747-400 Boeing Converted Freighter

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

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)
747-400BCF cargo arrangements

Main Deck

- (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.)

Lower Hold

- (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.)

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

Note: AS 1825 volumes used
747-400BCF basic upper deck layout

8 Supernumerary Seats

- Crew Rest (2 Bunks)
- 4U Lavatory
- Cabin Control Panel
- Curtain
- 747-400F Type Stowable Ladder and Cutout
- Lit. Pockets (2) Places Provisions Only
- 180° Maximum Open Angle
- Provisions for main deck access oxygen bottles & masks
- Sidewall Stowage Unit (Typ)
- Two 10-Person Life Rafts
- Buyer Furnished Equipment (customer responsible for certification)
- Emergency Equipment
- Emergency Door
- Access Door
- 747-400F Type Galley Track Mounted
- MDA
- Lit. Pockets (2) Places Provisions Only
747-400BCF maximum optional upper deck layout

19 Supernumerary Seats
747-400BCF upper deck modification

~20,674 ft³ main deck cargo volume
(all pallet configuration)
747-400BCF – Typical upper deck configuration
### General Electric Engines

#### 747-400BCF performance summary

<table>
<thead>
<tr>
<th></th>
<th>747-200SF CF6-50E1</th>
<th>747-400BCF CF6-80C2B1F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Taxi Weight</td>
<td>379,203 (836,000)</td>
<td>395,986 (873,000)</td>
</tr>
<tr>
<td>Maximum Takeoff Weight</td>
<td>377,842 (833,000)</td>
<td>394,625 (870,000)</td>
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<td>Maximum Landing Weight</td>
<td>285,763 (630,000)</td>
<td>295,742 (652,000)</td>
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<tr>
<td>Maximum Zero Fuel Weight</td>
<td>267,619 (590,000)</td>
<td>276,691 (610,000)</td>
</tr>
<tr>
<td>Estimated OEW (including tare)</td>
<td>160,939 (354,810)</td>
<td>168,850 (372,250)</td>
</tr>
<tr>
<td>Tare</td>
<td>5,130 (11,310)</td>
<td>5,266 (11,610)</td>
</tr>
<tr>
<td>Fuel Capacity</td>
<td>196,974 (52,035)</td>
<td>203,523 (53,765)</td>
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<tr>
<td>Revenue Payload</td>
<td>106,680 (235,190)</td>
<td>107,842 (237,750)</td>
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<tr>
<td>Design Range</td>
<td>3,174 (5,878)</td>
<td>4,091 (7,577)</td>
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<tr>
<td>Total Volume</td>
<td>704.4 (24,877)</td>
<td>710.7 (25,097)</td>
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<tr>
<td>Density</td>
<td>151.4 (9.5)</td>
<td>151.9 (9.5)</td>
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<tr>
<td>Main Deck Volume (Pallets)</td>
<td>570.4 (20,142)</td>
<td>585.4 (20,674)</td>
</tr>
<tr>
<td>96x125 x96 (BCF/SF 96x125 x86)</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>96x125 x118</td>
<td>21</td>
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</tr>
<tr>
<td>Lower Deck Volume</td>
<td>105.8 (3,735)</td>
<td>105.8 (3,735)</td>
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<tr>
<td>96x125</td>
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<td>LD-1</td>
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<tr>
<td>Bulk</td>
<td>28.3 (1,000)</td>
<td>19.5 (688)</td>
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</tbody>
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- Typical mission rules
- Nominal fuel burn + 4%
### 747-400BCF performance summary

**Pratt and Whitney Engines**

<table>
<thead>
<tr>
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<th>747-200SF</th>
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<th>747-400BCF</th>
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<tbody>
<tr>
<td>JT9D-7R4G2</td>
<td>PW4062</td>
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<tr>
<td><strong>Estimated OEW (including tare)</strong></td>
<td>kg (lb)</td>
<td>159,397 (351,410)</td>
<td>168,895 (372,350)</td>
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<td><strong>Tare</strong></td>
<td>kg (lb)</td>
<td>5,130 (11,310)</td>
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<td><strong>Fuel Capacity</strong></td>
<td>L (U.S. gal)</td>
<td>198,393 (52,410)</td>
<td>204,355 (53,985)</td>
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<tr>
<td><strong>Revenue Payload</strong></td>
<td>kg (lb)</td>
<td>108,223 (238,590)</td>
<td>107,796 (237,650)</td>
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<tr>
<td><strong>Design Range</strong></td>
<td>nmi (km)</td>
<td>3,435 (6,362)</td>
<td>4,100 (7,593)</td>
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<td><strong>Total Volume</strong></td>
<td>m³ (ft³)</td>
<td>704.4 (24,877)</td>
<td>710.7 (25,097)</td>
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<tr>
<td><strong>Density</strong></td>
<td>kg/m³ (lb/ft³)</td>
<td>153.6 (9.6)</td>
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- Typical mission rules
- Nominal fuel burn + 4%
# 747-400BCF Performance Summary

## Rolls Royce Engines

- 747-200SF
  - RB211-524D4
- 747-400BCF
  - RB211-524G

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<td>163,389 (360,210)</td>
<td>169,507 (373,700)</td>
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<td></td>
<td>104,231 (229,790)</td>
<td>107,184 (236,300)</td>
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<td>Design Range</td>
<td>nmi (km)</td>
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<td>Density</td>
<td>kg/m³ (lb/ft³)</td>
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- Typical mission rules
- Nominal fuel burn + 4%
Typical 747-400BCF payload-range capability

**Revenue Payload, 1,000 kg (1,000 lb)**

- **747-400BCF**
  - MTOW: 394,625 kg (870,000 lb)
  - MZFW: 276,691 kg (610,000 lb)

- **747-200SF**
  - MTOW: 377,842 kg (833,000 lb)
  - MZFW: 267,619 kg (590,000 lb)

- Typical mission rules
- 200 nmi alternate

**Range, 1,000 nmi (1,000 km)**
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%

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

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

- 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
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