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COMBAT AIR FORCES IN CRISIS

By Rebecca Grant

Mitchell Paper 1



Brig. Gen. Billy Mitchell

On September 12, 1918 at St. Mihiel in France, Col. William Mitchell became the first person ever to command a major force of allied aircraft in a combined-arms operation. This battle was the debut of the US Army fighting under a single American commander on European soil. Under Mitchell's control, more than 1,100 allied aircraft worked in unison with ground forces in a broad offensive—one encompassing not only the advance of ground troops but also direct air attacks on enemy strategic targets, aircraft, communications, logistics, and forces beyond the front lines.



Mitchell was promoted to Brigadier General by order of Gen. John J. Pershing, commander of the American Expeditionary Force, in recognition of his command accomplishments during the St. Mihiel offensive and the subsequent Meuse-Argonne offensive.

After World War I, General Mitchell served in Washington and then became Commander, First Provisional Air Brigade, in 1921. That summer, he led joint Army and Navy demonstration attacks as bombs delivered from aircraft sank several captured German vessels, including the SS *Ostfriesland*.

His determination to speak the truth about airpower and its importance to America led to a court-martial trial in 1925. Mitchell was convicted, and resigned from the service in February 1926.

Mitchell, through personal example and through his writing, inspired and encouraged a cadre of younger airmen. These included future General of the Air Force Henry H. Arnold, who led the two million-man Army Air Forces in World War II; Gen. Ira Eaker, who commanded the first bomber forces in Europe in 1942; and Gen. Carl Spaatz, who became the first Chief of Staff of the United States Air Force upon its charter of independence in 1947.

Mitchell died in 1936. One of the pallbearers at his funeral in Wisconsin was George Catlett Marshall, who was the chief ground-force planner for the St. Mihiel offensive.

ABOUT THE MITCHELL INSTITUTE: The General Billy Mitchell Institute for Airpower Studies, founded by the Air Force Association, seeks to honor the leadership of Brig. Gen. William Mitchell through timely and high-quality research and writing on airpower and its role in the security of this nation.

ABOUT THE AUTHOR: Dr. Rebecca Grant is an airpower analyst with nearly 20 years of experience in Washington, D.C. She is a Senior Fellow of the Lexington Institute and president of IRIS Independent Research. She has written extensively on airpower and serves as director, Mitchell Institute, for the Air Force Association.

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March 2009

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LOOMINGS

It was early afternoon, May 30, 2007. Willie Mayberry, a citizen of Knox County, Indiana, looked up into the sky to see two modern tactical fighters staging a mock dogfight high overhead. Because the Air National Guard operated a big fighter base only 150 miles west in St. Louis, the sight of such warplanes was common enough in southwest Indiana. Still, these two aircraft were about to put on quite a show.

"I saw one of them make a loop and start to lose altitude," Mayberry said. "Then, all of a sudden, I saw the pilot eject. The seat separated from him, and I saw the parachute open." Down came the F-15 into a field between two farmhouses, where it instantly burst into flames. "I saw a billow of black smoke and then a big old ball of fire," Mayberry recounted.

The pilot, with 15 years' experience, walked away from the crash, but not before answering questions from another bystander who reached him shortly after he parachuted to Earth. The question: What happened? "The jet was just unresponsive," the pilot told the witness. And little wonder. The F-15's wings had been ripped right off in flight.

In the years of World War II, American manufacturing on the grandest scale put everything technology could offer in the hands of the two-million man US Army Air Forces. By 1944, Gen. H. H. "Hap" Arnold's USAAF was receiving 43 percent of War Department appropriations.¹

He knew that would not last very long when the economy reverted to peacetime operations. Congress would be tempted to look at the mountains of aircraft and, not recognizing that they had become obsolete, acquire a false sense of security, Arnold thought. So, he chartered Theodore von Karman to draft a plan for the core of fast-paced research and replacement of equipment to continue as the Air Force entered the jet age.

In October 1945, Arnold went to Congress and explained the problem: "We must remember at all times that the degree of national security rapidly declines when reliance is placed on the quantity of existing equipment instead of its quality. ... We must count on scientific advances requiring us to replace about one-fifth of existing Air Forces equipment each year, and we must be sure that these additions are the most advanced in the world."²

PART I. A DANGEROUS MOMENT

Dictionaries define a crisis as "an unstable situation of great danger or difficulty." Danger and difficulty are words that have become only too appropriate in describing the situation of the United States Air Force's combat formations. Today is a time when aged fighters fall out of the sky, and the nation

bets its basic security on a force that is older—by far—than at any time in the Air Force’s more than 60-year history.

There is no single “official” definition of Combat Air Forces. Airmen often use the term to refer to fighter, attack, bomber, and some intelligence-surveillance-reconnaissance (ISR) assets, most of which come under the jurisdiction of Air Combat Command but some of which report to US Air Forces in Europe and Pacific Air Forces. Within that grouping, the fighter and attack force forms the core of USAF’s manned and unmanned striking power.

It is American airpower’s center of gravity and it has already undergone irrevocable change and damage.

Fighter and attack aircraft are aging faster than they can be replaced. The way out of this crisis has been blocked by the cut in F-22 Raptor production and budget-driven delays in production of the F-35 Lightning II, also known as the Joint Strike Fighter (JSF). As a result, the service is trying to figure out how to do what it has never done: accept into its aircraft mix a large number of less-capable legacy forces.

The USAF Chief of Staff, Gen. Norton A. Schwartz, described the change as going from “low risk” to “moderate risk.”³ The nature of the risk, of course, is that airmen will be unable, in a crisis, to successfully carry out their joint missions.

The crisis of the Combat Air Forces stems from several contributing factors. They include budget woes, uncertainty about the future roles for Combat Air Forces, and what to do about aircraft committed to homeland defense under a situation of threatened air sovereignty.

The crisis begins with a strategic outlook which has committed the Air Force to a deliberate policy of accepting higher military risk through lack of modernization of its fighter, attack, and bomber forces. The idea of taking a chance is not new. Others have done the same on four different occasions, for four rather different reasons.

■ In the first Clinton term (1993-97), DOD reduced Air Force combat forces and delayed modernization in order to reap a “peace dividend” after the Cold War. It did so, however, when USAF possessed a large inventory of relatively young aircraft, and it coordinated with internal USAF plans to cut older force structure and to invest in new fighters.

■ In the second Clinton term (1997-2001), the Pentagon took a major risk with the future of the Combat Air Forces. It used the Quadrennial Defense Review as a justification to reduce—from 448 to 339—the planned program quantities of F-22s.

■ In the first George W. Bush term (2001-05), Secretary of Defense Donald H. Rumsfeld and his underlings sought to “skip a generation” of weapons. In December 2004, a budget memo eliminated funding for F-22s after 2010,

capping the program at 180 fighters. Just as important, Rumsfeld extracted from USAF accounts \$40 billion in future modernization funding, curtailing F-35 annual production.

■ In the second Bush term (2005-09) and the first months of President Barack Obama's Administration in 2009, Secretary of Defense Robert M. Gates has emphasized development of US irregular warfare capabilities and downgraded modernization for long-term threats to a lesser priority, mostly to save money. The USAF fighter force has suffered from this.

