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# AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

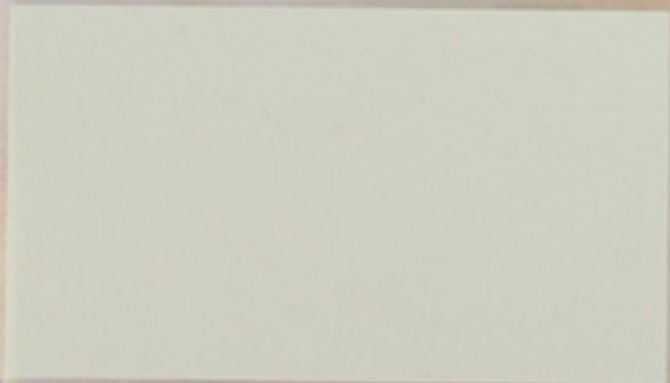
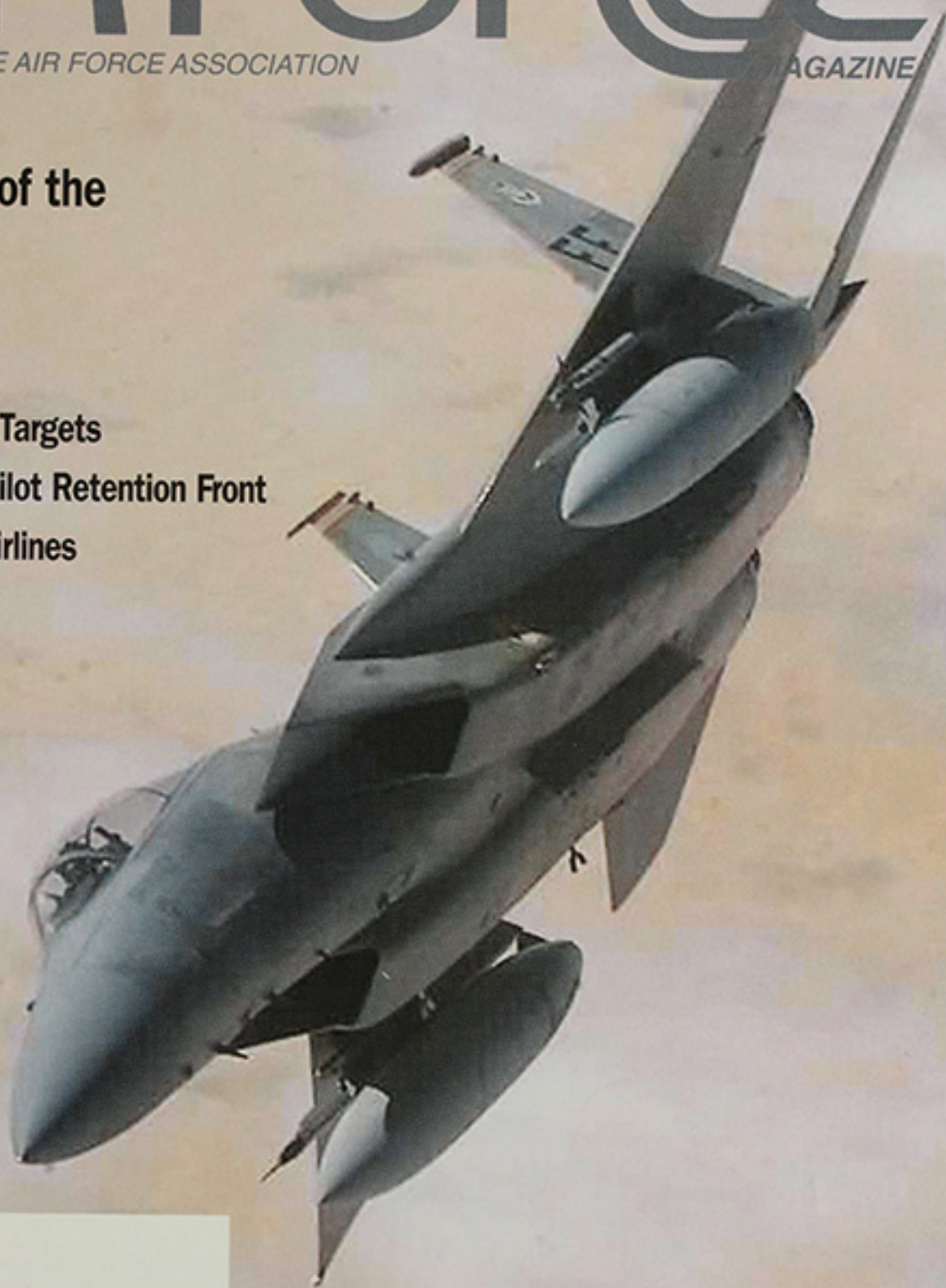
MAGAZINE

## The Evolution of the Bush Doctrine

In Search of Lawful Targets

New Gains on the Pilot Retention Front


Grim Days for the Airlines





## WHO'S KEEPING AN EYE ON HIS BENEFITS?

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JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

February 2003, Vol. 86, No. 2

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**About the cover:** An F-15 of the 1st Fighter Wing, Langley AFB, Va., over Saudi Arabia. USAF photo by TSgt. Jack Braden. See "The Evolution of the Bush Doctrine," p. 30.

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By Robert S. Dudley, Editor in Chief

## The Bush Doctrine and Its Demands

IT IS now widely noted that President George W. Bush has put forward a demanding new security doctrine. It ventures well beyond deterrence, embracing pre-emption of emerging threats and the deployment of anti-missile defenses. It envisions fighting multiple theater wars and striking at terrorists the world over. The upshot is a need for expanded US military power.

This view is presented with special clarity by John T. Correll, the former Editor in Chief of this magazine, in an in-depth Air Force Association report on the development and interrelationship of strategy, requirements, and forces. (This month, we publish some of the results, "The Evolution of the Bush Doctrine," starting on p. 30.)

The issue is not doctrine in the abstract. The issue, rather, is military sufficiency—building a force to back up the doctrine.

It is hard to see how the Bush Doctrine can be executed without more military power. According to defense officials and analysts, the new requirements include advanced remote sensing, long-range precision strike, transformed maneuver forces, missile defenses, and cyber-war systems. These are expensive capabilities.

"Bush's doctrine and strategy hold together conceptually," writes Correll, but "the ultimate test may be whether he can fund them."

More and more, that looks doubtful. To their credit, the Bush Administration and Congress have arrested the long, post-Cold War slide in defense spending and put it on an upward path. Still, the increases have fallen short of what is required to modernize and transform the force and finance current operations.

The Administration has faced three key budgeting decision points. The first concerned the 2002 Pentagon budget, inherited from President Clinton.

When Bush took office in January 2001, the armed forces were in the backwash of a decade of neglect. Defense outlays had been slashed time and again. The armed forces were a third smaller but far busier. Equipment

was aging. Modernization was slack. By some estimates, the military needed an additional \$100 billion per year just to prevent further deterioration.

On top of that, Bush had proposed building a new, multibillion-dollar missile defense system.

The White House confounded many by deferring any increase until Defense Secretary Donald Rumsfeld had completed a defense review. Rums-

**The strategic concept makes sense. Will the US build the force to back it up?**

feld eventually concluded DOD needed to boost Clinton's 2002 spending plan by \$35 billion, but White House budgeteers thought more like \$15 billion, which is close to what DOD got.

The second phase, in late 2001, was shaped by two factors. First was the Sept. 11 terrorist attacks. Bush declared that any nation sponsoring terrorists would be viewed as hostile and subject to attack. Also, DOD completed its Quadrennial Defense Review, which dumped the old "two-war" force-sizing standard for a more expansive "4-2-1" standard. It called for forces powerful enough to deter aggression in four theaters, swiftly defeat foes in two theaters, and occupy one nation, if necessary.

Given these new demands, the next budget—for 2003—was eagerly awaited. Rumsfeld proposed a one-year \$41 billion boost, but 60 percent went to the war on terrorism, air patrols over US cities, health care costs, and so on, leaving little for modernization and transformation.

The third phase played out last year. In spring 2002, the Administration began seriously planning to topple Saddam Hussein and end Iraq's quest for mass-destruction weapons. Bush folded this into a doctrine of pre-emption, outlined at West Point in June. "We must ... confront the worst threats

before they emerge," said Bush. In December, he elaborated a specific strategy of active intervention against mass-destruction weapons.

With the US on the brink of a pre-emptive war with Iraq, defense officials leaked part of the 2004 budget, set for February release. It was to raise spending by \$14 billion—less than had been planned and far less than needed for the tasks at hand.

Evidence of insufficiency could be seen in specific problems:

- Though USAF's 40-year-old KC-135 refuelers are wearing out, DOD had not yet firmly committed any money to buy or lease replacements.

- DOD has waived off calls for early end strength increases to ease the strain of high operations tempo.

- The Office of Management and Budget proposed to impose caps on military pay raises, but Bush intervened to save them.

A recent study by the Congressional Budget Office reported that the cost of carrying out Bush's existing defense plans would average at least \$426 billion a year in the out-years, more than planned.

The time is not ideal for major defense boosts. There is rising political pressure to increase spending on education and other domestic programs. The economy has weakened. Also, big federal budget deficits have returned.

Still, today's \$364 billion defense program consumes only 3.3 percent of the nation's Gross Domestic Product, which is not high, by historical standards. The US during the Cold War devoted a far higher share to national security. AFA's official view is that the nation can and should provide at least four percent of GDP to the support of national defense. Four percent of today's \$11 trillion economy works out to about \$440 billion, not an exorbitant amount, given the needs.

The defense budget shortfall cannot be wished away. Clearly, the Administration's actions have reduced it; they haven't eliminated it. Without more American strength, the doctrine itself will lose credibility. ■

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## War of Fog

I keep looking through the [*Editorial: The War of Fog*, December, p. 2] for the statement "This is a paid political announcement by the Republican National Committee."

Unlike Editor in Chief Robert Dudley, I am having a difficult time grasping President Bush's pre-emption policy. Despite the Administration's rhetoric to convince an uninformed public, I remain unconvinced Iraq poses an immediate and dire threat to the United States or that any Iraqi affiliation with the events of Sept. 11, 2001, is more than wishful thinking. If Bush's pre-emption policy is so easy to grasp, why hasn't anyone been able to explain why it applies to Iraq but not North Korea?

Rather than a "War of Fog," this has been a campaign of "smoke and mirrors," with distortions of facts, ill-defined and constantly shifting objectives, and a continual raising of the bar to ensure Iraqi failure.

I would hope the United States of America is not about to launch a pre-emptive attack upon another country because the President of the United States does not like its leader. I don't believe this country revolted from the perceived tyrannies of King George III to serve the whims of George II.

Stephen Miller  
Fredericksburg, Va.

I believe the time has come that the United States ought to seriously consider the options pertaining to a pre-emptive strike in its war plans. For the first time in the history of this country, terrorism has raised its ugly head, thus changing the rules by which we defend our country and its people.

We cannot stand idly by in the world today and allow terrorists to attack our country with such vengeance as was done on 9/11. Countries throughout the world that advocate and support terrorist organizations with weapons of mass destruction need to be dealt with even if it means a pre-emptive strike at the heart of such a nation.

Sen. Robert C. Byrd stated: "America fights wars, but America does not begin wars." Perhaps the Senator doesn't realize that such clichés are no longer applicable. Our country needs to have a strong defense against a potential missile strike. Yet, on the other hand, it is virtually impossible to defend against terrorist attacks of weapons of massive destruction, e.g., a smallpox carrier entering our country which could feasibly infect millions of people, or perhaps a dirty nuclear radioactive device carried in a small briefcase and left in one of our cities.

There are rogue nations that have and will continue to support this sort of terrorism, and if this country has positive proof that such be the case, then a pre-emptive strike against such a country is justified.

Years ago, Israel used a pre-emptive strike to destroy a nuclear facility in Iraq, knowing only too well that one day Iraq would have a nuclear weapon to use against Israel. [*See "Osirak and Beyond," August 2002, p. 74.*] A small nation like Israel took what action was absolutely necessary, as the rest of the world stood by.

The US has done likewise on occasions; therefore, pre-emptive strikes are nothing new when it comes to defending our freedoms.

Lt. Col. Donald E. Evett,  
USAF (Ret.)  
Bountiful, Utah

Mr. Dudley's editorial contributed his views to the fogged, delicate subject of pre-emptive strikes against

Iraq. His ending, "Who among us would not have attacked Osama bin Laden on Sept. 10," was well-chosen. Any mention of 9/11 is supposed to stir our emotions for revenge, but that is not the point of concern. The question being asked is how, and why, the primary focus after 9/11 turned from protection from future terrorist acts to pre-emptive aggression to disarm and change the leadership in Iraq.

Mr. Dudley used Grenada, Panama, and Cuba as past pre-emptive strikes to justify attacking Iraq. President Kennedy's action during the Cuban crisis has no similarity at all with what is being planned against Iraq. I don't know of a single shot fired by the US during that crisis, even when our U-2 spyplane was shot down over Cuba. He writes as if there is no difference between quarantine and a massive military attack. As for Grenada and Panama, they were so minor I doubt if future history books mention them.

Bush's National Security Strategy states this country has the right to use force against any country posing a nuclear, chemical, or biological threat to this country or any ally. Under this policy, what's to prevent a hawkish government, like we now have, from overreacting to poor intelligence? Or refusing to accept accurate intelligence?

I agree with Mr. Dudley that pre-emption brings risks. I believe it carries very high risks due to the many unknowns. Does the degree of threat outweigh the many risks?

Iraq is no more of a direct threat to this country than Iran, Syria, Indonesia, Malaysia, and some other countries. I can't help but wonder why the focus is only on Iraq. Is it the oil?

A pre-emptive attack is being re-defined as a defensive act, but in reality it is still offensive aggression. Our national standards have always been above that. We have always condemned guilty nations. If our legal system says a person is innocent until proven guilty in a court of law, why not a nation also?

Do you have a comment about a current article in the magazine? Write to "Letters," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. (E-mail: letters@afa.org.) Letters should be concise and timely. We cannot acknowledge receipt of letters. We reserve the right to condense letters. Letters without name and city/base and state are not acceptable. Photographs cannot be used or returned.—THE EDITORS

There is no crime, individual, national, or international, until it has been committed.

MSgt. Joseph T. Lang  
USAF (Ret.)  
Omaha, Neb.

■ *Additional facts regarding the Cuban Missile Crisis: On Oct. 22, 1962, President Kennedy warned, "We no longer live in a world where only the actual firing of weapons represents a sufficient challenge to a nation's security to constitute maximum peril." The "quarantine" he declared Oct. 23, 1962, constituted a blockade, traditionally regarded as an act of war. The Oct. 24, 1962, Pravda, in fact, accused the US of "unprecedented aggressive measures." Later on Oct. 24, 1962, Premier Nikita Khrushchev warned JFK that the blockade was an act of aggression. The US Navy was prepared to fire on transgressing Soviet ships. In the end, of course, the Soviets did not try to run the blockade.—THE EDITORS*

#### Not Technical, Political


Your article "Attack at the Speed of Light" [December, p. 26] appeared to contain several misperceptions regarding Space Based Lasers. The "huge technical challenges" faced in the Space Based Laser program are in fact issues of funding and political will to deploy a space-based defense.

In describing the huge technical challenges of a Space Based Laser or SBL, the article noted how an SBL would require a booster capable of lifting 80,000 pounds into orbit with a fairing that could accommodate a payload 26.4 feet in diameter. The Defense Science Board panel "observed that no existing rocket could lift such a payload, nor is one even on the books." This huge technical challenge was more than satisfied over 30 years ago by the Saturn V rocket, capable of lifting 200,000 pounds into orbit.

As a point of fact, SBL planning, at least as far back as 1995, included the concurrent development of a heavy-lift booster capable of launching an SBL.

The article noted the SBL would need a five- to eightfold increase in power over the proposed experimental version to be operationally useful against ballistic missiles, and that given the "long list of engineering breakthroughs necessary to make an operational system workable by 2020," the Defense Science Board rated the SBL as "high risk." Several issues are being confused.

First, in 1997, the Space Based




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Laser completed its integrated ground testing under the Alpha Lamp Integration testing program for beam power and control. This testing was accomplished with the megawatt class Alpha chemical laser in Capistrano, Calif. The successful results of this program were to have led to testing in space, verifying systems operation, as lethality, power, and beam control issues had already been addressed. The Alpha laser,

moreover, was designed to be scalable, able to operate at a higher power by adding hardware that had been developed. In other words, the "long list of engineering breakthroughs" were accomplished by 1997 and could have been accomplished sooner had the program received adequate funding.

While the steps needed to take the SBL from ground testing to operational status in space are not trivial,

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the fact remained that the technology had been developed.

Second, the SBL experiment was designed to test systems in space, and to do so at a minimum cost, utilizing a platform that could be launched by a Titan IV—an existing launch vehicle—rather than requiring a larger, more powerful booster. Hence, the mirror size, weight, and power of the experimental SBL were reduced to fit the launch vehicle. Has anyone heard of systems engineering?

Finally, the article notes that the Missile Defense Agency “will do the technology as aggressively as we can, but it won’t be focused on putting an experiment in space in the near term.” To translate that remark into English, what the director of the Missile Defense Agency was really saying was he was abandoning the Space Based Laser program, making plans to dispose of the high energy SBL technology the United States has slowly accumulated for over 20 years.

The United States suffers a dearth of good leadership—leadership that is willing to invest in space for ballistic missile defense as well as a host of other applications.

James H. Hughes  
Albuquerque, N.M.

