UNITED KINGDOM
CIVIL AVIATION AUTHORITY

FA44
Issue 5
February 2004
BOEING 747-400 Series,
747-400F Series

TYPE CERTIFICATE DATA SHEET No. FA44

This data sheet, which is part of CAA Type Certificate No.FA 44, prescribes conditions and limitations under which the product, for which the type certificate was issued, meets the airworthiness requirements of the Civil Aviation Authority.

In this case of a foreign manufactured type, the CAA type certification is based on the U.S. Federal Aviation Administration certification as issued under FAA Type Certificate No. A20WE.

The Type Certificate for the B747-400 was issued in June 1989.

In August 2003 Boeing requested completion of the JAA "Catch up" exercise in advance of the start of operation of the European Aviation Safety Agency. The attached JAA Data Sheet No JAA/25/03-028 Issue 1, dated 26 September 2003 has therefore also been accepted by CAA for the Boeing 747-400 and 747-400F Series.

TYPE CERTIFICATE HOLDER: Boeing Commercial Aeroplanes
P O Box 3707
Seattle
Washington 98124-2207
USA

MANUFACTURER: Boeing Commercial Aeroplanes
P O Box 3707
Seattle
Washington 98124-2207
USA

AIRCRAFT TYPE/
MODEL NUMBER(S): Boeing 747-400 series
747-436, 747-467, 747-467F, 747-4Q8, 747-47UF, 747-41R, 747-443

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 and of aircraft serial nos. 23908 and 23814 as defined in D6-35276 for the 747-467F and 65B00002-444 for the 747-4Q8.

747-400

CERTIFICATION BASIS: FAA Certification Basis.

Part 25 of the FAR effective February 1, 1965 as amended by Amendments 25-1 through 25-59 with the following exceptions:-

Section	TITLE	Thru.Amdt. 25-
25.107	Take off Speeds	41
25.109	Accelerate-stop distance.	41
25.149	Minimum control speed	41
25.251	Vibration and buffeting	22
25.305	Strength and deformation	22
25.331	General	45
25.351	Yawing conditions	45
25.365	Pressurised cabin load	53
25.571	Damage-tolerance and fatigue evaluation of structure.	9
25.607	Fasteners	22
25.631	Bird strike damage	(NA)**
25.657	Hinges	22
25.675	Stops	37
25.683	Operation tests	22
25.772	Pilot compartment doors	46
25.783	Doors	53
25.785	Seats, berths, safety belts, harnesses	50
25.787	Stowage compartments	31
25.789	Retention of items of mass in passenger and crew compartments	45
25.809	Emergency exit arrangement	45
25.812	Emergency lighting	31
25.832	Cabin ozone concentration	(NA)**
25.858	Cargo compartment fire detection systems	(NA)**
25.1103	Induction system duct and air duct systems	45
25.1401	Anticollision light system	26
25.1438	Pressurisation and pneumatic systems	40**
25.1529	Instructions for continued airworthiness	(NA)**

** Not applicable - The requirements of this section do not apply to this type design because the original certifiction basis, which did not include this section, has been determined to be adequate.

Part 36 of the FAR as amended by Amendments 36-1 through 36-15, and any later amendments in existence at the time of certification. The Boeing Company has elected to comply with the Stage 3 noise level requirements.

Special Federal Aviation regulation (SFAR) 27, as amended by Amendments 27-1 through 27-6 and any later amendments in existence at the time of type certification.

The following special conditions, exemptions, and equivalent safety findings, which are part of the Model 747-300 certification basis, are also part of the certification basis for the Model 747-400 (Ref. Type Certificate Date Sheet No. A20WE).

The special conditions include those enclosed with FAA letter to Boeing Company dated February 20, 1970 and the following:-

1. Special Condition 4A, revised to apply to airplanes with the landing gear load evener system deleted, was recorded as an enclosure to an FAA letter to The Boeing Company dated May 12, 1971.

2. Special Condition No. 25-61-NW-1 for occupancy not to exceed 32 passengers on the upper deck of airplanes with spiral staircase was transmitted to The Boeing Company by FAA letter dated February 26, 1975.

3. Special Condition no. 25-71-NW-3 for occupancy not to exceed 45 passengers on the upper deck of airplanes with straight segmented stairway was transmitted to The Boeing Company by FAA letter dated September 8, 1976.

4. Modification of Special Condition No. 25-71-NW-3 for occupancy not to exceed 100 passengers on the upper deck of airplanes with straight segmented stairway was transmitted to the Boeing Company by FAA letter dated August 3, 1981.

