

December 2008/\$4

# AIR FORCE

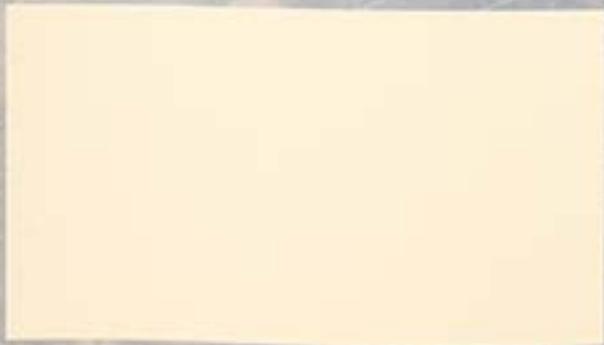
JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE

**Losing Air Dominance**



**Armed Overwatch  
High-Stress Numbers Game  
Focused Lethality**





how

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# AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE

December 2008, Vol. 91, No. 12



**About the cover:** An F-15 pops flares over Southwest Asia. Photo by SSgt. Aaron Allmon II. See "Losing Air Dominance," p. 24.

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**AIR FORCE Magazine** (ISSN 0730-6784) December 2008 (Vol. 91, No. 12) is published monthly by the Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1196. Phone (703) 247-5800. Second-class postage paid at Arlington, Va., and additional mailing offices. **Membership Rate:** \$36 per year; \$90 for three-year membership. **Life Membership (nonrefundable):** \$500 single payment, \$525 extended payments. **Subscription Rate:** \$36 per year; \$2E per year additional for postage to foreign addresses (except Canada and Mexico, which are \$10 per year additional). Regular issues \$4 each. USAF Almanac issue \$6 each. **Change of address** requires four weeks' notice. Please include mailing label. **POSTMASTER:** Send changes of address to Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1196. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association. Copyright 2008 by Air Force Association.

## Air Supremacy in a Downdraft

IT WAS April 1953. "TV Guide" was making its first appearance on newsstands. Young geneticists James D. Watson and Francis H. C. Crick were unveiling the so-called "double-helix" structure of DNA. Singer Harry Belafonte was celebrating his first hit single, "Matilda."

And in that same month, enemy aircraft (in Korea) killed a US soldier. He was the last to perish in this way; because of USAF's vigilance, there have been no fatal air attacks on American ground forces—zero—in some 56 years.

The Air Force brand of air dominance—total, unquestioned, and suffocating—has been around quite a while, so long that many now view it as a birthright. It is not, a point made with special force and clarity by Dr. Rebecca Grant, director of the Mitchell Institute for Airpower Studies, in this issue's lead article, "Losing Air Dominance."

According to Grant, USAF today "is in danger of losing" its ability to guarantee command of the air, and, with it, its power to protect land forces, surmount enemy defenses, and subject an adversary to devastating aerial attack.

As Grant makes plain, the problem stems not from poor tactics or technologies but "from the breakdown of a fighter master plan set in motion after the Gulf War of 1991." Air supremacy is in a downdraft; the fighter force is old and getting older. Soon, USAF will lack sufficient numbers of advanced fighters to operate in heavily defended airspace.

Grant's story (excerpted from a fuller study, available at [www.afa.org/mitchell/reports](http://www.afa.org/mitchell/reports)), makes for lamentable reading. It is a tale of how USAF, in the wake of the Gulf War, chose to forgo purchases of existing F-15s and F-16s and devote its resources to a smaller but highly advanced force of stealth fighters, only to see the plan run afoul of the Pentagon bureaucracy.

As is now well known, the key factor in the collapse was unwillingness on the part of three Administrations—Democrat and Republican—to adequately support the F-22 fighter. Over the years, it has been weakened

by foolish reductions, culminating in the Bush Pentagon's decision to cap the fleet at 183 fighters, about half of the required number.

This decision exploded the Air Force fighter plan. Yet the Pentagon did not adjust the national strategy to take account of this fact. As Grant wryly notes, "There was no announcement that the future threat had changed—just that the future should stop being such a problem for Pentagon planners."

The demise of the F-22 explains the weakening of USAF's grip on air

**The Air Force brand of air dominance has been around quite a while, so long that many now view it as a birthright.**

dominance. Without sufficient numbers of this potent, world-beating fighter, all other elements of the air dominance mission are put at risk.

It is doubtful that, lacking F-22 support, much can be accomplished by other Air Force fighters, including the other "fifth generation" stealth aircraft, the F-35.

Not everyone agrees with this assessment, of course. Some in DOD think of the F-22 and F-35 as being interchangeable, and that more Raptors aren't needed.

That, in fact, is the view of Pentagon chief Robert M. Gates and his top aide, Deputy Secretary of Defense Gordon England. Both would sacrifice more F-22s to protect the F-35. Here are, however, some reasons to doubt their analysis:

- **Stealth.** The F-35's all-aspect signature is much bigger than the F-22's in key bands and against certain threats.

- **Speed.** The F-22's top speed of Mach 2 exceeds that of the F-35.

- **Supercruise.** The F-22 can hit mid-Mach 1 speeds without resorting to fuel-gulping afterburners. The F-35 cannot.

- **Altitude.** The F-22 flies combat profiles at 50,000 feet; the F-35 employs at 30,000 feet.

- **Weapons.** The F-22, with a full bomb load, can carry four air-combat weapons in stealth mode. The F-35 can carry only two.

- **Agility.** The F-22 features vectored thrust and can turn at twice the rate of an F-35.

None of this is a military secret; from the start, the F-35 was conceived as the less-potent, less-costly "low" part of a "high-low" fighter mix. It may prove to be a stellar performer, but these weaknesses could make a huge difference in battles with the air arm of a near-peer such as China or Russia.

Final resolution of the fighter problem will fall to the new President, Barack Obama, and his advisors. In the campaign, Obama stated, "We must preserve our unparalleled air-power capabilities," but no one really knows how he will resolve this issue.

First, top officers are sounding out lawmakers and others with a new proposal for 250 to 275 Raptors. This plan would lop more than 100 of the fighters from the long-validated requirement. DOD officials are sure to resist even this compromise, but lawmakers have expressed interest.

In fact, Congress in November finally forced a recalcitrant Pentagon to spend some F-22 funds that lawmakers had appropriated to keep the Raptor line open.

Second, USAF contemplates cuts in its legacy fighter forces as a way to save billions in maintenance and upgrade funds now flowing into these aircraft. Service officials say Fiscal 2010 will see accelerated retirements of 314 older F-15C and F-16 fighters and a smattering of A-10 attack aircraft.

These two moves, if realized, could leave the Air Force with a highly capable fighter force, but it would be small—perhaps too small to fully support current defense strategy.

Large nations—China, India, Russia—are moving aggressively to improve their airpower. Even less advanced nations are acquiring sophisticated air defense systems that will complicate USAF's combat missions. The history of recent warfare makes plain that whoever controls the air has an excellent chance of dominating the entire battlespace.

For decades, that has been us. Without some large course correction, however, it might turn out to be someone else. ■

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## Airlift on Thin Ice

With "Airlift on Thin Ice" [October, p. 32], John Tirpak continues his valuable series of annual updates on air mobility. But I think he underemphasized the real challenges to initiating a successful fix to the national air mobility system, which is in some danger of experiencing a major systemic or operational failure in the near future.

The real challenge isn't technological or a series of Band-Aid fixes to geriatric aircraft. A young fleet of widebodied, next generation tankers, C-17s, and C-130Js offers the capacity to move the core of our military requirements. A few C-5Ms and C-27Js at the margins will allow the military to move the critical loads too big for the C-17, and to quiet the gabbling of a few organic users about responsiveness and/or having to plan ahead on their movement requirements. No, such a fleet won't be state-of-the-art or as efficient as possible, but it is available and it will work over the next half-century, particularly if the Air Force manages to wear out the C-5M fleet astutely.

The thorny problem in all this is that the Air Force and the defense community are locked into some bad habits in the way they formulate airlift policy. Among these are:

(1) Failure to articulate a coherent and politically robust "grand strategy" for air mobility policy since the 1960 Presidential Approved Courses of Action and its update, the 1987 National Airlift Policy.

(2) Persistent efforts to develop scenario-based mobility studies to guide investment—studies which never survive the flow of events, evolving strategies, and/or the political maelstrom long enough to have more than peripheral effect on what happens or actually hits the ramp.

(3) Piecemeal approach to planning, which should, but does not, correlate all the essential elements of air mobility simultaneously, including technology; the attributes of the active, guard, Reserve, and civil reserve airlift fleet components; all the battlefield and organic airlift assets of all the services; full exploitation of maritime alternatives, industrial base, and political realities; joint command relations and operational doctrines; and so on.

Are there solutions? Of course! But this is [a letter to the editor], so there's only space to suggest that the road to air mobility health probably begins with a new national air mobility policy endorsed by the President and Congress and, perhaps, a break from the habit of justifying force structure with a train of scenario-based studies. A better, albeit politically difficult, approach would be to focus on production and modernization—maintaining as large and steady a flow of modernized systems into the fleet as the budget will allow. Put good iron in the fleet and let an unpredictable world come as it may.

Col. Robert C. Owen,  
USAF (Ret.)  
Daytona Beach, Fla.

## Warheads on Foreheads

Just a couple of comments on the October 2008 issue:

In "Warheads on Foreheads" [p. 44], the comment is made that "the Air Force began pouring concrete into the nose of the [500-pound] bomb." Actually, this warhead, the BLU-126/B Low Collateral Damage Bomb (LCDB, or "LoCo") was a variant of the BLU-111A/B (Mk 82) developed by NAVAIR's PMA-201 as a quick fix to the battlefield need for urban use of precision guided munitions causing minimal collateral damage. Spearheaded by Cmdr. Tom Hole, development of the weapon occurred during 2006, concluding with 10 live-fire tests in December that confirmed that the bomb produced less than 10 percent of the fragmentation pattern of the basic BLU-111. The first 48 weapons were available for use in Iraq by March 2007. When looking at photos of LGBs and JDAMs, these warheads

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are easy to spot by the additional yellow band behind the suspension lugs. The other thing unique about them from the USAF perspective is that they have the US Navy's thermal protection coating.

Maj. Jim Rotramel,  
USAF (Ret.)  
Lexington Park, Md.

### Daylight Precision Bombing

The article "Daylight Precision Bombing" in the October issue [p. 60] identified the problem caused by the limited yield of the 500-pound bombs used after 1943, but failed to note that the design of the B-17 and B-24 was the source of the problem. Those responsible for strategic bombing planning and aircraft requirements, in their focus on accuracy, had not put sufficient emphasis on what size of bombs would be needed to achieve the desired effects when the bombs hit the target. Once US airmen had a chance to see the results of the German bombing of Great Britain, they realized that even 2,000-pound bombs had practically no effect against buildings adequately protected by sandbags, but by then, the B-17 and B-24, which could not carry bombs larger than 2,000-pounds internally, were in production. Although these aircraft could carry 4,000-pound bombs under their wings, this configuration limited range and altitude so much that they were not used operationally. We should hope that those responsible for the design of the next bomber have learned that flexibility demands a weapons bay with room to carry very large, heavy munitions.

Lt. Col. Price T. Bingham,  
USAF (Ret.)  
Melbourne, Fla.

### Stuka Terror

The legend of tank buster Ernst Rudel ("The Stuka Terror," October, p. 66) lives on among today's A-10 community. Rudel was interviewed extensively in 1972 by Battelle Labs to apply his close air support experience to the Warthog's design. Before the formal A-10 tactics doctrine was developed, it was not uncommon to see Hogdrivers reading Rudel's "Stuka Pilot" for advice on tactics ("Never fly straight and level for more than two seconds over the battlefield."). His ideas could be found in TAC's 1977 "A-10 Coloring Book," which recommended tactics and attack angles on Soviet armor. Rudel would routinely launch by himself before his pilots were awake to meet with the ground commander he would be supporting that day, then fly back to his FOL to personally brief his pilots before leading them on that day's five or six combat sorties.

Col. Al Allenback,  
USAF (Ret.)  
Montgomery, Ala.

### GHQ Air Force

Many thanks for the interesting article in your excellent publication ["GHQ Air Force," September, p. 62]. Being born immediately prior to the US involvement in World War II, I was only vaguely aware of the attitudes and control exerted by the Army command over the US Army Air Corps, being exposed to it through the magazines and newspapers I read as a young boy prior to USAF standing up as a separate member of the armed forces in 1947. I have always been curious as to the intent and impact of the GHQ Air Force element, and John Correll has made it much clearer to me. I can recall the effort required to create USAF and the arguments the Army used to prevent it; but, because World War II had already loosened the stranglehold the Army exerted, I was not exposed to the reasons for the GHQ and the importance of it standing up. So, again, many thanks for publishing the article.

I did notice one very slight glitch, and that would be when Mr. Correll mentioned the "XB-17." According to most sources, the term was never applied to the Boeing Model 299 (NX13372) until some three months after its crash due to crew error on Oct. 30, 1935. Boeing used company funds to design and build the 299, and the government did not procure it or assign a military serial number, as it did not complete the USAAC evaluation trials. Popularly, however, the term "XB-17" has been in wide use ever since, and will most likely remain with us forever, as befits a truly remarkable aircraft. Again, my thanks to John Correll and to you for a very interesting article.

Robert Taylor  
Ventura, Calif

### Joint Base Dispute

The issues raised in "The Joint Base Dispute" ("Issue Brief," October, p. 30) should not be underestimated. Adam Hebert correctly distinguishes between the Army's recruit-driven force and the Air Force's retention-driven corps. When quality of life drops (e.g., housing standards decline to the "lowest common denominator"), married airmen with skills marketable in the civilian world will be sorely tempted to pursue their options.

When I served on the staff of the AMC command chaplain several years ago, Air Force leadership was already proactively addressing these quality of life issues. Given the parameters of the joint basing process, however, there is only so much that can be done. For example, even at joint bases led by the USAF partner, it is challenging—improving facilities which are (by our norms) substandard will consume resources that would formerly have been used for ongoing improvement on

the Air Force "side" of the installation. The implications are staggering.

When I was considering which branch of the armed forces to enter, my father offered his advice in two sentences. "Don't go in unless you can go into the Air Force. They'll take much better care of your family." Coming from a proud combat veteran of the Marine Corps, these words carried great weight. The distinctions noted by a USMC sergeant major a quarter-century ago persist today, and the Air Force is wise in being wary of the ramifications.

Robert C. Stroud,  
USAF (Ret.)  
Poulsbo, Wash.

### In Agreement

I was pleased to see the letter from my long-ago commander, Maj. Gen. Jack Gamble, questioning Secretary Robert M. Gates' qualifications to be Secretary of Defense, given his obvious ignorance and bias against the Air Force's role as an independent arm and its need for modernization ["Letters: Failure Is an Option," October, p. 4].

In attributing the dismissal of Secretary Michael W. Wynne and Chief of Staff Gen. T. Michael Moseley to managerial issues rather than to his basic disagreement with them over policy, Secretary Gates went beyond

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## Letters

the Bush Administration's deep-sixing the Army Chief of Staff and its Secretary. In those cases, they at least had the candor to acknowledge that policy was at the root of the matter.

And it's disturbing, but not surprising, that SECDEF's news conference on the firings got the media play it deserved, while SECAF's follow-up presentation on the actual defense policy issues caused no ripples beyond the Beltway.

The Bush Administration, and the country, has now learned that former Army Chief of Staff Gen. Eric K. Shinseki was right when he told Congress it would take "several hundred thousand" soldiers both to overrun AND to quickly stabilize Iraq. And former Army Secretary Thomas E. White was right when he questioned the intelligence basis for the invasion. Those lessons were learned the hard way, in lives, treasure, and international credibility.

But those lessons, learned in the small crucible of a one-nation counter-insurgency, pale to insignificance when you consider how we all might learn someday, suddenly, that we have lost the ability to project power quickly across great distances and WIN, all under the umbrella of air supremacy.

Lt. Col. Mark Foutch,  
USAF (Ret.)  
Olympia, Wash.

## Air Force World

As a youngster, I would bicycle out to Hancock Field to watch the "Boys from Syracuse" fly their F-86Hs every chance I had. The loss of a pilot-driven mission is a sad page in their history, but inevitable in today's world [*"Air Force World: NYANG Unit Starts Mission," October, p. 26*]. I believe your statement of ending 61 years of flying fighters is hyperbole, even for what constitutes a "fighter" these days. Among the 138th Fighter Squadron's many mission aircraft were two decades split between the A-37 Dragonfly and the A-10 Thunderbolt II.

As a side note, one of the unit's gate guards is an F-94 serial No. 50-877. If it is as marked, this is an aeronautical gem more suited for the warm protection of the National Museum of the US Air Force than facing the brutal lake-effect winters of upstate New York. 877 was the second prototype YF-97—the first, 50-955, was built on speculation by Lockheed in a non-military version—which was the military version and later redesignated YF-94C. She is well-packed beneath a thick protective blanket of ghost gray paint, but sure would look pretty stripped to her bare metal birthday suit.

Jim Caiella  
Richmond, Va.

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## Nuclear "Roadmap"; The big six themes; Is industry sinking? ....

### It's "Global Strike Command"

Responding to the nuclear weapons and materials handling mistakes that have caused turmoil for the better part of a year, the Air Force released a new roadmap designed to redouble its emphasis on the nuclear mission. The centerpiece of the plan, released in late October, was a new major command solely focused on the nuclear enterprise.

The roadmap was described as the product of "painful lessons" derived from seven internal and external reviews of how the Air Force operates with and manages nuclear weapons. It is "the starting point" for reclaiming the service's credibility in this arena, Secretary of the Air Force Michael B. Donley told a Pentagon press conference.

The new entity will be called Global Strike Command. Much like the famed but long-defunct Strategic Air Command, it will be responsible for nuclear-capable bombers and intercontinental ballistic missiles.

GSC will soon stand up as a provisional command and come under the command of a three-star general. Plans call for it to achieve operational status in September 2009.

The command will comprise 20th Air Force—which controls ICBMs—and 8th Air Force—which controls nuclear-capable B-2 and B-52 bombers—as well as most airmen in those two outfits. Those assets currently fall under Air Force Space Command and Air Combat Command, respectively.

The conventional-only B-1B bomber fleet will remain under ACC because, Donley said, the Air Force doesn't want to backtrack on "10 years' worth" of learning how to integrate bombers with ground support operations. Requirements for the next bomber, due to be operational in 2018, will still be managed by ACC, Air Force Chief of Staff Gen. Norton A. Schwartz said, with GSC supplying specific nuclear requirements.

Cyber operations will not be part of Global Strike Command's portfolio. According to Schwartz, top Air Force leaders concluded that a combination of nuclear and cyber functions "perhaps was too much for a single organization to address with the necessary focus."

The Air Force announced that cyber operations will be conducted by 24th Air Force, under Air Force Space Command. The service is abandoning plans to create a new major command for cyber, officials said.

Nuclear assets controlled by US Air Forces in Europe will not be part of the GSC portfolio, Donley noted. He also said that nuclear-capable bombers will still be available to regional commanders in a conventional role if requested.

### Six Nuclear Themes

The Air Force's roadmap is a direct outgrowth of a shocking and unprecedented leadership shake-up. On June 5, then-Secretary of the Air Force Michael W. Wynne and then-Chief of Staff Gen. T. Michael Moseley were sacked in the wake of two nuclear events. In one, live nuclear missiles were inadvertently flown cross-country on a B-52. In the other, parts

for nuclear fuses were mistakenly shipped to Taiwan, labeled as helicopter parts.

Donley and Schwartz were brought in with a charge to restore the service's lost focus on the nuclear mission.

The roadmap addresses "six recurring themes" identified as problem areas in USAF's nuclear enterprise by the Schlesinger Commission and other internal and external reviews.

The six, according to Donley, were as follows:

- Inadequate investment in the nuclear deterrence mission, owing in part to the lack of a senior officer advocate.
- Fragmented nuclear-related authority and responsibility.



Schwartz (l) and Donley sharpen the focus.

- Ineffective processes for discovering and fixing nuclear-related capability and compliance problems.
- Dwindling nuclear-related expertise within the Air Force.
- The lack of a critical self-assessment culture in USAF.
- Erosion of the nuclear mission culture since the end of the Cold War, and a perception within the Air Force that the nuclear mission has become less important.

The roadmap is based on the work of a service task force headed by Maj. Gen. C. Donald Alston, then director of nuclear operations, plans, and requirements. It is aimed at restoring USAF's "culture of compliance" with rigorous inspection processes; rebuilding the service's nuclear expertise; investing in nuclear systems; organizing for clear lines of authority in the nuclear mission; and revitalizing the Air Force's role as a steward of nuclear forces.

The roadmap covers everything from tightened and streamlined inspection procedures to a bigger role for nuclear doctrine in professional military education.

Donley said the changes will help the Air Force keep focus on the nuclear mission even as it evolves its other activities, and "regardless of how big or small the nuclear enterprise is."

Donley announced creation of a service nuclear oversight board, chaired by himself and Schwartz, which will meet quarterly to review the Air Force's nuclear activities, and it

USAF Photo by Scott M. Ash



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is this committee that will keep Defense Secretary Robert M. Gates informed of progress in revamping the Air Force's nuclear enterprise.

Two parts of the roadmap, disclosed prior to the press conference, call for the creation of a new staff office at Headquarters USAF to "provide singular focus on nuclear matters." The new office, to be called A10, will be split off from the existing directorates for air, space, and information operations (A3) and plans and requirements (A5).

### Industrial Base Angst

Washington insiders predict that defense spending will have to be sharply curtailed as a result of the economic meltdown, but a trio of recent reports warns that such a move couldn't come at a worse time for the defense industrial base. In fact, a new and coherent defense industrial policy is needed if the US is to continue to field the most technologically advanced force in the world.

The Aerospace Industries Association, in a report it styled as a primer for the incoming Administration, warns that the next decade will be crucial for the industrial base. In "US Defense Modernization: Today's Choices for Tomorrow's Readiness," AIA said most of the weapons bought in the so-called Reagan buildup have reached "the end of their useful lives" and must be replaced. If they aren't, rising costs to keep old gear operating will continue to escalate, and an already shrunken supplier base—particularly among companies able to design new state-of-the-art equipment—may disappear in some critical areas for lack of work.

The pressures are being keenly felt already, AIA warned. Breaking out defense spending into two big chunks, it notes an increasing imbalance between operations and support costs with investment accounts. The O&S accounts—personnel, operations, and maintenance—now claim about 60 percent of the defense budget, up from about 57 percent in 1989. Pay, health care, and education costs have risen sharply, as have costs for fuel and to keep increasingly worn-out equipment functioning. Meanwhile, investment accounts—research and development and procurement—have shrunk to about 35 percent of the budget. That number, though, doesn't reflect the fact that newer gear is more complex, sophisticated, and expensive, meaning fewer actual items can be bought.

The Bush Administration's plan to add 72,000 more ground troops will worsen the personnel cost issue, and if defense budgets do stay flat, the extra money will have to come from investment accounts, AIA warned.

"Continuing this trend beyond current projections will make it even more difficult for defense planners to adequately resource the investment spending upon which our military superiority and technological edge depends," the AIA maintained.

It also noted a tendency for defense budgets to dip after conclusion of a major conflict, but the difference this time is that there was no massive procurement of weapons during the Iraq and Afghanistan conflicts that the military can live off afterward. In fact, two rounds of modernization—one that should have taken place in the 1990s, and another this decade—have been "chronically deferred."

AIA said last year's unexpected grounding of the Air Force's F-15 fleet—and a six-month hole in homeland defense—should be a wake-up call.

"We are now in uncharted territory with so many aging weapons systems having to be retained beyond the life spans for which they were originally designed, simply because funding their timely replacement by modern systems has been long deferred."

The Defense Science Board sounded similar themes in its own report, "Creating an Effective National Security Industrial

Base for the 21st Century: An Action Plan To Address the Coming Crisis."

Former Pentagon acquisition, technology, and logistics czar Jacques S. Gansler, chairman of the Task Force on Defense Industrial Structure for Transformation, said in the report that there is a "critical need" for the Defense Department to establish a vision for what it wants its industrial base to look like—something that has been hitherto left for the industrial sector itself to figure out. The Pentagon should more urgently reform its own business practices, move toward faster and more affordable acquisitions, and take steps to ensure an adequate acquisition workforce, he said.

The task force set out nine steps the DOD should take, as quickly as possible. It should "articulate a national security industrial vision"; focus on interoperability and net-centric systems; cut costs and delivery times while still providing better performance; "recognize the role of contractors in the 'battlefield'"; properly fund "engines of innovation"; understand and properly benefit from globalization; make greater use of "best value" in choosing contractors; upgrade the military's logistics with a data-centric system; and "move aggressively to strengthen the future high-quality, high-skill DOD acquisition workforce."

### Seeking a Middle Ground

Yet another industrial base prescription came from Barry D. Watts, former head of DOD's program analysis and evaluation shop, now an analyst with the private Center for Strategic and Budgetary Assessments.

In "The US Defense Industrial Base: Past, Present, and Future," released in October, Watts maintained that the Pentagon actually should play a much more direct role in shaping its network of suppliers, given that many defense products have no commercial application, and the field is largely divorced from normal market forces.

Some middle ground should be found between the "hands off" approach to the defense industry and dictating its structure, Watts said.

Watts agreed with the DSB that the Pentagon must establish a "vision" of what it wants the industrial base to be.

Noting that the industrial base has dwindled from dozens of big companies to "monopolies or duopolies" in key areas such as combat aircraft, shipbuilding, large aircraft, radars, missiles, etc., Watts proposed that the Pentagon move to keep a steady flow of work in the pipeline. It should do this by adopting a new policy of elevating program schedule above all other considerations.

"Time is easier to understand than cost and less subject to abuse through artful ways of portraying costs," Watts wrote. Imposing strict time limits on programs would make them far more resistant to ceaseless requirements creep, and would get them in the field quickly, when they are still relevant. Lengthy procurements run the risk of fielding obsolescent gear, he said, and threaten the numbers built because of increased development cost and the price of keeping older gear in service until the new equipment appears.

Time-based procurement would thus stimulate constant innovation through lots of new starts, and while numbers of items built would be smaller, they would come out more frequently, thus creating "a richer mix of advanced systems ... making it more difficult for adversaries to counter American capabilities."

He said the "defense industrial base is not on the brink of [an] imminent crisis or near collapse," but is having contraction pains that can best be alleviated by articulating "a more consistent, thoughtful, longer-term, and active strategy for influencing the structure and capabilities" of the arsenal of democracy. ■



# 40.

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## Donley Becomes USAF Secretary

Michael B. Donley formally became the 22nd Secretary of the Air Force Oct. 17 during a swearing-in ceremony at the Air Force Memorial in Arlington, Va. Defense Secretary Robert M. Gates administered the oath of office.

Donley had been serving as Acting Secretary since June when he replaced Michael W. Wynne in the Air Force's top civilian position. The Senate confirmed Donley for the post on Oct. 2. Several Senators, chief among them Sen. Maria Cantwell (D-Wash.), had placed a hold on his confirmation primarily over dissatisfaction with the state of the Air Force's now-postponed KC-X tanker recapitalization program. They relented in late September.

## KC-135 Contract Struck Down

A US federal claims court ruled Sept 30 that the Air Force must redo its solicitation to find a company to perform depot maintenance on its

Eisenhower-era KC-135s. Alabama Aircraft Industries, Inc., filed a federal lawsuit in June against the Air Force and Boeing after the Air Force decided to proceed with the \$1.2 billion contract that it originally awarded to Boeing in September 2007.

AAll protested the original award and won, receiving a favorable December 2007 decision from the Government Accountability Office. This caused the Air Force to re-examine the bids. But when the service decided to stay with its selection of Boeing, AAll filed a second protest with the GAO, which it subsequently lost, prompting the company to turn to federal court.

The court's ruling enjoined the Air Force from proceeding with the original award to Boeing and required the service to issue a new solicitation that addressed "explicitly the role of an ever-aging KC-135 fleet" on the programmed depot maintenance to be performed. The Air Force said it would

## Air Force Proposes Major Fighter Cuts

In a dramatic change, the Air Force wants to shed a large portion of its legacy fighter fleet in 2010 to save upward of \$3.4 billion that it could then apply to areas such as bomber modernization, intelligence-surveillance-reconnaissance expansion, and a greater focus on the nuclear mission.

Based on reports from InsideDefense.com that surfaced in October, citing internal Air Force budget planning documents for Fiscal 2010, the service is proposing retiring almost one-third of its F-15 air superiority fighters and about 15 percent of its F-16s in 2010, years earlier than previously planned.

Indeed, Air Force data, current as of Aug. 31, showed that the service had planned to retire only six F-15A/Bs and five F-16C/Ds in Fiscal 2010 when it presented Congress with its Fiscal 2009 five-year spending plan back in February. Now it aims to phase out 137 F-15s and 177 F-16s, as well as nine A-10s in 2010. The service said it is willing to accept the risk out to 2014 of a smaller, but more modern, fighter force—when coupled with a robust bomber fleet—until production of the new F-35A stealth fighter ramps up to 110 units per year and F-22s can be modified to a common configuration.