The fact that this risk comes at a potentially dangerous moment is widely acknowledged. There are more challengers to USAF Combat Air Forces than at any time in the past 15 years. Gates even wrote in January 2009: "Both Russia and China have increased their defense spending and modernization programs to include air defense and fighter capabilities that in some cases approach the United States' own."⁴

Opinion has split on the question of how much the nation should care about maintaining military forces powerful enough to stand up against the best front-line adversary systems flooding the international market. This difference of opinion has inexorably driven the Combat Air Forces to the point of crisis.

After coming to the Pentagon in December 2006, Gates opted to continue to question the need for such systems. The net result is lack of acceptance for putting a priority on buying new fighters. The 2008 National Defense Strategy placed emphasis on preparing for irregular warfare. As Gates described it, the strategy concludes that:

"Although US predominance in conventional warfare is not unchallenged, it is sustainable for the medium term, given current trends. It is true that the United States would be hard-pressed to fight a major conventional ground war elsewhere on short notice, but as I have asked before, where on Earth would we do that? US air and sea forces have ample untapped striking power should the need arise to deter or punish aggression—whether on the Korean Peninsula, in the Persian Gulf, or across the Taiwan Strait. So although current strategy knowingly assumes some additional risk in this area, that risk is a prudent and manageable one."

Schwartz has described the Gates decision to downgrade investment for conventional war as a needed move, though one that will in fact increase the level of risk that the Air Force will face when it engages in future major combat operations.

Gates' widely quoted statement that US air forces have "ample untapped striking power" to deter or punish aggression was subtly worded. By focusing his comment narrowly on a short action to deter or punish a foe, the Pentagon chief deftly avoided having to address the class of risks—ranging from small operations to major campaigns—that for decades has been used to balance force structure size and quality.

Planners for the Combat Air Forces depend on constant infusions of advanced technology, much as Arnold anticipated more than 60 years ago. Replacing 20 percent of the force every year is no longer necessary, because the systems don't go obsolete as fast as they did in the 1940s. Still, the USAF Combat Air Forces are suffering erosion in what Gates called their "untapped striking power."

The epicenter of the crisis is the very high age of the manned fighter and attack platforms. The standard euphemism—"aging aircraft"—no longer suffices; these aging aircraft have become downright old. For example, the active fighter and attack force, even including the brand-new Reaper unmanned aerial vehicle (UAV), counts just 45 percent of its inventory as being younger than 18 years. That used to be the very highest end of the age structure.

And the situation is certain to get worse. By 2014, the share of fighters of more than 18 years of age will constitute a whopping 77 percent of the force—the highest percentage recorded in the more than 100-year history of USAF and its predecessor organizations in the Army.

To the extent that the sky is going to fall, it has already fallen. It is too late to avert the crisis. Old platforms and years of inadequate procurement have set the force structure on an all but irreversible downward course for at least the next several years and probably much longer. Now, the Air Force is assessing the risks and remedies that will help it find ways to cope with an extremely high proportion of legacy aircraft in the Combat Air Forces.

The fact that this paper calls attention to the crisis in the fighter, attack, and bomber fleets is not meant to gainsay other problems. Failure to begin buying a new tanker over the past seven years has been a humiliating and disastrous shortcoming. If structural problems suddenly were to lead to a grounding of all or part of the 50-year-old KC-135 tanker fleet, this could turn overnight into a crippling of the whole Air Force and, with it, the whole joint force.

Buying new Combat Air Forces and phasing out old ones is no easy business. In a recent study, the Government Accountability Office termed it "a costly and very challenging enterprise, requiring a delicate and dynamic balancing of funding, fielding schedules, and retirement plans between new system acquisitions and legacy aircraft to ensure that current and future forces can meet national security requirements at reasonable levels of risk."⁵

However, this crisis is not just about unit cost growth or purchasing power, although these both play a role. The problem is about how to chart a path ahead. Here, there is not one crisis—the aged force—but several, touching on the core role that Combat Air Forces are to play in the nation's defense.

The crisis began with unusual wartime budget conditions in the early 2000s. It has extended to delayed modernization and the challenges of working with a legacy fleet. Equally at issue is what role air forces are supposed to play in homeland defense, and how the Guard and Reserve will meet that mission.

Still another factor might best be described as “the crisis within”—a reluctance among airmen to debate, analyze, and promote the role of airpower in wars since 1991, which has led to obfuscation of the role of Combat Air Forces.

All of these factors feed into the next challenge: how to formulate a new requirement for the fighter and attack mission, and then articulate it sufficiently well in the political and budgetary arenas. Linked to it is a crisis in dealing with systems of air control between air and ground forces, as the Air Force and Army expand their cooperative wartime ventures.

To help explore these and other issues, the Mitchell Institute for Airpower Studies on Jan. 27, 2009, convened a day-long review of the current status of the Combat Air Forces, holding it at the Air Force Association headquarters in Arlington, Va. Attendees comprised some 20 experienced airpower practitioners, analysts, and commentators—uniformed and civilian, retired and active duty, from all communities and of varied political persuasions. The session was off-the-record, with no attribution of individual comments but with provision for use of views and conclusions.

This paper, greatly aided by the thoughts and conclusions adduced at the session, discusses each crisis in turn. It concludes with a discussion of formulating a new fighter and attack requirement.

PART II. THE BUDGET CRISIS

If there is a single overwhelming event in this story, it is the Rumsfeld Pentagon’s approval, on Dec. 23, 2004, of an internal DOD paper blandly titled “Program Budget Decision 753: Other Secretary of Defense Decisions.” PBD 753 produced a cut in fighter funding that was truly historic in nature. That is because the reduction destroyed USAF’s chances for regaining a normal balance between advanced forces and legacy forces in the manned fighter and attack missions of the CAF.

According to an official then serving in the Office of the Secretary of Defense, the decision was simply a matter of saving money.⁶ The budget decisions took place against a backdrop of highly unusual defense budget trends.

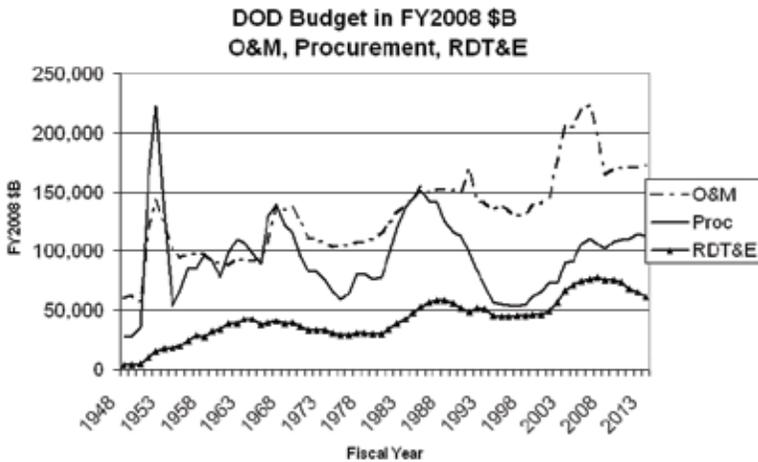
The War Years

Underlying the problem was the pressure generated by Bush’s Global War on Terror, which manifested itself in expensive combat operations in Afghanistan and Iraq. During the 2000-09 decade, the purchasing power in the defense budget has been squeezed by soaring operation and maintenance (O&M) costs, more so than in any other war that the nation has fought since World War II.

