

# 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

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

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)

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

Window plugs

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

Vacuum waste system

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



Add 747-400F  
cargo door and  
surround structure

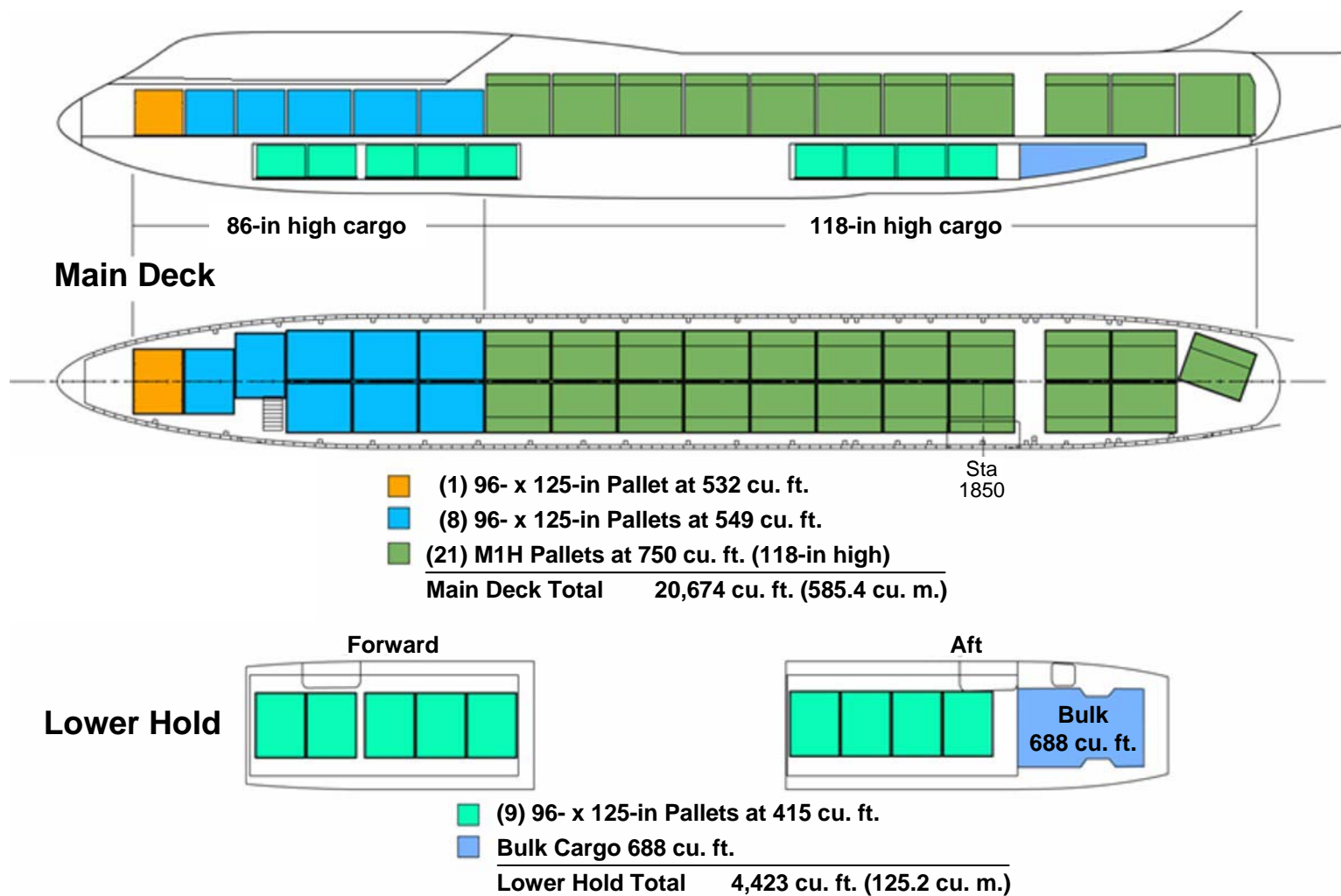
Install 400F-type Main  
Deck Cargo floor beams