The Air Force fighter inventory, as of Aug. 31, included 420 F-15 A-to-D models—including 376 F-15C/Ds that average slightly more than 25 years in age—and 1,205 F-16C/Ds that are about 19 years old on average.

Air Force generals warned in April on Capitol Hill that the service faces a looming fighter gap beginning in 2017 and running through 2024 that could leave it 800 or more airframes short of its requirements for 2,250 fighters. The service views getting the F-35A annual build rates up to 110 as soon as possible as the means to mitigate this.

The next Administration will present the final version of the Pentagon's Fiscal 2010 budget request to Congress early next year.



“take appropriate action consistent with the court’s decision.”

### To Avoid Civilian Casualties

The Air Force said in October it was adjusting its procedures in the air war in Afghanistan to reinforce the methods it applies to avoid civilian casualties in close air support operations. The new procedures are “almost the same as we were doing before, but with a few exceptions,” said Brig. Gen. James

M. Holmes, commander of the 455th Air Expeditionary Wing at Bagram Air Base, according to a FoxNews.com report Oct. 13.

Tightening the rules was meant to help smooth US-Afghan tensions over a much-publicized firefight between coalition forces and anti-government insurgents Aug. 22 in Azizabad in Afghanistan’s Herat Province. Originally, the US said the exchange, which included an AC-130 gunship attack,

killed many insurgents and six civilians. But a subsequent investigation carried out by US Central Command found that 22 enemy combatants died along with 33 civilians, including at least 12 children.

Despite the tragic loss of innocent life, CENTCOM said coalition forces acted legitimately within the rules of engagement and law of war. And the enemy purposely chose fighting positions in proximity to civilians.



11.07.2008

*Barely visible between huge turbofan engines, an unidentified USAF A-10 pilot heads out on a close air support mission over parched Afghanistan. The shark mouth paint means this A-10 comes from the 23rd Wing, Moody AFB, Ga.—heir of the famed Flying Tigers—but it is temporarily deployed to Bagram Airfield. It is heavily armed; note the nose-mounted GAU-8/A 30 mm cannon, capable of firing 65 rounds per second, and underwing munitions.*

**MH-53s Retired**

Air Force Special Operations Command formally retired its remaining MH-53 Pave Low helicopters at the end of September, thereby ending the MH-53's roughly 40 years of service. The last six Pave Lows in use completed their final combat missions in Iraq on Sept. 27 and were then prepared for transport back to the United States.

On Oct. 17, AFSOC held a deactivation ceremony at Hurlburt Field, Fla., for the 20th Special Operations Squadron, the last unit flying the venerable helicopter. The first flight of the MH-53 occurred in March 1967, and the helicopters saw service in Vietnam. The Air Force lost six MH-53s after 9/11, supporting operations in Afghanistan and Iraq, one of them—in April 2004 in Iraq—as a result of enemy fire. CV-22 Osprey tilt-rotor aircraft are replacing the Pave Lows.

**F-35 Beddown Progresses**

Apparently the Air Force has placed Eielson AFB, Alaska, on its short list of beddown locations for the F-35 Lightning II stealth fighter, along with Hill AFB, Utah, Moody AFB, Ga., Mountain Home AFB, Idaho, and Shaw AFB, S.C. The Air Force had not announced this list publicly as of mid-October, but word of it surfaced in a report Oct. 14 in the *Fairbanks Daily News-Miner*.

In January, the Air Force issued its future capabilities roadmap that listed these bases as part of the 41 potential



DOD photo by A1C Jason Epley

**Light 'Em Up:** A1C Martin Uresti, a security forces apprentice with the 532nd Expeditionary Security Forces Squadron, fires a signal flare from an observation tower during proficiency training at Joint Base Balad, Iraq. The 532nd is deployed from Lackland AFB, Tex.

homes of the F-35, expected to enter the Air Force's inventory in the early part of next decade. Once the short list is official, the process will proceed to complete environmental impact assessments of basing the F-35s at the preferred locations

In a related development, Air Force on Oct. 17 issued the final environmental

impact statement addressing the BRAC 2005 actions that include the beddown of the F-35 joint training activity at Eglin AFB, Fla.

**Defense Bill Becomes Law**

President Bush on Oct. 14 signed into law S. 3001, the defense authorization act for Fiscal 2009. The legislation includes \$542.5 billion for the Pentagon's baseline budget, as well as \$68 billion representing the first iteration of supplemental war spending for the fiscal year.

The act authorizes funds to cover an active duty end strength of 317,050 for the Air Force (USAF's end strength will rise to 330,000 in Fiscal 2010). It funds the production of seven Air Force F-35s and 20 F-22s. And it includes \$523 million to keep the F-22 production line active in case the next Administration wants to keep buying them beyond the current program of record.

Funds in the act also keep alive the GE-Rolls Royce F136 engine program for the F-35, enable the Air Force to maintain 76 B-52H bombers in a common configuration, and buy six C-17 transports, bringing the Air Force's C-17 total to 212.

On Sept. 30, Bush signed into law Fiscal 2009 defense appropriation legislation totaling \$488 billion as part of H.R. 2638, a larger consolidated spending act.

**Predators at Cannon**

The 3rd Special Operations Squadron, Air Force Special Operations Command's sole unmanned aerial

**No Major Command for Cyber**

The Air Force leadership announced in early October that it will not establish a major command to oversee the service's activities in the cyber realm. Rather, it will stand up a numbered air force—rotationally designated 24th Air Force—under Air Force Space Command to handle cyber operations.

Determining the headquarters location for the cyber NAF will require further deliberation, service officials said.

The decision came out of the service's tri-annual Corona summit that was held Oct. 1-3 at the Air Force Academy in Colorado Springs, Colo. (The leadership also decided at Corona to establish a nuclear-centric major command. See "Washington Watch: It's 'Global Strike Command,'" p. 8.)

Combining cyber and space functions makes sense because it places two interdependent domains under one command, Air Force officials said. In the statement announcing the decision, Air Force Secretary Michael B. Donley said the conduct of cyber operations is "a complex issue," as DOD and interagency partners have "substantial equity" in the realm. But the Air Force "will continue to do" its part to increase its cyber capabilities, he said.

Maj. Gen. William T. Lord, commander of Air Force Cyber Command (Provisional) at Barksdale AFB, La., said Oct. 1 that the work of his organization in Fiscal 2008 significantly advanced the understanding of how the Air Force will train, organize, equip, fight—and prevail—in cyberspace as it moves forward with these new plans.

"That's something we didn't have a year ago," Lord said. He continued: "We've figured all that out. We've outlined how to organize cyber forces, i.e., what capabilities fall into, or not into, a cyber organization." These efforts have "laid the foundation" for "a strong cyberspace capability," he said.



USN photo by Petty Officer 2nd Class Todd Frantom

vehicle unit, formally transferred from Nellis AFB, Nev., to Cannon AFB, N.M., during a ceremony Oct. 8.

AFSOC activated the squadron in October 2005. It has been providing MQ-1 Predator capabilities to commanders in Southwest Asia since May 2007 from Nellis and Creech AFB, Nev., using UAVs and personnel brought over from Air Combat Command.

The unit has become one of the Air Force's most in-demand units for the War on Terror. Once it is at full strength at Cannon by around mid-2009, it will have more than 300 personnel.

#### NATO C-17 Plan Advances

NATO announced Oct. 1 that the alliance-led Strategic Airlift Capability program was moving into its execution phase with the completion of the 12-nation memorandum of understanding on Sept. 23 after two years of negotiations. Participating NATO members Bulgaria, Estonia, Hungary, Lithuania, Netherlands, Norway, Poland, Romania, Slovenia, and the United States, as well as NATO Partnership for Peace nations Finland and Sweden, will jointly operate three C-17 transports under a multinational heavy airlift wing at

**At Gunpoint:** Airmen from Det. 3, 732nd Expeditionary Security Forces Squadron, perform a weapons check before leaving Forward Operating Base Falcon, Baghdad, Iraq.

Papa AB, Hungary. The US is providing one of the C-17s; the participants are acquiring the other two from Boeing via a US foreign military sale.

Arrival of the first C-17 at Papa is anticipated next spring with the remaining two coming next summer; initial operations of the wing is expected next summer. Denmark, Slovakia, and Latvia withdrew from the SAC program. The Czech Republic and Italy are still considered "prospective participants" and have until Dec. 23 to formally join.

#### Bronze Star Medals for Airmen

The Air Force awarded Bronze Star Medals to 10 airmen in September and October for their activities supporting operations in Afghanistan and Iraq. Two of them, TSgt. Christopher Grove and SSgt. David Solis, combat controllers with the 23rd Special Tactics Squadron at Hurlburt Field, Fla., received Bronze Star Medals for valor for directing close air support strikes while under fire.

The other recipients are: Maj. Joseph B. Wurmstein for electronic warfare work with the Army; 1st Lt. Eric Snelgrove for intelligence work with Army Special

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## Air Force Takes Action To Stem A-10 Wing Cracks

The Air Force issued a time-compliance technical order on Oct. 3 that required the immediate removal from flight schedules of about one-third of the service's A-10 ground-attack aircraft, including those serving in Southwest Asia, for wing inspection and, if necessary, repair.

The service has 356 A-10s, including those in front-line units as well as those used for training and tests and in routine maintenance status. Affected by the TCTO were about 130 A-10s assigned to Air Combat Command, Air Force Materiel Command, Pacific Air Forces, the Air National Guard, and Air Force Reserve Command that have comparatively thin-skinned wings that are more susceptible to structural fatigue than the thicker wings found on newer A-10s.

The Air Force said it made the decision following "an increase in fatigue-related wing cracks" discovered during recent depot work. Although the service already has a program in place with Boeing to replace wings on 242 A-10s, the service deemed that "taking immediate action is necessary for the safety of our aircrews and to bring our A-10 fleet back to health."

Aircraft currently deployed with units in Afghanistan and Iraq were given priority for the repairs.

Despite the inspection stand-down, the Air Force said it had enough A-10s available—albeit in fewer numbers—to go ahead with Hawgsmoke 2008, its biennial A-10 bombing and gunnery competition. AFRC's 442nd Fighter Wing at Whiteman AFB, Mo., hosted the event Oct. 15-18 at the Kansas Air National Guard's 34,000-acre Smoky Hill range near Salina.

Airmen from 14 active duty, ANG, and AFRC squadrons participated, sharing 30 A-10s provided by the Air Guard and Reserve units.

The top scoring team was the Idaho Air Guard's 190th Fighter Squadron.

Forces; 2nd Lt. Anthony Florentine for his signals intelligence actions with the Army while he was a staff sergeant; CMSgt. Paul Wheeler for his actions at Joint Base Balad, Iraq; MSgt. Darrin Goetchius for his work training Iraqi maintainers; TSgt. Michael McKenna and SSgt. Kevin Krooner, both tactical air control party airmen with the 8th Air Support Operations Squadron at Aviano AB, Italy; and SSgt. Joseph Hepler from Hurlburt's 23rd STS.

## ANG F-16 Units Changing

The New York Air National Guard's 174th Fighter Wing started its 18-month transition, per BRAC 2005, from the F-16 fighter to the MQ-9 unmanned aerial vehicle on Oct. 14 with the permanent departure of the first two F-16s from the wing's home at Hancock Field, near Syracuse.

This represented the beginning of the end of the 174th's F-16 mission, which began in 1988. More F-16s will depart Hancock as the transition progresses, and wing members are supposed to begin training with MQ-9s in 2010.

Less than two weeks earlier, on Oct. 2, another Air Guard F-16 unit, the Michigan

USAF photo by TSgt. Erik Gudmundson



**Heavy Duty:** An MQ-9 Reaper is armed and ready for a mission at Joint Base Balad, Iraq. Larger and more powerful than its forerunner, the MQ-1 Predator, the Reaper can carry up to 3,750 pounds of laser guided bombs and Hellfire missiles. August marked the first weapons engagement in Iraq since it began flying combat sorties there in July.

### Operation Iraqi Freedom—Iraq

#### Casualties

By Nov. 6, a total of 4,193 Americans had died in Operation Iraqi Freedom. The total includes 4,182 troops and 11 Department of Defense civilians. Of these deaths, 3,388 were killed in action with the enemy while 805 died in noncombat incidents.

There have been 30,774 troops wounded in action during Operation Iraqi Freedom. This number includes 17,218 who were wounded and returned to duty within 72 hours and 13,556 who were unable to return to duty quickly.

#### Mosul Air Strike Against Al Qaeda-in-Iraq Members

A Mosul family reported to Iraqi authorities that a suspected al Qaeda-in-Iraq member had entered their home Oct. 7 wearing a suicide vest, causing them to flee. When police approached the residence, small-arms fire erupted from suspected AQI members who had entered the house.

Coalition troops arrived at the scene to reinforce the police. When they and police approached the house again, they began taking fire. The on-scene joint terminal attack controller requested air support after all local citizens were cleared from the surrounding area. A coalition aircraft dropped a bomb on the house, destroying it. One coalition soldier, one police officer, and one AQI member were killed in the exchange, according to Multinational Corps-Iraq.

### Operation Enduring Freedom—Afghanistan

#### Casualties

By Nov. 6, a total of 622 Americans had died in Operation Enduring Freedom. The total includes 621 troops and one Department of Defense civilian. Of these deaths, 407 were killed in action with the enemy while 215 died in noncombat incidents.

There have been 2,581 troops wounded in action during OEF. This number includes 911 who were wounded and returned to duty within 72 hours and 1,670 who were unable to return to duty quickly.

#### Compass Call Unit Eclipses 10,000 Hours Over Afghanistan

The 41st Expeditionary Electronic Combat Squadron, an EC-130 Compass Call unit operating from Bagram AB, Afghanistan, surpassed 10,000 combat hours in Operation Enduring Freedom in late September, according to Air Forces Central. The milestone occurred during a night mission escorting a 41-vehicle International Security Assistance Force convoy.

The 41st EECS, deployed from Davis-Monthan AFB, Ariz., amassed the hours during more than four years of operations in the combat theater, beginning with its first OEF deployment in March 2004. The Compass Call is a specialized aircraft that disrupts enemy communications and limits the effectiveness of enemy forces trying to coordinate attacks.

The 10,000-hour milestone is significant, given the fact that the Compass Call is one of the Air Force's low-density, high-demand assets and there are only 14 of them dispersed in two operational units, members of the 41st EECS said.

Accordingly, many members of the 41st EECS have deployed overseas multiple times. Since the squadron sends only one or two EC-130s on each deployment, each aircraft has averaged about 2,000 to 3,000 flight hours annually to break the 10,000-hour mark, they said.

the service's new training program for operating MQ-1 Predator and MQ-9 Reaper unmanned aerial vehicles. The first 10 officers selected will start training in January, and a second batch of 10 will begin instruction in April.

If the first two training classes of 10 prove to be successful, then the Air Force will start accepting larger classes, service officials have said. The Air Force unveiled this new UAV training program in September. The service eyes it, along with the new practice of taking about 10 percent of its new undergraduate pilot training graduates and training them to operate the Predators and Reapers, as a means to beef up its current pool of about 450 UAV operators to 1,100 by Fiscal 2012.

#### Booster Reliability Eyed

The Air Force will fix problems with the Atlas V and Delta IV evolved expendable launch vehicles before launching them again, Gary E. Payton, deputy undersecretary of the Air Force for space programs, told reporters Sept. 25 in Washington, D.C.

Payton said the Russian-designed RD-180 engine used on the Atlas V rocket experienced "an uncommanded actuator anomaly" in one instance, meaning that the actuator moved even though the rocket's guidance system did not tell it to. He said the Air Force thought the USAF-industry team had the fix in hand.

In the case of the Delta IV booster, the contractor performing vibration tests on component parts discovered that its test equipment had not been calibrated correctly for the past several years, meaning that some parts may not have been adequately tested, Payton said. They were to be retested.

#### F-35 Depot Work Decided

The Air Force and Navy in September came to terms on how they will divvy up depot work on about 80 percent of the F-35 Lightning II stealth fighter and set the parameters on how they will decide on the remaining workload allocation.

F-35 airframe maintenance, scheduled to be up and running in 2012, will be located at the Fleet Readiness Center-East at MCAS Cherry Point, N.C., and Ogden Air Logistics Center at Hill AFB, Utah, the Air Force said in a Sept. 29 news release. Engine maintenance, which will also stand up in 2012, will be at the Oklahoma City ALC at Tinker AFB, Okla., to be joined in 2014 by the Fleet Readiness Center-Southeast at NAS Jacksonville, Fla.

The F-35 engine lift system, which will be resident in Marine Corps F-35Bs, will be maintained beginning in 2014 at Cherry Point. A source-selection team, comprising representatives from all the services and the F-35 joint program

ANG's 127th Wing at Selfridge ANG Base outside of Detroit, formally relinquished its air sovereignty alert mission to the Ohio ANG's 180th Fighter Wing based in Toledo. Selfridge's F-16s protected American skies since 9/11 as part of Operation Noble Eagle. The 127th Wing, which already converted from a C-130

transport mission to flying KC-135 tankers, is scheduled to stop flying F-16s by year's end and transition to A-10s.

#### UAV Pilot Recruiting Starts

The Air Force on Oct. 6 began its search for officer volunteers with no previous flying experience to enter

## Senior Staff Changes

**NOMINATIONS:** To be Lieutenant General: Mark A. Welsh III. To be ANG Major General: William S. Busby III, Stanley E. Clarke III, Garry C. Dean, Steven R. Doohen, John B. Ellington Jr., Maria A. Falca-Dodson, Donald E. Fick, Kathleen E. Fick, Tony A. Hart, James E. Hearon, Kelly K. McKeague, Linda K. McTague, Alan W. Palmer, Mark F. Sears, Charles E. Tucker Jr., Janette Young. To be ANG Brigadier General: John D. Bledsoe Jr., Theresa Z. Blumberg, Paul D. Brown Jr., Brewster S. Butters, Charles E. Foster Jr., Steven D. Friedricks, Steven D. Gregg, John O. Griffin, Mark R. Kraus, Joseph L. Lengyel, Bradley A. Livingston, Catherine S. Lutz, Joseph K. Martin Jr., Michael A. Meyer, Stanley J. Oserman Jr., Stephan A. Pappas, Jay M. Pearsall, Bruce W. Prunk, James W. Schroeder, Charles L. Smith, James R. Summers, Bruce N. Thompson, Delilah R. Works.

**CHANGES:** Maj. Gen. C. D. Alston, from Dir., Nuclear Ops., Plans & Rqmts., DCS, Ops., Plans & Rqmts., USAF, Pentagon, to Asst. C/S, Strat. Deterrence & Nuclear Integration, USAF, Pentagon ... Brig. Gen. Larry K. Grundhauser, from Vice Dir., Intel., Jt. Staff, Pentagon, to Dir., Intel., ACC, Langley AFB, Va. ... Brig. Gen. Robert C. Kane, from Vice Cmdr., 18th AF, AMC, Scott AFB, Ill., to Commanding General, Coalition AF Transition Team, Multinational Security Transition Command-Iraq, Baghdad, Iraq ... Brig. Gen. James O. Poss, from Dir., Intel., ACC, Langley AFB, Va., to Vice Dir., Intel., Jt. Staff, Pentagon ... Lt. Gen. (sel.) Mark A. Welsh III, from Assoc. Dir. for Mil. Spt., CIA, Washington, D.C., to Assoc. Dir. of CIA for Mil. Spt., Washington, D.C. ... Brig. Gen. Margaret H. Woodward, from Cmdr., 89th Airlift Wg., AMC, Andrews AFB, Md., to Vice Cmdr., 18th AF, AMC, Scott AFB, Ill. •

office, will decide on the work for the remaining 20 percent of the aircraft, which includes software and some avionics systems.

## MIA Pilots' Remains Found

The remains of Col. David H. Zook Jr. and Capt. Lorenza Conner, Air Force pilots missing since they died in separate crashes in Vietnam in October 1967, have been identified.

Zook, from West Liberty, Ohio, was carrying out a psychological warfare mission in a U-10B aircraft on Oct. 4, 1967 over

Song Be Province, South Vietnam, when the U-10B collided in midair with a C-7A, crashed, and exploded. Excavations of the suspected crash site in 1992, 1993, and in March 2008 recovered remains that forensic analysis proved to be his, DOD said Sept. 30.

Conner's F-4D fighter was shot down by anti-aircraft fire on Oct. 27, 1967 over Tuyen Quang Province, North Vietnam. While his copilot ejected safely and was captured, Conner was unable to eject before the airplane crashed. Surveys of the crash site between 1992 and 2003,

and then in 2007, led to recovery of aircraft wreckage and human remains that were identified as Conner's, DOD said in an Oct. 8 statement.

## DOD Plans Aircraft Sales

The Defense Department informed Congress on Oct. 2 of its intent to convert three Air Force KC-135R tankers into RC-135 Rivet Joint signals intelligence platforms for Britain under a proposed foreign military sale. If all options are exercised, the deal could be worth as much as \$1.1 billion, including associated equipment and services.

Three days earlier, the Pentagon told Congress of its intent to sell Israel at least 25 F-35 Lightning II stealth fighters and perhaps as many as 75 of them under a proposed FMS worth up to \$15.2 billion if all options are exercised. Israel would be the first F-35 non-partner nation to buy the aircraft.

The Mideast nation initially would receive 25 F-35A conventional takeoff and landing aircraft and associated equipment and services, with first delivery potentially in 2014. It would have the option of acquiring an additional 50 F-35s at a later date, either in the CTOL configuration or F-35B short takeoff/vertical landing model.

## AFSOC Training Center Opens

Air Force Special Operations Command formally stood up the Air Force Special Operations Training Center Oct. 6 at Hurlburt Field, Fla. The center consolidates all of the command's training units under one roof.

It will be responsible for all mission qualification training of operators of AFSOC's gunships, special-mission transports, unmanned aerial vehicles, and nonstandard aviation, Col. Paul Harmon, the center's commander said in an interview Oct. 10. The AFSOTC will also be in charge of training the command's combat aviation advisors and special tactics airmen, he said.

AFSOC expects to have the center fully operational in Fiscal 2012.

## Chinese Visit Hickam

A 12-member delegation from the Chinese People's Liberation Army visited Hickam AFB, Hawaii, and other nearby military installations Oct. 1-2 for a professional exchange with senior enlisted airmen, marines, sailors, and soldiers. Maj. Gen. Zhong Zhiming, chief of military affairs for the PLA Headquarters General Staff, led the Chinese group, whose visit was part of the US military's efforts to promote understanding and a constructive bilateral relationship.

The Chinese visit came after a US military delegation went to China in June.



USAF photo by SrA. Julianne Showalter

**Climbing the Ladder:** Pararescuemen from the 23rd Special Tactics Squadron climb a ladder into a US Army MH-60 Black Hawk after completing a training mission at Gator Lake, Fla., near Hurlburt Field.



And it concluded just one day before the Bush Administration informed Congress of its intent to sell Taiwan a \$6.5 billion package of defensive arms.

The Chinese government wasted no time in responding, announcing Oct. 6 that it was canceling a senior general's visit to Washington, D.C., later this year, halting port calls by US naval vessels for the time being, and not participating in upcoming talks on disaster relief and nonproliferation.

#### **Blackswift Canceled**

The Defense Advanced Research Projects Agency said in October it was canceling plans to pursue the Blackswift reusable hypersonic flying test bed after Congress slashed the program's \$120 million funding profile in Fiscal 2009 down to \$10 million. DARPA had planned to fly the Mach 6-capable Blackswift, which was to be powered by a combined-cycle propulsion system featuring a turbojet and supersonic combustion ramjet, in 2012.

While Blackswift hopes were dashed, DARPA announced Sept. 30 that it would spend \$18.3 million to fund a third flight test of the full-scale hypersonic strike missile demonstrator that Boeing and Aerojet have designed under the HyFly program with the Navy. This flight is scheduled for the summer of 2010. It comes after two partially successful flight demonstrations in September 2007 and January 2008.

#### **Joint CSAR Training Begins**

Air Force HH-60G Pave Hawk and Army AH-64 Apache helicopter forces deployed to Bagram AB, Afghanistan, flew their first joint combat search and rescue training mission Sept. 25.

"We are practicing recovering isolated personnel while the Apache suppresses any threat in and around the isolated personnel," said Air Force Lt. Col. John Trumpfheller, 33rd Expeditionary Rescue Squadron commander.

The HH-60s have their own firepower, two 50-caliber machine guns, but Trumpfheller said the Apache's weapons provide an extra measure of coverage. Pave Hawks and Apaches have already flown joint aeromedical evacuation missions in the combat theater.

#### **SBIRS May Still Face Bumps**

The Air Force may be facing additional delays and costs in getting the first Space Based Infrared System early warning satellite, GEO-1, into orbit in December 2009 as planned, the Government Accountability Office warned in a Sept. 30 report. Indeed the confidence level that some contractors will produce the necessary software in time to meet that launch goal is in some cases only five percent, and the program's schedule allows little margin for error, the agency noted.

Further, the Office of the Secretary of Defense has introduced more risk

**Heavy Lifting: A C-17 Globemaster III readies for takeoff Nov. 3 at Ramstein AB, Germany. USAF members at the base handle more than 85 aircraft operations daily. USAF modernized a 50-year old runway at the base, to go along with the brand-new runway built a few years ago. Now the mobility hub can handle the heaviest cargo aircraft in USAF's inventory.**

by granting waivers to streamline the software development processes to meet the schedule, thereby allowing the program "to deviate from disciplined processes," GAO said.

In 2007, the SBIRS program had a "major setback" when flight software for GEO-1 failed testing due to design issues, GAO noted. In April of this year, OSD approved the fix, estimating at that time that the program would be delayed by 15 months and incur costs of \$414 million to resolve the issue. "But these estimates appear optimistic," GAO wrote.

#### **World War II Airman Identified**

DOD announced Oct. 21 that it has identified the remains of 2nd Lt. Ray D. Packard, declared missing following the crash of his P-38 on Aug. 25, 1944 during an engagement with German enemy fighters over Beauvais, France. Packard, of Atwood, Calif., was one of 22 P-38 pilots en route from St. Lam-

## AFRICOM Looks To Expand Airlift Infrastructure

The Department of Defense has no plans to establish any permanent US presence on the continent of Africa at this time, outside of the forces currently stationed at Camp Lemonier in Djibouti, Army Gen. William E. Ward, commander of US Africa Command, told defense reporters Oct. 8 in Washington, D.C.

However, Ward said, an effort is under way to negotiate "cooperative security locations" across the continent that would serve as small logistical hubs for US airlift assets of the just-activated 17th Air Force, the air component of the new command.

It would "not be a permanent infrastructure," he said. Instead CSLs would be places where AFRICOM has standing agreements with host nations to get fuel and logistics support for aircraft as they conduct activities across the continent. Some locations already exist that would meet the command's standards, such as Entebbe, Uganda, Ward noted.

These locations would have a limited storage capacity, fuels infrastructure, maintenance capabilities, and some warehousing available. "We would look to enhance those where it might be suitable" if the host nations agree to it, Ward said.

AFRICOM's permanent air infrastructure will remain at Ramstein AB, Germany, but CSLs will be crucial due to the immense distance between Europe and the interior of Africa, he said. Exercising and training events would require these locations, and, due to the size of the continent, increasing the number of these sites would aid in performing missions such as humanitarian relief, Ward said.

AFRICOM, currently headquartered in Stuttgart, Germany, reached full operational status as a global unified combatant command on Oct. 1. The command is geared toward a systematic, interagency approach to promote stability, security, and democracy on the entire continent, except for Egypt, which remains under US Central Command's purview.

Camp Lemonier is home to Combined Joint Task Force-Horn of Africa, formerly a CENTCOM-run effort that now falls under AFRICOM's responsibility along with African-related initiatives formerly executed by US European Command and US Pacific Command.

bert, France, to strike German-held airfields near Laon-Chambry, France, when they were attacked by more than 80 German fighters, resulting in the loss of 11 P-38s.

It was not until 2006 that US investigators tracked down human and other remains that led to excavations in 2006 and 2007 and the recovery of Packard's ID tag and other items.

## Medal for Bataan Survivor

Retired CMSgt. Robert Brown, the youngest surviving member of World War II's Bataan Death March, received the Bronze Star Medal during a ceremony Sept. 30 at Beale AFB, Calif., 66 years overdue. Due to illness, he was unable to attend the ceremony, but his wife, Rosemary, accepted the honor on his behalf.

Brown was among the Luzon Forces that surrendered to the Japanese on the Bataan Peninsula, Philippines, on April 9, 1942, and then were forced to march more than 60 miles without sufficient food and water through the jungle to a POW camp. He served as a medical technician, helping other prisoners of war during his more than three years of imprisonment by the Japanese, which included time in Korea and Manchuria.

## B-1B Cleared for Synthetic Fuel

The B-1B bomber on Sept. 15 became the third Air Force aircraft certified for "unlimited use" of the synthetic fuel blend that the service wants its entire inventory cleared to use by early next decade. The B-1B joined the B-52H and C-17.