America has for decades ramped up defense spending when faced with

big threats and throttled back on the expenditures as these dangers have receded. As a result, the line chart depicting US defense procurement over the past 60 years or so looks like a maladjusted sine wave. However, this pattern of expenditure got the job done. It allowed for an expansion of arms spending at times of maximum danger while maintaining a cycle of procurement replenishment sufficient to keep the force reasonably young and therefore keep long-term O&M costs in check.

After the Cold War, the trend shifted in two principal ways. First, fighter and bomber procurement spending plunged, reducing the number of aircraft coming out of the pipeline. Second, O&M costs soared, as aging aircraft required more and more care and upgrades to stay in fighting trim. For the last 15 years, US military operations have run on operations and maintenance funding without commensurate new procurement to sustain the force.



Now the data are flashing signs of a new and worrisome pattern. From about 2002 onward, the spike in operation and maintenance spending exceeded the peak years of spending in the Korean War and Vietnam War—conflicts in which the US maintained at least one million more individuals in uniform. Few realize it, but the funding of O&M at this exorbitantly high level has in effect reset the pattern of the US defense budget.

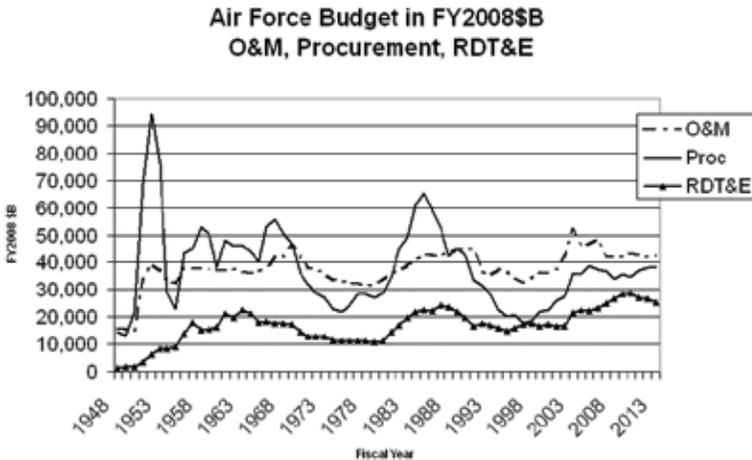
The single most stunning trend in the defense budget in this decade is the tsunami of O&M costs that built up between 2004 and today. From a relative low of \$129 billion in 1997, O&M spending turned up in 2001 after the start of the war in Afghanistan, but then turned dramatically up after the start of the war in Iraq, rising to \$234 billion in 2008 (figures are expressed in terms of constant, inflation-adjusted 2008 dollars). And this figure does not include all of the war supplemental funding for Iraq and Afghanistan, which would magnify the trend even further.

Put in simplest terms, the armed forces are burning up current military capa-

bility and, along with it, the money needed to fund systems that will replace that capability in the future.

Washington's most astute budget analysts have remarked on the unnatural growth of O&M spending. Steven M. Kosiak, formerly of the Washington-based Center for Strategic and Budgetary Assessments, and now associate director for defense and international affairs within the Office of Management and Budget, noted that the supplemental spending has grown dramatically, but stated, "It is unclear what accounts for most of the growth."⁷

There is a larger trend, too: The lavishness of O&M spending is driving the Pentagon topline to unprecedented heights. The overall defense budget, expressed in terms of outlays on major force programs (exclusive of supplementals), has topped \$500 billion (constant dollars) only nine times in the past five decades. These were in the years 1967 (the height of the Vietnam War); 1985, 1986, and 1987 (the peak of the Reagan rearmament program); and 2004, 2005, 2006, 2007, and 2008 (the Bush war years).



For Air Force modernization, this rise in operation and maintenance has been catastrophic because it has crowded out the proper funding of investment accounts. As shown in the chart, the USAF budget has largely mirrored the overall DOD trends, with a deep fall in procurement spending and rising O&M costs.⁸ A recent uptick on procurement still has not created the recapitalization bulge seen in past decades. As Kosiak noted in his analysis of the 2009 budget request: "This 'migration' of funds from procurement does not bode well for DOD's long-term modernization plans."⁹

These budget facts are significant for what they tell about the implementation of American defense strategy. The late 1950s show a significant increase in procurement and research, development, test, and evaluation (RDT&E) as the Eisenhower Administration implemented the "New Look" in defense

policy, emphasizing USAF's strategic nuclear forces and airpower generally. A similar rise in procurement took place when the Reagan Administration fully funded conventional and strategic forces to meet the challenge of Soviet military expansion.

Accordingly, the Air Force budget saw a procurement spike, due to rapid acquisition of systems such as the B-1 bomber, KC-10 tanker, and F-16 and F-15 fighters, along with research and development of the B-2 bomber.

It is important to remember that these procurement "humps" resulted from deliberate national strategy choices. In contrast, the changes in defense funding during the past decade have clearly been ad hoc and incremental. Certainly the commitment to opposing terrorism represented a clear national policy. However, there was no corresponding set of policy decisions guiding the course of procurement, operation and maintenance, and research and development accounts.

Not until the 2005 Quadrennial Defense Review (made public in early 2006) did the Pentagon begin to enunciate the first facets of a strategy for combining conventional operations, irregular warfare, and homeland defense. Still, except for emphasizing irregular warfare, there was not an accompanying period of aligned fiscal guidance.

Compounding the problem is a rise in RDT&E funding, as a proportion of the total budget. Note that, in 1998, the lines for Air Force procurement and Air Force RDT&E nearly touched. This relative shift of position in procurement and R&D signaled a philosophical shift that has crossed two Administrations. It was not a policy per se to simply leave systems in RDT&E; rather, the trend shooting upward encompasses decisions of several types: early cancellations of programs, dramatically lower buys, delayed procurement, and, toward the end, renewed investment in RDT&E under the banner of transformation.

Now clear for all to see is the fundamental result: For the first time since World War II, the Air Force has failed to re-equip itself.

These macro budget trends explain the overall cash shortage that led to decisions on cutting future procurement. Do they explain why fighter and attack modernization, in particular, began to fail well before the Gates-led emphasis on irregular warfare?

The answer is no. Concerns about the cost of advanced aircraft have attracted considerable attention. Accusations about program management and cost growth have been traded back and forth between the Hill, the press, and the Pentagon. Certainly, the development of the ambitious technologies now proved in the F-22, for example, was not easy. However, there are two points to keep in mind.

First, the high cost of advanced combat aircraft is not a new problem. It has been around for decades. One of the best examples is the B-29 bomber of

the 1940s. It encountered significant cost and technical difficulties, and it became controversial even in the midst of an all-out war.

Second, aircraft aren't the only expensive weapons in the US arsenal. The costs of other types of advanced systems—warships, satellites, submarines, helicopters—have also reached towering heights. Rising shipbuilding costs have been a big concern for Navy planners. In 2006, the RAND Corp. released a sobering study documenting how average annual costs for Navy ships grew between seven and 11 percent per year from 1950 to 2000. That was far in excess of typical inflation rates in most years.

