

## Boeing Pushing to Keep F/A-18 in Production

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F/A-18E Super Hornet

Boeing's F/A-18 Hornets and Super Hornets have been the dominant fighter jet on aircraft carriers for more than 30 years, but the landscape will change in the next decade as Lockheed Martin's F-35 begins to push out the legacy aircraft.

The Navy's procurement of the Super Hornet has slowed, with no new purchases of the aircraft in the works. Procurement of the E/A-18 Growler — the electronic warfare variant of the F/A-18 — ends in fiscal year 2014, and Boeing could make its final deliveries of Super Hornets and Growlers as early as 2016.

Nonetheless, Boeing officials are optimistic that more sales are on the horizon. The company expects to sell anywhere from 50 to 200 Super Hornets and Growlers to the Navy, and up to 200 foreign purchases could be in the cards, program manager Mike Gibbons told National Defense.

"When you look at the combination of the development risk on F-35 and the affordability advantage that

we've got ... the options the Navy has makes Boeing believe that the Navy will opt to buy more Super Hornets," he said.

Further delays of the F-35 would give Boeing a better chance to sell additional Super Hornets, but analysts said that the company's projections are overly confident given the grim fiscal environment.

"It does look like Lockheed Martin has come a long way in the past couple of years in straightening out the F-35's difficulties. Having said that, it would not be a big surprise if we saw some minor delays further along the line," said Ray Jaworowski, senior aerospace analyst at Forecast International. "I don't expect to see a showstopper by any means. The F-35 program right now ... is too big to fail. They're going to make it work."

A December 2012 analysis by the Teal Group forecasts that Boeing will be able to sell an additional 24 aircraft in the domestic and international markets — most likely to the Navy or Australia. "That's probably conservative," the report stated.

Richard Aboulafia, the report's author and vice president of analysis at the Teal Group, said a more optimistic estimate is that Boeing could sell at least 100 more aircraft. He believes it's possible for Boeing to win at least two foreign competitions and to sell anywhere from 50 to 100 planes to the Navy.

"I can't see anything that adds up to a slam dunk," he said. "Do they deserve it? Yes. Is it a good product? Yes. Is it needed here at home? Absolutely. But it's just a difficult environment."

Boeing has good reason to fight tooth-and-nail to extend production as long as possible. The industrial impact of the program totals \$6 billion, including 90,000 jobs extending across 44 states, according to company information.

The program may see some additional domestic sales as a result of congressional action. Although the Pentagon's fiscal year 2014 budget request did not include any procurement of Super Hornets, the House version of the National Defense Authorization Act set aside long-lead funding to buy Super Hornets in 2015.

"It's a little more murky, what's going to come out of the Senate. The Senate version of the authorization bill did not include those funds," Jaworowski said.

"What are the chances of this funding surviving in Congress?" he continued. "It's a very close call. It wouldn't surprise me if the funding survived, and we do see additional Super Hornets in fiscal '15. On the other hand, it wouldn't surprise me if we didn't."

Boeing also is trying to extend Super Hornet and Growler production through international sales in countries such as Australia, Malaysia, Brazil, Kuwait, the United Arab Emirates, Denmark and Canada.

Australia is the only foreign country to use the Super Hornet, with a fleet of 24 aircraft. The country in May ordered 12 Growlers and could decide to expand to more in the future, Jaworowski said.

Malaysia and Kuwait are two other countries with a good chance of adopting the Super Hornet, the Teal Group report said.

Malaysia hasn't announced a competition yet, but will be looking to replace its Mikoyan MiG-29 aircraft. An initial buy could amount to between 18 and 24 aircraft, Gibbons said.

Boeing officials would not go into details on possible sales to the Middle East, but Gibbons said the company has active campaigns in at least three countries that could total 100 possible purchases.

Boeing also is in talks with Brazil, which plans to make an initial buy of 36 aircraft as early as this year, Gibbons said. The company is competing against Sweden's Saab AB and France's Dassault Aviation SA.

"The Brazil buy has been delayed for some time now, and there's the possibility of further significant delays. They're definitely not a lock for Brazil by any means," Jaworowski said.

It's likely that Boeing will win at least one or two foreign competitions, Aboulafia said, though it's difficult to say which ones. "Everything is ... at that 45-percent mark."

To sweeten its current offerings, Boeing is promoting a suite of new features that can be retrofitted onto Super Hornets or bought new as the Advanced Super Hornet. The upgrades initially were pitched to the international market, but the company is also targeting the U.S. Navy as a potential customer.