Jeff Braun, director of USAF's alternative fuel certification office, said Sept. 29 that the Air Force has also certified all of its ground support fueling equipment for unrestricted use with the synthetic mix. The fuel blend is a 50-50 mix of traditional JP-8 jet fuel and synthetic paraffinic kerosene. SPK is derived today from natural gas but can also be made from coal of which the US has an abundant supply, making it highly promising as one means to reduce US dependence on foreign sources of energy. ■

## News Notes

■ The Senate confirmed Lt. Gen. William M. Fraser III on Oct. 2 to be the Air Force's 34th vice chief of staff. Fraser received his fourth star Oct. 8 and assumed his new post that day.

■ Air Force Lt. Gen. Craig R. McKinley was confirmed by the Senate Oct. 2 for appointment to the rank of general and to head the National Guard Bureau as its 26th chief and first four-star leader. He has led the Air Guard since May 2006.

■ Werner J. A. Dahm, a University of Michigan professor of aerospace engineering, became the chief scientist of the Air Force on Oct. 1, replacing Mark J. Lewis who had served in that role since 2004.

■ Capt. Chad Bubanas, an AC-130H gunship commander assigned to the

18th Flight Test Squadron at Hurlburt Field, Fla., on Oct. 6 received USAF's annual Cheney Award for his role in directing his gunship crew during a close air support mission in Afghanistan in May 2007 that saved ground troops' lives. The Cheney Award honors valor in an aircraft in service of a humanitarian interest.

■ The 109th Airlift Wing from Schenectady County Arpt., N.Y., sole operator of ski-equipped LC-130 transports in the US military, in September won the National Guard Association of the United States' Spaatz Trophy for being the overall outstanding Air National Guard flying unit in 2007.

■ The Air Force adopted special duty assignment pay in October for most air- men serving in the explosive ordnance

disposal career field to sustain this specialized force in the face of a 30 percent decline in retention since 2002 due to the career field's high operations tempo and the inherent dangers of the work.

■ The National Park Service on Oct. 10 opened the National Tuskegee Airmen Historic Site at Alabama's Moton Field, which, along with Tuskegee Army Air Field, trained black airmen during World War II. A portion of Interstate 85 was also designated that day as Tuskegee Airmen Memorial Highway.

■ The near-simultaneous failure of two hydraulic systems on a B-1B bomber after landing April 4 at an air base in Southwest Asia ultimately led to the aircraft's destruction and damage to two nearby C-130Js, Air Combat Command announced Oct. 1. ■

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## On Military Health Care

**A** long and frequently tense national debate over the cost of military health care once again is gathering force, threatening to become a divisive issue for President Obama in his first months in office.

On one side of this argument are active duty service members, retirees, their family members, and their political advocates. They are warning the Department of Defense not to backslide on its long-standing promise to provide high-quality, affordable health care to the troops and to military retirees for life.

On the other side are Pentagon bean counters. They bemoan rapidly rising health care costs, calling them an "existential threat" to DOD, a "death spiral," and a "national concern" against which Washington is "struggling."

Caught in the middle is the nation's uniformed military leadership. Because of the vagaries of the military budget, health care costs—ever for retirees 65 and older—are funded through the Pentagon's operations and maintenance account.

Demographic shifts, benefits expansion, and general health care inflation have caused health costs to explode in recent years. In 2000, defense officials spent roughly \$17.4 billion (measured in today's dollars) on the health program. Cost increases at the time were considered unacceptable, so the Pentagon scrapped its long-standing CHAMPUS system in favor of Tricare, which was supposed to dampen the cost escalation.

But Congress began raising benefits, and expenses quickly rose to \$39.4 billion in 2007 and \$42.5 billion in 2008. That represented a 144 percent increase just since 2000.

Defense care is a legally protected entitlement, but the rest of DOD's O&M budget is considered discretionary. The more that health care costs rise, the bigger the squeeze put on the rest of the defense budget—assuming Congress doesn't provide additional funds to cover the rising health care expenses.

Over the years, Congress has proved eager to order new benefits, but unwilling to provide the money to actually pay for them, and it has regarded Tricare cost increases as political poison.

This sets up a no-win situation for the military establishment. Legally and morally, they must provide high-quality care to troops, retirees, and family members, though they must also look for ways to cover rising expenses. With static budgets, uniformed officials must either cut core defense programs or fight to shift more cost to the beneficiaries.

Why? Americans are living longer. Millions of veterans from the large Cold War standing military will be on the rolls for decades to come. The number of retirees using Tricare has risen, and the cost to care for each of them continues to rise.

Base closures in the 1990s meant numerous DOD hospitals and clinics closed or became busier. Thousands of retirees and family members no longer had access to "space avail-

able" care, and were forced into more expensive private sector health care. DOD picks up the tab for them as well, through Tricare Standard or Tricare Extra.

Initially, Tricare was available only to retirees under age 65. Those 65 and older were expected to use Medicare. However, armed forces recruiters had for decades promised recruits that, in return for a full military career, the government would provide health care for life. This promise became an integral part of expected military benefits, but it was often broken.

To fix this problem, Congress in 2000 enacted Tricare For Life, which applies to retirees 65 and older. The Pentagon is currently looking at a long-term Tricare For Life bill of \$488 billion.

In fact, Tricare fees and cost shares were never pegged to inflation, and have not changed since the mid-1990s. Over this period, out-of-pocket expenses at private insurers such as Kaiser Permanente and Blue Cross have nearly doubled. The freeze on Tricare fees had the unintended consequence of encouraging ever-larger numbers of military retirees to opt out of private insurance and shift over to the less-expensive Tricare system.

Today, about 75 percent of health care expenses go to retirees, with only 25 percent to active military members. Officials say that, next year, retirees could account for 80 percent of defense health care costs.

DOD's decade-long budget expansion is probably over, meaning the health care bill will soon come due. If military budgets level off in the coming years, as expected, health care costs will consume an ever-larger share of the defense budget, posing an enormous threat to the military's operating budget.

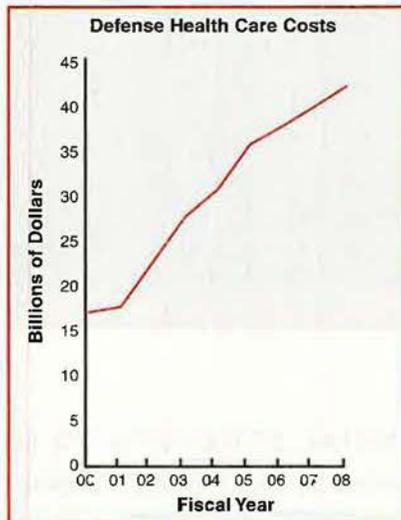
Military health care costs represented only 4.5 percent of the overall Pentagon budget in 1990, according to a high-level task force that reviewed the problem last year. At the current growth rates, defense health may consume 12 percent of the Pentagon budget in 2015.

The task force recommended new Tricare user fees, pegged to inflation, but the proposals were immediately shot down by Congress.

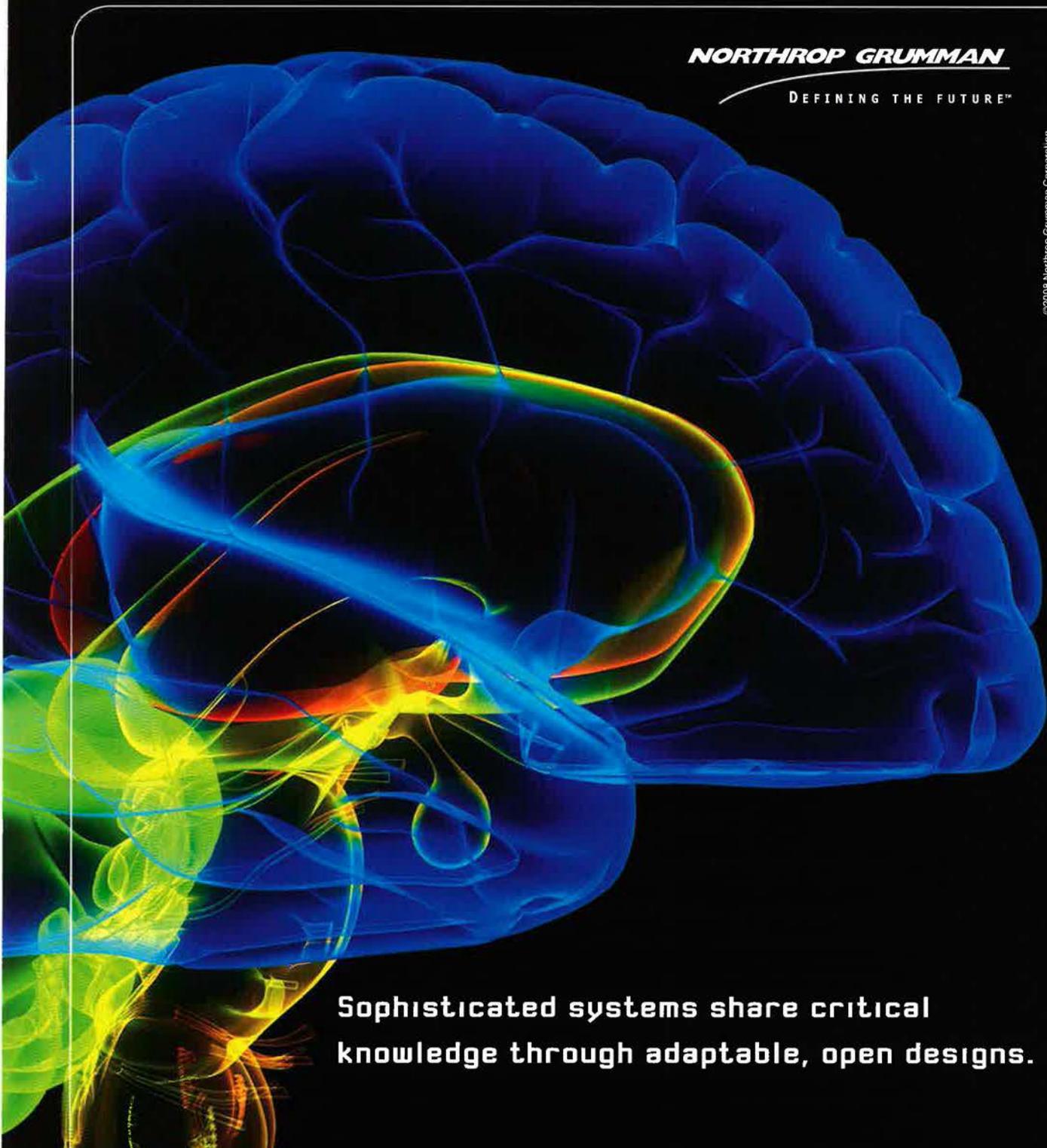
The Defense Department must maintain a quality health care program for its troops, retirees, and their families, but it should not be forced to shunt money from its primary missions to do so. This is not an either-or proposition.

One solution is to enact permanently higher defense budgets. The Obama Administration has the option of actually asking for an appropriate amount of money to pay for both health care and DOD operating expenses.

Another option is to pull defense health spending out of DOD's operating budget altogether. That, at least, would end the unhealthy competition for dollars that exists between proper military health care and defense of the nation. ■



More information: <http://www.DODfuturehealthcare.net>



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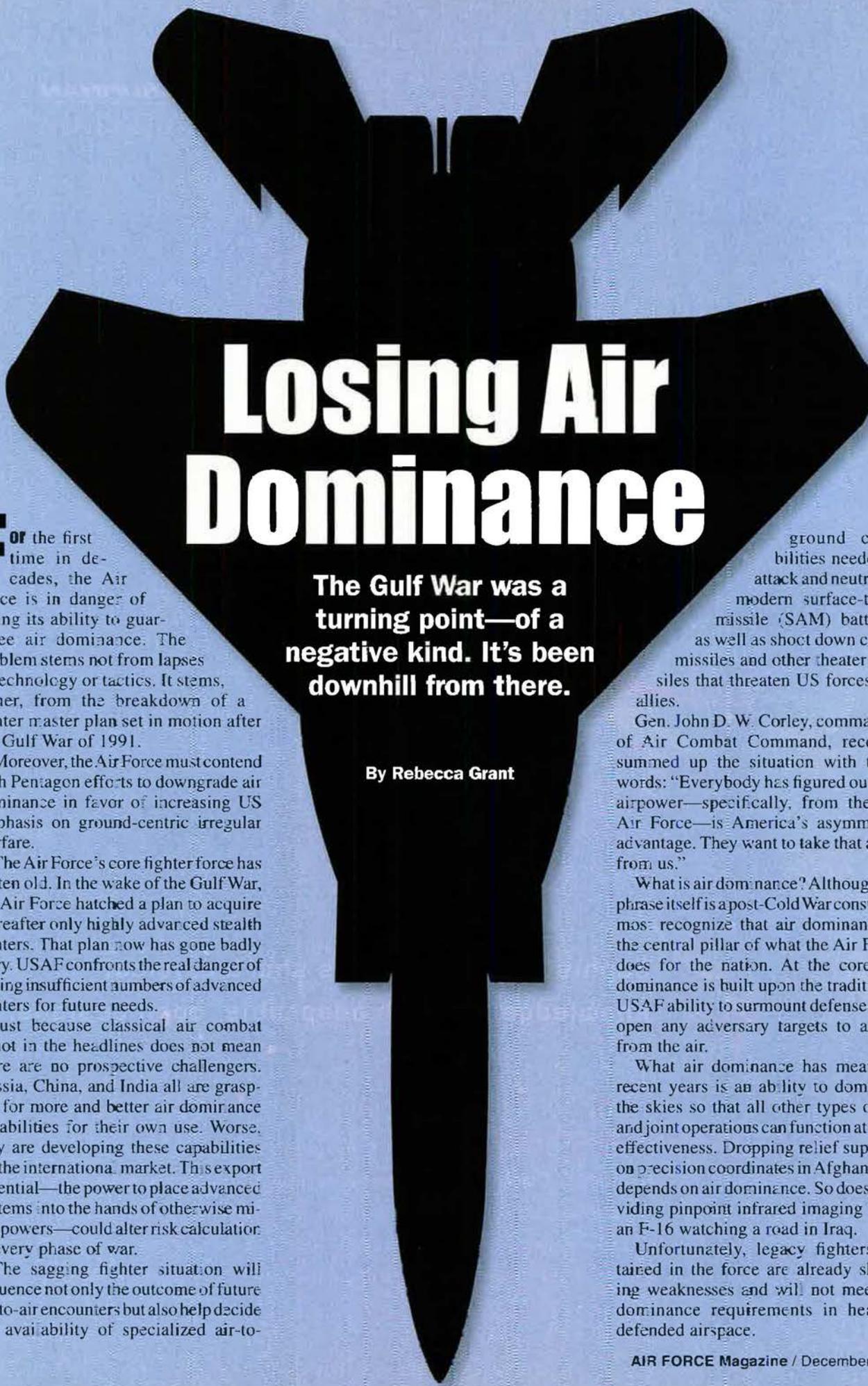
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# Losing Air Dominance

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

**By Rebecca Grant**

**F**OR 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-

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 precise 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.



*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



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



USAF Photo by TSgt. Rick Sborza

*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.*

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

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

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

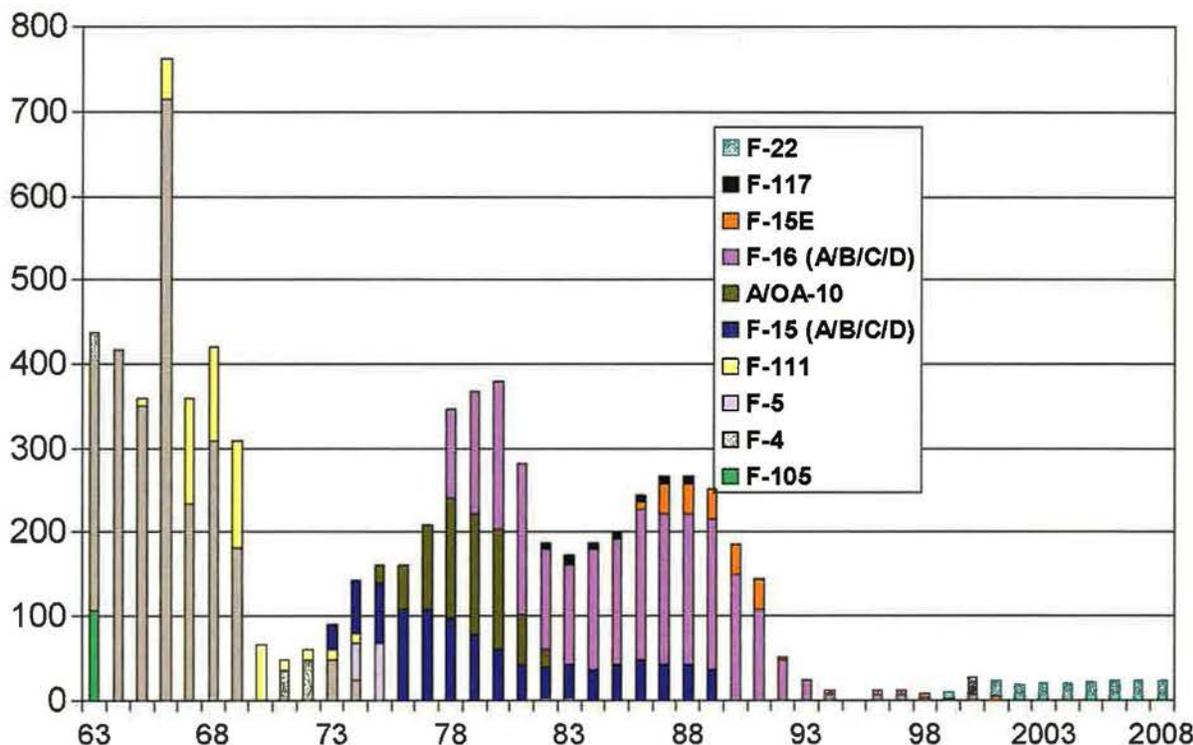
F-117 (already accomplished), all F-15Cs, F-15Es, and many F-16CJs.

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



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.



*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.*

Lockheed Martin Photo

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 “cut-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 Slump



**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,

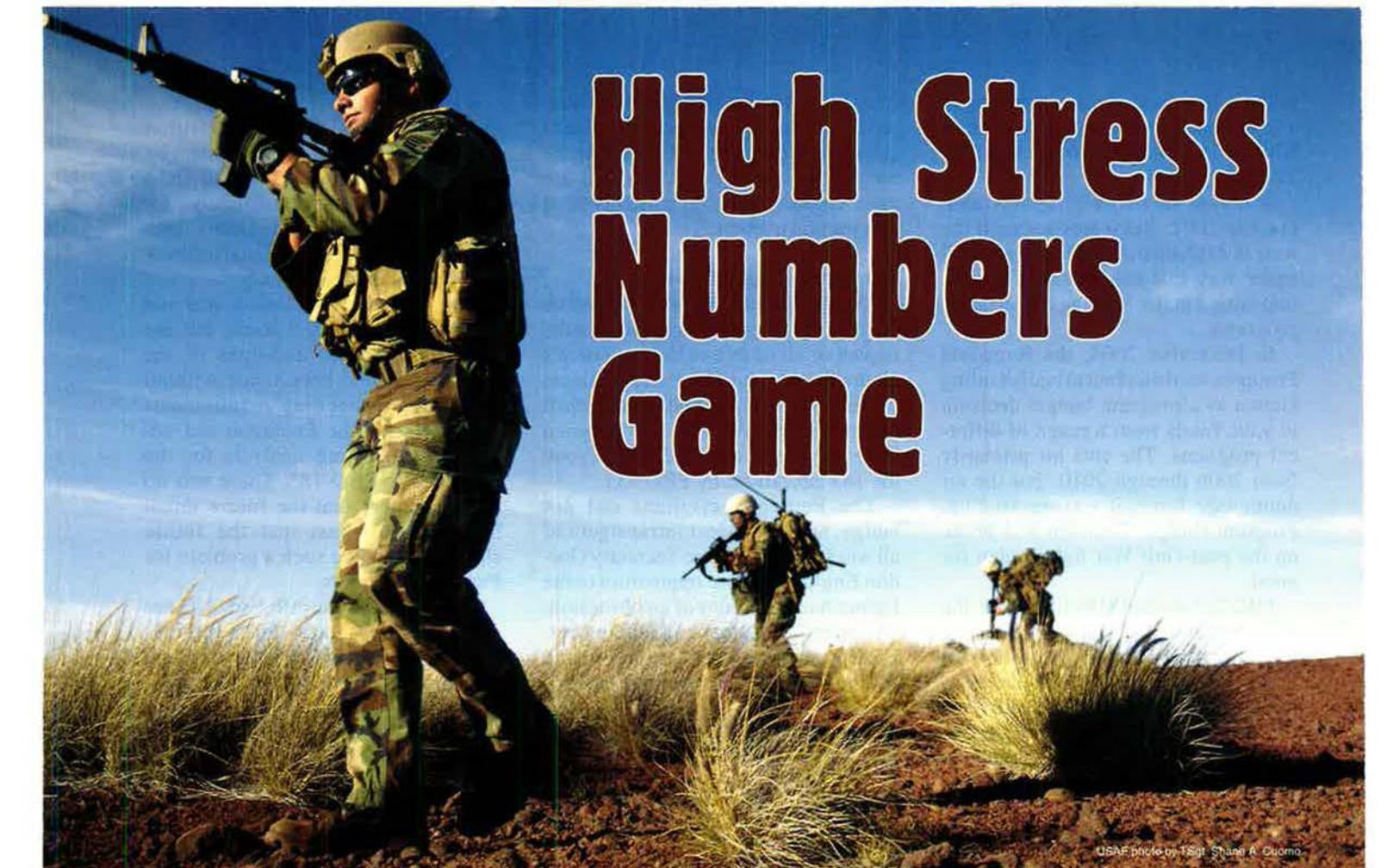
if the line were to stay intact into the term of a new President. The post-Gulf War plan was now in tatters. Lt. Gen. Daniel J. Darnell, the Air Force’s deputy chief of staff, air, space, and information operations and plans and requirements, testified in April 2008 that the truncated F-22 buy and a 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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*Rebecca Grant is a senior fellow of the Lexington Institute and president of IRIS Independent Research. She has written extensively on airpower and serves as director for AFA's Mitchell Institute. This article was adapted from a September 2008 Mitchell Institute study, "Losing Air Dominance." Her most recent article for Air Force Magazine was "Airpower Genesis," which appeared in the November issue.*



# High Stress Numbers Game

USAF photo by TSgt Shane R. Cuomo

**Demand is high. Systems and forces are few. How will the Air Force square the circle?**

**T**he Air Force has long struggled to supply combatant commanders certain premium but scarce capabilities. These powers, essential to battlefield success, flow from a small number of precious, highly specialized aircraft and airmen.

They have never been fielded in sufficient numbers. There are never enough to go around.

Now, USAF is under intensifying pressure to expand these capabilities. Because future budgets are expected to stay flat at best, the service now must find solutions other than spending a larger amount of money on the problem.

Systems and forces experiencing the greatest stress fall into four categories. The four are: battle management; electronic warfare; battlefield airmen/combat search and rescue; and intelligence-surveillance-reconnaissance.

It is an eclectic mix, ranging from the big flying sensor platforms such as the RC-135 Rivet Joint down to

small forces of special operations personnel.

The Pentagon for years referred to these as “low-density, high-demand” capabilities. (The official term is “limited-supply, high-demand,” but it has yet to catch on at the highest levels.) Former Defense Secretary Donald H. Rumsfeld once quipped that, whatever the name, the meaning was clear: “We didn’t buy enough.”

The problem of LD/HD has gotten lip service from senior Pentagon leaders over the years. Even Rumsfeld, after issuing his famous statement, did little to address the problem.

Many LD/HDs are either too expensive, too complex, or both, for the Air Force to simply buy more with available funds, while others cannot be built up quickly at all. In the latter category are special operations forces and battlefield airmen, who require years of training and seasoning.

Air Force officials charged with providing LD/HDs point out that there are

**By John A. Tirpak, Executive Editor**

only three ways to cope with the situation: restrain demand, increase supply, or squeeze more out of assets on hand.

One element—demand—is out of their hands.

The demand is “insatiable,” contended Maj. Gen. Paul A. Dettmer, the Air Force’s assistant deputy chief of staff for ISR. Dettmer, specifically commenting on shortages in his area, noted that the demand for ISR systems has been “exponential” during the past seven years of war in Afghanistan and Iraq.

Field commanders want it all—everything from signals data to imagery—but their singular cry is for full-motion video, such as that provided by Predator and Reaper unmanned aerial vehicles and fighters equipped with new targeting pods, he said.

Almost all Air Force ISR systems are “in a surge mode, and have been for quite some time,” Dettmer noted.

“Virtually everything we have in our inventory, we have pushed up and out, in support of combat ops.”

**SSgt. George Earhart takes point as he trains with other TACPs from the 25th Air Support Operations Squadron.**

In most other fields, the story is much the same. How did the Air Force get in this situation?

Dettmer speculated that, for the last decade, Air Combat Command, which controls most ISR assets, “probably didn’t place as much emphasis and priority on the ISR because of other, equally high-priority issues, like recapitalization of our aging fleet of aircraft.”

However, he said, “There’s been a recognition by the Air Force that ISR is [as] important as next generation fighters [and] bombers.”

The pressure on the Air Force to provide ever-increasing amounts of battlefield information has grown in recent months. Last spring, Defense Secretary Robert M. Gates lamented publicly that he was having a hard time getting the services to meet theater commander demands for coverage, and in a speech at the Air War College at Maxwell AFB, Ala., he complained that it had been like “pulling teeth” to

deploy more ISR capabilities—a job squarely aimed at the Air Force.

After the top two Air Force leaders were forced out in June (ostensibly for service failures in the handling of nuclear weapons), Gates made it known that he wanted their replacements to pull out all the stops and push to get more ISR into the fight. The new Chief of Staff, Gen. Norton A. Schwartz, and the new Air Force Secretary, Michael B. Donley, rolled out an aggressive plan to do just that.

### **Assumption of Risk**

The push to beef up the ISR contingent is getting the most attention and the most resources. Air Force officials, speaking in October, said it wasn’t a done deal yet, but ISR capabilities were slated to get the greatest share of 14,000 personnel billets that Gates returned to the Air Force in June. Some officials suggested that ISR would get as many as 12,000 of these slots.

The ISR field was also set to get “tens of billions” of procurement dollars in the five-year spending plan built for 2010 and beyond, one official reported. The bulk would go toward

sharply increasing the size of the UAV fleet.

While the Air Force is meeting the requirements of US Central Command, this has been done “at the expense of” European Command, Pacific Command, and Southern Command, Dettmer said. In those other areas of responsibility, “we’ve had to assume risk,” he said, meaning that those combatant commanders usually don’t get the ISR coverage they need to have comprehensive situational awareness in their theaters.

Dettmer said he can scarcely think of an Air Force ISR system that isn’t “in a surged mode right now.” The Rivet Joint Sigint aircraft, the U-2 Dragon Lady, and RQ-4 Global Hawk high-flying recon aircraft and MQ-1 Predators and MQ-9 Reapers all have been tasked for nearly nonstop action.

About the only ones not stressed, he said, are super-specialized aircraft such as Combat Sent and Cobra Ball variants of the RC-135, which have specific “scientific and technical” intelligence collection functions needed only for observing events like a North Korean missile test.



**HH-60G Pave Hawks from the 66th Expeditionary Rescue Squadron fly over Iraq in September.**

USAF photo by SSgt. Aaron Allmon



USAF photo by SSGT Brian Ferguson

**Alexander Holcomb (l) and Darryl France, contractors with General Atomics, off-load an AGM-114 Hellfire missile from an MQ-9 Reaper.**

Although technically a battle management asset, the E-8C Joint STARS aircraft fleet is under related stress, said Dettmer, because “its sensors are in very high demand for ISR purposes.” The Joint STARS can provide a wide-area view of all the vehicles moving within a geographical area, and analysts have been able to rewind the imagery of moving vehicles to trace insurgents who buried an improvised explosive device or set up an ambush.

Practically every ISR career field is strained, Dettmer said. The people most in demand are operations intelligence analysts, imagery analysts, and crypto-linguists with Middle Eastern language skills.

These specialists are in what Dettmer calls “one-to-one dwell.” Under the Air and Space Expeditionary Force (AEF) system, the typical Air Force unit or individual deploys for 120 days and is at home for the other 245 days of the year. That amounts to a “two-to-one dwell”—two times as much time “dwelling” in the US as deployed overseas.

With intelligence personnel, “it’s been recognized” that the 120-day AEF goal won’t work, Dettmer reported. “We can’t do that. We can’t ... keep that kind of tempo; we have to do something different,” he admitted.

These LD/HD personnel, rather than go through the AEF structure of a training and rest period followed by a work-up period and finally a deployment before the cycle begins again, have gone instead

into “what we call a ‘tempo band.ng’” format where they are simply deployed six months to a year, and then rotate to home base for a similar amount of time, Dettmer said. Those in the bands are thus deployed about three times as much as those in the standard AEF rotations.

