747-400 Boeing Converted Freighter

COMMERCIAL
AVIATION
SERVICES

High-value, low economic risk replacement for earlier tri and quad-engine freighters

747-400BCF conversion overview

Retain existing crew rest
8 upper deck supernumeraries

Deletion of the aft, straight stairway and installation of the ladder

Revised Integrated Display System software

MTW	873,000 lb (395,986 kg)
MTOW	870,000 lb (394,625 kg)
MLW	652,000 lb (295,742 kg)
MZFW	610,000 lb (276,691 kg)

Strengthening of the wing gear side struts and wing-to-body joint

Vacuum waste system

Replacement of the aft, upper deck floor beams with tension ties

Window plugs

Full main deck lining for Class E cargo (similar to 747-400F)

Remove flight deck door

Class C lower lobe

Fwd and aft lower lobe air-conditioning

Deactivate all main deck entry doors except 1L and 5L

Main deck and lower lobe animal carriage

Provisions for selected cargo-handling system

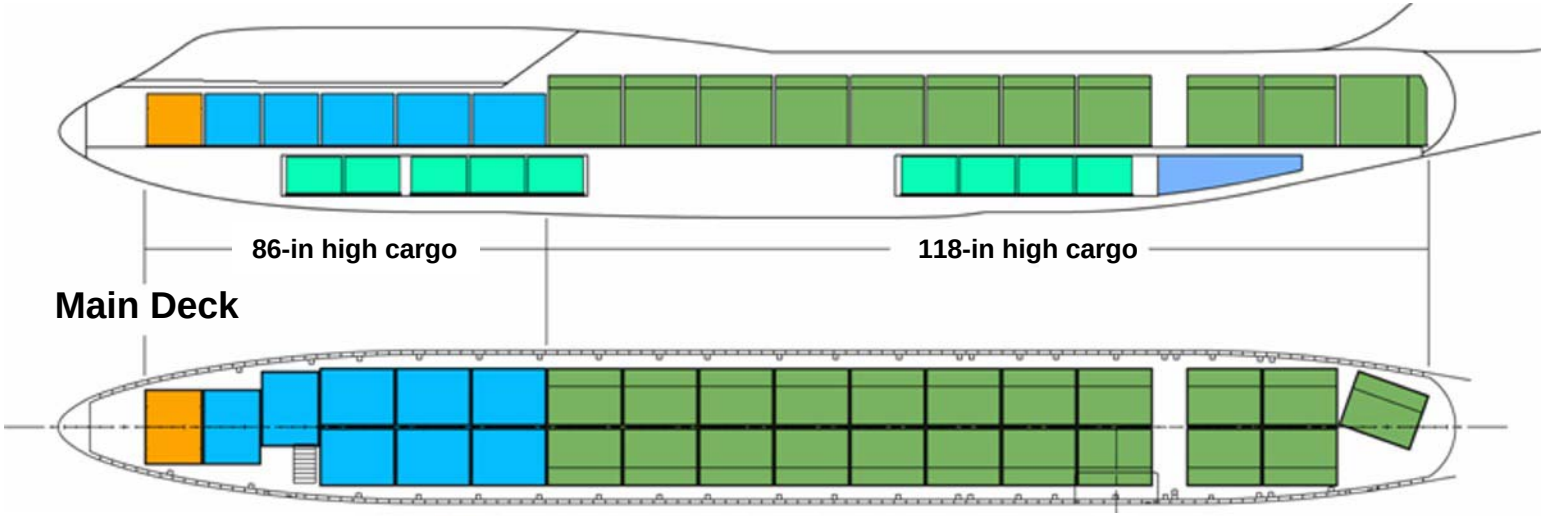
Add 747-400F cargo door and surround structure