### Women in Combat

I am totally opposed to women in combat, whether it be as fighter pilots, infantry, or whatever. [See “*The Quiet Pioneers*,” December, p. 34.] Ignoring the many arguments offered opposing them, I submit one more significant than them all: I do not want to see “coed” body bags being brought back in the next or any future conflict.

So OK, I’m an old fogey, a male chauvinist, and a dinosaur. And so I will continue being.

Lt. Col. Wallace H. Little,  
USAF (Ret.)  
Fort Walton Beach, Fla.

Thank you for recognizing women flying combat missions. Regarding Lt. Col. Martha McSally, I would like to tell the rest of the story about her “successful fight to overturn the policy requiring US military women to wear the head-to-toe Muslim abaya when on Saudi streets.” Though McSally had perfect evaluations up to this time, she was recently denied her promotion to colonel. Catering to our so called Saudi “friends” (whose citizens fly planes into our buildings, finance terrorists, and hold American children hostage) over our military personnel is unconscionable.

Surely the Air Force would be the last branch of the military you would expect to “Billy Mitchell” one of its own.

Ruth D. Helm,  
Tucson, Ariz.

### On the Bishops’ Guidance

Regarding [“*Aerospace World: US Bishops Raise Questions About War With Iraq*,” December, p. 22]: I was appalled to learn that Cardinal Bernard Law was selected to write the Catholic bishops’ “guidance” on the war with Iraq.

Here is a man who has demonstrated his inability to properly address a clear-cut moral issue (pedophile priests) in a situation which was under his direct jurisdiction. Yet he apparently feels competent to offer judgement in an area of ambiguous morality (preventive war) and on which he has no particular expertise. And a majority of the other bishops fail to see how Law totally lacks any moral authority to author such a statement. Perhaps the good bishops truly are men whose minds are in the spiritual world—they certainly are not in tune with any reality on the face of this Earth.

John Halchak  
Los Angeles

I am a retired Air Force officer, a 30-year member of the Air Force Association, and a Roman Catholic. I was offended by your choice of words, “Though snarled in a pedophile-priest scandal, US Catholic bishops found time to offer moral guidance on war with Iraq.”

One of the natures of scandal is that it harms those who are otherwise innocent of the crime. I am one of those innocents—trying to persevere in my faith and to help others do the same. Notwithstanding the sinful, criminal, abhorrent actions of some priests and the wrongful cover-up by their bishops, I still believe that the US Conference of Catholic Bishops has a job to do and that they represent me as a Catholic.

Are your words meant to indicate your belief that the Catholic Church in America has lost its moral authority and should no longer speak out on moral issues including war?

Nathan L. Walker  
University Place, Wash.

### Kirstein

I don’t want to beat this subject to death since Professor [Peter N.] Kirstein and St. Xavier University have apologized [see “*Aerospace World: Pacifist Professor Feels Blow-*”



back From Comments," December, p. 20]; however, this is an exceptional opportunity to glimpse into the psyche of an "out of sync" American, and I'd like to offer a couple points.

Despite his 180-degree apology, Professor Kirstein's incomprehensible response simply can't be chalked up to "a bad hair day" and, to me, is a symptom of a deeper problem in America today. While pacifism may be "noble," it is extraordinarily idealistic and his unconstrained aggressiveness in asserting his extreme position clearly indicates his beliefs have taken him beyond the conscious world.

Even a cursory review of the most elementary history reveals that maintenance and use of a military force is a requirement for a country's continued existence. While most rational people agree that it would be very nice for that not to be the case, a review of historical facts shows unequivocally that as long as the world is populated by human beings, maintenance and occasional use of a protective force will always be necessary.

His mentality, which I believe is proliferating, can explain why there was so much surprise and shock when the World Trade Center was destroyed on Sept. 11, 2001, as well as why an "American Taliban" can come to exist. His views are dangerous and breed at best apathy and lack of involvement. At worst, they breed activism for undermining this country's integrity or sympathy for those who would destroy this great land.

The opportunity to live in a freedom-loving, individual rights-oriented democracy such as the United States is an extraordinary privilege. Service back to the country to keep it healthy and progressive is a small price to pay. Military service is but one way to contribute to our future and is most certainly an honorable service.

Professor Kirstein simply doesn't have a clue.

Col. Joseph J. Komisarz,  
USAF (Ret.)  
Arlington, Tex.

I have read Professor Kirstein's original e-mail to the Air Force Academy cadet, his subsequent apology, and [St. Xavier President Richard A.] Yanikoski's official statement on the matter. I can tell you unequivocally that neither have, in my opinion, assuaged the wrong Professor Kirstein has committed. I note that Mr. Yanikoski, even with a favorable review, has chosen to resign his presidency

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at the end of his current term. I hope that Professor Kirstein also chooses this more noble path, for while I will defend to my death his right to hold and teach his pacifist views, I certainly cannot and will not condone his teaching disdain for, and hatred of, the armed services and those who serve in them.

After spending over 23 years in the US Air Force, protecting and preserving Professor Kirstein's right to his views, I am livid at his blatant disregard for the blood, sweat, and heartache that my peers and I have suffered to ensure these rights and freedoms. He has been able to make his choices as a direct result and benefit of the choices we have made. His unappreciative regard for the benefits that he has enjoyed at our expense is appalling.

This is a clear case of too little, too late. A reprimand in Professor Kirstein's personnel file is not enough. He crossed the line by a huge margin, and it should cost him his job.

SMSgt. Lee Reedy  
USAF  
Peyton, Colo.

### Adaptations

Gen. [Richard B.] Myers is quoted as saying that the bad guys are better at adapting than the good guys. [See "Aerospace World: Myers Says Taliban, al Qaeda Excel at Adaptation," December, p. 10.] Why should that surprise anyone?

With our media and our headline-hunting politicians constantly harping on "the public's right to know," we tell the bad guys practically everything we are doing or are going to do—how we monitor phone calls, including (where the ACLU doesn't prevent it) cell phones; our efforts to track money transfers and laundering among various financial organi-

zations, including charitable organizations; where our entry procedures were lax and what we are doing to improve them; how many new customs officials we will deploy and where gaps still exist (along the Canadian-US border, for example); how INS, FBI, and CIA are updating procedures, including monitoring aliens on student visas; etc.

It's like NFL teams giving the other teams' coaches their playbooks and then letting each team's defense listen in on instructions from the bench to the opposing quarterback.

We find it necessary in our daily news conferences to tell the bad guys our lessons learned. We give them our playbook on how we deploy and where we will deploy almost before we get there. We tell the world how we operate, how we communicate, how our space and airborne recon units work, how we coordinate air strikes, how we laser-designate targets. (Operation Anaconda was telegraphed and publicized ahead of time—where, when, and what objectives.) Then we are surprised that the enemy anticipates and makes appropriate counter-moves.

It's instructive to read about the careful efforts of the Allies in World War II to conceal their plans and actions. In the Pacific, knowledge that we had cracked the Japanese codes was limited to a very few, and they were not allowed to go anywhere where they might be captured.

Churchill and Roosevelt set up a small secret organization under a man called Intrepid (Sir William Stevenson) to run our underground activities on the continent. This only became known years after the war ended. The Allies concealed from the media our Normandy invasion



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### AFA's Mission

*To advocate aerospace power and a strong national defense.*

*To support the United States Air Force and the Air Force family.*

*To promote aerospace education to the American people.*

### Letters

plans and conducted a very intricate disinformation campaign, including establishing an Army with thousands of decoys in southeast England to convince the Germans that General Patton was to lead the main attack in the Calais area; the Germans bit.

General Schwarzkopf was less than forthcoming with the media in the Gulf War, despite their protests. He had [SEALs] surreptitiously clear the beaches in Kuwait prior to the land-attack phase, implying a seaborne attack. He knew that the Iraqis would notice, but he was careful not to let the media know, which would have alerted Iraq to a trick. Then he suddenly executed the famous "Left Hook," which took the Iraqis completely by surprise.

Why are you surprised, General Myers? If the public's so-called right to know is going to continually tip our hand, our enemies are going to continue to beat us at adapting.

Col. Morton T. Eldridge,  
USAF (Ret.)  
Madison, Ala.

### Doubly Proud

I have served proudly as an enlisted member of the Air National Guard as well as a civilian police officer for many years.

Watching Montgomery County, Md., Police Chief Charles Moose on television this last fall, as he led a combined task force of law enforcement officers in the biggest criminal investigation in at least a decade, made me proud to be a police officer. [See "Aerospace World: Moose Is ANG Officer," December, p. 13.]

I was doubly proud when I read that Chief Moose was not only a skilled law enforcement executive but a member of the District of Columbia ANG, security police squadron.

Chief Moose is a poster child for the citizen-airman concept. All members of the USAF and reserve components should take pride in one of our own stepping up to the plate in time of real crisis.

CMSgt. W. Graham Burnley  
Eureka, Mo.

### More to the Story

The "Flashback" photograph on p. 39 of the December magazine was timely and a thoroughly delightful image of how far the science of aeronautics had come between 1903 and 1937.

The XB-15 was originally intended to have been powered by four Allison V-3420 engines (actually a pair of

V-1710 engines coupled together and driving a common gearbox), but the V-3420 was in the throes of development problems. This forced the Army Air Corps and Boeing to shop around for the nearest production engine, and the choice was made for the Pratt & Whitney R-1830 Twin Wasp. The V-3420 engines were to have developed 2,000 hp, and the model of R-1830 was little more than 2,000 hp at the time. This made the XB-15 woefully underpowered; the aircraft was saved only by its vast acreage of wing area.

The wing, incidentally, was later adapted to the legendary Boeing 314 flying boat (known for a brief time as the C-98 in USAAF).

One of these birds, in Pan American Airways service, served as the very first Presidential airplane, used by President Roosevelt on one of his overseas jaunts. This was before the C-87 *Guess Where II* or the C-54C, whose nickname was *Sacred Cow*. Three of these 314 flying boats were sold to British Overseas Airways Corp., and one was flown by the British Prime Minister Winston Churchill, who was acquainted with aviation from his time as a student pilot while First Lord of the Admiralty in Britain during the Great War.

But was the XB-15 really the ancestor of the B-17? Well, not really. Both proceeded simultaneously. A clue to this situation is the defensive armament installations in the extreme nose and in the waist positions. The turrets were interchangeable. Further proof is the comparison of first flight dates: 1935 for the Boeing 299 (which is frequently, and erroneously, called the XB-17) and 1937 for the XB-15.

This is not to say that the XB-15 was not a pioneering design. Heavy bomber development began with both the XB-15 and B-17 lines being combined to bring forth the B-9/B-50 series. True, it never dropped a bomb in anger, but proceeded to be used in the development of long-range strategic airlift, after redesignation as the XC-105. The bird is at the sharp end of a fleet which included the Douglas C-54, C-74, and C-124, along with the Lockheed C-141 and C-5. It now rests with the Boeing C-17. In spite of its importance to history, the bird was scrapped—at Albrook Field in the Panama Canal Zone, in 1945 or 1946.

Good photo choice for "Flashback." Keep 'em coming!

Tom Baldenhofer  
Waveland, Miss.

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# Aerospace World

By Suzann Chapman, Managing Editor

## ACC Begins F/A-22 Operations

Air Combat Command's Air Warfare Center, Nellis AFB, Nev., received its first F/A-22 Raptor Jan. 14. (See photo this page.) The center will have 17 of the new stealth fighters by 2009.

Over the next year, the Air Force's initial cadre of F/A-22 pilots, maintainers, and support personnel will receive their training at Nellis. The base has added additional operations space, a parts store, maintenance hangar, and, to handle the fighter's stealth materials, a corrosion control/composite repair facility.

Additionally, Air Education and Training Command established an F/A-22 maintenance training facility on the base.

Seven F/A-22 Raptors, due in over this year and next and bound for Nellis, will go to the 53rd Wing's 422nd Test and Evaluation Squadron, which will assist in operational testing and development of combat tactics. Another nine, due between 2008-09, will go to the 57th Wing for the USAF Weapons School. All F/A-22s at Nellis will be maintained by the 57th Wing.

## USAF Deploys B-2 Shelters

The Air Force announced in early January that it had erected two of the B-2 stealth bomber transportable hangar systems overseas. It would not officially state the location.

The shelters enable the service to forward deploy its B-2 bombers, greatly reducing mission length. For Operation Enduring Freedom missions in Afghanistan, the B-2 crews flew missions as long as 44 hours from their home base at Whiteman AFB, Mo.

Twenty members of the 49th Materiel Maintenance Squadron, Holloman AFB, N.M., spent 70 days working 12-hour shifts to set up the B-2 shelters. The handpicked team finished about three weeks ahead of schedule, according to Lt. Col. Myron Majors, 49th MMS commander. Some of the team members had worked with the shelters during testing.

The shelters are about two football fields long, are climate controlled,

## Air Force Restructures F/A-22, Full Buy Still Expected

The Air Force in late December moved to slow the F/A-22 Raptor fighter airplane project in a way that will shift program costs to the early airplanes and streamline the test program.

Air Force Secretary James G. Roche told *Air Force Magazine* last month that the service still expects to build all 339 of the planned F/A-22s and maybe more.

Service officials last November had revealed a potential cost overrun of about \$690 million. In early December, following an investigation, the Air Force revised that number to between \$700 million and \$1 billion. (See "Aerospace World: F/A-22 Development Cost Issue Grows," January, p. 9.) At the time, USAF leaders predicted they would need to cut the planned purchases by about six aircraft.

For bookkeeping purposes, however, the Air Force set a new goal of 276 airplanes. Roche said this figure will be revisited almost annually.

A new maximum rate of F/A-22 production was set at 36 per year, but that rate may not be reached until 2009.

Cost of early production aircraft shot up when Defense Secretary Donald H. Rumsfeld last spring ordered an evaluation of the ramifications of reducing the F/A-22 fleet to 180 airplanes. (See "The F-22 On the Line," September 2002, p. 36.) Although only an intellectual exercise to consider options, the study prompted F/A-22 subcontractors to demand faster paybacks on their investments in the program.

New program and test leadership has been assigned to focus on getting the F/A-22 fielded on time, beginning in late 2005.

—John A. Tirpak



Lt. Col. David Rose touches down Jan. 14 at Nellis AFB, Nev., in the first of nine F/A-22 stealth fighters destined for the Air Combat Command warfare tactics base. Rose is chief of the Nellis F/A-22 integration office and ACC's first Raptor pilot. (See "ACC Begins F/A-22 Operations," this page.)

USAF photo by SrA. Kenny Kennemer

and can withstand extremes in temperature and wind. They enable the service to maintain the stealth characteristics of the B-2.

Air Force officials said in late October that they were prepared to forward deploy the bombers. Plans announced then called for four shelters at the British-owned Indian Ocean island Diego Garcia and one at RAF Fairford, UK. The service had already established a special B-2 hangar at Andersen AFB, Guam.

### Bush OKs Military Pay Raise

President Bush in early January rejected a proposal by the Office of Management and Budget to impose a military pay raise cap for the Fiscal 2004 budget. The raise to take effect in January 2004 will be an average of 4.1 percent, as proposed by Pentagon leaders, instead of the two percent OMB recommended.

Congress mandated a military pay raise formula beginning in 1999 and running through 2006 to provide a minimum raise that is greater by a 0.5 percentage point than the previous year's average private sector salary increase.

Pentagon leaders proposed for the fourth year straight to target certain ranks for higher increases. Studies have shown that midgrade and senior enlisted troops are underpaid compared to the private sector, while junior enlisted and junior officer pay is actually somewhat better. Therefore, the raises will range from 3.2 percent to more than six percent, except for new recruits, who will get a two percent boost.

Congress still has to approve the pay raise as part of the 2004 Pentagon budget. Lawmakers approved an across-the-board 4.1 percent increase and more for certain ranks, in the Fiscal 2003 legislation passed late last year.

### Stop-Loss Inflates Retention

USAF revealed in mid-December that the Fiscal 2002 enlisted retention numbers released last fall were inaccurate. The high numbers simply reflected the effects of Stop-Loss.

The Air Force implemented Stop-Loss, following the 9/11 terrorist attacks, to prevent service personnel from retiring or separating. The ban persisted throughout most of 2002 for many career fields.

The retention numbers showed rates higher than the service's goals for first-term (72 percent vs. a goal of 55 percent) and second-term (78 percent vs. 75 percent) enlisted members. The retention rate for career airmen equaled the goal of 95 percent.

## Combat Controller Receives Posthumous Honor

The Air Force posthumously awarded the Air Force Cross to TSgt. John Chapman, a combat controller assigned to the 24th Special Tactics Squadron, Pope AFB, N.C. The award ceremony took place at Pope on Jan. 10. Chapman was killed in Afghanistan on March 4, 2002, during a firefight with al Qaeda and Taliban forces as he helped save the lives of his team.

The Air Force Cross is USAF's highest award for valor and, overall, is second only to the Medal of Honor, which Congress must approve.

Chapman was one of two Air Force members killed during Operation Anaconda. The other, SrA. Jason D. Cunningham, a pararescue jumper with the 38th Rescue Squadron, Moody AFB, Ga., also received an Air Force Cross posthumously at a ceremony last fall. (See "Aerospace World: Air Force Posthumously Honors Pararescueman," October 2002, p. 11.)

As an Army helicopter inserted Chapman and his teammates into Afghanistan in the early hours of Anaconda, it came under heavy machine gun fire. It was directly hit by a rocket-propelled grenade, which caused one member, Navy SEAL Petty Officer 1st Class Neil C. Roberts, to fall from the aircraft. The helicopter was severely damaged, and the pilot made an emergency landing about four miles from where Roberts fell.

Chapman called in an AC-130 gunship to provide close air support and cover the stranded team, then directed the gunship to search for Roberts. Next, Chapman called for an evacuation helicopter. He volunteered to rescue Roberts and engaged and killed two enemy personnel in the attempt.

