D-20	P.EASA.IM.A.165 (747-8)	Aisle Width for Front Row of Zone A (2 Passengers)	25.815
D-21	P.EASA.IM.A.165 (747-8)	Aisle Width for Front Row of Zone A (6 Passengers)	25.815
D-24	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Exterior Exit Markings	25.811(f)
D-25	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Door Sill Reflectance	25.811(f)
D-27	P.EASA.IM.A.165 (747-8)	Oxygen Outlets in the Galley Work Areas	25.1447(c)(3)
D-28	P.EASA.IM.A.165 (747-8)	Remote Stowage of the Door 1 Slide/Raft Survival Kit	25.1415(c)
E-03	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Powerplant Fire Protection	25.1181(a)(6)
E-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Ignition Switches	25.1145(a) and (b)
E-09	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Nacelle Areas Behind Firewalls and Flammable Fluid Carrying Components for PDOS	25.1182(a) 25.1183(a)
E-12	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Engine Fuel Filter Location	25.997(d) 25.1305(c)(6)
E-13	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Engine Thrust Reverser Endurance Test	25.934
E-15	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Nacelle Areas Behind Firewalls for Thrust Reverser Directional Control Valve (DCV)	25.1182(a) 25.1183(a)

CRI	Project	Title	Applicable Part 25 Section
E-19	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Hydraulic Components in Engine Aft Fairing Compartment	25.1182(a) 25.1183(a)
F-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Reset Switch for Overspeed Warning	25.1303(c)(1)
F-21	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Overspeed Warning Aural	25.1303(c)(1)

4. Special Conditions

CRI F-GEN-11 (Special Conditions) Non-rechargeable Lithium Batteries Installations

CRI	Project	Title	Special Condition Number
B-02	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Human Factors	SC B747-8F/B-02
C-02	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fuel Tank Pressure Loads	SC B747-8F/C-02
C-05	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Landing Gear Criteria	SC B747-8F/C-05
C-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Sustained Engine Imbalance	SC B747-8F/C-06
C-16	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Design Roll Maneuver	SC B747-8F/C-16
C-18	P.EASA.IM.A.164 (747-8F)	Installation of Flutter Suppression System	SC B747-8F/C-18
D-03	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	High Altitude Operation/ High Cabin Heat Load	SC B747-8F/D-03
D-06	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fire Resistance of Thermal Insulation Material	SC B747-8F/D-06
D-09	P.EASA.IM.A.165 (747-8)	Installation of Crew Rest Compartment (passenger aircraft)	SC B747-8/D-09
D-16	P.EASA.IM.A.165 (747-8)	Application of Heat Release and Smoke Density Requirements to Seat Materials	SC B747-8/D-16
D-22	P.EASA.IM.A.165 (747-8)	Type C Passenger Exits	SC B747-8/D-22
D-23	P.EASA.IM.A.165 (747-8)	Design for Security	SC B747-8/D-23
D-30	P.EASA.IM.A.165 (747-8)	Installation of seats with inflatable restraints	SC B747-8/D-30
D-37	P.EASA.IM.A.165 (747-8)	Door 2 Stairs	SC B747-8/D-37
D-44	P.EASA.IM.A.165 (747-8)	Upper Deck Occupancy	SC B747-8/D-44
D-45	P.EASA.IM.A.165 (747-8)	Door 1 Extendable Slide	SC B747-8/D-45

CRI	Project	Title	Special Condition Number
E-14	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Fuel Quantity Indication System	SC B747-8F/E-14
F-01	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	HIRF Protection	SC B747-8F/F-01
F-22	P.EASA.IM.A.164 P.EASA.IM.A.165 (747-8F/747-8)	Security Assurance Process to Isolate or Protect the Aircraft Systems and Networks from Internal and External Security Threats	SC B747-8F/F-22
H-01	P.EASA.IM.A.164 (747-8F) P.EASA.IM.A.165 (747-8F/747-8)	Instructions for Continued Airworthiness for Electrical Wiring Interconnection Systems (EWIS)	SC B747-8F/H-01