RAND's analysis found that economic factors such as expanded labor and material costs accounted for part of the price growth, while the fundamental decision to build bigger, better, and heavier ships explained the rest. As the RAND team put it, "Most of the growth beyond inflation is due to changes in the customer-driven factors."¹⁰

All costs increased substantially over the last 30 years, after adjusting for inflation. The cost of a single nuclear attack sub, as expressed in constant dollars, jumped from \$484 million in 1967 to \$2.4 billion in 2005. Amphibious ships of several types that once averaged \$229 million apiece have grown to cost \$1.1 billion each. Guided missile destroyers rose from \$515 million to about \$1.2 billion in the same time period.

Without doubt, there is plenty of room for improvement in the nation's acquisition of surface warships, satellites, submarines, and land force combat systems. Blaming unspecified "cost overruns" as the root cause of the crisis in the Combat Air Forces is moralistic and borders on the superstitious. Nor is "high technology" primarily at fault. As the RAND shipbuilding study authors took care to explain: "Improving ship capability and effectiveness is not, of course, a bad thing."¹¹

PART III. LEGACY AIRCRAFT CRISIS

The quest for more combat power through introduction of new systems clearly has hit the wall. Once, USAF airmen used the word "legacy" in reference to the service's heritage or to traditions passed from older generations of pilots to younger ones coming up in the ranks. Now, the term has a different use. It refers to handing down aircraft from one generation to the next. There has never been anything like it.

No air force ever has had the ideal inventory, composed entirely of latest generation fighters, attack aircraft, and bombers. USAF has always worked to balance older, obsolescent force structure with the introduction of new, "front-line" platforms. The art always lay in how to balance numbers and quality. During the Cold War, different nations chose different paths. The strategy of the USSR, China, and others focused heavily on quantity. And, in fact, older MiG-17s and MiG-21s, in the right hands and with the proper

combat tactics, proved formidable adversaries in the wars in Korea and Vietnam.

Up until the very end of the Cold War in the late 1980s, USAF officers fully expected to have to fight outnumbered against the Soviet Union. The strategy was to keep an edge in performance of the fighter and attack missions with superior platforms, systems, and tactics. Budgets were always a factor; never did the fighter and attack forces have unlimited spending power. In fact, the dominance of strategic nuclear forces generated tough arguments over every design and major program. The “high-low mix” of F-15s and F-16s was designed to bring the right capability and numbers at an affordable cost.

The fighter and attack requirement centered on the massive air battle that USAF and NATO would fight if war began in Europe. This was not just a continentwide dogfight. The US planned, by quickly deploying airpower as ground forces arrived, to hold off enemy forces long enough for the West to pull together a war-winning force. Ground forces counted on the air forces to strike a large share of the moving Warsaw Pact echelons—an idea reflected in the AirLand Battle doctrine of the day.

There could hardly be enough airpower for this scenario. Noted airpower analyst Christopher J. Bowie has maintained that, in the war plan, USAF was planning to commit a majority of its total fighter force of about 3,700 operational aircraft. “Seven hundred combat aircraft were in the European Theater, and USAF would reinforce this with an additional 1,800 fighter aircraft,” wrote Bowie. “The Air Force planned to move 1,600 of these fighters in just 10 days—more than two wings per day.”¹²

With the collapse of the Warsaw Pact and the evaporation of Cold War tensions, a smaller air force seemed to be adequate; USAF had no longer to face the prospect of war with a numerically superior Soviet air force. Moreover, technological advances demonstrated in Operation Desert Storm in 1991 showed that each fighter in the future would be capable of attacking more targets than was the case with earlier aircraft. The next generation of fighters—F-22 and F-35 aircraft—would be stealthy, multirole systems designed to carry, between them, the entire fighter-attack mission.

USAF made a strenuous effort to reconfigure itself for the “New World Order” and to do so quickly. By 1993, the Combat Air Forces had shed a great deal of force structure and cut back overhead of all types, ranging from bases to major commands, from uniformed end strength to the pilot-production pipeline. The Clinton Administration’s so-called “Bottom-Up Review” of military forces and policy, carried out in 1993, determined that USAF should have no more than 20 tactical fighter-wing equivalents (FWEs), down from 38 in the 1980s and 26 under the George H. W. Bush Administration.

Classified wargames conducted throughout the 1990s reconfirmed, time and again, the requirement for air forces ready to win two simultaneous major regional conflicts.

The Clinton Administration's relaxed approach to fighter modernization was made easier by the fact that the USAF inventory was full of relatively young airframes with thousands of hours of service life left on them—the result of massive fighter buys in the Reagan years. The strong inventory and developmental nature of the stealth fighter programs put off the need to build a solid justification for new fighter modernization.

Plans called for fielding a fighter force 100 percent composed of advanced F-22s and F-35s. For a time, it was clear, there would be a transition from legacy F-15s and F-16s to the new airframes. In due course, the plan approved in the 1990s would have replaced all F-15Cs, F-16s, and A-10s with 381 F-22s and 1,763 F-35s. The F-35 part of that plan survived, despite devastating budget cuts imposed by the George W. Bush Administration. "JSF replaces all our F-16s and all our A-10s," then-Lt. Gen. Donald J. Hoffman reported in April 2008. However, Hoffman added, "they may not live ... until the last JSF comes along."¹³ Indeed, the last F-35 won't be built until the 2030s, under current plans.

Retaining a Legacy Force

The key now will be to come up with the right balance of old and new aircraft. "We're ... already starting to review what that mix ... might have to be," USAF Lt. Gen. Daniel J. Darnell, the Air Force's deputy chief of staff for air, space, and information operations and plans and requirements, told the Senate Armed Services AirLand subcommittee in April 2008.

Retaining a legacy fighter force has never been part of the philosophy or ethos of USAF's Combat Air Forces. In fact, this is more a hallmark of other air forces which resisted giving up old force structure, sought comfort in raw numbers, and therefore could not invest fully in advanced capabilities.

Leading airpower nations such as the United States and Britain kept the number of latest generation aircraft high and the number of older forces low. A RAND study completed in 1995 found 87 percent of the RAF's inventory to be front-line forces, with only 13 percent being old forces. The same study estimated that, in Poland that same year, only about 10 percent of the fighters were modern.¹⁴

The active component of USAF modernized at a pace to keep the percentage of legacy forces low. Aircraft procurement was steady and retirements timely even as the force was reduced from Cold War peaks.¹⁵ The total number of active fighters fell by 1,065 aircraft from September 1980 to September 1995. From 1980 through 1995, the percentage of legacy forces was typically under 12 percent of the active fighter force. The exception came just before the handoff from the F-4 to the F-16 picked up pace. The percentage of legacy aircraft reached 28 percent in September 1985, for example, as 804 F-4s remained in the force. However, by September 1990, the balance was back to 12 percent legacy and 88 percent advanced forces. About 285 fighters, mainly F-4s, had been retired, and more F-16s and F-15s entered the force. It was a good thing, as hundreds of these new aircraft were deploy-

ing to the Persian Gulf to wage Operation Desert Storm beginning on Jan. 17, 1991.

Five years later, a significant cut had been made to take the active force from 2,957 to 1,878 fighters. This left the active fighter and attack force near the ideal. Nearly 99 percent of the active force of A-10s, F-15s, F-16s, and F-117s were under 18 years of age. Only six aircraft—all F-15s—logged in as older than 18 years. Of course, many older aircraft had been transferred to the Air National Guard and Air Force Reserve Command. However, the fighter force at this stage was so strong that it more than justified decisions not to procure anything more than a trickle of new F-16s or F-15s.

