



# Backgrounder

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Boeing Commercial Airplanes  
P.O. Box 3707 MC 21-70  
Seattle, Washington 98124-2207  
[www.boeing.com](http://www.boeing.com)

## **The Boeing Next-Generation 737 Family – Flying Higher, Faster and Farther**

The newest members of the Boeing 737 family – the 737-600/-700/-800/-900ER models – continue the 737's pre-eminence as the world's most popular and reliable commercial jet transport. The entire 737 family has won orders for more than 6,000 airplanes. No other jet airplane in commercial aviation history has achieved the sales success of the 737.

The 737-700 was launched in November 1993 with Southwest Airlines' order for 63 airplanes. First delivery occurred in December 1997.

On Sept. 5, 1994, the 737-800 was launched with commitments from customers for more than 40 of the airplanes. The first delivery was to German carrier Hapag-Lloyd in spring 1998.

Scandinavian Airlines (SAS) became the launch customer for the 737-600 on March 15, 1995, when the airline ordered 35 airplanes. First delivery of the 737-600 went to SAS in the third quarter of 1998.

On Nov. 10, 1997, Alaska Airlines became the launch customer for the 737-900 with orders for 10 airplanes. Deliveries began in May 2001.

A higher capacity, longer-range derivative of the 737-900, the 737-900ER (Extended Range), was launched on July 18, 2005 with an order for 30 airplanes from Indonesia carrier Lion Air. The first delivery is scheduled for 2007.

The 737 – a short-to-medium-range airplane – is based on a key Boeing philosophy of delivering added value to airlines with reliability, simplicity and reduced operating and maintenance costs. In addition, the newer 737 models offer a modern flight deck using the latest large flat-panel-display technology. Airlines can choose to provide their flight crews with either the latest display format, common with models like the 777, or opt for data format commonality with earlier 737 models.

On Nov. 7, 1997, the 737-700 was awarded type certification by the U.S. Federal Aviation Administration (FAA), clearing the airplane for passenger service within the United States. On Feb. 19, 1998, Europe's Joint Aviation Authorities (JAA), which comprises the aviation regulatory authorities of 27 countries, recommended type validation of the 737-700. On March 13, 1998, the second model of the new 737 family, the 737-800, earned type certification from the FAA with JAA type validation on April 9, 1998. The 737-600 earned type certification from the FAA on Aug. 14, 1998, followed by JAA validation on Sept. 4, 1998. On April 17, 2001, the 737-900 earned type certification from the FAA, with validation from the JAA on April 19, 2001.

### **A Family of Airplanes**

The Next-Generation 737 family is offered in four sizes, ranging from 110 to 215 seats. The 737-600 is the smallest member of the family and can carry 110 to 132 passengers. The 737-700 is capable of carrying 126 to 149 passengers. The 737-800 can seat 162 to 189 passengers. Finally, the 737-900ER is the longest 737, capable of carrying up to 180 passengers in a two-class layout and up to 215 passengers in a one-class layout.

### **Listening to Customers**

Airline customers who were involved in the development of the Next-Generation 737 models delivered a very clear message: They wanted advanced technology that allows for simplicity, reliability and low cost – and not just technology for technology's sake. They also wanted flight-deck commonality with earlier 737s.

Beside airline customers, a chief mechanic and Boeing field service representatives participated in the airplanes' development.

### **A Bigger Wing, Longer Range and Higher Speed**

The 737-600/-700/-800/-900ER models incorporate a new, advanced-technology wing design that helps increase fuel capacity and efficiency, both of which increase range. On each wing, the chord is increased by about 20 inches (50 centimeters) and the total span by approximately 16 feet (5 meters). The total wing area is increased by

25 percent to 1,340 square feet (125 meters<sup>2</sup>), providing 30 percent more fuel capacity for a total of 6,875 U.S. gallons (26,020 liters).

New technology Blended Winglets, which are available on the 737-700, -800 and -900ER, further boost performance of the 737. These eight-foot long wingtip extensions enhance range, fuel efficiency and take-off performance while lowering engine maintenance costs and noise.

The Next-Generation 737's range is approximately 3,300 nautical miles (5,926 kilometers), an increase of up to 900 nautical miles over earlier 737 models. This allows U.S. transcontinental flights and increases 737 route capability throughout the world.

The advanced wing airfoil design provides an economical cruise speed of .78 Mach – compared to .74 Mach for earlier 737 models – with sprint capability of .82 Mach.

The Next-Generation 737 airplanes are capable of cruising to a maximum altitude of 41,000 feet, compared to 37,000 feet for the 737-300/-400/-500 models, and 39,000 feet for the Airbus A320.