### No Rest For the Weary

“It’s not fixing the problem, but it’s a recognition that we cannot stick to the standard AEF deployment cycle because we’re in a one-to-one dwell,” Dettmer observed.

A decade ago, as the LD/HD problem was just beginning to draw attention, the Air Force began to ask other services to

supply comparable systems that could substitute for Air Force aircraft so the stressed people and hardware could be rested. The Navy, for example, would provide EP-3 Orion aircraft to fill in for some of the electronic reconnaissance mission.

The other services have thrown their ISR assets into the mix for CENTCOM, but the Air Force hasn’t been able to rest as a result. Asked if the other services’ contributions are allowing a respite for the Air Force, Dettmer said, “No. It’s an addition.”

He added that the Air Force is now looking at ways to increase ISR coverage in Afghanistan—where senior leaders have said a greater overall military effort will be required than has been the case the last few years—without stinting Iraq.

How will USAF pull that off? “I don’t know, but we’re working our way through that,” Dettmer answered.

Among the ideas on how to rapidly increase the ISR capabilities in CENTCOM is something called Project Liberty, modeled on the Liberty Ship idea of World War II, in which American shipyards took the design for a tramp steamer and mass-produced 2,700 of them as cargo ships. In the modern incarnation, the Air Force and Army have turned to the RC-12, a military variant of the Beech King Air, to be outfitted with sensors and a crew to replicate the capabilities of a Predator UAV, plus some other “ints” as well.

“It would add in more multiple intelligence-discipline sensors but, predominantly, imaging, full-motion video, and Sigint,” Dettmer reported.

USAF photo by TSgt. Cecilio M. Ricardo



**An aircrew member boards an E-3 Sentry AWACS aircraft just before a surveillance mission over the eastern Pacific.**



Photo by Jim Haseltine

**An RC-135W Rivet Joint aircraft from the 55th Wing, Offutt AFB, Neb., on a recent training mission.**

The Air Force will buy 37 of the planned 51 new RC-12s, and could field the first one as early as February, Dettmer said.

At the same time, the Air Force is in production of Predator, Reaper, and Global Hawk at the maximum capacity of the manufacturers, he noted.

In battle management, while the E-8C Joint STARS is in heavy demand, there is less stress on the E-3 AWACS fleet, according to Col. Steven Ruehl, deputy director for air operations.

Ruehl reported that, because the enemy in Iraq and Afghanistan is almost exclusively a ground force, the AWACS fleet has come off a full-pressure deployment schedule, and other COCOMs are getting the coverage they need from the system. That wasn't always the case; in the 1990s, AWACS was one of the most-stressed systems, and during the combat phase of Operation Iraqi Freedom, AWACS was "heavily tasked," Ruehl said.

The AWACS force today is "stretched, but it is not anything we can't manage," he observed. Even so, AWACS and Joint STARS, while "being managed at a rate that is sustainable, [are] still considered [low-density], high-demand."

The Pentagon top leadership is not turning a blind eye to the LD/HD problem. Marine Corps Gen. James E. Cartwright, vice chairman of the Joint Chiefs of Staff, ordered US Strategic Command to perform "a force sizing study," which was due to be completed in November, to address some of the LD/

HD issues, Dettmer reported. The study was to identify models or other tools that could predict the mix of resources needed to deal with ISR requirements across a range of scenarios. It will be one of the first studies in recent times to get into "this issue about the requirement," Dettmer said.

### The Brute Force Way

"What's the requirement?" he asked rhetorically. "What's the required capability for Iraq and Afghanistan? ... We don't have a good answer yet."

That has been a problem because the Air Force has been chasing an ever-changing demand for LD/HD assets. The Air Force handily beat 2007 Quadrennial Defense Review targets for increasing UAV patrols over Iraq and Afghanistan, but has been told it's still not enough. Particularly in ISR, no matter what is provided, the combatant commander asks for more. The Air Force has not wanted to say no, so it has squeezed hard to put more capability out.

"We're going to keep putting out until someone says we've got it right, or we can't afford more," Dettmer asserted. "When folks are getting shot up and maimed, then you're not doing enough. That's been our view." Continually throwing more into the mix is "kind of a brute force way to do this," he said, and he's hoping STRATCOM's analysis will develop more quantifiable goals.

"If we can get agreement by everyone in all the services and OSD that, for want of a better, this model is what we'll use,

that may get us closer to ... what kind of mixes help satisfy the requirement in ... Iraq and Afghanistan, with both traditional and nontraditional sources, and to include our national overhead systems as well," he said.

More money and machines will help, but Dettmer noted that projections show that by 2011, USAF will have increased its ISR flying hours by 4,700 percent since 2001, but its manpower "will have contracted by about two percent. So, you can draw your own conclusions; something's got to give." Even if all notional budget adds to the ISR personnel force come to fruition, it would still yield only "a net .6 percent increase in Air Force intel manpower."

The Air Force lost its E-10 battle management program in budget drills two years ago. The aircraft was to have replaced AWACS, Joint STARS, and Rivet Joint aircraft, and without a new aircraft, those platforms need upgrades to stay airworthy. The AWACS fleet is undergoing a major capability enhancement, and the E-8C fleet will get a long-requested engine upgrade to improve performance and time on station. But simply replacing the big platforms won't, by itself, fix the LD/HD problem.

Dettmer said the Air Force will likely develop a new solution to ISR shortages, capitalizing on "significant sensor capabilities on nontraditional [ISR] platforms like the F-22, F-35, [and] bombers" to collect more information on the battlefield. The stealth aircraft will both have impressive sensor suites that will act as ISR vacuum cleaners, sucking up data about the enemy's posture and feeding it to military networks.

This nontraditional ISR "is a way to mitigate" the LD/HD problem, Dettmer said, and a whole series of studies is under way to look at "concepts of operation, ... tactics, techniques, and procedures" to turn every aircraft in theater into an ISR sensor.

Ruehl said the Air Force currently does not consider any of its "shooters"—bombers, fighters, attack aircraft—to be in the LD/HD category. All the combat aircraft are being managed within the framework of the AEF, and they are generally sticking to the 120-day AEF deployment rotation, he reported.

Only one kinetic combat system is considered to be LD/HD, and that is in combat search and rescue, Ruehl noted. The Air Force is overdue on beginning



USAF photo by S/A. Miranda Moore

*A flight line ground crew attaches a tow rod to a Global Hawk UAV at Andersen AFB, Guam.*

replacement of its 101 HH-60 *Pave Hawks*, which are averaging a one-to-two dwell time, he reported—meaning that for every month deployed, two are spent at home base. This does not necessarily equate to the 120-day AEF rotation. In the reserve component, Ruehl said, CSAR units are on a one-to-four dwell.

Not to be overlooked in the CSAR mission is the HC-130 fixed-wing transport, which, like most of the legacy C-130 fleet, is showing its age and is in need of structural upgrades, particularly to center wing boxes.

Moreover, the EH-60s have been heavily used, and their maintenance requirements are putting a strain on ground crews.

“It takes more effort by the entire team to get those airplanes prepped and ready to execute,” Ruehl said. “They have a lot of hours on those aircraft.”

A new CSAR aircraft was selected two years ago to replace the HH-60, but after a series of protests, the Air Force was compelled to rerun the competition. A winner is expected to be selected in the next couple of months. Competitors include Boeing, with its HH-47 (which originally won the contest before the protests); Lockheed Martin, offering the HH-71, a version of the European EH-101 also selected as the new Presidential transport helicopter; and Sikorsky, offering its HH-92 *SuperHawk*.

The CSAR-X acquisition is supposed to yield 141 aircraft, which would ease the burden on CSAR forces. However,

Ruehl said that CSAR is not one of those missions where COCOMs are being asked to do without.

“At this point, we are meeting the needs of all the combatant commanders with regard to CSAR,” he asserted.

Beyond that, Ruehl said the most stressed assets are in “human capital,” and list a half-dozen disciplines where the Air Force is chronically short of people needed for key jobs.

Topping the list are tactical air control party airmen, or TACPs. These airmen embed with ground forces to help combat aircrew provide close support to troops on the ground. The Air Force and Army recently signed a deal that would have the Air Force increase its TACPs so that there would be enough USAF people to embed with all Army combat units.

### More Stress

“We intend to meet that requirement by 2014,” according to the agreement, Ruehl said, but he did not have a specific timetable for doing so. The Air Force agreed to provide enough airmen to integrate with the larger Army expected to be fielded by the middle of the next decade.

After the TACPs, stressed career fields include, in no particular order, explosive ordnance disposal experts, civil engineers, linguists, security forces, special operators, pararescuemen, and even contracting officers. The latter are needed because local merchants want to deal with an individual they have gotten to know, and the AEF Center at Randolph AFB,

Tex., assigns people to this job for a year-long tour as a result.

Although the Air Force is striving to keep these areas at a one-to-two dwell, Ruehl acknowledged that “we are at or approaching a one-to-one dwell” in EOD, security police, civil engineers, and contracting.

He added that the Office of the Secretary of Defense instituted a series of “red lines” to highlight the issue of LD/HD. When any system or career field is at or approaching a one-to-one dwell, a formal notification must be made to the Chief of Staff. Schwartz receives such notifications regularly.

One area of stress that is not apparently being addressed with any funded program is electronic warfare. The Air Force shares use of the Navy’s EA-6B *Prowler* escort jamming aircraft, but the *Prowler* will retire in the next few years, and when it does, USAF will have no dedicated platform for electronic attack. The service is exploring a broad-area jamming system carried aboard B-52 bombers, called the Core Component Jammer. Such a project has already been tried once, but was scrapped due to high costs.

Air Force officials generally keep mum about other approaches to electronic combat, saying only that the F-22 and F-35 stealth fighters will have significant self-protection jamming capabilities by virtue of their advanced radars and sensors. Even so, inventories of other types of electronic warfare platforms, such as the EC-130J *Commando Solo*, will not be increased under current plans.

Ruehl said that the 14,000 billets the Air Force was given back this past summer will largely flesh out ISR units, with the remainder going to meet heightened personnel requirements in the nuclear mission. Asked if any would be left over to help the other stressed career fields, he said, “What I’ve been told is, the answer is, ‘No.’”

The stressed fields are not experiencing a massive exodus, though, Ruehl said.

“You’re always going to have some percentage of people that will elect to go on and do something else,” he said, but the stressed fields “are not voting with their feet.”

He said he believes that incentive pay and re-enlistment bonuses help with retention, but that chiefly, “I talked to these people out in the field, and they like what they’re doing, they are professionally satisfied, and know that this is important for the nation.” ■

AIR FORCE ASSOCIATION'S 25TH ANNUAL

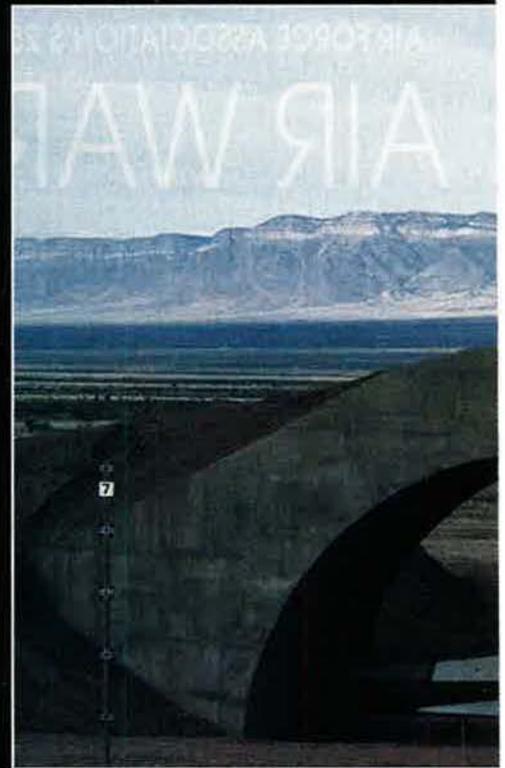
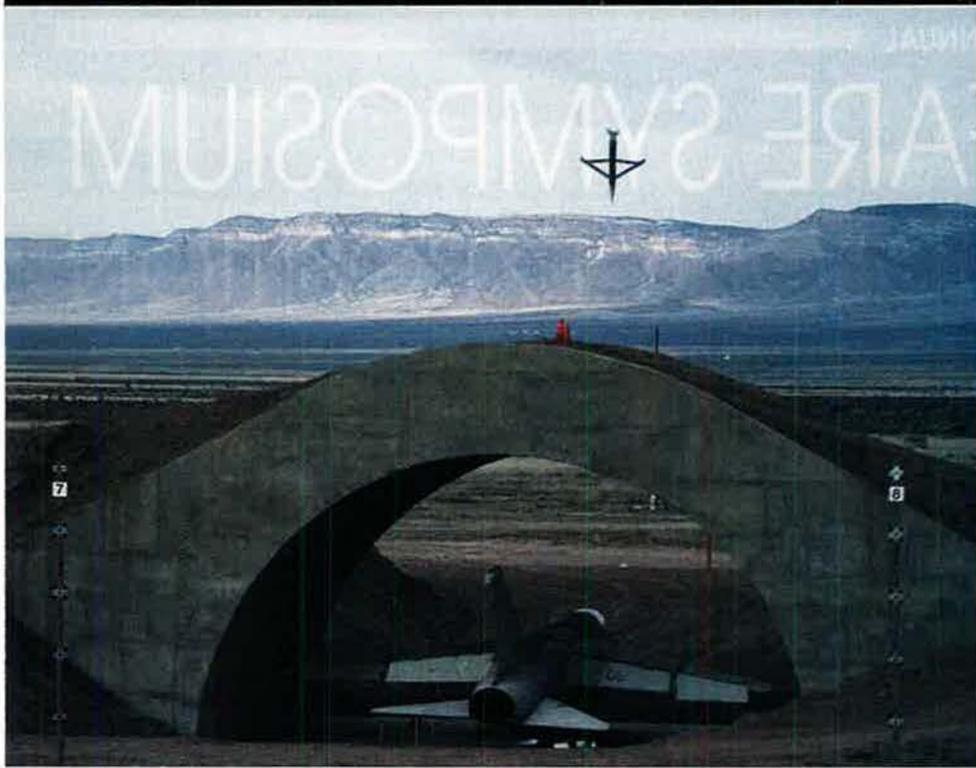
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**USAF seeks weapons with less boom but more precision and flexibility.**

# Focused Lethality

By Marc V. Schanz, Associate Editor

**T**he Air Force has embarked on a sizable conventional-weapon update in hopes of greatly expanding its power to generate specific—and greatly varied—battlespace effects.

Propelling the new weapon effort is the operational impact of a smaller and still-shrinking aircraft fleet. Weapons are now being designed to yield greater accuracies and offer much more flexibility in employment. Future aircraft, piloted and unmanned alike, will require portfolios of weaponry that can be smaller, but only if they can produce a wide variety of effects.

USAF's munitions arsenal faces "performance issues," Air Force Secretary Michael B. Donley told Congress in July, and the Air Force is committed to increasing the lethality of its

force "through advanced weapons." Donley added that the service now is developing "a new generation of scalable weapons with improved accuracy, standoff, penetration, and stealth."

These weapons have already begun to emerge and will continue to flow into the inventory over the next few years.

Weapons procurement plans may seem random to an outsider, but they have not been formed in a vacuum, argue planners at Air Combat Command, Langley AFB, Va. They note that the Air Force seeks a specific mix of new capabilities to complement older weapons that will remain in service a while longer.

Lt. Col. Andrew D. Spires, chief of ACC's weapons and tactics division (known as A3TW), is in charge of harmonizing the operational plans for

specific theaters with the capabilities needed to attack targets there.

"We just don't ... say, 'Hey, this is a great weapon; we're going to buy it,'" Spires said. "We need to have a weapon that is drilled down to a requirement."

The specific requirement could be deep-earth penetration, all-weather capability, or laser guided accuracy.

This is not a new process. Back in the early 1990s, the Chief of Staff, Gen. Merrill A. McPeak, was displeased that the Air Force's Paveway laser guided bombs could be rendered ineffective by rain, dust, and cloud cover. He ordered work to begin on an all-weather precision guided weapon.

McPeak's order was the genesis of the Joint Direct Attack Munition—a



“dumb” unguided iron bomb fitted with sophisticated, Global Positioning System-powered guidance hardware. The JDAM has become the go-to weapon for the Global War on Terror, and the same process has now given birth to several new capabilities with precise combat effects, said Spires.

Spires, recalling his deployment to the Middle East this year, said airmen there are expending an “extraordinary amount of effort” on the task of limit-

ing collateral damage, adding that “a lot of that drives the engineering on what we need in theater.”

### Enter SDBs

This affects everything from the size of the warhead to the precision of the guidance systems used.

These efforts were key to the introduction of the Small Diameter Bomb, a near-precision, GPS-guided 250-pound warhead with a blast area significantly

*Stills from a video sequence showing a Small Diameter Bomb penetrating a hardened shelter.*

smaller than that of other weapons. From its first combat deployment in October 2006, the weapon has quickly become a mainstay for combat operations in both Iraq and Afghanistan.

An SDB variant, known as the Focused Lethality Munition, reduces collateral damage even further, according to Spires. That is because it features a composite-material casing to minimize fragments and a special multiphase fill designed by the Air Force Research Laboratory. The FLM arose from an urgent combat requirement. The first 50 were delivered to the Air Force in March.

A second increment of the SDB is in development and features the ability to hit moving targets in all weather conditions from standoff distances up to 46 miles. The Air Force plans a contract award by the end of 2009.

As unmanned aerial vehicles have increased their combat effectiveness,



USAF photo by TSgt. Erik Gudmundson

*SSgt. Michael Jackson (l) and SSgt. Anthony Bagen, both munitions crew members with the 77th Expeditionary Fighter Squadron, prepare a JDAM to be loaded onto an F-16.*



**An F-16 fires an AGM-65H Maverick missile at a target at the Utah Test and Training Range. New Mavericks are being used against moving targets such as terrorists' trucks.**

their weapons loads have evolved as well. The service's UAV fleet, dominated by the MQ-1 Predator and MQ-9 Reaper, is currently equipped with familiar, current generation weapons such as the AGM-114 Hellfire missile, GBU-12 Paveway II munition, and JDAM.

Old weapons are getting their own capability improvements. USAF's AGM-88 High-speed Anti-Radiation Missiles, known as HARMs, will be upgraded

with new navigational tools and will cause less collateral damage.

### New Deployment Standards

ACC officials said that, as the Air Force expands its use of UAVs—especially the Reaper—capabilities will continue to advance. The MQ-9 should begin “Reaper Increment II” upgrades in 2011. In this period, weapons such as the SDB II will enter the Reaper's weapons arsenal.

Realities of modern warfare have also affected some older weapons such as cluster munitions. The BLU-108 submunition proved highly effective in the early days of Operation Iraqi Freedom, when it was used to great effect against Iraqi armored columns, but new policies limit its use. While reaffirming the military utility of cluster bombs, DOD has implemented a stricter standard for deployment.

In July, DOD released a new US cluster munitions policy which mandates that cluster weapons must have, by 2018, a functioning rate of at least 99 percent. This means that the weapon, after arming, must leave no more than one percent of its bomblets on the ground as unexploded ordnance.

For area attack, the Air Force's Sensor Fuzed Weapon Preplanned Product Improvement version (SFW P3I) now has entered the inventory. The weapon is more than 99 percent reliable and is the only area weapon currently meeting the criteria, said ACC.

The Air Force is now evaluating the best way to draw down and eventually demilitarize the remainder of its legacy cluster munitions.



**This USAF F-15E, over Afghanistan, bristles with weaponry—a JDAM, laser guided bombs, and an AIM-120 Advanced Medium-Range Air-to-Air Missile.**



Airmen at Dyess AFB, Tex., ready a Joint Air-to-Surface Standoff Missile (JASSM) to be loaded onto a B-1B.

ACC officials said they are closely analyzing the payload capacity of the F-22 and F-35; the internal weapons bays for the stealth fighters have limited space. Internal carriage allows F-35s and F-22s to keep a stealth profile in combat and evade air defenses. Smaller precision munitions, such as the Small Diameter Bomb, have been developed to meet these requirements.

Because of the cramped internal spaces in these fighters, planners also are pursuing the idea of weapons that can carry out air-to-air and air-to-ground functions. ACC's weapons planners indicate a focus in this area. The Joint Dual Role Air Dominance Missile (JDRADM) is envisioned as a single multirole missile for air and ground targets, and will meet the needs of a fifth generation fighter force structure around 2020.

Combat forces are clamoring for more flexible weapons to meet immediate needs. One result is the GBU-54, better known as the Laser JDAM. It was first employed in combat Aug. 12 by F-16s over Iraq in an attack against a moving enemy vehicle.

First identified as an urgent operational need in early 2007, Laser JDAM's development and testing was completed in fewer than 17 months. It is the service's newest 500-pound precision weapon, equipped with a special sensor combining GPS guidance with the pinpoint accuracy of laser targeting.

The Air Force has ordered 400 units and is deploying them across the combat fleet, Spires said.

He said the new weapon gives combat aircraft a capability similar to the EGBU-12 Paveway II laser guided bomb, with GPS augmentation to boot. The weapon is mountable on any aircraft that currently flies with JDAM. It allows a pilot in a combat situation to switch back and forth between satellite guidance and laser targeting—depending on the nature of the target.

### Newer Mavericks

The Air Force has also moved to increase its portfolio of weapons useful against moving targets by acquiring a new variant of the old Maverick air-to-surface missile. The new missile, with an improved and newly manufactured laser seeker mated to a legacy Maverick body, is critical for precision strikes against high-speed, fleeting targets in urban areas.

ACC officials said they expect to buy 250 to 400 of the low-collateral-damage missiles beginning in 2010. USAF currently fields an older version of the laser Maverick on fighters such as the A-10C, which deployed to Iraq last year with about 50 vintage variants provided by the Navy.

The Air Force wants greater flexibility in its future weapons. "You're probably going to see more combining of guidance capabilities [versus] com-

ing up with new guidance capabilities," Spires said.

Ten to 20 years from now, newer weapons will likely feature as many as four guidance systems, Spires predicted. These could include laser, radar, GPS, or inertial types, or some other breed of classified guidance technology.

Conventional standoff strike—attacking from beyond the range of enemy air defenses—is a capability that has not been in much demand since the early days of Operation Iraqi Freedom.

But strike plans, especially against well-defended targets and integrated air defenses, depend on standoff-range stealthy weapons.

The Joint Air-to-Surface Standoff Missile, a cruise missile that as recently as last year was on the verge of cancellation after a long string of test failures and cost overruns, is key to future war plans.

Lt. Col. Gregory McNew, commander of the 676th Armament Systems Squadron at Eglin AFB, Fla., and JASSM deputy program manager, said a good portion of the cost growth was linked to USAF's changes in the program. Old plans for 2,400 missiles were revised, more than doubling the projected buy to 4,900 rounds in two variants—JASSM and JASSM-Extended Range. JASSM-ER is capable of a 500-mile range, 300 more than the original.

Once seemingly a model for a low-cost weapons acquisition, JASSM's 2007 troubles spurred the Air Force and Lockheed Martin to give the program a complete scrub. Following the review, ground testing at Eglin certified the weapon's GPS capability and in February the program conducted 16 flight tests in four days at the White Sands Missile Range in New Mexico.

Fourteen of the 16 tests were successful.

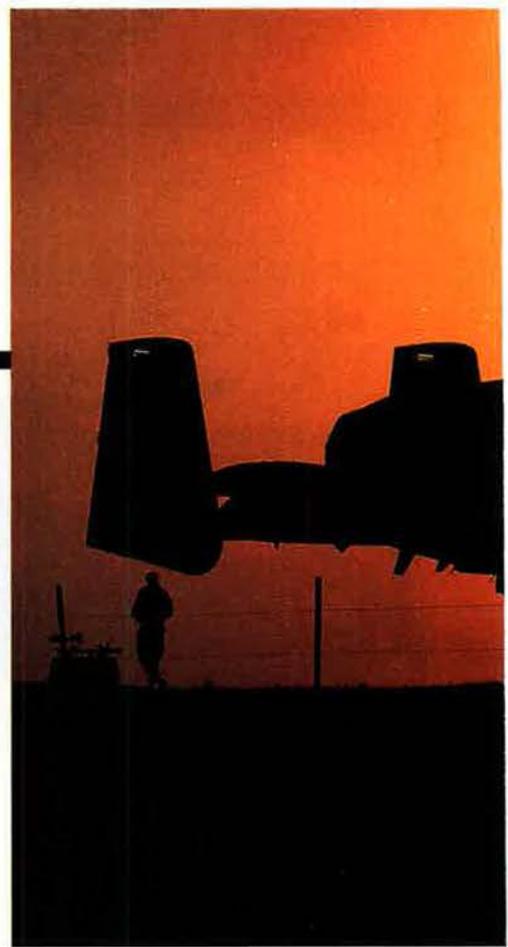
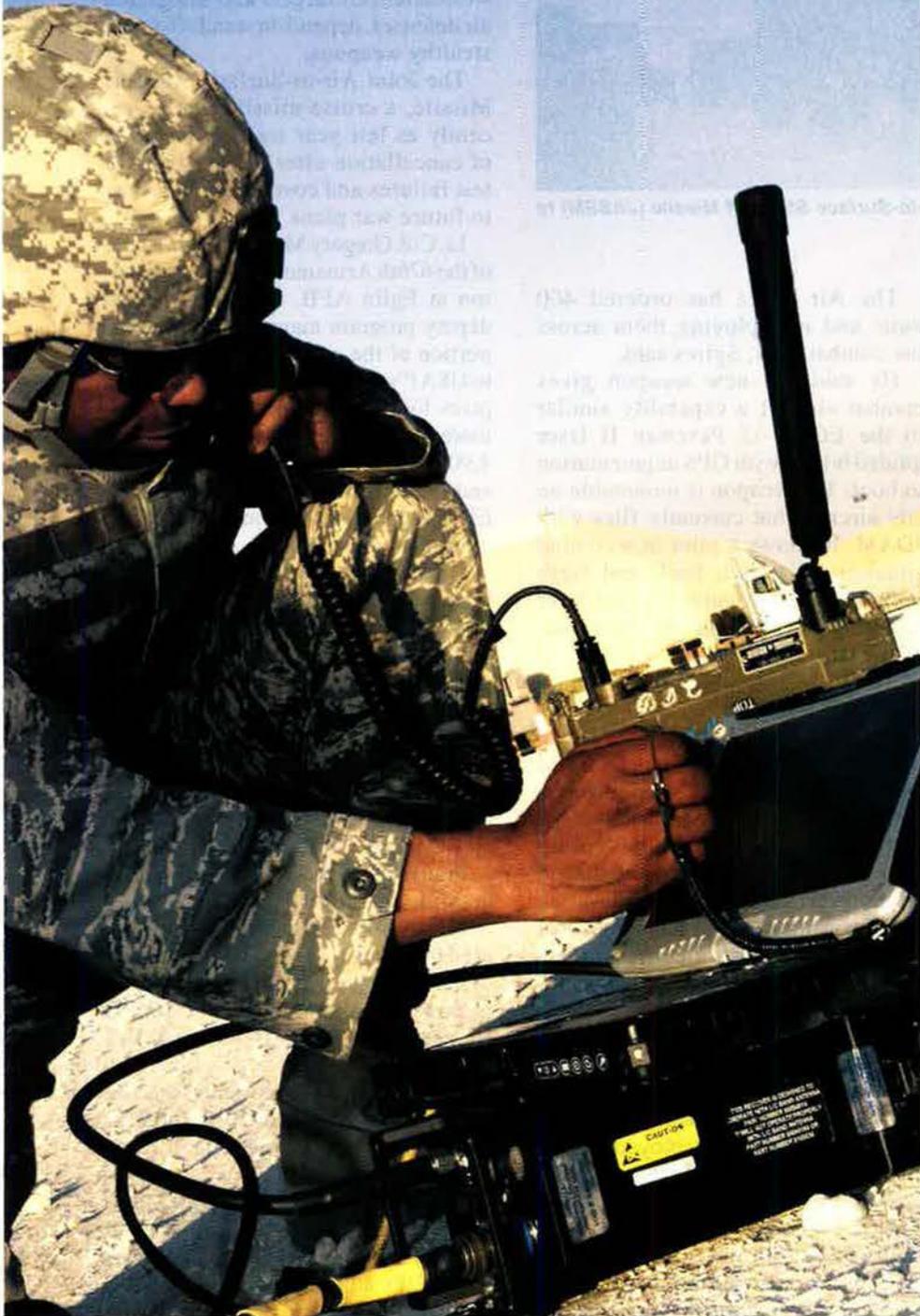
Nearly 800 missiles had been delivered by August, according to program officials, and the baseline weapon is now operational on the F-16C/D fighters and B-52, B-1B, and B-2 bombers.

The extended range variant is to be delivered beginning in 2010. Integration efforts are proceeding for the F-15E and the F-35.

According to JASSM Program Director Alan Jackson, it remains to be seen if the F-35 will carry two or four of the stealth cruise missiles on external stations. ■

In recent years, close air support has undergone something like a revolution.

