



Losing Air Dominance

For the first time in decades, the Air Force is in danger of losing its ability to guarantee air dominance. The problem stems not from lapses in technology or tactics. It stems, rather, from the breakdown of a fighter master plan set in motion after the Gulf War of 1991.

Moreover, the Air Force must contend with Pentagon efforts to downgrade air dominance in favor of increasing US emphasis on ground-centric irregular warfare.

The Air Force's core fighter force has gotten old. In the wake of the Gulf War, the Air Force hatched a plan to acquire thereafter only highly advanced stealth fighters. That plan now has gone badly awry. USAF confronts the real danger of having insufficient numbers of advanced fighters for future needs.

Just because classical air combat is not in the headlines does not mean there are no prospective challengers. Russia, China, and India all are grasping for more and better air dominance capabilities for their own use. Worse, they are developing these capabilities for the international market. This export potential—the power to place advanced systems into the hands of otherwise minor powers—could alter risk calculation in every phase of war.

The sagging fighter situation will influence not only the outcome of future air-to-air encounters but also help decide the availability of specialized air-to-

The Gulf War was a turning point—of a negative kind. It's been downhill from there.

By Rebecca Grant

ground capabilities needed to attack and neutralize modern surface-to-air missile (SAM) batteries as well as shoot down cruise missiles and other theater missiles that threaten US forces and allies.

Gen. John D. W. Corley, commander of Air Combat Command, recently summed up the situation with these words: "Everybody has figured out that airpower—specifically, from the US Air Force—is America's asymmetric advantage. They want to take that away from us."

What is air dominance? Although the phrase itself is a post-Cold War construct, most recognize that air dominance is the central pillar of what the Air Force does for the nation. At the core, air dominance is built upon the traditional USAF ability to surmount defenses and open any adversary targets to attack from the air.

What air dominance has meant in recent years is an ability to dominate the skies so that all other types of air and joint operations can function at peak effectiveness. Dropping relief supplies on precision coordinates in Afghanistan depends on air dominance. So does providing pinpoint infrared imaging from an F-16 watching a road in Iraq.

Unfortunately, legacy fighters retained in the force are already showing weaknesses and will not meet air dominance requirements in heavily defended airspace.



USAF photo

Gen. Merrill McPeak, in the wake of the Gulf War, saw no point in buying more “aluminum” fighters, arguing to go with stealth all the way from then on.

for operations that irregular warfare in the later phases of a campaign could require a level of military effort as great as—and perhaps greater than—what is needed for so-called major combat operations.

This declaration constitutes a seismic shift in American military thinking. In theory, the power to wage irregular warfare might get the same priority in force tasking as Phase 3 dominant combat operations has received in decades past. It is forcing a re-evaluation of air dominance needs.

A Broad Demand

This joint doctrine revision, written into Joint Pub 3-0 in February 2008, has not downgraded military preparation for more-conventional type of war. Rather, it has simply created a need to expand forces in all directions. The doctrine is a campaign planning guide, not a strategic planning handbook, but the basic point is clear enough: The demand for air dominance, and therefore its tasking, has never been broader. The bad news is that the Air Force is facing shortfalls in nearly every phase.

That’s not the only problem. Ever since 2004, the Pentagon has focused more and more heavily on the demands of irregular warfare and accorded it a far more prominent place in joint campaign doctrine. The shift has, in turn, forced to the surface the question of what constitutes the right type of air dominance force for irregular warfare, shaping operations, and other relatively new tasks.

Today’s air dominance force was structured primarily to accommodate an older concept of joint operations. It viewed major combat operations and dominant maneuver—to use the joint term—as the culminating points of any campaign. The campaign had four notional phases—deter, seize the initiative, dominate, and stabilize. However, Phase 3—dominant maneuver—was the centerpiece. In the past two years, however, joint doctrine has gone through a major change. The doctrine writers have expanded it; it now comprises six phases of war—i.e., shape, deter, seize the initiative, dominate, stabilize, and enable civil authority.