5. Special Condition No. 25-77-NW-4 (modification of the autopilot system to approve the airplane for use of the system under Category IIIb landing conditions) was transmitted to The Boeing Company by FAA letter dated July 8, 1977.

6. Special Condition No. 25-ANM-16 for use of an overhead crew rest area, occupancy not to exceed ten crew members was transmitted to The Boeing Company by FAA letter dated November 19, 1987. FAA approved procedures required for compliance with para 13 of the Special Condition are located in Boeing Document D926U303, App. D.

7. Special Condition No. 26-ANM-24 applicable to flight deck displays and propulsion control system was provided to Boeing on December 22, 1988.

8. Special Condition No. 25-ANM-25 which established lightning and radio frequency (RF) energy protections requirements was provided to Boeing on December 22, 1988.

9. Exemptions from FAR Part 25:

   No. 1013A dated December 24, 1969 - Exemption from Section 25.471(b) to allow lateral displacement of the C.G from the airplane centre line.

   The following optional requirements which are part of the Model 747-300 certification basis, apply also to the 747-400:

Ditching Provisions	Section 25.801
Ice Protection Provisions	Section 25.1419

The following equivalent safety findings, previously made under the provisions of Section 21.21b)(1) are also applicable to the Model 747-400:

Width of Aisle	Section 25.815
Pilot compartment view	Section 25.773
Use of 1-g Stall Speed (nonstructural items)	Several
Use of 1-g Stall Speed (structural items)	Several
Position Light Distribution and Intensities	Section 25.1389(b)(3) (747-400 only)
Fire-detection system	Section 25.1203 See note 1
Pressure Relief	Section 25.1103(d) See note 1
Emergency locator transmitter	Section 25.1415(d)
Emergency exit marking	Section 25.811(f)

Note 1: Applies to RB211-524G/H series engine installations only.

Equivalent Safety Findings exist with respect to the following Regulation:

25.773(b)(2)(i), Amendments 25-1 through 25-67 (Boeing 747-400 Series).

Part 25 of the FAR, effective February 1, 1965, as amended by Amendment 25-1 through 25-59 with the following exceptions:
(See note 15).

Certification Maintenance Requirements (CMRs):

The CMRs are listed either in the FAA-approved Section 9 of Boeing Maintenance Planning Data Document D6-21U400 or the applicable engine Type Certificate Data Sheet. The more restrictive requirement from these two documents shall be in force.

Production Basis:

Production Certificate No. 700.

Equipment:

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

In addition:

UK Additional Requirements for Certification in the Transport Category (Boeing 747-400 Series).

CERTIFICATION CATEGORY: Transport Category (Passenger)

PERFORMANCE CATEGORY: UK Group A

FLIGHT MANUAL: Boeing 747-400, FAA Approved Airplane Flight Manual (Ref. D6U10003). This manual is approved by the FAA on behalf of the CAA.

ENGINE: Four Engines

Rolls-Royce PLC

Model RB211-524G2-19
RB211-524G3-19
RB211-524G3-T-19
RB211-524H2-19
RB211-524H2-T-19

CAA Engine Type Certificate Data Sheet (ETCDS) No.1046.

For engine operating limits see the FAA Approved Airplane Flight Manual (AFM) or the Engine TCDS.

OR

General Electric GE CF6-80C2-B1F

APU: Pratt and Whitney of Canada Inc.
Type PW901A
CAA Validation letter ref 9/80/EZ7 dated 25 May 1989.

MAXIMUM WEIGHTS:

	Lb	Kg
Maximum Taxying Weight	877,000	397,800
Maximum Take-off Weight	875,000	396,893
Maximum Landing Weight	630,000	285,762
Maximum Zero Fuel Weight	544,000	246,754

Note: See the appropriate FAA Approved Airplane Flight Manual.

DIMENSIONS:

	Ft	M
Length	231’10”	70.66
Wingspan	211’5”	64.44
Height	63’5”	19.33
Wing Area	5500ft^2	

MINIMUM CREW: Pilot and Co-Pilot

MAXIMUM OCCUPANTS/PASSENGERS: The maximum number of passengers shall not exceed 660 nor the number for which seating accommodation, approved for take-off and landing is provided. This maximum number is limited by the number and type of emergency exits. The maximum number of occupants (including crew) shall not exceed 676.

