



Backgrounder

Boeing Commercial Airplanes
P.O. Box 3707 MC 03-XW
Seattle, Washington 98124-2207
www.boeing.com

Boeing 767-300F designed to deliver

The 767-300 Freighter is more fuel efficient than competing aircraft in the medium-widebody freighter market. Excellent fuel efficiency, operational flexibility, low-noise levels and an all-digital flight deck allow the 767 Freighter to support time-critical cargo schedules even at airports with stringent noise and emissions standards.

The 767 has evolved through time to meet ever-changing market requirements. The 767-300F is the latest iteration of that evolution. It benefits from the advanced avionics, aerodynamics, materials and propulsion incorporated on the Boeing 767 passenger airplanes. Its proven combination of light, durable aluminum alloy and composite structure helps make the 767-300F lighter than competing freighters.

The 767 Freighter is similar in external appearance to 767 passenger airplanes, except for the lack of passenger windows and doors. The interior of the main-deck fuselage has a smooth fiberglass lining. A fixed, rigid barrier installed in the front end of the main deck serves as a restraint wall between the cargo and the flight deck. A door in the barrier wall permits in-flight access from the flight deck to the cargo area.

In addition, the 767 has a bright future in expanded applications, particularly for military use in tanker and command and control applications.

The 767-300F unrivaled for reliability and profitability

The freighter model is the industry's touchstone for efficiency among medium widebody cargo airplanes and is ideal for developing new long-haul, regional, or feeder markets.

Thanks to its intercontinental range capability and highly efficient payload configuration, the 767-300F is the best fit in the midsized freighter market. Operators around the world agree, in this market segment, the flexibility and economics of the right-sized 767-300F make it one of the best assets in a fleet.

Schedule reliability—an industry measure of departure from the gate within 15 minutes of scheduled time— is nearly 99 percent for the 767. Fleetwide, daily utilization is more than 10 hours.

The 767-300F proven in efficiency and economics

The 767 Freighter keeps ton-mile costs to a minimum with its two-person flight deck, and its twin high-bypass-ratio engines offer excellent fuel economy. The cargo airplane's operating costs, per available ton-mile, are projected to be 20 percent lower than those of its closest competitors. This contrasts with older cargo airplanes, such as the 707 and DC-8, which have three-crew flight decks and are powered by four engines.

The 767 Freighter also has a common type rating with the 757 Freighter, providing airlines with flexibility in scheduling flight crews. More than 40 airlines have combined 767 and 757 fleets.

Today's efficient 767s are the result of continuous technology enhancements designed to maintain its preference with airlines. A large display system is available for retrofit by Boeing Service Bulletin to incorporate 787 size flight deck displays. Expanded applications particularly for military use in tankers and command and control applications are obtainable. And optional winglets are offered as post-production retrofit from Aviation Partners Boeing (APB) on the 767-300ER and 767-300F. This provides approximately 230 nmi more range and a fuel savings of 4.4% for the 767ER and approximately 100 nmi more range and fuel savings 3.9% for the 767-300ER.

Cargo Capability – loading flexibility

With more than 15,469 feet³ (438 m³) of cargo volume available, and the ability to carry approximately 58 tons (52.7 tonnes) of revenue payload more than 3,255 nautical miles (6,025 km), this airplane is an ideal freighter to meet medium-size requirements and to replace aging 707 and DC-8 freighters.

Up to 24 pallets, each measuring 88 inches by 125 inches (223.5 cm by 317.5 cm) at the base, can be accommodated on the main deck. Total main-deck container volume is 11,884 feet³ (336 m³), and the two lower holds of the airplane provide 3,585 feet³ (102 m³) for seven pallets, two containers and bulk loading.

The freighter's main-deck cargo system offers the flexibility of accepting virtually all types of pallets and containers in the air-cargo industry. The 767 Freighter is well-

suited to directly accommodate transfer of pallets and containers commonly used in existing widebody freighters, such as the 777 and 747, as well as those from single-aisle freighters, including the 757-200. This allows an operator to interline freight from one airplane to another until it reaches its destination.

The 767 Freighter features a large cargo door on the main deck of the forward fuselage, a single crew-entry door and a freighter interior.

Cargo-handling – made easy

The 767 Freighter is equipped with powered cargo-handling equipment, both on the main deck and in lower holds. The cargo-handling system provides complete automation of the cargo-loading process, with the operator's interface through control panels and joysticks. The freighter's main deck has both interior and exterior master control panels as well as local control panels to provide maximum flexibility.

The cargo-handling system's power-drive units move the cargo containers into and out of the airplane and are equipped with high-tech sensors. The sensor information is fed back to the system's microprocessor-based controllers, which move only the power-drive units necessary to load each container, preventing wear and tear on the equipment and improving reliability. Another advantage is that the power-drive units weigh less than those used on previous airplanes.

