



## A Boeing Of Asia?

**It could happen, now that airbus and Boeing build planes in global factories.**

**By Emily Flynn Vencat**  
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May 15-22, 2006 issue - The prototype of the new Boeing 787 Dreamliner is being built in a virtual factory so big, it effectively spans continents. Engineers in Japan build the wings, Koreans add the raked wingtips, Brits refine the Rolls-Royce engines, while Italians and Texans fit the horizontal stabilizer and center fuselage. Project managers in Everett, Washington, watch it all take shape with 3-D glasses that allow them to walk around the digital prototype and monitor every change made by their 6,000 workers worldwide, just as if the model were being assembled in a real factory.

The ultimate manufacturing race—Boeing versus Airbus—is evolving from a battle pitting America against Europe to a competition between two global companies. The national identity of their planes is disappearing, even as the transatlantic trade battle continues to boil over which side supports its aerospace industry more unfairly. Consider: 70 percent of the Dreamliner, which is due to take to the skies in 2008, is being built outside the United States. And up to 60 percent of the production work on Airbus's answer to the 787—the A350, due to launch in 2010—will be done outside Continental Europe.

Even more interestingly, the two companies' rival networks of exclusive subcontractors are evolving into one network, with many factories that serve both giants. The biggest beneficiaries will be contractors in Asia, particularly Japan and China, fueling a new trade worry that could unite Europe and America at a time of sharply rising concerns about globalization. "We're transferring lessons learned and new technology being honed to Asian [companies]," says David Pritchard, an aerospace expert at the State University of New York at Buffalo. "When the next-generation airplane comes along, we will have no base knowledge of how to produce it ourselves."

The shift east has been quiet, but dramatic. More than 35 percent of Boeing's 787, including the wings (which up until now Boeing has refused to outsource because their construction requires the most expertise), is being made in Japan. That's up from 15 percent of the 767 in 1982 and 20 percent of the 777 in 1995. In March, Airbus announced a final A320 production line in China, the company's first ever outside Europe. Already, nearly half of the component parts for Airbus's highly anticipated A380 superjumbo, which will be the largest-ever commercial airplane when it lands with buyers later this year, is being built by non-Europeans.

Aerospace outsourcing to China follows a familiar pattern: chasing low labor and production costs. But the majority of foreign imports for both Boeing and Airbus are coming from countries like Japan and Canada, where costs are just as high as or higher than at home. The key to collaborating globally comes down to expertise, says David McKenna, an executive in Boeing's airplane-production global-strategy unit in Seattle. "We want to have the best partners in the world in our new program ... whether they're from Italy, Sweden, France, Korea, Japan, China [or] the United States," he says. China, for instance, can handle assembling metal aircraft like Airbus's A320 or building wingboxes, but doesn't yet have the skills to craft the newest composite wings, which the 787 will debut commercially. For those, Airbus will rely on British Aerospace, which is an independent contractor now that it's sold its 20 percent stake in Airbus back to the Franco-German majority owners, EADS.

There are, however, other reasons, including politics. America's close relationship with Japan has given Boeing a 96 percent share of the market there. Boeing also benefits indirectly from Japanese government subsidies, including an estimated \$1.6 billion to Mitsubishi, Kawasaki and Fuji to fund work on the 787. This is a major European talking point in the trade dispute over aircraft subsidies. Indeed, many analysts see the Airbus foray into China as a so-far successful attempt to prevent Boeing from taking control there, too. In the past six months, China has placed \$9 billion in orders for Boeing 737s and \$10 billion in orders for Airbus A320s, often in deals sealed during high-profile official visits (including Chinese President Hu Jintao's recent tour of Boeing operations in Everett, Washington). Says Ben Fidler, an aerospace analyst at Deutsche Bank, "At the end of the day, airline purchasing decisions are as much based on politics as they are on the quality of the product."

