

DEFENSE INDUSTRIAL INITIATIVES CURRENT ISSUES

No. 12: U.S. Competitiveness in the Fighter Aircraft Export Market (05/26/09)

In his April 6, 2009 address, Sec. Gates discussed his vision for the F-22 “Raptor” and the F-35 “Lightning II”, two of the U.S. aerospace industry’s most prominent programs. While at the forefront of 5th generation fighter technology, their limited international sales potential is emblematic of the diminishing prospects for a military aerospace sector described by the Congressional Research Service as “a major source of technological innovations” and a \$10.2 billion export surplus.¹

A History of Export Success

Northrop’s F-5A/B “Freedom Fighter” and F-5E “Tiger II,” more than 2,000 of which have been sold since the 1950s, have seen service with some 30 countries as diverse as Switzerland, Kenya and South Korea. General Dynamics, now Lockheed Martin, has sold at least 4,400 F-16 “Fighting Falcons,” the export champion succeeding the F-5, to 25 air forces. Both aircraft, designed from the get-go as versatile, low-cost platforms, have no obvious successors indigenous to the U.S. aerospace industry.

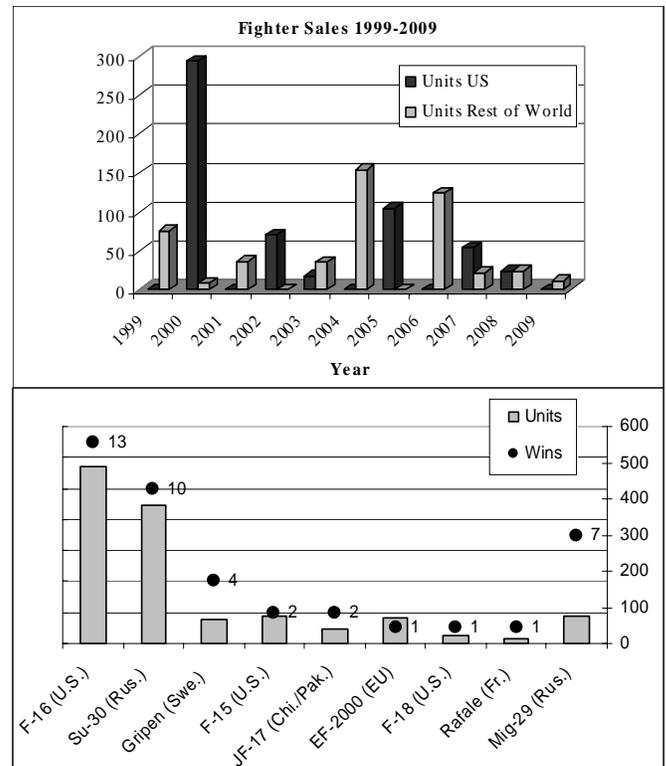
In addition to their economic benefits, international sales accelerate innovation—via an enlarged market for upgrades—while also strengthening ties and increasing interoperability between the U.S. military and the militaries of strategic partners.

At present however, U.S. cuts to tactical aviation couple with existing export obstacles to paint an unfavorable picture for the future. At the lower-end of the market, the rising cost of the F-35—designed and built by an international consortium—puts it out of reach for many export customers the U.S. aerospace industry served in the past. At the high end, export of the F-22 has been blocked by Congress with the intent to guard sensitive technology.

¹ Christopher Bolkcom, “Tactical Aircraft Modernization: Issues for Congress,” Congressional Research Service, December 17, 2008, p.14.

The Industry Since 2000

While interest and actual sales of American fighters remained strong into the 2000s, the sustainability of U.S. dominance appears questionable. Developing states that bought American for political reasons have purchased F-16s, rather than committing to buy F-35s, and wealthier countries have chosen upgraded 4th generation fighters—like the UAE’s F-16E/Fs and Singapore’s F-15SGs. Both instances reveal limited practical interest in the F-35 due to cost and schedule, and more specifically, a lack of planning for an affordable next generation export platform.



