Civil Aviation Authority United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.A.00128

for

Boeing 787

Type Certificate Holder

The Boeing Company

737 Logan Ave N

Renton

WA 98057-0000

USA

Model(s):	787-8 787-9 787-10
Issue:	1
Date of issue:	19 February 2025

TABLE OF CONTENTS

Section 1 General (All Models)

I. General

This Type-Certificate Data Sheet (TCDS) is the concise definition of the type-certified 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.115 at Issue 25 dated 20 April 2020 and are therefore accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.
3. Certification Review Items (CRI) issued by UK CAA for validation projects since 01 January 2021 will have the suffix ‘UK’. For example, the first CRI issued by UK CAA against subpart E of the applicable standard is numbered CRI E-01UK.

Section 2 Boeing 787-8

I. General

This Data Sheet, which is part of Type Certificate UK.TC.A.00128, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the United Kingdom Civil Aviation Authority (UKCAA).

1. Type / Variant / Model

a) Type: Boeing 787

b) Model: Boeing 787-8

2. Performance Category

A

3. Certifying Authority

Federal Aviation Administration (FAA)

Seattle Aircraft Certification Office

2200 South 216th Street

Des Moines, WA, 98198-6547

United States of America

4. Manufacturer

The Boeing Company

737 Logan Ave N

Renton, WA, 98057-0000

United States of America

5. FAA Certification Application Date

October 01, 2006

6. EASA/UKCAA Type Validation Application Date

October 01, 2006

7. FAA Type Certification Date

August 26, 2011

8. EASA/UKCAA Type Validation Date

August 26, 2011

II. Certification Basis

1. Reference Date for determining the applicable requirements

October 01, 2006

2. FAA Type Certification Data Sheet No.

T00021SE

3. FAA Certification Basis

October 01, 2006

4. EASA/UKCAA Airworthiness Requirements

The following certification specifications were adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

Certification Specification 25, Amendment 1, effective as of December 12, 2005, except where identified below.

Certification Specification All Weather Operations (CS AWO), Book 1 and 2 published October 17, 2003.

Additional airworthiness requirements established by the UK CAA since establishment will be added to this section.

5. Special Conditions

The following special condition CRIs were adopted by UKCAA as part of their separation and establishment dated 01 January 2021. Additional special conditions validated by the UK CAA will be added to this section.

CRI	Subject
B-05	Control Surface Position Awareness
B-11	Human Factors
C-01	Crashworthiness of Composite Structure
C-02	Design Manoeuvre Requirements
C-04	Engine and APU Load Conditions
C-07	Fuel Tank Structural Integrity / Fuel Tank Access Covers
C-13	Tyre / Wheel Debris – Fuel Tank Penetration
D-03	High Altitude Operation / High Cabin Heat Load
D-06	Fire Resistance of Thermal Insulation Material
D-09	Type C Passenger Exits
D-12	Fuselage Doors
D-15	Post-Crash Fire Resistance of Composite Material
D-16	In-Flight Fire Resistance of Composite Material

CRI	Subject
D-22	Flight and Attendant Overhead Crew-rest
D-23	Application of Heat Release Requirements to Seat Installations
D-24	Strengthened Flight Deck Bulkhead
E-03	Engine and APU Intake Icing – Falling and Blowing Snow
E-07	Flammability Reduction System (Nitrogen Generation System)
E-11	Composite Wing and Fuel Tank Fire Protection
E-14	Fuel Quantity Indicating System
F-03	Protection from External High Intensity Radiated Fields (HIRF)
F-22	Isolation or Protection of Aircraft Control Domain and Airline Information Services Domain from the Passenger Information and Entertainment Services Domain
F-24	Lithium-Ion Batteries
F-25	Aircraft System Security for the Aircraft Control Domain and Airline Information Services Domain from Internet and Operator Network Access and Electronic Transmission of Field-Loadable Software Applications and Databases
F-29	Flight Recorders, Data Link Recording
H-01	Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWIS

Post-TC:

D-GEN8	Installation of Oblique Seats, public effectivity from 787 EASA TCDS Issue 23
D-GEN9	Incorporation of Inertia Locking Device in Dynamic Seats, effective December 09, 2019
D-GEN10	Installation of Suite Type Seating, effective October 31, 2019
F-GEN-11	Non-rechargeable Lithium Batteries Installations, effective for changes from November 10, 2016

6. Exemptions

Exemptions validated by the UK CAA will be added to this section.

7. Deviations

The following deviation CRIs were adopted by UKCAA as part of their separation and establishment dated 01 January 2021. Additional deviations validated by the UK CAA will be added to this section.

CRI	Subject
B-07	Cockpit Controls
E-20	Indication of Gross Fuel Contamination (RR engines)
E-21	Indication of Gross Fuel Contamination (GEnx engines)

Notes: CRI E-20 is a time limited Deviation. For Model 787-8 airplanes granted a certificate of airworthiness prior to October 31, 2014, the “Airworthiness Limitation” section of the Model 787-8 airplane “Instructions for Continued Airworthiness” must state that delivered airplanes cannot be operated after December 31, 2016, unless the appropriate design changes are incorporated by the owner or operator. If an application for an airworthiness certificate is made on or after October 31, 2014, the affected airplanes must incorporate the indication of impending bypass of the fuel oil heat exchanger

CRI E-21 is a time limited Deviation. For Model 787-8 airplanes granted a certificate of airworthiness prior to October 31, 2014, the “Airworthiness Limitation” section of the Model 787-8 airplane “Instructions for Continued Airworthiness” must state that delivered airplanes cannot be operated after December 31, 2016, unless the appropriate design changes are incorporated by the owner or operator. If an application for an airworthiness certificate is made on or after October 31, 2014, the affected airplanes must incorporate the indication of impending bypass of the fuel oil heat exchanger

8. Equivalent Safety Findings

The following table lists the Equivalent Safety Finding requests made by Boeing which are specific to the 787-8 model.

CRI	Subject
B-06	Trim Systems
B-09	Out of Trim Characteristics
B-12	Standby Air Data System
C-03	Dive Speed Definition, with Speed Protection System.
D-04	Strengthened Flight Deck Door
D-08	Flight Control System Failures
D-17	Lighted “No Smoking” Signs in lieu of Placards
D-18	Emergency Exit Door Arrow and “OPEN” Colour

D-25	Crew Determination of Quantity of Oxygen in Passenger Oxygen System
D-28	Door Indications
E-04	Thrust Reverser Testing
E-05	Hydraulics Bay in Aft Strut Fairing
E-09	GEnx Cowl TAI Duct
E-12	Ignition Switches
E-17	RR Turbine Overheat Detection
E-24	GEnx Engine Fuel Filter Location
F-14	Use of Earth Reference System (ERS) accelerometers in lieu of the CG mounted Flight Data Recorder Accelerometers
F-18	Minimum Mass Flow of Supplemental Oxygen
F-27	Instrument Systems
F-30	First Aid Portable Pulse Oxygen System
G-04	Fire Handle Design
G-02-10	Green Arc for Powerplant Instruments*
G-GEN1	Instructions for Continued Airworthiness (ICA)

*Considered from EASA approval ref 10063714

The following table lists those subjects where Boeing has requested continued use of Equivalent Safety Finding CRIs previously agreed by JAA/EASA/UKCAA on earlier Boeing programmes. All of these ESFs are considered to be non-controversial.

CRI	Subject
777 F-9	Access to oxygen dispensing units in galley/work areas
777 D-LR-6	Door Sill Reflectance
777 F-LR-3	Exterior Exit Markings
777 F-LR-4	Pneumatic Systems – High Pressure, escape slide cylinders and associated piping.
777 F-12	Non-unique Overspeed Aural Warning
777 F-LR-1	Dedicated Reset Switch, Overspeed Warning

Post TC:

B-13	Vibration/Buffeting Compliance Criteria for Large External Antenna Installation, from 787 TCDS Issue 24.
D-05-9	Leading Edge Seal Krueger Flap Actuation

E-22	B787/GE Equivalent Safety Finding (ESF) for § 25.1181(a)(6) & § 25.1182(a) for the GEnx-1B Fan Case Compartment and § 25.1183(a) for the Power Door Opening System (PDOS)
D-GEN7	Flammability Testing Hierarchy

9. Elect to Comply

For the 787-8 Boeing has elected to comply with the full content of the mature NPAs listed below that were not incorporated into CS 25 Amendment 1.

NPA	Subject
JAA NPA 25D-320 April 02, 2001	Standards for Cargo and Baggage Compartments
JAA NPA 25G-334 September 01, 2002	Contaminated Runways Equivalent Level of Safety
EASA NPA 2008-01 June 06, 2008	Extended Range Operations with Two-Engined Aeroplanes ETOPS Certification and Operation (AMC 20-6)

For the aircraft having embodied the modification and approval related to the *Major Change Approval ref 10057983 "Model 787 - Automatic Dependent Surveillance – Broadcast (ADS-B in and Out) new functionality"*, Boeing elect to comply with:

CS-ACNS, Initial Issue, dated 17 December 2013, Book 1, Subpart D -- Surveillance, Sections: 1, 2, 3, 4

From 01 January 2025 for the 787-8, Boeing elects to comply with CS 25.1535, Amendment 10.

10. Environmental Protection Requirements

Noise: ICAO Annex 16, Volume I (for details see CAA TCDSN UK.TC.A.00128)

Fuel Venting: ICAO Annex 16, Volume II, Part II, Chapter II

III. Technical Characteristics and Operating Limitations

1. Type Design Definition

787-8: D061Z022-02, Revision C, dated 11 August 2011, and Major Level 1 Change (EASA Project No. 0010012573-001).

2. Description

Twin turbo-fan, twin-aisle, long range, large aeroplane.

3. Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.