OPERATING LIMITATIONS: Refer to FAA approved AFM, D6U10003.

MANDATORY MAINTENANCE INSTRUCTIONS: Scheduled Maintenance Checks as for Boeing MRB Report Boeing Maintenance Manual, Doc. D633U101-05 and D633U101-64.

Time Limits:

Chapter 5 of Boeing Maintenance Manual and CMR's as per Boeing MPD D621U400.

Structure Repairs:

Boeing Structural Repair Manual Doc.D634U102.

NOISE: CAA Noise Type Certificate No.123 Issue 1.

747-400F

FAA Certification Basis

Part 25 of the FAR, effective February 1, 1965, as amended by Amendments 25-1 through 25-67 with the following exceptions:

(See Note 14 for cargo compartment liner requirements)

Section No.	Title	Thru Amdt. 25-
25.107	Takeoff speeds	41
25.109	Accelerate-stop distance	41
25.149	Minimum control Speed	41
25.251	Vibration and buffeting	22
25.305	Strength and deformation	22
25.331	General	45
25.351	Yawing conditions	45
25.365(g)	Pressurized Compartment Loads	53
25.562	Emergency landing dynamic conditions	63**
25.571	Damage-tolerance and fatigue evaluation of structure	9
25.607	Fasteners	22
25.631	Bird strike damage	22
25.657	Hinges	22
25.675	Stops	37
25.683	Operation tests	22
25.772	Pilot compartment doors	46
25.783	Doors	53
25.809(f)(1)(v)	Emergency exit arrangement	45

Cond't

Section No.	Title	Thru Amdt. 25-
25.812	Emergency lighting	31
25.858	Cargo compartment fire detection systems	(NA)**
25.1103	Induction system ducts and air duct systems	45
25.1401	Anticollision light system	26
25.1438	Pressurization and pneumatic systems	(NA)**
25.1529	Instructions for continued airworthiness	(NA)**

***Not Applicable – The requirements of this section do not apply to this type design because the original certification basis, which did not include this section, has been determined to be adequate.*

Part 36 of the FAR as amended by Amendments 36-1 through 36-20.

Special Federal Aviation regulation (SFAR) 27, as amended by Amendments 27-1 through 27-7. (Same as FAR Part 34, October 14, 1993).

The following special conditions, and equivalent safety findings, which are part of the Model 747-200F and 747-400 certification basis, are also part of the certification basis for the Model 747-400F.

The special conditions included those enclosed with FAA letter to The Boeing Company dated February 20, 1970, and the following:

1. Special Condition 4A, revised to apply to airplanes with the landing gear load evener system deleted, was recorded as an enclosure to an FAA letter to The Boeing Company dated May 12, 1971.

2. 3. and 4. were removed in this Revision 27, dated August 1, 1996.

5. Special Condition No. 27-77-NW-4 (modification of the auto pilot system to approve the airplane for use of the system under Category IIIb landing conditions) was transmitted to The Boeing Company by FAA letter dated July 8, 1977.

6. was removed in this Revision 27, dated August 1, 1996.

7. Special Condition No. 25-ANM-24 applicable to flight deck displays and propulision control system was provided to Boeing on December 22, 1988.

8. Special Condition No. 25-ANM-25, which established lightning and radio frequency (RF) energy protection requirements was provided to Boeing on December 22, 1988.

Exemptions from FAR Part 25:

No. 1013A dated December 24, 1969 – Exemption from Section 25.471(b) to allow lateral displacement of the C.G. from the airplane centreline.

New Exemption for 747-400F:

No. 1870E dated September 8, 1993, allows maximum of six (6) non-crew members on the upper deck.

No. 6949 dated April 27, 1993, exempts latches on the decompression vent doors from meeting 25.855(C).

The following optional requirements, which are part of the Model 747-400 certification basis, apply also to the 747-400F:

Ditching Provisions	Section 25.801
Ice Protection Provisions	Section 25.773

The following equivalent safety findings (ESF), previously made for earlier models under the provisions of Section 21.21(b)(1), are also applicable to the Model 747-400F:

Width of Aisle	Section 25.815
Pilot Compartment View	Section 25.773
Use of 1-g Stall Speed (non-structural items)	Several
Use of 1-g Stall Speed (structural items)	Several
Position Light Distribution and Intensities	Section 25.1389(b)(3)
Emergency Locator Transmitter (ELT)	Section 25.1415(d)
Emergency Exit Markings	Section 25.811(f)

New ESF for 747-400F:

Doors	Section 25.783(e)

Part 25 of the FAR, effective February 1, 1965, as amended by Amendment 25-1 through 25-59 with the following exceptions: (See note 15).