Data excludes DoD purchases. Sources include: DSCA 36(b) Major Arms Sales Notifications and SIPRI Arms Transfer Database since 1999. Rafale sale not confirmed.

From a capabilities perspective, Sec. Gates asserted that the U.S. often buys “more capability than the nation needs” and fails to connect “modernization goals” with “actual and prospective capabilities of...future

adversaries.”² While such policy is intended to prepare U.S. forces to achieve air dominance, the resulting aircraft do not fit the requirements of potential export customers. Decisions by Thailand and Indonesia—F-5 and F-16 users—to buy 4.5th generation Saab JAS 39 Gripen and Sukhoi Su-30s reflect this. Though small, these sales demonstrate that the competition understands customer demand and is striving meet it.



The F-16E/F Block 60, operated only by the UAE, is more advanced than the F-16C/D Block 50s of the U.S. Air Force. Source: F-16.net

Beyond the fact that the F-35’s per unit cost makes it too expensive for some trade partners, export controls may also affect its competitiveness. Several countries have expressed concern that the F-35 export variant is “watered down.” Others, like Israel, are distressed that its software is not “open” enough to facilitate local upgrades.³ Concurrently, F-22 sales have been blocked, even to staunch allies Japan and Australia.

More broadly, export control issues have also driven foreign technology companies—particularly in Europe—to develop U.S. component-free products.⁴ In the process, many have made technological leaps that would not have occurred had they been able to procure components from the U.S. This not only damages future industry sales prospects and weakens relationships with current and potential partners, but it also spurs the availability of advanced military technology outside the domain of U.S. arms control regimes.

Looking Ahead

Though upgraded F-16s remain cost competitive and sales continue to outstrip newer aircraft from Europe,

the survival of the F-16 and F/A-18 assembly lines are not infinite—especially with resources shifting to full-rate F-35 production. With this in mind, the dynamics of the tactical aviation market appear poised for change. While F-16E/F Block 60s cost some \$50 million, the F-35 has been projected at \$65-120 million,⁵ out of the range of many F-16 users and closer to export busts like EADS’ \$120 million EF-2000 Typhoon and Dassault’s \$70 million Rafale.

At the same time, U.S. and foreign companies have been successful in producing mid-life or “block” upgrades that offer improved data buses, precision targeting pods and day/night all-weather capability. Barring penetration of a transformational platform like the F-22, the market may be evolving toward a model that values upgradeable computing and open systems architecture as much as the airframe itself.

While upgrade packages offer sales opportunities, with no new starts pending, and few export viable platforms on the horizon, the tactical fighter base will face adversity—especially if the U.S. continues to demand purely high-end, technology-sensitive, export limited platforms. This may drive contractors to internally finance export oriented aircraft, or yield the lower end of the market to foreign competition.

Boeing’s independently financed, export-oriented F-15SE “Silent Eagle,” intended to provide F-35-like capability at a lower cost, demonstrates that U.S. firms are not ready to cede market share. Unmanned combat aircraft systems (UCAS)—which could drive a revolutionary shift in tactical aircraft design—have the potential to supersede the post-war, generational shifts in the tactical aviation technology lifecycle. Regardless of manned tactical fighter sales, further UCAS investment would preserve the U.S. lead in tactical aviation and solidify the industrial base

—Andrew Jesmain

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² Robert Gates, “[Defense Budget Recommendation Statement](#),” DefenseLink.mil, April 6, 2009, p.3.

³ “[Israeli Plans to Buy F-35’s Hitting Obstacles](#),” *Defense Industry Daily*, April 20, 2009.

⁴ “[Defense Industrial Base Assessment: U.S Space Industry](#),” Air Force Research Labs, August 31, 2007.

⁵ Steve Kosiak and Barry Watts, “[U.S. Fighter Modernization Plans: Near-Term Choices](#),” Center for Strategic and Budgetary Assessments,” June 20, 2007 and Christopher Bolcom, “[F-35 Lightning II Joint Strike Fighter \(JSF\) Program: Background, Status, and Issues](#),” Congressional Research Service, February 17, 2009.