The change affects more than the phases of war. Reflecting recent experience in Iraq and, to a lesser extent, Afghanistan, the Joint Staff estimated in a recent update to its joint doctrine

By the early 1980s, the Air Force had in development a highly classified Advanced Tactical Fighter. The objective was to combine, in a single aircraft, stealthiness, maneuverability, supersonic speed, and supercruise. Plans called for the F-22 to replace all F-15Cs and F-15Es at a ratio of about one-to-two, meaning USAF would be lopping in half its high-end fighter force. Still, it was judged that a force of that size would yield air dominance for 40 years at an affordable price.

The problem is, this never came to pass, and that is a story all its own.

In a way, it all started with the Gulf War. The year 1991 seemed like the dawn of a new age for American airpower. Stunning air dominance had provided the vital edge in the international coalition’s fight to drive Saddam Hussein’s Iraqi forces out of Kuwait. The air campaign that began on Jan. 17, 1991 ultimately drove the Iraqi Air Force from the skies and mauled dug-in ground forces to the point where even the elite Republican Guards beat a hasty retreat up the road to Baghdad as soon as coalition ground forces rolled into Kuwait. The war was over by March 1.

Not long after, on April 23, 1991, Secretary of the Air Force Donald B. Rice announced the selection of Lockheed’s YF-22 as the winner of the ATF competition. Enough design work had been done to guarantee the F-22

USAF photo



F-16A, F-15C, and F-15E aircraft on a mission during Operation Desert Storm.



An F-22 fighter cruises during a training mission over Colorado. The original requirement for 750 Raptors has been steadily whittled down to a plan to buy just 183.

in “The Boneyard” at Davis-Monthan AFB, Ariz.

McPeak, in a 1994 speech at the Heritage Foundation in Washington, D.C., said that “our nation has too much tacair. ... The United States has nearly twice as many fighter aircraft as any other nation.” As a result, the Air Force and the Pentagon agreed to cut the fighter force from 36 fighter wing equivalents in 1990 to 26 fighter wings. Later, that number fell to 20 wings, where it has stayed.

Making possible the cuts of this scope and magnitude was precision. As older aircraft retired, the newer ones remaining in the inventory got precision targeting systems and precision guided munitions that made them far more capable than ever before. With precision, each fighter became a multirole platform.

In Desert Storm, only Air Force F-117s, F-111s, and a dozen or so F-15Es had infrared targeting systems that would allow them to self-designate laser guided bombs. Navy A-6s and some allied aircraft had some limited capabilities for precision, but the Air Force expended 90 percent of the PGMs in that war.

Within a few years, the LANTIRN night-time targeting pods became standard equipment for F-15Es and F-16s. The Navy invested in precision, turning its F-14 Tomcat into a precision-capable “Bombcat” while adding upgrades to the F/A-18C force as well.

Combat results were dramatic. In 1995, just four years after the Gulf War, fighters carried out Operation Deliberate Force, the two-week air campaign against Bosnian Serb targets. The short air campaign was the first in which employment of laser guided precision weapons superseded that of standard, unguided bombs. In 1999, fighters drew most of the assignments for time-critical targeting in Operation Allied Force, the so-called Air War Over Serbia. Advances were notable. For example, the F-15E had been modified in the mid-1990s so the pilot en route to a target could receive video images of that target after getting airborne.

The laser weapon mini-revolution was followed by a Global Positioning

could be developed to meet signature, cost, and performance requirements. The Air Force planned to acquire 750 of them.

The F-22 was the key of an immensely important decision for the Air Force. After Desert Storm, the Air Force decided never again to buy a nonstealthy fighter. According to the then-Chief of Staff of the Air Force, Gen. Merrill A. McPeak, there was no point in buying any more “aluminum” fighters. Stealth was to be the Air Force hallmark from then on.

This was a bold decision, given the strong performance of standard fighters—the F-15s and F-16s in particular—in the Gulf War. The F-15E was still in production, and it would have been easy indeed for the Air Force to make a case for a big new buy based on combat results.