4. Dimensions

Wingspan	60.1218 meters [197 feet, 3 inches]
Fuselage Length	56.7182 meters [186 feet, 1 inch]
Fuselage Constant Diameter	5.7531 meters [18 feet, 10.5 inches]

5. Engines

Two (2) Rolls-Royce plc Turbofan Engines: (EASA Engine Type Certificate No. E.036) Models: Trent 1000-A, Trent 1000-A2, Trent 1000-C, Trent 1000-C2, Trent 1000-D, Trent 1000-D2, Trent 1000-E, Trent 1000-G, Trent 1000-G2, Trent 1000-H, Trent 1000- H2, Trent 1000-L2, Trent 1000-AE3, Trent 1000-CE3, Trent 1000-D3, Trent 1000-G3, or Trent 1000-H3

Two (2) General Electric Engines: (EASA Engine Type Certificate No. E.102) Models: GEnx-1B64, GEnx-1B64/P1, GEnx-1B64/P2, GEnx-1B67 GEnx-1B67/P1, GEnx-1B67/P2, GEnx-1B70, GEnx-1B70/P1, GEnx-1B70/P2, GEnx-1B70/75/P1 or GEnx-1B70/75/P2

Engine Limits:

	Static thrust at sea level:	
RB211 Trent 1000-A with or without M/SB 72-G319 incorporated	307.8 kN (69,194 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-C with M/SB 72-G319 incorporated	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-D with M/SB 72-G319 incorporated	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-E with M/SB 72-G319 incorporated	265.3 kN (59,631 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-G with M/SB 72-G319 incorporated	320.6 kN (72,066 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-H with M/SB 72-G319 incorporated	284.2 kN (63,897 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-A2	307.8 kN (69,194 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-C2	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-D2	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 35 deg C)
RB211 Trent 1000-G2	320.6 kN (72,066 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-H2	284.2 kN (63,897 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-L2	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 25 deg C)
RB211 Trent 1000-AE3	307.8 kN (69,194 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-CE3	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-D3	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 35 deg C)
RB211 Trent 1000-G3	320.6 kN (72,066 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)

	Static thrust at sea level:	
RB211 Trent 1000-H3	284.2 kN (63,897 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B64 applicable to Bill of Material GEnx-1B64G03 and GEnx-1B64G04	298.0 kN (67,000 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B64/P1 applicable to Bill of Material GEnx-1B64/P1G01	298.0 kN (67,000 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B64/P2 applicable to Bill of Material GEnx-1B64/P2G01 or GEnx-1B64/P2G02	298.0 kN (67,000 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B67 applicable to Bill of Material GEnx-1B67G03 and GEnx-1B67G04	308.7 kN (69,400 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B67/P1 applicable to Bill of Material GEnx-1B67/P1G01	308.7 kN (69,400 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B67/P2 applicable to Bill of Material GEnx-1B67/P2G01 or GEnx-1B67/P2G02	308.7 kN (69,400 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B70 applicable to Bill of Material GEnx-1B70G03 and GEnx-1B70G04	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B70/P1 applicable to Bill of Material GEnx-1B70/P1G01	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B70/P2 applicable to Bill of Material GEnx-1B70/P2G01 or GEnx-1B70/P2G02	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B70/75/P1 applicable to Bill of Material GEnx-1B70/75/P1G01	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 38.8 deg C)
GEnx-1B70/75/P2 applicable to Bill of Material GEnx-1B70/75/P2G01 or GEnx-1B70/75/P2G02	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 38.8 deg C)

* 10 minutes at takeoff thrust allowed only in case of engine failure

Refer to the Approved Airplane Flight Manual for engine intermix eligibility. Other engine limitations: See the relevant Engine Type Certificate Data Sheet.

6. Auxiliary Power Unit

One (1) no bleed-air APU, Hamilton Sundstrand APS5000

Limitations and Operating Procedures - See the Airplane Flight Manual

7. Propellers

N/A

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

Fuels: Rolls-Royce plc Turbofan Engines*

Nomenclature	Specification	
	U.S.A.	RUSSIA
KEROSENE	ASTM D-1655 grades Jet-A and Jet A-1	
	MIL-DTL-83133 grade JP-8	
		GOST 10227-86 grade TS-1
High Flash Point	MIL-DTL-5624 grade JP-5	

Fuels: General Electric Turbofan Engines*

Nomenclature	Specification	
	U.S.A.	RUSSIA
KEROSENE	ASTM D-1655 grades Jet-A and Jet A-1	
	MIL-DTL-83133 grade JP-8	
		GOST 10227-86 grade TS-1
High Flash Point	MIL-DTL-5624 grade JP-5	

* Fuels conforming to the specifications in the table are acceptable. Fuels produced to other specifications and having properties meeting the requirements of the above specifications are acceptable for use (refer to applicable approved Manuals). The fuel and any fuel additives must conform to the relevant Engine Operating Instructions.

See the Airplane Flight Manual for further information.

Oils

Oils: Refer to applicable associated Manuals.

Hydraulics

Hydraulic Fluids: Refer to the applicable associated Manuals.

9. Fluid Capacities

Tanks	Usable Fuel			
	U.S. Gallons	Pounds*	Liters	Kilograms*
Main L or R	5,570	37,319	21,085	16,868
Center	22,200	148,740	84,036	67,229
Total	33,340	223,378	126,206	100,965

	Unusable Fuel			
	U.S. Gallons	Pounds*	Liters	Kilograms*
Drainable	32.4	217	122.6	98
Trapped	72.4	485	274.1	219
Total	104.8	702	396.7	317

* Fuel Density is 6.7 Pounds / U.S. Gallon and 0.8 Kilograms / Liter

Please reference the Weight and Balance Manual for further information.

10. Airspeed Limitations

V_{MO}/M_{MO} = 350KEAS / 0.90M.

For other airspeed limits, please reference the Airplane Flight Manual.

11. Flight Envelope

Maximum Operating Altitude: 43,100 feet

See the Airplane Flight Manual for further information.

12. Operating Limitations

See the Airplane Flight Manual for further information.

12.1 Approved Operations

The airplane is approved for the following kinds of flight and operation, both day and night, provided the required equipment is installed and approved in accordance with the applicable regulations/specifications:

- Visual (VFR)
- Instrument (IFR)
- Icing Conditions
- Low weather minima (CAT I, II, III operations)
- B-RNAV
- RVSM
- Gear down dispatch
- Towbarless Towing
- Wet and contaminated runway operations
- Extended Over-Water

All-Weather Capability
The aircraft is qualified to CAT III precision approach and autoland.

12.2 Other Limitations

Operational Limits:

- Runway slope – ±2%
- Maximum Takeoff and Landing Tailwind Component – 15 knots*
- Maximum Operating Altitude – 43,100 feet pressure altitude

* The capability of the airplane has been satisfactorily demonstrated for takeoff and manual and

automatic landings with tailwinds up to 15 knots. This finding does not constitute operational approval to conduct takeoffs and landings with tailwind components in excess of 10 knots.

13. Maximum Certified Masses (at Type Certification)

Maximum Taxi Weight	Maximum Takeoff Weight	Maximum Landing Weight	Maximum Zero Fuel Weight	Minimum Flight and Zero Fuel Weight
503,500 LB	502,500 LB	380,000 LB	355,000 LB	229,500 LB
228,383 KG	227,930 KG	172,365 KG	161,100 KG	104,100 KG

Notes: The maximum weight limits may be less as limited by centre of gravity, fuel density and fuel loading limits, as given in the Airplane Flight Manual. Refer to the Weight and Balance Manual for additional specific airplane loading limitations.

The Minimum Flight Weight does not include usable fuel.

See the Airplane Flight Manual (AFM) for further information.

14. Centre of Gravity Range

See the Airplane Flight Manual (AFM) for further information.

15. Datum

Station 0.0, located 1.41732 meters [55.8 inches] forward of airplane nose (B.S. 55.8).

16. Means Aerodynamic Chord (MAC)

6.27126 meters [246.9 inches]

17. Levelling Means

A plumb bob attachment and levelling provision scale are provided in the left main gear wheel well.

18. Minimum Flight Crew

Two (2): 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).

Passenger Seating Capacity & Cabin Configuration	**Cabin crew**
381 passengers: (A, A, A, A) exit arrangement	8
350 passengers: (A, A, A, A) exit arrangement	7
355 passengers: (C, A, A, A) exit arrangement	8
350 passengers: (C, A, A, A) exit arrangement	7
330 passengers: (A, A, C, A) exit arrangement	7

Passenger Seating Capacity & Cabin Configuration	Cabin crew
300 passengers: (A, A, C, A) exit arrangement	6
300 passengers: (C, A, C, A) exit arrangement	6

20. Maximum Seating Capacity

The maximum number of passengers approved for emergency evacuation taking into account the introduction of Type C emergency exits is:

- 381 passengers with four pairs of exits in an (A, A, A, A) exit arrangement
- 355 passengers with four pairs of exits in an (C, A, A, A) exit arrangement
- 330 passengers with four pairs of exits in an (A, A, C, A) exit arrangement
- 300 passengers with four pairs of exits in an (C, A, C, A) exit arrangement

Maximum passenger capacity may be further limited by Environmental Control System ventilation per occupant as defined in CS 25.831(a) as amended by EASA 787 Special Condition CRI D-03.

21. Baggage/Cargo Compartment

Cargo Compartment	Maximum Load	
	Pounds	Kilograms
Forward	56,250	25,514
Aft	42,180	19,132
Bulk	6,030	2,735

Please reference the Weight and Balance Manual, Boeing Document D043Z580-aaaa (where aaaa is the owner identifier).

