

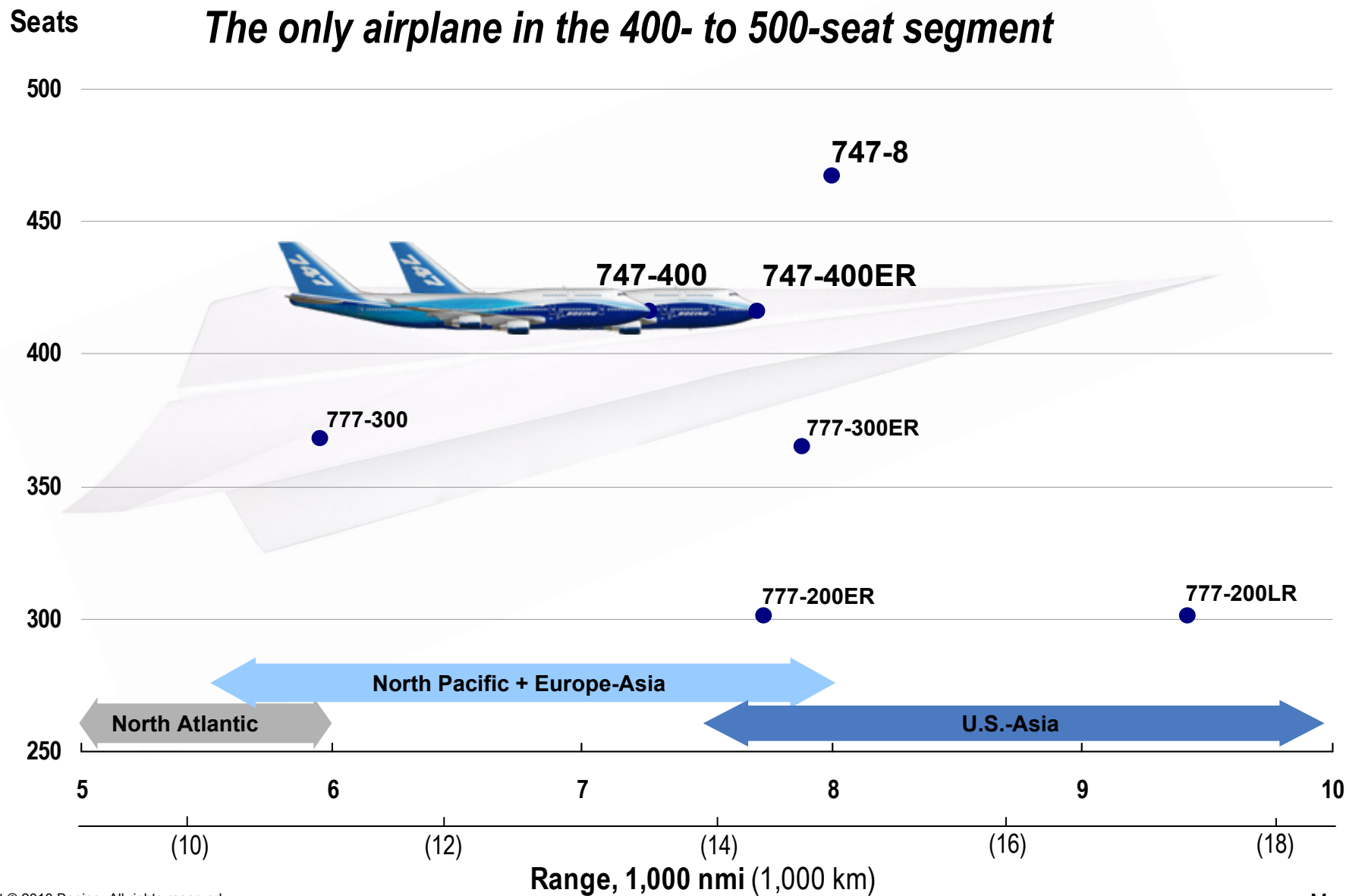
# The right choice for the large airplane market

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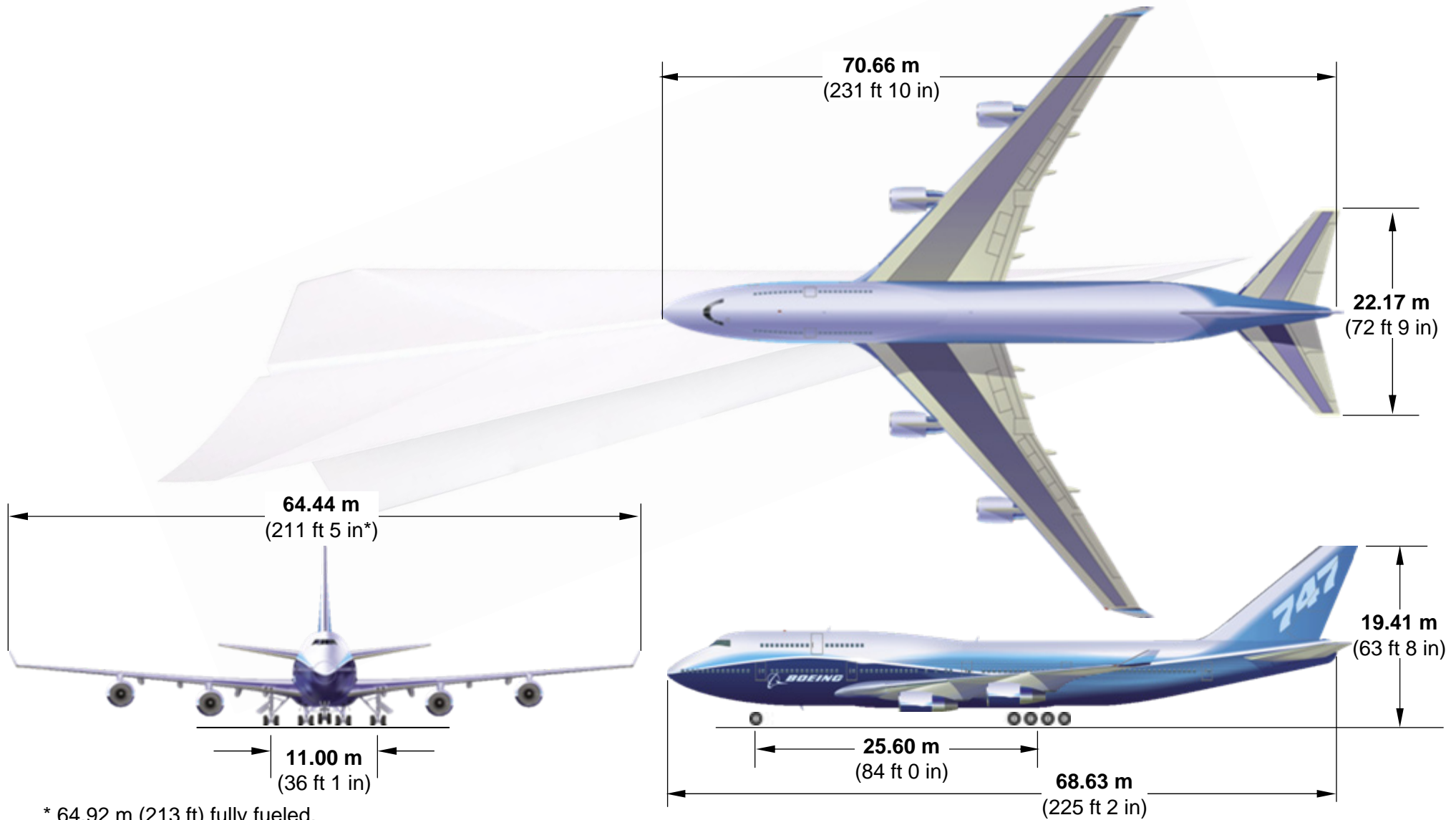
# The 747 family plan

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# 747-400/-400ER

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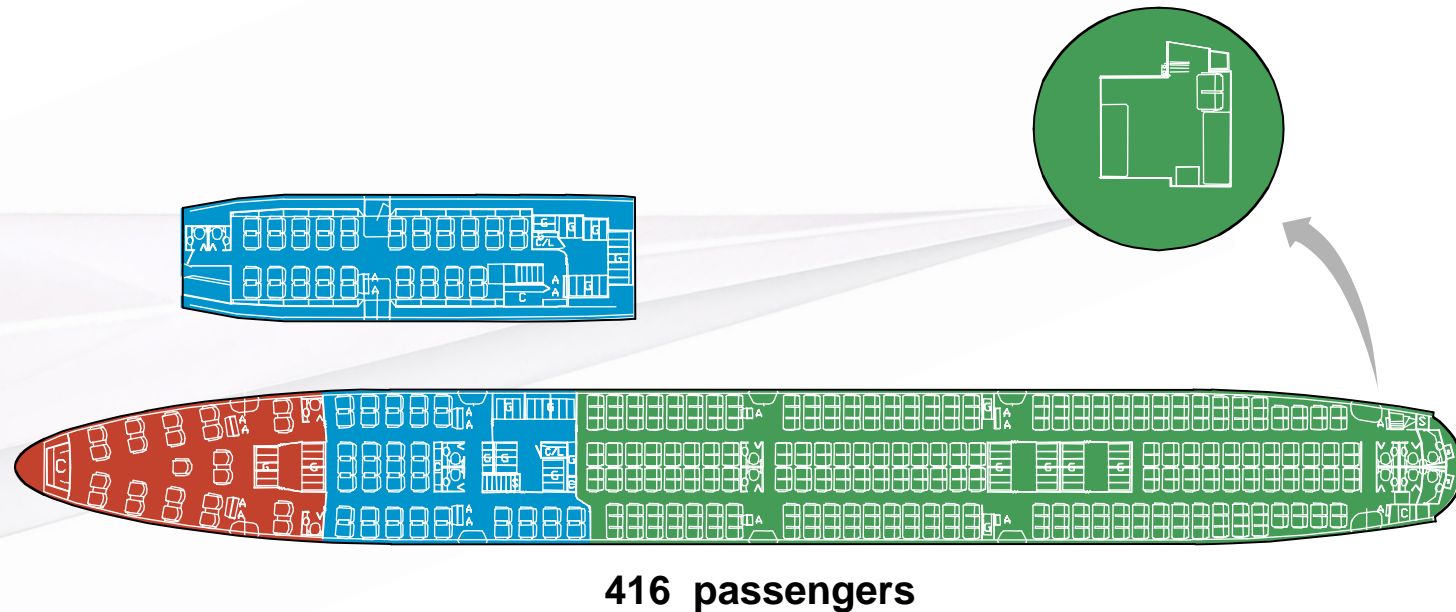
\* 64.92 m (213 ft) fully fueled.

# 747-400/-400ER Interior arrangement

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*Three-class seating, long-range rules*

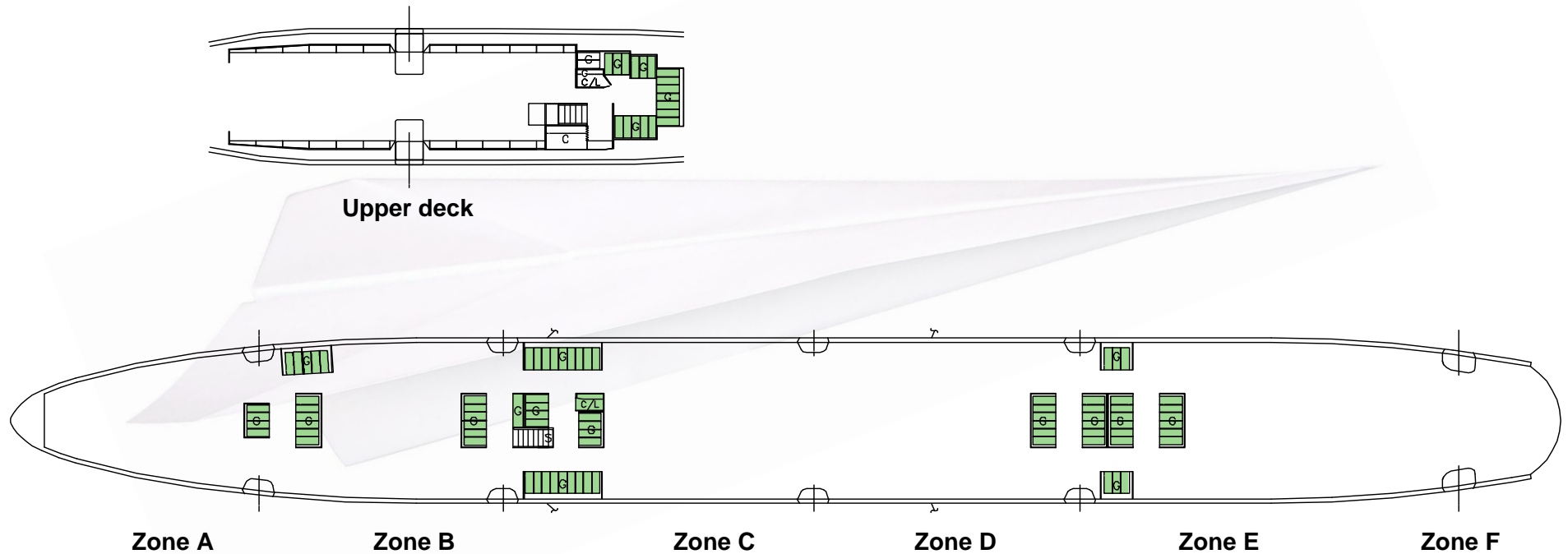
**747-400/-400ER**  
23 first at 61-in pitch  
80 business at 39-in pitch  
313 economy at 32-in pitch