The award citation said the following: "He continued to advance, reaching the enemy position, then engaged a second enemy position, a dug-in machine gun nest. At this time the rescue team came under effective enemy fire from three directions. From close range Sergeant Chapman exchanged fire with the enemy from minimum personal cover until he succumbed to multiple wounds."

The citation continued: "His engagement and destruction of the first enemy position and advancement on the second enemy position enabled his team to move to cover and break enemy contact."

Air Force Secretary James G. Roche said at the ceremony that Chapman was an "American's American."

Chapman left the University of Connecticut to join the Air Force in 1985. He first served in the information systems field, then, in 1989, began combat controller training at Lackland AFB, Tex. At Pope, Chapman was known for his skill as a radio communicator, aircraft landing zone controller, combat search and rescue specialist, air traffic controller, free-fall parachutist, and military scuba-diving instructor.

Gen. John P. Jumper, Chief of Staff, presented the Air Force Cross to Chapman's widow, Valerie, and to his parents, Terry Giaccone and Gene Chapman.

"On paper, the Air Force did meet its goals," said Maj. Gen. Peter U. Sutton, USAF's director of learning and force development. However, he added, "The reality is that there is still a retention challenge."

The high numbers could send the wrong message to airmen and commanders, said Sutton.

### Tanker Lease Still On Hold

Pentagon officials issued a statement Dec. 19 saying they had not reached a final decision on the controversial Air Force proposal to lease modified Boeing 767 aircraft to serve as aerial refuelers. They expected to make a decision early this year.

However, Air Force officials told lawmakers recently that USAF would retire 68 of the "oldest, most expen-

sive, least able to fly" aerial refuelers, according to the *Seattle Post-Intelligencer*. Such a move will put even more stress on an already overworked fleet but could spur decision-makers.

Details of the retirement are to be revealed this month in the Fiscal 2004 Pentagon budget.

In mid-November the Air Force and Boeing reportedly had reached an agreement on the proposed lease cost—about \$17 billion, some \$9 billion less than the original estimate. The service would lease 100 aircraft for six years each and take delivery beginning in 2006. At the end of the lease, USAF would be able to purchase all the aircraft for an additional \$4 billion.

The Air Force proposed the ar-

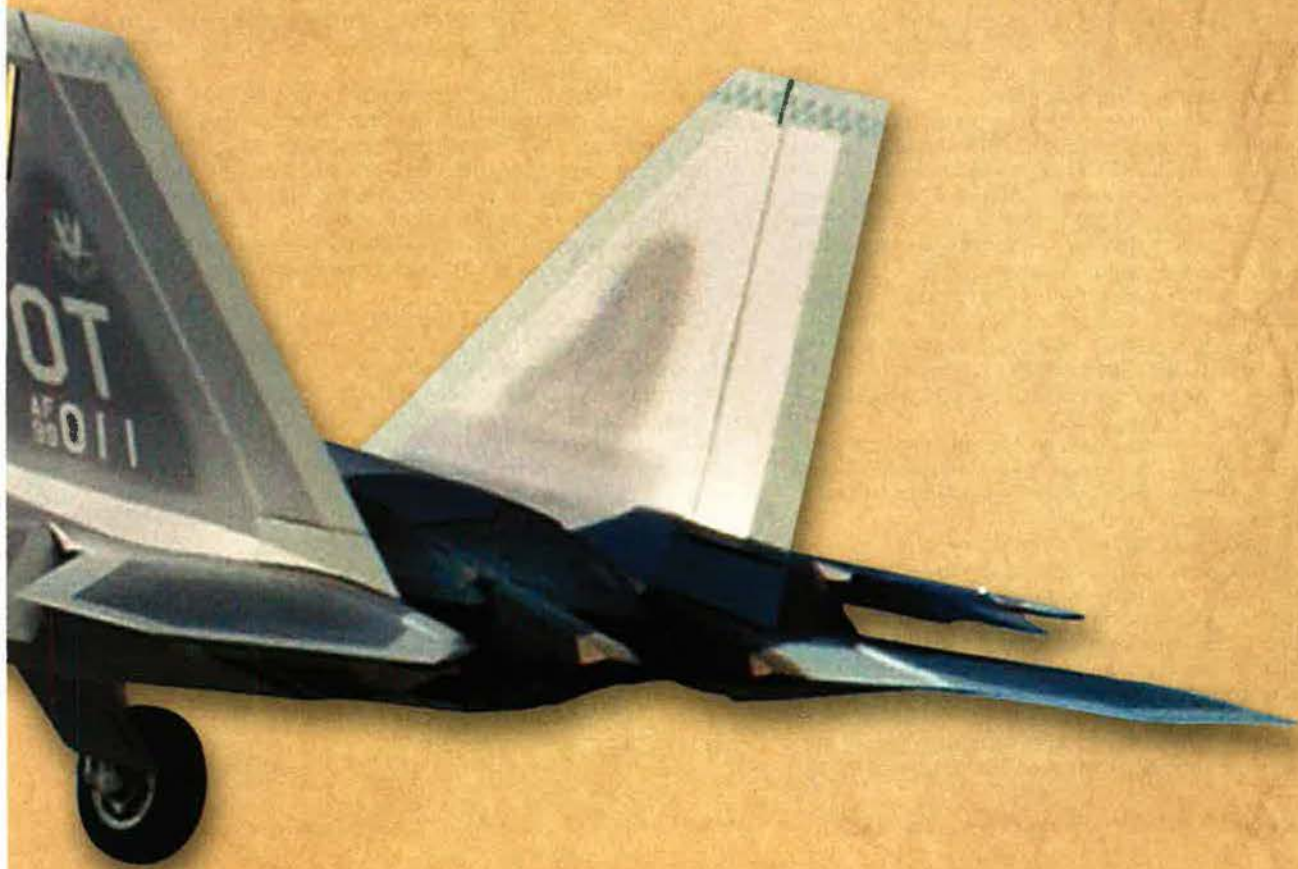
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## SOCOM To Become a Major Warfighting Command

Senior defense officials announced in January that US Special Operations Command will receive substantial increases in manpower, money, and authority.

Perhaps most significant, SOCOM will no longer be just a supporting command that organizes, trains, and equips forces for regional warfighting commanders. Officials said the new SOCOM will become the lead command for certain operations such as the pursuit of small groups of terrorists scattered around the world.

Defense Secretary Donald H. Rumsfeld said Jan. 7 that DOD is "for the most part, still organized, trained, and equipped to fight armies, navies, and air forces, not to target small cells or even individual terrorists."

Air Force Gen. Charles R. Holland, SOCOM commander, will have authority to plan missions worldwide and task regional commands, such as US Pacific Command or US Central Command, to support the special operators.

This is an outgrowth of the war on terrorism, in which special forces played a critical role in defeating al Qaeda and Taliban forces in Afghanistan. Given the global nature of the terrorist threat, officials decided SOCOM is the logical choice to lead such operations.

Along with the new focus, officials plan to boost the special operations forces by about 4,000 troops, to include staff increases at MacDill AFB, Fla., and at theater special operations commands, known as T-SOCs. The additional headquarters personnel will help prepare for new missions and enable SOCOM to "conduct a wider range of activities simultaneously," said a senior defense official.

Officials declined to detail the proposed special operations budget increase. (It is included in the Pentagon's Fiscal 2004 budget request.) However, according to the *Washington Times*, SOCOM's budget will rise from \$4.9 billion this fiscal year to \$6 billion in 2004, with a total of \$7 billion to be added through 2009.

In practical terms, theater special operations commands will now have access to air, naval, and land forces. These forces will support the T-SOC when necessary and "act in response to its direction and control."

Rumsfeld said SOCOM will divest itself of some non-core missions, such as routine foreign military training and civil support. A senior official added that DOD also wants SOCOM to divest some of its combat search and rescue, support airlift, and counterdrug operations. Other DOD entities could handle these mission areas.

However, a second senior official cautioned that the cost of SOCOM's new agenda will not be offset entirely by the proposed budget increases and divestiture of non-core missions. The Air Force and other services will foot part of the bill.

"They are the ones who are supplying the people and in some cases are underwriting some of the equipment," the senior official said. "There is a transfer that takes place there."

The SOCOM changes, though driven in part by current events are part of the Pentagon's overall restructuring of its unified commands—the latest move to align the commands with future responsibilities. Under last year's update of the Unified Command Plan, DOD created US Northern Command, headquartered at Peterson AFB, Colo., and merged US Space Command with US Strategic Command into a new STRATCOM, at Offutt AFB, Neb.

To accompany its enhanced mission, SOCOM will also receive some additional equipment and replacements for "equipment losses in Afghanistan and elsewhere," Rumsfeld said.

DOD plans to increase the number of special operations aircraft, including USAF AC-130s and MC-130s, to provide an attrition reserve as a hedge against future losses and to provide a "step-up in overall capability" over the next few years, an official said.

Further, DOD wants to accelerate the CV-22 program to replace aging helicopters in Air Force Special Operations Command but only if the redesigned tilt-rotor aircraft proves it is safe and effective in flight tests this spring. The V-22 is designed to hover and land like a helicopter but cruise with the speed and range of a fixed-wing airplane. The aircraft was redesigned after a pair of deadly crashes in 2000 and is currently undergoing a new round of flight tests.

Once the V-22 gets past testing, the follow-on question will be "is there some way ... to accelerate use of those aircraft," said a senior DOD official.

Currently, the Marine Corps MV-22, which is not slated for special operations, is scheduled for delivery first, so Marine pilots will be first in the training pipeline. AFSOC would follow with the CV-22, which will have mission-specific equipment, such as terrain-following radars, and additional fuel capacity and is intended to be much more capable than existing special ops helicopters.

One way to accelerate special ops use of the V-22, said the senior official, would be to change the sequence of deliveries. Another option would be to certify some Marine pilots for special ops missions. (In a separate move, DOD already has tapped the Marine Corps to contribute ground forces to SOCOM this year, for the first time in the service's history.) A third option would be to advance USAF CV-22 pilots in the training pipeline.

—Adam J. Hebert

agement more than a year ago as the fastest, and possibly the cheapest, way to revive its aging tanker fleet, which has seen greatly escalated use since the war on terror began. Lawmakers agreed to the plan. However, Administration officials have balked about the cost.

### Bill To Link Fed Civ/Military Pay

On the heels of a lower than expected 2003 federal civilian pay raise, several lawmakers are proposing to restore pay parity between civil service and military personnel to head

off a similar disparity for 2004. In 2003, the Administration set the military pay raise at 4.1 percent, while providing only 3.1 percent for civil service. (Congress hoped to boost the civil service increase to 4.1 percent as it worked to finish appropriations legislation last month.)

Sen. Paul S. Sarbanes (D-Md.) introduced legislation in early January to establish identical raises. His legislation initially had 18 sponsors, including Sen. John W. Warner (R-Va.).

According to Sarbanes, the Congressional Research Service found

that there were only three times over the last 17 years when the pay increases were not identical.

President Bush cited the current state of national emergency as the reason for limiting the civil service pay raise. Administration officials noted that the 3.1 percent raise is greater than the inflation rate.

### ROTC Gains and Loses

According to Air Force Reserve Officer Training Corps officials, the number of college students participating in ROTC has grown by more



than 30 percent over the past three years. However, they said 57 percent of that surge came at just 17 percent of ROTC detachments.

Some 20 percent of the service's current ROTC detachments either simply maintained their enrollments or saw them decline.

Det. 434 at Mississippi Valley State University is one that has produced few officers over the past decade. Officials said they will close Det. 434 this summer and move the unit's manpower authorizations to another school.

Other detachments have seen their staffing reduced or increased based on a review of the officer production at each unit. Officials said the adjustments are part of an ongoing effort to realign ROTC assets.

They also noted that the number of scholarship applications had jumped from 8,500 in 2001 to 16,900 for 2003, a clear indication of increased interest.

### **Thieves Steal Health Record Info**

DOD Tricare officials revealed Dec. 23 that computer equipment and files were stolen Dec. 14 from the Central Region Tricare contractor. Officials said they learned on Dec. 20 that thieves had broken into the corporate offices of TriWest Healthcare Alliance in Phoenix.

The stolen data included beneficiary names, addresses, Social Security numbers, and some claims information with diagnoses.

TriWest was to contact individuals in the 16-state region whose information potentially was compromised. Some 500,000 Tricare beneficiaries were to receive letters informing them of the theft and providing suggestions on how to prevent identity theft.

Tricare officials said TriWest already has improved their physical security controls, but DOD sent a team to review procedures and make recommendations where needed. Further, DOD ordered all Tricare contractors to reassess their current physical and electronic security.

Central Region beneficiaries may call 1-800-339-9378 or e-mail questions to [computertheft@triwest.com](mailto:computertheft@triwest.com).

### **USAF Changes HYT**

Changes to the high year of tenure policy will enable enlisted members in most ranks to serve an additional two years on active duty, according to a Jan. 3 Air Force announcement. The change was effective Jan. 1.

Under the revised HYT policy, senior airmen can serve up to 12 years

## **USAF To Exceed AEF Rotations**

The Air Force announced Jan. 3 that it would deploy some units and personnel outside their normal Air and Space Expeditionary Force rotation schedule to meet new requirements issued by Defense Secretary Donald H. Rumsfeld. The forces will support ongoing operations and possibly take part in future contingencies, said officials.

USAF organized itself into 10 AEFs in 1999. An AEF rotation cycle is 15 months, during which time elements of two AEFs normally are vulnerable to 90-day deployments. Currently, the service has deployed nearly all the forces assigned to AEF 7 and AEF 8 to support Operations Northern Watch and Southern Watch, covering no-fly zones in Iraq, Operation Enduring Freedom in Afghanistan, and to operate more than 12 expeditionary bases.

A single AEF includes about six squadrons of fighter and bomber aircraft, as well as enabling forces, such as C-130 and air refueling aircraft, search and rescue forces, intelligence, surveillance, and reconnaissance assets, and necessary support personnel to operate expeditionary bases.

The new deployments will round out AEF 7 and 8 and add almost another full AEF. Maj. Gen. Timothy A. Peppe, AEF special assistant to the Chief of Staff, predicted that "expeditionary combat support, such as services, combat communications, intelligence, security forces, civil engineers and others, will be tasked at a level beyond three AEFs of capability."

To round out AEF 7 and 8, USAF has called up B-1B bombers from Ellsworth AFB, S.D., and HC-130 aircraft from Moody AFB, Ga. From AEF 9 and 10, the service identified F-15C fighters from Langley AFB, Va.; F-16 fighters from Spangdahlem AB, Germany; HC-130s from Moody AFB, Ga.; HH-60 Pave Hawk helicopters and Predator unmanned aerial vehicles from Nellis AFB, Nev.

Additional forces include F-15Es from Seymour Johnson AFB, N.C.; E-8C Joint STARS radar aircraft from Robins AFB, Ga.; and AC-130 gunships, MC-130 Combat Talons, and MH-53 Pave Low helicopters from Hurlburt Field, Fla. Other aircraft and personnel were included in the deployment order, but USAF had not yet identified specific units.

Last year, the service announced plans for AEF structure changes, set to begin in June, to relieve some pressure points in the system. The new arrangement, said Peppe last September, will enable the service to handle both steady-state requirements and surge support for contingencies. USAF plans to distribute elements of two on-call wings among its basic 10 AEFs, equalize the draw of combat support forces from throughout the service, and realign some Air National Guard and Air Force Reserve Command forces.

of total service; technical sergeants up to 24 years; master sergeants up to 26 years; and senior master sergeants up to 28 years. The tenure rules for staff sergeants remain at 20 years and for chief master sergeants at 30 years.

CMSAF Gerald R. Murray, USAF's top enlisted member, said the new policy will increase the service's ability to retain highly skilled enlisted members to offset shortages created by the drawdown in the early 1990s and several years of lower retention.

Personnel officials said no one will be forced to stay longer. They encourage troops to check with local personnel offices for program specifics.

The last change to the HYT policy was in 2001, when the Air Force increased the maximum years of service for technical sergeants from 20 to 22 years.

### **DOD To Detail Military Pay Plan**

Congress has asked Pentagon

leaders to submit by March 31 their long-range plans for military pay.

Under 1999 legislation that runs through 2006, military pay raises are tied to the Employment Cost Index, a measurement the Bureau of Labor Statistics uses to gauge private sector salary growth.

The law was meant to close the pay gap many lawmakers and DOD officials believe exists between military and private sector pay. Last year the House Armed Services Committee indicated its support for continuing the ECI-plus-0.5-percent formula beyond the 2006 cutoff date. However, some Administration officials believe that any pay gap is limited to a few specialties. They have ordered a study that would take age, education level, and job specialty into consideration. The report is due in December.

### **USAF To Move CSAR Units**

The Air Force plans to locate three combat search and rescue squadrons at the 355th Wing, Davis-



Joe Foss, then a World War II Marine captain, touches the cowling of his F-4.

### War Hero Joe Foss Dies at 87

Joseph Jacob Foss, a Medal of Honor recipient and a Marine Corps fighter pilot with 26 aerial victories in World War II, died Jan. 1 at a hospital in Arizona following a long illness.

Foss served as an Air Force Association National Director Emeritus and was a former AFA President and Chairman of the Board.

He was the first American pilot to equal the World War I record of Capt. Eddie Rickenbacker, "the ace of aces."

Foss, who was born April 17, 1915, in South Dakota, was twice governor of that state, among other civilian accomplishments.

Foss joined the Marines and won his pilot's wings in March 1941. On Guadalcanal in the Pacific, he and a group of fliers, known as Foss's Flying Circus for their aerobatic maneuvers, were a major force in defending the island.