Because of the optimum age of the force in 1995, plans were redrawn to reflect a decision to wait on introduction of the F-22 and F-35. A RAND study completed that year projected that the percentage of legacy systems in 2005 would be only 10 to 15 percent.¹⁶ Thus, the decision to wait was a measured one, with minimal risk to the overall strength of the force. No one at the time foresaw that the risk lay in losing the rationale for recapitalization altogether.

Things rocked along like this for a while. By September 2000, it had become apparent that the sharp edge of the fighter force was starting to disappear. The force was smaller at 1,674 active duty fighters, and the percentage was trending toward legacy systems, with 22 percent of the aircraft now aged 18 at least. Ominously, a large group of 165 active F-15s pushed over the 18-year mark that very year.

Between 2000 and 2005, the full effects of block aging began to emerge for all to see. By September 2005, the legacy percentage of fighter and attack aircraft had climbed to 41 percent of the total of 1,567 active aircraft. The presence of 47 brand-new F-22s increased the force's capability but did little to alter the overall trend toward old fighters. The Rumsfeld Pentagon wanted to "skip a generation" but, in a real sense, USAF had already skipped a generation—in the 1990s—and could ill-afford to skip two in a row. That, however, is exactly what is happening.

The force today has completely lost the new/old balance. The active inventory contains about 1,404 manned fighter and attack aircraft, along with 22 unmanned MQ-9 Reaper attack aircraft. (Another 800 or so are in the Guard and Reserve.) Just 620 of those active duty aircraft—44 percent of the total—are 18 years old or younger. Fighters in the Guard and Reserve are all older than 18 years.

The situation will get worse, even assuming the best case, in which USAF acquires every currently planned aircraft. By 2014, only about 341 fixed-wing fighters will have been around for fewer than 18 years. F-22 production might continue for a while to a best case of 245 or so fighters. About 100 F-35s will be in the force. Production of the F-35 will not have reached a point where significant replacements of older USAF force structure can begin. As a percentage, assuming no retirements, legacy fighters more than 18

years will constitute 77 percent of the force in 2014, the highest percentage ever.¹⁷

Unprecedented Situation

In the past, a few strong designs such as the F-4 Phantom II of the 1960s and 1970s have served for several decades. Still, the current USAF plans are based on the assumption that the life span of fighters can be stretched far beyond anything seen in previous experience. A comparison of the F-4 and the F-16 illustrates this change.

The last major legacy fighter system to retire from USAF was the F-4. (The F-117 has been retired since then, but fewer than 60 Nighthawks were produced.) Between 1963 and 1979, the Air Force built 2,874 F-4s. Many were adapted for specialized uses such as reconnaissance and suppression of enemy air defenses. F-4G Wild Weasels flew about 900 sorties in Desert Storm. The last F-4s left service in 1996, by which time they comprised only a small percentage of the fleet. A total of 33 years elapsed from production start to final retirements.

By comparison, the full-scale development version of the F-16 made its first flight in December 1976. It will eclipse the Phantom's 33-year mark this December, but its stand-down is still well more than a decade away. The Air Force plans to keep F-16s in the force until 2025. Specialized capabilities of the F-16CJs—the surface-to-air missile (SAM) killers—are in most demand.

The aging of the design and the individual airframes is unprecedented. Quite simply, this is changing the definition of what constitutes a legacy fighter. The prospect of retiring whole systems is all but off the table, and the definition now falls more on aging, with systems over 18 years of age categorized as legacy systems.

The F-16 design will be in service for half a century when it retires in 2025. Service life extensions to increase the fighter hours could take the F-16 past the half-century mark. While the F-16 has been upgraded significantly, it is the same design that grew out of a lightweight fighter development program of the early 1970s. The F-16 has proved battle-worthy and versatile, but it is not now and can never be a stealthy aircraft—a perilous situation, given the worldwide proliferation of advanced, “Generation 4-plus” fighters and highly sophisticated “double-digit” surface-to-air missile systems.

Tactical Solutions

USAF is striving to compensate for materiel weakness in nonmateriel ways. The Air Force, for example, is developing tactics to combine the F-22 with legacy fighters in scenarios with low or moderate air defenses. This may be a prudent move, given the current acquisition outlook.

One focus has been on combining F-15s and F-22s in an air battle against adversary forces. “When the F-15s are up doing their tactics, we’re kind

of back behind them a little bit and helping them out if they have trouble,” explained one pilot in an interview for *The Atlantic*.¹⁸ He added: “If an F-15 is having some trouble dealing with electronic countermeasures where he can’t shoot, that’s when we’ll go in and get rid of that guy for him. I think the synergistic effect of having a couple of F-22s in with those fourth-generation fighters is great. Based on the buy, I think we’re going to have to do that, if we stay at the same number of F-22s. We simply don’t have enough, so we have to find ways to integrate like this to optimize our capability.”

However, the unsolved worry for the future is an environment combining both highly capable “Red” fighters and advanced SAMs. Deployed SA-20s could well complicate or invalidate these tactics because of the added danger posed to nonstealthy aircraft. The SA-20 is believed to have a range against conventional aircraft of at least 75 miles, which would mean that aircraft other than stealth F-22s and F-35s would be operating in contested airspace.

No doubt USAF tacticians will work quickly to find ways to combine legacy aircraft in all scenarios. The F-16CJs, which are specially equipped for destruction of enemy air defenses, will be in particular demand. Yet it is an adjustment for commanders, striving to make best use of the limited numbers of F-22s, to also have to assist F-15s and F-16s on their missions.

PART IV. AIR SOVEREIGNTY CRISIS

In the past decade, the Air Force has taken on a mission that never was envisioned by Cold War force cutters: protection of US air sovereignty. The growing weakness of the aged fighter fleet will start to affect the air sovereignty of the country in just a few years. Where the active force at least has the largest numbers of younger fighters, the Guard and Reserve forces, which carry a big share of the homeland defense mission, already face enormous problems. A recent report from the GAO found that, unless new aircraft arrive soon, more than 60 percent of the air sovereignty sites will be closed down by 2020.¹⁹

The air sovereignty mission took on critical national importance after the hijacked-airliner attacks of Sept. 11, 2001. Air sovereignty includes the aircraft on patrol over critical sites to intercept hostile aircraft. Patrols increase in times of heightened alert to provide full coverage against airborne threats. Currently, the main focus remains on preventing another 9/11 type of attack. The future may also require defenses against UAVs and cruise missiles. Either way, air sovereignty has become an essential mission within homeland defense, and the mission has fallen to the Air Force.

In dealing with this matter, the age of the F-16 fleet is crucial. The bulk of F-16s were acquired in the late 1980s; 479 of the 700 F-16s in the active inventory entered the force between 1986 and 1994. The reserve component forces manning air sovereignty alert sites are even older. Already, there is a cluster of aged F-16s in the Guard. A total of 289 Guard F-16s entered

the force between 1986 and 1988. On top of this, the active force and the Guard together have 191 F-16s acquired before 1986.