5. Exemptions

No exemptions have been granted

6. Elect to Comply

Area or System - Comments	Applicable Part 25 Section	Title	Proposed Compliance Amdt Level
Airframe – Wing (CRI C-11)	25.963(e)	Fuel Tank Access Covers	CS 25-3
Propulsion - Engine/APU Structures (CRI C-09)	25.361	Engine and APU Load Conditions	NPA 25C-305
Interiors – Insulation (CRI D-29)	25.856(b)	Thermal/Accoustic Insulation Material	CS 25-6
Fuels (CRI E-11)	25.981	Fuel Tank Ignition	CS 25-6
Airframe – Empennage (Inboard Elevator)	25.571(a) and (b)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
	25.571(d) and (e)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
Airframe – Fuselage (Not Affected portions of the fuselage, floors and doors, as defined in CRI A-01,Table 2.3)	25.305(a), (b), and (c)	Strength and deformation.	CS 25-2
	25.571(a) and (b)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
	25.571(d) and (e)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
Airframe - Fuselage: Flight deck floor beams/frames (not affected from decompression standpoint)	25.365(e)	Pressurized cabin loads.	CFR 25-54

Area or System - Comments	Applicable Part 25 Section	Title	Proposed Compliance Amdt Level
Airframe - Fuselage: #2 and #3 flight deck windshield, window for main entry door #1, window for upper deck crew door, fuselage viewport windows, and supernumerary compartment windows	25.303	Factor of safety.	CS 25-2
	25.305(a), (b), and (c)	Strength and Deformation	CS 25-2
	25.307(a) and (d)	Proof of structure.	CS 25-2
	25.365(a), (b), and (d)	Pressurized cabin loads.	CS 25-2
	25.571(b)(5)(ii)	Damage-tolerance and fatigue evaluation of structure.	CS 25-2
	25.601	Design & Construction - General.	CS 25-2
	25.603	Materials.	CS 25-2
	25.605	Fabrication methods.	CS 25-2
	25.609	Protection of structure.	CS 25-2
	25.611	Inspection provisions.	CS 25-2
	25.775	Windshields and windows.	CS 25-2

7. All Weather Capabilities

See approved FAA Airplane Flight Manual

All Weather Operation

CS AWO Initial Issue, effective 17 October 2003.

8. Environmental Standards

Noise: ICAO Annex 16, Volume I, 5th Edition, Chapter 4, Amendment 9 (Refer to TCDSN UK.TC.A.00165 for details)

Emissions: ICAO Annex 16, Volume II, 3rd Edition, Amendment 6

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

Design Standards identified as the basis for this Type Certificate is that of the Series Design defined by the "Submittal of Descriptive Data List (DDL) for the 747-8 Amended Type Design Configuration, Rev J," as enclosed in Boeing Internal Letter B-H320-2011-02221, dated December 9, 2011.

2. Description

Low wing jet transport with a conventional tail unit configuration, powered by four high bypass turbofan engines mounted on pylons beneath the wings.

3. Production Basis

Manufactured under Production Certificate 700

4. Dimensions

Length 76.3 m (250 ft 2 ins)

Wing Span 68.5 m (224ft 7 ins)

Height 19.4 m (63 ft 6 ins)

5. Engines (Type/Model, Type Certificate, Limitations)

Type and Model

747-8F: 4 General Electric GEnx-2B67, GEnx-2B67B, GEnx-2B67/P

6. Engine type certification data sheets:

UK.TC.E.00121 General Electric GEnx-2B67, GEnx-2B67B, GEnx-2B67/P

WARNING: To prevent unsafe airplane handling characteristics, electronic engine control (EEC) software C060 (or newer) cannot be intermixed on the same aircraft with older EEC software: C032, C040, or C045. The idle selection logic is different in GE C060 software compared to older versions of EEC software. This difference can potentially provide large unsafe thrust asymmetries during acceleration from lower power if C060 EEC software is mixed with older EEC software (i.e. one or more engine at a high idle, while the rest are at minimum idle. The engines at high idle will respond much quicker if there is a rapid throttle advance). See Boeing Service Bulletin 747-73A2083