290 lb/in running load over wing

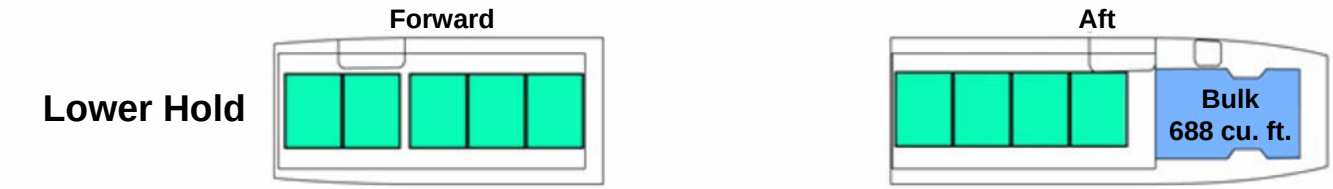
Install 400F-type Main Deck Cargo floor beams

Rerouting of mechanical flight controls

747-400BCF cargo arrangements



(1) 96- x 125-in Pallet at 532 cu. ft.
(8) 96- x 125-in Pallets at 549 cu. ft.
(21) M1H Pallets at 750 cu. ft. (118-in high)
Main Deck Total 20,674 cu. ft. (585.4 cu. m.)

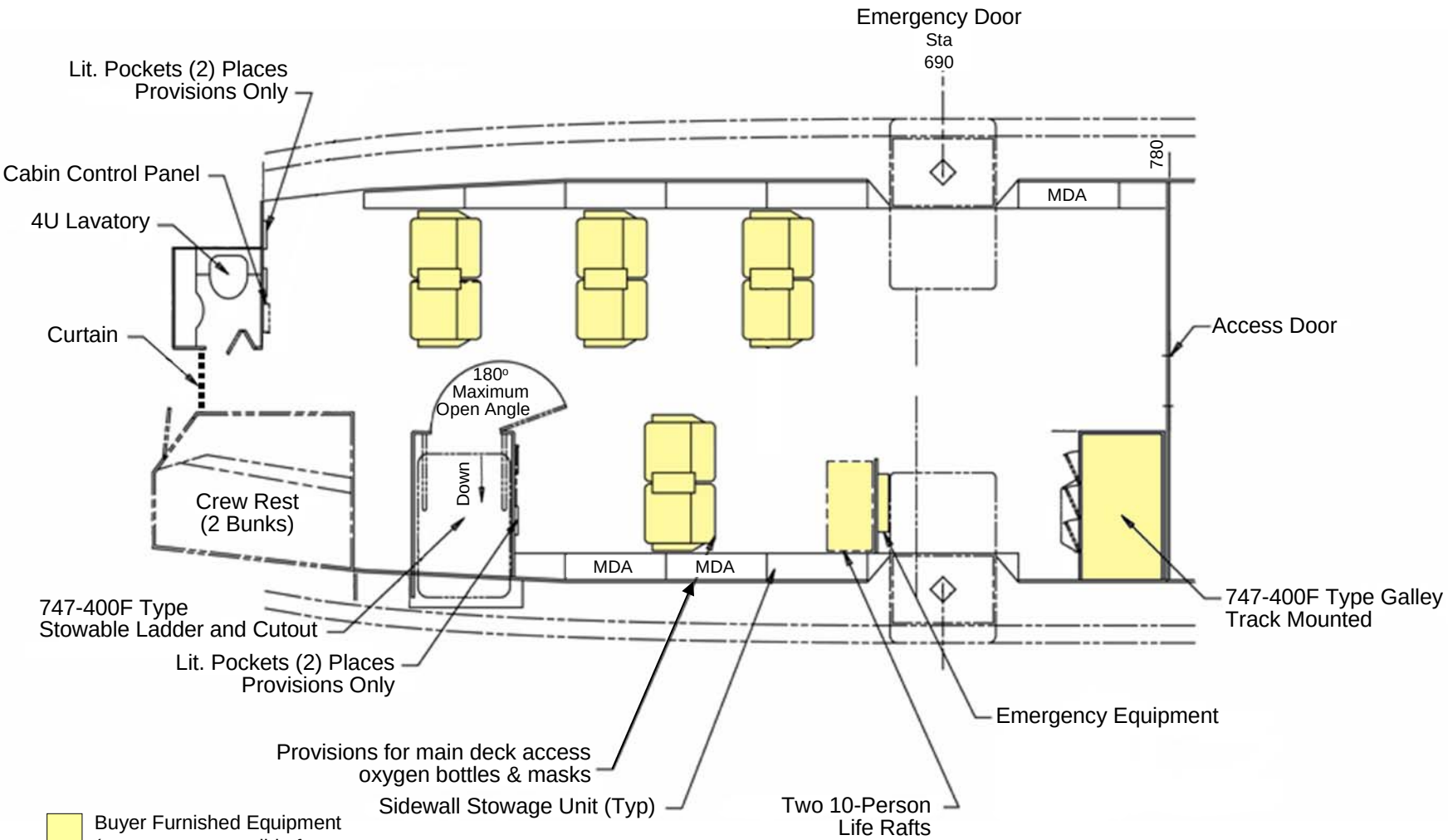


(9) 96- x 125-in Pallets at 415 cu. ft.
Bulk Cargo 688 cu. ft.
Lower Hold Total 4,423 cu. ft. (125.2 cu. m.)

Note: AS 1825 volumes used

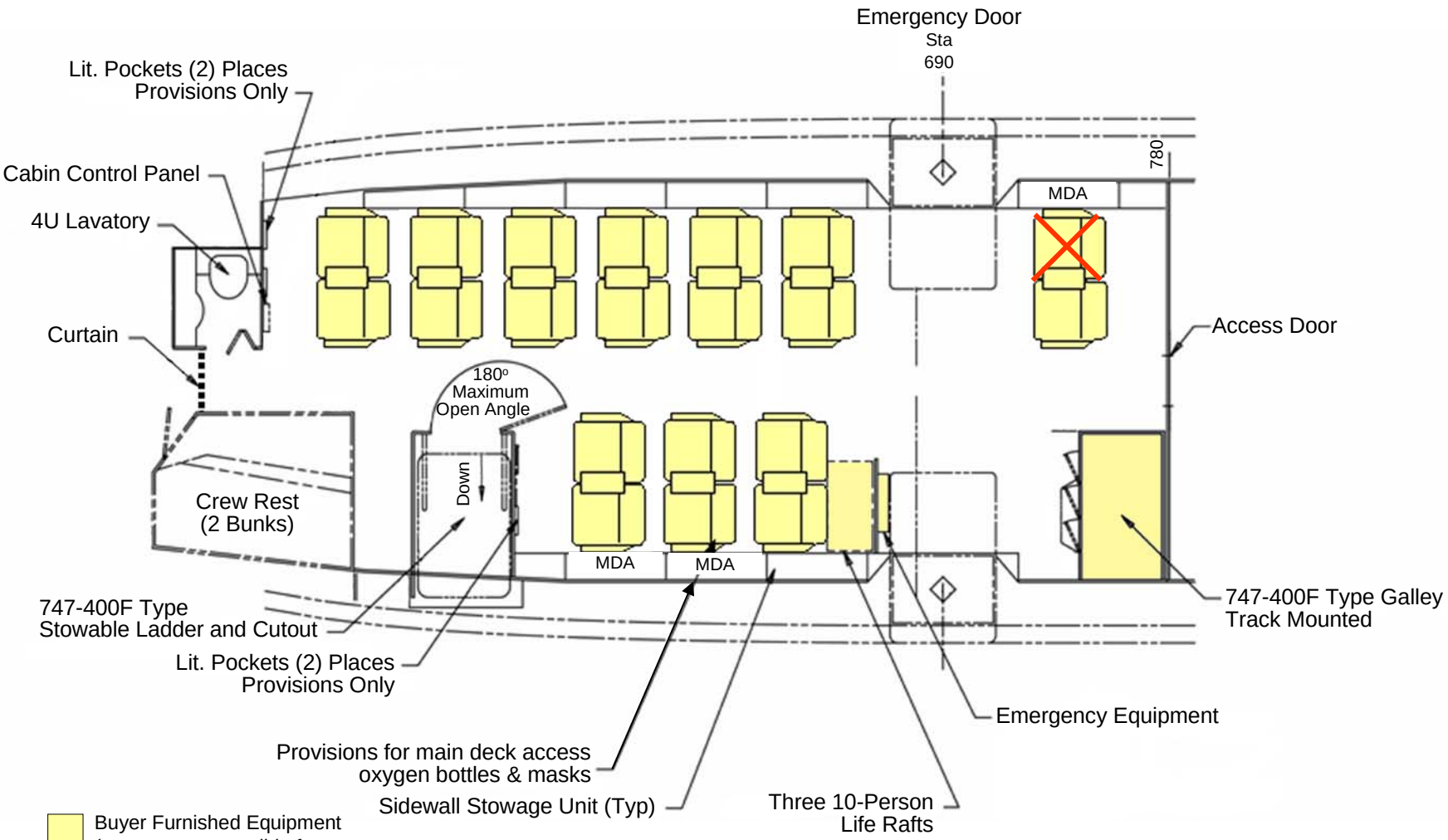
Total Cargo Volume = 25,097 (710.7 cu. m.)