Certification Maintenance Requirements (CMRs):

The CMRs are listed in the FAA-approved Section 9 of Boeing Maintenance Planning Data Document D621U400 or the applicable engine Type Certificate Data Sheet. The more restrictive requirement from these two documents shall be in force.

Production Basis:

Production Certificate No. 700

Equipment:

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

CERTIFICATION CATEGORY: Transport Category (Cargo)

PERFORMANCE CATEGORY: UK Group A

FLIGHT MANUAL: Boeing 747-400F, FAA Approved Airplane Flight Manual (Ref. D6U10001, D6U10002 and D6U10003). This manual is approved by the FAA on behalf of the CAA.

ENGINES: 4 General Electric CF6-80C2B1F, CF6-80C2B5F, or 4 Rolls-Royce RB211-524G2/H.

APU: Pratt and Whitney of Canada Inc.
Type PW901A
CAA Validation letter ref 9/80/EZ7 dated May 25, 1989.

MAXIMUM WEIGHTS:

	Lb	**Kg**
Maximum Taxiing Weight	877,000	397,800
Maximum Take-off Weight	875,000	396,893
Maximum Landing Weight	666,000	302,092
Maximum Zero Fuel Weight	635,000	288,030

NOTE: See the appropriate FAA Approved Airplane Flight Manual.

DIMENSIONS:

	Lb	**Kg**
Length	231’10’’	70.66
Wingspan	211’5’’	64.44
Height	63’5’’	19.33
Wing Area	5500ft^2	

MINIMUM CREW: For all flights, 2 persons (pilot, copilot)

MAXIMUM PERSONS: For 747-400F airplanes, the total persons capacity is limited to six persons on the upper deck per Exemption 1870E.

OPERATING LIMITATIONS: Refer to FAA approved AFM

- END -

JAA DATA SHEET

Boeing 747 400
Boeing 747-400F

Manufacturer:

Boeing Commercial Airplane Group
P. O. Box 3707
Seattle, WA 98124-2207
United States of America

JAA/25/03-028

I. GENERAL

1.	Data Sheet No.	JAA/25/03-028
2.	Airworthiness Category	T (Transport)
3.	Authority: (Address)	Federal Aviation Authority (USA) Seattle Aircraft Certification Office, 1601 Lind Avenue S.W. Renton, WA 98055-4056 United States of America
4.	Manufacturer (Type Certification Holder): (Address)	Boeing Commercial Airplane Group P. O. Box 3707 Seattle, WA 98124-2207 United States of America

II. GENERAL

1.	Aircraft Type	:	Boeing Model 747-400 747-400F
2.	JAA Validation Application Date	:	747-400 dated 8 August 2003 747-400F dated 8 August 2003
3.	JAA Validation Date (JAA recommendation)	:	26 September 2003
4.	Build Standard	:	CRI-A6

III. CERTIFICATION BASIS

1. Approval Date Primary Certifiating Authority :January 10, 1989

2 FAA Type Certification Data Sheet No. A20 WE

3. Joint Certification Basis

Following the JAA Catch-up exercise it was agreed within the JAA that the 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 Pressurized 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 inhibited during any phase of flight is required.

4.	Flight Manual	:	Boeing Document D6-U10001, Boeing Document D6-U10002, Boeing Document D6-U10003.
5.	Engine	:	See FAA Type Certificate Data Sheet No. A20WE Limitations : See FAA Type Certificate Data Sheet No. A20WE
6.	Propeller	:	N/A
7.	APU	:	See FAA Type Certificate Data Sheet No A20WE

8.	Maximum Certified Weights:		See FAA Type Certificate Data Sheet No A20WE
9.	Dimensions	:	Length :70.51 m Wingspan :59.64 m Height :19.05 m
10.	Minimum Flight Crew	:	Two (2): Pilot and Copilot
11.	Maximum Passengers	:	See FAA Type Certificate Data Sheet No A20WE
12.	Operating Limitations	:	For all limitations of speed, altitude, cargo/baggage, passengers, weight etc., refer to the JAA approved Flight Manual identified in Section 4 of this Data Sheet.
13.	Other relevant information	:	Relevant information not included in this Type Certificate Data Sheet may be found in the FAA Type Certificate Data Sheet No. A20WE