290 lb/in running  
load over wing

Rerouting of mechanical  
flight controls

Provisions for selected  
cargo-handling system

# 747-400BCF cargo arrangements

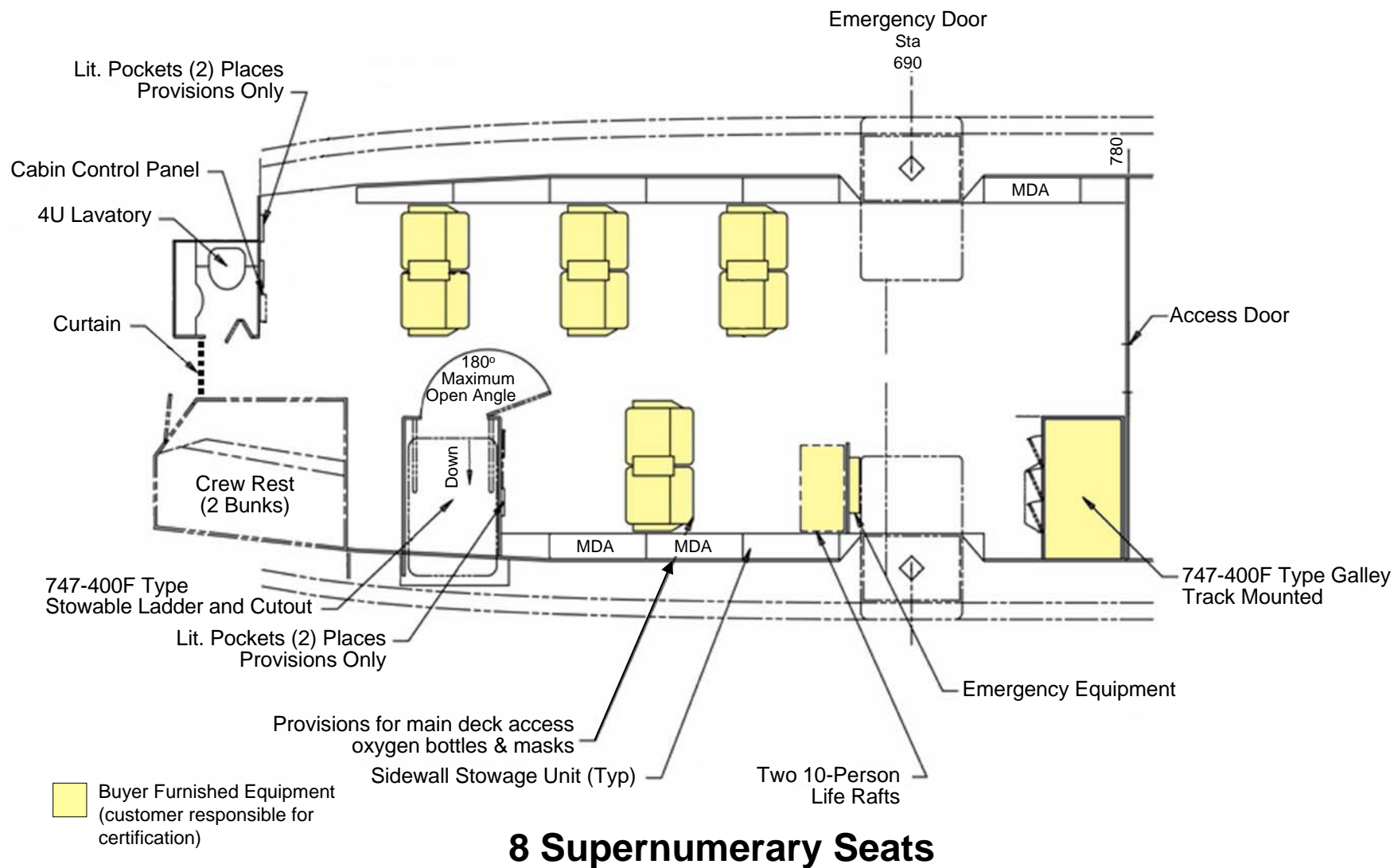


Note: AS 1825 volumes used

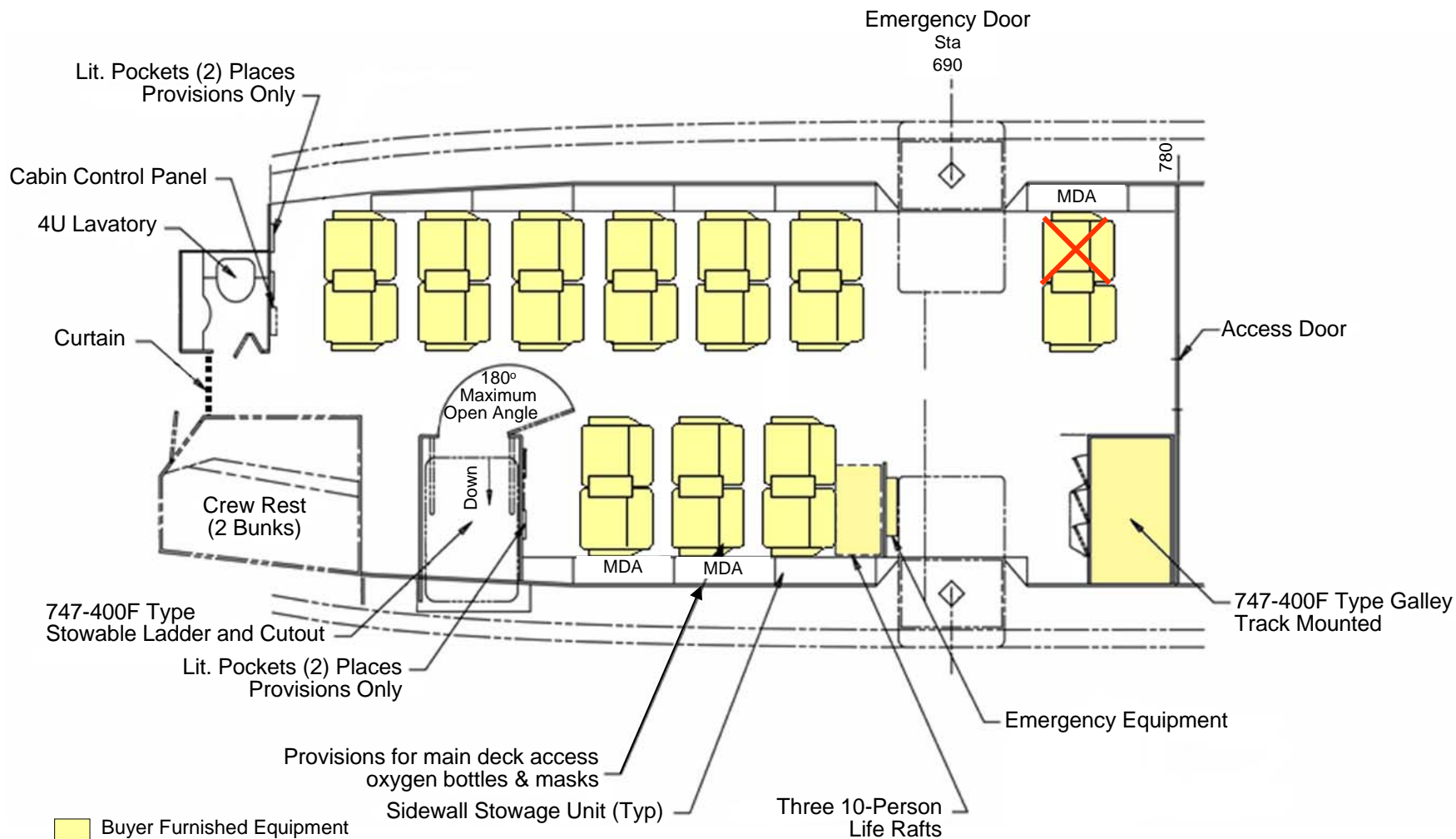
**Total Cargo Volume = 25,097 (710.7 cu. m.)**