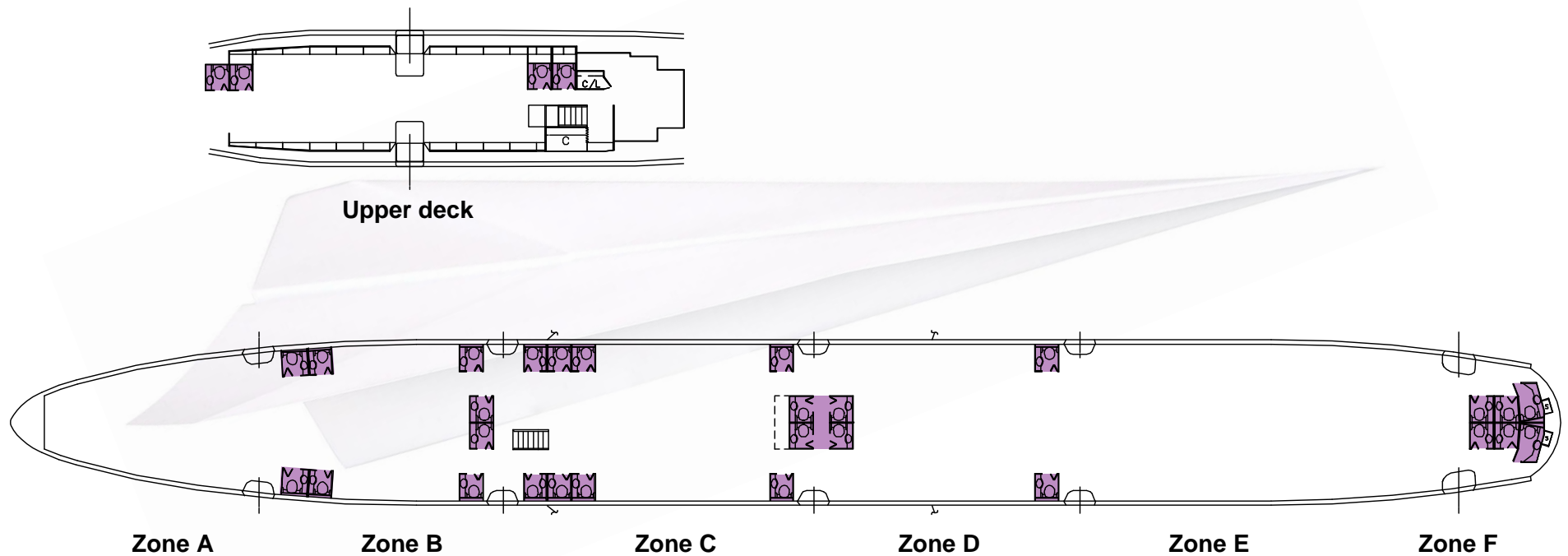
# 747-400/-400ER Standard galley locations

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# 747-400/-400ER Standard lavatory locations

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# 747-400/-400ER

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*Zone A*





# 747-400/-400ER

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*Upper deck business class*





# 747-400/-400ER

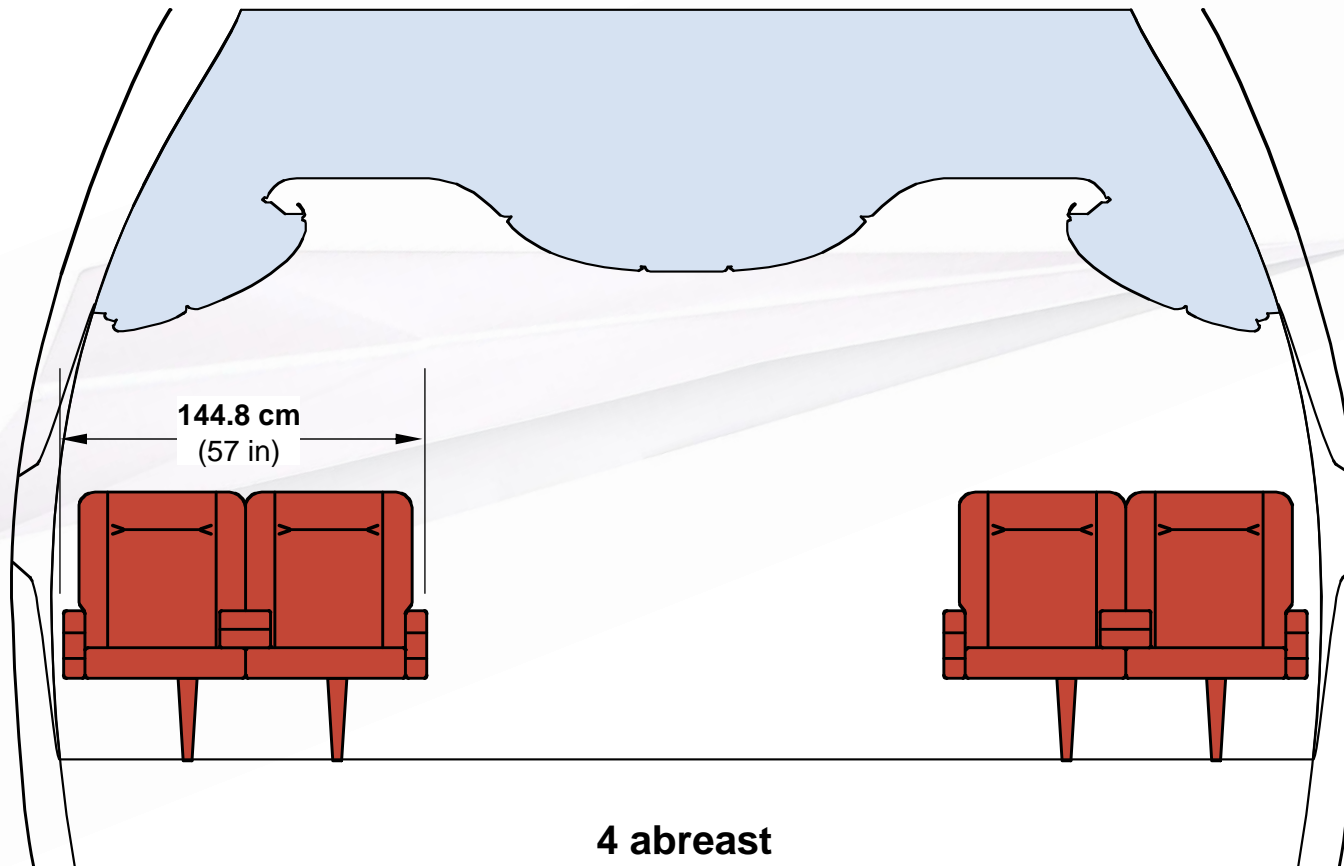
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*Main deck economy class*



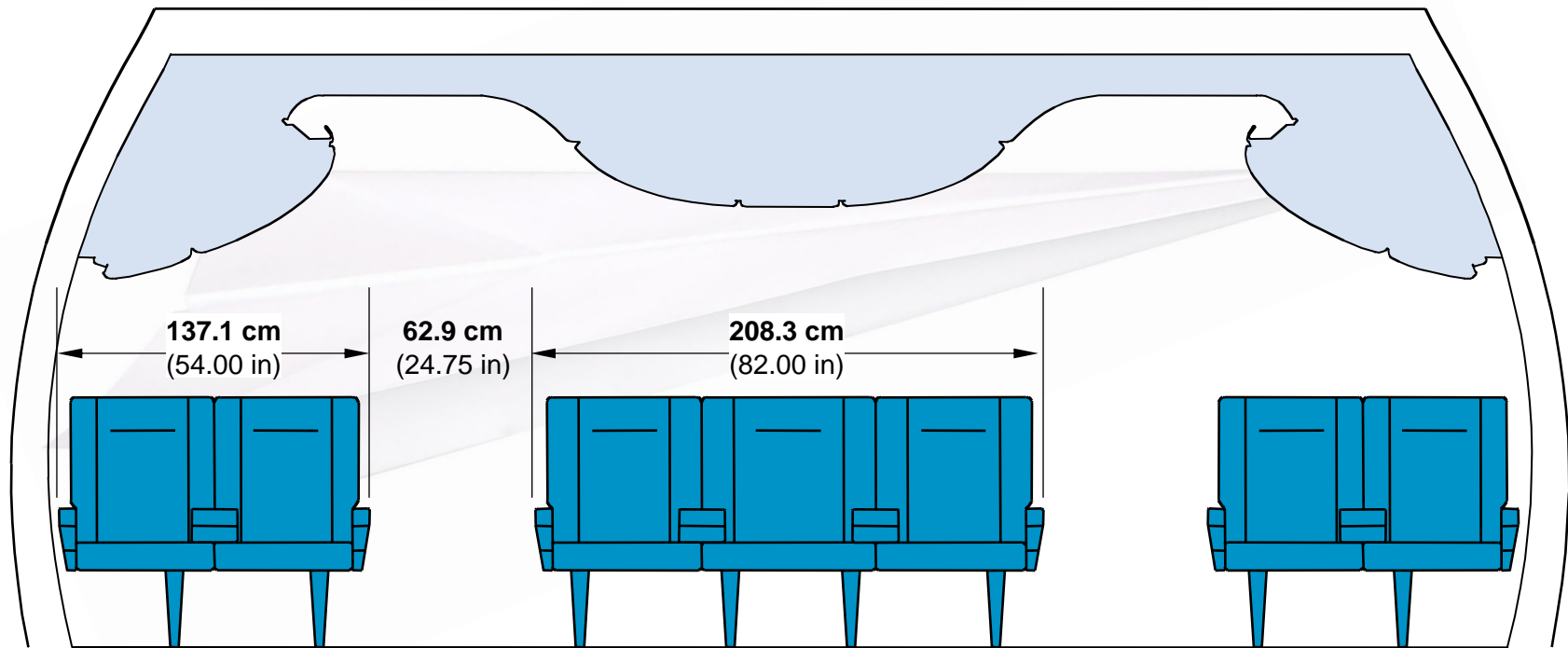
# 747-400/-400ER First-class

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# 747-400/-400ER Business-class

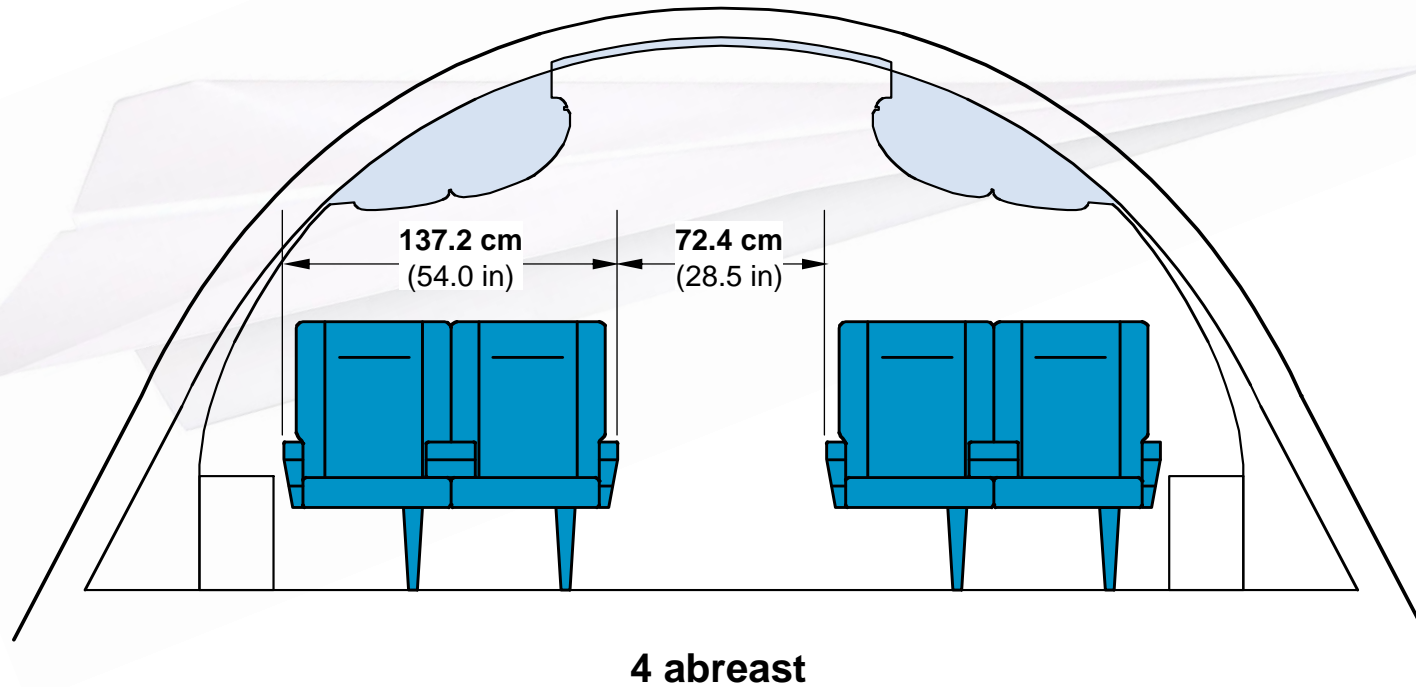
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**7 abreast**