The Gulf War, although it was an airpower walkover, nonetheless taught some disturbing lessons. Nearly every weapon system community lost an aircraft or two, usually to ground fire, and some lost more than a few. Pilots attacking Baghdad targets remembered flying through anti-aircraft fire so dense it was like being inside a popcorn popper. In another case, an F-16 in a mass raid on a chemical plant was lost due in part to failures of coordination with electronic attack assets. SAM-killing aircraft were busy constantly. For all that, nobody laid a glove on the low-observable F-117. Pilots and commanders walked away with a very vivid image of what the future might hold, and they wanted more stealth.

A year later, McPeak testified, “The F-15 will be able to win any fight that I can think of out [to] the turn of the century” but that its days were numbered after that. “The F-15 cannot get to the fight after the turn of the century,” by about 2010, McPeak judged. As a result, USAF resisted any temptation to beef up its inventory of F-15Cs, F-15Es, or F-16s, pushing instead its long-term commitment to buy stealth.

A Three-Part Plan

It was a bold and visionary move that was expected to pay huge dividends, and everyone expected the plan to hold up.

The fact that the plan did not hold up explains today’s deterioration of the Air Force’s grip on air dominance. The plan had three parts: Shrink but continually update the fleet of current fighters, buying no more of them; develop the F-22; and add a less expensive multirole stealth fighter to eventually replace the F-16 and the A-10.

In the early 1990s, the Air Force had begun a program of deep cuts to the fighter force structure and the overall size of the Air Force. Military forces were cutting people and systems left and right to produce a “peace dividend” now that the Cold War was finally over.

Still, even by these standards, the Air Force cuts were remarkable. Nothing was spared to put the plan in place. On the cut list was the F-111, a Gulf War superstar. It was retired outright in spite of its excellent Gulf War record of precision bombing and tank-plinking. Soon the last of the F-111Fs were sitting

USAF Photo by TSgt. Rick Storza

System mini-revolution. In 1999, the B-2 bomber was the only aircraft able to drop the all-weather, GPS-guided Joint Direct Attack Munition. In Operation Enduring Freedom in Afghanistan just two years later, many other Air Force and Navy aircraft employed JDAMs to great effect.

Unfortunately, the stunning successes of the precision-capable fighter force did not translate into support for long-term funding for air dominance. Though these smart weapons were lauded on television news broadcasts, the nation never really came to grips with the need to provide for such an advanced fighter force. This would have fatal effects on the long-term modernization plan that depended on a consensus stretching across two decades.

So, how did the Air Force plan work out?

Part 1—the downsizing coupled with precision upgrades across the

fleet—was complete by the turn of the century. USAF’s force was smaller but far more capable.

Unexpected Risk

Part 2—bringing on the F-22—and part 3—developing the cheap, multirole stealth fighter—both took very unexpected turns. In a sense, the Air Force has yet to recover.

It has been a long time since the Air Force adequately explained why it needed “two new fighters,” the F-22 and the F-35.

Actually, the F-22 was the principal program underwriting the force reductions and justifying decisions in the 1990s not to waste taxpayer money on conventional fighters. The final outcome of the F-35 program was always seen as important, but production of an adequate number of F-22s always was viewed as the pivotal factor. Once in the force in sufficient numbers, the F-22 would enable retirement of the