# 747-400BCF basic upper deck layout



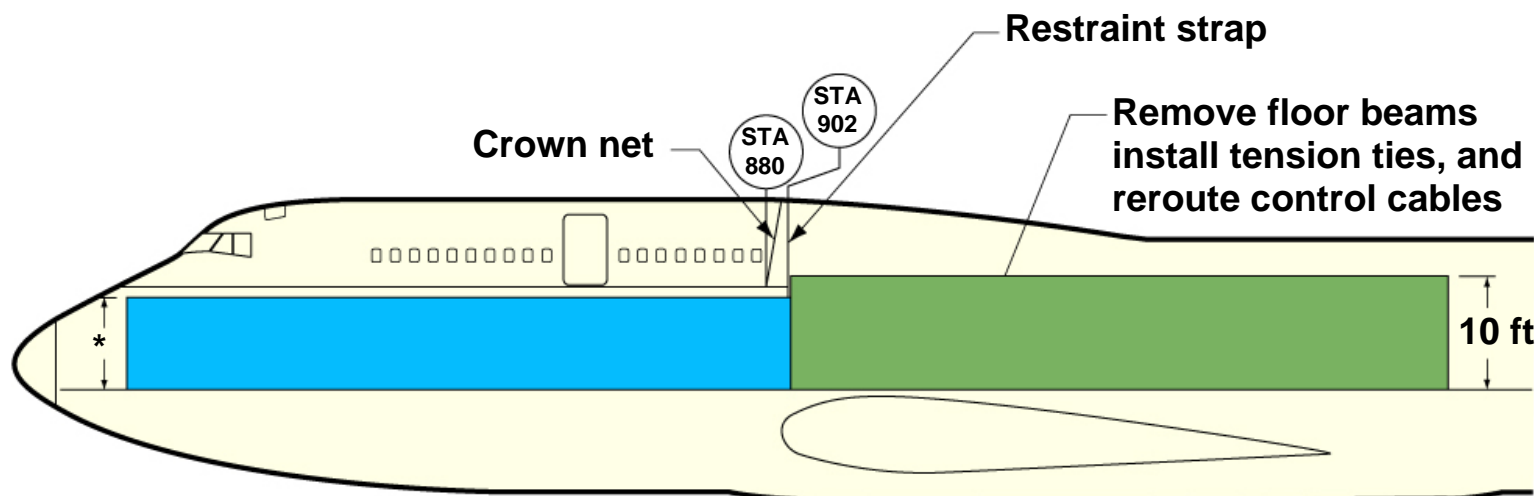
# 747-400BCF maximum optional upper deck layout



 Buyer Furnished Equipment (customer responsible for certification)