22. Wheels and Tyres

Nose Assy (Qty 2)

Tyre: 40x16.0R16
Wheel: S685Z001-390 or -590

Main Assy (Qty 8)

Tyre: 50x20.0R22
Wheel: S685Z001-360 or -561

23. ETOPS

The 787-8 has been evaluated in accordance with the type design requirements of CS 25.1535 and found suitable for ETOPS operations when operated and maintained in accordance with Boeing Document No. D021Z002-01, “Model 787 ETOPS Configuration, Maintenance, and Procedures.” This finding does not constitute approval to conduct ETOPS operations.

IV. Operating and Service Instructions

1. Aeroplane Flight Manual (AFM)

Boeing Document D631Z003

2. Instructions for Continued Airworthiness and Airworthiness Limitations

Boeing Document D011Z009-02	787 Maintenance Review Board Document (MRBR)
Boeing Document D011Z009-03	Maintenance Planning Document (MPD)
Boeing Document D011Z009-03-01	Airworthiness Limitations (AWLs)
Boeing Document D011Z009-03-02	Line Number Specific Airworthiness Limitations (AWLs)
Boeing Document D011Z009-03-03	Certification Maintenance Requirements (CMRs)
Boeing Document D011Z009-03-04	Special Compliance Items (SCIs)
Boeing Document D021Z002-01	787 ETOPS Configuration, Maintenance, and Procedures (CMP)

3. Weight and Balance Manual (WBM)

Boeing Document D043Z580-aaaa-xxxxx (Note 1)

Note 1 A current weight and balance report, including a list of equipment included in the certificated empty weight and loading instructions when necessary, must be provided for each aircraft at the time of original certification. (aaaa is the owner identifier and xxxxx is the aircraft serial number)

Note 2 Airplane operation must be in accordance with the Airplane Flight Manual, Boeing Document D631Z003. All placards required by either the approved Flight Manual, the applicable operating rules, or the Certification Basis must be installed in the airplane.

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below were originally approved by the European Aviation Safety Agency under the EASA Type Certificate number EASA.IM.A.115 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014. They were adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

1. Master Minimum Equipment List

a. Master Minimum Equipment List (MMEL reference D630Z004-04) approved at revision 0, dated on 06 August 2024 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : JAR-MMEL / MEL, section 1 Subpart A & B

b. Required for entry into service by UK operator.

2. Flight Crew Data

a. The Flight Crew data (FCD reference D015Z033-01) approved at Revision New, dated on 10 December 2015 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : CS-FCD, initial Issue.

b. Required for entry into service by UK operator.

c. Pilot Type Rating: "B777/787".

Note: These data cover the models B787-8, -9 and B777-200, -300 and -777F series aircraft. Differences are addressed in D015Z033-01.

3. Cabin Crew Data

a. The Cabin Crew data (CCD reference D6-85797, Operational Suitability Data-Cabin Crew Data - Boeing 777/787) approved at revision A, dated on 1st August 2015 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : CS-CCD, Initial Issue.

b. Required for entry into service by UK operator.

c. The B787-8 and B787-9 models are determined to be the same aircraft type for Cabin Crew. The B787-8/-9 aircraft models are determined to be variants, in terms of Cabin Crew, to the B777 (B777-200 / -200ER / -200LR / -300 / -300ER) aircraft model(s).

VI. Notes

1. Boeing and GE have determined that the GEnx engines on these 787-8 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 3 Boeing 787-9

I. General

This Data Sheet, which is part of Type Certificate UK.TC.A.00128, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the United Kingdom Civil Aviation Authority (UKCAA).

1. Type/ Model

a) Type: Boeing 787

b) Model: Boeing 787-9

2. Performance Class

A

3. Certifying Authority

Federal Aviation Administration (FAA)

Seattle Aircraft Certification Office

2200 South 216th Street

Des Moines, WA, 98198-6547

United States of America

4. Manufacturer

The Boeing Company

737 Logan Ave N

Renton, WA, 98057-0000

United States of America

5. FAA Certification Application Date

July 05, 2009

6. EASA/UKCAA Validation Application Date

July 18, 2011

7. FAA Type Certificate Date

June 13, 2014

8. EASA/UKCAA Type Validation Date

June 13, 2014

II. Certification Basis

1. Reference Date for determining the applicable requirements

July 05, 2009

2. FAA Type Certification Data Sheet No.

T00021SE

3. FAA Certification Basis

July 5, 2009

4. EASA/UKCAA Airworthiness Requirements

The following certification specifications were adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

Certification Specification 25, Amendment 5, effective as of September 5, 2008 except where identified below.

Certification Specification All Weather Operations (CS AWO), Book 1 and 2 published October 17, 2003.

Additional airworthiness requirements established by the UK CAA since establishment will be added to this section.

Reversion:

The following reversions (exceptions) as defined by the respective 787-9 CRIs, were originally accepted as part of the EASA Validation of the Boeing 787-9 and are requested by Boeing and agreed by EASA for the certification basis for the validation of the Boeing 787-9. They were then adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
25.125	Landing			
	25.125(b)(2)(ii)(B)	5	1	787-9 Airplane
25.611	Accessibility Provisions			
	25.611	5	1	Flight Controls / MCP hardware
				Pilot Controls (except for the flap lever)
				FCE cabinets, PCM, FCE battery, DMRS, GSS, MSA
				IB Slat skew sensor, OB slat skew detection mechanism assembly, LE Slat position sensor
				Aileron & Flaperon REUs, Spoiler REU, Spoiler surface position resolver, Spoiler & Stab trim actuator EMCU
	25.611	5	1	Flight Deck/ Flight Deck Linings and Consoles, Crew Oxygen Mask , FD Seats, Enhance Security Flight Deck Door & Bulkhead
	25.611(b)	5	1	Hydraulics/All Hyd electrical component interfaces
25.729	Retracting Mechanism			
	25.729(e)(1)	5	1	LGA/NWS / Nose Wheel Steering and LG Actuation System except MLG Retract Actuator, MLG Door Actuator, MLG Door Uplock, MLG Door Prox Mech
25.745	Nose-wheel Steering			
	25.745(c)	5	1	Nose Wheel Steering System
25.783	Fuselage Doors			

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
	25.783	5	1	Doors/ Fwd and Aft Large Cargo, Aft EE Access, and Bulk Cargo Door Mechanisms/Systems, Fwd Access and Fwd EE Access Doors, Passenger Entry and Crew Emergency Exit Doors
	25.783	5	1	DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device
25.809	Emergency Exit Arrangement			
	25.809	5	1	Doors/Passenger Entry and Crew Emergency Exit Doors
25.810	Emergency egress assist means and escape routes			
	25.810	5	1	Doors/Passenger Entry and Crew Emergency Exit Doors
25.858	Cargo or baggage compartment smoke or fire detection systems			
	25.858	5	1	DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device
25.869	Fire protection: systems			
	25.869	5	1	Air Data System/ ADMs, AOASs, TAT Probe, Static Ports, Pitot Probes.
	25.869	5	1	Common Core System/ RDC, ACS, ARS, FOX, GPM, PCM, Cabinet
	25.869	5	1	Integrated Surveillance System/ISSPU, ATP, TCAS Antenna, WXR Drive Unit, Receiver Transmitter Module, Flat Plate Antenna
	25.869	5	1	DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device
	25.869	5	1	EFB/EU and DU
	25.869	5	1	Flight Deck Audio/ACP, AGU
	25.869	5	1	Recorder System/EAFR
	25.869	5	1	SATCOM/SRT, DLNA, HGA
	25.869	5	1	Comm Radios/VHF Txcvr, HF Txcvr, TCP, VHF antenna
	25.869	5	1	Crew Information System/Flight Deck Printer, Wireless LAN Unit, Wireless LAN Unit External Antenna, Wireless LAN Unit Internal Antenna
	25.869	5	1	Core Network/Modular Chassis Assembly (MCA), Network Interface Module (NIM), Ethernet Gateway Module (EGM), Controller Server Module (CSM) File Server Module (FSM), Crew Information System (CIS) / Maintenance System (MS) File Server Module (FSM), Air Blocking Module (ABM)
	25.869	5	1	Exterior Lighting
	25.869	5	1	Flight Deck Seats
	25.869	5	1	Flight Deck Control Panels (except 413000 and 413200)
	25.869(a)(2)(3)	5	1	Hydraulics/All Hydraulic electrical component interfaces

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
25.1203	Fire-detector system			
	25.1203	5	1	DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device
25.1302	Installed systems and equipment for use by the flight crew			
	25.1302	5	Note 1	Flight Deck – Applicable Installed Systems and Equipment for use by the flight crew
25.1329	Flight Guidance System			
	25.1329	5	1	DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device
	25.1329	5	1	Flight Controls/ MCP hardware
				Control wheel, column and rudder pedal autopilot back drive actuators
25.1353	Electrical equipment and installations			
	25.1353	5	1	Air Data System/ ADMs, AOASs, TAT Probe, Static Ports, Pitot Probes.
	25.1353	5	1	Common Core System, RDC, ACS, ARS, FIX, GPM, PCM, Cabinet
	25.1353	5	1	ADF Receiver (ADF),DME Transceiver(DME), INR Receiver(INR), Glide Slope Antenna, GNSS Antenna, Localizer Antenna, Marker Beacon Antenna, VOR Antenna, DME Antenna, ADF Antenna, ELT Antenna, ELT
				Transmitter, ELT AIM
	25.1353	5	1	DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module,
				Cursor Control Device
	25.1353	5	1	Proximity Sensing System / EPAS
				Module, PSDC, MEDC
	25.1353	5	1	Exterior Lighting
	25.1353	5	1	Flight Controls / ISFD except SSEC Table, MCP hardware, Pilot Controls (except for the flap lever)
				FCE cabinets, PCM, FCE battery, DMRS, GSS, MSA, IB Slat skew sensor, OB slat skew detection mechanism assembly, LE Slat position sensor, Aileron & Flaperon REUs, Spoiler REU, Spoiler surface position resolver, Spoiler & Stab trim actuator EMCU
	25.1353	5	1	Flight Deck Seats
	25.1353	5	1	Hydraulics/All Hyd electrical component interfaces
	25.1353(a)	5	1	Brake System Control Unit, Main and Nose Landing Gear Axle Remote Data Concentrators, Electric Brake Actuator Controller