747-400BCF basic upper deck layout



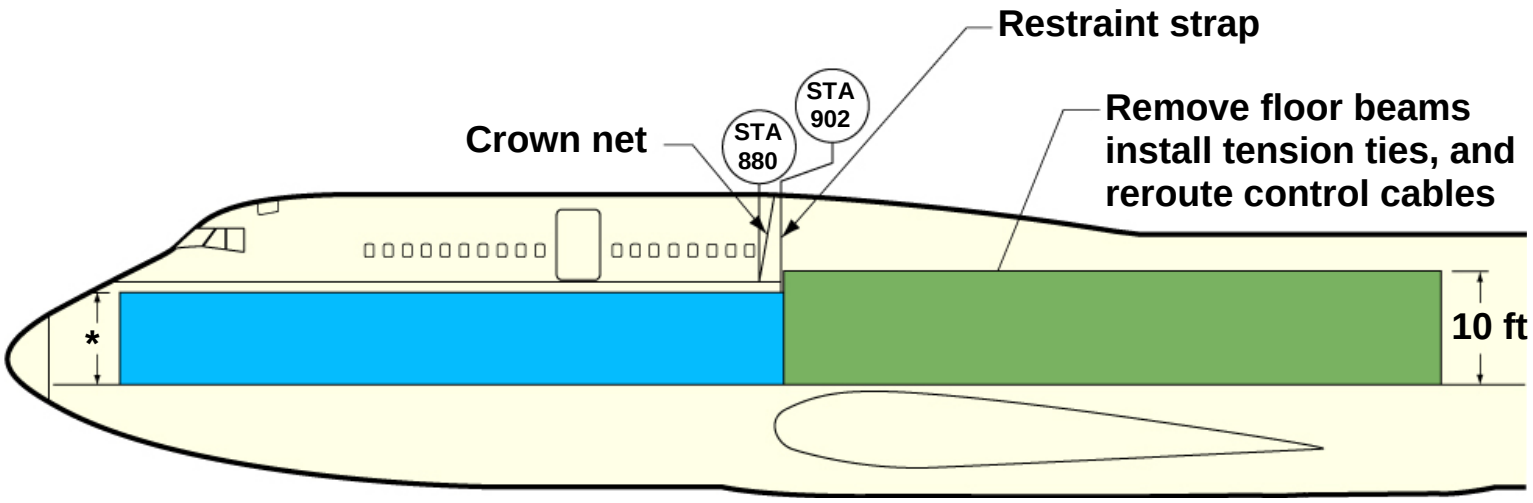
8 Supernumerary Seats

747-400BCF maximum optional upper deck layout



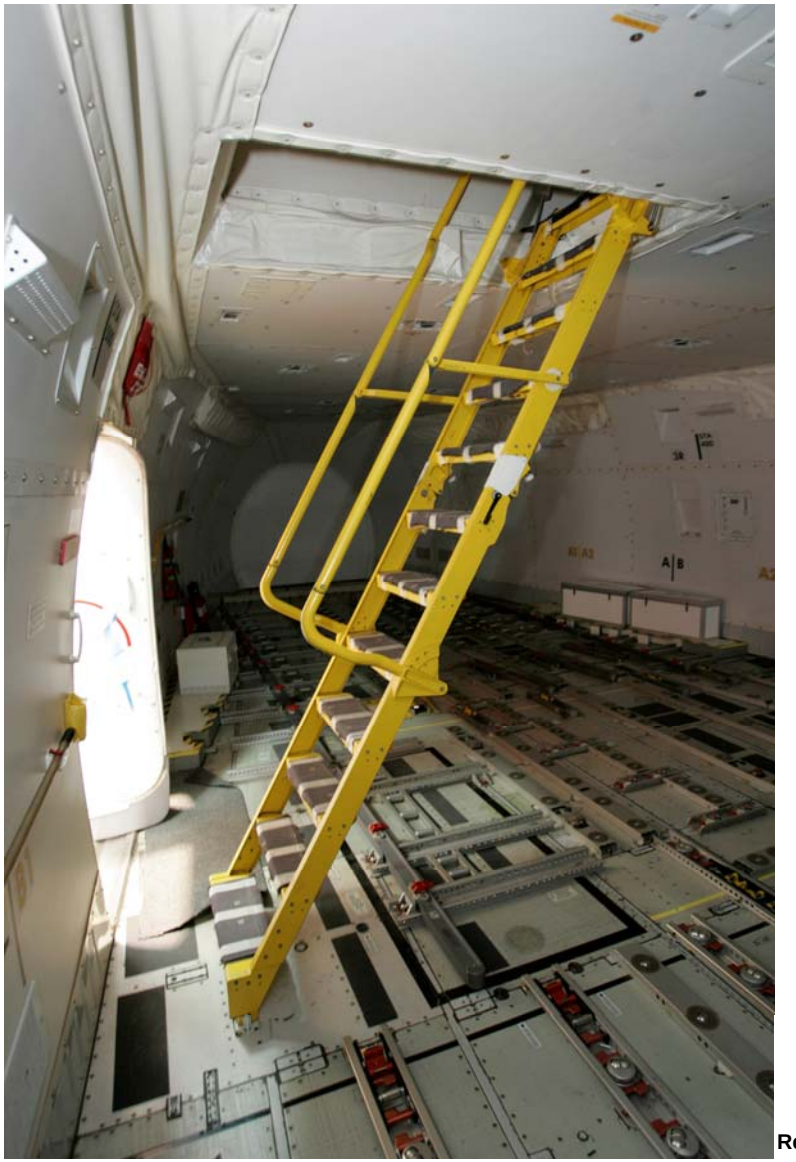
19 Supernumerary Seats

747-400BCF upper deck modification



~20,674 ft^3 main deck cargo volume (all pallet configuration)

747-400BCF – Typical upper deck configuration



747-400BCF Main Deck

747-400BCF performance summary

General Electric Engines

		747-200SF CF6-50E1		747-400BCF CF6-80C2B1F	
Maximum Taxi Weight	**kg** (lb)	**379,203**	(836,000)	**395,986**	(873,000)
Maximum Takeoff Weight	**kg** (lb)	**377,842**	(833,000)	**394,625**	(870,000)
Maximum Landing Weight	**kg** (lb)	**285,763**	(630,000)	**295,742**	(652,000)
Maximum Zero Fuel Weight	**kg** (lb)	**267,619**	(590,000)	**276,691**	(610,000)