The saga of the homeland air defense mission is an instructive tale. Air defense interceptors numbered in the thousands in the 1950s. After the Cold War, the threat of Soviet bombers coming over the pole or across the seas vanished. Changing strategic requirements saw the number of air defense fighters fall to 180 when the Cold War ended. NORAD had divided the continental United States into three regions, the airline-heavy Northeast Air Defense Sector, the Southeast Air Defense Sector, and the Western Air Defense Sector—everything west of the Mississippi.

Loud calls to more quickly disband the remaining interceptor force came from the Joint Staff, among others. In 1994, the GAO complained that the Air Force was not moving fast enough. A report contended “air defense is no longer needed and could be disbanded at an annual savings of as much as \$370 million” allowing other units “to handle what has become the defense force’s current focus—intercepting drug smugglers.”²⁰ Specifically, the report protested that the 1993 Chairman’s Roles and Missions Review had called for eliminating or sharply reducing the air sovereignty force. At the time, this consisted of about 180 fighters.

For all of these reasons, getting rid of the homeland defense fighters seemed like a good idea, and few lamented the decline of the interceptor force. By the late 1990s, there was discussion of a “four-corners strategy” in which just four bases would keep interceptors on alert. However, the final posture came to rest at seven bases, each with two fighters on alert in special shelters, their crews ready to take off within a few minutes.

The air defense surge on Sept. 11, 2001, upended the old concept of air sovereignty. At 0931 Eastern time there were 5,107 flights airborne in the continental US. At 0940, the FAA ordered all flights grounded. Fighters were already airborne from the alert sites at Cape Cod, Mass., and at Langley AFB, Va. The District of Columbia Air National Guard launched F-16s to help protect the capital. Tankers, AWACS, and more fighters joined in to patrol the skies. “Pretty soon fighters were all over the sky, like you kicked a hornet’s nest,” said Col. Robert Marr, who was the director of the Northeast Air Defense Sector.²¹ Marr said the dense northeast sector was tracking 21 unidentified flights at one point.

Fighters flew 179 missions in the next 18 hours. A total of 301 aircraft were either airborne, on alert, or generated for potential tasking. Covering the massive US airspace posed immediate challenges with communications relays. Fighters in Hawaii went on alert, and Alaska’s interceptors shadowed inbound airliners from Asia in several dramatic encounters.

The 9/11 experience showed just how deeply a homeland defense crisis could dig into the available fighter force. High alert postures persisted through the spring of 2002. Fighters patrolled New York and Washington, D.C., without a break. Fighters also gave air protection for the US President

and provided special coverage for events ranging from the Super Bowl and the 2002 Winter Olympics to the shuttle launches from Cape Canaveral, Fla. No one could have predicted that kind of air sovereignty tasking as decisions were being made to reduce alert forces a decade earlier.

By late 2002, a new level of tiered alert left a structure of 18 principal locations to support air sovereignty taskings. However, the mission has remained ad hoc as far as planning for the Combat Air Forces is concerned.

GAO shed light on the problem in a January 2009 report. "For example," GAO found, "if aircraft are not replaced within the next few years, our analysis of Air Force documentation indicates that 11 of the 18 current ASA [air sovereignty alert] sites could be without viable aircraft by 2020."²² The GAO report also criticized the Air Force for failing to take actions identified by NORAD and DOD to institutionalize air sovereignty operations as a steady-state, ongoing, and indefinite mission.

The approaching crisis in air sovereignty forces is a real departure from the best estimates of 15 years ago. Solving this piece of the Combat Air Forces requirement will involve difficult decisions not unlike those in sizing the outward-looking posture. Uncertainty about policy for the air defense mission adds complications to the balance of fighter procurement and retirement.

PART V. CRISIS WITHIN

The various pressure points on fighter and attack forces are not all external. Understanding the future dimensions of the fighter and attack role has been an internal problem for USAF. Before discussing what it may take to reformulate the requirement, it is important to explore what might best be called the crisis within.

While the lack of a clear national strategy for dealing with regional and peer threats has made it hard to reach consensus on the proper size for Combat Air Forces for the future, there is more to the story. There has been a marked reticence within the Air Force about exposing aircraft performance, campaign dynamics, and future requirements to scholarly debate.

Since Operation Desert Storm, there has been little official Air Force accounting on the exact role air forces have played in campaigns in Kosovo, Afghanistan, and Iraq. The net result is that airpower has slowly slipped to the edges of the defense debate, or off the page altogether. Over time this has added to analytic uncertainty about when and whether airpower is needed.

After Operation Desert Storm in 1991, the Air Force launched a project to lay out the role of airpower in exquisite detail. The Gulf War Air Power Survey occupied five volumes totaling more than 2,000 pages of reporting. The project was funded by the Air Force but was led by an independent team under

the direction of Eliot Cohen, a professor at The Johns Hopkins University's School of Advanced International Studies. Teams of academics compiled data on every sortie flown and bomb dropped and added narrative analysis of the air campaign. The final product was published in unclassified form in 1992, a year after the campaign concluded. Cohen published an article on the good and the bad of the air campaign, and several other scholars would go on to draw on the survey's work.

This would prove to be the last detailed, statistical assessment of an air-power campaign made generally available to the public.

The next large-scale air campaign was NATO's Operation Allied Force in 1999. Respected British military historian John Keegan praised it as an airpower-only victory. For all that, the Air Force was soon getting trounced in the after-action battle. The Air Force commissioned a study group to prepare its own review of the war. In the end, the team produced a massive classified document and a much shorter, unclassified report titled "Air War Over Serbia." The AWOS study quickly ran into trouble.

Evidently, the Air Force's brother services and the denizens of OSD were grievously offended at the idea of USAF pointing out the enormous achievement of airpower in the Balkans. This was the explanation of Grant T. Hammond, a professor at USAF's Air War College, Maxwell AFB, Ala., and now dean of the NATO Defense College in Rome. In early 2000, he wrote, "Several attempts at analysis of military action in Kosovo—at least two versions of the 'Air War Over Serbia'—have been embargoed by the Office of the Secretary of Defense."²³

According to Hammond, the problem was discomfort over crediting "airpower alone" with the victory. He went on to say the clamp-down was coming from as high up as Secretary of Defense William S. Cohen. "The Air Force performed well under very difficult circumstances and enjoyed a relatively spectacular operational, if not strategic, success," Hammond said. The Pentagon's move to keep the AWOS report from public view, he added, amounted to a kind of "ethical cleansing" on the part of the Pentagon.

Meanwhile a controversy sprang up over how many mobile targets were struck by allied aircraft—USAF, Navy, and NATO. On the one side was a surprisingly exhaustive study, conducted by US European Command, which claimed a significant number of kills of Serb artillery, tanks, and trucks. On the other side were press reports citing a Serb spokesman, who claimed a mere handful of losses. In *Newsweek*, notably, the Serb version prevailed; it claimed the air war had destroyed a mere 14 tanks.

The sour taste of the Allied Force after-action effort has persisted for a decade. It has deterred the Air Force from making any effort to produce public analysis of airpower effects after the Afghanistan campaign of 2001-02. It has similarly eradicated any chance that the Air Force would publicly outline its share of major combat operations in Iraq in 2003 or in the irregular war that has unfolded since then.

Summary information on sorties flown and aggregate tonnages of bombs dropped was released by the Air Force for the period from Oct. 7, 2001 to January 2002. There has been nothing since on the Afghanistan campaign.