# 747-400/-400ER Business-class, upper deck

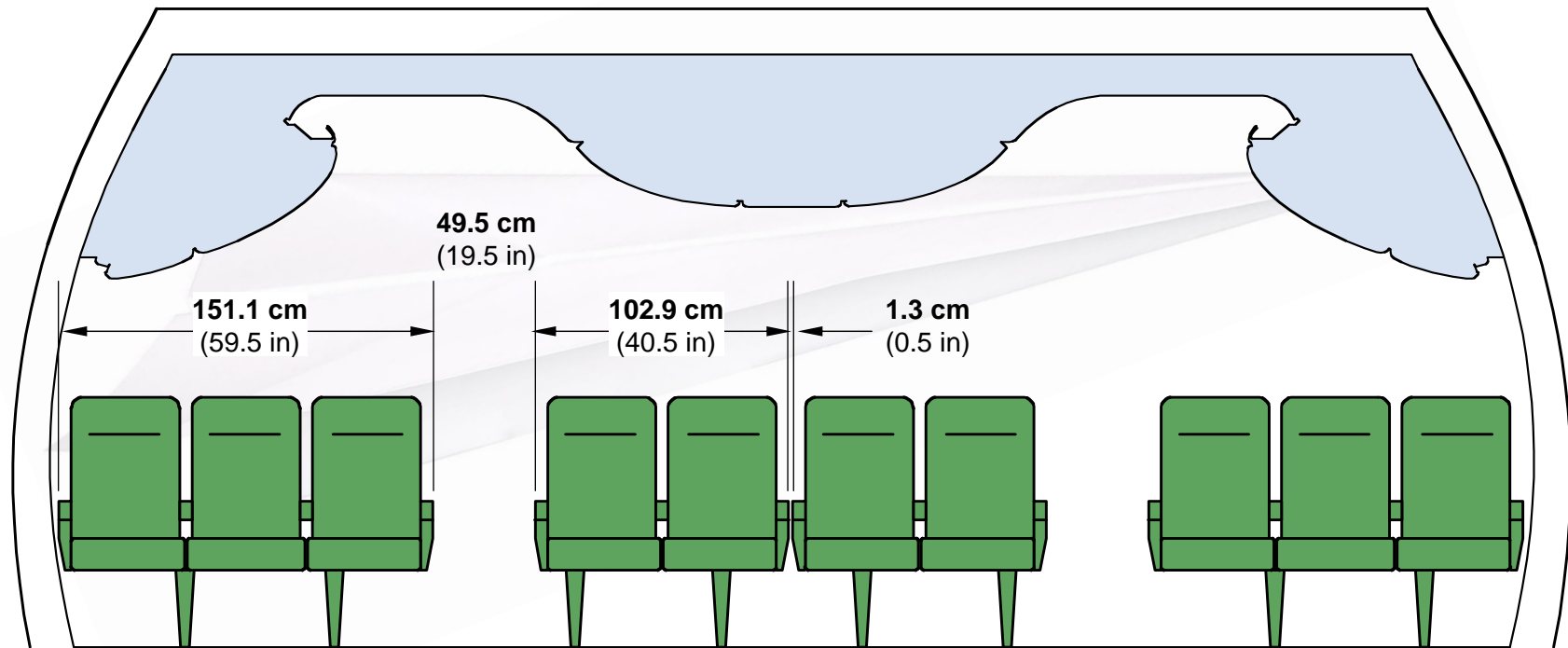
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# 747-400/-400ER Economy-class

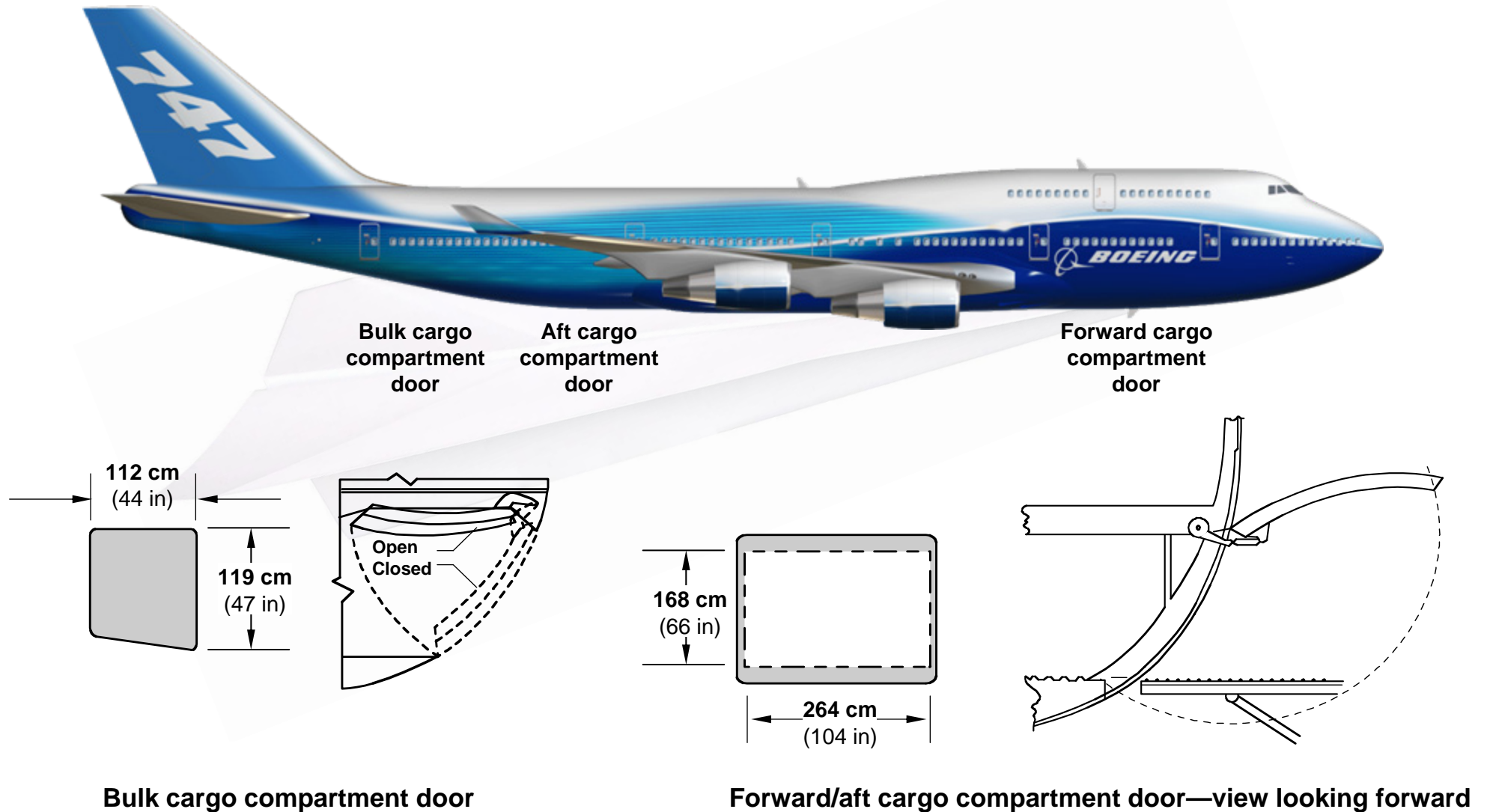
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**10 abreast**

# 747-400/-400ER Lower hold cargo door arrangement

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# 747-400 lower hold capability

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		Lower hold compartment			
		Forward	Aft	Bulk	Total
<b>Basic</b>					
All containers (16/14)	m <sup>3</sup> (ft <sup>3</sup> )	79.3 (2,800)	69.4 (2,450)	23.6 (835)	172.3 (6,085)
Pallets/containers (5/14)	m <sup>3</sup> (ft <sup>3</sup> )	58.8 (2,075)	69.4 (2,450)	23.6 (835)	151.8 (5,360)
All pallets (5/4)	m <sup>3</sup> (ft <sup>3</sup> )	58.8 (2,075)	47.0 (1,660)	23.6 (835)	129.4 (4,570)
<b>Optional aft lower hold</b>					
Pallets/containers (5/16)	m <sup>3</sup> (ft <sup>3</sup> )	58.8 (2,075)	79.3 (2,800)	13.9 (490)	151.9 (5,365)

- LD-1 containers.
- 96- x 125-in pallets.

# 747-400ER lower hold capability

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			Compartment			
			Forward	Aft	Bulk	Total
Basic (one auxiliary tank)						
All containers (14/14)	m <sup>3</sup> (ft <sup>3</sup> )		69.4 (2,450)	69.4 (2,450)	21.4 (755)	160.1 (5,655)
Pallets/containers (4/14)	m <sup>3</sup> (ft <sup>3</sup> )		47.0 (1,660)	69.4 (2,450)	21.4 (755)	137.8 (4,865)
All pallets (4/4)	m <sup>3</sup> (ft <sup>3</sup> )		47.0 (1,660)	47.0 (1,660)	21.4 (755)	115.4 (4,075)
Optional fuel capacity (two auxiliary tanks)						
All containers (12/14)	m <sup>3</sup> (ft <sup>3</sup> )		49.0 (1,730)	69.4 (2,450)	21.4 (755)	139.7 (4,935)
Pallets/containers (3/14)	m <sup>3</sup> (ft <sup>3</sup> )		35.3 (1,245)	69.4 (2,450)	21.4 (755)	126.0 (4,450)
All pallets (3/4)	m <sup>3</sup> (ft <sup>3</sup> )		35.3 (1,245)	47.0 (1,660)	21.4 (755)	103.6 (3,660)
Optional aft lower hold						
Pallets/containers (4/16)	m <sup>3</sup> (ft <sup>3</sup> )		47.0 (1,660)	79.3 (2,800)	11.6 (410)	137.9 (4,870)

- LD-1 containers.
- 96- x 125-in pallets.

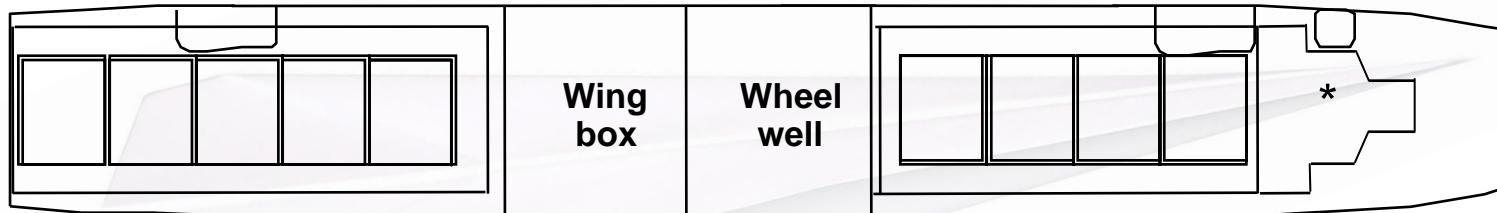


# Lower hold cargo volume

## 747-400

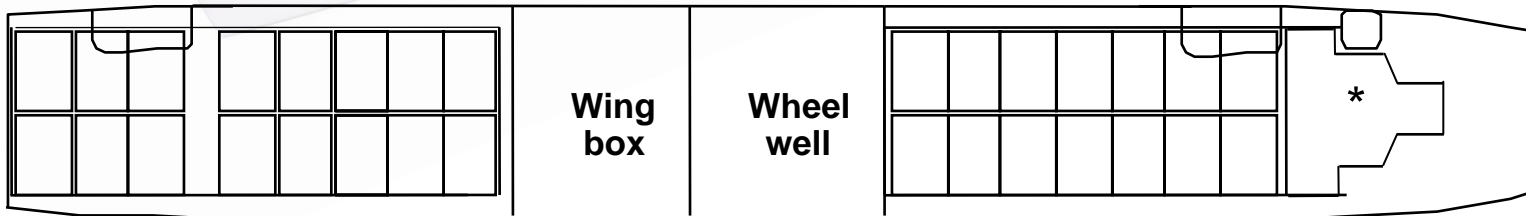
### Forward lower hold

### Aft lower hold



**(5) 96-in x 125-in pallets**  
**58.8 m<sup>3</sup> (2,075 ft<sup>3</sup>)**

**(4) 96-in x 125-in pallets**  
**47.0 m<sup>3</sup> (1,660 ft<sup>3</sup>)**



**(16) LD-1/LD-3 containers**  
**79.3 m<sup>3</sup> (2,800 ft<sup>3</sup>)**

**(14) LD-1/LD-3 containers**  
**69.4 m<sup>3</sup> (2,450 ft<sup>3</sup>)**

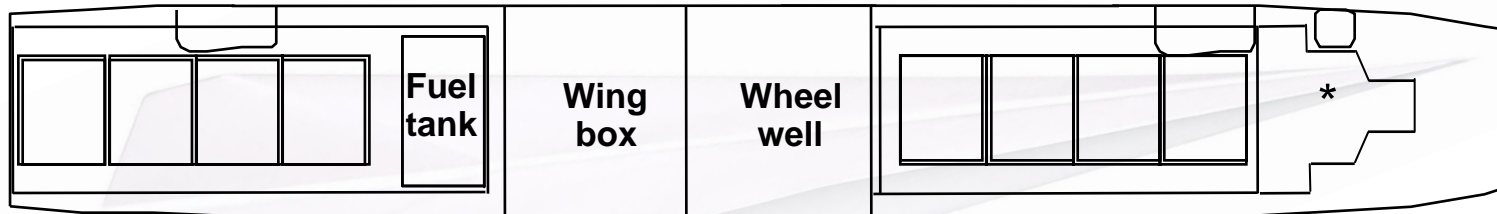
\*Bulk cargo = 23.6 m<sup>3</sup> (835 ft<sup>3</sup>) or 13.9 m<sup>3</sup> (490 ft<sup>3</sup>) with 2 additional LD-1/LD-3 option.