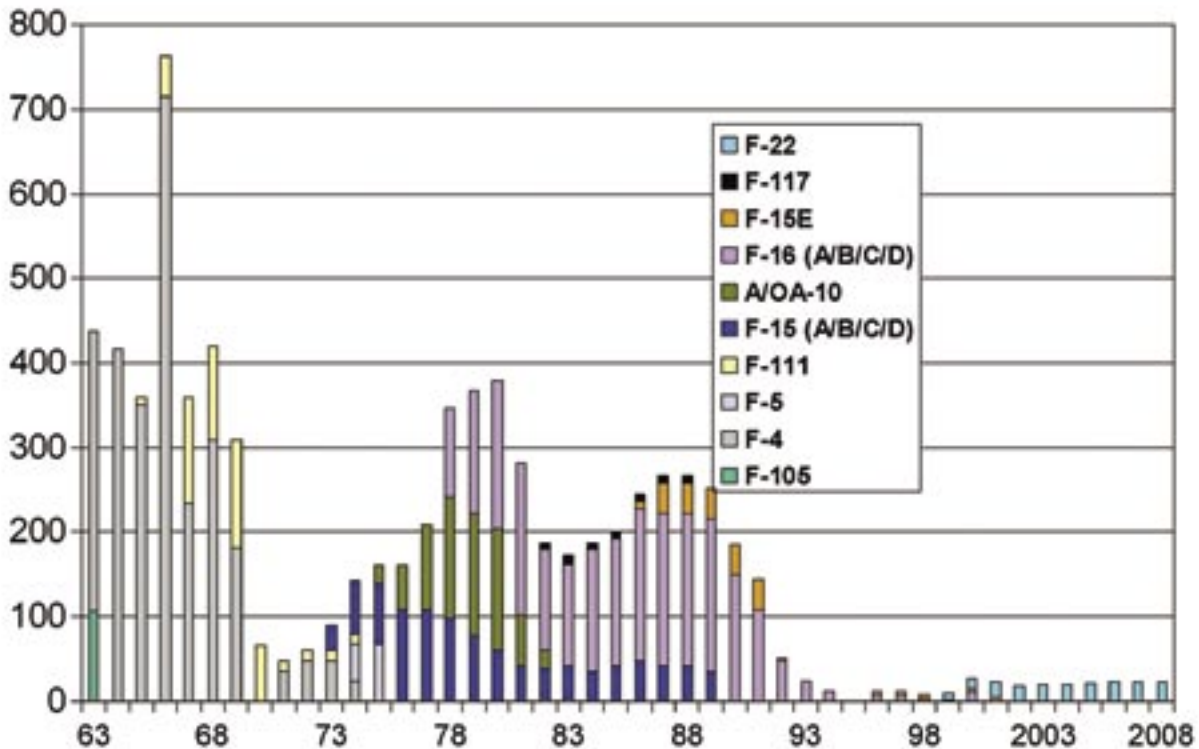
F-117 (already accomplished), all F-15Cs, F-15Es, and many F-16CJs.

The F-22 made its first flight in 1997. Right from the beginning of its test regime, it was one of the least troublesome of aircraft, practically a golden child amongst its peers. Its low observable signature results met requirements. It sailed through supersonic cruise. The development of its software would turn out to be a real challenge, but, considering the Raptor’s technical complexity, it performed much, much better than other aircraft at the same stage of development.

However, the effort to buy sufficient numbers of F-22s became a struggle long before its first flight. The bold decision not to buy any more nonstealthy fighters had put the Air Force’s air dominance at far more risk than anyone anticipated.

Danger signs began appearing right away. The “too-much-tacair” contention, which arose at a time when

Major Fighter Aircraft Buys 1963-2008



Department of Defense

The Air Force plan after the 1991 Gulf War contained fewer fighters but more stealth. Thus, USAF slashed procurement of new “conventional” fighters in the 1990s to save money for stealth purchases later on.



Lockheed Martin Photo

The stealthy F-35 multirole fighter, meant to be produced in large numbers, was always a key part of USAF's "get-well" fighter plan. Dominance, however, will require a strong core of both the F-35 and the F-22.

the Cold War force was still intact, continued to shape defense debates even after the Air Force had carried out extremely deep cuts to the Cold War force structure. The existence of multiple new fighter programs—the F-22, Super Hornet, and what is now the F-35—sparked claims of wasteful overlap and redundancies.