# Armed Overwatch



By Rebecca Grant

**T**he US and its coalition partners will fly nearly 35,000 close air support and armed reconnaissance missions over Iraq and Afghanistan this year. Since 2004, the cumulative total will top 130,000 sorties.

Oct. 11, 2008 was a typical day over Afghanistan. F-15Es, A-10s, and Navy F/A-18Cs dropped a variety of satellite guided Joint Direct Attack Munitions on enemy forces in Nangalam, Shkin, Qalat, and other cities. Warthogs and Hornets flew low-level show of force flights. All told, 70 sorties covered NATO and Afghan forces conducting patrols and reconstruction activities that day.

Close air support peaks when the air defense environment is relatively benign and when large numbers of ground forces are on the move and

*Left: MSgt. Chris Thompson, a joint terminal attack controller, operates a ROVER in Southwest Asia. Top: A-10s, such as this one, perform daily close air support missions in the War on Terror. Right: An F-15E heads out on a mission over Afghanistan.*

USAF photo by SSgt. Angeliique Perez



USAF photo by TSgt. Cecilio M. Ricardo Jr.

engaged with hostile forces. Iraq and Afghanistan have met the preconditions for several years.

“This is our continual task—to have airpower overhead,” Lt. Gen. Gary L. North, US Central Command’s combined force air component commander, has said.

This is the new kind of CAS, in which most sorties do not drop bombs although pilots are ready to do so on a moment’s notice. Aircrews fly regular, dedicated sorties, but “armed overwatch” and shows of force are the new norm.

In this regard, CAS today bears little resemblance to the close air support of yesterday. For example, in Korea, August 1950, Far East Air Forces (FEAF) alone logged 7,397 close air support sorties—about 238 per day.

In Vietnam, CAS was so intense during the siege at Khe Sanh and on other occasions that B-52s became specialists at bomb drops just a few hundred yards from friendly troops.

In Desert Storm, CAS totaled just six percent of the sorties. It was considered an emergency procedure, tightly controlled and limited in numbers.



USAF photo by MSgt. Phillip J. Kelly



*MSgt. Craig Hillsman (r) relays target information to an A-10 pilot during a training exercise. TSgt. Robert Mathis is operating a ground laser target designator.*

Precision weapons, rapid retargeting, and the use of sensors for battlespace awareness have revolutionized CAS. Virtually all fighter and bomber sorties flown in the CENTCOM area of responsibility are now categorized as close air support.

The change became obvious with the kickoff of Operation Iraqi Freedom in March 2003, where the lion's share of armed fighter sorties were termed kill box interdiction/close air support, or KI/CAS—a term with a nice vernacular ring. KI/CAS was emphasized to ensure that land forces had plentiful interdiction and close air support on their two-pronged drive to Baghdad.

Air commanders sought to limit the amount of “traditional” close air support because of the high payoff from attacking enemy forces before they engaged troops. Most of the early OIF sorties interdicted targets tens and even hundreds of miles away from the forward edge of the battle. Kill box interdiction was efficient because fewer airspace control measures were needed when friendly troops were not in close proximity.

The concept won praise from its main customers—the land forces.

“We had CAS in abundance,” said then-Lt. Gen. William S. Wallace, commander, V Corps, and the top Army commander on the ground in Iraq.

A total of 15,592 designated mean points of impact (DMPs) were struck while labeled as KI/CAS missions during the month of major combat operations. By that reckoning, KI/CAS consumed 79 percent of the air attack effort.

### Three Types

Much of this was “Type III” CAS, where controllers cleared aircraft to drop within a certain area for a specified period of time, with devastating effect.

In Type I close air support, the joint terminal attack controller is physically located at the objective and sees both the aircraft and the target. One controller described Type I CAS as “the reason I have no hearing in my left ear.”

In Type II CAS, the JTAC has real-time and accurate target data, but there is no requirement to see the aircraft and target. Because of this, the aircraft must be “cleared hot” by the controller for every strike, to ensure accuracy.

In Type III CAS, the JTAC gives an aircraft blanket clearance to attack a

specified area in a given time period. The JTAC imposes limits through boundaries and terrain features, but aircraft do not have to check in for clearance before every weapons release. This type of kill box CAS was common in the major combat operations phase of Operation Iraqi Freedom.

Controllers today find themselves relying heavily on Type I and Type II CAS. Blanket clearance for Type III CAS has become very rare, “especially in Iraq, where it’s so dense,” said MSgt. Thomas Gorski, a JTAC instructor. “You really want control” in an urban or populated environment.

Yet there were clearly areas for improvement even early on.

An after action report from the Army’s 1st Battlefield Coordination Detachment examined what they called “the good and bad” of joint fires in late 2003. The BCD was located within the combined air operations center and served as the main liaison between air and land components. While praising

the abundance of close air support sorties, the report turned a critical spotlight on command and control issues, and the lack of standardized, timely bomb damage assessment to pass back to the land component was a top complaint.

The Air Force did not see the problem in quite the same terms—as Lt. Gen. T. Michael Moseley, then the CFACC, put it while the campaign was still under way: “There will be someone, somewhere along the way, that will want an accounting scheme of who killed what vehicle, ... but right now that’s not important to us.”

Overall, KI/CAS was a winner in the all-out phase of OIF, but few anticipated that CAS would grow into the glue helping hold together dispersed land operations. The need to manage a lethal but evasive threat vaulted CAS into a

different: Collateral damage concerns and the dense mix of forces require controllers to deliver CAS with greater efficiency.

Aircraft on CAS missions have now dropped laser guided bombs and JDAMs on personnel sites, compounds, and weapons caches.

They linked with controllers on the ground via ROVER communications laptop sets streaming real-time video between cockpits and the ground controllers.

They delivered emergency close air support in close visual range to troops under fire.

Aircraft began getting calls to strafe insurgents on low-level passes at more than 400 miles per hour.

They fired flares at low altitudes to press insurgents into retreat.

The finely tailored support allowed

Having aircraft airborne and on call permitted land forces and Special Forces to fan out without lugging along mortars and artillery every time they moved.

The terminology of record dropped references to interdiction.

AFCENT records later showed just 371 bombs dropped during the 20,787 sorties flown in 2004, but that didn’t matter. The troops are protected whether bombs are dropped, flares frighten off the enemy, a screaming low-level pass compels an enemy retreat, or the mere presence of coalition aircraft deters an attack.

### Hide and Seek

The real ramp up began in 2007, when overall sorties rose to 30,668 across the CENTCOM AOR. Between 2004 and 2007, the number of close air support sorties flown increased 50 percent, according to Air Forces Central. CAS sorties flown in Afghanistan nearly doubled, while close air support for Iraq rose 25 percent.

Gone are the days of dropping strings of ordnance on dug-in positions for hours on end. The precision of today’s CAS weapons are matched by ever-more careful procedures for weapons employment.

“The enemy doesn’t operate in droves like in past conflicts,” said Lt. Col. Dave Trimble, who was the 190th Expeditionary Fighter Squadron commander in Afghanistan. “It’s not like we show up and see a mass of people advancing. It’s much more challenging trying to find them in the types of terrain they are dispersed in.”

Enter the joint terminal attack controller. The JTAC has the authority to call in close air support, and these days, land force operations in Iraq or Afghanistan don’t go far without them.

In 2008, the 6th Combat Training Squadron at Nellis AFB, Nev., produced 120 qualified JTACs. Senior airmen and staff sergeants first attend a course at Hurlburt Field, Fla., then go to Nellis for five weeks of intensive training—three weeks of academics followed by two weeks of live exercises on the range.

The live exercises are where the JTACs learn the “mental muscle memory” of close air support, the “cadence they follow when controlling aircraft,” explained Lt. Col. Red Walker, director of operations for the 6th CTS.

On the range, each JTAC gains proficiency by controlling eight to a dozen close air sorties before return-



USAF photo by MSgt. Andy Dunaway

**An al Qaeda compound in Iraq goes up in smoke after being hit by a B-1B. Note the JDAM about to hit the target.**

set of new missions as the stabilization operations in Iraq and Afghanistan grew more complex and protracted.

In 2004, coalition air forces flew 14,292 CAS sorties in OIF and another 6,495 supporting Operation Enduring Freedom.

Then the missions widened. Stability operations and dispersed firefights are

ground forces to use strike aircraft for suppressive fire.

US Air Forces Central’s categorization of all of these missions as close air support sorties changed the terms of reference. While many supported troops in contact with enemy forces, most were flown in a role best described as overwatch.



USAF photo by MSgt. Andy Dunaway

**A B-1B begins a new mission over Afghanistan. Virtually all heavy bomber sorties are classified as CAS missions.**

ing to home units for final mission qualification

“We graduate guys who will conduct this job safely,” said Gorski, an instructor at the 6th CTS.

Production “does need to increase,” said Walker. The Army’s brigade combat teams are expanding, and “the need for JTACs will increase.” Recognizing this, the 6th CTS is ramping up to train 150 new JTACs in 2009, and perhaps even more in the future.

Nellis’ student pipeline is limited by the output of the JTAC technical training course—but even more by the limited air sorties available to JTACs in training.

The school has no aircraft assigned to it: All the aircraft flying in support of the JTAC course come from Green Flag-West exercises. “We are one of multiple priorities,” said Walker.

Once on assignment in Iraq and Afghanistan, it is often not firepower, but surveillance that ground forces want. Using targeting pods and other on-board systems, fighters scan for targets, enemy forces, and improvised explosive devices. They can also provide full-motion video via video link to ground forces.

Fighters and bombers now have precision sensors. F-16s and F/A-18s with targeting pods use infrared sensors not just to refine fixed targets but to look for new ones—or verify their absence.

What is loosely termed nontraditional ISR, or NTISR, started out with air support requests from ground forces. By 2006, it was being refined into a subset

of three missions: armed recce, armed overwatch, and NTISR.

“Armed recce and armed overwatch are requested through normal ASR channels, and NTISR is requested through intelligence channels,” explained Lt. Col. Wayne Shaw III, writing in 2007. Emphasis, he said, was “being rightly placed on armed recce or armed overwatch in support of troops on the ground.”

Reports from the field indicate that pilots are acclimated to orbiting for overwatch and employing a variety of ordnance, from flares to GPS-guided bombs to 20 mm shells from their guns.

### Not Enough To Go Around

“If our presence alone makes the enemy stop shooting, that in itself is rewarding,” Trimble said.

Producing enough JTACs—and keeping them current—is likely to remain difficult. Army and Marine Corps doctrine call for nonlinear operations where maneuver units operate deeper, more independently, and with less organic and mutually supporting firepower. Close air support will give them the overwatch needed to maneuver fast and the indirect firepower to achieve objectives.

Dispersing maneuver units further could scale up the demand for CAS even more. “They have multiple objectives, and they want us there,” said SSgt. John

Dowd, a 6th CTS instructor. “There’re not enough of us to go around.”

By the controllers’ estimates, there are less than 500 JTACs.

One major question will be where best to position controllers in the future. The traditional controller embedded with land forces may not be the best way to execute the mission. In fact, ground commanders often want a JTAC in the tactical operations center (TOC) with them.

“Conventional brigades have so much going on, ... we can’t be everywhere at once,” noted Gorski. However, “with SOF or Rangers, you can be at every objective,” he added, due to the smaller number of individual units.

A JTAC located in the TOC can be available to assist in two or more places at once by controlling support through digital networks. The situational awareness of the JTAC in the field can be much more limited. Placing them in combat also creates the risk that they could be injured or killed, quickly making a bad combat situation even worse for troops under fire.

Despite the benefit of enhanced situational awareness and constant connectivity in the TOC, it’s not always a popular spot. “A lot of guys really hate staying back and not being out on the objective with the Army,” said Gorski.

To help deal with the shortage of trained controllers, the Army is creating joint fires observers. These JFOs do not control fixed-wing aircraft. They are trained to call in ground-based fires and some helicopters. Fixed-wing CAS procedures are spelled out in an agreement between US Joint Forces Command, the services, and several allies. It specifies that only certified JTACs may control fixed-wing close air support.

The JFOs are, however, part of the loop in passing targeting data back to the tactical operations center. Walker explained that for Type II or Type III close air support, “accurate data from the JFO may allow for an air strike.” However, the final decision rests firmly with the JTAC.

Close air support by nature varies with the ground operations concept. But it will always be one of the airman’s most rewarding jobs. CAS is airpower at its highest level of support, and a small cadre of specialized airmen controls it. ■

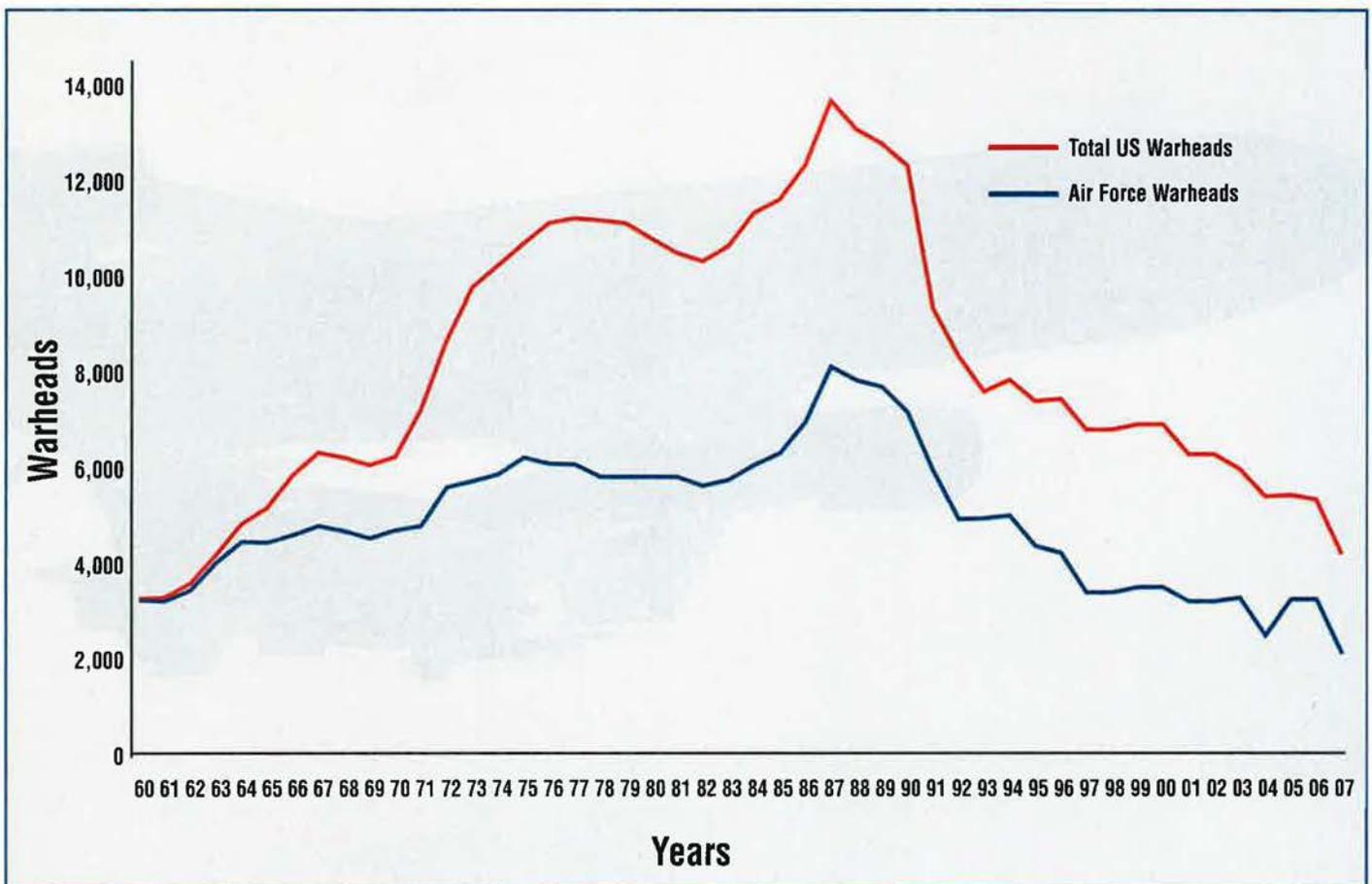
*Rebecca Grant is a senior fellow of the Lexington Institute and president of IRIS Independent Research. She has written extensively on airpower and serves as director for AFA’s Mitchell Institute. Her most recent article for Air Force Magazine was “Airpower Genesis,” which appeared in the November issue.*

## A Flagging Nuclear “Enterprise”

“Reinvigorating the Air Force Nuclear Enterprise” was the title of an Oct. 24 USAF task force report. Pentagon chief Robert M. Gates also refers to the “nuclear enterprise.” Yet, as the chart makes only too apparent, a dramatic shrinking of this enterprise has been national policy for 20 years. In 1987, the US boasted some

14,000 strategic nuclear warheads, of which USAF had more than 8,000. Two decades of arms control, political hostility, and budget cuts pushed the total below 4,000, and plans call for the inventory to go below 2,200 in 2012. Some critics are thinking the end-state goal should be more like 500.

The warhead count has been sliding for 20 years.



Source: “Table of US Strategic Offensive Force Loadings. Archive of Nuclear Data.”  
Posted by the Natural Resources Defense Council [<http://www.nrdc.org/nuclear/nudb/datab1.asp>]. Includes subsequent NRDC annual updates.

# McGuire Means

The 305th Air Mobility Wing's thousands of airmen keep the airlifters and tankers in constant motion.

Photography by Rick Linares



# Mobility



*A trio of Vermont Air National Guard F-16s tanks up from a KC-10A of the 305th Air Mobility Wing, McGuire AFB, N.J., over northern New York state.*

**M**cGuire AFB, N.J., has become a key waypoint in the ceaseless flow of people, machines, and materiel headed to combat operations in the Mideast. McGuire's 305th Air Mobility Wing is instrumental in sustainment of the war effort, as well as in the day-to-day support of US military activities worldwide. **1** The boom operator on a KC-10 has a commanding view of the receiving aircraft and vicinity, as in this "10 on 10" operation in which a KC-10 refuels another KC-10. **2** The 305th tailflash features a small white P-38 Lightning, a tribute to base namesake Maj. Thomas McGuire Jr., who grew up in New Jersey and flew the P-38. McGuire was the second highest-scoring US ace in World War II, awarded the Medal of Honor posthumously after he was killed during a 1945 combat mission. **3** Capt. Pete Braxton of the 305th positions his KC-10 beneath another KC-10 for refueling. Such transfers can be used to share fuel and tank up more aircraft at once.



**4** Second Lt. Casey Eden inspects pallets ready for loading at McGuire's air terminal. She is the flight commander for the facility, and is assigned to the 305th Aerial Port Squadron.



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*111* The boom on the business end of a KC-10 can transfer fuel at a rate of up to 1,100 gallons per minute. The boom operator sits upright in the fuselage below the tail and “flies” the boom into position. In the KC-135, boom operators lie prone to operate the boom. 121 “Boomers” must be familiar with the receptacle idiosyncra-

sies of many different aircraft. This A-10’s receptacle is immediately forward of the windscreen. On other aircraft, the boom may connect behind, above, or to the side of the cockpit. 131 A C-17’s engine, with KC-10s and a C-17 in the background. McGuire has 13 C-17s and 32 KC-10s to extend the Air Force’s reach worldwide.

*141* Inspecting a C-17’s cockpit are (l-r) SSgt. Jason Pratek and SrA. Matt Dezino of the 305th Maintenance Squadron. 151 A C-17 of the 6th Airlift Squadron gets airborne. Its four Pratt & Whitney F117 engines each can generate up to 40,440 pounds of thrust.



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111 TSgt. Chrissie Valerza and SrA. Simon Hunt check the radar and other avionics in a C-17's nose. Both are with the 305th Maintenance Squadron. 121 Trapezoidal markings on USAF aircraft assist boomers in locating and plugging into refueling receptacles. This one is on a KC-10.

131 A C-17 makes the approach to the boom. Each type approaches differently, given the complex flow of air around the two aircraft. 141 TSgt. Kit Carson pulls up floor rollers from a C-17. With the rollers, pallets roll on and off easily. Rollers removed, the C-17 can better handle up

to 102 paratroops. 151 A KC-10 touches down after a mission. In service since 1981, the KC-10 was meant to bridge between Eisenhower-era tankers and the future KC-X, procurement of which has been delayed several times.



**11** The view from an F-16 of the Vermont Air Guard's 158th Fighter Wing as it moves in to gas up from a KC-10. During refueling, formation flight skills are crucial; the boom is mere inches from the top of the canopy. **12** Pratek and Dezino work the test gear in the back of a buttoned-up C-17. **13** Each of the 305th AMW's KC-10

squadrons has 16 aircraft. This KC-10's boom is stowed in the upright position. Belly markings and lights help receiver aircraft line up properly. **14** A KC-10 lands as a C-17 awaits its turn on the runway. **15** The preflight check of a KC-10 is wrapped up. The wing boasts 7,000 officers, enlisted, and civilian personnel.



*11* Total Force: The 514th Air Mobility Wing, a Reserve unit, shares billing on the nose of this KC-10. The Reserve unit is co-located at McGuire and uses the same aircraft as the active unit. *12* A C-17 cruises above upper New York state. With a length of 174 feet and a wingspan of

169 feet, the C-17 can carry a pallet load comparable to that of the KC-10, but can get in and out of short and unimproved runways. *13* A KC-135 Stratotanker of the 108th Air Refueling Wing, an Air Guard unit also located at McGuire. *14* A 305th AMW KC-10 touches down at McGuire.

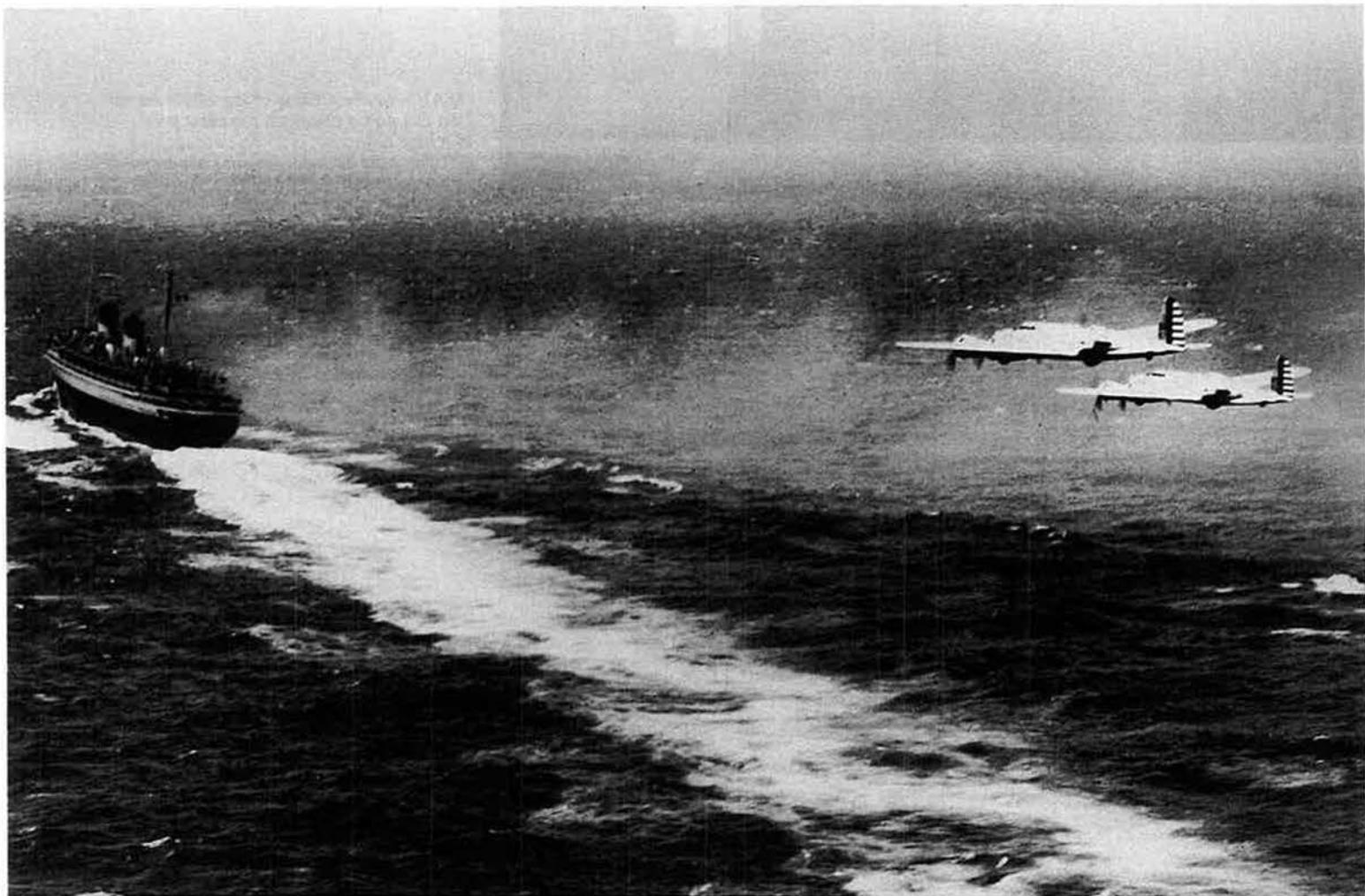
In seconds, the three engines will be switched to reverse thrust to slow the aircraft down. The engines can provide up to 52,500 pounds of thrust. *15* Two KC-10s taxi to takeoff.



*111 A1C Natalie Collins of the 305th Aerial Port Squadron checks a manifest prior to a load being put onto an aircraft. The unit provides both cargo and passenger services to the 305th AMW. 121 An A-10 of the 23rd Wing, Moody AFB, Ga., hooks up with a KC-135 of the New Jersey Air Guard. Along with Charleston AFB, S.C., McGuire is one of the two main East Coast "jumping off" bases across the Atlantic for resupply of Europe and US Central Command. 131 This special building at McGuire can swallow a whole KC-10 for washing by spray racks.*



*141 The capacious C-17 cargo bay, 88 feet long, 18 feet wide, and 12 feet high, can carry 170,900 pounds of cargo. It's carried everything from helicopters to an elephant, and is able to land in just a few hundred feet—a capability unique to USAF. ■*



# Rendezvous With the *Rex*

**They bucked storm after storm, and turbulence tossed them around, but the lead navigator was Curtis LeMay.**

**By John T. Correll**

**I**n May 1938, the Air Corps staged the most extensive maneuvers in its history up to then. Maj. Gen. Frank M. Andrews was in charge of the exercise. He established his headquarters at Mitchel Field on Long Island.

Andrews was commander of General Headquarters Air Force, to which the field forces of the Air Corps were assigned. For the wargames, he had pulled together 187 combat airplanes and thousands of airmen from all three wings of GHQ Air Force. The aircraft were deployed to 19 airports in the northeastern United States, from Schenectady, N.Y., and Aberdeen, Md., westward to Harrisburg, Pa.

Taking part were twin-engine B-18 bombers, P-36 fighters (still called "pursuits" in 1938), and A-17 attack aircraft, but the star of the show was the B-17 Flying Fortress. The Air Corps had only 13 of these new Boeing-made four-engine bombers, and Col. Robert Olds, commander of the 2nd Bomb Group at Langley Field, Va., had brought nine of them to the maneuvers. They were parked on the ramp at the Harrisburg municipal airport.



**Facing page: Two B-17s, having spotted the Italian liner *Rex* in the Atlantic, move into position to simulate an attack. Left: Maj. Ira Eaker (l) in 1936 (shown with Maj. William Kepner). Two years later, Lieutenant Colonel Eaker played a key role in conceiving and publicizing the *Rex* intercept.**

was to serve as G-2 (intelligence) for the maneuvers and to handle the press. Eaker brought with him Reserve 2nd Lt. Harris B. Hull, a reporter for the *Washington Post* who had been called to active duty for the exercise. Hull learned that the Italian cruise liner *Rex* was about 1,000 miles offshore, inbound to New York. He suggested an “intercept” of *Rex* to Eaker, who proposed it to Andrews, who was all for it. It was a splendid opportunity to bring the range and capability of the B-17 to public attention.

### Roles and Missions Clash

Italian officials readily agreed to the plan, which would bring free publicity to their steamship line. The War Department approved as well. It soon became apparent that the Army Chief of Staff, Gen. Malin Craig, did not fully catch on to what it was all about. Ostensibly, the intercept would exercise GHQ Air Force in its coastal defense role. In actuality, it would demonstrate the capabilities of long-range airpower—and of the new B-17.

Strategic power projection was not an official assigned mission of the Air Corps at the time. In the 1930s, isolationism dominated US foreign policy, and having the ability to conduct armed operations far from US soil was deemed not only unneeded but also unwanted. As a result, Air Corps officers had to use coastal defense and reinforcement of distant possessions as justification for acquiring the long-range bomber.