Estimated OEW (including tare)	**kg** (lb)	**160,939**	(354,810)	**168,850**	(372,250)
Tare	**kg** (lb)	**5,130**	(11,310)	**5,266**	(11,610)
Fuel Capacity	**L** (U.S. gal)	**196,974**	(52,035)	**203,523**	(53,765)
Revenue Payload	**kg** (lb)	**106,680**	(235,190)	**107,842**	(237,750)
Design Range	**nmi** (km)	**3,174**	(5,878)	**4,091**	(7,577)
Total Volume	**m^3** (ft^3)	**704.4**	(24,877)	**710.7**	(25,097)
Density	**kg/m^3** (lb/ft^3)	**151.4**	(9.5)	**151.9**	(9.5)
Main Deck Volume (Pallets)	**m^3** (ft^3)	**570.4**	(20,142)	**585.4**	(20,674)
96x125 x96 (BCF/SF 96x125 x86)	**Quantity**	**8**		**9**	
96x125 x118	**Quantity**	**21**		**21**	
Lower Deck Volume	**m^3** (ft^3)	**105.8**	(3,735)	**105.8**	(3,735)
96x125	**Quantity**	**9**		**9**	
LD-1	**Quantity**	**0**		**0**	
Bulk	**m^3** (ft^3)	**28.3**	(1,000)	**19.5**	(688)