## 19 Supernumerary Seats

# 747-400BCF upper deck modification



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

- Typical mission rules
- Nominal fuel burn + 4%

# 747-400BCF performance summary

## Pratt and Whitney Engines

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

- Typical mission rules
- Nominal fuel burn + 4%

# 747-400BCF performance summary

## Rolls Royce Engines

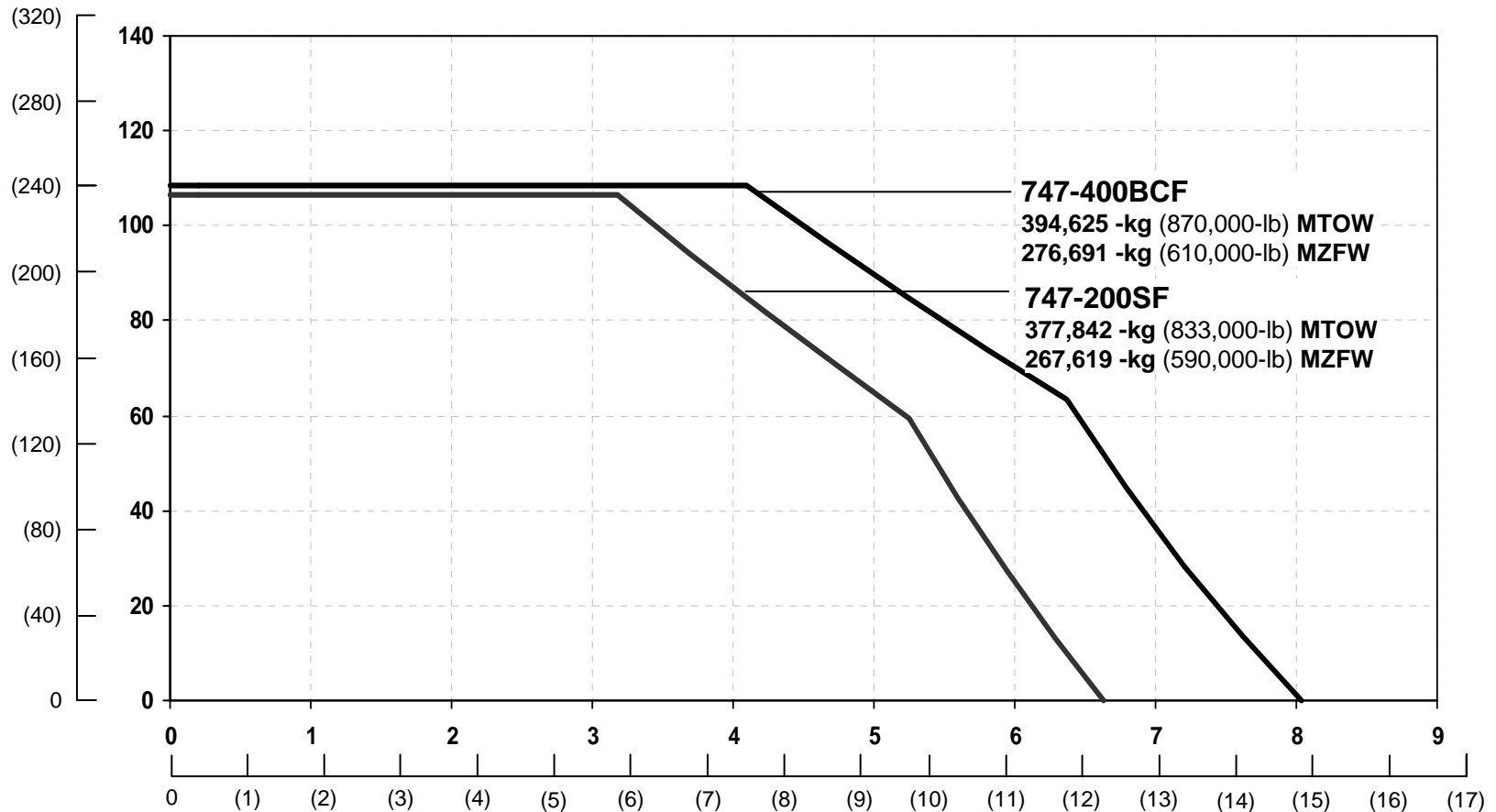
		747-200SF		747-400BCF	
		RB211-524D4		RB211-524G	
<b>Maximum Taxi Weight</b>	<b>kg (lb)</b>	<b>379,203</b>	(836,000)	<b>395,986</b>	(873,000)
<b>Maximum Takeoff Weight</b>	<b>kg (lb)</b>	<b>377,842</b>	(833,000)	<b>394,625</b>	(870,000)
<b>Maximum Landing Weight</b>	<b>kg (lb)</b>	<b>285,763</b>	(630,000)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

