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With a Stealth Fighter, China Tries to Gain Attention

By **CHRISTINA LARSON**

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A Chinese J-31 stealth fighter making a test flight Monday before Airshow China in Zhuhai, where the plane was expected to be displayed. Credit Alex Lee/Reuters

BEIJING — Amid the whine of high-performance jet engines at the start of an air show in Zhuhai, the Chinese government is hoping to generate a different sort of buzz: admiration, and perhaps purchases, of its shadowy J-31 stealth fighter, which is expected to make its first public appearance.

For almost 20 years, the event, Airshow China, has been a showcase for the country's homegrown hardware, and a marketplace for those interested in selling to the world's most populous country. As the country tries to climb into the high-end arms market, it has been

eager to display fighters, missiles and drones that it hopes will demonstrate how China can compete on the global stage.

By exhibiting a stealth aircraft at the show, China wants to show just how far its arms industry has come, experts say. The United States is the only country with operational stealth planes, and Lockheed Martin the only company to have successfully exported one, the [F-35](#).

The air show, which starts Tuesday, is widely expected to be “a coming-out party for the J-31,” said John Stillion, senior fellow at the Center for Strategic and Budgetary Assessments, an independent research institute in Washington.



A Y-20 military transport in Zhuhai. CreditReuters

“The more ambitious the display, probably the closer it is to being ready for prime time. If they fly it, that’s a big deal,” he said. “One of the ways countries try to increase demand for their combat aircraft is displaying them, doing cool stuff at air shows; it’s an opportunity to show off.”

After scrutinizing online videos and squinting at oblique references in Chinese state news media, foreign experts say there are many open questions regarding the J-31’s development: how soon the plane will be in service, whether it will use engines that are domestically made or imported from Russia, whether its capabilities will be a match for Lockheed Martin’s jets, and whether it will be substantially cheaper than the competition.

It is also unclear whether the introduction of the J-31 at the show will significantly bolster China’s clout in the global arms trade. It is not even certain that the jet, developed by the state-owned Shenyang Aircraft Corporation, is meant for export. Another stealth fighter, the J-20, is being developed by the Chengdu Aircraft Industry Group.

“People think the J-20 won the contest,” said Richard A. Bitzinger, senior fellow and coordinator of the Military Transformations Program at the S. Rajaratnam School of International Studies in Singapore.

Some shortcomings may be evident in the plane’s appearance, he said. Unlike the F-35, the J-31 has two engines.

“Traditionally the Chinese have to stick in extra engines because their engines aren’t powerful enough — that’s a warning signal right there,” he said. Lockheed Martin’s F-22, the world’s only operational stealth fighter, also has two engines, but they are powerful enough to propel the plane faster than the speed of sound without using the fuel-intensive afterburner.

Robert M. Farley, an assistant professor at the University of Kentucky’s Patterson School of Diplomacy and International Commerce, said engine designs had hindered Chinese aerospace ambitions. The Xian Aircraft Industry Y-20, a domestically produced military transport that will also be shown at Zhuhai, has been developed with engines made by the Russian company Aviadvigatel that are far less efficient than their Western counterparts, typically made by General Electric, Pratt & Whitney or Rolls-Royce.

“The problem with Chinese engines is that they’ve been remarkably unreliable,” Mr. Farley said. “Engines require extremely tight tolerances in construction; even small errors can lead to the engine burning out.”

Quality control, in general, could undermine the J-31’s biggest apparent selling point: its ability to evade radar.

“The potential problem with Chinese- and Russian-construction stealth fighters is that if there’s a bolt out of place, it shows up on a radar signature,” Mr. Farley said. “Russian and Chinese construction is typically much looser.”

“Will Chinese fighters be as ‘stealthy’ as Western fighters? We won’t know that for another five or 10 years,” he said.

If China’s fighters perform as advertised, Mr. Farley said, the J-31 will attract buyers — but only if it is marketed well below the F-35’s price tag, which ranges from about \$150 million to more than \$300 million depending on the model. Development costs for the J-31 are completely hidden from public view, but the journal *Science* noted that about 45 percent of the Chinese government’s research and development spending is “not accounted for” and probably allocated to defense.

“My guess is that somewhere around \$75 million, or at least less than \$100 million, is the ballpark cost to make it attractive,” Mr. Farley said. “Pakistan, of course, would be a huge buyer. Several Latin American countries are recapitalizing their air forces. In the Middle East, there’s a lot of dissatisfaction with the U.S. and U.S. equipment. A cheaper Chinese stealth fighter could do well.”

Political pressures and incentives could also affect who buys from China, said Robert C. Michelson, principal research engineer emeritus at the Georgia Tech Research Institute.

“Countries with poor Western relations, such as Iran, might be forced to consider the J-31 in the absence of other competing options,” he said. “Of course the Chinese jets will be in competition with the Russian jets, and will have to prove more cost-effective.”

Russia is the world’s second-largest exporter of arms, controlling 27 percent of the global market; its Sukhoi aeronautics company is also developing a so-called fifth-generation jet, the T-50, jointly with India. The United States controls 29 percent of the market, according to the Stockholm International Peace Research Institute, or Sipri.

By last year, China had overtaken France as the world’s fourth-largest exporter of arms, according to Sipri data; Germany is No. 3. Although China has long sold small arms and ammunition, increasing manufacturing sophistication means that it is now also trying to export air-defense missile systems, antitank weaponry, helicopters and warships.

In just five years, the percentage of the global arms trade sourced from China has jumped to 6 percent from 2 percent, even as total international arms sales have risen 14 percent. From 2009 to 2013, China’s top arms customers were Pakistan, Bangladesh and Myanmar. Meanwhile, China’s arms imports have shrunk as domestic factories fill more orders, according to Sipri.

The country’s aviation industry is also trying to break into commercial manufacturing; China’s first domestically produced jet airliner, the C919, is in the final stages of development, as is the ARJ21, a regional jet.

The C919 is “meant to compete with Airbus and Boeing,” said Ray Jaworowski, senior aerospace analyst at Forecast International.

“In both instances, the planes will be powered by Western engines — they will be incorporating Western systems, and this will help them compete in Western markets,” Mr. Jaworowski said, adding that finding buyers outside China would be difficult no matter what.

One advantage for China as it tries to become a bigger manufacturer of aviation hardware is a large internal market.

“A lot of these companies in China have been doing pretty well because the Chinese defense budget has gone up so significantly,” said Mr. Bitzinger of the S. Rajaratnam School. In 1997, China’s total defense budget was about \$7 billion; by 2014, it was officially \$150 billion, and perhaps much higher, he said.

Although the public is expected to get its first official glimpse of the J-31 at Zhuhai — the plane, called the Falcon Hawk in the show’s program, is scheduled to fly on Tuesday, Wednesday and Saturday — there will almost certainly not be a peek under the hood.

“I suspect that this is intended to be the public debut of the J-31 so that the world will be impressed that it is real,” said Mr. Michelson of Georgia Tech. “Rightfully, China is proud of this development and wants to show it off.”

“Performance claims will no doubt be made for the J-31 at Zhuhai, but until those are vetted, they will just be claims,” he added.

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