# Lower hold cargo volume

## 747-400ER

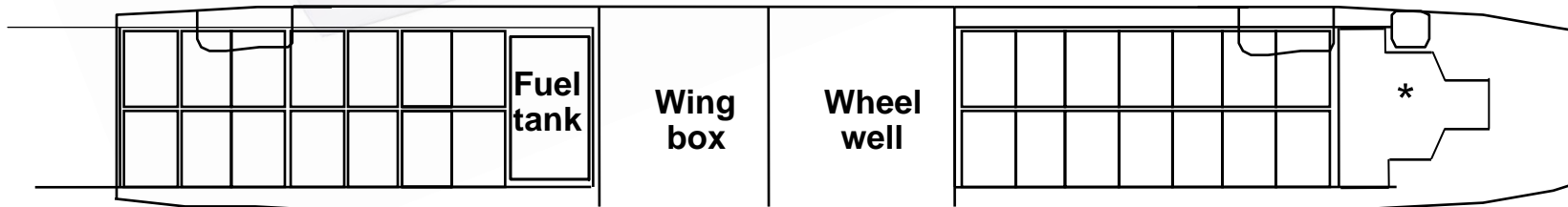
### Forward lower hold

### Aft lower hold



**(4) 96-in x 125-in pallets**  
**47.0 m<sup>3</sup> (1,660 ft<sup>3</sup>)**

**(4) 96-in x 125-in pallets**  
**47.0 m<sup>3</sup> (1,660 ft<sup>3</sup>)**



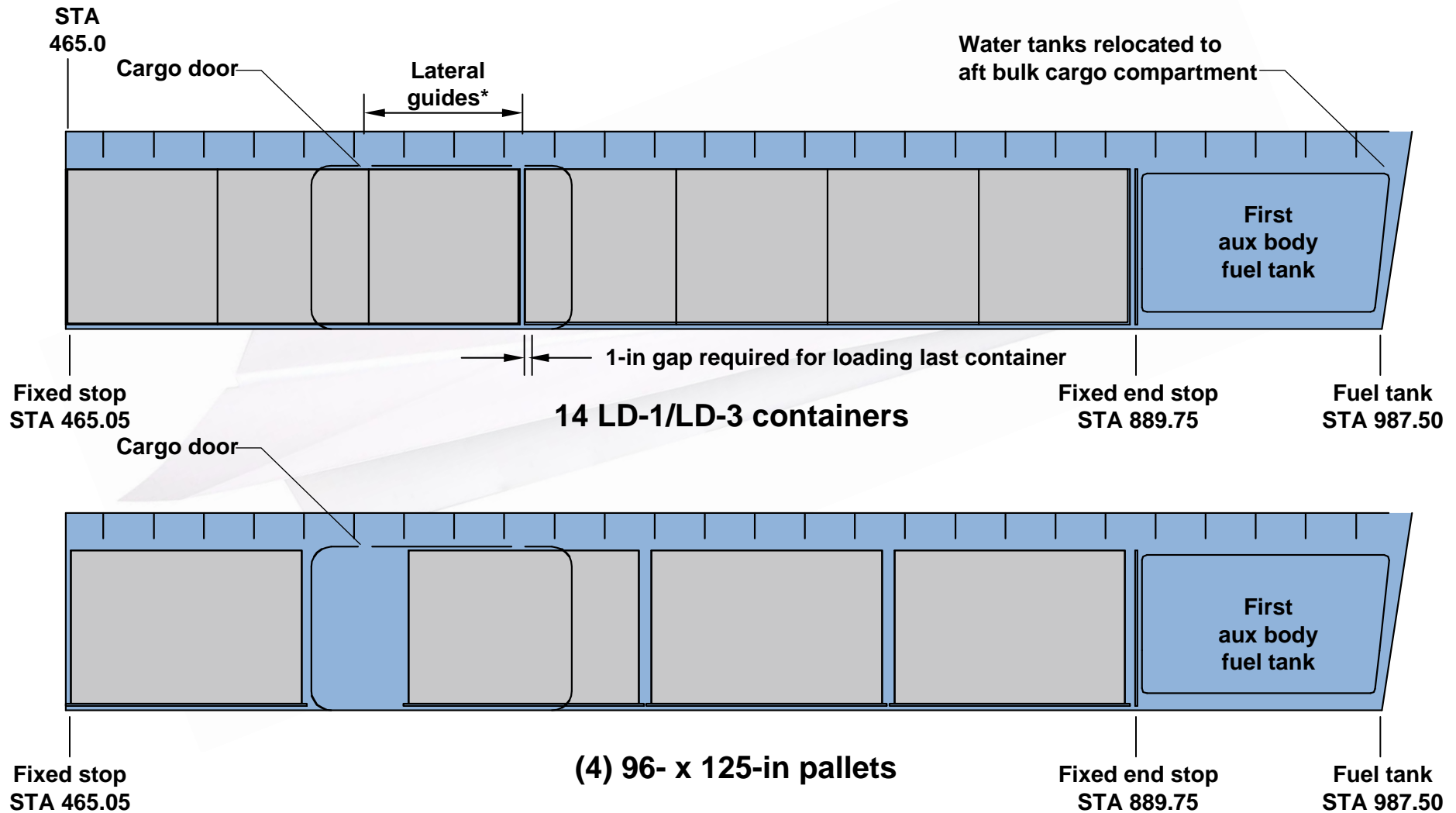
**(14) LD-1/LD-3 containers**  
**69.4 m<sup>3</sup> (2,450 ft<sup>3</sup>)**

**(14) LD-1/LD-3 containers**  
**69.4 m<sup>3</sup> (2,450 ft<sup>3</sup>)**

\*Bulk cargo = 21.4 m<sup>3</sup> (755 ft<sup>3</sup>) or 11.6 m<sup>3</sup> (410 ft<sup>3</sup>) with 2 additional LD-1/LD-3 option.

# 747-400ER forward lower hold cargo arrangement with one body fuel tank

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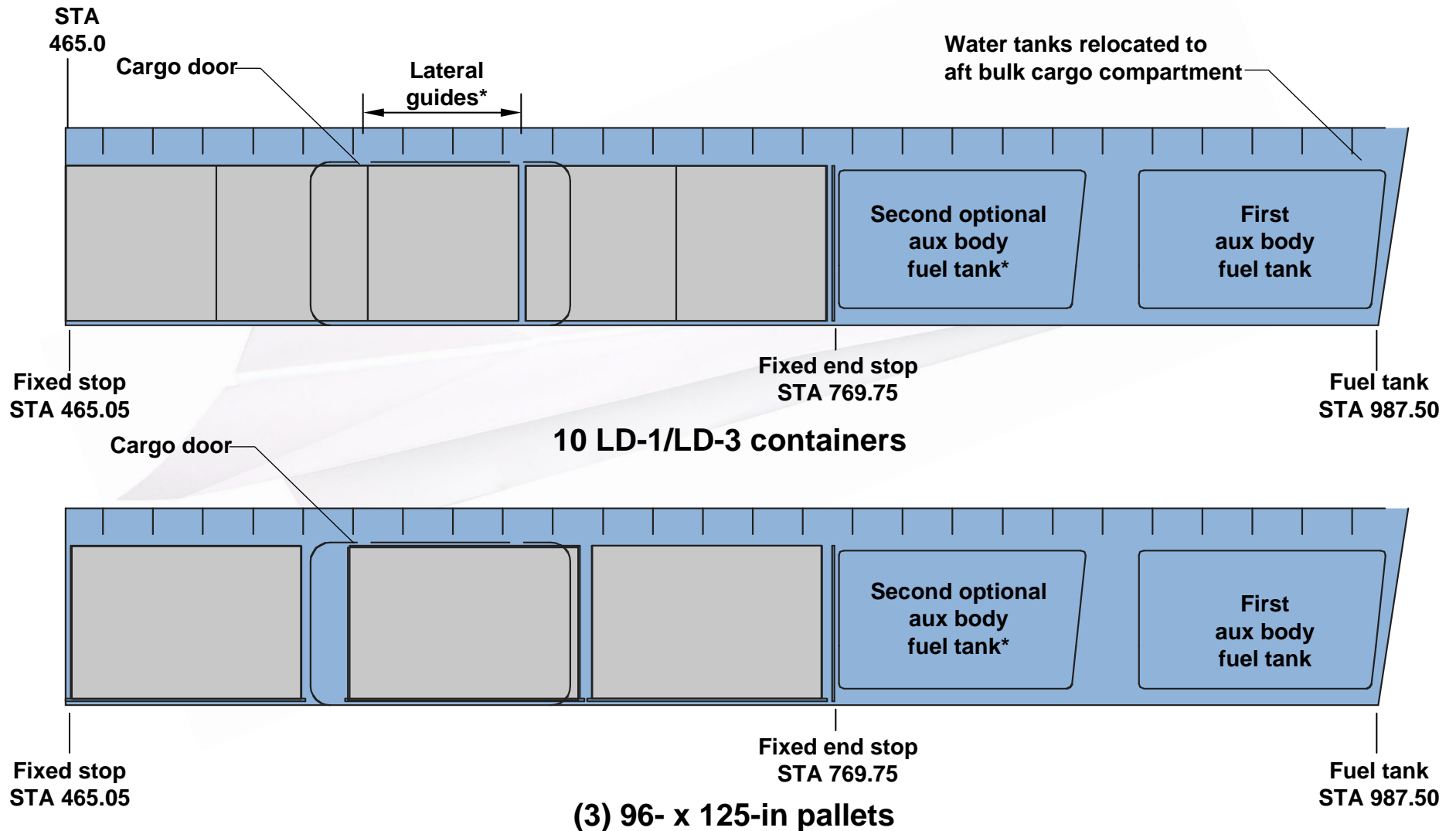


\*Not typical loading for last container.

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May 2010

# 747-400ER forward lower hold cargo arrangement with two body fuel tanks



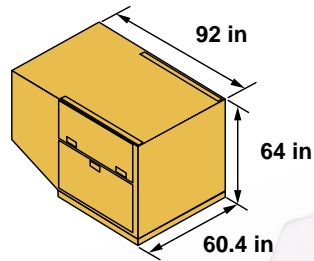
\* Provisions basic.



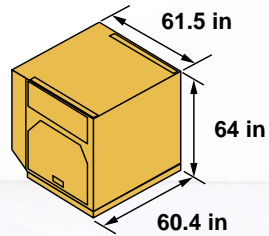
# 747-400/-400ER Lower hold capability

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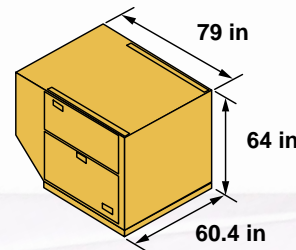
## Containers and pallets



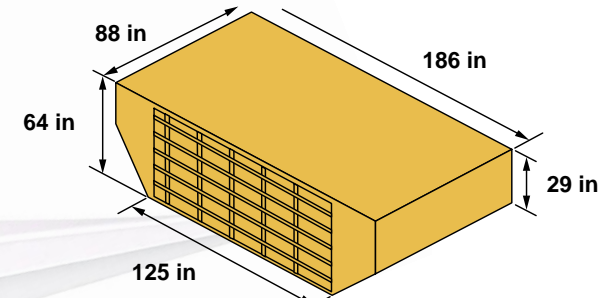
**1,588-kg (3,500-lb)**  
**4.9 m<sup>3</sup> (175 ft<sup>3</sup>)**  
**(LD-1)**



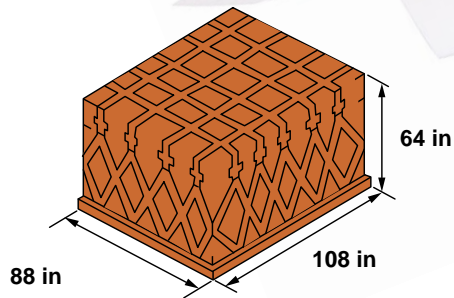
**1,225-kg (2,700-lb)**  
**3.5 m<sup>3</sup> (125 ft<sup>3</sup>)**  
**(LD-2)**



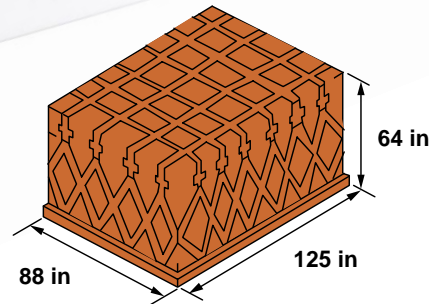
**1,588-kg (3,500-lb)**  
**4.5 m<sup>3</sup> (160 ft<sup>3</sup>)**  
**(LD-3)**



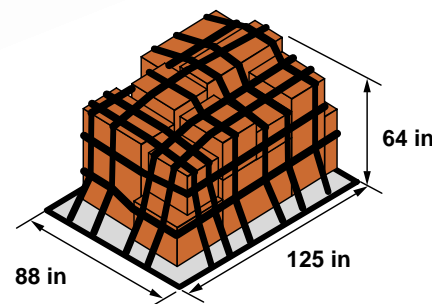
**4,536-kg (10,000-lb)**  
**14.6 m<sup>3</sup> (516 ft<sup>3</sup>)**  
**(LD-29)**