A unique feature of the cargo-handling system is the extensive use of built-in test equipment, or BITE, which allows troubleshooting in the event of a system problem. This function not only detects and isolates controller faults, it also provides the maintenance operator with a series of automated tests to isolate other system faults.

Environmental control system changes make the airplane suitable for transporting live animals and perishable goods. Plenty of fresh air is delivered to the cargo areas, and temperatures can be controlled to cool or heat the freight appropriately.

Began in 1993

Boeing launched the 767 Freighter in January 1993, when Atlanta-based United Parcel Service (UPS) announced an order for up to 60 of the freighters. The purchase was the largest order for all-cargo airplanes ever received by Boeing.

The first UPS freighter entered production in January 1995 at the Boeing factory in Everett, Wash. It rolled out in May 1995, entered flight testing in June 1995 and was delivered to UPS in October 1995.

Boeing has been the world leader in civilian air cargo since the 707 Freighter was introduced more than 30 years ago.

767-300 Freighter Technical Characteristics	
Cargo	
Maximum payload	116,200 lb (52,700 kg)
Total volume	15,469 ft ³ (438 m ³)*
Main deck	11,884 ft ³ (336 m ³)
Lower deck	3,585 ft ³ (102 m ³)
Engines (maximum thrust)	GE CF6-80C2B7F 62,100 lb
Maximum Fuel Capacity	23,980 U.S. gallons (90,770 L)
Maximum Takeoff Weight	408,000 lb (185,060 kg)
Maximum Range	3,225 nautical miles (6,025 km) with 58-ton (52.7 tonnes) payload
Typical Cruise Speed (at 35,000 feet)	Mach 0.80 530 mph (850 km/h)
Basic Dimensions	
Wing Span	156 ft 1 in (47.6 m)
Overall Length	180 ft 3 in (54.9 m)
Tail Height	52 ft (15.9 m)
Interior Body Width	15 ft 6 in (4.7 m)

*15,469 ft³ = 11,884 ft³ + 3,585 ft³ + bulk = 24 contoured pallets (88 in x 125 in) + 7 pallets (96 in x 125 in) + 2 LD-2 containers + bulk

767-2C a new generation of capability

Boeing is extending a tanker legacy that started more than eight decades ago, when the first aerial refueler took flight.

The 767-2C, a new commercial freighter based on the 767-200ER. The first 767-2Cs will be provisioned commercial baseline airplanes modified into U.S. Air Force KC-46A Tankers.

The first flight of an EMD test aircraft without its aerial refueling systems is scheduled to take place in 2014, followed by the first flight of a complete KC-46A tanker in early 2015. The first delivery of a production aircraft to the Air Force is planned for early 2016. Boeing expects to build 179 tankers by 2027 if all options under the contract with the Air Force are exercised. For more information, review the [KC-46 webpage](#) or read the KC-46A (PDF)

The Boeing 767 300-ER Efficiency and Economics for the Mid-range Market

The Boeing 767-300ER is sized between the single-aisle 757 and the larger, twin-aisle 777. The 767 passenger airplane has built a reputation among airlines for its profitability and comfort.

The 767 cabin is more than 4 feet (1.2 m) wider than single-aisle jetliners, and the 767's versatile design allows customers to select the seating that best suits their operational requirements: four, five, six, seven or eight abreast.

The extended-range airplanes typically have three-class seating of 181 to 245 passengers, using five-abreast, 747-size first-class seats; six-abreast business class seats; and seven-abreast economy class seats.

The Boeing 767-300ER is offered in a variety of takeoff weights, which allow operators to choose only the amount of design weight needed to satisfy their requirements. These offer corresponding design ranges from just over 5,625 nautical miles (10,415 km) to nearly 6,385 nautical miles (12,195 km). This range versatility gives the 767 family the ability to efficiently serve routes as short as U.S. domestic and pan-European to long-range flights over the North Atlantic and North Pacific. The 767 crosses the Atlantic from the United States to Europe more often than any other jetliner.

Schedule reliability—an industry measure of departure from the gate within 15 minutes of scheduled time—is nearly 99 percent for the 767. Fleet-wide, daily utilization—the actual time the airplane spends in the air—averages more than 10 hours.

Production Design Begins in 1978 With an Order from United Airlines

Production design of the 767-200 began in 1978 when an order for 30 short-to-medium-range 767s was announced by United Airlines. The first 767 was completed and rolled out of the Boeing plant in Everett, Wash., on Aug. 4, 1981. The airplane made its initial flight on Sept. 26, 1981.