Boeing officials view the upgrades as a way to evolve the Super Hornet as it engages in anti-access/area denial environments. The menu of options currently include a new cockpit and display, conformal fuel tanks that give the jet more range, an enclosed weapons pod and a new engine that improves acceleration.

A Super Hornet outfitted with the new weapons pod and fuel tanks will begin test flights this year. Boeing first plans to do performance testing at its headquarters in St. Louis, Mo., before flying to the Navy's Atlantic Test Range in Patuxent River, Md., where the company will evaluate the aircraft's stealth, said Bob Kornegay, business development senior manager for the F/A-18 and E/A-18.

Installing all of the available upgrades would cost around \$10 million per aircraft, Kornegay said, but customers could pick and choose from any of the options.

Boeing plans to continue funding additional features for the platform, one possibility being a small, unmanned aircraft that could be launched and controlled from inside the jet, Gibbons said.

"They [could] go forward far past the jet, potentially into high-threat environments, and then by communicating with them, you've basically projected your forward sensors," he said. The company would likely have to modify a small commercial, off-the-shelf drone — such as the ScanEagle made by Boeing's partner, Insitu Inc. — to fit the compressed carriage scheme of the aircraft, he added.

Targeting the Advanced Super Hornet features to an international market is "a strong idea, but as long as all the F-35 partners keep the faith, it's going to be hard to find a launch customer," the Teal Group report said.

In order to keep prices close to its current rate, Boeing will need sales of at least 24 Super Hornet or Growler aircraft per year, Gibbons said. If the company couldn't hit that number, it would have to consider measures such as accelerating production from future years in order to drive down cost and maintain a minimum production rate.

"When we look at that skyline, 24 looks to be the minimum that we would anticipate when you look at a healthy blend ... of domestic, plus international on top of it," he said.

Until the Joint Strike Fighter reaches its scheduled initial operational capability in 2019, the Navy will continue to rely on its fleet of legacy Hornets to support aircraft carriers. The older aircraft have already undergone one service life extension program, which increased their lifespans from 6,000 to 8,000 hours.

But as the jets approach the 8,000-hour mark, the Navy is considering another life extension, which would give 150 Hornets an additional 1,400 flight hours for a total cost of \$2.19 billion, stated a November 2012 report from the Government Accountability Office.

The GAO criticized the Navy estimates, which have not undergone an independent analysis and do not include other costs that may creep their way into the program.

For instance, those estimates do not include the costs of capability upgrades that are being considered for some of the Hornets, which could add another \$1.76 million per aircraft. Separate from the service life extension, the Navy is considering replacing or modernizing old or obsolete F/A-18 parts that could increase the cost of the program by \$5.64 million per aircraft, the GAO report said.

A Navy spokesman said the service had no comment on the service life extension program at this time.

The Navy expects it would finish the life extension by 2018, the GAO report said. The program would give the Hornets around five more years of service, allowing time for the F-35 to work its way onto carriers.

However, Boeing officials are pushing for a sale of Super Hornets to replace the legacy version, which they believe is a better long-term purchase because the newer aircraft have a lower operating cost.

"We don't just want them to buy new because it's new, we want them to buy new because it's more capable," Gibbons said. With legacy Hornets costing 25 to 30 percent more per flight hour, "it's actually cheaper per flight hour to buy new," he added.

Jaworowski and Aboulafia agreed that the prospect of the Navy replacing its old Hornet fleet with Super Hornets is a long shot.

"It might have long-term cost savings, but the upfront cost would be greater, and Congress tends to focus on the short-term costs. The upfront costs get far more attention politically than the long-term cost savings," Jaworowski said.

Both analysts are confident that there will be at least some additional sales of Super Hornets and Growlers that would extend production past 2016. But what happens to Boeing in the worst-case scenario that the company is unable to fill any additional orders for Super Hornets and Growlers, and production ends?

For a while, Boeing will be able to fall back on the F-15 fighter jet it builds for the Air Force, Jaworowski said. The company currently is working on 84 F-15s for Saudi Arabia and could make other foreign sales to countries such as South Korea.

The F-15 program, however, could end in the early 2020s, Jaworowski said. Beyond that, the company has no other fighters in production and would have to bank on landing the contract for the F/A-XX, the name given to the presumed sixth generation fighter jet that will replace the Super Hornet once it reaches the end of its service life.

Boeing in April revealed an updated F/A-XX concept — a tailless, twin-engine design that will be available in both manned and unmanned versions.

"F/A-XX probably represents their best hope for returning as a manufacturer of a fighter aircraft," Jaworowski said. "But ... that's well down the road."

*Photo Credit: Navy*

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