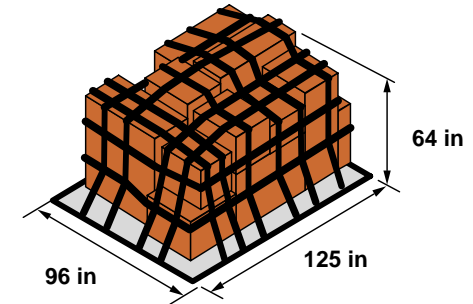
**4,627-kg (10,200-lb)**  
**9.0 m<sup>3</sup> (320 ft<sup>3</sup>) (military)**  
**9.2 m<sup>3</sup> (327 ft<sup>3</sup>) (commercial)**



**4,627-kg (10,200-lb)**  
**10.8 m<sup>3</sup> (381 ft<sup>3</sup>)**  
**(LD-7)**



**4,627-kg (10,200-lb)**  
**10.5 m<sup>3</sup> (372 ft<sup>3</sup>)**  
**(pallet)**



**5,035-kg (11,100-lb)**  
**11.7 m<sup>3</sup> (415 ft<sup>3</sup>)**  
**(pallet)**

# 747-400 performance summary

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## General Electric engines

		Basic	Maximum <sup>2</sup>
Passengers Cargo	(FC/BC/EC) pallets/containers <sup>1</sup>	416 (23/78/315) 5/14	
Engines		CF6-80C2B1F	CF6-80C2B5F
SL standard-day takeoff thrust/flat-rated temperature (BET)	lb/°F	56,500/90	62,100/86
Maximum taxi weight	kg ( <b>lb</b> )	364,230 ( <b>803,000</b> )	398,250 ( <b>878,000</b> )
Maximum takeoff weight	kg ( <b>lb</b> )	362,870 ( <b>800,000</b> )	396,890 ( <b>875,000</b> )
Maximum landing weight	kg ( <b>lb</b> )	260,360 ( <b>574,000</b> )	295,740 ( <b>652,000</b> )
Maximum zero fuel weight	kg ( <b>lb</b> )	242,670 ( <b>535,000</b> )	251,740 ( <b>555,000</b> )
Operating empty weight <sup>3</sup>	kg ( <b>lb</b> )	182,480 ( <b>402,300</b> )	182,840 ( <b>403,100</b> )
Fuel capacity	L ( <b>U.S. gal</b> )	203,520 ( <b>53,765</b> )	216,010 ( <b>57,065</b> )
Design range (MTOW, full passenger payload)	nmi ( <b>km</b> )	6,080 ( <b>11,260</b> )	7,225 <sup>4</sup> ( <b>13,380</b> ) <sup>4</sup>
Cruise Mach		0.855	0.855
Takeoff field length (SL, 86°F, MTOW)	m ( <b>ft</b> )	2,815 ( <b>9,250</b> )	3,015 ( <b>9,900</b> )
Initial cruise altitude (MTOW, ISA + 10°C)	ft	34,700	32,700
Landing field length (MLW)	m ( <b>ft</b> )	1,905 ( <b>6,250</b> )	2,175 ( <b>7,150</b> )
Approach speed (MLW)	kias	146	157
Fuel burn/seat 6,000 nmi	kg ( <b>lb</b> )	298.2 ( <b>657.4</b> )	298.6 ( <b>658.4</b> )

- Typical mission rules.
- Three-class seating.

<sup>1</sup>196- x 125-in pallets/LD-1 containers.

<sup>2</sup>Highest optional weight, loading restrictions apply.

<sup>3</sup>Includes overhead crew rest, door 5—does not include IFE.

<sup>4</sup>Fuel volume limited.

# 747-400 performance summary

StartupBoeing

## Pratt & Whitney engines

		Basic	Maximum <sup>2</sup>
Passengers Cargo	(FC/BC/EC) pallets/containers <sup>1</sup>	416 (23/78/315) 5/14	
Engines		PW4056	PW4062
SL standard-day takeoff thrust/flat-rated temperature (BET)	lb/°F	57,100/92	63,300/86
Maximum taxi weight	kg ( <b>lb</b> )	364,230 ( <b>803,000</b> )	398,250 ( <b>878,000</b> )
Maximum takeoff weight	kg ( <b>lb</b> )	362,870 ( <b>800,000</b> )	396,890 ( <b>875,000</b> )
Maximum landing weight	kg ( <b>lb</b> )	260,360 ( <b>574,000</b> )	295,740 ( <b>652,000</b> )
Maximum zero fuel weight	kg ( <b>lb</b> )	242,670 ( <b>535,000</b> )	251,740 ( <b>555,000</b> )
Operating empty weight <sup>3</sup>	kg ( <b>lb</b> )	183,160 ( <b>403,800</b> )	183,520 ( <b>404,600</b> )
Fuel capacity	L ( <b>U.S. gal</b> )	204,350 ( <b>53,985</b> )	216,840 ( <b>57,285</b> )
Design range (MTOW, full passenger payload)	nmi ( <b>km</b> )	6,075 ( <b>11,250</b> )	7,285 <sup>4</sup> ( <b>13,490</b> ) <sup>4</sup>
Cruise Mach		0.855	0.855
Takeoff field length (SL, 86°F, MTOW)	m ( <b>ft</b> )	2,815 ( <b>9,250</b> )	2,955 ( <b>9,700</b> )
Initial cruise altitude (MTOW, ISA + 10°C)	ft	34,700	32,800
Landing field length (MLW)	m ( <b>ft</b> )	1,905 ( <b>6,250</b> )	2,175 ( <b>7,150</b> )
Approach speed (MLW)	kias	146	157
Fuel burn/seat 6,000 nmi	kg ( <b>lb</b> )	296.7 ( <b>654.1</b> )	297.1 ( <b>655.1</b> )

- Typical mission rules.
- Three-class seating.

<sup>1</sup>96- x 125-in pallets/LD-1 containers.

<sup>2</sup>Highest optional weight, loading restrictions apply.

<sup>3</sup>Includes overhead crew rest, door 5—does not include IFE.

<sup>4</sup>Fuel volume limited.

# 747-400 performance summary

StartupBoeing

## Rolls-Royce engines

		Basic	Maximum <sup>2</sup>
Passengers Cargo	(FC/BC/EC) pallets/containers <sup>1</sup>	416 (23/78/315) 5/14	
Engines SL standard-day takeoff thrust/flat-rated temperature (BET)	lb/°F	RB211-524G2-T 56,400/86	RB211-524H2-T 59,500/86
Maximum taxi weight	kg ( <b>lb</b> )	364,230 ( <b>803,000</b> )	398,250 ( <b>878,000</b> )
Maximum takeoff weight	kg ( <b>lb</b> )	362,870 ( <b>800,000</b> )	396,890 ( <b>875,000</b> )
Maximum landing weight	kg ( <b>lb</b> )	260,360 ( <b>574,000</b> )	295,740 ( <b>652,000</b> )
Maximum zero fuel weight	kg ( <b>lb</b> )	242,670 ( <b>535,000</b> )	251,740 ( <b>555,000</b> )
Operating empty weight <sup>3</sup>	kg ( <b>lb</b> )	183,290 ( <b>404,100</b> )	183,650 ( <b>404,900</b> )
Fuel capacity	L ( <b>U.S. gal</b> )	204,350 ( <b>53,985</b> )	216,840 ( <b>57,285</b> )
Design range (MTOW, full passenger payload)	nmi ( <b>km</b> )	5,960 ( <b>11,030</b> )	7,155 <sup>4</sup> ( <b>13,250</b> ) <sup>4</sup>
Cruise Mach		0.855	0.855
Takeoff field length (SL, 86°F, MTOW)	m ( <b>ft</b> )	2,830 ( <b>9,300</b> )	3,200 ( <b>10,500</b> )
Initial cruise altitude (MTOW, ISA + 10°C)	ft	34,700	32,800
Landing field length (MLW)	m ( <b>ft</b> )	1,905 ( <b>6,250</b> )	2,175 ( <b>7,150</b> )
Approach speed (MLW)	kias	146	157
Fuel burn/seat 6,000 nmi	kg ( <b>lb</b> )	Not applicable	303.0 ( <b>667.9</b> )

- Typical mission rules.
- Three-class seating.

<sup>1</sup>96- x 125-in pallets/LD-1 containers.

<sup>2</sup>Highest optional weight, loading restrictions apply.

<sup>3</sup>Includes overhead crew rest, door 5—does not include IFE.

<sup>4</sup>Fuel volume limited.



# 747-400ER performance summary

StartupBoeing

## General Electric engines

		Basic fuel capacity <sup>2</sup> (1 body tank)	Maximum fuel capacity <sup>2</sup> (2 body tanks)
Passengers	(FC/BC/EC)	416 (23/78/315)	
Cargo	pallets/containers <sup>1</sup>	4/14	3/14
Engines		CF6-80C2B5F	CF6-80C2B5F
SL standard-day takeoff thrust/flat-rated temperature (BET)	lb/°F	62,100/86	62,100/86
Maximum taxi weight	kg ( <b>lb</b> )	414,130 ( <b>913,000</b> )	414,130 ( <b>913,000</b> )
Maximum takeoff weight	kg ( <b>lb</b> )	412,760 ( <b>910,000</b> )	412,760 ( <b>910,000</b> )
Maximum landing weight	kg ( <b>lb</b> )	263,530 ( <b>581,000</b> )	295,740 ( <b>652,000</b> )
Maximum zero fuel weight	kg ( <b>lb</b> )	245,840 ( <b>542,000</b> )	251,740 ( <b>555,000</b> )
Operating empty weight <sup>3</sup>	kg ( <b>lb</b> )	185,610 ( <b>409,200</b> )	186,330 ( <b>410,800</b> )
Fuel capacity	L ( <b>U.S. gal</b> )	228,160 ( <b>60,275</b> )	240,310 ( <b>63,485</b> )
Design range (MTOW, full passenger payload)	nmi ( <b>km</b> )	7,495 <sup>4</sup> ( <b>13,880</b> ) <sup>4</sup>	7,565 ( <b>14,010</b> )
Cruise Mach		0.855	0.855
Takeoff field length (SL, 86°F, MTOW)	m ( <b>ft</b> )	3,320 ( <b>10,900</b> )	3,320 ( <b>10,900</b> )
Initial cruise altitude (MTOW, ISA + 10°C)	ft	31,900	32,800
Landing field length (MLW)	m ( <b>ft</b> )	1,935 ( <b>6,350</b> )	2,175 ( <b>7,150</b> )
Approach speed (MLW)	kias	147	157
Fuel burn/seat 6,000 nmi	kg ( <b>lb</b> )	304.5 ( <b>671.4</b> )	305.4 ( <b>673.4</b> )

- Typical mission rules.
- Three-class seating.

<sup>1</sup>96- x 125-in pallets/LD-1 containers.

<sup>2</sup>Highest weight, loading restrictions apply.

<sup>3</sup>Includes overhead crew rest, door 5—does not include IFE.

<sup>4</sup>Fuel volume limited.



# 747-400ER performance summary

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## Pratt & Whitney engines

		Basic fuel capacity <sup>2</sup> (1 body tank)	Maximum fuel capacity <sup>2</sup> (2 body tanks)
Passengers	(FC/BC/EC)	416 (23/78/315)	
Cargo	pallets/containers <sup>1</sup>	4/14	3/14
Engines		PW4062	PW4062
SL standard-day takeoff thrust/flat-rated temperature (BET)	lb/°F	63,300/86	63,300/86
Maximum taxi weight	kg ( <b>lb</b> )	414,130 ( <b>913,000</b> )	414,130 ( <b>913,000</b> )
Maximum takeoff weight	kg ( <b>lb</b> )	412,760 ( <b>910,000</b> )	412,760 ( <b>910,000</b> )
Maximum landing weight	kg ( <b>lb</b> )	263,530 ( <b>581,000</b> )	295,740 ( <b>652,000</b> )
Maximum zero fuel weight	kg ( <b>lb</b> )	245,840 ( <b>542,000</b> )	251,740 ( <b>555,000</b> )
Operating empty weight <sup>3</sup>	kg ( <b>lb</b> )	186,290 ( <b>410,700</b> )	187,010 ( <b>412,300</b> )
Fuel capacity	L ( <b>U.S. gal</b> )	228,990 ( <b>60,495</b> )	241,140 ( <b>63,705</b> )
Design range (MTOW, full passenger payload)	nmi ( <b>km</b> )	7,560 <sup>4</sup> ( <b>14,000</b> ) <sup>4</sup>	7,585 ( <b>14,045</b> )
Cruise Mach		0.855	0.855
Takeoff field length (SL, 86°F, MTOW)	m ( <b>ft</b> )	3,260 ( <b>10,700</b> )	3,260 ( <b>10,700</b> )
Initial cruise altitude (MTOW, ISA + 10°C)	ft	32,000	32,000
Landing field length (MLW)	m ( <b>ft</b> )	1,935 ( <b>6,350</b> )	2,175 ( <b>7,150</b> )
Approach speed (MLW)	kias	147	157
Fuel burn/seat 6,000 nmi	kg ( <b>lb</b> )	303.0 ( <b>668.0</b> )	303.9 ( <b>669.9</b> )

- Typical mission rules.
- Three-class seating.

<sup>1</sup>196- x 125-in pallets/LD-1 containers.

<sup>2</sup>Highest weight, loading restrictions apply.

<sup>3</sup>Includes overhead crew rest, door 5—does not include IFE.

