The world's air forces continue developing and buying extremely expensive fighter aircraft amid a continuing conundrum: Significant air combat has been nearly extinct for decades. Since the last air combat over Vietnam in 1973, American fighter pilots have shot down merely 54 hostile aircraft. (Of those, six were helicopters and four were trainers.) That's barely one a year.

The last time U.S. aircrews claimed 10 hostiles in a day was 1972. The last time anybody downed 20 in a day was the Israelis in 1982. And the last time anybody downed 30 was the last day of World War II.

Since Operation Desert Storm in 1991, the greatest area of air-to-air action, by far, has been South America where Honduran, Columbian, and Peruvian pilots interdict drug smugglers. The total numbers are unknown, but in one 11-year period, at least 24 drug aircraft were shot down by armed Tucanos and Cessna AT-37s.

The situation is not limited to aviation. The U.S. Navy retains a large fleet structure despite the fact that no sea battle worthy of the name has been fought since 1944. With the collapse of the Soviet Union in 1990, the world entered the post-naval era with no serious threats to maintaining the sea lanes.

None of the foregoing means that we should stop buying fighters or aircraft carriers. But it does mean that decades of evidence call into question our military acquisition policy in a changed world.

Let's face it—the military is a huge market. Recent budgets of the Department of Defense have run about $500 billion with no end in sight, despite the United States being $20 trillion in debt.

When you talk fighters, you have to talk stealth. The first stealth “fighter” was Lockheed's egregiously designated F-117 Nighthawk, a subsonic attack aircraft with no means of defending itself. Next up was Lockheed Martin's F-22 Raptor, the first “fifth-generation” fighter. Originally intended for more than 700 aircraft, the program ended in 2011 with only 195 due to rising costs, operational problems, and reduced need.
Nonetheless, Lockheed Martin followed up with the multiservice F-35 Lightning II, the most expensive military program ever. Pentagon and industry number crunchers have ways of spinning the cost figures with “constant” dollars, “then” dollars, program cost, fly-away cost, and so forth. Official statements peg the Joint Strike Fighter (JSF) program at $1.5 trillion over the expected service life of the F-35 series.

And therein lies much of the problem. Despite the failed example of the 1960s’ General Dynamics F-111, the military-industrial complex again floated a one-size-fits-all airframe. The F-111, intended for both the Air Force and Navy, flunked its naval evaluation and was canceled as an unsuitable fighter. Similarly, Boeing’s dead-end A-12 was a carrier-based attack aircraft designed with “low observable” priorities over operational capability and also was canceled—but litigation lasted more than 20 years.

F-35 comes in three flavors: the Air Force A model, the Marines’ STOVL B model, and the Navy’s C model. All are perennially over budget and late. Some admirals recently confided that too much of what they buy “costs too much and doesn’t work.” The Navy had been hanging tailhooks on air-planes since 1922, but the C model required more than two years of improvement so that it could reliably catch an arresting wire.

Unlike the Navy, which continued buying FA-18 Hornets, the Marines went all in for F-35B and declared it “operational” before testing was complete. (In 2015, the Air Force secretary finally opined that maybe we should finish testing before buying extremely expensive airplanes.) Industry critics noted that the program office continually hit “the reset button” to declare JSF “on schedule.” In 2014, the General Accounting Office declared the F-35 “unaffordable,” costing nearly $9 billion more than the fighters it’s intended to replace. Then, late last year, the Joint Program Office requested an additional half billion dollars to continue developing F-35.

Based on the 2005 schedule, the first flights of F-35A/B/C were two years, two years, and one year late, respectively; operational capability was late by two, four, and five years. Industry insiders note that low-rate initial production (LRIP) took 11 years rather than the seven projected, and LRIP continues today.

So much for the money. JSF critics have said from the start that it was born with “TBTF” tattooed on its forehead: Too Big to Fail. But like it or not, the F-35 family is here to stay, leaving us to ponder not only how well the three types may perform but also whether they will ever be used as intended.

Aerospace merchandisers sold stealth, in part, as a “force...
“multiplier,” with costly advanced technology offsetting superior enemy numbers. The theory held that while fewer fifth-generation aircraft could be purchased, they would more than offset the deficit by their stealthiness. It sounds fine at first blush, but it fails the fact test. Our biggest day of air combat over Vietnam—never matched since—was 11 MiGs downed in three combats.

As noted, air-to-air combat has been in steady decline for 40 years. Thus, the United States and allied nations purchasing F-35s might find themselves with an embarrassment of riches, owning high-high-tech platforms that are seldom if ever employed. It seems far more likely that JSFs will be used in the strike role, especially with the intent of controlling unmanned “wingmen” drones for reconnaissance, intelligence gathering, and perhaps strike missions.

Yet even with advanced stealth technology, the defenses also continue evolving. Recent “double-digit” surface-to-air missiles have extended the air-defense envelope far beyond the Vietnam-era SA-2s—perhaps 150 miles or more. Thus, there is bound to be a continuing need for electronic countermeasures (ECMs) since stealth itself might never match “the brochure.” Operators confide that stealth aircraft frequently cross the beach inbound with jammers in attendance. Furthermore, ECM can be added on, whereas stealth coating (susceptible to environmental degradation) cannot.

Meanwhile, consider the critical factor of affordability: In the early 1950s, an F-86E cost $219,000; an F-15C was $30 million in the late ’90s. Today, those figures equal about $2 million and $45 million. An F-35A—the least expensive JSF—is pegged at $98 million. Thus, discounting the performance difference among those jets, we are inevitably left wondering how many we can afford and how many increasingly complex aircraft can be maintained. A continuing problem is millions of lines of code governing aircraft flight controls and onboard systems. Correcting problems in one realm can cause problems in others—hence, the F-35’s inoperative gun, currently not expected to function until 2019.

So, comes the day when fifth-generation fighters enter combat. Apart from air to air, sending a stealth aircraft down in the weeds for close air support—the A-10 mission—seems to violate every tenet of cost effectiveness. Running roughly $100 million each, how much risk will we accept for those precious assets? And what is the trade-off for destroying a target that might cost less than the aircraft that attacked it?

The solution should be obvious: Reduce the JSF purchase and continue buying “legacy” fighters—Eagles, Falcons, and Hornets—with improved systems and weapons. Even though the Marines refuse to do so, at some point reality should force itself upon the decision makers. American air superiority should not have a shelf life.

The F-15 Eagle represents America’s “legacy” fighters of the Cold War, operational since 1976 with more than 1,500 produced in the United States and Japan. (Photo by John Dibbs/planepicture.com)