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## The Airbus A380

In the spring of 1963, a team of Boeing engineers started designing a new airplane that would hold the title of the world's largest commercial passenger airplane for 36 years. Their dream airplane, the 747, took its first test flight in February 1969.

The Airbus A3XX project to build a larger airplane than the 747 started in 1991. This plane's 14-year "incident-packed journey" (April 2005, BBC News) from design concept to actual airplane has all the necessary ingredients of a nonfiction thriller. In fact, the Hollywood thriller *Flight Plan* stars a two-deck, 800-seat, super-sized airplane that most certainly resembles the A380 in design, if not in name. The starring plane even has its own whistleblower who claims that it has a faulty microprocessor that can cause a rapid loss of cabin pressure.

The June 5, 2000, issue of *Newsweek* described the A3XX as a "paper airplane that would never fly, and never should. . . .

[The magazine reported that] critics said its sheer bulk would

damage runways, stir up gale-force winds with deafening noise and overwhelm airport terminals by disgorging mobs of 600 people."

The Airbus A380, the plane that many thought would never be built, flew its first test flight this past April. It generates only half the noise of a 747. It is very fuel efficient, burning 12 percent less fuel per passenger than a 747. By placing more people on a single airplane, Airbus feels it can actually reduce aircraft overload at airports. However, the amount of turbulence the new jumbo jet will

generate still needs to be determined. Airbus is now using A380 test flights to determine just how much turbulence the plane generates during takeoffs, flights and landings.

The International Civil Aviation Organization (ICAO) will set standards for the A380 before it goes into commercial service. Many expect the ICAO to require increased distance between the A380 and other planes. The A380 should complete all testing and required certifications in time to enter regular service in March 2006.

The initial cabin configuration will seat 550 passengers, divided between upper and lower decks. Seating includes



One of many possible cabin layouts

first class, business class and coach sections. The plane has enough passenger floor space to create other layouts that can increase passenger load comfortably to 800.

The A380 has a wing span of 262', 50' longer than a 747 and 28' shorter than the world's largest airplane, the Russian An-225. The A380's maximum weight at takeoff is 1.25 million pounds. As soon as it enters service, the A380 will instantly become the world's largest passenger airplane. (Russia's An-225 has never been configured for passenger service.)

The Fédération Aéronautique Internationale (FAI) is the international organization that keeps tabs on aviation and space records. The organization uses the maximum takeoff weight, rather than wingspan, fuselage or other relative measurements, to determine airplane size. The An-225 maximum takeoff weight is listed by the Russians as 1.3 million pounds. The Russian cargo plane that set the world record in 1989 only weighed in at 1.12 million pounds at takeoff, or .13 million pounds less than a fully loaded A380. When the A380 enters service, it will certainly shake up some world records.

This column has many phrases to Google that will lead you to web



Photos courtesy of Airbus

The A380 draws an airport's terminal.

sites with photos, proposed layout and facts about the A380. My January 1996 column introduced the Boeing 777 airplane. The building of an Airbus A380 is similar to the building of a Boeing 777. Go to <http://manufacturing.stanford.edu> and watch a high-speed video to see how a 777 is built.

### Recalling the Facts

1. Many airplane critics felt that the A380 should never have been built. Why?

2. Do you feel their concerns were justified? Why?

3. What will the FAI use to determine how the A380 ranks in size to other existing aircraft? ©

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