In one day, Foss shot down five enemy aircraft, bringing his total to 14 in just 13 days. He went on to claim 12 more aerial victories. However, in one of his most impressive actions, he didn't fire a single round.

On Jan. 25, 1943, Foss and his eight Marine F-4F and four Army P-38 pilots went up to meet 60 Japanese bombers and fighters bent on wiping out the airfield. Foss ordered his flight to stay high instead of attacking the fighters, realizing that the bombers could slip through if the US aircraft engaged the fighters. As the Americans kept maneuvering nearby, the enemy aircraft began to run out of fuel. The Japanese pilots did not attack the smaller US group, thinking they were decoys for a larger force hidden in the clouds. Meanwhile a few more American fighters arrived, shooting down four Japanese fighters before the enemy aircraft got away. Japan never attempted another sustained aerial attack on Guadalcanal.

Foss returned to the States a few months later to be decorated and give pep talks around the country.

His Medal of Honor citation noted that Foss's "remarkable flying skill, inspiring leadership, and indomitable fighter spirit were distinctive factors in the defense of strategic American positions on Guadalcanal."

After the war, Foss took a commission in the South Dakota Air National Guard, which he helped organize. Then he moved into politics and was elected to the South Dakota House of Representatives. During the Korean War, he returned to active duty, this time as an Air Force colonel. Later he became chief of staff of the South Dakota ANG as a brigadier general.

In 1954, South Dakotans overwhelmingly elected him governor and sent him back for a second term. Following his time as governor, Foss became the first commissioner of the American Football League, serving in that capacity until 1966. At the same time, he served as AFA President and then AFA Chairman of the Board.

Monthan AFB, Ariz., beginning this year. The moves would continue through 2007.

Most of the aircraft will come from Air Force Reserve Command's 939th Rescue Wing at Portland, Ore.

The entire complement of aircraft will include as many as 12 HH-60 Pave Hawk helicopters and 10 HC-130 refueling aircraft. The move will also bring 1,000 additional personnel to Davis-Monthan.

### New Mail Order Pharmacy Opens

DOD on March 1 will switch more than 400,000 customers from the National Mail Order Pharmacy program to a new mail order program under Tricare.

According to Tricare officials, most customers who have refills remaining on prescriptions on March 1 should automatically be transferred to Express Scripts Inc., the new provider. Some prescriptions, such as those for narcotics or other controlled substances, cannot be transferred automatically. Officials said current customers should have received information about the switch in the mail last month.

The new program will save taxpayer dollars since it will purchase drug products at federal prices, some 24 percent below average commercial wholesale prices, according to Tricare officials.

### USAF To Reduce OTS Numbers

Air Education and Training Command has cut the number of officers the service needs to commission through its Officer Training School. The reason: Growing numbers of officers are commissioned through ROTC.

During the past three years, the number entering the Air Force through ROTC has grown by about 30 percent, some 300 each year. ROTC has consistently been the top source of officers, while OTS helped round out service requirements as needed.

"OTS has acted as an accordion in balancing officer accessions," said Gen. Donald G. Cook, AETC commander. "When we needed more people commissioned, we could expand OTS production."

During the past few years, OTS ran at peak capacity, eliminating that flexibility. In 2002, the school commissioned 1,946 second lieutenants, while the service had projected a program load of almost 200 fewer.

### Predator Goes Down

US Central Command would not

confirm that Iraq had shot down a Predator unmanned aerial vehicle flying a reconnaissance mission over southern Iraq but did state that the UAV was missing on Dec. 23 after being fired upon by an Iraqi military aircraft.

The Predator was not the first UAV that Iraq has shot down, according to Air Force Gen. Richard B. Myers, Joint Chiefs of Staff Chairman.

He told reporters that Iraq has been trying to shoot down coalition aircraft—manned and unmanned—for several years.

DOD confirmed that at least twice, and perhaps three times, Iraq has downed Predators operating in the no-fly zones in northern and southern Iraq. Those UAVs were shot down by ground-based anti-aircraft fire. The December shutdown is the first known instance of an Iraqi airplane shooting down a coalition aircraft since the Gulf War.

Iraq shot down one—the F/A-18 fighter aircraft of Cmdr. Michael S. Speicher—on the first day of the Gulf War.

### Seven-Day Rule Changes

The Air Force announced Jan. 7 that officers who are eligible to separate or retire instead of taking a projected assignment may now take more than the usual seven days to make a "potentially career ending decision."

Officers will not only get more decision time, but also a general officer will review the proposed assignment and their decision to leave the service rather than take a particular assignment. Maj. Gen. Thomas A. O'Riordan, Air Force Personnel Center commander, said the general officer will "ensure that it's the right decision for the individual and for the Air Force."

However, he emphasized that the needs of the service come first. "We will not be able to please everyone," said O'Riordan, "but it's worth the effort if we can find some common ground to retain a valuable officer."

### Museum Showcases Aviation Art

The USAF Museum at Wright-Patterson AFB, Ohio, plans to feature more than 250 original aviation paintings this year as part of the service's Centennial of Flight commemoration activities.

The art will be shown in five separate, consecutive exhibits. The first one, which opened Jan. 16 and runs to April, features 60 paintings by Keith Ferris. Its title is "A Century of Flight."

The remaining exhibits each feature works by a number of artists. One that begins on April 12 is titled

## USAF Kills Troubled B-1 Defensive System Upgrade

The Air Force on Dec. 19 announced cancellation of its B-1B bomber Defensive Systems Upgrade Program after years of repeated delays and cost growth. USAF acquisition executive Marvin R. Sambur said in a statement that the service "can no longer afford to invest precious resources in problematic programs."

Instead, the Air Force will spend the \$600 million intended for DSUP on other B-1 improvements.

The upgrade program, which started in 1997, had not progressed beyond engineering and manufacturing development. USAF twice reported to Congress that the program had breached the Nunn-McCurdy law governing excessive cost growth. The service restructured the program three times trying to get it on track.

Officials said the program faced yet another restructuring that would have added an additional 17 months and \$175 million to its cost.

The upgrade program was to have replaced most of the existing ALQ-161 electronic countermeasures system with updated defensive systems, including a fiber-optic towed decoy. However, the ALE-55 decoy system proved problematic. The Air Force stated that 11 test sorties had been flown with "mixed results and limited success."

However, according to BAE Systems, maker of the ALE-55 system, problems with the decoy were resolved through redesign. The Navy is purchasing the decoy for use on the F/A-18E/F Super Hornet.

Nonetheless, Air Force officials said in December that an independent review team recently characterized the B-1 upgrade program as "high risk" because of the decoy system's performance with the B-1 bomber.

In lieu of the DSUP improvements, the Air Force now will fund other B-1 modernization efforts, such as:

- Upgrade of the ALQ-161 ECM system.
- Development, procurement, and integration of the Joint Air-to-Surface Standoff Missile-Extended Range to provide increased standoff strike capability.
- Additional sustaining engineering efforts.
- Improved Wind-Corrected Munitions Dispenser and chaff dispenser capabilities.

A growing backlog in funding for important upgrades was one of the factors in USAF's 2001 decision to retire about one-third of the Lancer fleet and consolidate B-1 operations at two bases. Money saved through that move was to be reinvested in the remaining B-1Bs.

—AJH

"Air Power." Next up, on June 6, is "Aviation Art Worldwide," then, on Aug. 26, "Those Magnificent Flyers." The fifth exhibit, "Fly Me to the Future," begins on Oct. 9.

For more information, contact Denise Bollinger at 937-255-8046, ext. 492.

### News Notes

**By Tamar A. Mehuron, Associate Editor**

■ On Jan. 16, Air Combat Command officials announced cancellation of the upcoming Red Flag exercise because the lead wing, the 4th Fighter Wing, Seymour Johnson AFB,

N.C., had received deployment orders. Red Flags last from two to six weeks and generally are held several times a year to provide realistic combat training.

■ Gen. James L. Jones Jr. became the first Marine to assume command of US European Command in a ceremony Jan. 16. On the following day, Jones also became NATO's supreme allied commander Europe. Gen. Michael Hagee replaced Jones as head of the Marine Corps in a ceremony Jan. 13.

■ DOD plans to implement its new short-term enlistment program beginning Oct. 1. (See "Aerospace



**USAF's Airborne Laser YAL-1A aircraft lands at Edwards AFB, Calif. The arrival of the highly modified 747-400 "means that we can start the important job of installing the components that will make this the world's first laser-armed combat aircraft," said Col. Ellen Pawlikowski, ABL program director. "It won't be something we can do overnight, but ... it will be done and done well."**

## Are There "Holes" in Bio-War Defenses?

The Pentagon does not possess vaccines to protect troops against some biological agents because of a lack of funds and commercial interest, one of the military's top bio-defense scientists told reporters Jan. 8.

One day later, the Pentagon issued a statement declaring that DOD is prepared to protect its personnel against biological weapons.

"In addition to the vaccines against the most likely biological threats—anthrax and smallpox—DOD has other countermeasures to protect against biological threat agents," said William Winkenwerder Jr., assistant secretary of defense for health affairs.

Col. Erik A. Henchal, head of the US Army Medical Research Institute of Infectious Diseases at Ft. Detrick, Md., told reporters that his lab has developed 20 vaccines for various agents, but most are simply on the shelf awaiting production. Under the current process, military researchers develop a vaccine then license it to a company for production. However, the Pentagon has been unable to attract interest from pharmaceutical companies to produce some vaccines because they see little commercial value.

For example, Henchal said, the US currently has no supplies of vaccine to counter one of the most deadly substances on Earth—botulinum toxin. Iraq supposedly has destroyed more than 2,000 gallons of the toxin since 1991 but is thought still to have large stocks.

Henchal admitted that there are holes in US defenses against chemical and biological threats that agencies such as his are trying to fill. He recommended new financing methods or production facilities dedicated to military use to get the necessary vaccines into production.

The Pentagon statement noted that DOD uses a "range of measures to protect service members from biological threats, including combinations of protective clothing and equipment, detectors, vaccines, antibiotics, and training."

Henchal had emphasized in his remarks to reporters that the US military could detect most chemical and biological threats on the battlefield and could operate in protective gear. However, he said a chem-bio attack would slow operations by about 30 percent. It could have a paralyzing effect.

When asked which are the most serious chem-bio threats to US troops, Henchal said anthrax and smallpox. Since the Pentagon already has taken steps to vaccinate troops against those two threats, he said it's more likely Iraq or other foes would produce other agents.

World: Shorter Enlistments Coming Up," January, p. 12.) The Army and Navy already have limited two-year enlistments, but this will be the first time the Air Force and Marine Corps will offer the option. A DOD official said the shorter enlistments will be limited to high-quality recruits—those with high school diplomas and scores in the top half of aptitude tests.

- Two USAF T-37 trainers collided Dec. 21 over southern Oklahoma, but the aircrew members escaped injury. One of the T-37s returned safely to Sheppard AFB, Tex., while the other crashed in a field south of Duncan, Okla., after its pilots ejected safely.

- China announced it will launch a manned spaceflight later this year, following the successful launch and return of the Shenzhou IV spacecraft Jan. 5. Such a launch, planned for the last six months of this year, would make China only the third nation, after the US and Russia, to put men into space aboard an indigenous rocket.

- An Air Force investigation report released Dec. 10 concluded mechanical failure caused an Air Force RQ-4A Global Hawk unmanned aerial vehicle to crash last July 10. The Global Hawk UAV was on a surveillance mission for Operation Enduring Freedom. A fuel nozzle in the high-flow position failed, and that led to the internal failure of the engine.

- Members of Air Force Reserve Command's 920th Rescue Group flying two HH-60 helicopters and one HC-130P/N tanker aircraft on Dec. 8 rescued Mike Swan, a commercial fishing captain suffering from kidney stones. Swan's vessel was about 500 miles off Florida's eastern coast. The rescue crew stabilized Swan and transported him by helicopter to Melbourne, Fla.

- USAF announced on Dec. 17 selection of 1,557 line captains for promotion to major out of 1,681 considered, for a 92.6 percent selection rate. The service selected 16 chaplains of 20, an 80 percent selection rate; 59 JAGs of 64 or 92.2 percent; 91 nurses of 130 or 70 percent; 50 medical service corps captains of 55 or 90.9 percent; and 109 biologic sciences corps captains of 126 or 86.5 percent.

- A federal judge threw out a lawsuit filed by 32 lawmakers to prevent President Bush from pulling out of the 1972 Anti-Ballistic Missile Treaty. The US district judge dismissed it on the grounds that the withdrawal was political, not judicial, and noted that



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## The Case of the ANG Pilots: Blame, Support, and Conflicting Testimony

The Air Force on Jan. 14 began an Article 32 hearing against two Illinois Air National Guard pilots charged in the April 17, 2002, bombing incident that left four Canadian soldiers dead and eight others wounded. The Article 32 hearing—similar to a civilian grand jury proceeding—determines whether the pilots must face a court-martial.

Maj. Harry Schmidt and Maj. William Umbach were charged last year with four counts of involuntary manslaughter and eight counts of assault. (See "Aerospace World: Air Force Charges Two Pilots in Deaths of Canadians," October 2002, p. 19.)

Those who blame Schmidt and Umbach say the pilots failed to follow proper flight procedures and acted recklessly. Supporters maintain the pilots responded appropriately to a perceived attack and blame superiors for a general lack of communication. Following are some of the comments and witness testimony surrounding the case.

### On Combat Airmanship

Brig. Gen. Stephen T. Sargent, the general who filed the charges, testified: The pilots broke the most basic rules of combat flying and showed "reckless disregard" for orders intended to prevent such accidents. They violated the rules of engagement for coalition aircraft by descending and slowing down before dropping a 500-pound bomb on what they mistook for hostile forces, rather than ascending and speeding away to identify those forces from a position of safety.—*New York Times*, Jan. 22.

Lt. Col. Ralph Viets, ANG pilot, when asked by the prosecution if the pilots' actions flew in the face of standard protocol, responded: "It's not all that unusual."—*St. Louis Post-Dispatch*, Jan. 18.

Lt. Col. Craig Fisher, an F-16 pilot who was a key officer in the coalition air operations center on April 17, testified: "A prudent person would remain outside the threat envelope."—*St. Louis Post-Dispatch*, Jan. 18.

Col. Lawrence Stutzriem, a senior officer in the CAOC on April 17, testified that Schmidt's request to strafe from a high angle in the black of night was "extremely unusual. ...

It's just something you wouldn't expect, something that wouldn't occur."—*New York Times*, Jan. 16.

Capt. Joseph M. Jasper, Canadian soldier at Tarnak Farms, testified that fire from Canadian troops could reach only a few thousand feet into the air before burning out. (The pilots were flying at about 20,000 feet.) Upon cross-examination, he admitted he was observing a drill some distance away from where the bomb fell, so did not see how high his men were firing.—*New York Times*, Jan. 15.

### On Lack of Communication

Capt. Evan Cozadd, an Air Force intelligence officer, testified that the pilots had been warned before the mission that friendly forces might be on the ground. "We couldn't speak with any degree of certainty who they were looking at." Upon cross-examination, Cozadd admitted he did not know of a Canadian live-fire exercise at Tarnak Farms.—*Washington Post*, Jan. 21.

Stutzriem, in further testimony, said that air combat orders Air Force pilots were required to read included information that coalition ground forces would intermittently use live ammunition. "I would assume every pilot who read [the orders] knew that Tarnak Farm was there. ... It was well-known. Kandahar is a location of friendlies."—*New York Times*, Jan. 17.

Maj. Marshall S. Woodson III, an officer on the ground who relayed instructions via radio to the two pilots, testified upon cross-examination that he had never heard of Tarnak Farms.—*Washington Post*, Jan. 21.

Jasper, upon cross-examination, said that there were breakdowns in communication and noted that his regiment had nearly been strafed by friendly aircraft a month before the bombing.—*New York Times*, Jan. 15.

Col. David C. Nichols, the pilots' commander: "The problem I see with this is we have friendly aircraft in a war zone that is unknown as to where the bad guys are and where the good guys are. ... A stated, ongoing problem from the beginning [has been] not knowing where the friendly locations are."—In taped comments following the incident, *Washington Times*, Jan. 9.

the lawmakers lacked House authorization to bring the suit. The treaty, a Cold War centerpiece, formally expired June 13. (See "Aerospace World: This Is the Way the ABM Treaty Ends, Not With a Bang but a Whimper," July 2002, p. 17.)

■ Boeing delivered the first YAL-1A Airborne Laser (see photo p. 18) to the Air Force Flight Test Center, Edwards AFB, Calif., Dec. 19. The aircraft will receive its laser and optical systems, which have been undergoing testing and integration on the ground. The program goal is to shoot down a ballistic missile by the end of 2004. USAF leads the YAL-1A team, comprising Boeing, Lockheed Martin, and TRW, under the direction of the Missile Defense Agency.

■ Lockheed Martin won a \$3.5 billion contract from Poland for 48 F-16 fighters, powered by Pratt & Whitney F100-PW-229 engines, beating out Dassault Aviation of France and BAE Systems/Saab, a UK-Swedish team. The two competitors offered the Mirage 2000-5MK and the JAS-39 Gripen fighters, respectively.

■ An F-15E accident at Eglin AFB, Fla., last July 3 was due to an engine valve failure and the use of the wrong instrument during a maintenance inspection, concluded an Air Combat Command report released Dec. 17. A structural failure of the low-pressure turbine blades in one of the two engines caused the engine to fail. The incident occurred during a weapons test mission. Although the pilot

landed the aircraft safely, the failure cost about \$1.7 million in engine damage.

■ USAF announced Dec. 23 that it had selected 43 enlisted members to attend Officer Training School following a November 2002 selection board that considered 767 applications.

