



## 2016 Top Markets Report **Aircraft Parts** Country Case Study

### China

China is expected to be the world's largest single-country market for civil aircraft sales over the next 20 years. Boeing estimates that China will need to add more than 6,000 planes to its commercial fleet to meet traffic demand; at the same time, China's fleet of business jets, helicopters, training aircraft, and other general aviation planes is expanding quickly. China currently imports most of its civil aircraft, presenting opportunities for companies that supply parts to many current aircraft and engines, particularly equipment produced by Boeing, Airbus, Gulfstream, General Electric, and Pratt & Whitney. However, China's aspirations in aircraft manufacturing may lead to increased competition from domestic Chinese firms as well as policies that favor domestic manufacturers.

Overall Rank

7

China ranks high in terms of U.S. exports, projected growth and increasing manufacturing. Its overall desirability as an export destination is limited by intellectual property rights (IPR) concerns, localization requirements and general difficulty of doing business.

China's aviation industry is a national priority, and the Chinese government is expending significant resources to develop domestic manufacturing capabilities, build new airports, train new pilots, and increase domestic maintenance capacity. In 2015, China was the largest overall export market for U.S. aerospace products at nearly \$15.9 billion. Most of that figure was complete aircraft and is likely to rise as China's fleet ages and China does more maintenance at home.

The expansion of China's market creates both opportunities and challenges for U.S. companies. Companies that supply spare parts to aircraft operators and maintenance and overhaul shops should consider the growth of China's aircraft fleet in their sales and marketing plans. U.S. parts suppliers might also find new opportunities as suppliers to Chinese manufacturing programs. However, since aerospace

manufacturing is a national priority in China, U.S. companies may face localization pressures or may be disadvantaged by government policies in favor of local firms.

#### Overview of the Aviation and Aerospace Manufacturing Market

China has the second largest domestic aviation market in the world. It also has the world's fastest growing domestic aviation industry with passenger traffic increasing at a rate of 6.6 percent per year.<sup>i</sup>

Given that there are only about 2,570 commercial jets operating in China in comparison to roughly 7,000 in the United States, industry analysts predict that Chinese airlines will need to add 6,330, mostly single-aisle, aircraft to their fleets over the next two decades to meet this projected demand (new and replacement aircraft).<sup>ii</sup> Not surprisingly, Boeing and Airbus have identified China as the single most important market for sales over the next 20 years, and both companies are working hard to win orders from Chinese airlines.

Business opportunities in China are not limited to sales of large aircraft. China is also a growing market for business aircraft, helicopters and other general aviation aircraft. According to the Civil Aviation Administration of China (CAAC), the general aviation fleet totaled 1,798 aircraft in 2014.<sup>iii</sup>

Though the total current fleet is still relatively small, the potential importance of this industry to the Chinese economy in the long-term has led aircraft OEMs and Chinese government officials to devote significant resources toward capacity-building for general aviation. In the short-term, however, the overall cooling of the Chinese economy has slowed growth in this segment of the industry.

In addition to capacity-building for its domestic aviation industry, China is also developing a globally competitive manufacturing industry. This has manifested itself in several ways.

First, non-Chinese companies have increased their purchases from Chinese suppliers. U.S. imports of aerospace equipment from China nearly doubled between 2009 and 2013 to about \$900 million. In many cases, the imports are essentially transfers between U.S.-China joint ventures and the U.S. parent. China also has long-standing industrial relationships with suppliers in Russia and Ukraine and is deepening newer relationships with firms in Europe, Canada and Brazil.

Second, the Chinese government is supporting the development of indigenous Chinese aircraft, most notably the ARJ21 regional jet and the C919 large civil aircraft. The first ARJ21 was delivered to Chengdu Airlines in November 2015. While the aircraft structures are often made by Chinese firms, most of the major subsystems are being supplied by manufacturers headquartered in the United States and Europe. In the long-term, Chinese manufacturers may seek to shift production to Chinese-owned firms, but at least in the near-term, China's capacity to produce the more high-tech elements is limited.

Third, China is encouraging Chinese companies to invest in non-Chinese aerospace firms outside of China. So far, most of China's purchases have been in general aviation manufacturing, general aviation maintenance and helicopter manufacturing. In the short term, these acquisitions do not seem to have had a major effect on the business strategy of the purchased company; no production facilities have moved overseas. In some cases, however, China has announced intentions to

open new assembly lines in China for domestic Chinese use. This may create new export opportunities for those that have relationships with the companies acquired by the Chinese.