- Typical mission rules
- Nominal fuel burn + 4%



# Typical 747-400BCF payload-range capability

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



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

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

- 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%



# 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*

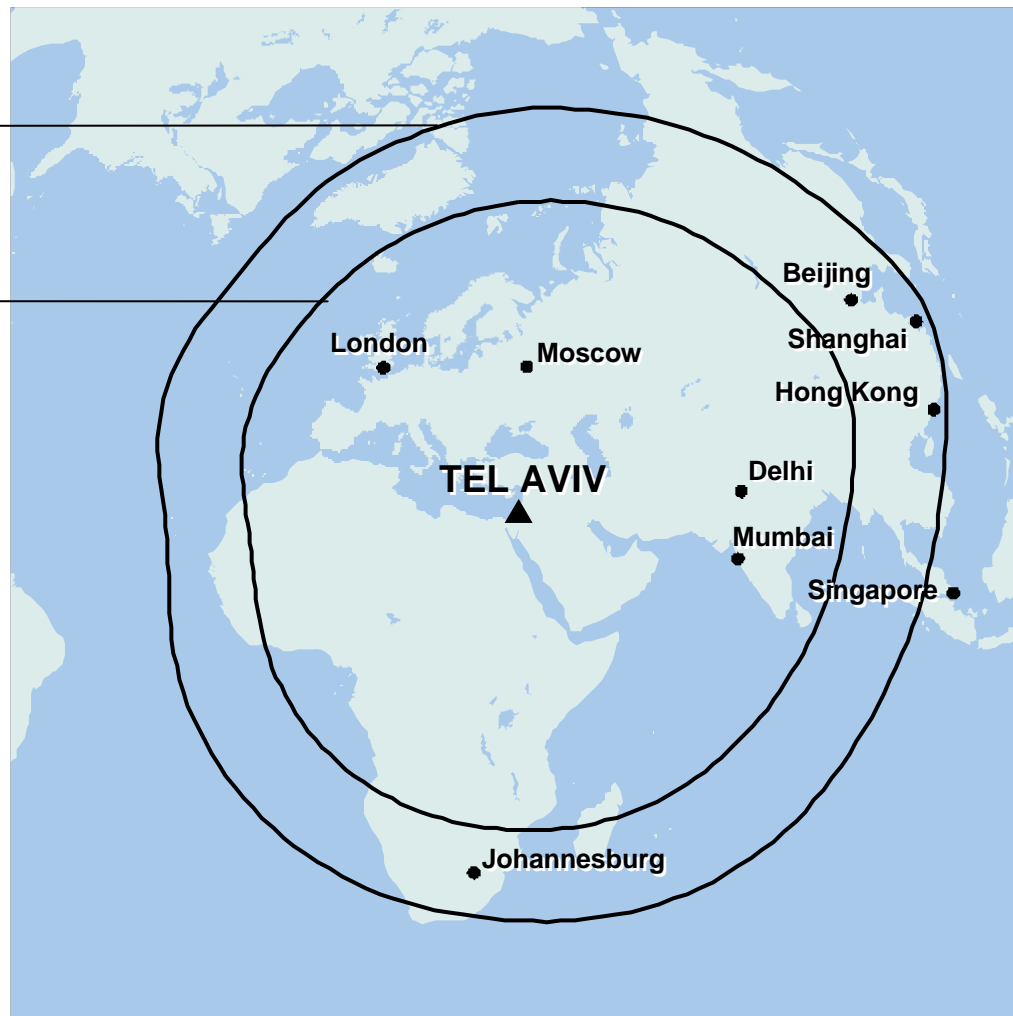
### **747-400BCF**

**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