■ Delivery of the first Eurofighters to Germany, Italy, Spain, and the UK has been delayed until the end of June. This latest six-month setback stemmed from minor design problems and the slow pace of gathering performance and flight safety data, UK Defense Minister Lewis Moonie said in a statement released Dec. 5. Although they are expected to resume soon, test flights of the Euro-

fighter were banned following a Nov. 21 crash in Spain of the prototype.

■ USAF's ICBM Systems Project Office, Hill AFB, Utah, awarded a \$181 million contract in December to Northrop Grumman to continue its upgrade of the guidance system electronics in the Minuteman III ICBM. The upgrade will extend the missile's service life through 2020.

■ Pratt & Whitney announced on Dec. 10 delivery of its 500th F117 engine for USAF's C-17 airlifters. The Air Force currently has 180 C-17s on order. Each one is powered by four F117-PW-100 engines.

■ Two "pico" satellites were successfully released Dec. 2 from the space shuttle *Endeavor* as part of the test process for the satellites, which weigh little more than two pounds. The pico micro-sat program, managed by the Air Force Research Lab's Information Directorate at Rome, N.Y., is expected to eventually place pico satellites in orbit near a spacecraft to monitor its health and send that data directly to spacecraft operators on Earth. An official at the Rome facility said the tiny satellites may also serve as a protection against natural or manmade threats to the spacecraft.

■ The Pentagon announced Dec. 20 that Academy Life Insurance Co., accused of defrauding service members from 1991 to 1998, will pay more than \$160 million in costs, penalties, and restitution, as part of a settlement of a civil complaint. The company also agreed never to sell insurance policies in the US or ask DOD for permission to conduct business on US military installations. In addition, it will pay \$2.7 million to an estimated 110,000 persons who canceled their policies from 1991 to 1998. Beginning on Sept. 11, 1998, DOD had imposed a three-year ban—possibly the first imposed DOD-wide—on Academy Life, whose agents had misrepresented themselves to service members and violated DOD solicitation practices.

■ According to a Dec. 20 release, USAF chose 638 medical and dental officers for promotion. Overall, it selected 118 for colonel, 144 for lieutenant colonel, and 376 for major. The selection rates for colonel were 77 percent for medical corps and 67.7 percent for dental corps. For lieutenant colonel, the rates were 98.3 percent for MC and 100 percent for DC. For major, the rates were 99.1 percent for MC and 97.5 percent for DC.

■ A new bronze-colored letter A device for the Overseas Short Tour Ribbon recognizes service time spent in the Arctic Circle. Eligible to wear

## Pentagon Leaders Say "No" to Military Draft

Two lawmakers proposed that the US reinstitute the military draft after nearly 30 years of operating with an all-volunteer force. They claim the present system unfairly places undue burden and risk on minorities.

Rep. Charles B. Rangel (D-N.Y.) and Rep. John Conyers Jr. (D-Mich.) introduced legislation last month to require military or alternative national service for men and women, ages 18 to 26.

Top leaders at the Pentagon insist there is no need for a draft because the all-volunteer force works.

"The disadvantages of using compulsion ... are notable," Defense Secretary Donald H. Rumsfeld said Jan. 7. "The disadvantages to the individuals ... are notable."

Rumsfeld added that those drafted created tremendous "churning." They required an "enormous amount of effort in terms of training, and then they were gone."

Air Force Gen. Richard B. Myers, the Chairman of the Joint Chiefs of Staff, agreed. "The all-volunteer force is working extremely well; it's efficient; it's effective; it's given the United States of America ... a military that is second to none," he said.

Rangel, Conyers, and others point out that minority representation as a percentage of the entire US military force is far higher than minority representation in society. Consequently, they believe, minorities would suffer a disproportionate share of combat casualties in any war.

A Pentagon report issued Jan. 13 gives a different perspective on the subject because it draws a distinction between the total US force and that fraction making up the combat arms.

Blacks (14 percent of the general population) make up 21 percent of the total military but 15 percent of the combat arms positions. The majority serve in administration, health, and other support positions.

## Rumsfeld's Apology

Some additional comments about the military draft made by Defense Secretary Rumsfeld at the Jan. 7 press briefing received wide circulation from columnists around the country. The columnists suggested that Rumsfeld had demeaned the service of those who had been drafted.

This is the portion of Rumsfeld's Jan. 7 comments that ignited the firestorm: "If you think back to when we had the draft, people were brought in, they were paid some fraction of what they could make in the civilian manpower market, because they were without choices. Big categories [of people] were exempted—people that were in college, people that were teaching, people that were married. It varied from time to time but those were all kinds of exemptions. And what was left [those who were not exempted] were sucked into the intake, trained for a period of months, and then went out, adding no value, no advantage really, to the United States armed services over any sustained period of time—because [of] the churning that took place. It took an enormous amount of effort in terms of training, and then they were gone."

On Jan. 21, Rumsfeld issued a statement in which he said his earlier words were misinterpreted by the press and were "not eloquent."

The statement reads: "I did not say [draftees] added no value while they were serving. They added great value. I was commenting on the loss of that value when they left the service. I certainly had no intention of saying what has been reported or of leaving that impression. Hundreds of thousands of military draftees served over years with great distinction and valor—many being wounded and still others being killed.

"The last thing I would want to do is disparage the service of those draftees. I always have had the highest respect for their service, and I offer my full apology to any veteran who misinterpreted my remarks when I said them, or who may have read any of the articles or columns that have attempted to take my words and suggest they were disparaging. ...

"It is particularly troubling for me that there are truly outstanding men and women in uniform or their families—past and present—who may believe that the Secretary of Defense would say or mean what some have written. I did not. I would not."

## Navy Offers New, Improved Vision for Sea Power

The top naval leadership last October approved a document detailing the Navy's transformation goals for the next century. The paper largely reaffirms existing plans but is consistent with several of the Air Force's warfighting priorities.

The vision statement notes that adaptation and transformation have been a "hallmark of the Navy/Marine Corps team."

"Naval Power 21 ... A Naval Vision" was signed by Navy Secretary Gordon R. England, Gen. James L. Jones Jr., then Marine Corps Commandant, now Supreme Allied Commander, Europe, and the Chief of Naval Operations, Adm. Vernon Clark.

The document lays out nine future capabilities for the Navy and Marine Corps to pursue. These will keep the services "transformational by design." The Navy wants to:

- Improve intelligence, surveillance, and reconnaissance capability "to acquire moving targets and deliver an increasingly persistent and decisive volume of timely fire."

- Integrate Navy and Marine Corps tactical aviation assets "for the optimum balance of efficiency and warfighting effectiveness."

- Use unmanned air, land, and sea vehicles for both combat and reconnaissance missions.

- Develop and project defenses against enemy ballistic and cruise missile attack, "extended to include over the shore."

- Build networks of ISR and command, control, communications, and computer systems "to enable integrated, forward deployed naval forces to deliver decisive effects."

- Improve information warfare planning and execution, reachback intelligence, and planning support.

One of the Navy's declared warfighting strategies, "Sea Strike," seeks to improve the offensive firepower the Navy can bring into combat from the seas. This will be accomplished by leveraging "enhanced C4ISR, precision, stealth, and endurance to increase operational tempo, reach, and effectiveness."

The Navy/Marine Corps team promises to dissuade, deter, and defeat adversaries, together with the Air Force, Army, and Coast Guard, by ushering in "order of magnitude increases in warfighting effectiveness."

—AJH

the A device are active duty and reserve members who serve a short tour at latitudes higher than 66.5 degrees north, which currently includes only Thule AB, Greenland, located 950 miles below the North Pole. It is the northernmost US military base.

- Two key mistakes caused a Sept. 3, 2002, F-15 mishap at Eglin AFB, Fla. An Air Combat Command investigation report released Dec. 19 concluded that the pilot failed to properly execute his landing sequence and landed 60 feet short of the runway, hitting a trench. The pilot was uninjured and there was no private property damage. He had been participating in a four-ship, two vs. two night-intercept training mission.

- ACC officials determined that an improper part installed in a U-2 reconnaissance aircraft was to blame for an Aug. 15, 2002, mishap. The wrong part caused the pilot to lose control during touch and go landings, and the aircraft left the runway. There were no injuries. Maintenance workers installed an incorrect torque arm on the aircraft's tail landing gear scissors assembly. The part eventually failed, causing the tail wheel to spin, so the pilot lost directional control of the aircraft.

- USAF tactical air control party personnel will soon be armed with the latest in laser targeting technology, according to a Dec. 11 Northrop Grumman statement. The service awarded the company a \$12.9 million contract for 290 of its Mark VII lightweight, handheld target location systems. The contract will run through June 2004, capping a previous Air Force order for 186 units that is almost complete.

- Air Force investigators could not determine a "clear and convincing cause" for the crash of an F-16C Sept. 9, 2002, near Cannon AFB, N.M., according to a report released Dec. 24. They saw no indication of aircraft malfunction, finding instead that the pilot became disoriented as he made a descending turn. The pilot, Capt. Benton Zettel, 522nd Fighter Squadron at Cannon, was killed in the crash. (See "Aerospace World: F-16 Pilot Dies in Crash," October 2002, p. 11.)

- The Defense Advanced Research Projects Agency chose BAE Systems to lead the Advanced Concept Technology Demonstration phase of the Adaptive Joint Command, Control, Communications, and Computer, Intelligence and Reconnaissance Node program. BAE will design, build, and deliver four flyable payloads providing

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The first two of nine additional F-16s slated to become part of the flight-test force at Edwards AFB, Calif., arrived at the base on Jan. 8. The F-16s had been sitting at the aircraft regeneration facility at Davis-Monthan AFB, Ariz., for the past 10 years. A decade ago, the US cancelled a foreign military sales deal to Pakistan, when that country ignored the nuclear non-proliferation policy.

communications relay and bridging, signals intelligence, and electronic attack capability. The Air Force will flight-test two payloads on either a KC-135 or RC-135 aircraft, and the Army will flight-test two on its Hunter UAV. DARPA has budgeted \$60 million over a five-year period for the program.

■ Pilot loss of situational awareness, spatial disorientation, and faulty flight-control inputs caused an Aug. 21, 2002, crash of an F-15C into the ocean south of Kadena AB, Japan, according to a Dec. 16 release. The crash occurred during a four-ship training mission. The pilot, with the 18th Wing at Kadena, ejected safely.

■ An investigation board report released Dec. 24 found that the pilot's takeoff combined with insufficient

power to climb out of a dust cloud led to the crash Aug. 12, 2002, of an HH-60G Pave Hawk helicopter at a forward operating location. The aircraft's slow departure caused it to be engulfed in a dust cloud from its own rotor wash; visibility was zero. The pilot first tried to climb and then to land, but he hit a sand berm. No one aboard was injured. The crew and chopper are permanently assigned to the 347th Rescue Wing, Moody AFB, Ga.

■ The Air Force on Dec. 12 christened its 100th and newest C-17 Globemaster III *Spirit of Strom Thurmond*, to honor the 100th birthday of one of the nation's longest serving US Senators. In a ceremony at Andrews AFB, Md., Thurmond watched as the

name was unveiled. The C-17 is assigned to the 437th Airlift Wing, Charleston AFB, S.C., the Senator's home state.

■ Quick thinking and emergency actions by an F-15 pilot and ground crew at Kadena AB, Japan, limited danger from an aircraft engine fire July 31, 2002. Investigators could not determine a clear cause of the accident, but substantial evidence suggested that there was a chain reaction from the failure of a high-pressure turbine component.

■ The Black Engineer of the Year awards selection panel chose Rodgerick Newhouse, an electronics engineer with 452nd Flight Test Squadron, Edwards AFB, Calif., as the most promising engineer in government for 2003. Newhouse works with the Global Hawk UAV flight test program. The award is sponsored by the Council of Engineering Deans of the Historically Black Colleges and Universities, Lockheed Martin, DaimlerChrysler, and *US Black Engineer and Information Technology* magazine.

■ The Institute for National Security Studies recently honored Air Force personnel for their research achievements. Maj. Steve Kiser and Troy Thomas received the Maj. Gen. Robert E. Linhard Award for their paper, "Lords of the Silk Route: Violent Non-State Actors in Central Asia." Both are intelligence officers, Kiser at Langley AFB, Va., and Thomas in Santa Monica, Calif., where he is working on a doctorate. Paul Bolt, a professor at the Air Force Academy, and Maj. Carl Brenner, formerly an assistant professor there, received the Outstanding Academy Researcher Award for their paper, "Information Warfare Across the Taiwan Strait."

■ Members of ANG's 149th Fighter Wing, Lackland AFB, Tex., teamed with W.E.N. Industries of New Hampshire to devise a prototype "Fuel Buggy" (officially the PH1000EL Self-Contained Fuel Transfer Unit) that recycles F-16 JP-8 fuel waste for use in various ground equipment. Prior to the fuel buggy's debut, such waste was collected in drums and picked up by a contractor for recycling and resale off base. The buggy is a four-foot wide, seven-foot long, four-wheel trailer with a 1,000-gallon tank, a hose, and an electric pump. Cost of the prototype is \$15,000, but it can recover \$1,500 worth of fuel monthly.

■ DOD recognized the outstanding contributions of both its employees with disabilities and their DOD employers in a ceremony Dec. 3. Air Force employee Kathleen S.

## Senior Staff Changes

**NOMINATIONS:** To be **Brigadier General:** Paul F. Capasso, Floyd L. Carpenter, William A. Chambers, Paul A. Dettmer, David K. Edmonds, Jack B. Egginton, David J. Eichhorn, David W. Eidsaune, Burton M. Field, Alfred K. Flowers, Randall D. Fullhart, William J. Germann, Marke F. Gibson, Robert H. Holmes, Stephen L. Hoog, Larry D. James, Ralph J. Jodice II, Jan-Marc Jouas, Jay H. Lindell, Kay C. McClain, Robert H. McMahon, Stephen P. Mueller, William J. Rew, Katherine E. Roberts, Jarisse J. Sanborn, Kip L. Self, Michael A. Snodgrass, David M. Snyder, Larry O. Spencer, Robert P. Steel, Thomas J. Verbeck, James A. Whitmore, Bobby J. Wilkes, Robert M. Worley II.

**COMMAND CHIEF MASTER SERGEANT RETIREMENT:** CMSgt. William A. Milligan.

**CCMS CHANGE:** CMSgt. Karl W. Meyers, to CCMS, AETC, Randolph AFB, Tex. ■



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Baumgartner, Offutt AFB, Neb., received an award for outstanding work performance. She was one of 16 DOD employees to receive the award. The Air Force was honored as the best military department.

■ Winners of the 2002 Gen. Thomas D. White Environmental Quality Awards are: Tinker AFB, Okla.; ANG's 177th Fighter Wing, Atlantic City, N.J.; and Ramstein AB, Germany. The Pollution Prevention Award went to Eglin AFB, Fla., and Robins AFB, Ga. Karlene E. Leeper, 611th Civil Engineer Squadron, Elmendorf AFB, Alaska, received an individual excellence award for cultural resources management, and the 611th CES received an excellence award for installations. Patrick AFB, Fla., claimed the Natural Resources Conservation Award. The National Environmental Policy Act Award for team excellence went to two bases: Andrews AFB, Md., and Langley AFB, Va.

■ The Senate on Jan. 22 unanimously confirmed Tom Ridge as the nation's first secretary of homeland security. His office, which formally opened for business Jan. 24, must merge 22 existing agencies, including about 177,000 employees. ■

## Chairman Hunter Revamps Committee Structure

Duncan Hunter (R-Calif.), new chairman of the House Armed Services Committee, on Jan. 9 announced a reorganization of subcommittees that he said will "better address and support" DOD missions.

"The dramatic national security challenges presently facing the nation require that we constantly re-evaluate all aspects of our defense establishment and procedures," said Hunter.

The plan calls for six subcommittees, each focusing on specific military missions or capabilities. The new lineup of leaders and committees is:

- Committee vice chairman—Curt Weldon (R-Pa.)
- Tactical Air and Land Forces—Weldon
- Readiness—Joel Hefley (R-Colo.)
- Terrorism, Unconventional Threats, and Capabilities—Jim Saxton (R-N.J.)
- Total Force—John McHugh (R-N.Y.)
- Strategic Forces—Terry Everett (R-Ala.)
- Projection Forces—Roscoe G. Bartlett (R-Md.)

In a statement, Hunter made clear that one effect of the reorganization will be to focus on service integration and joint capabilities.

The new structure will enable the committee "to examine our nation's defense needs not only in terms of individual weapon systems or the traditional role of a particular military service, but from the perspective of our ability to project and integrate our military forces throughout the world to respond to evolving threats," said Hunter.

He added that the new focus would be on missions rather than traditional budget categories. (For a perspective on the new chairman, see "The Airpower Advocate," January, p. 50.)

## Trouble Brewing in Future Imagery Architecture

Boeing's plans to develop a next-generation spy satellite system have run into serious developmental problems and cost growth. Press reports assert that the Future Imagery Architecture, being overseen by the National Reconnaissance Office, is more than a year behind schedule and \$3 billion over budget.

The program could be \$900 million over budget just in Fiscal 2003, the *Los Angeles Times* reported in December.

NRO director and Air Force Undersecretary Peter B. Teets told *Space News* in a written statement last November that DOD is "on the correct path to produce what this nation needs for a new reconnaissance system essential to US national security."

However, the highly classified nature of the program makes it difficult for those not directly involved in the program's oversight to determine exactly how the imagery architecture is progressing. Capabilities, budgets, quantities, and even the number of people working on FIA are classified.