### **Quieter, More Efficient, More Powerful Engines**

The Next-Generation 737 models are powered by new CFM56-7 engines produced by CFMI, a joint venture of General Electric Co. of the U.S. and Snecma of France. The engines meet strict international noise restrictions.

These new engines – which were certified by the U.S. Federal Aviation Administration in late 1996 at 26,400 pounds of thrust – also offer lower fuel burn and lower engine maintenance costs. The CFM56-7 has a 10 percent higher thrust capability than the CFM56-3C engines powering the 737-300/-400/-500 models. To take additional advantage of the engine's increased thrust, the newer 737 models' vertical fin and horizontal stabilizer are larger.

### **Interiors and Passenger Accommodations**

The new 737 interior reflects contemporary aesthetics and greater cabin flexibility with new soft, indirect lighting that enhances cabin ambience along with a smooth

sculptured ceiling, giving the cabin a more open, spacious feel. The curved ceiling panels offer up to three additional inches of headroom.

New longer overhead stowage bins give passengers more storage space. The additional space was created by advanced engineering on the bins that eliminated the need for an internal support brace

The flex-interior offered on 737-300/-400/-500 models is continued on the newer 737 models. This interior accommodates convertible seating, which allows operators to change a row of seats from five-abreast business-class seating to six-abreast tourist-class seating in less than one minute. A moveable cabin divider also allows configuration changes between flights.

A new handrail on the overhead stowbins is offered for added passenger and flight attendant convenience, and the passenger service units and lavatories have recently been updated.

### **Industry-leading Technology**

The Next-Generation 737 incorporates leading-edge display and flight-management software that promise to reduce flight delays and enhance safety and flight-crew efficiency. Examples of these technologies include Vertical Situation Display, which shows the current and predicted flight path of the airplane and indicates potential conflicts with terrain, and Head-Up Display, which provides pilots with “eye-level” flight and safety information.

<b>737 Family Technical Characteristics</b>				
	<b>737-600</b>	<b>737-700</b>	<b>737-800</b>	<b>737-900ER</b>
<b>Passengers</b>				
2-class configuration	110	126	162	180
1-class configuration	132	149	189	215
<b>Cargo</b>	720 cubic ft (20.4 m <sup>3</sup> )	966 cubic ft (27.3 m <sup>3</sup> )	1,555 cubic ft (44 m <sup>3</sup> )	1,827 cubic ft (51.7 m <sup>3</sup> )
<b>Engines</b> (Maximum thrust)	CFM56-7 22,700 lb	CFM56-7 26,300 lb	CFM56-7 27,300 lb	CFM56-7 27,300 lb
<b>Maximum Fuel Capacity</b>	6,875 gallons (26,020 L)	6,875 gallons (26,020 L)	6,875 gallons (26,020 L)	7,837 gallons* (29,660 L)
<b>Maximum Takeoff Weight</b>	145,500 lb (66,000 kg)	154,500 lb (70,080 kg)	174,200 lb (79,010 kg)	187,700 lb (85,130 kg)
<b>Maximum Range</b>	3,050 nm (5,648 km)	3,365 nm (6,230 km)	3,060 nm (5,665 km)	3,200 nm (5,925 km)
<b>Typical Cruise Speed</b>	Mach 0.78	Mach 0.78	Mach 0.78	Mach 0.78
<b>Basic Dimensions</b>				
Wingspan	112 ft 7 in (34.3 m)	112 ft 7 in (34.3 m)	112 ft 7 in (34.3 m)	112 ft 7 in (34.3 m)
With winglets	117 ft 5 in (35.7 m)	117 ft 5 in (35.7 m)	117 ft 5 in (35.7 m)	117 ft 5 in (35.7 m)
Overall Length	102 ft 6 in (31.2 m)	110 ft 4 in (33.6 m)	129 ft 6 in (39.5 m)	138 ft 2 in (42.1 m)
Tail Height	41 ft 3 in (12.6 m)	41 ft 2 in (12.5 m)	41 ft 2 in (12.5 m)	41 ft 2 in (12.5 m)
Interior Cabin Width	11 ft 7 in (3.53 m)	11 ft 7 in (3.53 m)	11 ft 7 in (3.53 m)	11 ft 7 in (3.53 m)
Body Exterior Width	12 ft 3 in (3.73 m)	12 ft 3 in (3.73 m)	12 ft 3 in (3.73 m)	12 ft 3 in (3.73 m)

\*2 Aux. Tanks

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December 2005

Contact: Public Relations, 425-965-9384