See FAA TCDS A20WE NOTE 6 (after section XVI) for further information regarding intermixing engines

7. Auxiliary Power Unit

Pratt and Whitney of Canada Type PW901C

8. Propellers

N/A

9. Fluids (Fuel, Oil, Additives, Hydraulics)

Fuel: Refer approved Airplane Flight Manual

Oil: Refer approved Airplane Flight Manual

10. Airspeed Limitations

VMO/MMO 365/0.9 (KCAS)

For other airspeed limits see the appropriate FAA Approved Airplane Flight Manual

11. Operating Limitations

Maximum Operating Altitude: 13,137 m (43,100 ft)

Maximum Airfield Elevation 2,896 m (9,500 ft)

for take-off

12. All Weather Capabilities

See approved FAA Airplane Flight Manual

13. Maximum Masses

747-8 Maximum Certified Weights: (At Type Certification)

	Kilograms	Pounds
MTW	449,056	990,000
MTOW	447,695	987,000
MLW	312,072	688,000
MZFW	295,289	651,000

See approved Airplane Flight Manual for the appropriate weights.

14. Centre of Gravity Range

See Airplane Flight Manual..

15. Datum

See Weights and Balance Manual.

16. Mean Aerodynamic Chord (MAC)

See Weights and Balance Manual.

17. Levelling Means

See Airplane Flight Manual.

18. Minimum Flight Crew

Two (2): Persons (Pilot and Co-pilot)

19. Minimum Cabin Crew

The table below provides the certified Maximum Passenger Seating Capacities (MPS), the corresponding cabin configuration (exit arrangement and modifications) and the associated numbers of cabin crew members used to demonstrate compliance with the evacuation certification requirements of CS 25.803. Additional cabin crew members may be required to comply with other regulatory requirements (e.g., cabin attendant direct view or ditching).

Passenger Deck	Passenger Seating Capacity & Cabin Configuration	Cabin crew
Main	495 passengers: (C, A, A, A, A) exit arrangement	10
Main	440 passengers: (C, A, A, A, C) exit arrangement	9
Upper	110 passengers: (A) exit arrangement	3
Upper	100 passengers: (A) exit arrangement	2
Upper	45 passengers: (I) exit arrangement	1

20. Maximum Seating Capacity

The maximum number of passengers approved for emergency evacuation is: 605

Upper deck: 110 persons

Main deck: 495 persons

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

21. Baggage / Cargo Compartment

See the appropriate FAA approved Weight and Balance Control Manual

22. Wheels and Tyres

See approved FAA Airplane Flight Manual

IV. Operating and Service Instructions

1. Aircraft Flight Manual

FAA Approved Flight Manual: D631U004.

2. Aircraft Maintenance Manual / Instructions for Continued Airworthiness and Airworthiness Limitations

Scheduled Maintenance	Scheduled Maintenance Checks as per Boeing MRB Report Boeing Maintenance Manual Doc. D633U8101.
Life Limited Parts:	Life Limited Parts and required inspection intervals are listed in the FAA approved Airworthiness Limitations Section of the Boeing Maintenance Planning Data Document D011U721-02.

3. Structural Repair Manual

Structural Repair Manual – Boeing Document D634U201.

4. Service Letters and Service Bulletins

As published by Boeing and approved by FAA

5. Required Equipment

All equipment as prescribed in Section II (Certification Basis) above must be installed in the aircraft.

V. Operational Suitability Data

The Operational Suitability Data Data elements listed below are approved by the European Union Aviation Safety Agency under the EASA Type Certificate EASA.IM.A.196 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014, and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.

1. Master Minimum Equipment List

EASA 747-8 MMEL D639U200-ESEM. MMEL OSD certification basis is JARMMEL Section 1 Subpart A and Subpart B at Amendment 1 (01 August 2005) with the MoC specified in applicant position as recorded in Boeing ORI 4.