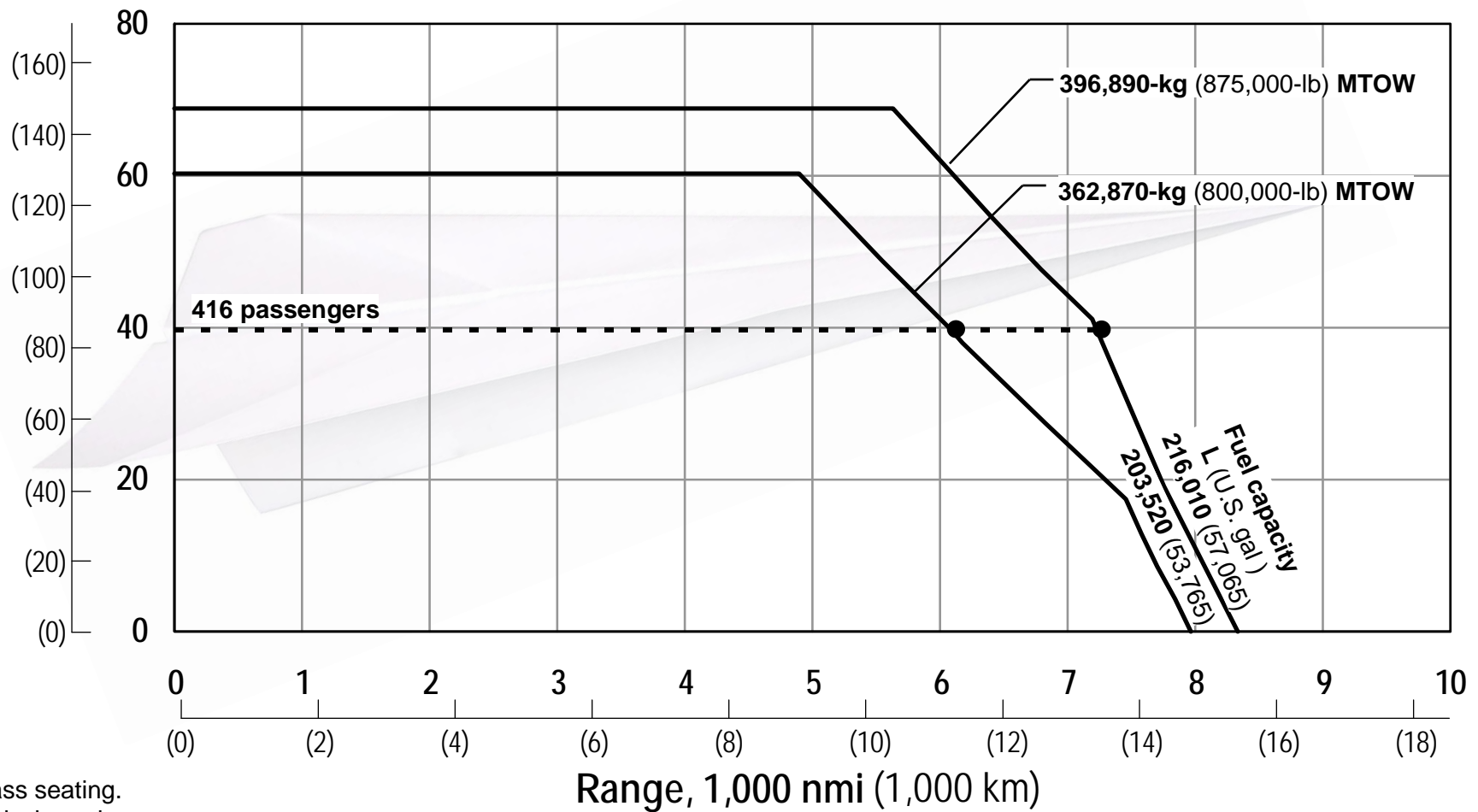
<sup>4</sup>Fuel volume limited.

# 747-400 payload-range capability

StartupBoeing

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

*General Electric engines*



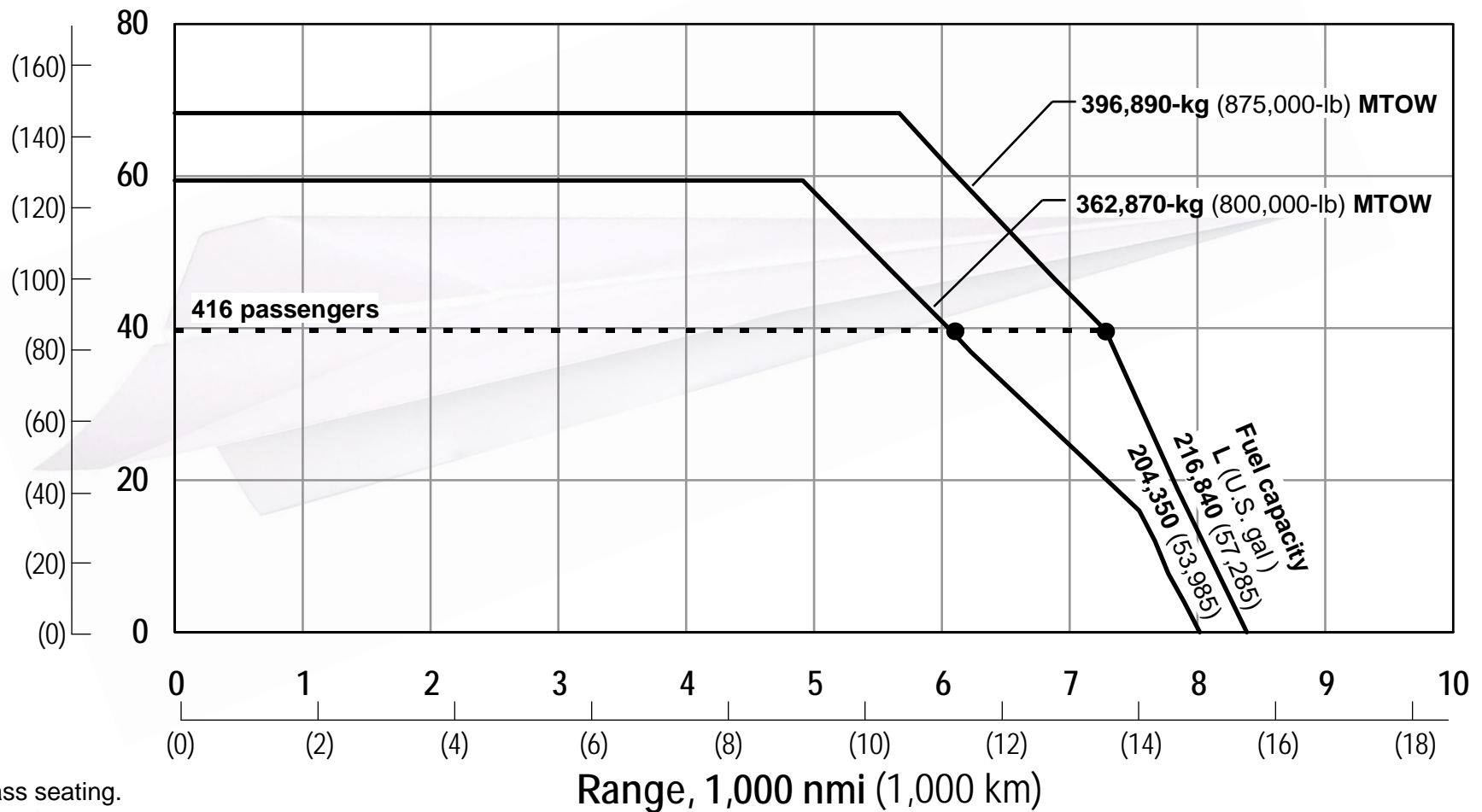
- Three-class seating.
- Typical mission rules.

# 747-400 payload-range capability

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

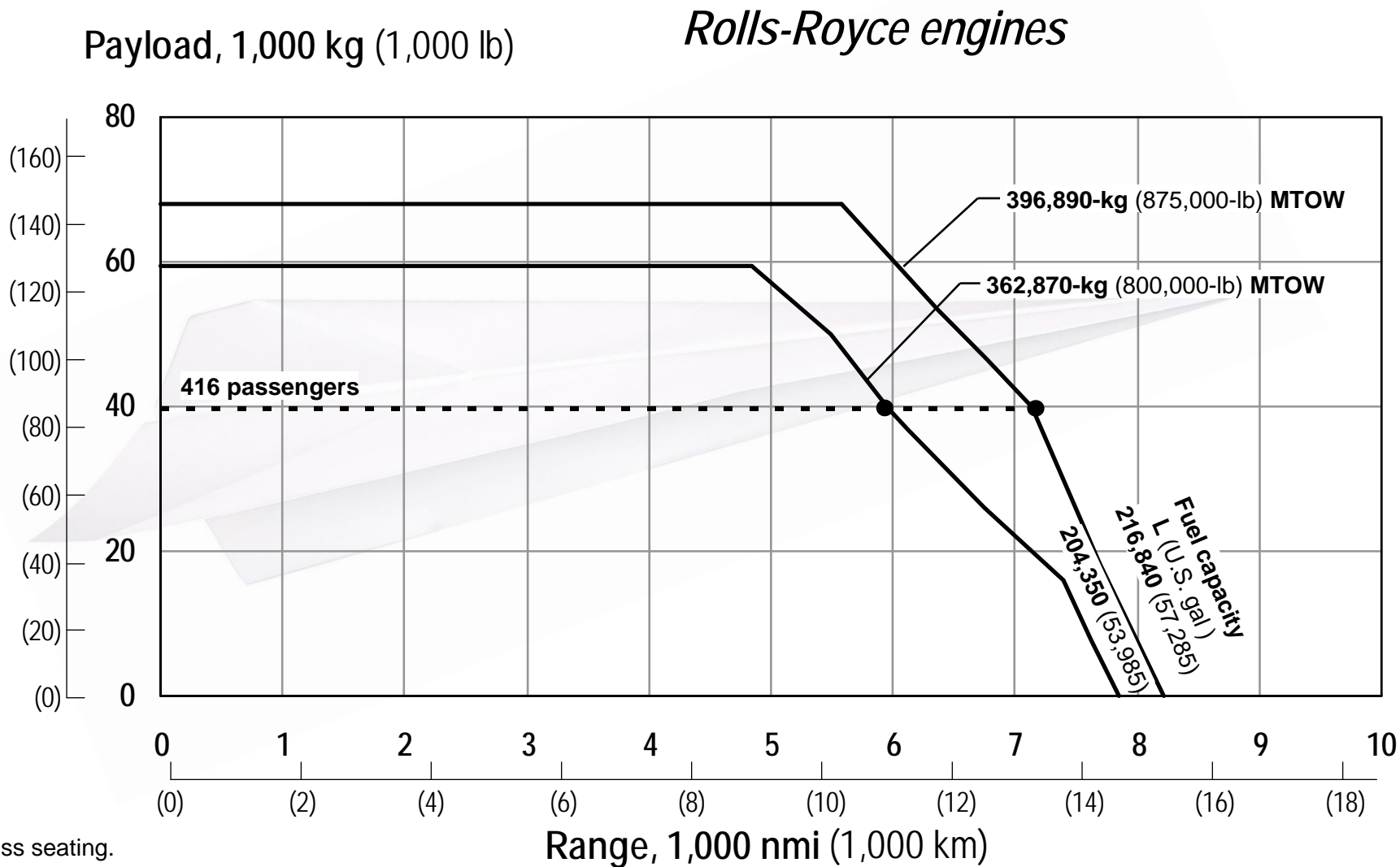
*Pratt & Whitney engines*



- Three-class seating.
- Typical mission rules.

# 747-400 payload-range capability

StartupBoeing



- Three-class seating.
- Typical mission rules.

