

# China's New Plane Will Be Helped Aloft by U.S. Technology

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- Comac's C919 airliner set to make maiden flight in Shanghai
- Overseas suppliers provided systems and expertise to build jet

China's Xiaomi Teams Up With Government  
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How Comac's New Aircraft May Impact Its Rivals in China

Out of more than 1,000 flights scheduled to take off or land at Shanghai's vast [Pudong International Airport](#) on Friday, one marks the beginning of a new era in the aviation business.

China is making its boldest attempt yet to break the stranglehold that [Airbus SE](#) and [Boeing Co.](#) have on the market for big commercial airliners. After years of delays, the nation's first modern large jet is expected to make its maiden flight.

"The C919 will be a game-changer for China's aerospace industry," said Corrine Png, chief executive officer of Singapore-based research firm Crucial Perspective.



Comac's C919 passenger plane in Shanghai on April 16.

Source: AFP via Getty Images

The 158-174 seat C919 is made by state-owned [Commercial Aircraft Corp. of China](#) Ltd. and follows Comac's development of a smaller, regional jet, the [ARJ21](#), that was flown by a Chinese airline for the first time last year. The C919 brings Comac to the table in one of the most lucrative sectors of commercial aviation, [competing head-to-head](#) with Boeing's ubiquitous 737 and Airbus's A320.

The C919's first flight is set for about 2:00 p.m. local time in Shanghai, a Comac spokesman said. Flights at Pudong between 1:00 p.m. and 3:30 p.m. may be [delayed](#) due to the new jetliner's maiden trip.

Behind the celebrations of a Made-in-China jet is the reality that Comac was able to build its new plane using a string of Western suppliers. At least 15 foreign partners such as [General Electric Co.](#), Safran SA and [Honeywell International Inc.](#) worked on components and systems of the C919.

"Comac has really leaned on the experience of its suppliers," said Tom Szlosek, chief financial officer at Honeywell. "We're adding a lot of value."

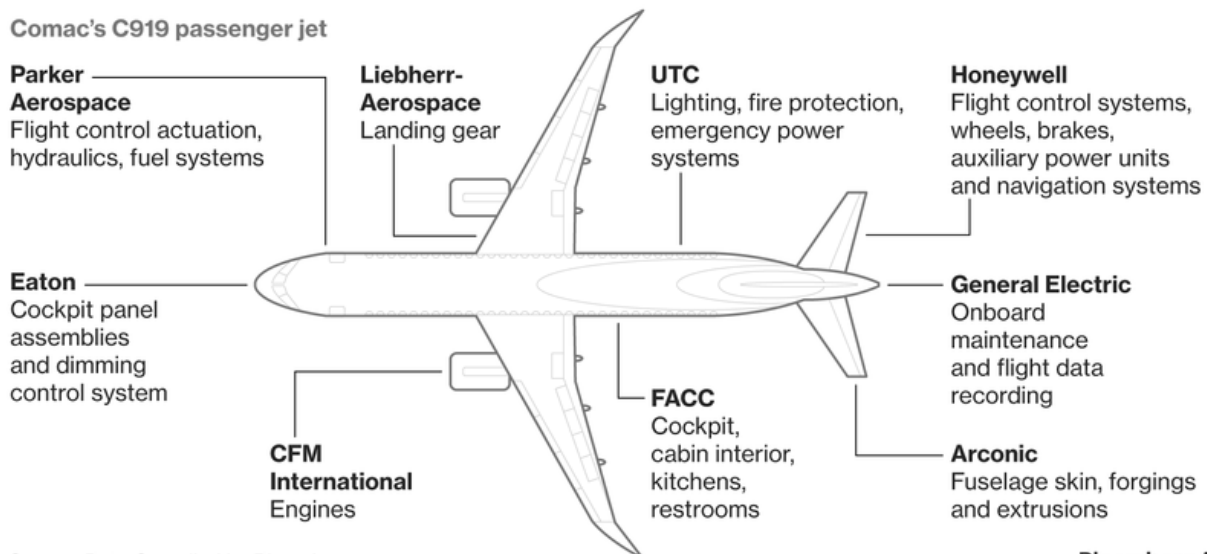
Tapping into the supply chains of Airbus and Boeing allows Comac to bypass many of the [technical challenges](#) of making a modern commercial jet from scratch and builds up the company's expertise for future designs.

"It's impractical for Comac not to take advantage of technologies that are already out there," said Yu Zhanfu, a principal at [Roland Berger Strategy Consultants](#) in Beijing. "If you insist on doing everything from the ground up by yourself, chances are you will become irrelevant."

### Western Partners for a Made-in-China Plane

Some of the foreign suppliers working with Comac on its new single-aisle jet

Comac's C919 passenger jet



Source: Data Compiled by Bloomberg

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Companies based outside China supply C919 systems for flight control, [power](#), lighting, cockpit control and much else. The [engines](#) and landing gear are from overseas manufacturers.

The Chinese jet demonstrates the extent globalization has taken over the manufacture of major engineering products. Just as the jet relies on systems from firms based around the world, many of those systems are built with components that originated in China.



A mock cockpit of a Comac C919.

Photographer: Johannes Eisele/AFP via Getty Images

The C919's engines for example are made by CFM. CFM's parents, [GE](#) and French manufacturer [Safran Aircraft Engines](#), in turn buy more than \$500 million of Chinese-made parts a year for the company's single-aisle jet engine series, the company said.