This, however, generated a persistent Air Corps-Navy roles and mission clash over coastal defense. In 1931, Gen. Douglas MacArthur, Army Chief of Staff, and Adm. William V. Pratt, the Chief of Naval Operations, had agreed that the Air Corps would defend the US coast and that Navy aircraft would defend the sea. No one, however, specified how far from land Air Corps airplanes would operate. The agreement was useful for Pratt, who wanted to free up resources to develop the Navy as an offensive, rather than a defensive, force. After Pratt retired, the new CNO, Adm. William H. Standley, ignored the agreement, and the interservice struggle over the coastal defense mission resumed.

In the 1938 wargames, the *Rex* intercept turned out to be the central event.

Olds moved three of his B-17s—No. 80, No. 81, and No. 82—from Harrisburg to Mitchel Field on May 11, the day before the main event.

Olds had chosen for the job the 49th Bombardment Squadron’s recognized first team. Maj. Vincent J. Meloy would command a three-ship formation. Capt. Cornelius Cousland would pilot No. 81, and Capt. A. Y. Smith would pilot No. 82. The lead aircraft, however, was No. 80. It was to be piloted by Maj. Caleb V. Haynes. Its lead navigator would be 1st Lt. Curtis E. LeMay.

LeMay was known to be the best navigator in the force. In 1933, already a pilot, he attended the first course in navigation ever conducted for the Air Corps. Only a few dozen officers, all pilots, were so trained. LeMay taught navigation to other airmen while flying as a pursuit pilot in Hawaii before coming to the 2nd Bomb Group at Langley in 1937.

Andrews and Eaker knew perfectly well that this distant intercept of *Rex* would infuriate the admirals. The Navy had not forgotten that Billy Mitchell and the Air Service had, in what the Navy regarded as a publicity stunt, sunk the war surplus battleship *Ostfriesland* in 1921 and cast doubt on the value of the fleet’s capital warship.

Furthermore, the Navy was still seething about a joint exercise in August 1937, when B-17s dropped water-filled practice bombs on the battleship *Utah* off the coast of California. That was the first big B-17 exercise, and the same airmen who later would conduct the *Rex* intercept were in the middle of it. The lead airplane was flown by Haynes, and the navigator guiding him to the target was none other than



**First Lt. Curtis LeMay**

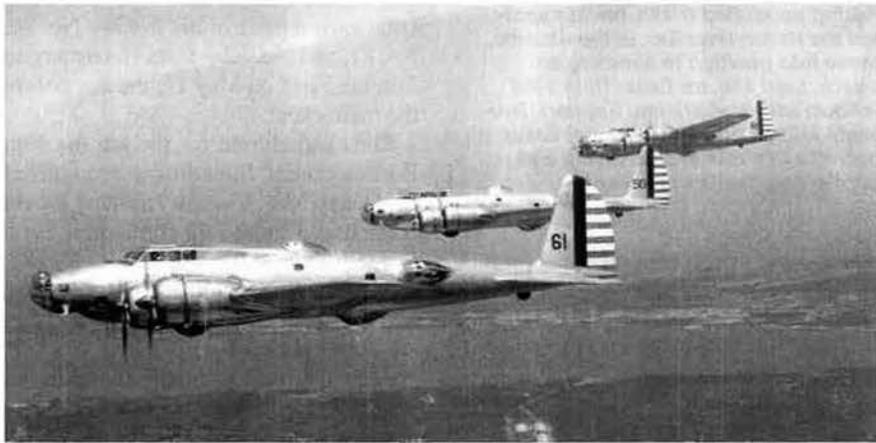
The B-17 had not yet taken on the full configuration that would become so familiar in World War II. These first models did not have the graceful dorsal fin or the extended fuselage that housed the tail gun in the wartime B-17s. Nevertheless, they were a big advance over earlier bombers and were of keen interest to the news reporters covering the maneuvers.

The scenario postulated an aggressor—a combination of adversaries from Europe and Asia. Enemy airplanes, warships, and troops would be employed to attack and attempt to capture industrial territory in the northeastern United States. The US Navy would be busy in the Pacific, so GHQ Air Force had to defend the eastern seaboard. A seaborne invasion force was headed for New England.

The scenario called for Air Corps airplanes to find the enemy force at sea before its aircraft carriers could attack, but no US ships were available to play the part of the enemy. The Navy, then conducting its own fleet exercises in the Pacific, was not about to give Andrews any of its ships to use as targets for his B-17s. Without Navy participation, it appeared that GHQ Air Force would have to fly out, simulate the intercept of ships, and fly back.

Then, with the maneuvers already under way, there emerged an opportunity to use an actual ship for the intercept and gain other advantages for the Air Corps as well.

Andrews had borrowed from the Air Staff Lt. Col. Ira C. Eaker, who was chief of its Information Division. Eaker



**Brand-new B-17s form up on May 12, 1937. Note aircraft 80 in the rear; exactly one year later, on May 12, 1938, it would carry LeMay and Haynes to their rendezvous with Rex.**

Curtis LeMay. Both Andrews and Olds were aboard the lead airplane.

Two times during the exercise, the Navy provided false position information for the target ships, explaining the glitch as an honest mistake. Despite that handicap, LeMay found the ships on Aug. 13. The bombers, emerging from the clouds at 400 feet, struck *Utah* with three direct hits, also registering several near misses. On Aug. 14, LeMay again found *Utah*; in this attack, 12 percent of the water bombs, dropped from high altitude, were direct hits.

Upon their return to March Field, Calif., the bomber crew members were met at the flight line and notified that, on orders from Washington, there would be no publicity about the just-completed exercise.

The Navy, having declined to engage in the 1938 GHQ Air Force maneuvers, had no opportunity to put in a fix or stipulate any rules—such as a news media blackout. In fact, the crafty Eaker placed news reporters aboard each of the three B-17s.

The lead B-17 bomber, No. 80, carried not only Haynes and LeMay but also an NBC announcer, two NBC engineers, and their radio transmitter. Mission commander Meloy also flew on that aircraft. Flying with Cousland on No. 81 was C. B. Allen of the *New York Herald Tribune*. Bomber No. 82 had aboard Hanson W. Baldwin of the *New York Times*.

### Into the Weather

To document the flight, Eaker had called in the top photo officer in the Air Corps, Maj. George W. Goddard, who came to the exercise from Dayton with his large-format Graflex camera. He flew in the copilot's seat on No. 81. Also aboard No. 81 was Eaker's resourceful Reserve assistant, Lieutenant Hull.

The aircrews arrived at Mitchel Field at midafternoon on May 11. Waiting for them was a radiogram from *Rex*, reporting

its position at noon. "If the *Rex* proceeded at normal speed along the regular route from Gibraltar to New York, she might be about 600 miles or a little more off Sandy Hook by the following noon," LeMay said. Sandy Hook barrier peninsula marked the entrance to New York Harbor.

The airmen expected an update from *Rex* that evening, but none ever arrived.

Thursday morning, May 12, brought bad weather at Mitchel Field and even worse conditions at sea. The forecast, LeMay said, was that "ceilings would be down to nothing in the area where it was hoped we could find the steamship." Haynes asked LeMay to estimate the intercept time. Working from the information in the previous day's radiogram, LeMay said it should happen about 12:25 p.m. Unknown to LeMay, the prediction was given to NBC, which scheduled for that time a short-wave broadcast from the bomber.

The B-17s had begun to taxi out through the blowing rain when, at 8:30 a.m., they received an update message from *Rex*. "Immediately I saw that the *Rex* wasn't nearly as close in as we had expected her to be," LeMay said. "There wasn't much margin remaining." *Rex* was 725 miles from New York. LeMay had included in his calculation the possibility of bisecting the route ahead of the ship and searching to find it. Now, they would have to make the intercept on the first effort.

The three airplanes plowed eastward through squalls, rain, hail, and downdrafts. "Most of the time, we couldn't even see the water, and turbulence was heaving us all over the sky," LeMay said. About 11 a.m., a break in the weather let LeMay get a check on speed and drift. Headwinds, more intense than predicted, had bled more than 11.5 mph from the ground speed. The B-17s were soon back in the murk.

Meloy, who had been riding in the waist section with the airsick NBC crew, made

his way up to the navigator's station to tell LeMay the broadcast would begin at 12:25 p.m. and that delaying it was not possible. "There was no longer any safety margin, but the present course should bring us into a perfect interception of the liner," LeMay said. "If I was correct in my calculations. It had all been dead reckoning."

At 12:23, the airplanes broke out of the last squall and into bright sunshine, flying low and line abreast, 610 miles east of Sandy Hook. *Rex* was dead ahead. Cousland was first to see it and radioed to the other airplanes: "There it is! There it is!" Two minutes later, the three B-17s passed *Rex*. Hundreds of passengers were on deck, wrapped in raincoats and scarves, and waving. Meloy exchanged radio greetings with *Rex's* captain.

On the next pass, photographer Goddard got his best shot—two B-17s sweeping past *Rex* at smokestack level. NBC reported the intercept live, on a coast-to-coast hookup.

The weather coming back was even worse than it was going out. When the B-17s landed at Mitchel, Cousland summoned LeMay to look at his aircraft, which had flown through a hailstorm. "All the leading edges of the wings and the nose of the airplane were pebbled and pitted," said LeMay, who added that it "looked like a gang of blacksmiths had been beating on them with ball-peen hammers."

The wargames went on for another week, but the main event was over.

Goddard's photo appeared the next day on the front pages of hundreds of newspapers. Magazines picked it up as well. Hanson Baldwin described the mission in detail in the *New York Times*. He said it was "one from which valuable lessons



**LeMay (l) was the navigator on B-17 No. 80, and Maj. Caleb Haynes (r) was the aircraft's pilot.**

about the aerial defense of the United States will be drawn" and that it furnished "a striking example of the mobility and range of modern aviation."

The Navy pitched a fit. The next day, Eaker was conferring with Andrews when the GHQ Air Force commander got an urgent call from Craig, the Army Chief. He, Craig, had gotten complaints from Secretary of the Navy Claude A. Swanson and Adm. William D. Leahy, Chief of Naval Operations. They said the *Rex* intercept "was in violation of the Navy's prerogative of controlling the sea approaches."

Craig told Andrews that Air Corps operations henceforth would not be permitted to extend beyond a line 100 miles from the US shoreline. The strange 100-mile restriction was enforced intermittently. Maj. Gen. Stanley D. Embick, Army deputy chief of staff, suggested lamely that it had been imposed as a safety measure. In 1939, the War Department authorized some exceptions to the policy for training purposes, provided there was no publicity.

The order itself is the subject of a minor mystery. All agree that Andrews, when informed of the new policy, asked to see the order in writing. Brig. Gen. Henry H. "Hap" Arnold, who in 1938 was assistant chief of the Air Corps and later Chief of the US Army Air Forces, reported that he never saw such a written order. However, Andrews told Eaker in April 1943—five years later—that a copy was in the files at his headquarters in London.

A month later, Andrews died in an air crash and the order has not been seen since. "Undoubtedly," Eaker asserted, "it had been removed by a current member of the Andrews staff with prior service on the War Department General Staff, who thus appreciated the possibility of its embarrassment of the Army and Navy."

Arnold came to doubt that such a document ever existed, but there is no question that Craig had issued the proscription.

"As far as I know," Arnold wrote in his 1949 memoirs, "that directive has never been rescinded. A literal-minded judge advocate might be able to find that every B-17, B-24, or B-29 that bombed Germany or Japan did so in technical violation of a standing order."

The Navy and the War Department could fume all they wanted about the intercept, but GHQ Air Force had made its point. Heavy bombers were long-range instruments of power and capable of actions a long way from home. The issue had moved beyond the question of coastal defense.

Some months after the *Rex* intercept, Secretary of War Harry H. Woodring canceled a planned purchase of more B-



**Maj. George Goddard, flying in No. 81, snapped this famous photo of two B-17 bombers sweeping past *Rex* at smokestack level. On deck were hundreds of passengers cheering them on.**

17s in 1939. His action was superseded by a call by President Roosevelt for an Air Force of 20,000 airplanes. By 1941, B-17s were coming off the production line in significant numbers.

### Into History

To this day, Navy diehards claim the *Rex* intercept was a sham and that the B-17s were guided to the point of rendezvous by continuous radio signals from the ship. They do not offer any supporting evidence.

History was not yet finished with the principal players in the *Rex* affair.

Harris Hull, the Reserve lieutenant who suggested the operation to Eaker, went on active duty with the Army Air Forces in 1942, remained in service for 22 years, and retired as a brigadier general in 1964.

Eaker built the World War II Eighth Air Force, commanded it during the darkest days of the Combined Bomber Offensive, and retired as a lieutenant general. In 1985, in recognition for his distinguished service to the nation, Congress promoted him to four-star rank on the retired list.

Andrews became commander of all US forces in the European Theater. Had he not perished in that 1943 crash, he—rather than Dwight D. Eisenhower—might have commanded the D-Day landings.

Olds was a major general with prospects of further promotion when he died at age 47 in 1943. His son, Robin Olds, also went on to considerable fame as an Air Force leader.

Haynes, pilot of the lead B-17 on the *Rex* intercept, retired as a major general. Meloy, the mission commander, reached the level of brigadier general.

The biggest future of all belonged to the dauntless No. 80 navigator, Curtis LeMay. He was almost universally regarded as the best combat leader in the Army Air Forces in World War II, commanding B-17 units in Europe and B-29s in the Pacific. In the 1950s, he made Strategic Air Command the most powerful military force in history. He served as USAF Chief of Staff from 1961 to 1965. Through it all, he frequently would describe himself as "a navigator by nature."

In September 1944, Italy had surrendered and *Rex* was in German hands. Germany planned to block Trieste harbor by sinking the big ship at the entrance. However, *Rex* was attacked en route by Royal Air Force Beaufighters and sent to the bottom.

In 1946, surviving officials of the Italian steamship line proposed to salvage *Rex* and recommission it, but the capsized hulk lay in a section of Trieste Harbor that was within the boundary of Yugoslavia. Belgrade blocked the recovery and junked the wreckage in 1947.

In August 2007, the US Air Force commemorated the *Rex* intercept. In this operation, three B-52s from Barksdale AFB, La., intercepted the Military Sealift Command's USNS *2nd Lt. John P. Bobo*, a maritime pre-positioning ship, several hundred miles east of Bermuda. Call sign for the lead B-52 was *Rex 51*.

The B-52s were given only a ballpark idea of where *Bobo* was but had no difficulty in finding it. The Air Force said the flight validated long-range homeland defense capabilities to find and identify ships far from the US coast. ■

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*John T. Correll was editor in chief of Air Force Magazine for 18 years and is now a contributing editor. His most recent article, "A New Look at Roles and Missions," appeared in the November issue.*

In the beginning, the Air Guard got no respect. Then along came Winston Wilson.

# Up From “Flying Club”

By Charles J. Gross



*Maj. Gen. Winston Wilson (l), chief of the National Guard Bureau, and Brig. Gen. Donald Stuart, commander of the 108th Tactical Fighter Wing, in 1964 after inspecting a newly received F-105 at McGuire AFB, N.J.*

**“A** t best, the Air National Guard represents aircraft in flyable storage.” So declared Lt. Gen. Ennis C. Whitehead, commander of Continental Air Command, in November 1949. Whitehead was no disinterested kibbitzer; he supervised training of ANG units for their federal role as the Air Force’s primary combat reserve.

Whitehead’s dismissive comments reflected top leaders’ profound skepticism about the Guard’s true capabilities. The deep prejudice did eventually fade away, but the change of heart did not take place for many years.

The first true National Guard aviation unit was set up on Nov. 1, 1915 in New York by Capt. Raynall C. Bolling. However, the Air Guard as we know it today is much newer. It was a product of the politics of interservice rivalry during World War II and in the postwar era.

Leading the charge for a new type of Air Guard was the Army’s Chief of Staff, Gen. George C. Marshall, who pushed for it during the final war years. Individual Guard aviation units began forming in 1946. Today, the Air Guard considers its official birthday to be Sept. 18, 1947—the same day the Air Force became a separate and independent service.

The leaders who planned and maneu-

vered for a separate postwar Air Force during World War II generally didn’t place much faith in the reserves, especially the state-dominated National Guard. They were determined to build the largest and most modern standing force they could possibly acquire.

## Muscles Flexing

The same leadership assumed future wars would be short and highly destructive affairs decided by aerial delivery of massive nuclear firepower on an enemy’s heartland. They were convinced that reserves could not operate complex modern weapons without extensive post-mobilization training.

That set up a huge postwar clash. The National Guard Association of the United States, a civilian organization in Washington, D.C., that represented the interests of the Guard before Congress, had flexed its considerable political muscle during World War II. It was determined that the Air Guard would be included in the postwar US military establishment.

NGAUS in fact compelled officials in the War Department, including those running the Army Air Forces, to seriously ponder the harsh political cost of excluding the Guard from a major role in postwar plans. It did this by threaten-

ing to oppose the creation of a separate postwar Air Force.

As significant was the attitude of Marshall. In the latter war years, the Chief of Staff rejected Army and AAF notions of a huge postwar active duty force. He ordered service planners to prepare for a relatively small postwar standing force backed by universal military training (UMT) and a large reserve contingent—including the Guard.

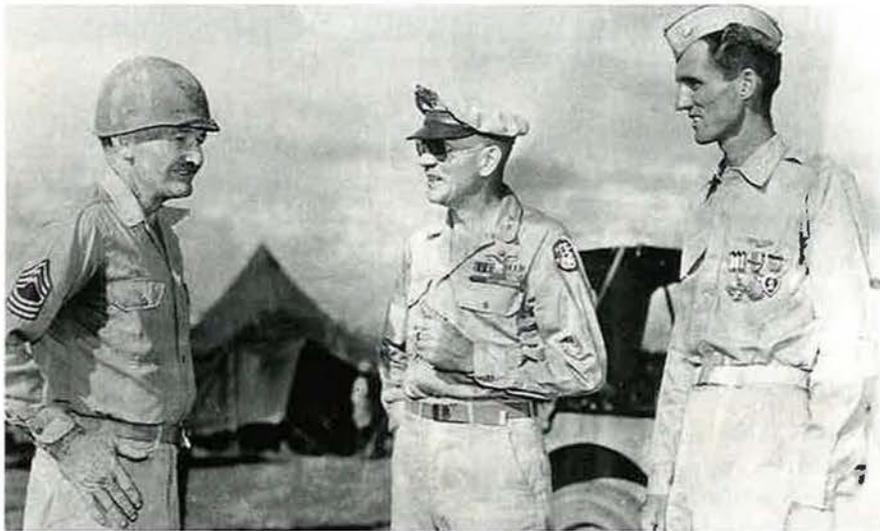
Bowing to Marshall’s guidance, and determined to avoid a political fight that might weaken support for a separate postwar Air Force, Gen. Henry H. “Hap” Arnold, Commanding General of the Army Air Forces, agreed to create the postwar Air National Guard. It was purely a matter of political expediency.

Once it was apparent that the Guard would play a prominent role as a postwar combat reserve of the Army and the Air Force, NGAUS agreed to endorse UMT and the creation of the Air Force as a separate military service, according to authoritative historical accounts of the period.

Consequently, the Air Force in the late 1940s found itself, against its professional judgment, in possession of a unique dual component reserve system, comprising the Air National Guard and the Air Force Reserve. The ANG would be manned by some 58,000 personnel. Its primary units would be 84 flying squadrons, mostly fighters, and its principal mission would be air defense of the continental United States.

At this stage, of course, there existed little trust or understanding between the active duty Air Force and the ANG. Some regular Air Force observers ridiculed the Guard units as “state-sponsored flying clubs.” Air Guard units regularly failed operational readiness inspections. The Air Force and the National Guard Bureau spent much of the late 1940s fighting over who was in charge of the Air Guard during those periods when it was not engaged in federal service.

Widespread Air Force frustration with the Air Guard culminated in a January 1950 proposal to strip the Air Guard of its combat missions and relegate it to less demanding tasks. In the same period, the



Maj. Gen. Ennis Whitehead (c), flanked by MSgt. Robert Barlow (l) and Maj. Joel Wise, visits a camp in the World War II Pacific Theater. In 1949, as head of Continental Air Command, Whitehead derided the Air Guard's readiness as "flyable storage."

chief of the NGB, Maj. Gen. Kenneth F. Cramer, an Army Guardsman, precipitated a crisis when he tried to run the Air Guard according to his own policies rather than those of the Air Force.

Tensions with the Air Force reached a boiling point when Cramer unilaterally fired Maj. Gen. George G. Finch, head of the NGB's Air Force Division, because of policy differences and personality conflicts. Finch eventually was restored to his post only through the direct and forceful intervention of Air Force Secretary Stuart Symington.

Those episodes epitomized the turbulent nature of the ANG's early history as the primary combat reserve for the Air Force.

Then came a critical turning point—the outbreak of the Korean War in June 1950. Some 45,000 Air Guardsmen—80 percent of the force—were mobilized for the crisis. That call-up exposed the glaring weaknesses of the US military, including its reserve components.

It soon became clear that Air Guard units and individual Guardsmen lacked specific wartime missions. Their equipment, especially aircraft, was generally obsolete. Their training was usually deplorable. Once mobilized, they proved to be almost totally unprepared for combat. Air Guard units were assigned almost at random to active duty, regardless of their previous training and equipment.

Many Air Guardsmen, especially veteran World War II combat pilots, were stripped away from their units and used as fillers elsewhere in the Air Force. It took months for ANG units to become combat ready. Some units never did reach that stage.

Eventually, the mess was sorted out. The initial mobilization fiasco forced Air Force leaders to reach a workable accommodation with the Air Guard and to begin revamping its entire reserve system.

### Proof in Korea

In the Korean War, the Air Guard's greatest strength was the experience of its personnel.

"When we first got to Korea, we had lots of youngsters, Air Force types that had been put through [pilot] training rather rapidly, and [we] were losing quite a few," recalled Brig. Gen. Paul E. Hoover, Ohio's assistant adjutant general for air, years later. "Then, as the Reservists and the Air Guard got there, the average age climbed quite a bit. With the experience of these individuals, our loss rate decreased rapidly."

Hoover added, "Many of us that got over there came from that World War II experience and we applied some of that experience in Korea. It reduced our losses considerably."

In Korea, Air Guardsmen flew 39,530 combat sorties. They destroyed 39 enemy aircraft—all but four of them by individual ANG pilots assigned to active duty Air Force fighter units. Air Guardsmen dropped 44,000 bombs, fired more than 16 million rounds of machine gun ammunition, and launched 31,000 rockets in combat.

Four Air Guardsmen became aces, and 101 ANG personnel were either killed or reported missing in action. The recalled Air Guardsmen clearly contributed much to the air war in Korea and the Air Force's global buildup for the expected military confrontation with the Soviet Union.

Because of the severe problems associ-

ated with the Korean War mobilizations, the Air Force and its reserve components revamped reserve training and management. Politically savvy leaders such as Maj. Gen. Winston P. Wilson in the National Guard Bureau, augmented by a strong political base in the individual states, helped ANG trade some of its autonomy as a state-federal force for closer integration with the active duty Air Force.

Wilson became arguably the single most important officer in the ANG's history. Mobilized from Arkansas in 1950 for Korean War duty, Wilson expected to be in Washington, D.C., for 21 months. Instead, he remained for 21 years.

Wilson served as head of ANG from 1954 to 1962. Then, in 1963, he became the first Air Guardsman to serve as chief of the National Guard Bureau, a position he held until 1971. Wilson was described by one former subordinate as "a one-man gang. ... He never delegated authority, and chains of command were meaningless."

Wilson recognized that the Air Guard faced a dim future unless it acquired definite wartime missions, integrated into Air Force operations on a daily basis, and met the same tough training standards as the active duty force. The Air Guard also needed additional full-time manning, because it had to be ready to go into combat the moment it was called into federal service. Finally, Wilson and others fought hard to acquire modern aircraft and facilities while expanding the Air Guard's mission portfolio to include airlift, air refueling, and other

### ANG in Brief

#### FORCE STRUCTURE

One numbered air force: 1st, Tyndall AFB, Fla.  
88 wings  
Seven squadrons

#### PERSONNEL

(as of Sept. 30, 2007)

Total ANG military*		106,256
Officers	14,025	
Enlisted	92,231	
Civilian		179
<b>Total</b>		<b>106,435</b>

\*Includes ANG personnel assigned to MAJCOMS, FOAs, and DRUs.

#### EQUIPMENT

(PAI as of Sept. 30, 2007)

Fighter/Attack	609
Helicopter	15
Recon/BM/C3I	15
SOF	4
Tanker	179
Transport	214

key missions performed by the active force.

Wilson's central insight was that, because of the high experience level of its personnel and their longevity in individual units, the Air National Guard could maintain high levels of military proficiency with far less training time than was needed by their active duty counterparts, so long as key programs were implemented. He was able to sell these concepts to the Air Guard, the Air Force, Congress, and the states. Under his leadership, ANG was transformed from a flying club to a valued reserve component.

Then, pushed by its reserve components and their political supporters, the Air Force adopted several management and training innovations after the Korean War that created combat-ready reserve forces.

The four most significant policy innovations were:

- Incorporation of the reserve forces in war plans. Starting in 1951, the Air Force established specific mobilization requirements for the Air Guard in its war plans for the first time. The ANG would begin training against those requirements and plans.

- Bringing ANG forces into participation in the air defense runway alert

## Leaders Through The Years

Col. William A. R. Robertson	Nov. 28, 1945	October 1948
Maj. Gen. George G. Finch	October 1948	Sept. 25, 1950
Maj. Gen. Earl T. Ricks	Oct. 13, 1950	Jan. 4, 1954
Maj. Gen. Winston P. Wilson	Jan. 26, 1954	Aug. 5, 1962
Maj. Gen. I. G. Brown	Aug. 6, 1962	April 19, 1974
Maj. Gen. John J. Pesch	April 20, 1974	Jan. 31, 1977
Maj. Gen. John T. Guice	Feb. 1, 1977	April 1, 1981
Maj. Gen. John B. Conaway	April 1, 1981	Nov. 1, 1988
Maj. Gen. Philip G. Killey	Nov. 1, 1988	Jan. 28, 1994
Maj. Gen. Donald W. Shepperd	Jan. 28, 1994	Jan. 28, 1998
Maj. Gen. Paul A. Weaver Jr.	Jan. 28, 1998	Dec. 3, 2001
Brig. Gen. David A. Brubaker (acting)	Dec. 3, 2001	June 3, 2002
Lt. Gen. Daniel James III	June 3, 2002	May 20, 2006
Gen. Craig R. McKinley	May 20, 2006	Nov. 17, 2008
Maj. Gen. Emmett R. Titshaw (acting)	Nov. 17, 2008	

program. ANG leaders proposed the air defense runway alert program as a way to combine realistic training and support of a significant combat mission in peacetime. The program began, on an experimental basis, in 1953 with inclusion of two fighter squadrons at Hayward, Calif., and Hancock Field, N.Y. Despite Air Staff doubts, the experiment was a success. By 1961, it had expanded into a permanent, round-the-clock program that included 25 ANG fighter squadrons.

The runway alert program was the first broad effort to integrate reserve units into the regular peacetime operating structure of the American armed forces on a continuing basis. It was the precursor to the Air Force's Total Force approach to reserve component training and utilization.

- Establishing the "gaining command" concept of reserve force management. This meant that the major air command responsible for using a Guard or Reserve unit in wartime would actually train it during peacetime. ANG leaders had pressed for that arrangement for years. However, the active duty Air Force had strongly resisted the change. The concept was grudgingly adopted in 1960 because of budget cuts and public criticism of the air reserve programs by Gen. Curtis E. LeMay, then Air Force vice chief of staff. It improved the effectiveness of ANG units by giving Air Force commanders direct personal incentives for improving the performance of those reserve organizations.

MAJCOM oversight also established firm precedents for the Total Force policy by integrating the air reserve components into the daily operations of the active force.

- Creation of the Selected Reserve Force program. This fourth major policy

innovation reflected Secretary of Defense Robert S. McNamara's determination to build an elite force of highly capable reserve units to back President John F. Kennedy's flexible response policy. He wanted America's military forces, including its reserve components, prepared to respond immediately across the spectrum of conflict, including guerrilla and limited conventional war. McNamara created a Selected Reserve Force in each of the military services. They had priority access to equipment, could recruit to full wartime strength, and were allowed to conduct additional training each year.

That Selected Reserve Force, including 13 ANG flying units, would provide most of the nation's strategic military reserve in the United States while a growing share of the active force was engaged in the Vietnam War. Their key objective was to be able to deploy overseas within 24 hours of being mobilized.

The improvements generated by those four innovations were demonstrated in 1968 when four Air Guard fighter squadrons were mobilized and sent to South Vietnam after senior officials finally figured out how to employ them. The units proved capable of rapid global deployment, and they sustained highly effective combat operations almost immediately upon their arrival in theater. Their performance helped to pave the way for Total Force policy in the 1970s.

With increased funding in the 1980s and strong USAF determination to repair the post-Vietnam "hollow force," the Air Guard soon became a highly capable force across the board. Indeed, for many years, top leaders in war zones have remarked that Guardsmen and Guard units are almost indistinguishable from their active duty counterparts.