The endgame is unclear, but one obvious possibility is the emergence of an Asian rival to Airbus and Boeing. The transfer of expertise, technology and money to Japan and China is giving Asian aerospace companies the wherewithal to dream big—meaning big enough to build their own passenger jets. It's happened before. When Shanghai Automotive last month detailed plans to launch the first all-Chinese car for the international market by next year, the company said the opportunity was ripe because of technology and expertise gained from its joint ventures with Volkswagen and GM. "There is nothing impenetrable about any duopoly in this industry," says Richard J. Samuels, MIT's director of the Center for International Studies. "The Japanese government and its heavy industrial firms have openly sought to establish Japan as an aerospace power for generations."

Indeed, over the last three years Japan's Ministry of Economy, Trade and Industry (METI) has invested \$76 million in three massive studies on reviving the country's capacity to build jet engines and regional jets of up to 100 seats. Led by such manufacturing giants as Mitsubishi, Ishikawajima and the Japan Aircraft Development Corporation, they are looking into everything from creating a 35-seater niche business jet to converting Kawasaki's C-X military transport into a civilian airliner with as many as 250 seats. A plane that size would compete directly with the smallest planes built by Boeing and Airbus (about 110 seats).

Thanks to the 787 wing contracts from Boeing, a Japanese company, Toray, is now the world leader in manufacturing with composite materials. Made from carbon fiber, composites are a superlight replacement for aluminum that greatly increase fuel efficiency—which is why the 787 helped Boeing retake the market lead for sales orders from Airbus last year. The Japanese contractors are also honing wing-design skills to a level that, analysts say, will soon surpass American engineering.

The early products of Japan's reviving ambition include the new HondaJet, which became the first new Japanese commercial jet in decades when it debuted last year. The Japanese Aerospace Exploration Agency recently signed a deal with France to develop supersonic technology, which could lead to a next-generation Concorde. Also last year, Japan's leading business paper, Nihon Keizai Shimbun, reported that Mitsubishi has plans to create its own 90-seat regional jet by the end of the decade.

Technologically, China remains many years behind Japan. Before China opened to global trade in the early 1980s, its aerospace industry was limited mainly to Soviet knockoffs. Afterward, its one attempt at a plane for the world market, the Y-10, based on the Boeing 707, failed to sell. The assembly work that China will do for Airbus is much less sophisticated than the wing design Japan is performing for Boeing. But Beijing's ambitions are growing again: last month, the Commission of Science, Technology and Industry announced plans to begin work on a 150-seat jetliner by 2010.

A Japanese or Chinese aerospace giant could capitalize on close political and trade ties to the booming Asia-Pacific markets. Last year, 40 percent of new aircraft orders were from Asia—compared with 17 percent from Europe and just 11 percent from North America, according to

industry magazine Flight International. By 2022, China is expected to become the second largest aviation market in the world. Driven largely by emerging economies, the worldwide market for passenger jets is expected to soar threefold over the next two decades, to \$1.9 trillion.

It could take decades for Japan or China to pose a serious threat, analysts say. Boeing and Airbus are flying high, with record sales in 2005, and complete domination of the market for planes that carry 150 or more people. Richard Aboulafia of the Virginia-based Teal Group says that Japan simply isn't investing the massive amounts of money—billions over decades—necessary to get a full range of passenger jets off the ground. "All-American defense spend-ing is what you need for this industry, not METI's \$29 million annual investment—that's corporate welfare for engineers," says Aboulafia. Indeed, the manufacturers most directly in competition with the next generation of Chinese and Japanese passenger planes are the smaller ones, like Brazil's Embraer or Canada's Bombardier.

Of course, the whole idea of "national" aerospace giants may be doomed now that Boeing and Airbus are increasingly less American or European. "What's the point of doing it all yourself when you can do it better and more cheaply when you spread it around the world?" says one industry insider, who declined to be named because he works for a high-profile aerospace company. "In 20 years it will be impossible to distinguish what is an American, Asian or European aircraft." That's likely to be true, too, for a Boeing of Japan, or an Airbus of China, if they ever take off.

*With Christian Caryl in Tokyo*

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