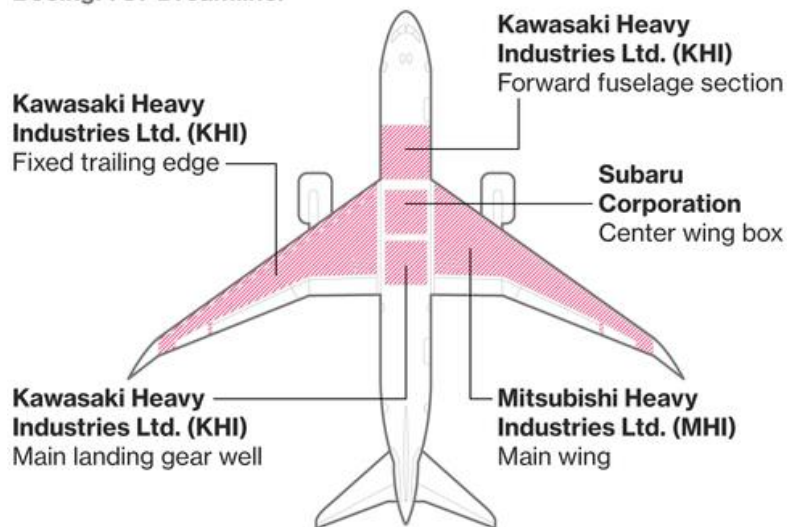
A China-designed aircraft doesn't mean all the parts have to be made by the Chinese, said Bao Pengli, a project manager for the C919 at Comac. Some of the equipment are sourced from international suppliers to meet Comac's standards and they not only supply Comac, but also other airplane makers around the world, he said.

China's approach is almost the opposite of the strategy followed by [Japan](#) when it was at a similar level of development. There, Japan's aerospace companies became suppliers to Boeing, and more recently Airbus, and now make as much as 35 percent of the Boeing 787's airframe, according to Boeing Japan.

### Boeing Depends on Suppliers from Japan

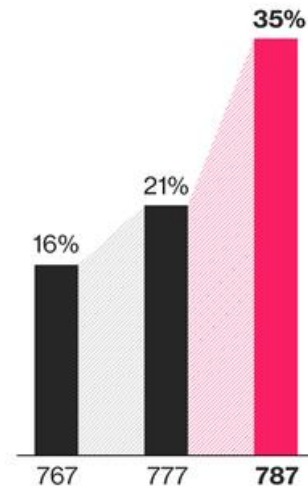
Japanese manufacturers account for over one-third of the Dreamliner's airframe

Boeing: 787 Dreamliner



Source: Boeing

Japan industry Work-Share Growth



Bloomberg

China's decision to build its own large jet with overseas help is one reason the C919's specifications are similar to the 737 Max and A320, said Michel Merluzeau, director of aerospace and defense market analysis for AirInsightResearch in Seattle. It should also help Comac ensure the plane is a success.

Of 15 non-Chinese suppliers contacted by Bloomberg about their involvement with the C919, eight -- [FACC AG](#), Honeywell, Parker Aerospace, [UTC Aerospace Systems](#), [Arconic](#), Liebherr-Aerospace, Eaton and [CFM International](#) -- responded. All expressed confidence in the new aircraft and the potential for further collaboration in China.



Workers assemble a Comac C919.

Source: VCG via Getty Images

While the emergence of a Chinese jet brings new revenue for component suppliers, it turns up the heat on the world's two biggest planemakers in a key market for growth.

### [Will 'Made in China' Threaten Boeing and Airbus?: QuickTake Q&A](#)

Boeing predicted in September that China will need [over 6,800 aircraft](#) valued at more than \$1 trillion in the two decades through 2035, and three-fourths of them will be single-aisle planes. The country's largest carrier, [China Southern Airlines Co.](#), and its units have ordered more than \$15 billion of new aircraft from Airbus and Boeing since 2015.

Boeing, which plans to build a [facility in China](#), said it congratulated Comac on the development of the C919. Airbus already assembles A320s at a plant in Tianjin and said the [competition](#) would be good for the industry.

U.S. [labor unions](#) aren't so sure.

“We have been sending out the alarm bells for many years now about China’s growing aerospace industry,” said Owen Herrstadt, director of trade and globalization for the [International Association of Machinists and Aerospace Workers](#). “They’ve pitted Western aerospace companies against one another.”

Fabrice Bregier, who runs Airbus’s jetliner arm, said at an airshow last year he expects the Chinese to become serious competitors but it would be well into the next decade before they had the range of aircraft and support network to be a global player.

“The real challenge for the Chinese is not to design and operate and fly an aircraft” in the C919 category, said AirInsight’s Merluzeau. “The real challenge is how they are going to be able to demonstrate to the customer outside of China that they can support and service the aircraft.”



Passenger seats inside a full scale model of a Comac C919.

Photographer: Chris Ratcliffe/Bloomberg

Within China, though, Comac will benefit from strong government support, according to George Ferguson, a Bloomberg Intelligence analyst who estimates the country has committed as much as \$7 billion to the program. “At some point, the government is going to say to the airlines: ‘You need to [buy these airplanes](#).’”

That support is one reason China's attempt to build big jets is faring better than efforts in Japan and Brazil, according to a [March report](#) by RAND Corp. The report said China was "absorbing losses that would dissuade new market entrants operating on a purely private-enterprise basis."

Few doubt China's determination to build its expertise. Comac is already working with Russia's United Aircraft Corp. to develop a bigger, twin-aisle airliner, dubbed the [C929](#), that would compete with the 787 and A330 models.

"They're serious about learning how to produce parts -- and producing high quality aircraft parts," said Jeegar Kakkad, chief economist and director of policy for [ADS Group](#), the London-based trade association representing aerospace companies in the U.K. "There is a huge learning curve for them."

— *With assistance by Bruce Einhorn, and Dong Lyu*