- Typical mission rules
- Nominal fuel burn + 4%

747-400BCF performance summary

Pratt and Whitney Engines

		747-200SF JT9D-7R4G2		747-400BCF PW4062	
Maximum Taxi Weight	**kg** (lb)	**379,203**	(836,000)	**395,986**	(873,000)
Maximum Takeoff Weight	**kg** (lb)	**377,842**	(833,000)	**394,625**	(870,000)
Maximum Landing Weight	**kg** (lb)	**285,763**	(630,000)	**295,742**	(652,000)
Maximum Zero Fuel Weight	**kg** (lb)	**267,619**	(590,000)	**276,691**	(610,000)
Estimated OEW (including tare)	**kg** (lb)	**159,397**	(351,410)	**168,895**	(372,350)
Tare	**kg** (lb)	**5,130**	(11,310)	**5,266**	(11,610)
Fuel Capacity	**L** (U.S. gal)	**198,393**	(52,410)	**204,355**	(53,985)
Revenue Payload	**kg** (lb)	**108,223**	(238,590)	**107,796**	(237,650)
Design Range	**nmi** (km)	**3,435**	(6,362)	**4,100**	(7,593)
Total Volume	**m^3** (ft^3)	**704.4**	(24,877)	**710.7**	(25,097)
Density	**kg/m^3** (lb/ft^3)	**153.6**	(9.6)	**151.8**	(9.5)
Main Deck Volume (Pallets)	**m^3** (ft^3)	**570.4**	(20,142)	**585.4**	(20,674)
96x125 x96 (BCF/SF 96x125 x86)	**Quantity**	**8**		**9**	
96x125 x118	**Quantity**	**21**		**21**	
Lower Deck Volume	**m^3** (ft^3)	**105.8**	(3,735)	**105.8**	(3,735)
96x125	**Quantity**	**9**		**9**	
LD-1	**Quantity**	**0**		**0**	
Bulk	**m^3** (ft^3)	**28.3**	(1,000)	**19.5**	(688)