Moreover, the new fighter programs had by the mid-1990s produced a huge tactical fighter production “bow wave” in the so-called “out-years.” Projections held that the Pentagon would be spending some \$10 billion annually on procurement of the three new fighters, as each was projected to be in low-rate or full-rate production in the 2000s. Worries about this problem dominated discussions and analysis of tacair modernization in the late 1990s. It was not resolved until the early 2000s.

The debate was shaped, to a large extent, by a false perception. The fighter fleet of the 1990s appeared to be, and was, large and healthy. Bulk buys of top-line fighters in the 1980s had left the Air Force, Navy, and Marine Corps well off. For the Air Force, high-rate buys of 8,000-hour F-16s provided a deep bench of force structure.

As shown in the chart on p. 27, USAF fighter purchases tailed off in the 1990s in expectation of a smaller force structure and an influx of more capable F-22 and, later, F-35 replacements. Proposed annual procurement of all fighter types fell from 140 in 1991 to zero in 1995, with only weak production after that.

The problem is that the Pentagon did not, as had been planned, begin efficient

production of the new fighters around the turn of the century. Soon, the wheels began to come off. What once seemed to be a manageable “pause” in fighter procurement lengthened and expanded, turning into a debilitating drought, putting the entire air dominance mission at risk.

Cutting Reviews

The problem had been brewing for years. The F-22 suffered program cuts and delays even before it entered low rate initial production. That is because the Air Force was not successful in linking its declared F-22 requirement to threat conditions and air dominance requirements.

The George H. W. Bush Administration cut the requirement from 750 to 680 fighters. In 1993 to 1994, the Clinton Administration’s so-called Bottom Up Review of defense programs reduced the program of record to 442 Raptors. The 1997 Quadrennial Defense Review took the requirement down to just 339 aircraft, or about three wings’ worth. The QDR, however, did leave an option to increase the buy to five wings to incorporate advanced air-to-ground capability and replace the F-15E and F-117 fighters.

In 2001, the Pentagon conducted yet another QDR, but it didn’t directly address the air dominance programs to the extent of changing numbers. The next year, however, the F-22 and four other major force programs came under harsh scrutiny. The F-22 program survived intact, due mostly to Joint Staff support, but skeptical Pentagon civilian

officials were looking to harvest funds from the program and would come back for another try.

In the 1990s, USAF also canceled its plans to develop a multirole fighter follow-on for the F-16. Along with the Navy, the Air Force began a new effort called the Joint Advanced Strike Technology program, or JAST. It has led to development of the F-35—the third element of the Air Force’s “get-well” fighter plan.

In 1997, the name changed to Joint Strike Fighter and two principal teams headed by Lockheed and Boeing began work on demonstrators. The Pentagon added a requirement for an advanced short takeoff/vertical landing capability, too. So, the JSF program was now committed to doing the hardest thing possible: building a family of aircraft for at least four principal users with different priorities and requirements.

The cost and technology trades made it a certainty the fighter would face its share of challenges. Still, the demonstration phase proceeded apace. Boeing flew its X-32A on Sept. 18, 2000, and the Lockheed Martin team, which now included Northrop Grumman and British Aerospace, followed with a first flight of its X-35A on Oct. 24, 2000. Both competitors moved on to test other versions of their demonstrators to show carrier suitability and vertical takeoff and landing performance. In October 2001, the Pentagon announced the winner: Lockheed Martin.

The F-35 down-select struck a positive note, especially coming as it did barely a month after the 9/11 attacks. America was now embarking on a difficult course in dealing with the menace of terrorism, but for the time being, air dominance still seemed to be on a sound footing. It was not.

In the early years of the George W. Bush Administration, transformation was the watchword. What had never been clear was how the Pentagon under Defense Secretary Donald H. Rumsfeld would reconcile transformation initiatives with looming budget bills and the potentially high cost of the Global War on Terrorism. “The Bush Administration’s much-touted ‘transformation’ of the United States

military has always been something of a faith-based initiative,” noted James Kitfield in a *National Journal* article in January 2005.