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
	25.1353(a)	5	1	LGA/NWS / Nose Wheel Steering and LG Actuation System except MLG Retract Actuator, MLG Door Actuator, MLG Door Uplock, MLG Door Prox Mech
25.1357	Circuit protective devices			
	25.1357	5	1	Air Data System/ ADMs, AOASs, TAT Probe, Static Ports, Pitot Probes.
	25.1357	5	1	ADF Receiver(ADF),DME Transceiver(DME), INR Receiver(INR), Glide Slope Antenna, GNSS Antenna, Localizer Antenna, Marker Beacon Antenna, VOR Antenna, DME Antenna, ADF Antenna, ELT Antenna, ELT Transmitter, ELT AIM
	25.1357	5	1	Integrated Surveillance System/ISSPU, ATP, TCAS Antenna, WXR Drive Unit, Receiver Transmitter Module, Flat Plate Antenna
	25.1357	5	1	DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device
	25.1357	5	1	EFB / EU and DU
	25.1357	5	1	Flight Deck Audio/ACP, AGU
	25.1357	5	1	Recorder System/EAFR
	25.1357	5	1	SATCOM/SRT, DLNA, HGA
	25.1357	5	1	Comm Radios/VHF Txcvr, HF Txcvr, TCP, VHF antenna
	25.1357	5	1	Crew Information System/Flight Deck Printer, Wireless LAN Unit, Wireless LAN Unit External Antenna, Wireless LAN Unit Internal Antenna
	25.1357	5	1	Core Network/Modular Chassis Assembly (MCA), Network Interface Module (NIM), Ethernet Gateway Module (EGM), Controller Server Module (CSM) File Server Module (FSM), Crew Information System (CIS) / Maintenance System (MS) File Server Module (FSM), Air Blocking Module (ABM)
	25.1357	5	1	Flight Controls / ISFD except SSEC Table, MCP hardware, Pilot Controls (except for the flap lever) FCE cabinets, PCM, FCE battery, DMRS, GSS, MSA, IB Slat skew sensor, OB slat skew detection mechanism assembly, LE Slat position sensor, Aileron & Flaperon REUs, Spoiler REU, Spoiler surface position resolver, Spoiler & Stab trim actuator EMCU
	25.1357	5	1	Flight Deck Seats
	25.1357	5	1	Enhance Security Flight Deck Door & Bulkhead
	25.1357(d)(f)	5	1	Hydraulics/All Hydraulic electrical component interfaces
25.1411	General			
	25.1411	5	1	Flight Deck Seats
25.1435	Hydraulic Systems			
	25.1435(b)(2)	5	1	Nose Wheel Steering and LG Actuation System except MLG Retract Actuator, MLG Door Actuator, MLG Door Uplock, MLG Door Prox Mech

Note 1: Use of Special Condition CRI B-11 as for the 787-8 Certification Basis.

5. Special Conditions

The following special condition CRIs were adopted by UKCAA as part of their separation and establishment dated 01 January 2021. Additional special conditions validated by the UK CAA will be added to this section.

CRI	Subject
B-05	Control Surface Position Awareness
B-11	Human Factors
C-01	Crashworthiness of Composite Structure
C-02	Design Manoeuvre Requirements
C-04	Engine and APU Load Conditions
C-13	Tyre / Wheel Debris – Fuel Tank Penetration
D-03	High Altitude Operation / High Cabin Heat Load
D-03-9	Single Side Facing Seats
D-04-9	Seats with Inflatable Restraints
D-09	Type C Passenger Exits
D-12	Fuselage Doors
D-15	Post-Crash Fire Resistance of Composite Material
D-16	In-Flight Fire Resistance of Composite Material
D-22	Crew Rest Compartment (Non-TT&L) and Flight Crew Rest Compartment (TT&L)
D-23	Application of Seat Release and Smoke Emission Requirements to Seat Installations
E-03	Engine and APU Intake Icing – Falling and Blowing Snow
E-07	Flammability Reduction System (Nitrogen Generation System)
E-11	Composite Wing and Fuel Tank Fire Protection
E-14	Fuel Quantity Indicating System
F-01-9	Data Link - Services for the Single European Sky
F-02-9	Flight Recorders including Data Link Recording
F-03	Protection from External High Intensity Radiated Fields (HIRF)
F-22	Isolation or Protection of Aircraft Control Domain and Airline Information Services Domain from the Passenger Information and Entertainment Services Domain
F-24	Lithium-Ion Batteries
F-25	Aircraft System Security for the Aircraft Control Domain and Airline Information Services Domain from Internet and Operator Network Access and Electronic Transmission of Field-Loadable Software Applications and Databases

Post-TC:

D-GEN8	Installation of Oblique Seats, public effectivity from 787 EASA TCDS Issue 23.

D-GEN9	Incorporation of Inertia Locking Device in Dynamic Seats, effective December 09, 2019
D-GEN10	Installation of Suite Type Seating, effective October 31, 2019
F-GEN11	Non-rechargeable Lithium Batteries Installations, effective for changes from November 10, 2016

6. Exemptions

Exemptions validated by the UK CAA will be added to this section.

7. Deviations

The following deviation CRIs were adopted by UKCAA as part of their separation and establishment dated 01 January 2021. Additional deviations validated by the UK CAA will be added to this section.

CRI	Subject
B-07	Cockpit Controls

8. Equivalent Safety Findings

The following table lists the Equivalent Safety Finding requests made by Boeing to the 787-9 model.

CRI	Subject
B-01-9	Standby Air Data System
B-02-9	En-route Climb
B-06	Trim Systems
B-09	Out of Trim Characteristics
C-03	Dive Speed Definition, with Speed Protection System.
D-05-9	Krueger Flaps
D-08	Flight Control System Failures
D-17	Lighted “No Smoking” Signs in lieu of Placards
D-18	Emergency Exit Door Arrow and “OPEN” Colour
D-25	Crew Determination of Quantity of Oxygen in Passenger Oxygen System
D-28	Door Indications
E-04	Thrust Reverser Testing
E-05	Hydraulics Bay in Aft Strut Fairing
E-09	GEnx Cowl TAI Duct
E-12	Ignition Switches
E-17	RR Turbine Overheat Detection

E-22	B787/GE Equivalent Safety Finding (ESF) for § 25.1181(a)(6) & § 25.1182(a) for the GEnx-1B Fan Case Compartment and § 25.1183(a) for the Power Door Opening System (PDOS)
E-24	GEnx – Fuel Filtration System
F-14	Use of Earth Reference System (ERS) accelerometers in lieu of the CG mounted Flight Data Recorder Accelerometers
F-18	Minimum Mass Flow of Supplemental Oxygen
F-27	Instrument Systems
F-30	First Aid Portable Pulse Oxygen System
G-04	Fire Switch Handle Design
G-02-10	Green Arc for Powerplant Instruments*
G-GEN1	Instructions for Continued Airworthiness (ICA)

*Considered from EASA approval ref 10063714

The following table lists those subjects where Boeing has requested continued use of Equivalent Safety Finding CRIs previously agreed by JAA/EASA/UKCAA on earlier Boeing programs. All of these ESFs are considered to be non-controversial.

CRI	Subject
757 D-05	Passenger Information Signs (Hard-Wired No-Smoking Signs)
777 D-LR-6	Door Sill Reflectance
777 F-LR-3	Exterior Exit Markings
777 F-LR-4	Pneumatic Systems – High Pressure, escape slide cylinders and associated piping.
777 F-9	Access to Oxygen Dispensing Units in Galley/Work Areas
777 F-12	Non-unique Overspeed Aural Warning
777 F-LR-1	Dedicated Reset Switch, Overspeed Warning

Post-TC:

B-13	Vibration/Buffeting Compliance Criteria for Large External Antenna Installation, from 787 EASA TCDS Issue 24.
D-GEN7	Flammability Testing Hierarchy

9. Elect to Comply

CS-25 Amendment 9 for the following certification specifications pertaining to Security Considerations:

CS	Subject
25.795(a)	Protection of flightdeck
25.795(b)(2)	Passenger cabin smoke protection

25.795(b)(3) Cargo compartment fire suppression
25.795(c)(1) Least risk bomb location
25.795(c)(3)(ii) Toilets

25.795(c)(3)(iii) Life preservers

CS-25 Amendment 10 for the following certification specifications

CS	Subject
25.1535	ETOPS Design approval

Additionally, for the aircraft having embodied the modification and approval related to the *Major Change Approval ref 10057983 "Model 787 - Automatic Dependent Surveillance – Broadcast (ADS-B in and Out) new functionality"*, Boeing elect to comply with:

CS-ACNS, Initial Issue, dated 17 December 2013, Book 1, Subpart D -- Surveillance, Sections: 1, 2, 3, 4

10. Environmental Protection Requirements

Noise: ICAO Annex 16, Volume I (for details see CAA TCDSN UK.TC.A.00128)

Fuel Venting: ICAO Annex 16, Volume II, Part II, Chapter II

III. Technical Characteristics and Operating Limitations

1. Type Design Definition

787-9: D061Z022-04, Revision B, dated May 27, 2014

2. Description

Twin turbo-fan, twin-aisle, long range, large aeroplane.

3. Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.