The 767-300 program got under way in September 1983. This model is longer than the 767-200 by 10 feet (3.1 m) and has 20 percent more seating capacity (approximately 40 passengers) and 31 percent greater cargo volume. The first 767-300 was delivered to Japan Airlines in September 1986.

The 767's uniquely low operating costs, are largely responsible for the fragmentation of the North Atlantic markets.

To take advantage of the airplanes' increased ranges and long, over-water flights, several new features were added: an advanced propulsion system and auxiliary power unit with high-altitude start capability, a fourth hydraulic-motor-driven generator, increased cargo compartment fire-suppression capability and cooling sensors for electronic flight instruments.

Continually Improved Features and Capabilities

The 767 wing is thicker, longer and less swept than the wings of earlier Boeing jetliners. This provides excellent takeoff performance and fuel economy. Each 767 is powered by two high-bypass-ratio turbofan engines, which are interchangeable with 747 engines with only minor modifications.

Preferred by Passengers, Now With the Boeing Signature Interior

The 767 300ER offers a new, even more passenger-pleasing cabin interior. The Boeing Signature Interior, based on the award-winning design of the 777, uses state-of-the-art lighting and design concepts to amplify the feeling of spaciousness on an airplane already prized for long-range comfort.

For passengers, the new interior also includes new, deeper stowage bins, which means it is easier to find space in the compartments. For airlines, the new interior offers increased flexibility in positioning and maintaining lavatories. About 70 percent of the lavatory components are the same as those found on the 777, easing maintenance and reducing the number and type of spare parts in airline inventories for operators of both models. The interior also features an improved in-flight entertainment interface.

The 767 has earned high passenger ratings in every class of service. In economy class seating, the 767 offers a seat-width that is surpassed only by the Boeing 777. Independent research has shown the seven-abreast seating concept in economy is

popular because it places 87 percent of the seats next to a window or aisle. The 767 has the highest percentage of window seats and aisle seats of any jetliner.

The Pioneer of Extended Operations (ETOPS)

In May 1985, the U.S. Federal Aviation Administration (FAA) approved 767s for long-range flights of up to 120 minutes from an alternate airport. In March 1989, the FAA approved the 767 as the first jetliner for 180-minute extended operations (ETOPS). This allows more direct, time-saving trans-Pacific and trans-Atlantic flights from many U.S. gateways. ETOPS has proven successful and is now part of airlines' routine operations. The 767 flies more ETOPS flights than any other airplane.

Continually Improved Features and Capability

The 767 300ER has the lowest operating cost per trip of any twin-aisle airplane currently in service. This low operating cost, variable range capability, almost universal airport compatibility and ETOPS capability, makes the 767 a versatile airplane. This versatility is an extreme competitive advantage to an operator that needs to serve a variety of different missions and passenger demands. Extensive commonality with the Boeing 757, which includes a common pilot-type rating, offers even more operational versatility to 767 operators.

The 767 has a long history of leading the way in technological innovation. Included in its list of "firsts" are:

- First two-crew flight deck on a twin-aisle airplane
- First common pilot type rating, which is shared with the Boeing 757
- First vacuum toilet waste system
- First to use brakes made of carbon fiber
- First airplane to achieve both 120- and 180-minute ETOPS approval
- First twin-aisle airplane to offer a choice of three passenger sizes – the 767-200ER, 767-300ER and 767-400ER
- First large commercial airplane to use efficiency-enhancing "raked" wingtips

Boeing has delivered more than 1,063 767s that are flown by over 120 operators around the world. The 767 family has accumulated more than 17.8 million flights, and has carried millions of passengers. About 3.6 million of the 14.7 million flights were on extended operations (ETOPS) rules.

767-300ER	
PASSENGERS	
Typical 3-class configuration	218
Typical 2-class configuration	269
Typical 1-class configuration	350
Cargo	4,180 feet ³ (118.4 m ³)
Engines (Maximum thrust)	Pratt & Whitney PW4000 63,300 lb GE CF6-80C2 62,100 lb
Maximum Fuel Capacity	23,980 U.S. gallons (90,770 L)
Maximum Takeoff Weight	412,000 lb (186,880 kg)
Maximum Range	5,990 nautical miles (11,070 km) Typical city pairs: Frankfurt to Los Angeles
Typical Cruise Speed (at 35,000 feet)	Mach 0.80 (530 mph, 851 kph)
Basic Dimensions	
Wing span	156 ft 1 in (47.6 m)
Overall length	180 ft 3 in (54.9 m)
Tail height	52 ft (15.8 m)
Interior cabin width	15 ft 6 in (4.7 m)

February 2014

Contact: Boeing Airplane Programs Communications, +1 425-294-2002