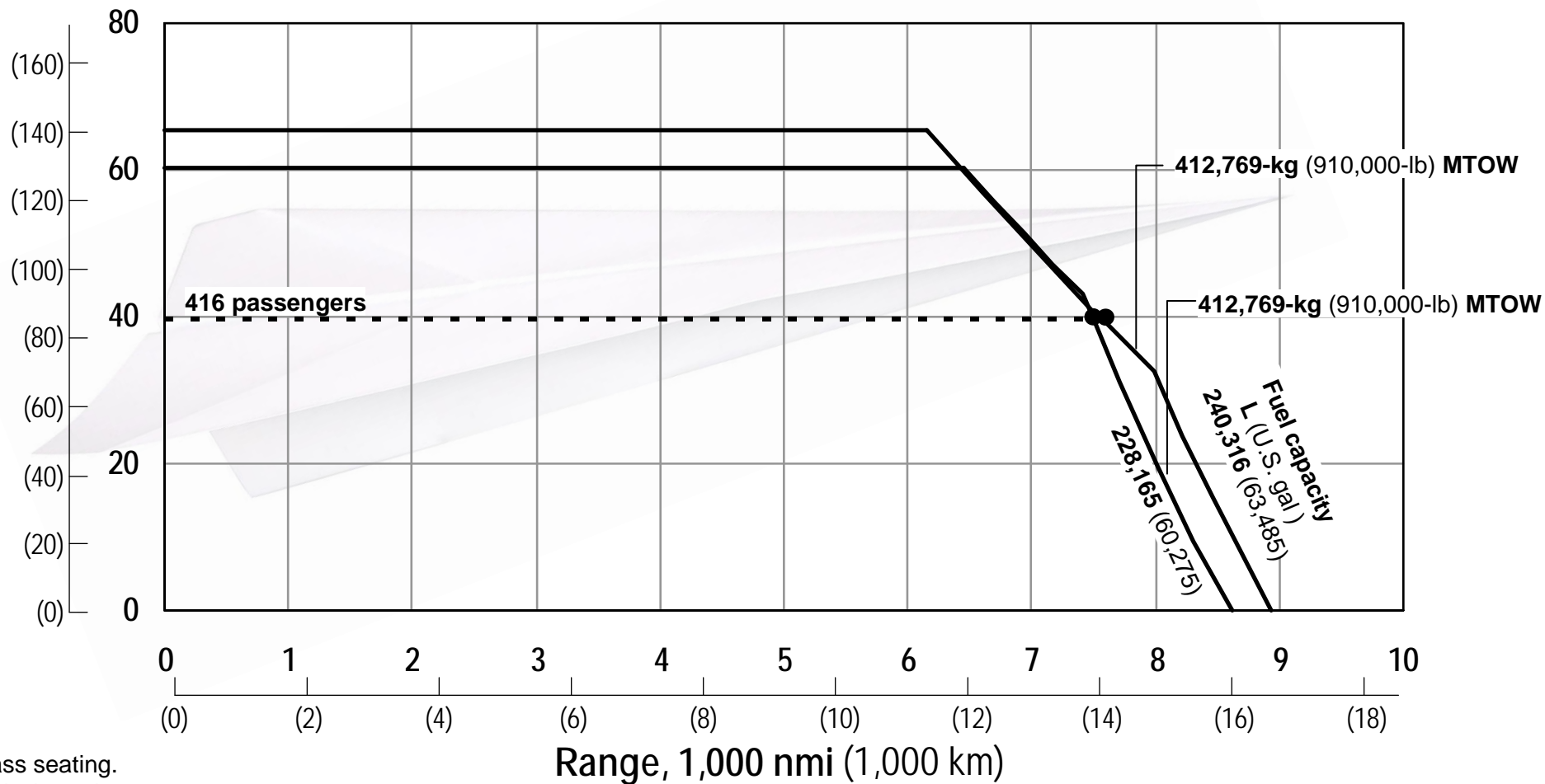
# 747-400ER payload-range capability



StartupBoeing

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

*General Electric engines*



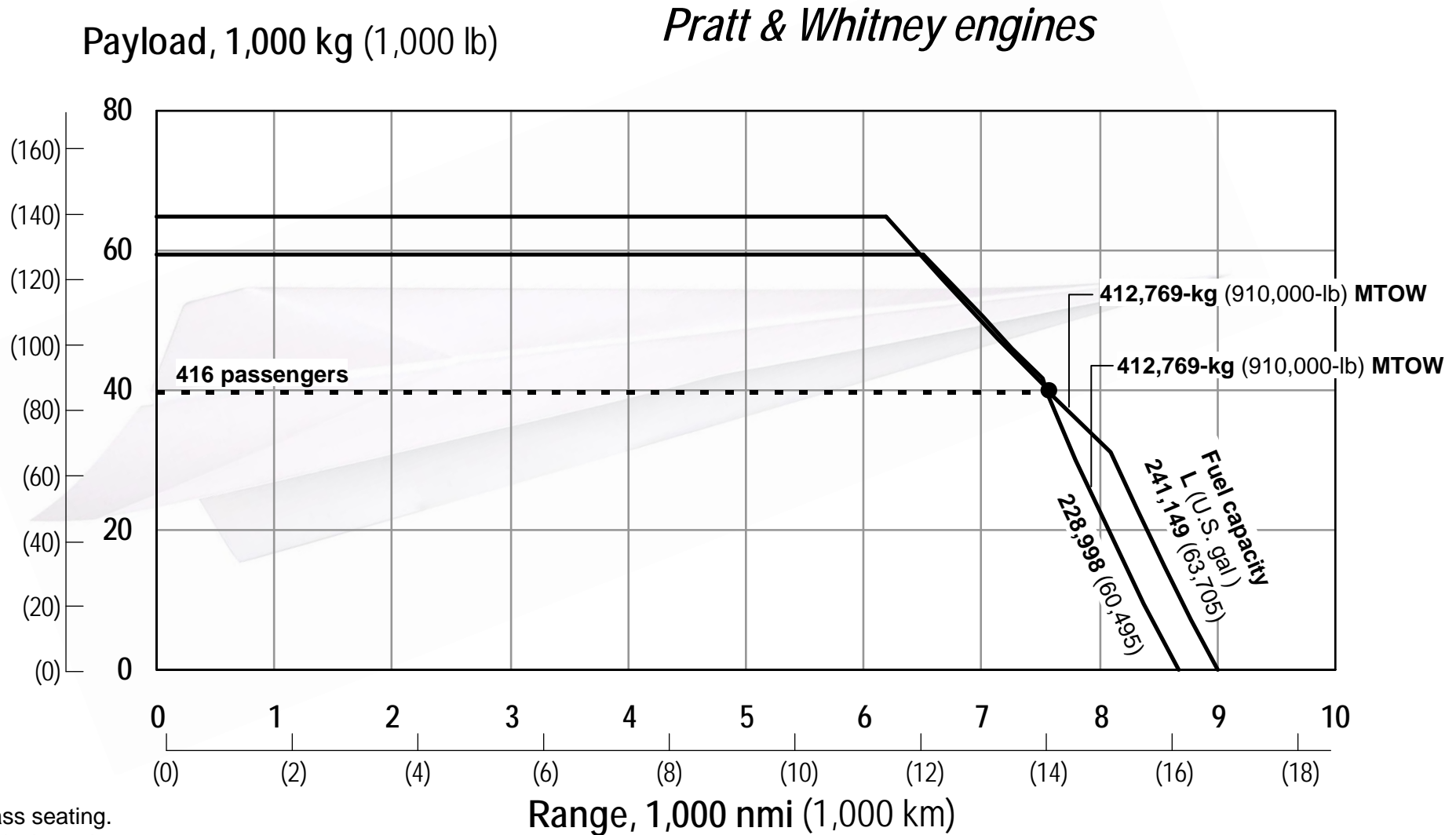
- Three-class seating.
- Typical mission rules.



# 747-400ER payload-range capability



StartupBoeing

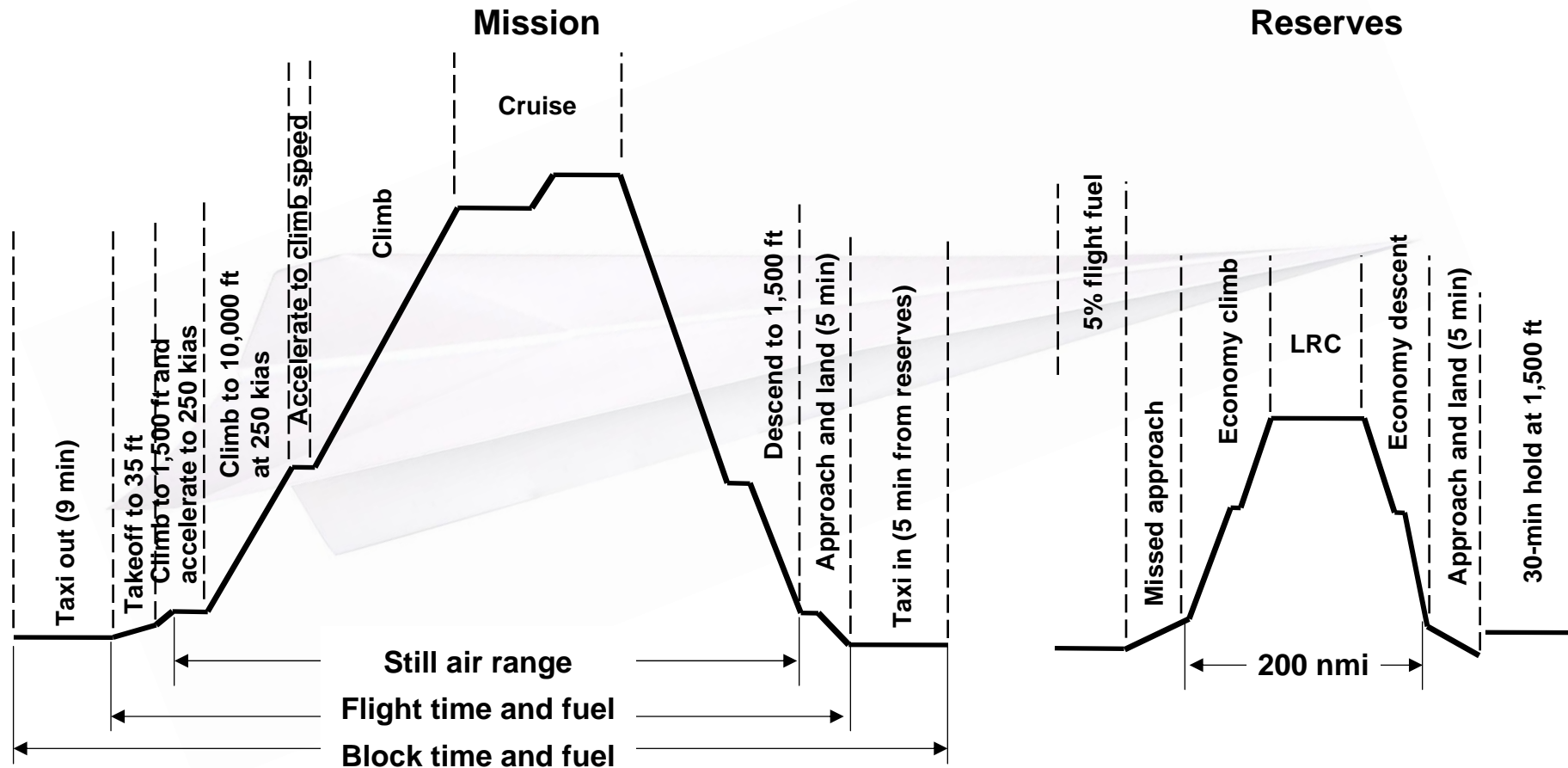


- Three-class seating.
- Typical mission rules.

# Mission profile

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## Typical mission rules



- Standard day.
- Fuel density, 6.7 lb/U.S. gal.
- Nominal performance.
- Passengers at 95 kg (210 lb) (passenger + baggage).

# Connecting more cities around the world

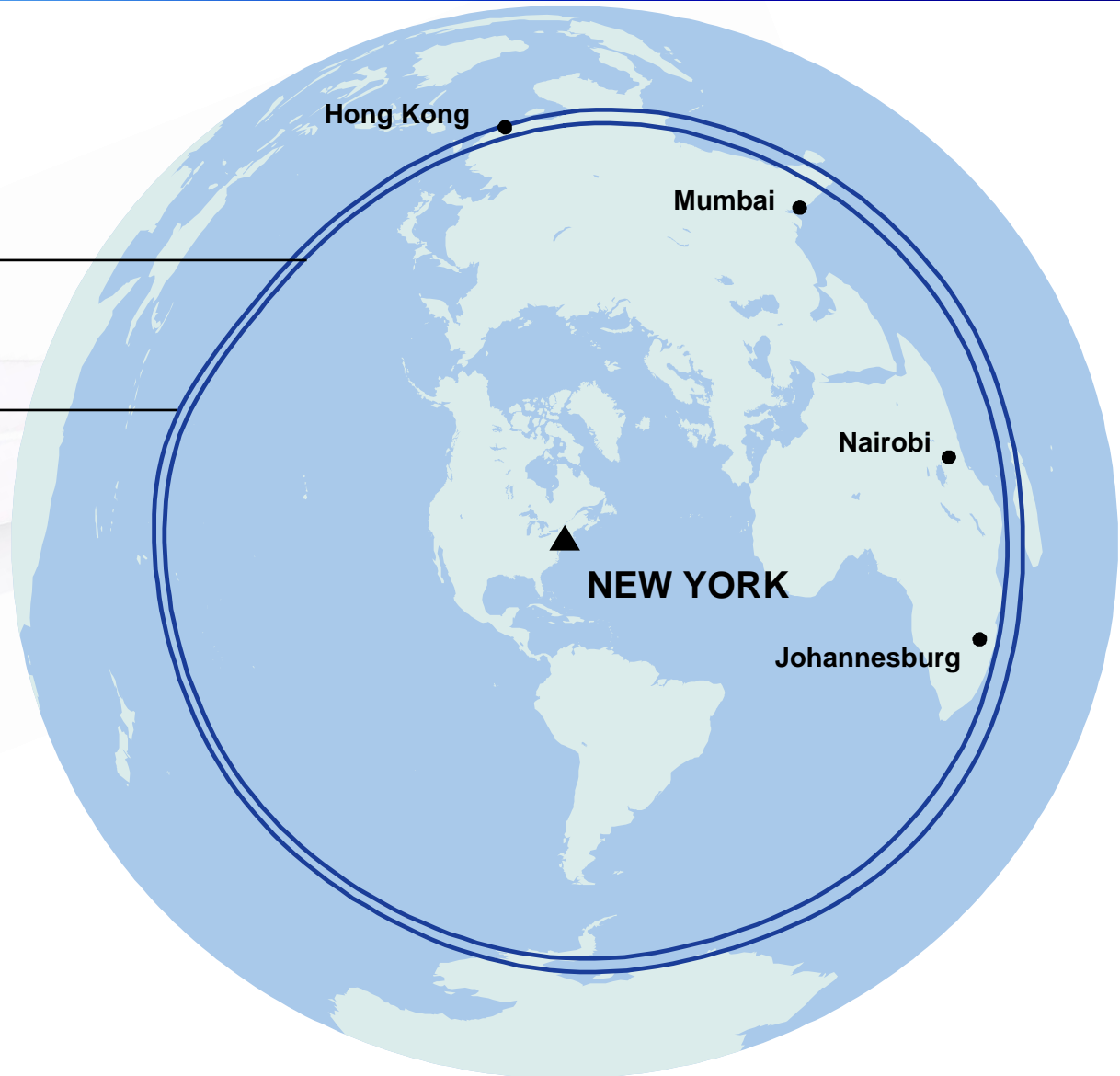
StartupBoeing

## *Full passenger payload*

**747-400**  
**396,890-kg (875,000-lb) MTOW**  
**416 three-class passengers**

**747-400ER**  
**412,770-kg (910,000-lb) MTOW**  
**416 three-class passengers**

- Typical mission rules.
- 85% annual winds.
- Airways and traffic allowances included.
- Range capability from New York.