4. Dimensions

Wingspan	60.1218 meters [197 feet, 3 inches]
Fuselage Length	62.0014 meters [203 feet, 5 inches]
Fuselage Constant Diameter	5.7531 meters [18 feet, 10.5 inches]

5. Engines

Two (2) Rolls-Royce plc Turbofan Engines: (EASA Engine Type Certificate No. E.036) Models: Trent 1000-J2, Trent 1000-A2, Trent 1000-K2, Trent 1000-D2, Trent 1000-AE3, Trent 1000-D3, Trent 1000-J3, or Trent 1000-K3

Two (2) General Electric Engines: (EASA Engine Type Certificate No. E.102) Models: GEnx-1B74/75/P2, GEnx-1B67/P2, GEnx-1B70/75/P2, GEnx-1B70, GEnx- 1B70/P1, GEnx-1B70/P2, GEnx-1B74/75/P1

Engine Limits:

	Static thrust at sea level:	
RB211 Trent 1000-J2	347.5 kN (78,129 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-A2	307.8 kN (69,194 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-K2	347.5 kN (78,129 lbf)	Takeoff (5 min)* (flat rated to 33 deg C)
RB211 Trent 1000-D2	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 35 deg C)
RB211 Trent 1000-AE3	307.8 kN (69,194 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-D3	331.4 kN (74,511 lbf)	Takeoff (5 min)* (flat rated to 35 deg C)
RB211 Trent 1000-J3	347.5 kN (78,129 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
RB211 Trent 1000-K3	347.5 kN (78,129 lbf)	Takeoff (5 min)* (flat rated to 33 deg C)
GEnx-1B74/75P2 applicable to Bill of Material GEnx-1B74/75/P2G01 or GEnx-1B74/75/P2G02	341.2 kN (76,700 lbf)	Takeoff (5 min)* (flat rated to 31.7 deg C)
GEnx-1B74/75P1 applicable to Bill of Material GEnx-1B74/75/P1G01	341.2 kN (76,700 lbf)	Takeoff (5 min)* (flat rated to 31.7 deg C)
GEnx-1B67/P2	308.7 kN (69,400 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B70/75/P2	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 38.8 deg C)
GEnx-1B70 applicable to Bill of Material GEnx-1B70G03 and GEnx-1B70G04	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B70/P1 applicable to Bill of Material GEnx-1B70/P1G01	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B70/P2 applicable to Bill of Material GEnx-1B70/P2G01 or GEnx-1B70/P2G02	321.6 kN (72,300 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)

* 10 minutes at takeoff thrust allowed only in case of engine failure

Refer to the Approved Airplane Flight Manual for engine intermix eligibility. Other engine limitations: See the

relevant Engine Type Certificate Data Sheet.

6. Auxiliary Power Unit

One (1) no bleed-air APU, Hamilton Sundstrand APS5000

Limitations and Operating Procedures - See the Airplane Flight Manual for further information.

7. Propellers

N/A

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

Fuels: Rolls-Royce plc Turbofan Engines*

Nomenclature	Specification	
	U.S.A.	RUSSIA
KEROSENE	ASTM D-1655 grades Jet-A and Jet A-1	
	MIL-DTL-83133 grade JP-8	
		GOST 10227-86 grade TS-1
High Flash Point	MIL-DTL-5624 grade JP-5	

Fuels: General Electric Turbofan Engines*

Nomenclature	Specification	
	U.S.A.	RUSSIA
KEROSENE	ASTM D-1655 grades Jet-A and Jet A-1	
	MIL-DTL-83133 grade JP-8	
		GOST 10227-86 grade TS-1
High Flash Point	MIL-DTL-5624 grade JP-5	

* Fuels conforming to the specifications in the table are acceptable. Fuels produced to other specifications and having properties meeting the requirements of the above specifications are acceptable for use (refer to applicable approved Manuals). The fuel and any fuel additives must conform to the relevant Engine Operating Instructions.

See the Airplane Flight Manual for further information.

Oils

Oils: Refer to applicable associated Manuals.

Hydraulics

Hydraulic Fluids: ExxonMobil HyJet V per BMS3-11 Type V Grade C only

9. Fluid Capacities

Tanks	Usable Fuel			
	U.S. Gallons	Pounds*	Liters	Kilograms*
Main L or R	5,520	36,984	20,895	16,716
Centre	22,340	149,678	84,566	67,653
Total	33,380	223,646	126,356	101,085

	Unusable Fuel			
	U.S. Gallons	Pounds*	Liters	Kilograms*
Drainable	43.0	288.1	162.7	130.2
Trapped	30.2	202.3	114.2	91.4
Total	73.2	490.4	276.9	221.6

* Fuel Density is 6.7 Pounds / U.S. Gallon and 0.8 Kilograms / Liter

Please reference the Weight and Balance Manual for further information.

10. Airspeed Limits

V_{MO}/M_{MO} = 350KEAS / 0.90M.

For other airspeed limits, see the Airplane Flight Manual.

11. Flight Envelope

Maximum Operating Altitude: 43,100 feet

See the Airplane Flight Manual for further information.

12. Operating Limitations

See the Airplane Flight Manual for further information.

12.1 Approved Operations

The airplane is approved for the following kinds of flight and operation, both day and night, provided the required equipment is installed and approved in accordance with the applicable regulations/specifications:

- Visual (VFR)
- Instrument (IFR)
- Icing Conditions
- Low weather minima (CAT I, II, III operations)
- RVSM
- B-RNAV
- Gear down dispatch

- Towbarless Towing
- Wet and contaminated runway operations
- Extended Over-Water

All Weather Capability

The aircraft is qualified to Cat III precision approach and autoland.

12.2 Other Limitations

Operational Limits:

- Runway slope – ±2%
- Maximum Takeoff and Landing Tailwind Component – 15 knots*
- Maximum Operating Altitude – 43,100 feet pressure altitude

* The capability of the airplane has been satisfactorily demonstrated for takeoff and manual and automatic landings with tailwinds up to 15 knots. This finding does not constitute operational approval to conduct takeoffs and landings with tailwind components in excess of 10 knots.

13. Maximum Certified Masses

Maximum Taxi Weight	Maximum Takeoff Weight	Maximum Landing Weight	Maximum Zero Fuel Weight	Minimum Flight and Zero Fuel Weight
561,500 LB	560,000 LB	425,000 LB	400,000 LB	244,000 LB
254,692 KG	254,011 KG	192,776 KG	181,436 KG	110,677 KG

Notes: The maximum weight limits may be less as limited by centre of gravity, fuel density and fuel loading limits, as given in the Airplane Flight Manual. Refer to the Weight and Balance Manual for additional specific airplane loading limitations.

The Minimum Flight Weight does not include usable fuel.

See the Airplane Flight Manual for further information.

14. Centre of Gravity Range

See the Airplane Flight Manual for further information.

15. Datum

Station 0.0, located 1.41732 meters [55.8 inches] forward of airplane nose (B.S. 55.8).

16. Mean Aerodynamic Chord (MAC)

6.27126 meters [246.9 inches]

17. Levelling Means

A plumb bob attachment and levelling provision scale are provided in the left main gear wheel well.

18. Minimum Flight Crew

Two (2) 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).

Passenger Seating Capacity & Cabin Configuration	Cabin crew
420 passengers: (A, A, A, A) exit arrangement	9
400 passengers: (A, A, A, A) exit arrangement	8
355 passengers: (C, A, A, A) exit arrangement	8
355 passengers: (A, A, C, A) exit arrangement	8
350 passengers: (A, A, C, A) exit arrangement	7
300 passengers: (C, A, C, A) exit arrangement	6

20. Maximum Seating Capacity

The maximum number of passengers approved for emergency evacuation taking into account the introduction of Type C emergency exits is:

- 420 passengers with four pairs of exits in an (A, A, A, A) exit arrangement
- 355 passengers with four pairs of exits in an (C, A, A, A) exit arrangement
- 355 passengers with four pairs of exits in an (A, A, C, A) exit arrangement
- 300 passengers with four pairs of exits in an (C, A, C, A) exit arrangement

Maximum passenger capacity may be further limited by Environmental Control System ventilation per occupant as defined in CS 25.831(a) as amended by EASA 787 Special Condition CRI D-03.

21. Baggage/ Cargo Compartment

Cargo Compartment	Maximum Load	
	Pounds	Kilograms
Forward	70,560	32,005
Aft	56,560	25,655
Bulk	6,030	2,735

See the appropriate Weight and Balance Manual, Boeing Document D043Z590-aaaa (where aaaa is the owner identifier).

22. Wheels and Tyres

Nose Assy (Qty 2)
Tyre: 40x16.0R16
Wheel: S685Z001-390 or -590
Main Assy (Qty 8)
Tyre: 50x21.0R22

Wheel: S685Z001-360 or -561

23. ETOPS

The 787-9 has been evaluated in accordance with the type design requirements of CS 25.1535 and found suitable for ETOPS operations when operated and maintained in accordance with Boeing Document No. D021Z002-01, “Model 787 ETOPS Configuration, Maintenance, and Procedures.” This finding does not constitute approval to conduct ETOPS operations.

IV. Operating and Service Instructions

1. Aeroplane Flight Manual (AFM)

Boeing Document D631Z003

2. Instructions for Continued Airworthiness and Airworthiness Limitations

Boeing Document D011Z009-02	787 Maintenance Review Board Document (MRBR)
Boeing Document D011Z009-03	Maintenance Planning Document (MPD)
Boeing Document D011Z009-03-01	Airworthiness Limitations (AWLs)
Boeing Document D011Z009-03-02	Line Number Specific Airworthiness Limitations (AWLs)
Boeing Document D011Z009-03-03	Certification Maintenance Requirements (CMRs)
Boeing Document D011Z009-03-04	Special Compliance Items (SCIs)
Boeing Document D021Z002-01	787 ETOPS Configuration, Maintenance and Procedures (CMP)

3. Weight and Balance Manual (WBM)

Boeing Document D043Z590-aaaa-xxxxx (Note 1)

Note 1 A current weight and balance report, including a list of equipment included in the certificated empty weight and loading instructions when necessary, must be provided for each aircraft at the time of original certification. (aaaa is the owner identifier and xxxxx is the aircraft serial number)

Note 2 Airplane operation must be in accordance with the approved Airplane Flight Manual, Boeing Document D631Z003. All placards required by either the approved Flight Manual, the applicable operating rules, or the Certification Basis must be installed in the airplane.