"Almost all of the space programs are in trouble, and that costs [the Defense Department] billions of dollars more than expected," Air Force Secretary James G. Roche told the *Wall Street Journal* in an interview published Dec. 2. Part of the problem concerns the inherent complexity of advanced space systems and the fact that satellites in orbit cannot be easily modified. "With these complex systems, if you make a mistake going in, it's permanent," Roche said.

Congressional authorizers called attention to FIA's problems in their report on the Fiscal 2003 Intelligence Authorization Act, passed last November. The program is facing major technical and funding challenges that "could force untenable trades between future capabilities and legacy systems," according to the authorization report.

—AJH

# Verbatim

By John T. Correll, Contributing Editor

## Waiting for the Call

"My feeling was that—and it's not an ego thing, but in military terms—I am a silver bullet. I can generate attention quickly. I have a credibility on the subject [Iraq] that most people don't. ... If my country ever calls upon me to serve, if someone thought I could ever be a good assistant secretary of defense or state, I would smartly salute and go off to serve my country."—**Scott Ritter, former UN arms inspector turned antiwar activist, quoted in the New York Times Magazine, Nov. 24.**

## Let Your Feet Bleed

"Don't be attracted to easy paths, because the paths that make your feet bleed are the only way to get ahead in life."—**Pamphlet of sayings from Iraqi President Saddam Hussein, quoted in the Boston Globe, Dec. 12.**

## Not Yet a Superpower

"As of 1940, the United States stood fourteenth in global military power, trailing Germany, France, Britain, Russia, Italy, Japan, China, Belgium, the Netherlands, Portugal, Spain, Sweden, and Switzerland."—**Craig Nelson, in The First Heroes: The Extraordinary Story of the Doolittle Raid, quoted in the New York Times, Nov. 17.**

## Run, Osama! They're Dropping Nuance!

"Although airpower is critical to both deterrence and warfighting, it lacks nuance. Airpower is either on or off. Thus, its threatened use in situations involving less than vital interests lacks credibility. It is therefore not always politically useful."—**Mackubin Thomas Owens, Naval War College professor, Washington Times, Nov. 24.**

## Digesting the Information

"The first thing I'm going to do is let the experience find its own organic place."—**Actor Sean Penn, preparing to return from peace mission to Iraq, quoted in the Washington Post, Dec. 16.**

## The Main Action

"It's ever more obvious, as airpower begins to keep the promise that it's had all along, that it is the main action, and other action is ancillary and supporting. The facts are what they are."—**Retired Gen. Merrill A. McPeak, former Air Force Chief of Staff, quoted in the Washington Post Magazine, Dec. 15.**

## Ridge's Ark

"He has a monumental task in front of him. It's like asking Noah to build the ark after the rain has started to fall."—**Sen. Joseph I. Lieberman (D-Conn.), on President Bush's naming of Tom Ridge to head the Department of Homeland Security, quoted in the New York Times, Nov. 26.**

## Patriotism Lite

"I call this patriotism lite. We have a lot of folks who are talking the talk, who say they support the military, but who are really not walking the walk."—**Sociologist Charles Moskos, on Scripps Howard News Service and Ohio University poll in which half the respondents said they did not want their children to choose a military career, quoted in the Seattle Post-Intelligencer, Nov. 26.**

## Bush on Leadership

"A president has got to be the calcium in the backbone. If I weaken, the whole team weakens. If I'm doubtful, I can assure you there will be a lot of doubt."—**George W. Bush to reporter—author Bob Woodward for his book Bush at War, quoted in the Washington Post, Nov. 22.**

## Nimble Nozzles

"We can spray faster than they can plant."—**US narcotics official on a US-funded program to eradicate coca crops by herbicidal spray in Colombia, quoted in the Chicago Tribune, Nov. 24.**

## Frogs and Onions

"For meals, I had to forage for food. Wild onions were the easiest to find.

The only other food I could find was frogs. For two long weeks, I lived on nothing but frogs and onions. It's not a diet I would recommend. I lost 15 pounds in two weeks and couldn't stand to eat onions for years afterward."—**Rep. Joseph R. Pitts (R-Pa.), former Air Force officer and Vietnam veteran, on his survival training, quoted in the Washington Times, Nov. 27.**

## The Spectrum From A to B

"We're taking the ... Web site and rebuilding it as a one-stop shopping for the antiwar movement. It's a campaign of all different kinds of groups, from the National Council of Churches to the International Socialists organization. I just got a call from the Raging Grannies of Palo Alto, who want to join."—**Andrea Buffa, co-chairwoman of Mothers Against War, a new antiwar protest network, quoted in the Washington Post, Dec. 2.**

## Unequal Sacrifice

"More than 130,000 reservists have been activated—taken from their civilian jobs and their families—since the attacks on the World Trade Center and the Pentagon. Some of them are in their second year of service, because no one is available to replace them. Thousands more will be called up if we fight Iraq. Almost everywhere you look, the element of shared sacrifice that should be expected in a nation at war is missing. A few people are being asked to give up a lot."—**David S. Broder, Washington Post, Dec. 4.**

## Alternative to the UN

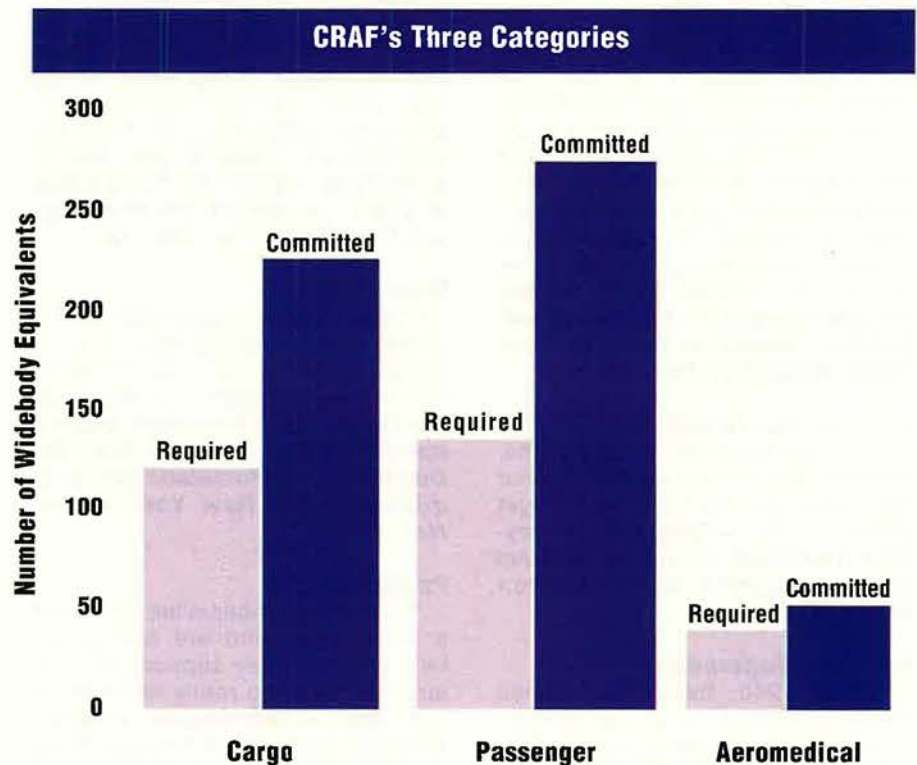
"I hear it said that the UN is imperfect but it's the only one we've got. It seems to me that if you've got a fire extinguisher that you know won't work, you don't approach a fire with it because it's the only one you've got. You find another way to put out the fire. ... Why is the United Nations a greater source of legitimacy than NATO?"—**Richard Perle, International Herald Tribune, Nov. 28.**

# The Chart Page

By Tamar A. Mehuron, Associate Editor

## The Current and Future State of CRAF

Currently, the Air Force has more commercial aircraft committed to its Civil Reserve Air Fleet than it needs to meet wartime demand, but the number required could be going up just as some carriers are considering leaving the CRAF program. Due out by 2004 is a new mobility requirements study that may call for increased CRAF use for cargo, passengers, and medical evacuation.



### A Typical Round-Trip Cost

Aircraft	Capacity	Trip Cost
747	90 tons	\$200,356
MD-11	86 tons	\$191,451
DC-10	75 tons	\$166,963

Note: Cost is based on round-trip from Dover AFB, Del., to Ramstein AB, Germany.

Greater CRAF participation may be hard to find, however. According to the General Accounting Office, one of CRAF's key incentives for an air carrier—the ability to bid on peacetime defense cargo business—may now be waning because USAF limits most of that work to one type of aircraft—the 747. Conversely, 747s account for only 38 percent of the widebody cargo aircraft in CRAF, and GAO found that more than 40 percent of the 747s used in 2002 flew without full loads.

Source: GAO: "Civil Reserve Air Fleet Can Respond as Planned, but Incentives May Need Revamping," December 2002.



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GET SMART

The President has set a new course in national security thinking. The question is whether he can properly fund it.

# The Evolution of the Bush Doctrine

By John T. Correll

**I**n 2000, for the first time in years, national defense was an issue in a Presidential election campaign, made that way by the Republican candidate George W. Bush.

Bush, speaking at the Citadel in September 1999, introduced his positions on defense. He said that "even the highest morale is eventually undermined by back-to-back deployments, poor pay, shortages of spare parts and equipment, and rapidly declining readiness."

He said that the Clinton Administration "wants things both ways: to command great forces, without supporting them."

In transforming the armed forces, he would go beyond marginal im-

provements and "use this window of opportunity to skip a generation of technology."

Among specific program intentions, Bush said that "at the earliest possible date, my Administration will deploy anti-ballistic missile systems, both theater and national, to guard against attack and blackmail."

He promised to review the open-ended deployments: "Sending our military on vague, aimless, and endless deployments is the swift solvent of morale. ... I will work hard to find political solutions that allow an orderly and timely withdrawal from places like Kosovo and Bosnia. We will encourage our allies to take a broader role. We will not be hasty. But we will not be permanent peace-

keepers, dividing warring parties. This is not our strength or our calling."

Another declaration that got extensive notice came from Bush's running mate, vice presidential candidate Dick Cheney. "Rarely has so much been demanded of our armed forces and so little given to them in return," Cheney said in summer 2000. "George W. Bush and I are going to change that. I have seen our military at its finest. And I can promise them now, help is on the way."

## A Decade of Neglect

The 1990s were a decade of neglect. The defense budget was cut repeatedly. It bottomed out in 1998, some 37 percent below the Cold War peak.

The armed forces were a third

*Desert Duty.* An F-15C of the 1st Fighter Wing at Langley AFB, Va., temporarily deployed to Saudi Arabia. Since the 1991 Gulf War, USAF pilots have flown thousands of sorties to contain Iraq's Saddam Hussein.





smaller but the Clinton Administration's activist policy of "Engagement and Enlargement" abroad kept them far busier. The force was nominally structured to fight two overlapping major theater conflicts, but it was never sized, equipped, or funded to do so.

Aging equipment wore out but was not replaced. Readiness rates fell. Force modernization programs were curtailed and postponed. Buildings and runways deteriorated for lack of maintenance. New words like "op-tempo" and "perstempo" entered the lexicon to describe the relentless pace of deployments to one overseas contingency after another.

The force had slipped so far that, by some estimates, it needed \$100 billion more a year just to avoid falling further behind—and that did not include any force modernization or transformation.

There was already considerable momentum for a defense increase, in Congress and elsewhere. Even President Clinton, on his way out of office, proposed a 2002 defense budget \$14.2 billion higher than the Fiscal 2001 level.

### Rumsfeld's Review

Thus it came as something of a surprise when, shortly after the inauguration in January 2001, the White House announced that Bush would stick with the 2002 Clinton defense budget until Secretary of Defense Donald H. Rumsfeld had completed a sweeping review

of force structure and requirements to determine long-term strategic requirements.

Rumsfeld was tight-lipped about the big review. It was widely believed that the study would be run by Andrew Marshall, the Pentagon's legendary director of net assessment, and that it would be done by March 2001.

In actuality, Rumsfeld had put more than a dozen study panels to work behind closed doors, but only a few people knew that at the time. The panels consisted mostly of outsiders. Security was extraordinarily tight. The results, not altogether surprising, were rampant rumor, confusion, and discord. Rumsfeld didn't confirm the rumors, but he didn't deny them either.

By the middle of May 2001, the uproar reached the point that Rumsfeld went on a media blitz, holding 14 press interviews and media availabilities in three weeks.

He said the review wasn't that big, that the work by his panels was just exploratory, that there was no big plan to reorganize the armed forces. He said the panel findings would be rolled into the next Quadrennial Defense Review, which had earlier slowed down its efforts in deference to the panels. The QDR was revived and put on what the Pentagon called "a forced march" to produce results by the middle of the summer.

Rumsfeld recognized the magnitude of the problem before him.

"First, because we have underfunded

and overused our forces, we find we are short a division, we are short airlift, we have been underfunding aging infrastructure and facilities, we are short high-demand/low-density assets, the aircraft fleet is aging at considerable and growing cost to maintain, the Navy is declining in numbers, and we are steadily falling below acceptable readiness standards," he told Congress in June 2001.

"Second, we have skimmed on our people, doing harm to their trust and confidence, as well as to the stability of our force. ...

"Third, we have underinvested in dealing with future risks. We have failed to invest adequately in the advanced military technologies we will need to meet the emerging threats of the new century."

Fortunately, Rumsfeld said, transforming part of the force would be sufficient. "The blitzkrieg was an enormous success, but it was accomplished by only a 13 percent transformed German Army," he said.

### The "4-2-1" Standard

By law, a new President must send Congress a National Security Strategy within 150 days of taking office. For the Bush Administration, the due date came and went. The National Security Strategy would not appear until September 2002.

The National Defense Strategy, published by the Pentagon, normally follows the National Security Strategy. This time the defense strategy came first. It was not a separate document, as usual, but rather part of the Quadrennial Defense Review, which was coming to a conclusion in early September 2001.

Then came Sept. 11, 2001, and the terrorist attacks in New York City and Washington, D.C. Suddenly, the war on terror was Mission No. 1. There could be no sanctuary for terrorism.

"Every nation, in every region, now has a decision to make," Bush said to a joint session of Congress. "Either you are with us, or you are with the terrorists. From this day forward, any nation that continues to harbor or support terrorism will be regarded by the United States as a hostile regime."

The QDR, published Sept. 30, 2001, included some last-minute inserts to reflect the terrorist attacks on Sept. 11, but it basically followed an outline of instructions Rumsfeld had laid down in June and July. It

USAF photo by SSgt. Pamela J. Farlin



**Heavy Demand.** With multiple operations under way, tankers have gotten a workout. Most USAF KC-135s are old, hard used, and a maintenance problem. Last year, more than 24 percent of the fleet was in depot maintenance.

introduced a new strategy and a new force-sizing standard.

The short title of the defense strategy was “Assure, Dissuade, Deter, Defeat.” Assure allies and friends. Dissuade other nations from future military competition with the US. Deter threats and coercion against US interests. If deterrence fails, decisively defeat any adversary.

It had a harder military edge to it than “Shape, Prepare, Respond” did. Taken along with other signs from the Bush Administration, it also indicated that the United States would not retreat very much from engagements abroad. The Expeditionary Air and Space Force could look for more of the same.

The orientation of strategy had changed from threat based to capabilities based. It focused on how an adversary might fight instead of on who the adversary might be or when and where the war might occur. It gave special attention to capabilities that adversaries might possess or could develop and on capabilities that we would need ourselves.

In the change that attracted the most public attention, the new strategy dumped former Defense Secretary Les Aspin’s force-sizing standard from 1993, in which forces were



USAF photo by SSgt. Matthew Hammen

**Expedited Airpower.** After many “temporary” operations in the 1990s, USAF reconfigured its operational forces into an expeditionary mode. Tent cities, such as this in Afghanistan, are routine sights.

supposedly structured to fight and win, almost simultaneously, two major regional conflicts—later called Major Theater Wars, or MTWs.

The new standard was “4-2-1.” It said the force should be sized to do the following:

- Defend the homeland.
- Deter aggression in four critical theaters (Europe, Northeast Asia, the

East Asian littoral, Middle East/Southwest Asia).

- Swiftly defeat aggression in any two theaters at the same time.
- Preserve the option for one major counteroffensive to occupy an aggressor’s capital or replace his regime.
- Conduct a limited number of smaller-scale contingencies.

## Bush’s Major Strategic Initiatives

With operations still in progress in Afghanistan, Bush introduced major initiatives on missile defense and nuclear weapons. In December 2001, he announced US withdrawal from the 1972 Anti-Ballistic Missile Treaty, giving Russia formal notice that the withdrawal would be effective six months later.

“I have concluded the ABM Treaty hinders our government’s ability to develop ways to protect our people from future terrorist or rogue state missile attacks,” Bush said. “We know that the terrorists, and some of those who support them, seek the ability to deliver death and destruction to our doorstep via missile. And we must have the freedom and the flexibility to develop effective defenses against those attacks.”

On Jan. 9, 2002, the Pentagon released the Nuclear Posture Review report. It said Russia was no longer the enemy and that the main concern had become rogue states with weapons of mass destruction. The nation would rely less on offensive nuclear weapons than it had done in the past.

The Pentagon said it could take two-thirds of the operational US nuclear warheads out of service by 2012, reducing the total to 2,200 deployed warheads or fewer. Some of the withdrawn warheads would be destroyed. Others would be transferred to the inactive stockpile.

The famed Strategic Triad of the Cold War (ICBMs, bombers, SLBMs) would be replaced by a “New Triad,” consisting of (1) offensive strike systems, i.e., the old Strategic Triad, (2)

active and passive defenses, and (3) a revitalized defense research and development and industrial infrastructure to “provide new capabilities in a timely fashion to meet emerging threats.”