# Connecting more cities around the world

StartupBoeing

## *Full passenger payload*

### **747-400**

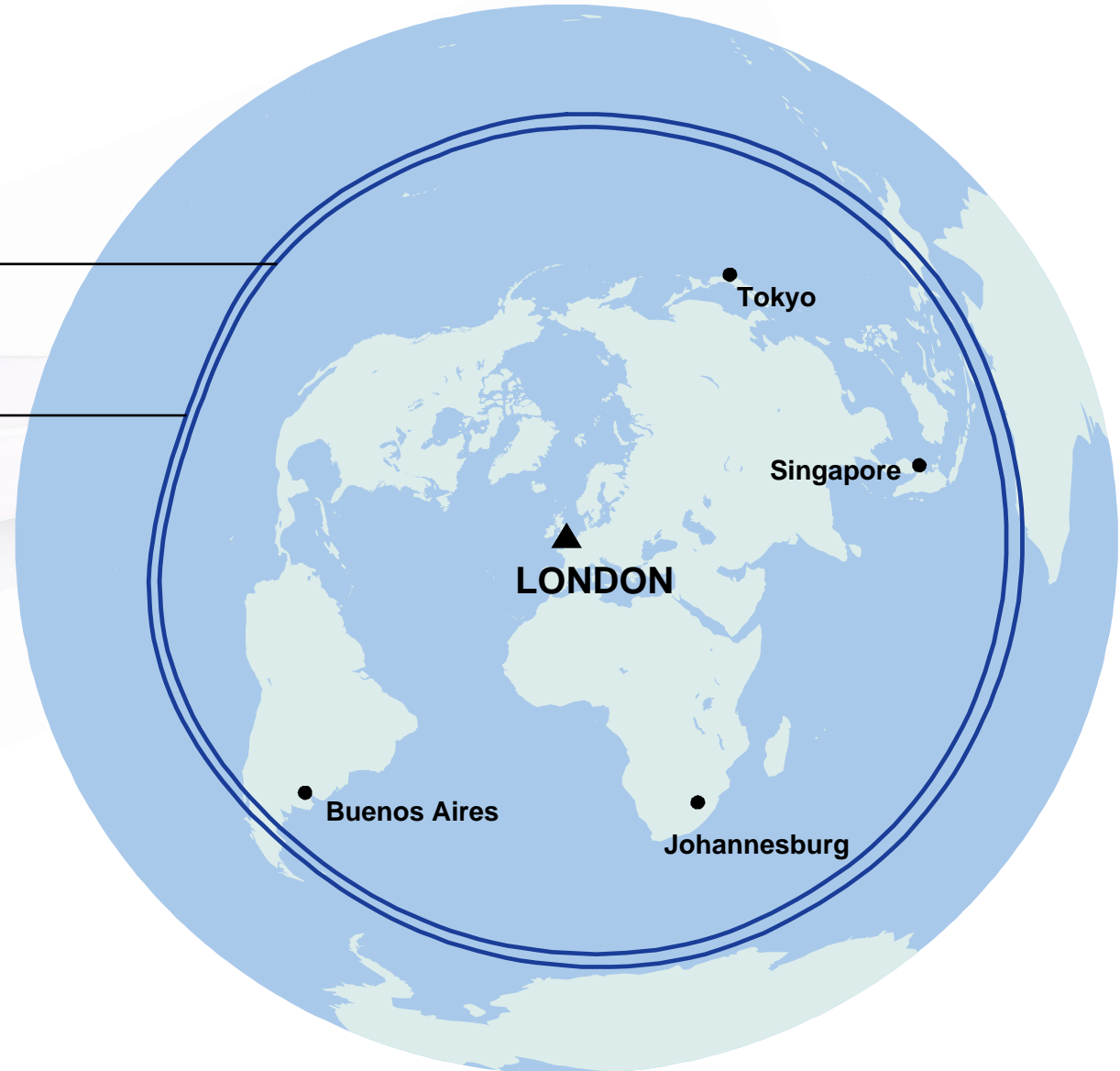
**396,890-kg (875,000-lb) MTOW**

**416 three-class passengers**

### **747-400ER**

**412,770-kg (910,000-lb) MTOW**

**416 three-class passengers**



- Typical mission rules.
- 85% annual winds.
- Airways and traffic allowances included.
- Range capability from London.

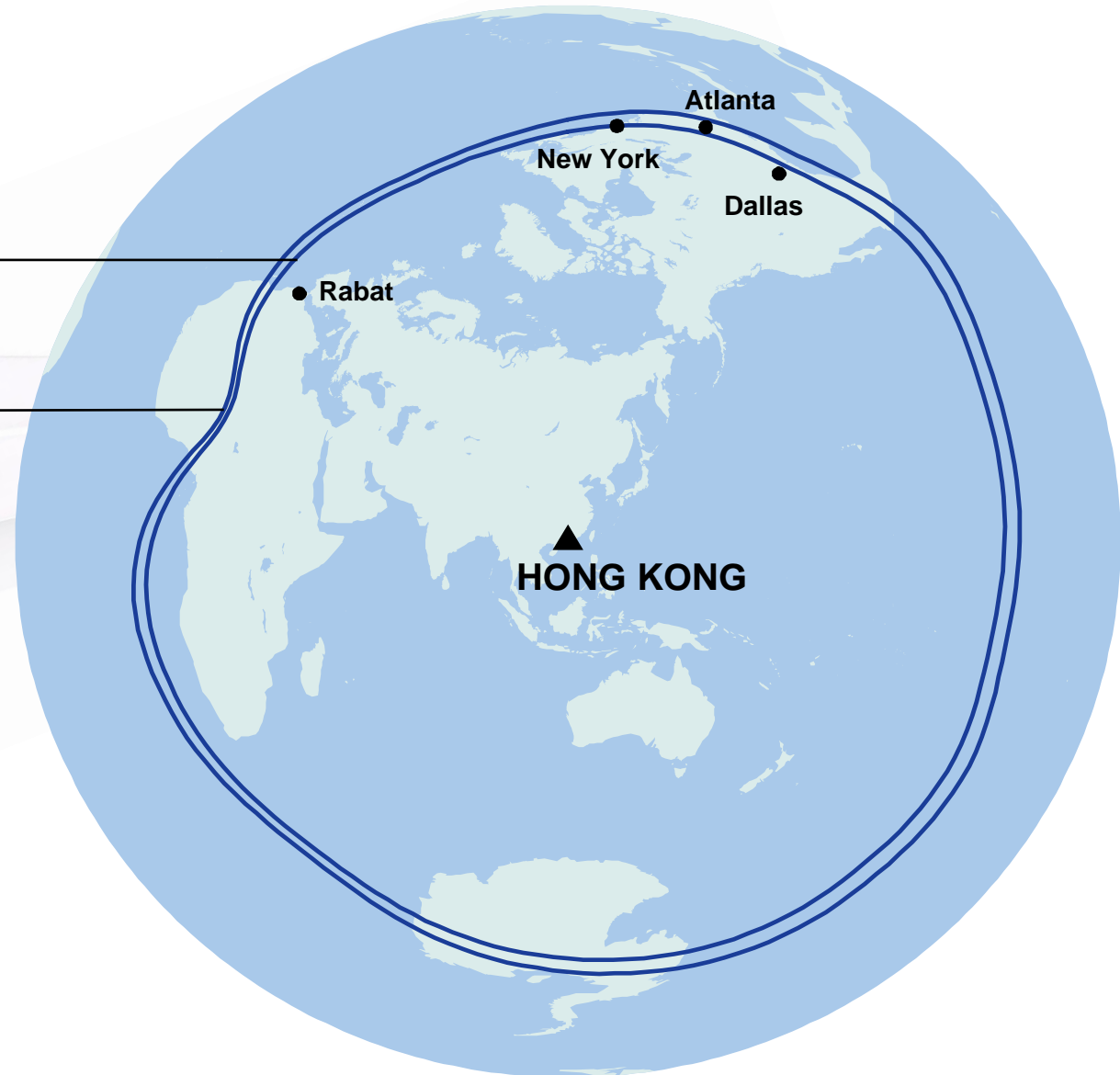
# Connecting more cities around the world

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## *Full passenger payload*

**747-400**  
**396,890-kg (875,000-lb) MTOW**  
**416 three-class passengers**

**747-400ER**  
**412,770-kg (910,000-lb) MTOW**  
**416 three-class passengers**



- Typical mission rules.
- 85% annual winds.
- Airways and traffic allowances included.
- Range capability from Hong Kong.



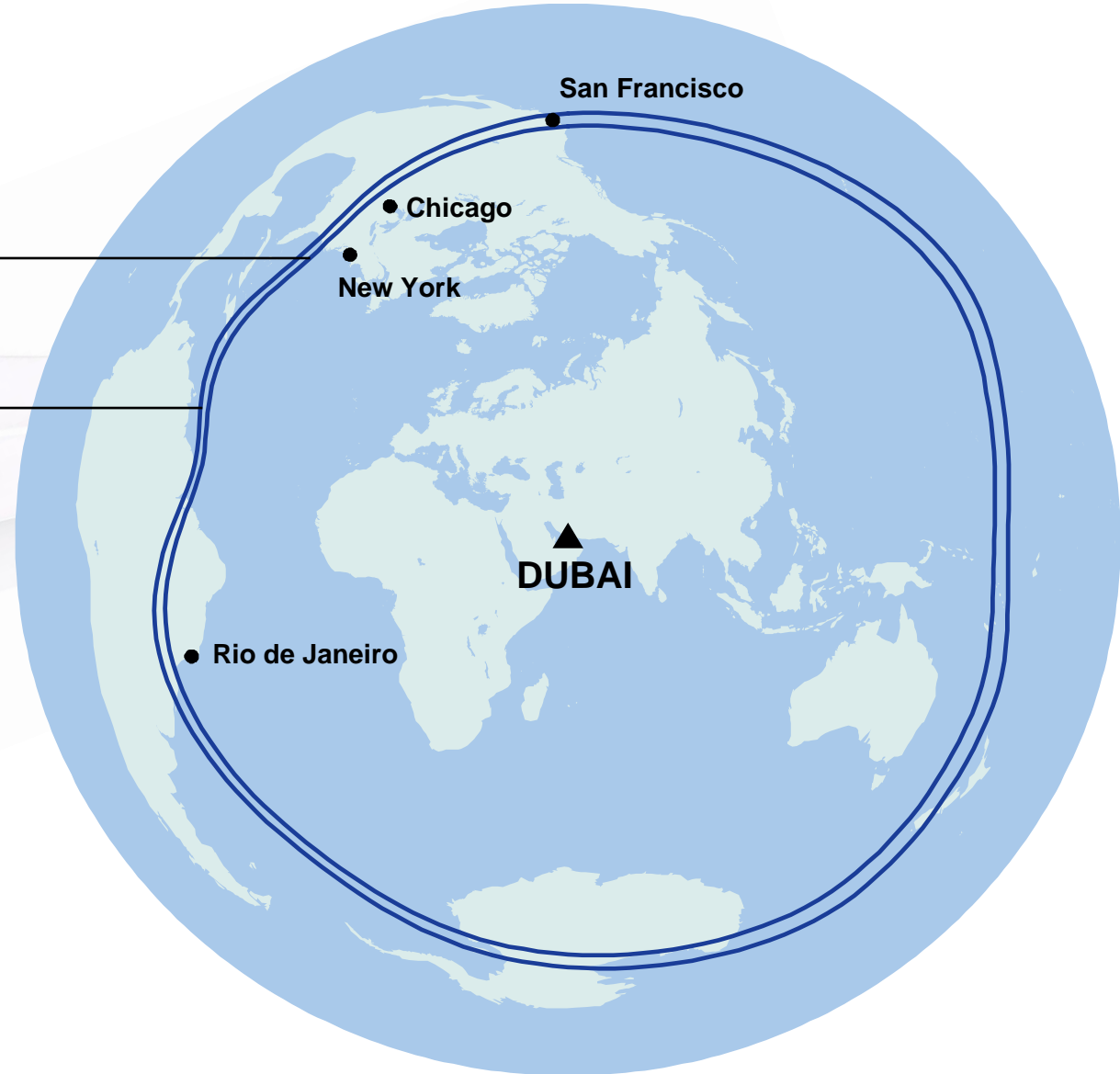
# Connecting more cities around the world

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## *Full passenger payload*

**747-400**  
**396,890-kg (875,000-lb) MTOW**  
**416 three-class passengers**

**747-400ER**  
**412,770-kg (910,000-lb) MTOW**  
**416 three-class passengers**



- Typical mission rules.
- 85% annual winds.
- Airways and traffic allowances included.
- Range capability from Dubai.

# 747 Flight Deck

StartupBoeing