2. Flight Crew data

The Operational Suitability Data for Flight Crew are contained in Boeing Document Reference D926U004-01, dated December 7, 2015 or later approved revisions. FC OSD certification basis is CS-FCD, Initial Issue, dated 31 January 2014.

3. Cabin Crew Data

a. The Cabin Crew Data has been approved as per the defined Operational Suitability Data Certification Basis, and as demonstrated by Boeing Document D221U000-01 – Operational Suitability Data – Cabin Crew Data – Boeing 747, dated December 04, 2015 or later approved revisions.

b. Required for entry into service by EU operator.

c. The B747-8 aircraft is determined to be a new type for cabin crew.

4. SIM Data

Not required.

5. Maintenance Certifying Staff Data

Not required.

6. Other

Not applicable.

VI. Notes

1. Boeing and GE have determined that the GEnx engines on these aircraft intermittently emit a sometimes clearly visible fuel vapor fog after shutdown, as a result of a small quantity of fuel being released from the engine's fuel system. These emissions do not present a safety issue or appreciable environmental impact. Boeing and GE will modify the design of the aircraft and engines by December 31, 2012 to completely eliminate this fuel venting on new aircraft. Boeing has included an airworthiness limitation in the instructions for continued airworthiness for the affected aircraft requiring incorporation of the modified design by December 31, 2014.

Section 9 Explanatory Note to TCDS UK.TC.A.00165

This Annex was created to make public non-proprietary data contained in selected UK specific Special Conditions, Deviations, or Equivalent Safety Findings that are part of the applicable Certification Basis as recorded in TCDS UK.TC.A.00165.

Only those Conditions, Deviations, or Equivalent Safety Findings raised on or after 01 January 2021 shall be included in this Explanatory Note.

For Special Conditions, Deviations or Equivalent Safety Findings included as part of the Certification Basis prior to 01 January 2021, refer to the EASA Explanatory Note to TCDS IM.A.196 – Boeing 747.

I. Special Conditions

None.

II. Deviations

None.

III. Equivalent Safety Findings

None.

Section 10 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
AFM	Airplane Flight Manual
APU	Auxiliary Power Unit
AWO	All Weather Operations
CAA	Civil Aviation Authority
CMR	Certification Maintenance Requirements
CRI	Certification Review Item
CS	Certification Specification
EASA	European Union Aviation Safety Agency
EC	European Commission
ES(F)	Equivalent Safety (Finding)
ETOPS	Extended Range Operations with Two-Engined Aeroplanes
EU	European Union
EU MS	European Union Member States
EWIS	Electrical Wiring Interconnection System
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FRS	Flammibility Reduction Systems
HIRF	High Intensity Radiated Field
IAA	Irish Aviation Authority
ICA	Instructions for Continued Airworthiness
ICAO	International Civil Aviation Organization
IGW	Increased Gross Weight
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
LBA	Luftfahrt-Bundesamt (CAA Germany)
MRB	Maintenance Review Board
NAA	National Aviation Authority
NG	Next Generation
NPA	Notice of Proposed Amendment
PTC	Post Type Certificate
SC	Special Condition
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCH	Type Certificate Holder
TSO	Technical Standards Order

II. Type Certificate Holder Record

TCH Record	Period
The Boeing Company **737 Logan Avenue North** **Renton, WA, 98057-0000**	Present. No changes.

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	24 Mar 2026	Initial Issue UK.TC.A.00165 Based on EASA TCDS No. IM.A.196, Issue 17 Section 1.II Part 26 compliance information added. Section 2.8 Note 3 removed. Section 3.III.IV JT9D-3 engine model removed from Boeing 747-100 as not in engine TCDS and no longer in service. Section 7.III.10 747-8F Maximum Operating Altitude conversion to metres corrected to 12,832 m All sections: References to NOTES in FAA TCDS corrected. Minor non-technical typographical and clerical corrections. Engine TCDS and TCDSN references updated to the UK applicable. References to EASA updated to UK as applicable. Section 9 Explanatory Note placeholder added with reference to existing EASA Explantory Note.	Issue 1 24 Mar 2026

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