Three times in 2002, the world was reminded forcefully of the dangers inherent in the proliferation of nuclear weapons.

■ India and Pakistan, both possessing nuclear weapons, went to the brink of war.

■ The Israel–Palestine crisis intensified. Prime Minister Ariel Sharon warned that if attacked by Iraq with nonconventional weapons, Israel would “exercise its right to self-defense.” It would not restrain itself, as it did when attacked by Iraq during the 1991 Gulf War.

■ In October, Bush announced the revelation by North Korea that it had been secretly developing nuclear weapons for years and that it now possessed “more powerful weapons.”

Sen. John McCain (R–Ariz.) pointed out the difference in dealing with Iraq and North Korea on nuclear weapons. “Our determination to confront Saddam Hussein openly and with all necessary means demonstrates a freedom to act against an enemy that does not—yet—possess nuclear weapons [rather than] waiting until he possesses nuclear weapons, as North Korea now does, thereby constraining our ability to respond to a developing danger. We cannot allow Iraq to become the North Korea of the Middle East.”

The new standard was more demanding than two MTWs, and it was more reliant on airpower. The force still had to stop aggressors in two theaters at the same time. What the standard eliminated—as Rumsfeld made clear—was one occupation force. The principal effect would be on ground forces.

“By removing the requirement to maintain a second occupation force, we can free up new resources for the future and for other, lesser contingencies that may now confront us,” Rumsfeld said.

### The War on Terror

The counteroffensive against terrorists, Operation Enduring Freedom, began on Oct. 7, 2001, with air strikes in Afghanistan.

Within the month, an outcry arose that the war was being lost. Airpower couldn't get the job done. It would not be possible, the critics said, to take Kabul or any of the other cities with airpower and indigenous forces. The operation was bogged down. The Taliban would hold on through winter. Our best hope, they said, was a ground offensive in the spring. It would take between 35,000 and 250,000 ground troops.

The critics were wrong. When heavy bombers, assisted by US spotters on the ground, began hammering the front-line positions, the defenses crumbled. Afghan irregulars, supported by airpower and US Special Forces, took Mazar-e Sharif and



USAF photo by SSgt. Greg L. Davis

**Guard Over Cities.** Operation Noble Eagle air patrols began the day of the Sept. 11 attacks. Military aircraft, most from the Air National Guard, flew around the clock above New York, Washington (shown here), and 20 other cities.

Kabul, swept south, and, by the middle of November, were in control of most of the country.

In December 2001, Bush returned to the Citadel—where he had made his campaign speech on defense two years previously—and updated his commitment to military transformation. “This revolution in our military is only beginning, and it promises to change the face of battle,” Bush said. “Afghanistan has been a proving ground for this new approach. These past two months have shown that an innovative doctrine and high-tech weaponry can shape and then domi-

nate an unconventional conflict.”

Furthermore, he said, “We’re striking with great effectiveness, at greater range, with fewer civilian casualties. More and more, our weapons can hit moving targets. When all of our military can continuously locate and track moving targets—with surveillance from air and space—warfare will be truly revolutionized.”

The air campaign tapered off after January 2002. The Navy had flown 70 percent of the strike sorties, but the Air Force had delivered 74 percent of the tonnage.

Military emphasis in Afghanistan shifted to the ground. Operation Anaconda, which began on March 1, 2002, was an Army operation, supported by airpower. The goal was to dig what was left of al Qaeda out of the Afghan mountains. It was markedly less successful than the air campaign, killing perhaps 500, but many of the enemy got away.

### Iraq and Pre-emption

Through the winter of 2001–02, force gathered behind a proposition to oust Saddam Hussein’s regime in Iraq and end his efforts to develop weapons of mass destruction. Most of the early advocates of such action were Republicans, but staunchly among them was Sen. Joseph I. Lieberman, the Democratic candidate for vice president in 2000.

In his State of the Union speech, Bush described an “Axis of Evil”—states like North Korea, Iran, and

USAF photo by SSgt. Jerry Morrison



**Into Afghanistan.** An A-10 attack aircraft taxis down the strip at Bagram AB, Afghanistan. It took US airpower, special forces, and local troops just two months to rout the Taliban and al Qaeda forces.

## Guidelines for Use of Force

Under what circumstances should US armed forces be committed to combat? Where should the threshold of war be set?

In 1984, Secretary of Defense Caspar Weinberger announced a series of tests that became known as the Weinberger Doctrine. He said that troops would not be committed to combat unless a vital national interest was at stake and until other options were exhausted. Political and military objectives should be clearly defined and achievable. If we went to war, it must be with sufficient force and a determination to win. There should be "some reasonable assurance" of support from the American public and Congress.

The Weinberger Doctrine was revoked by Clinton's first Secretary of Defense, Les Aspin, who disparaged what he called the "All-or-Nothing" school of military employment. Military force was often used for "sending messages" and other limited objectives.

The dividing line between peace and war blurred. Commenting on an operation in 1998, Secretary of State Madeleine Albright said, "We are talking about using military force, but we are not talking about war. That is an important distinction."

Soon after he became Secretary of Defense, Donald H. Rumsfeld wrote down his guidelines for committing US armed forces to combat, updating the paper from time to time. When the existence of his memorandum was discovered and disclosed in October 2002 by the *New York Times*, Rumsfeld passed out copies of the latest version, dated March 2001, to the press.

■ "Is a proposed action truly necessary? ... If US lives are going to be put at risk, whatever is proposed to be done must be in the US national interest. ... All instruments of national

power should be engaged before, during, and after any possible use of force. ... Just as the risks of taking action must be carefully considered, so too the risk of inaction needs to be weighed."

■ "Is the proposed action achievable? ... When the US commits force, the task should be achievable—at acceptable risk. ... To the extent possible, there should be clear, well-considered, and well-understood goals."

■ "Is it worth it? ... If an engagement is worth doing, the US and coalition partners should recognize that lives will be put at risk. ... If public support is weak at the outset, US leadership must be willing to invest the political capital to marshal support to sustain the effort for whatever period of time may be required."

■ "If there is to be action, act early. If it is worth doing, US leadership should make a judgment as to when diplomacy has failed and act forcefully, early, during the precrisis period, to try to alter the behavior of others and prevent the conflict. If that fails, be willing and prepared to act decisively to use whatever force is necessary to prevail, plus some. ... Authorities should not dumb down what is needed by promising not to do things (i.e., not to use ground forces, not to bomb below 15,000 feet, not to risk lives, not to permit collateral damage, etc.)."

Obviously, Rumsfeld had studied the Weinberger Doctrine of 1984 as well as the open-ended, poorly defined, often tentative employment of military force during the Clinton years.

Rumsfeld's guidelines steered a middle course, more flexible than Weinberger's list, but with a reasoned consideration, lacking in the limited engagements of the 1990s, of when and how the United States would commit forces to combat.

Iraq that sponsor and support terrorism and which he said were arming to threaten the peace of the world.

Secretary of State Colin Powell told Congress in February that the Administration was set on "regime change" in Iraq. That led to political anguish and accusations, which were seemingly blind to the fact that regime change in Iraq had been US policy for a long time.

An October 1998 resolution, adopted unanimously by both houses of Congress and signed into law by President Clinton, said: "It should be the policy of the United States to support efforts to remove the regime headed by Saddam Hussein from power in Iraq and to promote the emergence of a democratic government to replace that regime."

However, the controversy about regime change paled in comparison to the firestorm of objection stirred up by Bush's doctrine of pre-emption, declared in a speech at West Point June 1.

In some cases, Bush said, the Cold War doctrines of deterrence and containment would still apply, but de-

terrence meant nothing to terror networks with no nation or citizens to defend, and containment was not possible when "unbalanced dictators with weapons of mass destruction can deliver those weapons on missiles or secretly provide them to terrorist allies."

"If we wait for threats to fully materialize, we will have waited too long," Bush said. "We must take the battle to the enemy, disrupt his plans, and confront the worst threats before they emerge."

Some saw pre-emption as the equivalent of what the Japanese did at Pearl Harbor. Others saw it as more akin to what the Israeli Air Force did in 1981, when it attacked and destroyed the Iraqi nuclear reactor at Osirak. In retrospect, the consensus is that destroying the Iraqi reactor was a good thing, although there was a great deal of moral hand-wringing about it at the time.

Pre-emption was not a policy intended solely for Iraq, although Iraq was clearly a candidate. Hawkish elements in the Administration and in the news media argued that the

President had all of the authority he needed to strike Iraq and that he should do so lest Saddam Hussein succeed in the near future in his determination to obtain nuclear weapons.

In July 2002, the President, on behalf of the Office of Homeland Security, announced a Homeland Security Strategy. It had much detail about border security, domestic counterterrorism, and protection of critical infrastructures, but there was essentially no military content.

"The United States is working with more than 90 countries to disrupt and defeat terror networks," Bush said in a radio address to the nation in November 2002. "So far we have frozen more than \$113 million in terrorist assets. ... We've cracked down on charities that were exploiting American compassion to fund terrorists. ... We've deployed troops to train forces in the Philippines and Yemen, the former Soviet Republic of Georgia, and other nations where terrorists have gathered. ... To win the war on terror, we're also opposing the growing threat of weapons of

mass destruction in the hands of outlaw regimes.”

### National Security Strategy

Bush finally sent his first National Security Strategy to Congress in September 2002. It was less comprehensive than previous strategy documents had been, focusing almost entirely on terrorism and rogue nations.

In a signed preface, Bush said, “The gravest danger our nation faces lies at the crossroads of radicalism and technology,” weapons of mass destruction in reckless and irresponsible hands.

The strategy repeated the doctrine of pre-emption: “Given the goals of rogue states and terrorists, the United States can no longer solely rely on a reactive posture as we have in the past. The inability to deter a potential attacker, the immediacy of today’s threats, and the magnitude of potential harm that could be caused by our adversaries’ choice of weapons do not permit that option. We cannot let our enemies strike first.”

Pre-emption is also necessary because of the way adversaries regard weapons of mass destruction: “In the Cold War, weapons of mass destruction were considered weapons of last resort. ... Today, our enemies see weapons of mass destruction as weapons of choice” and “their best means of overcoming the conventional superiority of the United States.”



Photo by Paul Kennedy

**Flash Point East.** A member of USAF security forces guards the flight line in South Korea. At the start of 2003, tension flared anew on the peninsula as North Korea threatened a nuclear breakout.

The strategy said that pre-emption would not be automatic. “The United States will not use force in all cases to pre-empt emerging threats,” but “cannot remain idle while dangers gather.”

The great emphasis on multilateralism that characterized the Clinton strategy was gone. “While the United States will constantly strive to enlist the support of the international community, we will not hesitate to act alone, if necessary, to exercise our right of self-defense by

acting pre-emptively against such terrorists,” the new strategy said.

It confirmed Rumsfeld’s “Assure, Dissuade, Deter, Defeat” defense strategy and called specifically for “developing assets such as advanced remote sensing, long-range precision strike capabilities, and transformed maneuver and expeditionary forces.” It cited the need “to defend the homeland, conduct information operations, ensure US access to distant theaters, and protect critical US infrastructure and assets in outer space.”

Bush’s strategy did not address peacekeeping or nation-building missions, which had been recurring themes in the election campaign. In July 2002, the United States had voted in favor of a UN resolution extending the Stabilization Force in Bosnia for another year. By the end of the year, the Pentagon was planning a “reconstruction” mission in Afghanistan.

In December, the White House announced a more detailed strategy for dealing with weapons of mass destruction. “The United States will continue to make clear that it reserves the right to respond with overwhelming force—including through resort to all of our options—to the use of WMD against the United States, our forces abroad, and friends and allies.”

According to the *Washington Post*, the classified version of this document authorizes pre-emptive strikes on states or terrorist groups that are close to obtaining weapons of mass

### The Decline (and Partial Recovery) of Defense Funding

Budget Authority in FY03 Constant \$ Billions

Fiscal Year	DOD	Air Force
1985	\$461.7	\$156.3
1990	\$405.4	\$127.0
1998	\$294.6	\$86.0
1999	\$309.9	\$90.4
2000	\$315.2	\$89.8
2001	\$326.4	\$93.7
2002	\$337.2	\$95.9
<b>2003 proposed</b>	<b>\$378.6</b>	<b>\$106.9</b>

Source: Rumsfeld Annual Report, 2002.

**For two reasons, the defense funding recovery does not go as far as these numbers might otherwise suggest: the huge, overdue bill for recapitalization and force modernization, carried forward from the 1990s, and the additional cost since 2001 of the war on terrorism.**

destruction or long-range missiles to deliver them. The *Post* quoted a "participant" in development of the strategy as saying it is premised on a view that "traditional nonproliferation has failed, and now we're going into active interdiction."

### Congress and UN Votes

Under pressure to build a broader consensus, Bush said he would seek Congressional authorization before taking any military action against Iraq.

He also issued a challenge to the United Nations. "All the world now faces a test, and the United Nations a difficult and defining moment," he said in a speech to the General Assembly. "Are Security Council resolutions to be honored and enforced or cast aside without consequence? Will the United Nations serve the purpose of its founding, or will it be irrelevant?"

Bush asked Congress for unlimited authority to take action against Iraq without further consultation or approval.

Bush's most stalwart ally at this difficult time was British Prime Minister Tony Blair, who said that Britain was committed to disarming Iraq, "one way or another."

Bush also drew support from the *Washington Post*, which chastised critics who acknowledged that nuclear weapons in Saddam Hussein's hands would be a deadly and intolerable threat, yet were opposed to action. In an editorial, the *Post* said that "one striking feature of the criticism of President Bush's Iraq policy is the absence of suggested alternatives."

Bush got the votes he wanted.

On Oct. 10, Congress authorized the use of military force against Iraq, declaring that "the President is authorized to use the armed forces of the United States as he determines to be necessary and appropriate in order to (1) defend the national security of the United States against the continuing threat posed by Iraq; and (2) enforce all relevant United Nations Security Council resolutions regarding Iraq."

The majority of the vote was bigger (296-133 in the House, 77-23 in the Senate) than the Gulf War resolution Bush's father had gotten in 1991, and the authority was broader. The



USAF photo by SSgt. Shannon Collins

**The Can Opener.** In early 1991, the US established a no-fly zone (the future Northern Watch) in the airspace north of 36 degrees N latitude. F-16CJs such as this one fly out of Turkey and frequently engage Iraqi SAM systems.

Iraq resolution required Bush to inform Congress within 48 hours if he used the authority; the Gulf War resolution had required his father to inform Congress before the war began.

On Nov. 8, the United Nations Security Council adopted, 15-0, a resolution ordering Iraq to disarm and warning that this is its "final opportunity" to do so. Obtaining the vote required the United States to make some concessions, including the possibility that Saddam's regime might survive if it cooperated, but Bush said he was satisfied.

Some of Bush's critics saw it as a triumph for international opinion, giving inspections a chance to succeed. They apparently forgot that Iraq was not open to inspections until Bush pushed the issue.

"We would not have inspectors going into Iraq today except for the single fact that there is a possibility of the use of force to require that that country disarm," Rumsfeld said.

### The Ultimate Question

During the early months of the war on terrorism, it was popular to say that wars of the future would be of the Afghanistan variety, against primitive adversaries who might have no borders or military forces in uniform.

Within the year, though, there loomed the prospect of a major the-

ater conflict in Iraq. Even the war on terrorism relies on global projection of military power, striking at the enemy's training camps and sanctuaries.

The war on terrorism is in addition to, not instead of, the missions and requirements that existed before.

The underfunding of the 1990s left the Pentagon in a deep hole, in which it was still struggling when the war on terror added \$30 million a day to expenses.

In constant dollars (adjusted for inflation), the proposed 2003 defense budget was \$41.4 billion above the previous year's. It was billed, rightly, as the largest increase since the 1980s. However, of the total increase, some \$24 billion—almost 60 percent of it—was allocated to the war on terrorism, homeland security, increased air patrols over the continental United States, and related matters. The amount left over for new ventures, including transformation, was not that much.

Bush's doctrine and strategy hold together conceptually. The ultimate test may be whether he can fund them. ■

Go to the Air Force Association Web site ([www.afa.org](http://www.afa.org)) to see the AFA Special Report "Strategy, Requirements, and Forces: The Rising Imperative of Air and Space Power," January 2003, by John T. Correll.

*John T. Correll was editor in chief of Air Force Magazine for 18 years and is now a contributing editor. His most recent article, "New Horizons for the Total Force," appeared in the August 2002 issue.*

**In determining “military necessity” and “proportionality,” the commander’s judgment is more critical than ever.**

# In Search of Lawful Targets

**W**HEN bombs fall, controversy about the law of war is seldom far behind. Airpower is a weapon of such reach and potential devastation that it has long provoked sharp debate about the legality of its operations. In recent campaigns, where combatant casualties have been extremely low, accidental civilian deaths from collateral damage have made headlines. However, senior air planners show great concern for upholding the law of war, in no small part out of a desire for domestic acceptance and to maintain the international unity of effort.

Even in this age of precision warfare, many still raise questions about what constitutes a “lawful target.”

When a command’s staff lawyers advise a combatant commander, they are drawing on centuries of tradition as well as international conventions and treaties. Deciding whether a convoy of vehicles in a Predator Unmanned Aerial Vehicle’s scope is a lawful target demands working knowledge of the principles of armed conflict and a hefty dose of the commander’s judgment.

## **The Origins of Just War**

There are no lawful targets without “lawful” wars. The first concepts of lawful conduct in war sought to make war an instrument of national policy

rather than just an exercise in barbarity. Limiting the right to make war was the first step. Among the Romans, Cicero wrote of just war. St. Augustine and St. Thomas Aquinas both regarded war as one of the divine rights of kings. These two Christian philosophers formed the first core of just war doctrine among European societies. Their concepts of just war covered two areas: waging a war for justifiable reasons and conducting war according to a set of rules that recognize mercy and proportionality.