A review of major programs took place in 2002. But it was not until the wars in Afghanistan and Iraq were well under way that the Pentagon struck, imposing a major funding cut on tacair programs.

In December 2004, the Rumsfeld Pentagon used a technical budget ruling known as a program budget decision to yank funds from a range of different programs. The cuts hit primarily from 2006 through 2010. For the air dominance force, it was devastating. Program Budget Decision 753 broke up the post-Gulf War fighter plan for good.

PBD 753 slashed \$10 billion from the F-22 procurement budget, leaving the program of record at an anemic level of just 183 F-22s. PBD 753’s reductions put the fighter force structure into the red. Without doubt, it left unfunded the Air Force’s requirement for fighters to meet deployment tasking for war plans under the national military strategy.

Unlike a roughly contemporaneous cancellation of the Army’s stealthy Comanche scout helicopter, the PBD 753 action drained future obligation authority out of the Air Force. The Army had been allowed to keep the Comanche’s \$14.6 billion in FY 2004-11 aviation funding.

The purpose of DOD’s PBD 753 action was not hard to fathom. Mi-

frankly, is totally enmeshed in Iraq, [and] has itself just canceled a major acquisition program in Comanche. ... So you look to the services that are more capital intensive, which is [the] Navy and Air Force.”

Pentagon Critics Dig In

Even so, some time went by before there was much public recognition of the impact of all of this on the Air Force’s air dominance plan. Air Force partisans continued to hope that OSD would relent and permit the Air Force to program funds to extend the F-22 buy beyond the 183 aircraft set by PBD 753.

The Pentagon civilians did not budge, however. Most intransigent of all was Deputy Defense Secretary Gordon England, whose opposition to the fighter had overtones of an obsession. By spring 2008, time was running out. F-22 production was starting to wind down; fresh orders would be needed

Darnell estimated a gap would open in 2017. By 2024, USAF would be short of its requirement of 2,250 fighters by some 800 aircraft. This would leave USAF with an insufficient number for two major theater wars and other taskings as laid out in the national military strategy completed in 2005.

The startling conclusion was not so much the shortfall itself, but the fact that financial decisions of the early 2000s had been made without regard for reconciling requirements and strategy. The Pentagon did not present supporting analysis for the decisions in PBD 753. There was no announcement that the future threat had changed—just that the future should stop being such a problem for Pentagon planners.

Secretary of Defense Robert M. Gates perfectly encapsulated this “I’ll-think-about-it-tomorrow” attitude with his new term of derision—“next-war-itis.”

DOD photo by TSgt. Adam Stump



Gordon England (r), the Bush Administration’s deputy secretary of defense, had a big hand in weakening the F-22 program. In the background is Marine Corps Gen. James Cartwright, JCS vice chairman.

chelle A. Flournoy, a former Clinton Pentagon official who was at the time working at the Center for Strategic and International Studies, described it this way: “The general philosophical shift you see in PBD 753 and the Pentagon’s transformation efforts is from a military that is overinvested in dealing with conventional threats and underinvested in preparing for unconventional threats.”

Only a few truly criticized the Raptor cuts. More prevalent was the attitude of Dov S. Zakheim, a former Pentagon comptroller: “If you were only going to go after acquisition accounts, you couldn’t go after the Army, which,

if the line were to stay intact into the term of a new President. The post-Gulf War plan was now in tatters. Lt. Gen. Daniel J. Darnell, the Air Force’s deputy chief of staff, air, space, and information operations and plans and requirements, testified in April 2008 that the truncated F-22 buy and a major stretch-out in F-35 production would leave USAF short of its force structure requirements.

In a May speech in Colorado, Gates remarked: “I have noticed too much of a tendency towards what might be called ‘next-war-itis’—the propensity of much of the defense establishment to be in favor of what might be needed in a future conflict.”

Saddled with Rumsfeld’s decisions and Gates’ view of the problem, the air dominance plan could not be deader than it is at this moment. ■

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