# NEW CIVIL AIRCRAFT COMPETITORS ON THE HORIZON?

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- Exports of U.S.-built aircraft and parts play a vital role in the balance of trade and the domestic economy. The aircraft industry employs over 400,000 skilled and professional people in the United States. At $31.3 billion, large civil aircraft (LCA)[1] was the largest category, by value, of manufactured products exported by the United States in 2008.[2]

- The global market for LCA is shared by Boeing (United States) and Airbus SAS (France).[3] This duopoly has remained unchallenged since 1997, as the costs of market entry have been prohibitive. However, Boeing and Airbus do not participate in the market for regional jets (RJs), which typically seat fewer than 100 passengers.

- In a highly unusual development, three RJ manufacturers—Bombardier (Canada), Commercial Aircraft Company of China (CACC China), and Sukhoi Civil Aircraft Company (SCAC Russia)—recently announced ambitious plans to enter the LCA market in direct competition with Boeing and Airbus. New competitors are coming from Japan as well. Kawasaki Heavy Industries (KHI) has announced plans to enter the LCA market and Mitsubishi Heavy Industries (MHI) plans to enter the RJ market.[4]

- The rise of so many new competitors in this capital-intensive industry is atypical. It represents both a possible cause for concern for current LCA manufacturers in the form of heightened competition and a potential benefit for the U.S. supplier base in the form of new market opportunities.[5]

## THE EVOLUTION OF THE RJ MARKET

- Over the last 20 years, the industry and market have changed. The first flights of Bombardier and EMBRAER (Brazil) RJs were in 1991 and 1995, respectively. Their aircraft were 50-seat RJs with better fuel efficiency than existing RJs. Over time, the market demand for 30- to 50-seat RJs gradually diminished as airlines sought larger RJs in the 70- to 100-seat range. During this evolution, several RJ manufacturers exited the market,[6] leaving Bombardier and EMBRAER as the sole Western sources of new RJs seating 70 or more passengers.

- Within the last year, two new civil aircraft manufacturers, CACC China and SCAC Russia, have built RJs, and one seasoned supplier of aerospace components, MHI, announced plans to enter the RJ market. MHI will be unique in utilizing more composite structures in its aircraft than current or announced producers. The new entrants will compete with Bombardier and EMBRAER for a market projected to total 2,450 to 6,100 aircraft over the next 20 years.[7]

- The relatively small projected RJ market alone does not appear to provide a strong economic motivation for each of the new RJ entrants. Rather, their agenda appears to be to use the RJ market as a learning experience, teaching each how to manufacture, sell, and support civil aircraft in the global market.

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[1] LCA are those with 100 or more seats, weighing 15,000 kg or more.
[2] U.S. exports of new, nonmilitary aircraft over 15,000 kg in 2008.
[3] Airbus is a division of European Aeronautic Defence and Space Company EADS N.V. EADS is a public limited liability company owned by Sogeade (France), Daimler AG (Germany), SEPI (Spain) (together 53 percent), and the public (47 percent).
[4] Japanese aerospace companies tend to work cooperatively with each other. MHI likely will be a subcontractor for KHI and vice versa.
[5] New competitors are beginning to place orders with U.S. suppliers of avionics, engines, and aircraft systems.
[6] Companies that left the RJ market include AVRO/British Aerospace (UK), Fairchild Dornier (Germany), and Yakovlev (Russia).
[7] RJ market estimates based on EMBRAER press release, November 7, 2008; and Bombardier Aerospace, *Commercial Aircraft Market Forecast 2008–2027*, 20.

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## LCA MARKET OUTLOOK

- Bombardier, CACC China, SCAC Russia, and KHI plan to build LCA with up to 150 seats during the next 10-15 years. Their plans were given a boost when Boeing and Airbus announced that replacements for their LCA in the 150-seat range (Boeing 737 and Airbus A320 series) may not come into service until 2020.[8] Therefore, new entrants will have significant time to design and develop their aircraft.

- There are, however, substantial challenges for the new entrants in both the RJ and LCA markets, including the following:

  - Although interested in foreign sales, only Bombardier has an international presence for sales or support. Some efforts are underway to remedy this gap.

  - New entrants face established, fiscally strong brands with a global support infrastructure in place. The provision by Boeing and Airbus of training, spare parts, and managerial support to airlines and to other aircraft manufacturers contributes to their strong market reputation. New entrants must consider providing these functions in addition to building and supporting a competitive product.

  - CACC China and SCAC Russia have never built civil transport aircraft for a market economy, which demands aircraft that are reliable, have low operating costs, and are easily maintained.[9] In the past, government control of aircraft manufacturing in China and Russia resulted in aircraft that were heavier and less fuel efficient than similar aircraft produced in Europe and the Americas.

  - It is unclear to what extent, if any, the private sector will control aircraft design and production in China and Russia. Both governments have allocated funds for the creation of integrated aircraft manufacturing centers; China allocated nearly $3 billion for its program,[10] while Russia is spending $1 billion to create a design and manufacturing center near Moscow.[11] Their LCA plans likely will provide an opportunity to consolidate fragmented manufacturing capabilities and develop R&D and sales and support capabilities.

  - KHI and MHI of Japan do not receive the levels of fiscal support available to the Russian and Chinese companies. Their major advantage is experience with building critical aerostructures from composites. Armed with this fresh approach to aerostructures, KHI and MHI likely see an opportunity to expand their expertise and take advantage of the delay of Boeing and Airbus in fielding new LCA.[12]

  - Bombardier is the furthest along of the new entrants, having already begun work on its CSeries, a 100- to 130-seat aircraft with a proposed entry into service date of 2013.[13] Bombardier has the skills, manufacturing and support infrastructure, and brand recognition required to launch a new product (it has received firm orders for 50 aircraft and 50 options).[14] However, it does not have the level of resources available to other new entrants or to Boeing and Airbus.

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[8] FlightGlobal.com, "ILA 2008: Replacement Boeing 737 and Airbus A320 Narrowbodies to Take Longer than Planned," May 29, 2008; *Sydney Morning Herald*, "Boeing Shelves Plans for 737 Replacement," January 29, 2009.

[9] CACC China and SCAC Russia currently build structures for aircraft built in Europe and the Americas.

[10] China View, "China's Jumbo Passenger Aircraft Company Established in Shanghai," May 11, 2008.

[11] AvWeb editorial staff, "Russia's $1 Billion Aircraft Complex," February 25, 2008.

[12] MHI is a major partner in Boeing's 787 program, the world's first composite LCA.

[13] Bombardier Aerospace press release, July 13, 2008.

[14] Deutsche Lufthansa AG (Germany) ordered 30 aircraft and has options for 30 more. Bombardier Aerospace press release, March 11, 2009. Lease Corporation International Aviation Limited (Ireland) ordered 20 and has options on 20. Bombardier Aerospace press release, March 30, 2009.

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