### **Challenges and Barriers to Aircraft Parts Exports**

China is a large country with a sprawling and rapidly growing aviation industry. Aircraft parts manufacturers without local representation may find it difficult to build relationships, get timely information, and gain access to decision-makers.

Chinese corporate or corporate/government relationships are often difficult to decipher, even for large companies with significant local resources; SME suppliers may find navigating the market to be even more challenging. For general aviation in particular, it may be difficult for companies to determine which planned projects are likely to succeed. Though the aircraft manufacturing industry is a national priority, a significant amount of activity is controlled at provincial and local levels. The Aviation Industry Corporation of China (AVIC), one of the largest aircraft manufacturers in China and a state-owned enterprise (SOE), is actually a conglomerate of many state and local aerospace enterprises, some of which are in competition with one another.

China's major airlines and its aircraft manufacturers are mostly SOEs, and the high-end equipment manufacturing industry, which includes aircraft manufacturing, is one of China's designated Strategic Emerging Industries. As a result, U.S. suppliers may face pressure to form a joint venture with a Chinese firm in order to win a contract, particularly with a Chinese manufacturer, or they may be passed over for a supplier who has already formed such a joint venture. Furthermore, China's Catalogue for the Guidance of Foreign Investment Industries restricts non-Chinese ownership for general aviation aircraft and requires the use of joint ventures in the regional aviation aircraft subsector.

China's civil aviation authority has a relatively small staff and thus faces resource challenges in validating FAA certification of products so that they can enter the Chinese market. They use a queuing system that favors companies that already have a Chinese customer. Suppliers who want certification prior to market entry may face significant delays. There have also been reported instances of China's civil aviation authority (the Civil Aviation Administration of China), using the

certification/validation process to either demand technical data from U.S. firms that is not required by the U.S.-China Bilateral Aviation Safety Agreement (BASA) or to delay entry of U.S. products for which there is no current Chinese competitor. This problem does not seem to be universal but does occasionally arise.

Chinese counterfeit parts have become a major problem in the aerospace and defense industries, and U.S. suppliers are being increasingly held liable for any counterfeit parts that enter into their supply chains. In addition to counterfeiting, companies trying to enter China's market should be aware of pervasive industrial espionage and take precautions to protect critical technologies, including registering patents in China, consulting with local IPR attorneys, and protecting computer systems.

Export control regulations limit the export of certain products and technical data to China. In addition, U.S. exporters are prohibited from working with certain Chinese enterprises and individuals. Exporters should ensure that they have conducted proper due diligence before signing contracts.

Though the industry is growing, China has a shortage of technical personnel for both manufacturing and maintenance. This shortage may require foreign firms to invest significant resources towards developing human capital in China.

Finally, the current U.S.-China Bilateral Aviation Safety Agreement does not cover the jet aircraft China currently has under production.

### **Opportunities for U.S. Exporters**

The best immediate opportunity for U.S. companies will be in supplying parts for China's commercial aircraft fleet. It is the largest and most well-established segment of China's aviation market and is currently dominated by western aircraft with many U.S. suppliers. Programs (roadshows, demonstration projects and reverse trade

missions) should target sales to Chinese airlines, Chinese airports and Chinese aircraft finishing and MRO facilities.

Programs targeted at supplying parts for business aircraft, general aviation aircraft and helicopters are unlikely to lead to major sales in the short term, but these will be important as China's fleet expands. Working with OEMs to establish an aftermarket supply chain will be a component of the overall capacity-building effort for this segment of the industry.

Another immediate opportunity is the non-Chinese manufacturing supply chain in China. In some cases, the best way to enter this supply chain will be through traditional contacts in the company's home country; in other cases, making contacts at the China-based facility may be required. The best opportunities will be available when China-based assembly facilities intend to increase overall production of a particular aircraft model.

Prospects for entering China's domestic manufacturing supply chain are more mixed. Again, the most immediate opportunities will be in working with Chinese sub-suppliers to western aircraft programs, since those are likely to yield the highest volume of sales. China's domestic aircraft programs should not be ignored, but efforts should focus more on large companies who supply major systems until the long-term viability of the aircraft are clearer.

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<sup>i</sup> Boeing Current Market Outlook 2015

<sup>ii</sup> Boeing Current Market Outlook 2014

<sup>iii</sup> CAAC 2014 Civil Aviation Development Statistics Bulletin