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below were originally approved by the European Aviation Safety Agency under the EASA Type Certificate number EASA.IM.A.115 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014. They were adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

1. Master Minimum Equipment List

a. Master Minimum Equipment List (MMEL reference D630Z004-04) approved at revision 0, dated on 06 August 2024 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : JAR-MMEL / MEL, section 1 Subpart A & B

b. Required for entry into service by UK operator.

2. Flight Crew Data

a. The Flight Crew data (FCD reference D015Z033-01) approved at Revision New, dated on 10 December 2015 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : CS-FCD, initial Issue.
b. Required for entry into service by UK operator.
c. Pilot Type Rating: "B777/787".
Note: These data cover the models B787-8, -9 and B777-200, -300 and -777F series aircraft. Differences are addressed in D015Z033-01.

3. Cabin Crew Data

a. The Cabin Crew data (CCD reference D6-85797, Operational Suitability Data-Cabin Crew Data - Boeing 777/787) approved at revision A, dated on 1st August 2015 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : CS-CCD, Initial Issue.
b. Required for entry into service by UK operator.
c. The B787-8 and B787-9 models are determined to be the same aircraft type for Cabin Crew. The B787-8/-9 aircraft models are determined to be variants, in terms of Cabin Crew, to the B777 (B777-200 / -200ER / -200LR / -300 / -300ER) aircraft model(s).

VI. Notes

Reserved.

Section 4 Boeing 787-10

I. General

This Data Sheet, which is part of Type Certificate UK.TC.A.00128, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the United Kingdom Civil Aviation Authority (UKCAA).

1. Type/ Model

a) Type: Boeing 787

b) Model: Boeing 787-10

2. Performance Class

A

3. Certifying Authority

Federal Aviation Administration (FAA)

Seattle Aircraft Certification Office

2200 South 216th Street

Des Moines, WA, 98198-6547

United States of America

4. Manufacturer

The Boeing Company

737 Logan Ave N

Renton, WA, 98057-0000

United States of America

5. FAA Certification Application Date

July 12, 2013

6. EASA/UKCAA Type Validation Application Date

May 20, 2014

7. FAA Type Certificate Date

January 19, 2018

8. EASA/UKCAA Type Validation Date

February 28, 2018

II. Certification Basis

1. Reference Date for determining the applicable requirements

July 12, 2013

2. FAA Type Certification Data Sheet No.

T00021SE

3. FAA Certification Basis

July 12, 2013

4. EASA/UKCAA Airworthiness Requirements

The following certification specifications were adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

Certification Specification 25, Amendment 13, effective as of June 14, 2013 except where identified below.

Certification Specification All Weather Operations (CS AWO), Book 1 and 2 published October 17, 2003.

Additional airworthiness requirements established by the UK CAA since establishment will be added to this section.

Reversion:

The following reversions (exceptions) have been identified and accepted as part of the EASA Validation of the Boeing 787-10 and are requested by Boeing and agreed by EASA for the certification basis for the validation of the Boeing 787-10. They were then adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
25.125	Landing			
	25.125(b)(2)(ii)(B)	13	1	787-9 Airplane (Aerodynamics)
25.611	Accessibility Provisions			
		13	1	Flight Controls: All Flight Controls and Autoflight equipment except ACEs, slat electric motor controller, elevator REU, High Lift and Primary Flight Control actuators (changed or affected equipment), and all Empennage Door Actuation System (EDAS) equipment Flight Deck: Flight Deck Linings and Consoles, Crew Oxygen Mask , FD Seats, Enhance Security Flight Deck Door & Bulkhead

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
	25.611(b)	13	1	Mech/Hyd: All Hydraulics electrical component interfaces
25.777	Cockpit controls			
		13	1	Flight Controls: Pilot Controls equipment for Primary and Secondary Flight Controls, High Lift Systems, and ISFD
25.783	Fuselage Doors			
		13	1	Structures – Doors: Fwd and Aft Large Cargo, Aft EE Access, Bulk Cargo Door, Fwd EE Access Doors, Passenger Entry and Crew Emergency Exit Doors
25.795	Security considerations			
	25.795(b)(1)	13	5	787-10 Airplane (ECS – Air Distribution)
	25.795(c)(2)	13	5	787-10 Airplane (Airplane Safety)
	25.795(c)(3)(i)	13	5	787-10 Airplane (Interiors)
	The Boeing Model 787-10 was granted an exception for CS 25.795(b)(1), (c)(2) and (c)(3)(i) based on the demonstration and justification that security features were present in the type design. These security features must be in consideration in any subsequent type design change, modification, or repair, to ensure that the level of safety designed into the 787-10 is maintained. The reference aircraft at initial Amended Type Certificate 787-10 without the cabin interior is serial number 60256. The reference aircraft 787-10 with the cabin interior is serial number 60253. In lieu of the following, compliance to CS 25.795(b)(1), (c)(2) and (c)(3)(i), at amendment 13, may be shown: 'Modifications that reduce flight critical system separation or adversely impact flight deck smoke prevention, system separation and protections for searching above the overhead stowage compartments are not acceptable.'			
25.809	Emergency Exit Arrangement			
		13	1	Structures – Doors (Mechanisms/System): Passenger Entry and Crew Emergency Exit Doors
25.810	Emergency egress assist means and escape routes			

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
		13	1	Structures – Doors (Mechanisms/System): Passenger Entry and Crew Emergency Exit Doors
25.853	Compartment interiors			
	25.853(a)	13	5	Flight Controls:
				Pilot Controls, MCP, EDAS control and monitoring unit
25.869	Fire protection: systems			
		13	1	Avionics: Air Data System/ ADMs, AOASs, TAT Probe, Static Ports, Pitot Probes, Common Core System/ RDC, ACS, ARS, FOX, GPM, PCM, Cabinet Integrated Surveillance System/ISSPU, ATP, TCAS Antenna, WXR Drive Unit, Receiver transmitter module, Flat Plate Antenna, DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device
				EFB/EU and DU Flight Deck Audio/ACP, AGU, Recorder System/EAFR, SATCOM/SRT, DLNA, HGA Comm Radios/VHF Txcvr, HF Txcvr, TCP, VHF antenna
		13	1	Avionics: Crew Information System/Flight Deck Printer, Wireless LAN Unit, Wireless LAN Unit External Antenna,

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
				Wireless LAN Unit Internal Antenna Core Network/Modular Chassis Assembly (MCA), Network Interface Module (NIM), Ethernet Gateway Module (EGM), Controller Server Module (CSM) File Server Module (FSM) Crew Information System (CIS) / Maintenance System (MS) File Server Module (FSM), Air Blocking Module (ABM) Electrical: Exterior Lighting Flight Deck: Flight Deck Seats, Flight Deck Control Panels (except 413000 and 413200)
	25.869(a)(2)(3)	13	1	Mech/Hyd: All Hydraulic electrical component interfaces
25.1302	Installed systems and equipment for use by the flight crew			
		13	Note 1	Flight Deck: Applicable Installed Systems and Equipment for use by the flightcrew
25.1353	Electrical equipment and installations			
		13	1	Avionics: Air Data System/ ADMs, AOASs, TAT Probe, Static Ports, Pitot Probes Common Core System, RDC, ACS, ARS, FIX, GPM, PCM, Cabinet ADF Receiver, DME Transceiver, INR Receiver, Glide Slope Antenna, GNSS Antenna, Localizer Antenna, Marker Beacon Antenna, VOR Antenna, DME Antenna, ADF Antenna, ELT Antenna, ELT Transmitter, ELT AIM DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
				Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device Electrical: Proximity Sensing System / EPAS Module, PSDC, MEDC, Exterior Lighting Flight Deck: Flight Deck Seats Mech/Hyd: All Hyd electrical component interfaces Flight Controls: All Flight Controls and Autoflight electrical equipment except ISFD, ACEs, slat electric motor controller, elevator REU, High Lift and Primary Flight Control actuators (changed or affected equipment), and all Empennage Door Actuation System (EDAS) electrical equipment
	25.1353(a)	13	1	Mech/Hyd: Nose Wheel Steering and LG Actuation System except Semi Lever Gear Actuator Hydraulic Pressure Transducer and Gas Pressure/Temperature Transducer
25.1357	Circuit protective devices			

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
	25.1357	13	1	Avionics: Air Data System/ ADMs, AOASs, TAT Probe, Static Ports, Pitot Probes ADF Receiver, DME Transceiver, INR Receiver, Glide Slope Antenna, GNSS Antenna, Localizer Antenna, Marker Beacon Antenna, VOR Antenna, DME Antenna, ADF Antenna, ELT Antenna, ELT Transmitter, ELT AIM Integrated Surveillance System/ISSPU, ATP, TCAS Antenna, WXR Drive Unit, Receiver transmitter module, Flat Plate Antenna DCA/ Adaptive Flight (Head Down) Display Unit, Heads Up Guidance Projector, Heads Up Guidance Combiner, Display Control Panel, Remote Light Sensor, Multi Function Keypad, Graphic Generator Module, Cursor Control Device EFB / EU and DU Flight Deck Audio/ACP, AGU Recorder System/EAFR SATCOM/SRT, DLNA, HGA Comm Radios/VHF Txcvr, HF Txcvr, TCP, VHF antenna Crew Information System/Flight Deck Printer, Wireless LAN Unit, Wireless LAN Unit External Antenna, Wireless LAN Unit Internal Antenna Core Network/Modular Chassis Assembly (MCA), Network Interface Module (NIM), Ethernet Gateway Module (EGM), Controller Server Module (CSM)