- Typical mission rules
- Nominal fuel burn + 4%

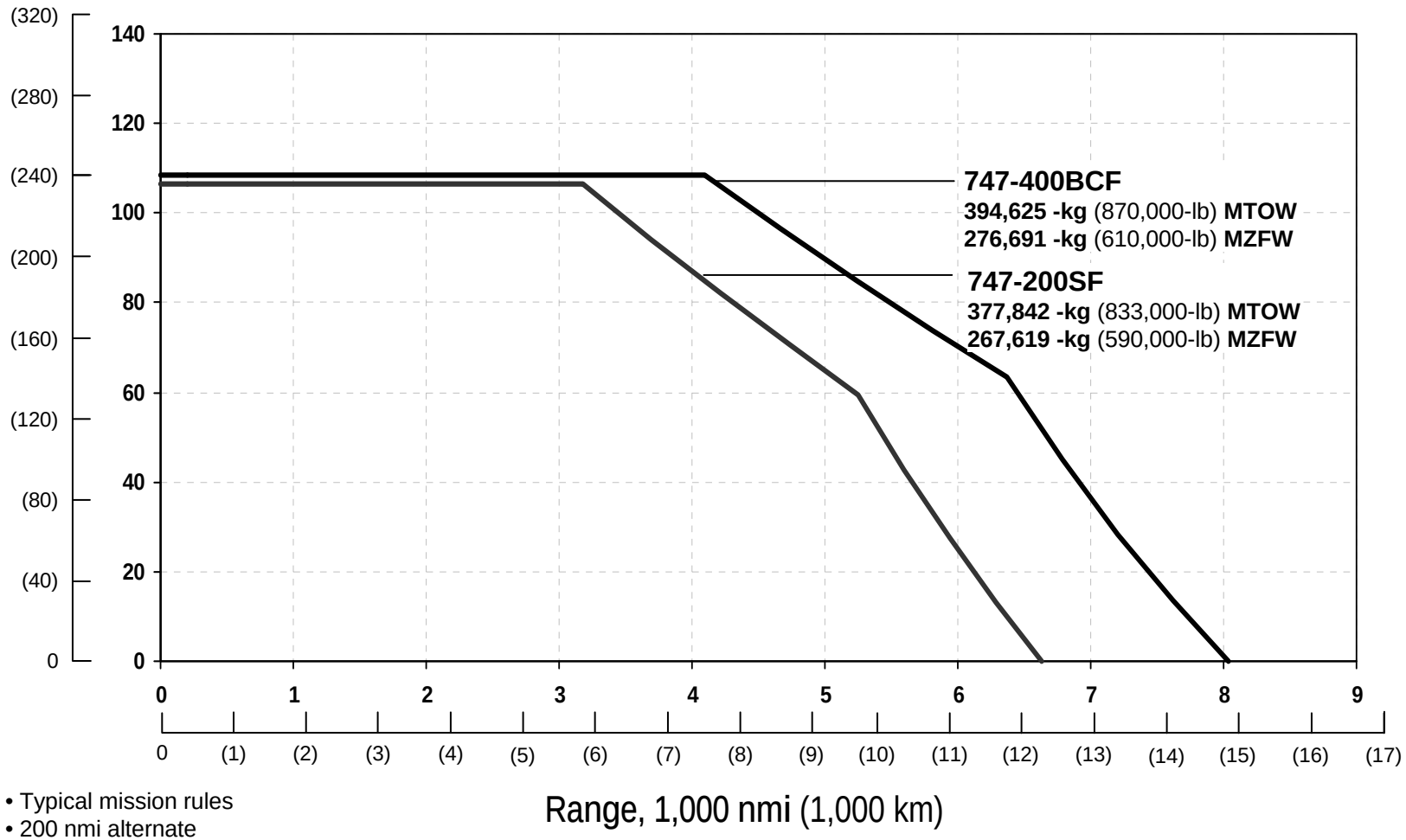
747-400BCF performance summary

Rolls Royce Engines

		747-200SF RB211-524D4		747-400BCF RB211-524G	
Maximum Taxi Weight	**kg** (lb)	**379,203**	(836,000)	**395,986**	(873,000)
Maximum Takeoff Weight	**kg** (lb)	**377,842**	(833,000)	**394,625**	(870,000)
Maximum Landing Weight	**kg** (lb)	**285,763**	(630,000)	**295,742**	(652,000)
Maximum Zero Fuel Weight	**kg** (lb)	**267,619**	(590,000)	**276,691**	(610,000)
Estimated OEW (including tare)	**kg** (lb)	**163,389**	(360,210)	**169,507**	(373,700)
Tare	**kg** (lb)	**5,130**	(11,310)	**5,266**	(11,610)
Fuel Capacity	**L** (U.S. gal)	**198,393**	(52,410)	**204,355**	(53,985)
Revenue Payload	**kg** (lb)	**104,231**	(229,790)	**107,184**	(236,300)
Design Range	**nmi** (km)	**3,421**	(6,336)	**4,052**	(7,504)
Total Volume	**m^3** (ft^3)	**704.4**	(24,877)	**710.7**	(25,097)
Density	**kg/m^3** (lb/ft^3)	**148.0**	(9.2)	**150.9**	(9.4)
Main Deck Volume (Pallets)	**m^3** (ft^3)	**570.4**	(20,142)	**585.4**	(20,674)
96x125 x96 (BCF/SF 96x125 x86)	**Quantity**	**8**		**9**	
96x125 x118	**Quantity**	**21**		**21**	
Lower Deck Volume	**m^3** (ft^3)	**105.8**	(3,735)	**105.8**	(3,735)
96x125	**Quantity**	**9**		**9**	
LD-1	**Quantity**	**0**		**0**	
Bulk	**m^3** (ft^3)	**28.3**	(1,000)	**19.5**	(688)