The major air war of Operation Iraqi Freedom (OIF) was documented in "OIF by the Numbers," a collection of tabular material. This quick-reaction account of operations from March 20 through April 19, 2003 captured the types of platforms employed and sorties flown by major participants. It gave a top-level view of the types of targets hit and offered some statistics on time-sensitive targets struck and the heavy weight accorded to interdiction and close air support. To date, however, no other statistical record of Operation Iraqi Freedom for this period has been released. Again, the Air Force commissioned a major, classified study of operations, but an unclassified version has never seen the light of day. The lack of data has made it difficult to gauge changes in the fighter and attack requirement.

Interestingly enough, USAF has recently done a better job at releasing data on its support for land forces that are conducting stability operations. Statistics on the ongoing air operations for Iraq and Afghanistan began emerging from Central Air Forces (now Air Forces Central) in late 2004. AFCENT now keeps cumulative records of the air effort from 2004 onward.

Daily summaries of sorties flown and major engagements fought paint a picture of constant, dedicated support which has become central to the conduct of operations. *USA Today* and other press outlets have reported on major trends in the statistics, such as the acceleration of activity in Afghanistan from 2006 onward. However, there has been no official Air Force compilation or commentary on these activities of the Combat Air Forces or the theater mobility forces.

The lack of official, publicly available analysis after 1992 closely parallels the other crises now affecting the health of the Combat Air Forces. This is probably not a coincidence.

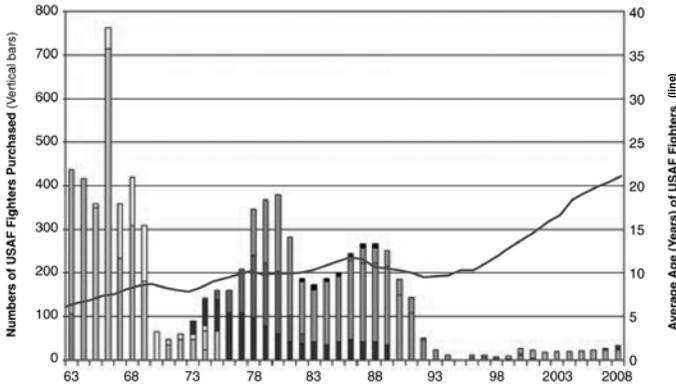
Perhaps the greatest unknown is just how airpower would be used in major combat operations of the future. One line of thinking is that more risk must be accepted in major combat operations. Supporting this is the premise that it is necessary to carry risk in topline capability in order to field immediate requirements for irregular warfare.

The growth of this dichotomy is perplexing and damaging—and situated very much in the struggles to provide ISR and other air component assistance to ongoing operations in Iraq and Afghanistan. An idea has grown up that the Combat Air Forces must take lower priority than joint force needs. Yet it is this very same Combat Air Forces that carries out joint taskings today and will do so tomorrow.

Shying away from discussion of airpower's battlespace roles and contributions does not, over time, make the task of planning one bit easier. Instead, it imperils broad understanding and informed debate about the role of Com-

bat Air Forces. When the last good set of statistics is nearing 20 years of age, there is a problem, and this analytic mini-crisis clearly is one of the Air Force's own making.

Air Force Fighters: Dwindling Purchases, Rising Age



Basic Data: US Air Force

If you want to know why USAF fighters are so old, look no further. In the '60s, '70s, and '80s, fighter purchases (vertical bars) generally oscillated between 150 and 400 a year. Turnover was heavy, so average age (line) hovered around 10 years. Then, in 1992, came the crash. Fighter purchases fell to almost nothing and have stayed in that desolate spot through three Presidencies. With no replacements, fighters have stayed in service, growing long in the tooth. The average fighter is now an unprecedented 21 years old.

PART VI. TOWARD A NEW REQUIREMENT

It's hard to set down a new fighter and attack aircraft requirement that takes into account irregular warfare, potential major combat operations, and the base of experience of the last two decades. Too many pieces of the puzzle are missing. As the discussion of the legacy mix makes clear, the sizing of the fighter portion of the Combat Air Forces has dropped through any previously known scale for USAF forces. Percentages of legacy to advanced forces are closer to those of the Warsaw Pact in the waning days of the Cold War.

Still, it is useful to define a new metric based on lessons from the past two decades of air campaigns. The new fighter requirement is actually a broader fighter and attack requirement and should be constructed so as to account for the new attack platforms, Predator and Reaper UAVs.

Here there is some good news. The great efficiency of combining fighter and attack missions has been apparent for decades and has been proved in several conflicts. However, from a war planner's perspective, the two missions retain discrete elements.

■ **Fighter mission.** Includes air superiority, defined as deterrence and defeat of adversary fighters and air defenses such as surface-to-air missiles.

■ **Attack mission.** The attack mission centers on delivery of ordnance for general-purpose and specialized missions. The attack mission was well-developed in World War II, Korea, and Vietnam, where specialized aircraft were adapted to provide light bombing capability without much obligation for air superiority missions. The last dedicated attack aircraft in the regular, active USAF inventory is the A-10. However, the Reaper UAV essentially fills an attack role.

Of course, fighters may spend a good deal of time in an “attack” role and this has earned nearly all current models the multirole sobriquet. It is much less likely that attack aircraft will do much in the way of the most strenuous air superiority missions—a thought to keep in mind.

Experiences of the last two decades from Desert Storm through Kosovo and the current operations in Iraq and Afghanistan suggest three primary categories of targets with important subcategories.

■ **Air superiority.** First is the requirement to win and hold air superiority. This includes defeat of enemy air forces and air defenses, and suppression of their residual elements. Some air superiority work takes place at the beginning of the campaign, and it should include attacks on ground targets such as air defense sites, integrated control sites, and runways. However, attacks against surface-to-air missile systems have continued throughout the campaign in both Operation Allied Force in 1999 and Operation Iraqi Freedom in 2003. The cat-and-mouse tactics plus the challenges of advanced systems such as the SA-20 are likely to make attacks on enemy air defenses an ongoing part of any future campaign.

The next two categories are strategic aimpoints and support to ground forces. Both of these have grown in the last decade to include diverse new missions. Efficient prosecution of both sets depends on air superiority; but there may well be times when joint commanders cannot wait to achieve full supremacy before proceeding.

■ **Strategic aimpoints.** These may include fixed or mobile military and regime support infrastructure. Within this is the subcategory of time-sensitive targets pursued at combatant commander (COCOM) direction. Depending on the target, these may be struck by available assets or may require combat air patrols specifically to be on call.

■ **Ground force applications.** In recent campaigns, interdiction targets among the enemy ground forces have accounted for the lion's share of strike sorties, and there is no reason to think this trend will change when ground forces are employed in substantial numbers. These include a range of targets from nominated interdiction at deep ranges to on-call indirect fires, including close air support.

Then there is the subcategory of fighter/attack aircraft-based ISR. This is

also a major factor in force planning. Originally the use of fighter combat air patrols mainly for surveillance was termed nontraditional ISR. In fact, the mission needs for this form of overwatch have become the primary requirement of land forces in irregular warfare. It is prudent to assume that ground force commanders will want the same overwatch in irregular and conventional warfare of the future.