CS Section	Title or subparagraph	Amendment Reversion		System/Area
		From	To	
				File Server Module (FSM) Crew Information System (CIS) / Maintenance System (MS) File Server Module (FSM), Air Blocking Module (ABM) Flight Deck: Flight Deck Seats, Enhance Security Flight Deck Door & Bulkhead Flight Controls: All Flight Controls and Autoflight electrical equipment except ISFD, ACEs, slat electric motor controller, elevator REU, High Lift and Primary Flight Control actuators (changed or affected equipment), and all Empennage Door Actuation System (EDAS) electrical equipment
	25.1357(d)(f)	13	1	Mech/Hyd: All Hydraulic electrical component interfaces
25.1411	Safety Equipment : General			
		13	1	Flight Deck : Seats
25.1435	Hydraulic Systems			
	25.1435(b)(2)	13	1	Mech/Hyd: Nose Wheel Steering and LG Actuation System except Semi Lever Gear Actuator, Tail Skid Actuator, Semi Lever Gear Actuator Hydraulic Pressure Transducer and Gas Pressure/Temperature Transducer, Semi Lever Gear Isolation Valve

Note 1: Use of Special Condition CRI B-11 as for the 787-9 and 787-8 Certification Basis.

5. Special Conditions

The following special condition CRIs were adopted by UKCAA as part of their separation and establishment dated 01 January 2021. Additional special conditions validated by the UK CAA will be added to this section.

CRI	Subject
B-05	Control Surface Position Awareness
B-11	Human Factors
C-01	Crashworthiness of Composite Structure
C-02	Design Manoeuvre Requirements
C-13	Tyre / Wheel Debris – Fuel Tank Penetration
D-03-9	Single Side Facing Seats (Post ATC)
D-03-10	Flaps Up Vertical Modal Suppression System Aeroelastic Stability Requirements
D-04-9	Seats with Inflatable Restraints – Issue 8 (Post ATC)
D-12	Fuselage Doors
D-15	Post-Crash Fire Resistance of Composite Material
D-16	In-Flight Fire Resistance of Composite Material
D-22	Crew Rest Compartment (Non-TT&L) and Flight Crew Rest Compartment (TT&L) (Post ATC)
D-23	Application of Seat Release and Smoke Emission Requirements to Seat Installations (Post ATC)
E-11	Composite Wing and Fuel Tank Fire Protection
F-01-9	Data Link - Services for the Single European Sky
F-02-9	Flight Recorders including Data Link Recording
F-03	Protection from External High Intensity Radiated Fields (HIRF)
F-22	Isolation or Protection of Aircraft Control Domain and Airline Information Services Domain from the Passenger Information and Entertainment Services Domain
F-24	Lithium-Ion Batteries
F-25	Aircraft System Security for the Aircraft Control Domain and Airline Information Services Domain from Internet and Operator Network Access and Electronic Transmission of Field-Loadable Software Applications and Databases
F-GEN-11	Non-rechargeable Lithium Batteries Installations

Post-TC:

CRI	Subject
D-GEN8	Installation of Oblique Seats, public effectivity from 787 EASA TCDS Issue 23.
D-GEN9	Incorporation of Inertia Locking Device in Dynamic Seats, effective December 09, 2019
D-GEN10	Installation of Suite Type Seating, effective October 31, 2019

6. Exemptions

Exemptions validated by the UK CAA will be added to this section.

7. Deviations

The following deviation CRIs were adopted by UKCAA as part of their separation and establishment dated 01 January 2021. Additional deviations validated by the UK CAA will be added to this section.

CRI	Subject
B-07	Cockpit Controls

8. Equivalent Safety Findings

The following table lists the Equivalent Safety Finding requests made by Boeing to the 787-10 model.

CRI	Subject
B-02-9	En route Climb
B-06	Trim Systems
B-09	Out of Trim Characteristics
C-03	Dive Speed Definition, with Speed Protection System.
D-01-10	Burnthrough Protection of Composite Fuselage
D-05-9	Krueger Flaps
D-08	Flight Control System Failures
D-25	Crew Determination of Quantity of Oxygen in Passenger Oxygen System
D-28	Door Indications
E-04	Thrust Reverser Testing
E-05	Hydraulics Bay in Aft Strut Fairing
E-12	Ignition Switches
E-17	RR Turbine Overheat Detection
F-14	Use of Earth Reference System (ERS) accelerometers in lieu of the CG mounted Flight Data Recorder Accelerometers
F-18	Minimum Mass Flow of Supplemental Oxygen
F-27	Instrument Systems
F-30	First Aid Portable Pulse Oxygen System
G-04	Fire Switch Handle Design
G-02-10	Green Arc for Powerplant Instruments
G-GEN1	Instructions for Continued Airworthiness (ICA)

The following table lists those subjects where Boeing has requested continued use of Equivalent Safety Finding CRIs previously agreed by JAA/EASA/UKCAA on earlier Boeing programs. All of these ESFs are considered to be non-controversial.

CRI	Subject
777 F-LR-4	Pneumatic Systems – High Pressure, escape slide cylinders and associated piping.
777 F-12	Non-unique Overspeed Aural Warning
777 F-LR-1	Dedicated Reset Switch, Overspeed Warning

Post TC:

B-13	Vibration/Buffeting Compliance Criteria for Large External Antenna Installation, from 787 EASA TCDS Issue 24.
D-GEN7	Flammability Testing Hierarchy

9. Elect to Comply

CS-ACNS, Initial Issue, dated 17 December 2013, Book 1, Subpart D -- Surveillance, Sections: 1, 2, 3, 4

10. Environmental Protection Requirements

Noise: ICAO Annex 16, Volume I (for details see CAA TCDSN UK.TC.A.00128)

Fuel Venting: ICAO Annex 16, Volume II, Part II, Chapter II

III. Technical Characteristics and Operating Limitations

1. Type Design Definition

787-10: D061Z114-01, Revision B, January 17, 2018

2. Description

Twin turbo-fan, twin-aisle, long range, large aeroplane.

3. Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.

4. Dimensions

Wingspan	60.1218 meters	[197 feet, 3 inches]
Fuselage Length	68.3007 meters	[224 feet, 1 inch]
Fuselage Constant Diameter	5.7531 meters	[18 feet, 10.5 inches]

5. Engines

Two (2) Rolls-Royce plc Turbofan Engines: (EASA Engine Type Certificate No. E.036) Models: Trent 1000-J3

Two (2) General Electric Engines: (EASA Engine Type Certificate No. E.102) Models: GEnx-1B76/P2, GEnx-1B76A/P2

Engine Limits:

	Static thrust at sea level:	
RB211 Trent 1000-J3	347.5 kN (78,129 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1B76/P2 applicable to Bill of Material GEnx-1B76/P2G01 or GEnx-1B76/P2G02	349.2 kN (78,500 lbf)	Takeoff (5 min)* (flat rated to 30 deg C)
GEnx-1 B76A/P2 applicable to Bill of Material GEnx-1 B76A/P2G01 or GEnx-1 B76A/P2G02	349.2 kN (78,500 lbf)	Takeoff (5 min)*

* 10 minutes at takeoff thrust allowed only in case of engine failure

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

6. Auxiliary Power Unit

One (1) no bleed-air APU, Hamilton Sundstrand APS5000

Limitations and Operating Procedures - See the Airplane Flight Manual for further information.

7. Propellers

N/A

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

Fuels: Rolls-Royce plc Turbofan Engines*

Nomenclature	Specification	
	U.S.A.	RUSSIA
KEROSENE	ASTM D-1655 grades Jet-A and Jet A-1	
	MIL-DTL-83133 grade JP-8	
		GOST 10227-86 grade TS-1
High Flash Point	MIL-DTL-5624 grade JP-5	

* Fuels conforming to the specifications in the table are acceptable. Fuels produced to other specifications and having properties meeting the requirements of the above specifications are acceptable for use (refer to applicable approved Manuals). The fuel and any fuel additives must conform to the relevant Engine Operating Instructions.

See the Airplane Flight Manual for further information.

Oils

Oils: Refer to applicable associated Manuals.

Hydraulics

Hydraulic Fluids: ExxonMobil HyJet V per BMS3-11 Type V Grade C only

9. Fluid Capacities

Tanks	Usable Fuel			
	U.S. Gallons	Pounds*	Liters	Kilograms*
Main L or R	5,520	36,984	20,895	16,716
centre	22,340	149,678	84,566	67,653
Total	33,380	223,646	126,356	101,085

	Unusable Fuel			
	U.S. Gallons	Pounds*	Liters	Kilograms*
Drainable	43.0	288.1	162.7	130.2
Trapped	30.2	202.3	114.2	91.4
Total	73.2	490.4	276.9	221.6

* Fuel Density is 6.7 Pounds / U.S. Gallon and 0.8 Kilograms / Liter

Please reference the Weight and Balance Manual for further information.

10. Airspeed Limits

V_{MO}/M_{MO} = 350KEAS / 0.90M.

For other airspeed limits, see the Airplane Flight Manual.

11. Flight Envelope

Maximum Operating Altitude: 41,100 feet

See the Airplane Flight Manual for further information.

12. Operating Limitations

See the Airplane Flight Manual for further information.