Ennis Whitehead would be amazed. ■

## Aircraft Fleet

(As of Sept. 30, 2007)

Type	TAI	PAI
<b>Fighter/Attack</b>		
A-10	78	78
OA-10A	28	18
F-15A-D	145	91
F-16	495	422
<b>Total</b>	<b>746</b>	<b>609</b>
<b>Helicopter</b>		
HH-60	18	15
<b>Reconnaissance/BM/C3I</b>		
E-8	18	12
EC-130	7	3
WC-130	3	0
<b>Total</b>	<b>28</b>	<b>15</b>
<b>Special Ops Forces</b>		
MC-130	4	4
<b>Tanker</b>		
HC-130	9	7
KC-135	226	172
<b>Total</b>	<b>235</b>	<b>179</b>
<b>Transport</b>		
C-5	30	27
C-17	8	8
C-21	19	2
C-26	11	0
C-32	2	0
C-38	2	2
C-40	3	0
C-130	173	165
LC-130	10	10
<b>Total</b>	<b>258</b>	<b>214</b>
<b>Total ANG</b>	<b>1,289</b>	<b>1,036</b>

Charles J. Gross is chief of the Air National Guard history program in the National Guard Bureau and has been an Air Force civilian historian since 1979. This is his first article for Air Force Magazine.



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# Forceful “Argument”

In the famous “Big Week” bombing campaign, America’s crushing advantage was leadership.

By Walter J. Boyne

**I**t’s official military title was Operation Argument. The Combined Bomber Offensive unfolded over a stretch of six days in 1944, starting on Feb. 20 and running through Feb. 25. Nobody knew it at the time, but Argument would shove the powerful Luftwaffe into an irreversible decline, and make possible the June 6, 1944 Normandy invasion.

No wonder everyone now refers to that famous bombing campaign simply as “Big Week.”

Big Week was led by the heroic men who manned the bombers and fighters that relentlessly pounded Germany with a simple goal in mind: Destroy the enemy air force. Behind the airmen is a story of upended doctrine, logistics

mastery, courageous decision making, and unprecedented supremacy in intelligence gathering.

The most important consequences of Big Week were not understood by Allied commanders until after the war had ended. Newly gathered information on the German effort was analyzed, and it revealed vast differences in German and American perceptions of the scale on which air warfare should be conducted. It laid bare the superiority of the Army Air Forces leadership over that of the Luftwaffe.

Three elements of the AAF leadership deserve special notice.

First was the brilliant planning behind Air War Plans Division 1 (AWPD-1),

which so correctly estimated the necessary size of the AAF—and its losses. The planners did their important work in a few days, based on long experience.

Second was the massive AAF effort to catch up on previously overlooked logistics requirements. This buildup was achieved over a much longer time.

Third was the flexibility of AAF leadership. When the air campaign leaders recognized their offensive doctrine was wrong, they reversed course and quickly executed new methods.

Key planners included Lt. Gen. Carl A. “Tooney” Spaatz, commander, US Strategic Air Forces in Europe (USSTAF), who selected an able orga-



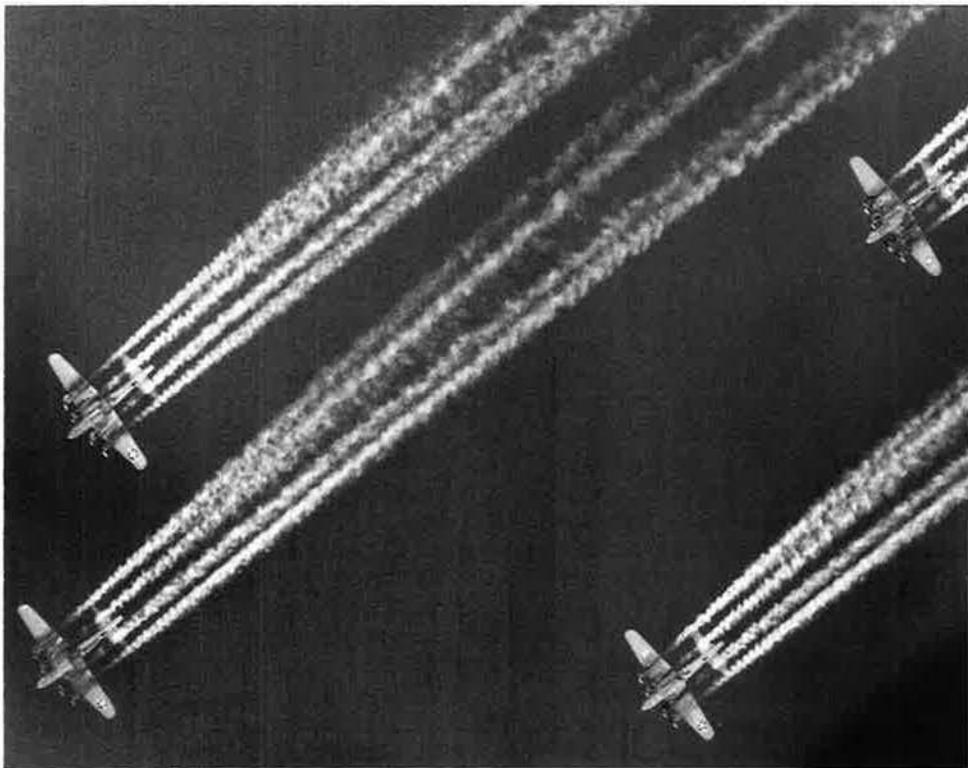
nizer, Maj. Gen. Frederick L. Anderson Jr., as his deputy.

Soon-to-be Lt. Gen. Jimmy Doolittle had succeeded Lt. Gen. Ira C. Eaker as commander, Eighth Air Force. (Eaker accepted an assignment as commander in chief, Mediterranean Allied Air

to factories in the Leipzig (which had been heavily bombed by the RAF the previous night), Bernburg, and Brunswick areas.

Three men earned the Medal of Honor for this mission. One went to a badly wounded pilot, 1st Lt. Wil-

Two others were awarded posthumously to Sgt. Archibald Mathies, a ball turret gunner, and navigator 2nd Lt. Walter E. Truemper. The two men made a gallant attempt to save their wounded crew members by flying their B-17 back with the pilots killed or disabled. Sadly, Truemper and Mathies were also killed in their attempted landing.



**Left: Bombs dropped by USAAF's Eighth Air Force pound a German ball-bearing factory in Stuttgart. Above: Fifteenth Air Force B-17s streak toward a bombing target.**

Forces.) Maj. Gen. Nathan F. Twining was commander of Fifteenth Air Force.

Big Week began with a big gamble on Feb. 20, when weather forecasts were so bad that the "master of the calculated risk," Doolittle, advised against launching. He and other commanders were concerned about losses that might be incurred by icing and collisions as thousands of aircraft made a long climb.

Yet Spaatz did not waver and gave the order to go.

Things began amazingly well. Eighth Air Force dispatched 1,003 bombers and 835 fighters, and the RAF provided 16 fighter squadrons for escort duties.

A total of 2,218 tons of bombs were dropped on 12 designated targets and 145 targets of opportunity.

Against Anderson's doleful fears that 200 bombers might be lost, only 21 were shot down, along with four fighters. The bombing results were good, with heavy damage meted out

liam R. Lawley Jr., who managed to bring his damaged B-17 back to Great Britain, saving seven wounded crew members.



**AAF Lt. Gen. Carl Spaatz (r), shown here with Supreme Allied Commander Gen. Dwight Eisenhower, led the planning effort.**

### Luftwaffe Reponse

On Feb. 21, 861 bombers and 679 fighters were launched, but the results were far less satisfactory, largely due to unexpected cloud cover.

Feb. 22 saw the Eighth attack with 799 bombers, but only 255 missions were credited as successful sorties. Two bombardment divisions were recalled, the 2nd because of its inability to establish a coherent formation en route to Germany, the 3rd due to multiple collisions during the climb.

Forty-one Eighth Air Force bombers were shot down that day, more than 17 percent of the effective force. Fifteenth Air Force lost 14, bringing the day's total to 55 aircraft lost.

The Luftwaffe responded to the massive pressure being applied. It drew fighters from the vast Eastern Front for the defense of the Reich. New defensive methods were employed, including attacking formations on their way in, rather than attempting to down them over the target and on the return trip.

The next day, weather brought a stand-down, but on Feb. 24, important targets were selected at Rostock, Schweinfurt, Gotha, and Eisenach. These were the primary factories producing the Messerschmitt Bf 110, Focke-Wulf FW 190, and anti-friction bearings.

Attrition and wear-and-tear reduced Eighth Air Force bombers to 505, and of these, 451 made successful sorties. Losses were heavy again, with 44 bombers lost. Fifteenth Air Force lost 17 bombers in its attack against Steyr, Austria.

The bombing was good at Schweinfurt, but the Germans had already begun their dispersal program. Many German facilities were no longer the rich targets they had been, but defenders still extracted a high toll for attacks.

On Feb. 25, the Allies got a break, with good weather forecast for almost every worthy target in Germany and occupied Europe. Once again Messerschmitt plants were the primary targets, with the Eighth attacking Regensburg, Augsburg, Stuttgart, and Furth. The



**A B-17 is refueled and re-armed at an airfield in England in 1944 after a bombing raid over Germany.**

Fifteenth was assigned targets at Regensburg-Prufening.

The weary Luftwaffe mustered its primary strength against the Fifteenth, and shot down 33 heavy bombers of the 176 on the Regensburg mission. The Eighth, which dispatched 738 successful sorties, lost 31 bombers.

Then, as quickly as it had begun, Big Week was over. The Allies assessed that the Luftwaffe was sufficiently degraded and that it was time to shift attention to other targets.

In sum, 3,300 heavy bomber missions were flown by Eighth Air Force and 500 from Fifteenth.

Almost 10,000 tons of bombs were dropped.

Depending on the source, bomber losses ran from 194 to 247. The Eighth, Ninth, and Fifteenth Air Forces put up nearly 3,700 fighter sorties and lost 28 fighters.

RAF's Bomber Command dropped 9,198 tons of bombs in 2,351 sorties, and lost 157 bombers.

Claims were made for 600 enemy fighters, well over the actual totals, but still posing a severe blow to the now-reeling Luftwaffe.

Allied leaders were satisfied with the number of German aircraft believed to have been shot down or destroyed on the ground on airfields and in factories. Yet the fight with the German Air Force continued until the end of the war. The Luftwaffe became ever smaller and less capable, but never harmless.

The advent of Big Week had found the Luftwaffe at the peak of its strength in many ways. Its flak force had grown in numbers and capability, as had Luftwaffe fighters, recalled from the Eastern Front. Luftwaffe units were well-led by veterans, and up to this point, green pilots were still being given training when they reached operational units. The ratio of experienced leaders to newcomers was still large enough to allow the Luftwaffe to inflict severe casualties.

Despite the enormous losses incurred during Big Week, the Luftwaffe



**First Lt. William Lawley Jr. was one of three airmen awarded the Medal of Honor after Big Week.**

retained the strength to blunt Bomber Command's night offensives through the spring of 1944.

But there was one basic truth the Luftwaffe could not overcome: It was too small to deal with air warfare on the scale that the United States now waged.

Thus, the outcome of Big Week was set in motion by contrasting decisions made earlier in the war in Germany and the United States.

In setting the proper doctrine, just four men distilled their Air Corps Tactical School training into AWPD-1. They boldly stated that the AAF would require 250 combat groups, 105,647 aircraft, and 2,164,916 airmen to win the war—and were uncannily accurate. Lt. Col. Harold L. George, Maj. Haywood S. Hansell Jr., Maj. Laurence S. Kuter, and Lt. Col. Kenneth N. Walker (who was posthumously awarded the Medal of Honor in 1943) were all field-grade officers when they wrote the document.

Logistics also had to be prioritized, and for many months the goal of producing entire aircraft had priority over production of adequate spare parts. Many officers struggled to rectify the situation, but Maj. Gen. Hugh J. Knerr exerted perhaps the greatest influence.

Knerr stepped on many toes but knew his logistics and enabled Eighth Air Force to build the vital supply systems, maintenance depots, and statistically valid reporting systems. He greatly enabled Big Week and the subsequent vastly expanded bombing operations of 1944 and 1945 to succeed.

In vivid contrast, there was a total failure by German leadership to understand the quantities of aircraft and equipment needed. This began with Hitler and extended through Reichsmarschall Hermann W. Goering and Gen. Hans Jeschonnek, Luftwaffe chief of staff.

Jeschonnek exemplified the arrogance and naivete of upper-level Luftwaffe leadership in 1942, when he cheerfully remarked that he would not know what to do with a production of more than 300 fighters per month.

The Luftwaffe was further handicapped by Goering's choice of World War I ace Gen. Ernst Udet to be the Luftwaffe's Generalluftzeugmeister, in charge of production and development. Beset by drugs, alcoholism, and failure, Udet committed suicide on Nov. 17, 1941 after making one incredibly bad decision after another. Jeschonnek also

committed suicide, in 1943, as did Hitler in 1945 and Goering in 1946.

On the Luftwaffe's plus side, the very capable Field Marshal Erhard Milch fought vainly to restore order in both production and maintenance, and to a lesser degree, logistics. Had he been in Goering's place, the air war may have been much more difficult to win.

German planners had been myopic, willing to begin the war with an air force about half the size it possessed at the end of the first World War.

In the United States, when President Roosevelt called for 50,000 aircraft per year, the aviation industry responded eagerly to the call.

In autocratic Germany, when Adolf Hitler called upon the aviation industry to produce 50,000 aircraft a year, he was simply ignored. Even more damaging, the Luftwaffe was often a lower priority than the Army or Navy.

Although AAF bombing was accurate, the Germans were surprised at the hardness of machine tools in the face of high-explosive attacks (fires from incendiary bombs did far more damage). They found that even comparatively sophisticated equipment could be moved to primitive facilities and have productive capability restored in short order.

### No Longer a Contest

Dispersal and late mobilization allowed German aircraft production to rise almost in sync with increasing Allied bombing efforts. German production peaked at just over 40,000 aircraft in 1944—but by this point, there were no longer the pilots or the fuel to use them effectively.

The German Air Force was still able to husband its dwindling forces and make occasional savage attacks, however, and managed to introduce a series of new weapons including jet- and rocket-powered fighters.

But the Luftwaffe was now worn down by the battle of attrition. Beset by losses, training difficulties, and fuel shortages, it could no longer contest Eighth Air Force.

Allied fighters now roamed the countryside strafing anything that moved. A battered German populace watched with awe the thousands of AAF bombers soaring over their homeland in parade ground formations, the sun glinting off their polished aluminum surfaces. AAF air superiority had been succeeded by air supremacy that became air dominance in the final weeks of the war.

## Laying the Foundation for Big Week

Maj. Gen. Ira C. Eaker had laid the groundwork for Big Week by advocating the Combined Bomber Offensive (CBO) with the code name Pointblank at the January 1943 Casablanca conference.

The CBO was intended to progressively destroy the German military industrial and economic system, undermining the will of the German people to resist. The AAF was to strike precision targets by day, while the RAF continued its night area bombing campaign. Pointblank was planned for four phases, each of three months, culminating in the spring of 1944.

As time passed, land campaigns diverted resources from the Eighth Air Force effort, causing dissatisfaction with Eaker's plan. The more refined strategy, Operation Argument, was developed to focus attacks against the highest priority German targets in central and southern Germany. These were the factories producing aircraft, aircraft components, and ball bearings.

The RAF continued to prosecute its night area bombing campaign under Air Chief Marshal Arthur T. Harris, whose goal was to "de-house" the German workforce.

During 1943, the AAF persisted in its belief that heavily armed bomber formations could successfully fight their way to targets without fighter escort.

The loss of a total of 120 aircraft on the Aug. 17 and Oct. 14, 1943 raids on Schweinfurt and Regensburg finally disproved the theory. The Luftwaffe convincingly demonstrated its deadliness when out of the range of Allied fighters. The situation demanded long-range escort fighters.

By the end of 1943, Gen. Henry H. "Hap" Arnold was distinctly dissatisfied. Famous for his pointed instructions, on Dec. 27, 1943, Arnold clarified things for Eaker, the outgoing commander of Eighth Air Force, and Maj. Gen. Jimmy Doolittle, the incoming commander. After assuring them that they now had adequate means at their disposal, he wrote, "Therefore, my personal message to you—this is a MUST—is to destroy the enemy Air Force wherever you find them, in the air, on the ground, and in the factories."

Arnold's assurance of adequate means was not entirely accurate. Eighth Air Force was just beginning to have adequate numbers of maintenance depots, replacement crews, and aircraft. Fifteenth Air Force was in the process of building up, but was in no way yet comparable to the Eighth. And the essential element to achieving Arnold's directive, the P-51 Mustang long-range escort fighter, was just entering service in Europe.

Importantly, American leaders held their commanders to higher standards than either the British or Germans. In but one example, when Arnold lost confidence in Eaker, he unhesitatingly removed him despite their strong personal ties.

The immediate effects of Big Week were important, yet the two most important effects of the heroic operation came later.

The first was the effect of the aircraft production lost. Big Week compelled the German high command to accelerate the decentralization of its aircraft factories.

Where Big Week directly caused an estimated two-month loss in aircraft production, the resultant decentralization caused another four-month loss.

Even more important, extensive decentralization made all German transportation arteries—roads, rail, canals, even bike paths—profitable targets for

far-ranging fighter-bombers. In this ironic denouement, and contrary to AAF doctrine, it was the fighters and not the bombers that delivered the critical final blows that brought German war production to its knees.

The once proud Luftwaffe had lost the war in its planning stage. The provincial German leaders, almost none of whom had the breadth of vision of their AAF counterparts, completely miscalculated the quantity and quality of the forces required for successful air warfare. Big Week proved this when the fully developed Luftwaffe came into combat with the fully developed AAF. ■

*Walter J. Boyne, former director of the National Air and Space Museum in Washington, D. C., is a retired Air Force colonel and author. He has written more than 600 articles about aviation topics and 40 books, the most recent of which is Supersonic Thunder. His most recent article for Air Force Magazine, "Goering's Big Bungle," appeared in the November issue.*

## Ten years in a row; Ounces of prevention; Speeding up the VA ....

### Pay Raise, Other Benefits

Members of the American armed services will get a 3.9 percent pay raise in January, the 10th consecutive time they have received an annual basic pay increase that surpasses private sector wage growth by at least a half percentage point.

This is part of the Fiscal 2009 defense authorization bill approved by Congress and signed into law by President George W. Bush on Oct. 14. Other personnel-related highlights in the defense bill are:

- **Tricare Reserve Select.** Premiums paid by drilling reservists and their families for TRS coverage will be lowered in 2009 to match actual program costs. For member-only coverage, premiums will fall to about \$47 a month from \$81. Family coverage premiums will fall to \$175 from \$253.

- **Chiropractic health**—By Sept. 30, 2009, chiropractic services will be offered to active duty members at 11 more military treatment facilities.

- **Lodging expense.** Military travelers will see maximum temporary lodging expense (TLE) reimbursements raised to \$290 per day from \$180.

- **Spouse employment.** The Defense Department will be authorized to pay tuition assistance to spouses of active duty service members for education and training programs that expand their job opportunities.

- **Special weight allowance.** The services will be allowed to pay an additional weight allowance of up to 500 pounds to ship professional books and equipment of military spouses on change-of-station moves.

### Preventive Health Care

Congress once again rejected efforts to raise Tricare fees, deductibles, and drug co-payments, most of which had been aimed at working-age military retirees.

Instead, lawmakers adopted new entitlements for beneficiaries to stay healthy through no-fee checkups, age-appropriate disease screening, stop-smoking help, and other “wellness” programs.

The four-part plan includes:

- **Waiver of Tricare co-payments** for various preventive services. These in-



USAF photo by SSgt. Aaron Allmon

*They will get a hefty pay raise.*

clude screening for colorectal, breast, cervical, prostate, and other problems; annual physical exams; and vaccinations. Excluded are Medicare-eligible beneficiaries, except in Fiscal 2009. In only that year, which began Oct. 1, 2008, DOD has authority to reimburse Medicare-eligible beneficiaries for co-payments.

- **A new cost-free smoking cessation program** for non-Medicare-eligible beneficiaries will include counseling, support groups, a toll-free quit line and nicotine-replacement drugs. The program is to be established by mid-April 2009. Nicotine-replacement drugs are to be made available only by mail order.

- **DOD is directed to test, on 1,500 members, effectiveness of a “preventive health services allowance,”** set at \$500 per individual and \$1,000 per family, if they take full advantage of preventive health care services.

- **The Pentagon also is directed to test—in three Tricare Prime areas—new health risk management techniques, focusing on younger retirees and their families.** This will include a wellness assessment and new monetary and non-monetary incentives to find out what works best to change unhealthy behaviors.

### Paternal Militarias?

One of the more surprising personnel-related initiatives in the autho-

rization bill is a new paternity leave benefit.

Male service members are authorized 10 days of paternity leave for children born on or after Oct. 14, 2008.

The extra days’ leave won’t count against 30 days of annual leave, but each service will determine when qualifying members can use the new leave benefit in light of mission needs, unit deployment schedules, and command priorities, a defense official said.

### Another SBP Rejection

Congress again rejected a Senate plan to allow concurrent receipt of military Survivor Benefit Plan (SBP) payments and Dependency and Indemnity Compensation (DIC) from the Department of Veterans Affairs.

It also declined to lower the age-60 threshold for the start of reserve annuities for all reserve component members who have deployed since 9/11.

The Senate for a fourth straight year had voted to restore full SBP payments to more than 55,000 surviving spouses who see them reduced, dollar for dollar, by DIC payments. Also for a fourth straight year, that initiative collapsed in final negotiations with the House.

The Senate decided not even to vote on many other key personnel amendments, and quickly passed the defense bill, after Sen. Jim DeMint (R-S.C.)

insisted on putting to a vote an amendment that would put at risk up to \$5 billion in special earmarks.

Among amendments sacrificed to protect those earmarks was one from Sen. Saxby Chambliss (R-Ga.) that would have made more than 140,000 reservists mobilized since Sept. 11, 2001, eligible for earlier reserve retirement if they completed at least 20 years of qualifying service.

Congress a year ago adopted a pared down Chambliss amendment on reserve retirement that lowered the age 60 start of retired pay for Reserve and National Guard members who mobilize for war or national emergencies. A reservist would see retired pay begin three months earlier for every 90 consecutive days mobilized.

Congress only found money to make this change applicable to deployment time after Jan. 28, 2008. Chambliss' amendment this year would have applied the change to mobilizations since Sept. 11. But Chambliss himself voted with colleagues to shelve this and all further amendments when DeMint and other fiscal conservatives insisted on challenging the earmarks.

### End to VA Budget Delays?

The chairmen of the House and Senate Veterans' Affairs Committees have vowed to push to enactment next year legislation that would guarantee timely, fully funded budgets each year for the VA health care system.

The so-called "advance budgeting" initiative was introduced symbolically this fall before lawmakers recessed for the election. But Rep. Bob Filner (D-Calif.), chair of the House Veterans' Affairs Committee, and his counterpart, Sen. Daniel K. Akaka (D-Hawaii), promise to reintroduce their bills in the 111th Congress and shepherd them into law.

The proposed Veterans Health Care Budget Reform Act is the brainchild of nine veterans service organizations that formed a Partnership for Veterans' Health Care Budget Reform. These groups are: AMVETS, the Blinded Veterans Association, Disabled American Veterans, Jewish War Veterans, Military Order of the Purple Heart, Paralyzed Veterans of America, the American Legion, VFW, and Vietnam Veterans of America.

The intent of the budget reform bill is to approve VA health care funding a year in advance to end a disruptive pattern by Congress of passing VA budgets months after budget years begin Oct. 1. VA hospitals and clinics have been forced by these delays to operate with funds frozen at previous-year levels. This unnecessarily results in supply and staff shortages, hiring freezes, and delays in buying critical equipment.



USAF photo by TSgt. Larry A. Simmons

### *They're coming home to a new GI Bill.*

The budget reform bill would put the VA health care budget under an "advance appropriation" schedule. A second part of the legislation would improve VA health care funding by requiring that VA use a new actuarial model it has developed that is quite accurate in projecting the per capita cost of providing health care to VA's enrolled patient population.

Filner called the legislation a "historic new approach to guarantee that our veterans have access to comprehensive, quality health care."

### New GI Bill on Time

The Department of Veterans Affairs will begin benefits under the new post-9/11 GI Bill on schedule next August but payments will be processed manually rather than rely on an industry standard computer program.

Keith M. Wilson, director of education service for the Veterans Benefits Administration, said concerns raised by some members of Congress that VA might not be able to start the new GI Bill by Aug. 1, 2009, the date set in law, are unfounded.

But Wilson said payments will have to be processed by hand, as now occurs with Montgomery GI Bill and other education benefits claims, because an automated processing system won't be ready.

The new GI Bill, when it begins, will nearly double the value of VA education benefits for eligible veterans. But it is a far more complicated benefit than the Montgomery GI Bill program. Wilson said it will take VA until October of 2010 to develop a computer system to process payments.

The MGIB pays veterans a flat rate monthly benefit regardless of the school they attend. If tuition is low, the veteran pockets the difference. If tuition is higher

than MGIB payments, the veteran pays the difference out of pocket.

Under the post-9/11 GI Bill, tuition and fees will be paid directly to schools based on what each school charges. But two other elements of the new GI Bill will be paid to students. One is a housing allowance based on where they live. The second is a \$1,000-a-year stipend for books and supplies.

"This program has a lot more variables, and each payment amount going out in support of a veteran will be unique to that veteran," Wilson said.

Soon after Congress approved the new GI Bill, VA officials said they would accelerate the plan to fully automate the processing of education benefits. Then they concluded the necessary expertise wasn't available in house so they would have to find a contractor.

By October, this course was deemed too risky for meeting an Aug. 1, 2009 start for the new GI Bill. So VA announced it would "rely upon its own workforce to set up the information technology programs needed to implement the educational benefits of the new post-9/11 GI Bill."

When lawmakers and veterans service groups complained that the VA appeared to be putting the start date in jeopardy, Wilson came forward to clarify that the new GI Bill would begin on time.

Wilson said VA will hire enough people to process new GI Bill claims at least as fast as now occurs for MGIB users, an average of 19 days between application and payment. With an automated system, he said, the goal will be 10 days, and most applications will be processed and approved in a day.