Beyond this, there is a fighter requirement for air sovereignty within the United States, as noted.

The last publicly documented case of major force application was Operation Desert Storm. About 65 percent of sorties were devoted to ground targets of all kinds, from artillery pieces to suspected biological warfare sites. About 35 percent of the sorties fell into the broad category of air superiority, including everything from combat air patrols to attacks on airfields and surface-to-air missile systems.

Of course, requirements since then have varied. However, other operations of the 1990s and this decade have included a similar focus on destroying air defense capabilities and reducing enemy ground force abilities. This evidence suggests several major guideposts in sizing the future force.

- There is a strong need for a modernized force with at least one-third of the fleet optimized for air superiority missions, including attack of enemy air defenses.
- The ground attack requirement should be divided between high- and medium-threat environments, on the one hand, and, on the other, stability operations which assume a very low air threat.
- Deciding when and where ground forces will operate will dictate the spread between F-35 and Reaper systems. It may also drive early research on a more survivable follow-on to Reaper.
- The potential role of long-range, heavy bombers should be taken into account.
- There quite likely will be a need to pursue time-sensitive targets in a high-threat air defense environment, and not just in a low-threat environment, as is seen in Iraq and Afghanistan.
- The final piece of the puzzle should perhaps be the first. This is to make a sustainable evaluation of forces held in reserve for air sovereignty and homeland defense missions, and a decision on whether these forces would also rotate to overseas taskings, as is done today.

The New Metric

Whatever the mix of fighter and attack aircraft is to be, it will ultimately need to fit into a new metric. The “fighter-wing equivalent” (FWE) of yore no longer

serves the purpose it once did of matching USAF force structure to joint missions.

By the mid-1990s, it was apparent that USAF and other partner forces were in for the long haul of policing the airspace of northern and southern Iraq. Posturing for crisis response led to adoption of a new metric based on so-called "air expeditionary forces," often described as "buckets of capabilities."

The shift to the AEF structure actually began in 1994, but was not made official policy until 1998. By 1999, the principal elements of USAF fighter force structure were grouped into the expeditionary metric with by-name force assignments of units to one of 10 AEFs.

The AEF metric was designed to impart force knowledge and predictability to commander and airman alike. It did this well, but it was never designed as a fighting position for defending the size of the force structure. The first new system to try apportionment based on the expeditionary metric was the F-22. In the QDR of 2001, the Air Force position was to provide one squadron of 24 aircraft for each of the 10 AEFs. Although this was a practical, transparent operational concept, the AEF language never took hold firmly in defense circles. Perhaps it seemed arriviste to older analysts schooled in the fighter-wing equivalent method of force sizing. At any rate, it never gained the kind of acceptance enjoyed by, say, the Navy's carrier air wing metric.

In 2006, USAF debuted a new metric of 86 combat wings. One of the first mentions came in the QDR report released in February of that year. It advocated organizing the Air Force around 86 combat wings. Only later was the composition revealed. Included in the number were 34 mobility wings, 24 ISR wings, six bomber wings, three ICBM wings, and 19 fighter-attack wings.²⁴ The 86-wing metric reflected minor tailoring of the 20 FWE concept. However, the true CAF would also embrace the 24 ISR wings. They were a mixed bag of everything from the low-numbers Global Hawk UAV to battlefield airmen units.

This metric was designed to match the Navy's 313-ship goal and the Army's 79 brigade combat team goal. (Marine Corps structure has since 1953 been fixed by law at three divisions and three air wings.) The 86-wing metric accurately described the current Air Force structure, but it did not catch on as a ready sizing metric, either.

By far the most interesting feature of the 86-wing metric was the Air Force's description of it. In the year the Air Force introduced the metric, the force actually stood at 81 wings. This was down from 139 wings in 1990 and 94 wings in 2000. Budget projections called for it to decline to 78 wings. The 86-wing Air Force was a target including expansion by eight wings, primarily in ISR, and shedding of three fighter-attack wings based on retirements of older aircraft such as the F-117.

Over the next three years, a number of changes emerged to ripple that met-

ric. Termination of the F-22 program was one. Another was the floating proposal to accelerate retirement of 300 to 400 older F-15s and F-16s in order to save money.

As it turned out, the 86-wing construct as a target or metric lasted only two years. It was effectively killed by Air Force Chief of Staff Schwartz, in late 2008. “I don’t think anyone sees that number [86 wings] as a line in the sand,” Schwartz said.²⁵ The Air Force had not publicly released a new force sizing construct by the time the new Obama Administration began its review work.

Finding some kind of force sizing metric—and sticking with it—remains important for three reasons. First, the public deserves a shorthand description that sums up the goals and size of the Air Force. Here, none has done it better than the Navy, with their ship number goals. Be it the “600 ship Navy” of the Reagan years or the “313 ship Navy” of today, the shorthand frames debate about overall fleet size, composition, purpose, and affordability. In public debate, these tools are invaluable.

Second, a metric allows a useful comparison of where the force was 10 or 20 years ago with where it is going to be in 2020.

Third, the metric should ideally provide a first-order measurement of combat capability. The Army’s allocation of combat and support brigade combat teams across active, Guard, and Reserve components stands as an excellent example.

Whatever the future may hold, the current presentation of forces rests on the squishy metric of 10 AEFs. Here the deficit of fighter and attack aircraft is striking. The force today includes about 150 fighters for each of the 10 AEFs. The future force under current profiles will include just 100 aircraft per AEF.²⁶ All that remains is determining how long that force will be compelled to carry its heavy legacy-fighter burden.

VII. CONCLUSION

With the Air Force specifically and the Pentagon generally all searching for victory in Iraq and Afghanistan, it is difficult to plan for the next war. Yet this is precisely why the Pentagon in years past has chosen a careful balance of forces.

The wisdom of this was demonstrated recently in a wargame exercise called Unified Engagement. The scenario evaluated a dual contingency with US and NATO forces engaged in a conflict with Iran and, at the same time, facing an external threat (Russian) to the security of Baltic nations. The scenario was designed specifically to stress and pull NATO resources in two directions.

What the exercise showed was that joint force commanders in future conflicts

may struggle with even the “moderate” risk that is now built into the USAF fighter and attack force structure. The deep resources of the Russian Air Force in particular made it hard to establish air superiority in the Baltic region.

Robust SA-20s, advanced fighters, jamming techniques, and even attacks on allied airfields combined to slow down the ability of US-led forces to establish air supremacy of the kind needed by the joint force commander.

Beyond this, putting augmentation of irregular warfare at odds with long-term planning has been an artificial distinction. As Defense Secretary Gates wrote, “Even the biggest of wars will require ‘small wars’ capabilities.” No airman would doubt that. However, the obverse is also true. Even small wars will require some “big war” capabilities.

The precondition for fighting a small war, US-style, is command of the air. That ability may be attained surreptitiously to insert special operations forces, but it is also likely that airmen will have to fight for it. In this, their task may prove to be as straightforward as it was in Afghanistan in 2001.

However, a significant percentage of future conflicts are likely to include challenges to US air supremacy. It would take only a few surface-to-air missile systems to constrain the joint force’s ability to conduct operations in a low-intensity environment. Better-equipped adversaries may have more latitude than they have had for decades.

That is the real crisis of the Combat Air Forces.

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