- Typical mission rules
- Nominal fuel burn + 4%

Typical 747-400BCF payload-range capability



- Typical mission rules
- 200 nmi alternate

Range capability from Moscow

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Anchorage

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Hong Kong

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Kuala Lumpur

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from London

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Luxembourg

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from New York

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Seoul

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Shanghai

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Singapore

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

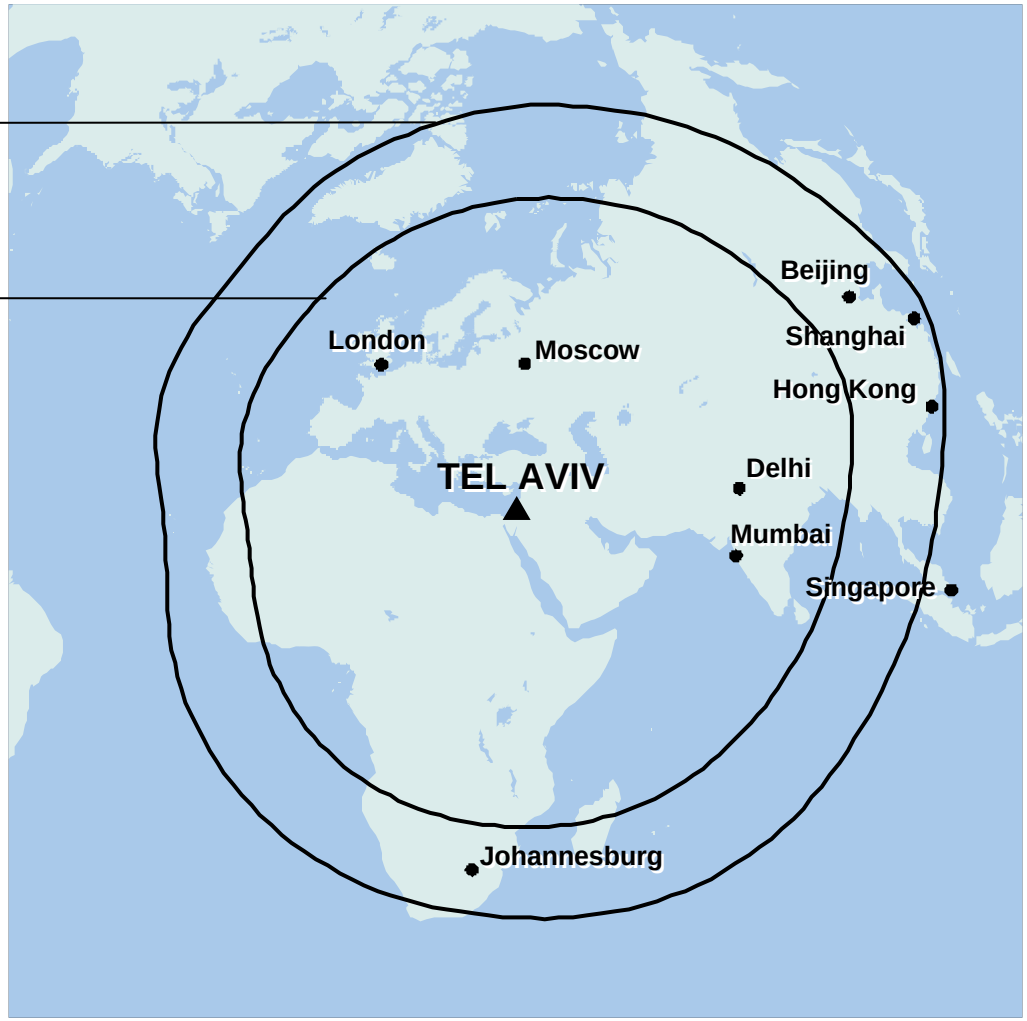
- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Tel Aviv

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**



- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

Range capability from Tokyo

Revenue Payload

747-400BCF
394,625-kg (870,000-lb) **MTOW**
107,842-kg (237,750-lb) **Payload**

747-200SF
377,842-kg (833,000-lb) **MTOW**
106,680-kg (235,190-lb) **Payload**

- Typical mission rules
- 85% annual winds
- Nominal fuel burn + 4%

747 Flight Deck

StartupBoeing