12.1 Approved Operations

The airplane is approved for the following kinds of flight and operation, both day and night, provided the required equipment is installed and approved in accordance with the applicable regulations/specifications:

- Visual (VFR)
- Instrument (IFR)
- Icing Conditions
- Low weather minima (CAT I, II, III operations)
- RVSM
- B-RNAV
- Gear down dispatch
- Towbarless Towing

- Wet and contaminated runway operations
- Extended Over-Water

All Weather Capability

The aircraft is qualified to Cat III precision approach and autoland.

12.2 Other Limitations

Operational Limits:

- Runway slope – ±2%
- Maximum Takeoff and Landing Tailwind Component – 15 knots*
- Maximum Operating Altitude – 41,100 feet pressure altitude

* The capability of the airplane has been satisfactorily demonstrated for takeoff and manual and automatic landings with tailwinds up to 15 knots. This finding does not constitute operational approval to conduct takeoffs and landings with tailwind components in excess of 10 knots.

13. Maximum Certified Masses (at Type Certification)

Maximum Taxi Weight*	Maximum Takeoff Weight	Maximum Landing Weight	Maximum Zero Fuel Weight	Minimum Flight and Zero Fuel Weight
561,500 LB	560,000 LB	445,000 LB	425,000 LB	244,000 LB
254,692 KG	254,011 KG	201,848 KG	192,777 KG	110,677 KG

Notes: The maximum weight limits may be less as limited by centre of gravity, fuel density and fuel loading limits, as given in the Airplane Flight Manual. Refer to the Weight and Balance Manual for additional specific airplane loading limitations.

The Minimum Flight Weight does not include usable fuel.

See the Airplane Flight Manual for further information.

14. Centre of Gravity Range

See the Airplane Flight Manual for further information.

15. Datum

Station 0.0, located 1.41732 meters [55.8 inches] forward of airplane nose (B.S. 55.8).

16. Mean Aerodynamic Chord (MAC)

6.27126 meters [246.9 inches]

17. Levelling Means

A plumb bob attachment and levelling provision scale are provided in the left main gear wheel well.

18. Minimum Flight Crew

Two (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).

Passenger Seating Capacity & Cabin Configuration	Cabin crew
440 passengers: (A, A, A, A) exit arrangement	9
355 passengers: (C, A, A, A) exit arrangement	8
355 passengers: (A, A, C, A) exit arrangement	8
300 passengers: (C, A, C, A) exit arrangement	6

20. Maximum Seating Capacity

The maximum number of passengers approved for emergency evacuation taking into account the introduction of Type C emergency exits is:

- 440 passengers with four pairs of exits in an (A, A, A, A) exit arrangement
- 355 passengers with four pairs of exits in an (C, A, A, A) exit arrangement
- 355 passengers with four pairs of exits in an (A, A, C, A) exit arrangement
- 300 passengers with four pairs of exits in an (C, A, C, A) exit arrangement

Maximum passenger capacity may be further limited by Environmental Control System ventilation per occupant as defined in CS 25.831(a).

21. Baggage/Cargo Compartment

Cargo Compartment	Maximum Load	
	Pounds	Kilograms
Forward	81,500	36,967
Aft	67,500	30,617
Bulk	6,030	2,735

See appropriate Weight and Balance Manual, Boeing Document D043Z510-aaaa (where aaaa is the owner identifier).

22. Wheels and Tyres

Nose Assy (Qty 2)
Tyre: 40x16.0R16
Wheel: S685Z001-390 or -590
Main Assy (Qty 8)
Tyre: 50x21.0R22
Wheel: S685Z001-360 or -561

23. ETOPS

The 787-10 has been evaluated in accordance with the type design requirements of CS 25.1535 and found suitable for ETOPS operations when operated and maintained in accordance with Boeing Document No. D021Z002-01, “Model 787 ETOPS Configuration, Maintenance, and Procedures.” This finding does not

constitute approval to conduct ETOPS operations.

IV. Operating and Service Instructions

1. Aeroplane Flight Manual (AFM)

Boeing Document D631Z003

2. Instructions for Continued Airworthiness and Airworthiness Limitations

Boeing Document D011Z009-02	787 Maintenance Review Board Document (MRBR)
Boeing Document D011Z009-03	Maintenance Planning Document (MPD)
Boeing Document D011Z009-03-01	Airworthiness Limitations (AWLs)
Boeing Document D011Z009-03-02	Line Number Specific Airworthiness Limitations (AWLs)
Boeing Document D011Z009-03-03	Certification Maintenance Requirements (CMRs)
Boeing Document D011Z009-03-04	Special Compliance Items (SCIs)
Boeing Document D021Z002-01	787 ETOPS Configuration, Maintenance and Procedures (CMP)

3. Weight and Balance Manual (WBM)

Boeing Document D043Z510-aaaa-xxxxx (Note 1)

Note 1 .A current weight and balance report, including a list of equipment included in the certificated empty weight and loading instructions when necessary, must be provided for each aircraft at the time of original certification. (aaaa is the owner identifier and xxxxx is the aircraft serial number)

Note 2 Airplane operation must be in accordance with the approved Airplane Flight Manual, Boeing Document D631Z003. All placards required by either the approved Flight Manual, the applicable operating rules, or the Certification Basis must be installed in the airplane.

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below were originally approved by the European Aviation Safety Agency under the EASA Type Certificate number EASA.IM.A.115 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014. They were adopted by UKCAA as part of their separation and establishment dated 01 January 2021.

1. Master Minimum Equipment List

a. Master Minimum Equipment List (MMEL D630Z004-04) approved at revision 0, dated on 06 August 2024 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : JAR-MMEL / MEL, section 1 Subpart A & B

b. Required for entry into service by UK operator.

2. Flight Crew Data

a. The Flight Crew data (FCD reference D015Z033-01) approved at Revision A, dated on 08 December 2017 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis :

CS-FCD, initial Issue.

b. Required for entry into service by UK operator.

c. Pilot Type Rating: “B777/787”.

Note: These data cover the models B787-8, -9, -10 and B777-200, -300 and -777F series aircraft. Differences are addressed in D015Z033-01.

3. Cabin Crew Data

a. The Cabin Crew data (CCD reference D6-85797, Operational Suitability Data-Cabin Crew Data - Boeing 777/787) approved at revision B, dated on 15th December 2017 (or later approved revisions) as per the defined Operational Suitability Data Certification Basis : CS-CCD, Initial Issue.

b. Required for entry into service by UK operator.

c. The B787-8 and B787-9 and B787-10 models are determined to be the same aircraft type for Cabin Crew. The B787-8/-9/-10 aircraft models are determined to be variants, in terms of Cabin Crew, to the B777 (B777-200 / -200ER / -200LR / -300 / -300ER) aircraft model(s).

VI. Notes

Reserved.

Section 5 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
A/C	Aircraft
AFM	Airplane Flight Manual
AMC	Acceptable Means of Compliance
APU	Auxiliary Power Unit
CG	Centre of Gravity
CRI	Certification Review Item
EASA	European Union Aviation Safety Agency
EU	European Union
EWIS	Enhanced Wiring Interconnection System
FAA	Federal Aviation Administration
GE	General Electric
ICA	Instructions for Continued Airworthiness
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
JAA	Joint Aviation Authorities
NPA	Notice of Proposed Amendment
RR	Rolls-Royce
RVSM	Reduced Vertical Separation Minima
TCDS	Type Certificate Data Sheet
TCDSN	Type Certificate Data Sheet for Noise
UKCAA	United Kingdom Civil Aviation Authority
VFR	Visual Flight Rules

II. Type Certificate Holder Record

TCH Record	Period
The Boeing Company 737 Logan Ave N Renton, WA, 98057-0000 United States of America	Present.

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	19 February 2025	The content of the initial issue of UK CAA TCDS was taken from EASA TCDS No. EASA.IM.A.115 Issue 25 dated 20 April 2020 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Boeing 787 accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. The following general changes have been made to reflect EU-Exit as well as corrections: • Layout and editorial changes to reflect UK CAA TCDS format. • Where relevant “EASA” removed and replaced by “UK CAA“. The following changes have been made to reflect validation of design changes by the UK CAA since 01 January 2021: • Section 2, V, 1 – For 787-8, 787-9 and 787-10 added UK CAA MMEL reference D630Z004-04, approved at revision 0, dated on 06 August 2024. The following changes have been made as administrative updates: • Section 2, I, 4 – For 787-8, 787-9 and 787-10 Boeing address updated. • Section 2, II, 5 – For 787-8, 787-9, 787-10: added post TC SC CRI D-GEN9. • Section 2, II, 8 – For 787-8: added post TC ESF CRI D-05-9, added post TC ESF CRI E-22 and added post TC ESF CRI D-GEN7.	Issue 1 19 February 2025

- Section 2, II, 10 – For 787-8, 787-9 and 787-10: updated Environmental Protection Standards (Chapter II. Certification Basis).
- Section2, III, 5 – For 787-8 and 787-9: added reference to AFM for engine intermix eligibility.

Additional amendment:

- Section 2, II, 9 – From 01 January 2025, for 787-8 Boeing elect to comply with CS 25.1535, Amendment 10.

Section 6 Explanatory Note – Annex 1 to TCDS UK.TC.A.00128

This explanatory note was create to make public non-proprietary data contained in all UK specific Special Conditions, Deviations, Equivalent Safety Findings, Elect to Comply and Reversions that are part of the applicable Certification Basis as recorded in TCDS UK.TC.A.00128.

For all Special Conditions, Deviations, Equivalent Safety Findings, Elect to Comply and Reversions adopted to the UK Certification Basis, refer to the Explanatory Notes to EASA TCDS EASA.A.115 Issue 25.

Special Conditions:

None.

Deviations:

None.

Equivalent Safety Findings:

None.

Elect to Comply:

None.

Reversions:

None.

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