VA, he said, was "just not willing to gamble benefit payments on this type of initiative" now. It's more important to start the new benefit on time. ■

## The Scholar-Secretaries

"For the first time, both the United States Secretary of State and Secretary of Defense have doctorates in Russian studies. A fat lot of good that's done us."—**Secretary of Defense Robert M. Gates, speech at Oxford Analytica (United Kingdom), Sept. 19.**

## Allegations and the F-35

"In all F-35 program office and US Air Force air-to-air combat effectiveness analyses to date, the F-35 enjoys a significant combat loss exchange ratio advantage over the current and future air-to-air threats to include Sukhois."—**Maj. Gen. Charles R. Davis, F-35 program executive officer, on allegations published in Australia (which is considering purchase of F-35s) and elsewhere that the multirole stealth fighter had been beaten by Russian Sukhoi fighters in a computer wargame, Sept. 19.**

## Total Force Commitment

"I commit that we will share the load and communicate openly on every decision that we face."—**Air Force Chief of Staff Gen. Norton A. Schwartz, National Guard Association of the United States conference, Sept. 22.**

## Mediocre Military Leaders

"When it comes to reaping political advantage from our supposed military superiority, Americans have been getting a lousy return on their investment. One consistently overlooked explanation for this phenomenon is that the quality of American generalship since the end of the Cold War has seldom risen above the mediocre. Although the overall quality of US forces may be at an all-time high, the same cannot be said of the most recent generation of four-star generals and admirals."—**Andrew J. Bacevich, retired Army colonel and professor of history and international relations at Boston University, The Limits of Power, Metropolitan Books, Aug. 5.**

## Modesty and Technology

"Be modest about what military force can accomplish, and what technology can accomplish. The advances in precision, sensor, information, and satellite technology have led to extraordinary

gains in what the US military can do. The Taliban dispatched within three months, Saddam's regime toppled in three weeks. Where a button is pushed in Nevada and seconds later a pickup truck explodes in Mosul. Where a bomb destroys the targeted house on the right, leaving intact the one on the left. But also never neglect the psychological, cultural, political, and human dimensions of warfare, which [are] inevitably tragic, inefficient, and uncertain. Be skeptical of systems analysis, computer models, game theories, or doctrines that suggest otherwise. Look askance at idealized, triumphalist, or ethnocentric notions of future conflict ... where adversaries can be cowed, shocked, or awed into submission, instead of being tracked down, hilltop by hilltop, house by house, block by bloody block."—**Gates, National Defense University, Sept. 29.**

## Not Asked

"I have no clue. I know zero, zip, nada, nothing. ... That's on the record. Zero, zip, nada, nothing. ... I was not consulted."—**Paula A. DeSutter, State Department chief of verification, on US taking North Korea off State Department's list of terror-sponsoring states, Wall Street Journal, Oct. 13.**

## Carrier Air Mix

"So what I envision in the future is an air wing that will have a mix of F/A-18 Super Hornets and Joint Strike Fighters, and then when Super Hornets phase out over time, ... replace [them] with a sixth generation fighter. Then you'll have JSF and a new fighter."—**Adm. Gary Roughead, Chief of Naval Operations, Navy Times, Oct. 6.**

## Absolute Standard

"Every day, you have to be perfect. There is no room for error when it comes to nuclear weapons."—**Air Force Gen. Kevin P. Chilton, commander of US Strategic Command, to missile crews at Malmstrom AFB, Mont., Omaha World Herald, Sept. 29.**

## F-22: More Is Less

"The Air Force's biggest mistake was insisting on 381. They should've

chosen a more budgetarily sustainable number."—**Richard Aboulafia, Teal Group research firm, on prospects for further funding of the F-22 fighter, National Defense, September.**

## Nation Builders

"I don't think the Army should transform itself into a light-infantry-based constabulary force."—**Army Col. Gian P. Gentile on new Army doctrine that foresees that nation building will become a more important mission than conventional warfare, Washington Post, Oct. 5.**

## Defining the Century

"It's not going to be the war on terror that defines the ideological challenge of our century. It's something more elusive. I think it involves three grand changes. One is what I call the global political awakening. For the first time, all of humanity is politically active. ... Second, there's a shift in the global center of power from the Atlantic world to the Far East. ... And the third is the surfacing of common global problems that we have to address, lest we all suffer grievously. I mean climate and environment, but also poverty and injustice."—**Former National Security Advisor Zbigniew Brzezinski, Los Angeles Times, Sept. 28.**

## Plan A

"Russia plans to raise defense expenditure by 50 percent in three years."—**Russian News & Information Agency NOVOSTI, Sept. 30.**

## Plan B

"Russia plans to trim its armed forces by more than 10 percent by 2012 with radical cuts among the officer ranks, the defense minister said Wednesday."—**Atlanta Journal-Constitution, Oct. 9.**

## No Victory

"We're not going to win this war. It's about reducing it to a manageable level of insurgency that's not a strategic threat and can be managed by the Afghan army."—**Brig. Mark Carleton-Smith, senior British commander in Afghanistan, declaring that a "decisive military victory" over the Taliban is impossible, Associated Press, Oct. 4.**

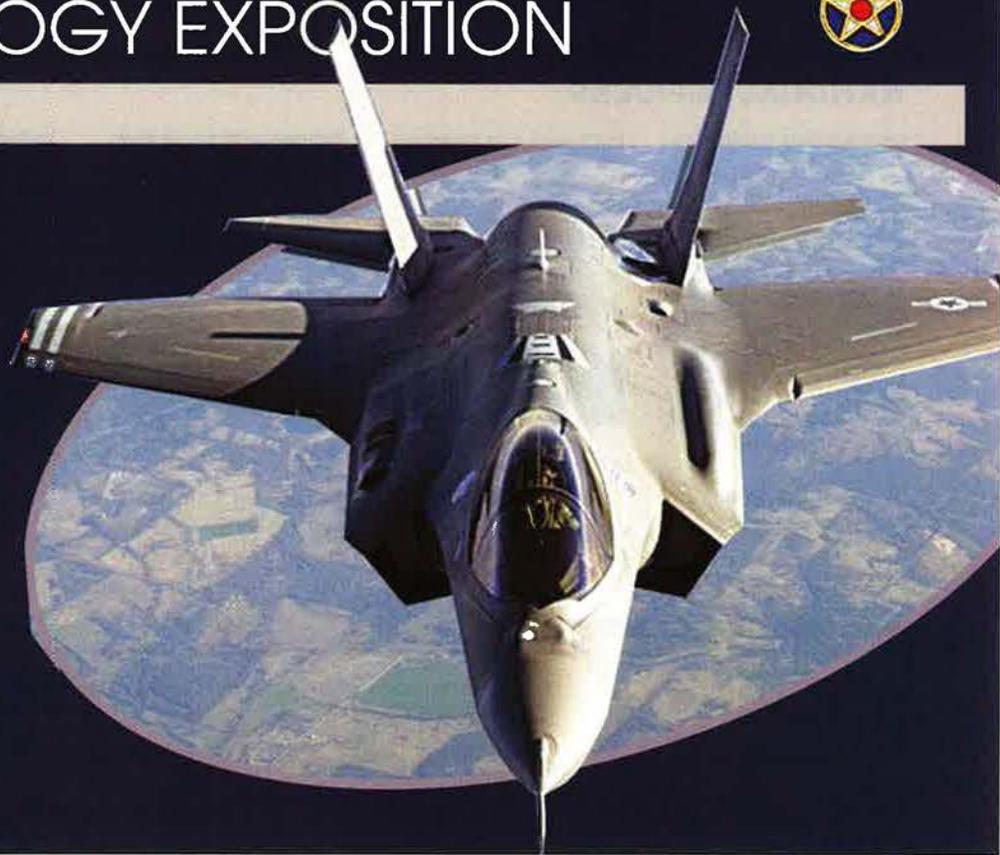
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# AFA National Report

natrep@afa.org

By Frances McKenney, Assistant Managing Editor

## Speaking to AMC

Air Force Association Chairman of the Board Joseph E. Sutter addressed Air Mobility Command leaders at an AMC commander's conference at Scott AFB, Ill., in October.

Invited to the three-day meeting by the head of AMC, Gen. Arthur J. Lichte, to learn about the challenges, successes, and way ahead for USAF's mobility forces, Sutter spoke about the association's history and how—today—it helps focus attention on airpower's role in the Global War on Terror and on the need to replace aging aircraft.

"AFA supports not only people and quality of life issues, but needed modernization and sufficient funding to maintain our Air Force as second to none," he told the audience of some 80 air mobility leaders.

Air Force Secretary Michael B. Donley and Gen. Duncan J. McNabb, head of US Transportation Command, also attended the biannual conference, called Phoenix Rally.

Sutter said he came away from the meeting with "great pride in the critical role of air mobility forces."

## Veterans Day in Washington, D.C.

Sutter attended the 55th annual Veterans Day ceremony in Washington, D.C., held at Arlington National Cemetery on Nov. 11 at 11 a.m.

The observance of Veterans Day began with Vice President Dick Cheney laying a wreath at Arlington National Cemetery's Tomb of the Unknowns.

The guests, who included Secretary of Defense Robert M. Gates and Air Force Secretary Michael B. Donley, then entered the adjacent outdoor amphitheater. The ceremony there acknowledged the Veterans Day National Committee's members and associate members, including the Air Force Association.

C-Span covered this in a live broadcast.

Sutter later joined committee representatives at the Tomb of the Unknowns, where he laid a wreath on behalf of AFA.

## Region and State Presidents Meet

AFA's region and state presidents met in Arlington, Va., in October for an orientation to the association and to their roles as field leaders.



AFA Board Chairman Joe Sutter stands fourth from right (dark suit), in this group photo at AMC's Senior Leaders Conference at Scott AFB, Ill. Up front are (l-r) AMC Commander Gen. Arthur Lichte and Air Force Secretary Michael Donley.

In two days of information sessions, workshops, and meetings, they heard from some of AFA's top elected officials and staff members. Topics ranged from the association's strategy, department functions, programs, and finances to the Air Force Memorial. In short, it was a cram course in "AFA 101."

AFA Board Chairman Sutter was unable to attend this meeting. In his place, James R. Lauducci, AFA vice chairman of the board for field operations, opened the meeting by welcoming the attendees: 26 of the 40 state presidents and 13 of the 14 region presidents. Lauducci noted that AFA's No. 1 challenge is membership. He said that it is a "shared responsibility of every leader" and added that "the potential out there is unbelievable" because of the broader guidelines for membership eligibility and AFA's additional mission of aerospace education.

One attendee Virginia state's new president Jeffrey L. Platte, said afterward that he found the orientation session valuable because field leaders talked about solutions to problems they all face. The Langley Chapter member said he was able to "pick up some great ideas" and got motivated to follow

through on methods for improving AFA state-level communications.

## More Exciting

"We thought that aerospace couldn't get any more exciting," wrote Megan Tucker in an e-mail to Hurlburt Chapter President Dann Mattiza. "But we were so wrong."

Tucker is a fourth-grade teacher at Kenwood Elementary School in Fort Walton Beach, Fla. She and Casey Oliver, a fifth-grade teacher from West Defuniak Elementary School in Defuniak Springs, Fla., spent a week in July at the Space Academy for Educators. The Hurlburt Chapter and Boeing helped pay the teachers' tuition.

Nicknamed Educator Space Camp, it involved five days at the US Space and Rocket Center in Huntsville, Ala., and featured a museum tour, hands-on projects, simulations, and presentations by aerospace notables such as six-time shuttle astronaut Story Musgrave.

Tucker and Oliver took part in exercises that are billed as being close to actual astronaut training. A "space shot" allowed them to experience three Gs and weightlessness; a helicopter "crash" in water gave them practice in

USAF photo by AIC Wesley Farnsworth

evacuation and rescue procedures; and they carried out a "shuttle mission," with Oliver as commander and Tucker as a mission specialist.

As a culmination activity, the teachers attended a dinner that was part of the Space and Rocket Center's reunion for Saturn V rocket and Apollo mission personnel. Attendees included astronauts Musgrave, Robert L. Gibson, and James D. Halsell Jr.

Tucker said that she and Oliver returned from the camp "saturated with ideas and curriculum to bring back into our elementary classrooms" and "pumped up" for the school year.

The US Space and Rocket Center was established in 1970 as an extension of NASA's Marshall Spaceflight Center in Huntsville to serve as a museum and archive. It later began educational camp programs to encourage schoolchildren—and adults—to explore science, technology, engineering, and math.

### Tech Symposium

The **Wright Memorial Chapter** sponsored its first AFA Technology Symposium on Sept. 26 at Wright-Patterson AFB, Ohio. The symposium piggybacked on Air Force Materiel Command's Senior Leaders Conference.

Led by AFMC commander Gen. Bruce Carlson, the Senior Leaders



**Jim Lauducci, AFA Vice Chairman, Field Operations, has a chance to talk with Joan Sell, Rocky Mountain Region president, before two days of information sessions get under way at the association's annual Region and State Presidents meeting.**

Conference involved some 100 field commanders and top AFMC officials, who gathered for two days of briefings and discussions. They took time out to celebrate a chapter co-sponsored Air Force Birthday Ball, held at the National Museum of the United States Air Force. The chapter, led by Kent D. Owsley, presented three of its most prestigious awards during the festivities.

Carlson received the chapter's Heritage Award. US Rep. Michael Turner (R-Ohio) was named as the Ambassador Award recipient. He is a member of both the House Armed Services and Veterans' Affairs Committees. William U. Borger, who retired last summer after 37 years in Air Force research and development, received the chapter's Legacy Award.

Following the conference, the AFMC officials attended the AFA Technology Symposium. Its purpose was to highlight the role AFMC plays in life cycle management of Air Force weapons systems. Owsley said later that the Air Force Research Laboratory took the lead for this symposium, but, in future years, the lead will go to other AFMC units, in turn.

The chapter also conducted a silent auction and hosted a golf outing in conjunction with the activities.

### The F-22 and the State Convention

The prospect of an F-22 demonstration flight, seen from a VIP chalet on the flight line, ensured a good turnout for the Indiana State Convention. Representatives from the state's six chapters—**Central Indiana, Columbus-Bakalar, Fort Wayne, Grissom Memorial, Lawrence D. Bell Museum, and Southern Indiana**—gathered for their convention, held during the Indianapolis Air Show at Mount Comfort Airport in August.

Indiana State President William R. Grider counted some 50 AFA members on hand, including state officers Harold F. Henneke, vice president; James E. Fultz, secretary; and Michael Malast, treasurer. The AFAers joined forces with the Indiana Air National Guard to host more than two dozen AFROT

Staff photo by Eric Lee

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cadets and 150 ANG personnel at an AFA chalet—a huge tent where food and beverages were served. Grider explained that the chalet had room for 250 people, so there was space to hold state and chapter meetings, as well.

In a highlight of the state convention, Lyle W. Marschand, then president of the Lawrence D. Bell Museum Chapter, received the first annual Great Lakes Region Member of the Year award. Marschand served in the US Army from 1940 to 1960, then in the Air Force Reserve for the following 15 years.

In addition to the star attraction F-22 Raptor and a Navy F/A-18 Hornet, the 12th annual Indianapolis Air Show showcased other current USAF aircraft—such as the A-10 and C-130—plus World War II warbirds and aircraft from other services.

**Outreach to Congress**

In August, **Northern Shenandoah Valley Chapter** leaders escorted two Capitol Hill legislative assistants to the 167th Airlift Wing (ANG) at Eastern West Virginia Airport in Martinsburg, W.Va.

Cynthia Klappmuss and Thomas M. Culligan Jr. are both from the office of US Rep. Frank R. Wolf (R-Va.).

*A grant from the Hurlburt Chapter helped teacher Megan Tucker (shown here in a shuttle mission simulation) attend Educator Space Camp last summer.*



Chapter President Norman M. Haller and past president Arthur Andraitis brought the professional staffers to the wing not only for an informal update on its operations but specifically to highlight

an aerospace education program that takes place at its facilities.

The group had lunch—in view of the flight line and the unit's C-5 transports—with Col. Brian A. Truman, wing

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**At the Indiana state meeting, State President William Grider (l) congratulates Lyle Marschand on being named as the first Great Lakes Region Member of the Year.**

vice commander; Capt. (now Maj.) Melissa Shade, the wing chief of staff; Sherra Triggs; and Laura Meske.

Triggs and Meske lead a Starbase educational program, hosted by the wing. DOD-sponsored Starbase programs take place at several military facilities nationwide and guide young students in hands-on science, technology, engineering, and math activities, while also giving them a chance to interact with military personnel. At Martinsburg, Starbase is geared to fifth-graders.

#### Strike Eagle Pilots

Several 4th Fighter Wing pilots from Seymour Johnson AFB, N.C., were guest speakers at the September meeting of the **Tarheel Chapter** in Durham, N.C.

Maj. Michael Ebner, an intelligence officer from the 4th Operations Support Squadron, spoke first. Following him were Maj. Mark Peters, Capt. David Cochran, and Capt. Pritchard Keely, all 335th Fighter Squadron F-15E pilots.

Joyce W. Feuerstein, chapter president, reported that they described their deployment to Afghanistan, with PowerPoint presentations showing how stark and difficult the terrain is and how weather is always a challenge.

"The living conditions seem dire to us," yet the airmen were enthusiastic about their work, she said.

AFROTC cadets from the University of North Carolina, Chapel Hill, and North Carolina State University were among the audience at this chapter meeting.

Feuerstein said chapter members stuck around after the meeting to chat with the guest speakers. "That pretty much tells you how impressed and grateful our members were to spend time with these men from Seymour Johnson," she said.

#### More Chapter News

■ In New York City, a full house greeted the **Iron Gate Chapter's** September guest speaker US Coast Guard Capt. Daniel A. Ronan. Commander of the Long Island Sound (N.Y.) sector, Ronan spoke about Coast Guard operations and the challenge of the melting Arctic

ice cap, which has led to wrangling over what country has jurisdiction over water that used to be unpassable. During the meeting, Ronan, Pamela Freytag, and the late New York National Guard Sgt. Nelson D. Rodriguez-Ramirez were named as AFA Jimmy Doolittle Educational Fellows. Freytag helps her US Representative select candidates for the military academies. Rodriguez-Ramirez died in June while deployed to Afghanistan. He was the cousin of chapter member Alaida Rivera.

■ In Pennsylvania, retired SMSgt. Oreste DiCerbo, aerospace science instructor at West Mifflin Area High School, received an AFA Medal of Merit in an October presentation before his AFJROTC cadets, detachment commander, and school administrators. The **Greater Pittsburgh Chapter** aerospace education VP earned the award because he volunteered his cadet sabre team for a Black History Month ceremony honoring the Keystone State's Tuskegee Airmen, last February. The state AFA organization also recognized DiCerbo's initiative by issuing an AFA Citation. Pennsylvania State President Robert C. Rutledge and Greater Pittsburgh Chapter President Tillie Metzger made the awards presentations to DiCerbo. ■

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20th Air Police Sq, Wethersfield, England (1953-63), May 12-14, 2009, in Chattanooga, TN. **Contact:** Earl Czech, 3682 104th Ave., N.E., Circle Pines, MN 55014 (763-784-8975) (cearlretired@aol.com).

Pilot Training Class 57-I. May 3-7, 2009, at the Peppermill Hotel/Casino in Reno, NV. **Contact:** Al Brezinsky (530-938-1671).

Seeking Iceland radar site members of the 667th, 932nd, 933rd, and 934th AC&W for a reunion in 2009. **Contact:** William Chick (803-932-9596) (littlechick@msn.com).

E-mail unit reunion notices four months ahead of the event to reunions@afa.org, or mail notices to "Unit Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.



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### US Postal Service Statement of Ownership, Management, and Circulation (Required by 39 USC 3685)

1. Publication Title: Air Force Magazine
2. Publication No.: 0730-6784
3. Filing Date: Oct. 24, 2008
4. Issue Frequency: Monthly
5. No. of Issues Published Annually: 12
6. Annual Subscription Price: \$36
7. Complete Mailing Address of Known Office of Publication (not printer): 1501 Lee Highway, Arlington, VA 22209-1198
8. Complete Mailing Address of Headquarters or General Business Office of the Publisher (not printer): 1501 Lee Highway, Arlington, VA 22209-1198
9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: Publisher: Michael M. Dunn, 1501 Lee Highway, Arlington, VA 22209-1198; Editor: Robert S. Dudney, 1501 Lee Highway, Arlington, VA 22209-1198; Managing Editor: Juliette Kelsey, 1501 Lee Highway, Arlington, VA 22209-1198
10. Owner: Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198
11. Known Bondholders, Mortgages, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities: None
12. Tax Status (For completion of nonprofit organizations authorized to mail at special rates): Has not changed during preceding 12 months.
13. Publication Title: Air Force Magazine
14. Issue Date for Circulation Data Below: Oct. 24, 2008

15. Extent and Nature of Circulation	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total No. of Copies (Net press run)	126,904	126,076
b. Paid Circulation		
(1) Mailed outside-county paid subscriptions	118,383	117,465
(2) Mailed in-county paid subscriptions	—	—
(3) Paid distribution outside the mails, incl other carriers	582	559
(4) Paid distribution by other classes (e.g., 1st class mail)	—	—
c. Total Paid Distribution [sum of 15b (1), (2), (3), (4)]	118,965	118,024
d. Free or Nominal Distribution (by mail and outside the mail)		
(1) Free outside county included on PS Form 3541	1,706	1,670
(2) Free in county included on Form 3541	0	0
(3) Free mailed at other classes (e.g., 1st class mail)	143	124
(4) Free distribution outside the mail	807	807
e. Total Free or Nominal Rate Distribution [sum of 15d (1), (2), (3), (4)]	2,656	2,611
f. Total Distribution [sum of 15c and 15e]	121,621	120,635
g. Copies not Distributed	5,025	8,052
h. Total [sum of 15f and 15g]	126,646	128,687
i. Percent Paid [15c / 15fX100]	97.82%	97.84%

16. Publication of Statement of Ownership Required. Will be printed in the December 2008 issue.

17. Signature and Title of Editor, Publisher, Business manager, or Owner: Robert S. Dudney, Editor in Chief,

(signed) Date: 10-29-08

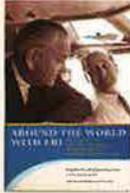
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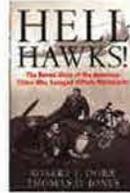
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Brig. Gen. James U. Cross, USAF (Ret.), with Denise Gamino and Gary Rice. University of Texas Press, Austin, TX (800-252-3206). 208 pages. \$26.95.



**Hell Hawks!: The Untold Story of the American Fliers Who Savaged Hitler's Wehrmacht** Robert F. Dorr and Thomas D. Jones. Zenith Press, Minneapolis (800-328-0590). 336 pages. \$24.95.



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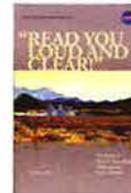


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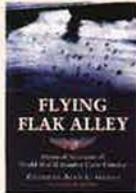
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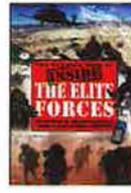
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Alan L. Griggs, ed. McFarland & Co., Jefferson, NC (800-253-2187). 257 pages. \$39.95.



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**Road to Mach 10: Lessons Learned From the X-43A Flight Research Program.** Curtis Peebles. American Institute of Aeronautics and Astronautics, Reston, VA (800-682-2422). 238 pages. \$39.95.



**Flying the SR-71 Blackbird: In the Cockpit on a Secret Operational Mission.** Col. Richard H. Graham, USAF (Ret.). Zenith Press, Minneapolis (800-328-0590). 288 pages. \$25.95.



**Memoirs of a B-29 Pilot.** Maj. Charles R. Reyher, USAF (Ret.). Merriam Press, Bennington, VT (802-447-0313). 228 pages. \$19.95.



**The Speed of Heat: An Airlift Wing at War in Iraq and Afghanistan.** Thomas W. Young. McFarland & Co., Jefferson, NC (800-253-2187). 263 pages. \$35.00.

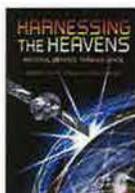
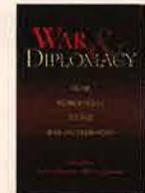
**Glory Days: The Untold Story of the Men who Flew the B-66 Destroyer Into the Face of Fear.** Col. Wolfgang W. E. Samuel, USAF (Ret.). Schiffer Publishing, Atglen, PA (610-593-1777). 429 pages. \$35.00.



**The Nieuport 28: America's First Fighter.** Theodore Hamady. Schiffer Publishing, Atglen, PA (610-593-1777). 277 pages. \$59.95.



**War & Diplomacy: From World War I to the War on Terrorism.** Andrew Dorman and Greg Kennedy, eds. Potomac Books, Dulles, VA (800-775-2518). 245 pages. \$60.00.



**Harnessing the Heavens: National Defense Through Space.** Paul G. Gillespie and Grant T. Weller, eds. Order from: Imprint Publications, Chicago (773-288-0782). 235 pages. \$29.95.



**One Step Forward: The Life of Ken Dahlberg.** Al Zdon and Warren Mack. Order from: Itasca Books, Minneapolis (800-901-3480). 160 pages. \$32.95.



**War Journal: My Five Years in Iraq.** Richard Engel. Simon & Schuster, New York (800-223-2336). 392 pages. \$28.00.

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### Special Assistant

#### Vacant

## Special Assistant Pacific

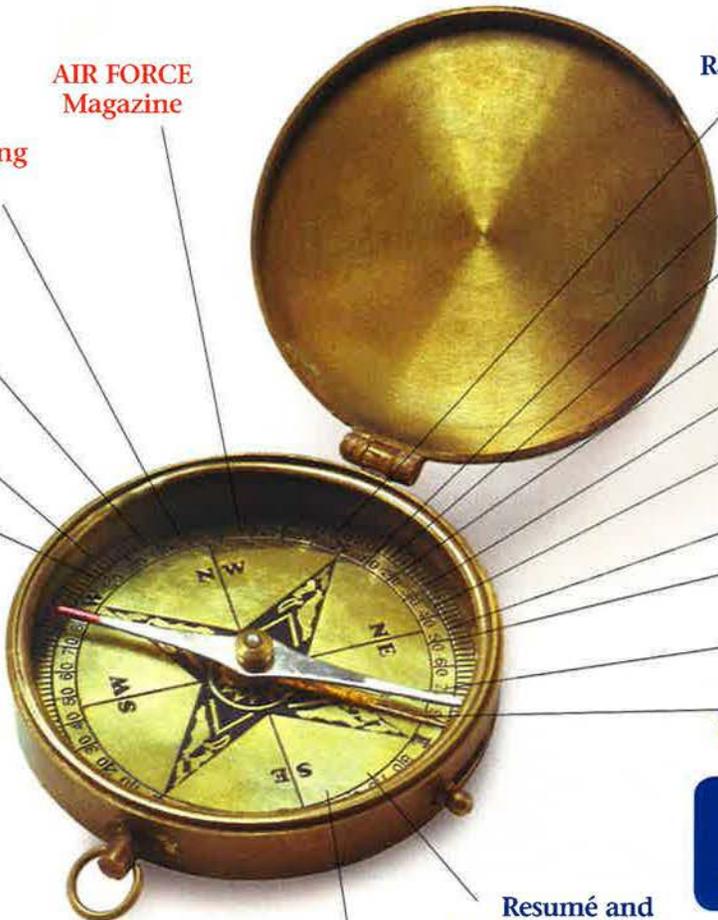
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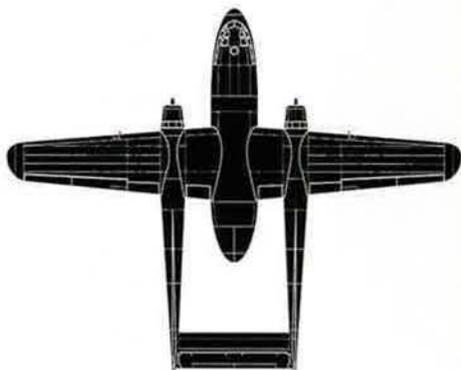
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# Airpower Classics

Artwork by Zaur Eylanbekov

## C-119 Flying Boxcar



The C-119 Flying Boxcar developed out of the World War II-era C-82 Packet. The Fairchild-designed transport aircraft performed well in the Korean War, in which, for instance, it dropped 2,011 parachute troops and 201 tons of supplies in a single day, March 23, 1951. In Vietnam, it flew first in the French Air Force and then with USAF. Conceived as a workhorse transport, the C-119 operated in a variety of roles, including satellite recovery, medical evacuation, aerial resupply, and gunship.

The Boxcar was built for close-in action. Its distinctive twin-boom design and low-slung fuselage with clamshell doors made it easy to load and unload. Still, the early C-119s suffered from structural problems and poor single-engine performance. It was an airplane you had to fly a lot before you loved it. Ninety-six C-119s carried cargo to Korea and supported major battles with parachute troops and supplies, and later resupplied besieged French

at Dien Bien Phu. It eventually saw use with Troop Carrier Command, Tactical Air Command, Strategic Air Command, Military Air Transport Service, and the US Navy.

The need for gunships in the Vietnam War brought about Project Gunship III, in which 26 Reserve C-119Gs were modified into the AC-119G Shadow, and 26 C-119Ks were modified into the AC-119K Stinger. The Shadow supplemented the AC-47 in the troops-in-contact role. For the more firepower intensive attacks on the Ho Chi Minh Trail, the Stinger had a J85 jet engine under each wing, adding almost 6,000 pounds of thrust. The AC-119's size, relative maneuverability, and extended loiter time made it an effective supplement to the AC-47 and AC-130.

—Walter J. Boyne

**This aircraft:** C-119F Flying Boxcar—#51-8146—as it looked in the late 1950s when it was assigned as the support aircraft for the Thunderbirds demonstration team.



C-119s disgorging cargo in a paradrop.

### In Brief

Designed by Fairchild ★ built by Fairchild, Kaiser-Frazer ★ gunship conversion Fairchild-Hiller ★ first flight November 1947 ★ number built 1,150 ★ **Specific to C-119G:** crew of six (pilot, copilot, navigator, radio operator, flight engineer, loadmaster) ★ capacity 62 troops or 35 stretchers ★ two Wright R-3350-89A radial engines ★ armament none ★ max speed 281 mph ★ cruise speed 186 mph ★ max range 1,630 mi ★ weight (loaded) 72,700 lb ★ span 109 ft 3 in ★ length 86 ft 6 in ★ height 26 ft 6 in ★ **Specific to AC-119K:** armament four MXU-470/A minigun modules; 24 Mk 24 flares; LAU-74/A flare launcher; two 20 mm Gatling cannons ★ crew of 10 (pilot, copilot, navigator, night obs sight operator, radar/FLIR operator, flight engineer, illuminator operator, three gunners).

### Famous Fliers

R. W. Henderson, James McGovern, William Fairbrother, Charles Robertson, Richard Marr, John Williams, Larry Elton Fletcher.

### Interesting Facts

Originally nicknamed "Creep" (gunship variant), changed to "Shadow" ★ used by 17 air forces in at least 21 variants ★ flew at 3,500 ft above ground level on CAS missions ★ suffered only five combat losses (gunships) ★ used up to 16 JATO bottles for quick takeoffs ★ used to snag capsules returning from orbit ★ recovered film capsule from Discoverer 14—first aerial recovery of an object returning from Earth orbit.

A close-up photograph of a man with dark hair, wearing safety glasses with a blue frame and clear lenses. He is looking down at a complex, white, multi-stranded cable assembly that he is holding. The background is slightly blurred, showing what appears to be an industrial or workshop setting with blue structural elements.

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The background of the advertisement features two satellites in space. The satellite on the left is larger and has several yellow circular antennas. The satellite on the right is smaller and has a single yellow circular antenna. Both satellites have long, blue solar panel arrays extending from their bodies. The Earth's horizon is visible at the bottom of the frame, showing a blue and white atmosphere against the blackness of space filled with stars.

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