To Augustine, it made “a great difference by which causes and under which authorities men undertake the wars that must be waged.” He defined war as part of the natural life of the state, as long as the war aimed at ultimately securing peace. A monarch had a right to wage war, said Augustine, but had to show mercy toward prisoners and vanquished populations.

Aquinas in the 13th century refined Augustine’s principles into three necessary conditions: War must be prosecuted by a lawful authority, which is empowered to wage war; the war must have a just cause; and it must intend “to achieve some good or to avoid some evil.”

As Europe’s wars of religion tapered off, the sovereign state became the primary agent of right and wrong in warfare. The state shouldered the moral responsibility for wars. Cicero

**By Rebecca Grant**

*Terrorists and other adversaries will not observe the laws of war, but highly refined concepts of what constitutes a lawful target are deeply ingrained in the American military. At right, a USAF pilot scours the horizon.*



To be called lawful, targets had to fall within these rules and other new concepts of just war laid down in the post-World War II updates of the Geneva Convention. One of the most important of these new concepts was proportionality. In 1977, Protocol I to the Geneva Convention stipulated that attackers had to “take all feasible precautions in the choice of means and methods of attack, with a view to avoiding, and in any event, to minimizing, incidental loss of civilian life, injury to civilians, and damage to civilian objects.”

Twentieth century warfare put airpower in the spotlight. Reactions to the RAF firebombing campaigns in Germany and to similar tactics in the Pacific war led to decades of post-war debate on what truly constituted lawful targets for air warfare. With nuclear weapons looming in the background, making the case for lawful bombing targets became part not only of just conduct of the war, but also of the whole underlying rationale for going to war in the first place.

### Applying the Law of War

It is not attorneys and judges who apply the law of war. That job falls to political and military leaders, and the law of war is a direct concern for both. Both *jus ad bellum* and *jus in bello* make commanders and political leaders sensitive to the concepts of military necessity and proportionality. Staying within the bounds of the law of war is a key ingredient in



**The Vietnam War featured some of the harshest aircrew restraints in history. Restrictions imposed by the nation's civilian leaders went well beyond the law of war and exposed service members unnecessarily to risks.**

keeping up support for waging war in the first place. Sometimes, political concerns prove to be even stronger as a force for restraint than the law of war itself.

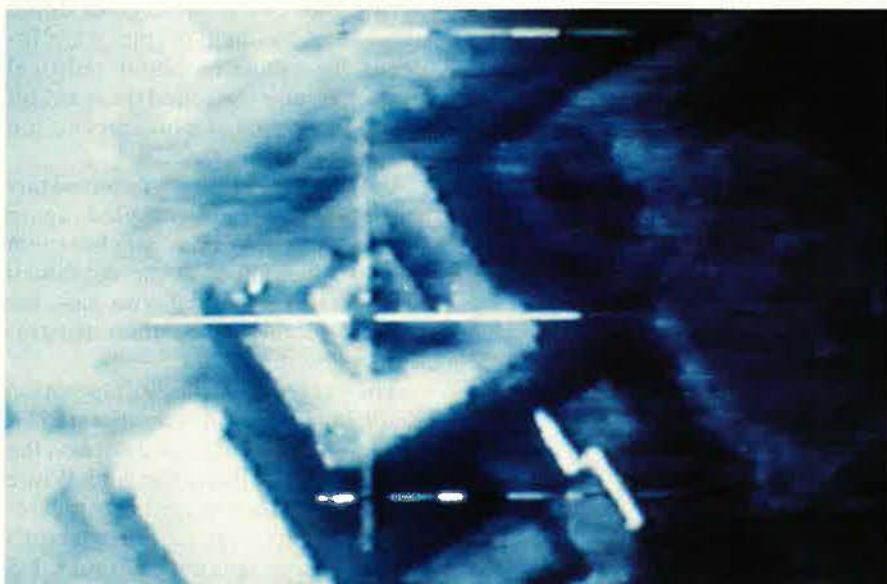
In the spring of 1944, the Allies planned attacks on the French and Belgian railway systems to constrain German troop movements before the Normandy invasion. Statisticians estimated that such attacks could cost 80,000 civilian lives. Gen. Dwight D. Eisenhower, the Supreme Allied Commander, and his air commanders challenged those numbers and took the precaution of selecting tar-

gets away from population centers wherever possible and warning civilians to stay away. The Allies were well within the limits of military necessity. As British Prime Minister Winston Churchill said at the time, humanitarian concerns were part of the picture, but it was also an issue of “high state policy” not to embitter the French.

Generals and admirals in command of operations have a direct stake in such matters. “You’d have to be crazy not to consult the lawyers since, if you violate the Geneva Conventions, you can be indicted as a war criminal,” said one senior officer in Operation Desert Storm.

Ironically, the early Hague conventions wanted to set up comprehensive rules so that unforeseen cases arising in battle would not “be left to the arbitrary judgment of military commanders” as it was phrased in 1907. However, because criteria such as military necessity and proportionality are central to keeping the conduct of war within lawful bounds, the commander’s judgment is a vital factor.

Take, for example, the Rolling Thunder bombing campaign in Vietnam. “Rolling Thunder was one of the most constrained military campaigns in history,” noted Army lawyer W. Hays Parks in a classic study of that operation. “The restrictions imposed by this nation’s civilian leaders were not based on the law of war but on an obvious ignorance of



**Images such as this one—the view as an F-117 fighter’s precision munition homes in on a target during Operation Desert Storm—drew attention to the possibilities inherent in high-tech targeting systems.**

the law—to the detriment of those sent forth to battle.” One example of this concerned an off-limits hospital complex at Viet Tri. “If it was in fact a hospital,” said one pilot, “it must have been a hospital for sick flak gunners, because every time we looked at it from a run on the railhead, it was one mass of sputtering, flashing gun barrels.” Parks noted that the 1949 Geneva Convention discontinued protection for hospitals being used for “acts harmful to the enemy,” presumably including anti-aircraft fire. “Given the insistence on widespread photographic coverage of air strikes over North Vietnam, US demands could have been made for cessation of the use of hospitals as AA sites, accompanied by the publication of photographs of the sites,” contended Parks.

In 1991, Operation Desert Storm was designed to be everything that Vietnam was not: decisive, rapid, and waged with a broad coalition of allies and at the least possible cost. The law of war—at least within a broad understanding—was carefully observed from the start. President George H.W. Bush instructed planners to make sure religious and cultural sites in Iraq were not on the target list. Strategic targets were chosen for military reasons but with an eye toward minimizing overall destruction to Iraq. The special planning group in the “Black Hole,” the main coalition air planning center in Riyadh, Saudi Arabia, had a military

lawyer on staff to render an opinion on the legality of strategic targets.

### Limiting Collateral Damage

“Every target was examined on how to approach it with minimum loss of life,” recalled retired Gen. Charles A. Horner, the commander of coalition air forces for the operation.

Key allies such as Britain were consulted about sensitive topics such as potential fallout from targeting chemical and biological weapons storage bunkers.

Control over lawful targets for air strikes became more intense as the war continued. The bombing of the Al Firdos command post bunker on Feb. 13, 1991, was one of the war’s major targeting controversies. Unknown to the coalition, hundreds of civilians were inside the bunker on the night it was attacked. Although the Al Firdos incident was an accident, not a violation of the laws of war, bombing Baghdad was almost put off-limits. “Targeting in the Baghdad area all but stopped, and General Schwarzkopf began to anguish over every target we nominated,” Horner later said. Gen. Colin Powell, Chairman of the Joint Chiefs of Staff, put targets in downtown Baghdad off-limits. Air planners worked around it by defining Baghdad as anything within only a three-mile radius of the city center.

In this case, senior military leaders went well beyond what was ex-

pected by the law of war and kept targets off the list. Those very commanders that the 1907 Hague Convention did not trust turned out to be the most powerful agents of restraint.

The perceived force of public opinion and interallied politics drove strategy again during Operation Allied Force, NATO’s 1999 air war over Serbia. Estimates of collateral damage and casualties were made for nearly every fixed target. In the air-only campaign, each fixed target in Serbian territory had to be approved via a complex, two-week process. Politics, not the dictates of international law, weeded them out.

For example, on April 6, 1999, 222 targets were submitted to Gen. Wesley K. Clark, Supreme Allied Commander Europe, but only 173 made it through the full approval process at the North Atlantic Council.

The White House was not an impediment. Secretary of Defense William S. Cohen testified to Congress that President Clinton approved all targets presented to him by the Chairman of the Joint Chiefs of Staff, Gen. Henry H. Shelton. However, the allies disapproved quite a few targets.

The mistakes of the NATO air war—from the accidental bombing of refugee vehicles in a convoy to the accidental bombing of the Chinese embassy in Belgrade—kept the air war under the microscope of international public opinion. Despite the use of precision weapons, every stray bomb caused a surge of doubt about the conduct of the war. Indeed, the concerns about political impact greatly exceeded the restraint imposed by reasonable precaution in the laws of war.

Laws of war and self-imposed targeting restrictions mingled again during Operation Enduring Freedom in 2001–02. Those at the combined air operations center who saw the tactical picture made their frustrations known.

The target calculus in Operation Enduring Freedom was dictated, it appeared, by an intense desire on the part of senior Pentagon and White House officials to wage the war carefully. Targets were carefully scrutinized by Gen. Tommy R. Franks, US Central Command’s commander, the Pentagon, and the White House. “I

*Continued on p. 44*

DOD photo



**In 1995 NATO responded to Serb attacks on civilians in Bosnia with Operation Deliberate Force air strikes against military targets. Here, an American soldier checks out a Serb tank stopped in its tracks.**

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Continued from p. 42

think it's important to say that the targeting by the United States and by coalition forces has been very careful," Defense Secretary Donald H. Rumsfeld told CNN in October 2001. "It's been very measured."

Cultural and civilian sites were kept off-limits. The policy goal of minimum destruction seemed to be just as important as the broad laws of war in the target selection process. Commanders struggled to ensure that targets hit to support Northern Alliance ground forces stuck to military necessity.

The law was no bar to use of the most modern weapons. Said legal scholar Danielle L. Gilmore, who performed a study of lawful targeting in Desert Storm: "Nothing in the law of war regulates the type of weapon that must be used when specifically attacking particular targets. The applicable law only mandates a balancing of military necessity and unnecessary suffering so that the concept of proportionality is followed. The rule becomes one of reasonable precaution."

By this criterion, the precautions taken more than upheld the laws of war. "To the extent that there have been significant military targets in areas that do have population nearby," said Rumsfeld, "they have almost always been targeted with a weapon that has a high degree of precision so that there will not be a high amount of collateral damage."

Accidental strikes did happen. Yet one incident—the mistaken October 2001 strike on a compound with a Red Cross warehouse—pointed up the obligations of the defenders to do their part. A Pentagon spokesman explained that the International Committee of the Red Cross warehouses were targeted by US forces because the Taliban used them for storage of military equipment. Commingling food aid and military vehicles—even if one building displays the red crescent—goes against the grain of the laws of war. In this case, the strike was inadvertent, but it pointed out



USAF photo by SRA Jeffrey Allen

**An F-16 of the 510th Fighter Squadron, Aviano AB, Italy, flies an Allied Force mission. In the 1999 NATO air war over Serbia, each target had to be approved through a two-week process governed mostly by politics.**

that the defenders were not upholding their end of the laws of war. Military vehicles had been seen in the vicinity of these warehouses, according to the Pentagon.

US forces intentionally struck only military and terrorist targets, said the spokesman.

The US code of conduct also led to the intense scrutiny of targets such as civilian vehicles or buildings thought to harbor terrorist leaders. Military necessity depended on the commanders' judgment, and in Operation Enduring Freedom, commanders chose to take time and exercise caution in identifying lawful targets.

### The Future of Lawful Targets

Twenty-first century warfare will hold new challenges when it comes to space operations and information operations.

Space law started with Sputnik and is already nearly 50 years old. "There is probably no other field of human endeavor that produced so much international law in such a short period," noted a 1999 Defense Department general counsel study. Unique to space law is the principle

of noninterference, which holds that nations in peacetime must not interfere with the operation of each other's satellites in space. However, in wartime, laws on the use of force again apply. As the general counsel report noted, "The existing treaty restrictions on military operations in space are in fact very limited."

Information operations broaden the scope by raising new questions about what exactly constitutes use of force. In 1998, Russia attempted to get the UN to outlaw information warfare, but the UN passed only a weak resolution the following year and other member states declined to follow up. For now, information operations remain subject to a commander's judgment on the same principles of necessity, proportionality, and discrimination that guide traditional use of force.

Terrorists and other unconventional adversaries will not observe any of these laws. But highly refined concepts of what constitutes a lawful target are deeply ingrained in the American military. High-visibility campaigns and instant media reporting simply underline the need to exercise great care, on political as well as legal grounds. The laws of war leave plenty of room for commanders to judge when a target must be struck due to military necessity. Yet recent experience emphasizes that American commanders, at least, err on the side of caution and respect. ■

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*Rebecca Grant is a contributing editor of Air Force Magazine. She is president of IRIS Independent Research in Washington, D.C., and has worked for RAND, the Secretary of the Air Force, and the Chief of Staff of the Air Force. Grant is a fellow of the Eaker Institute for Aerospace Concepts, the public policy and research arm of the Air Force Association's Aerospace Education Foundation. Her most recent article, "The Clash About CAS," appeared in the January issue.*

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**Northern Watch and Southern Watch over Iraq were defining events in the birth of a new expeditionary Air Force.**

# Legacy of the Air Blockades

**T**HE United States and its coalition allies began enforcing no-fly zones over both northern and southern Iraq more than 10 years ago. This military endeavor became a key feature in the foreign policy of three presidential administrations, consumed tremendous resources, returned benefits in coalition-building and intelligence, and led to a dramatic restructuring of the Air Force.

The two operations—known as Northern and Southern Watch—also created a template for similar “aerial blockades” used with great effectiveness in the Balkans. This formerly unprecedented use of airpower now is another tool in the military-diplomatic toolbox.

Northern and Southern Watch have helped contain the military adventurism of Iraqi President Saddam Hussein, protected Kuwait, enforced economic sanctions against Iraq, and fulfilled, to a degree, their stated original purpose: stopping the repression of the Kurdish people of northern Iraq and the Shiite Muslims of southern Iraq.

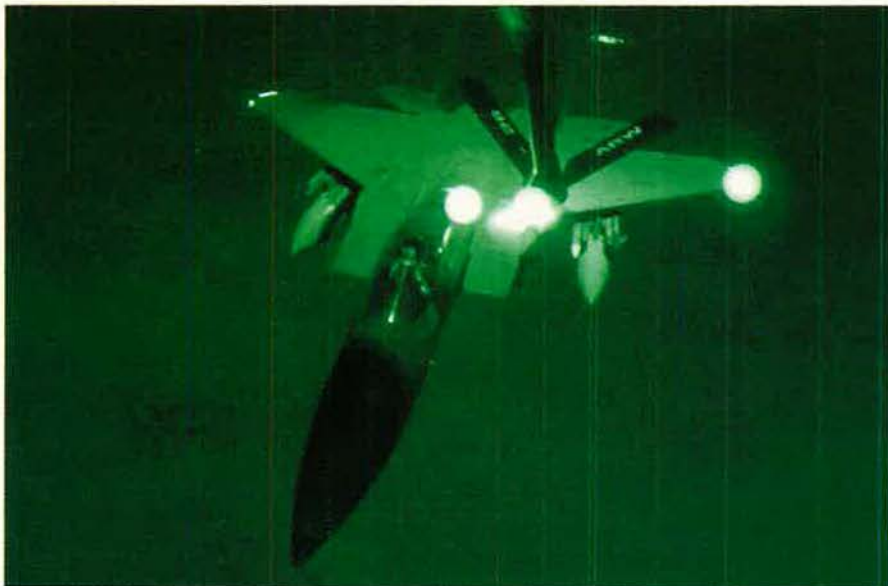
The two operations were a continuation of the 1991 Gulf War, punctuated by occasional periods of intense combat. Coalition aircraft have been shot at or threatened more than a thousand times by Iraqi air defenses and have retaliated with hundreds of missiles and bombs. Nearly 10 times more sorties have been flown in these “peacekeeping” operations than in the all-out war that preceded it.

For the Air Force, which has carried

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

*An F-15 from the 1st Fighter Wing, Langley AFB, Va., during an Operation Southern Watch sortie. The two no-fly zones have cost the US about \$12 billion so far—not counting wear and tear on aircraft and service members.*





**An F-15 takes on fuel during a nighttime no-fly zone patrol. Northern and Southern Watch are useful "labs" in which to test new concepts and equipment, but the operations take a toll on training.**

most of the burden of the no-fly zone patrols, the operations have been a particularly defining event and directly shaped its post-Cold War structure.

### Coming and Going

"We reconfigured in order to deal with this commitment," Air Force Chief of Staff Gen. John P. Jumper told *Air Force Magazine* recently. "There's no doubt about that."

Jumper, a former air component chief in US Central Command—advocated a new, "expeditionary" mindset in the mid-1990s, when the service's Cold War-style garrison structure was overtaxed by the pressures of deploying to multiple crises and contingencies.

"We couldn't go on the way we were going," Jumper said. Air Force units were "meeting themselves coming and going" in perpetual pickup deployments to the Middle East.

Jumper's predecessor, Gen. Michael E. Ryan, restructured the Air Force into 10 Air Expeditionary Forces in 1999, mainly to deal with the burden of running the Iraqi no-fly zones. The Iraq operations required constant and nonstop deployments of fighters to patrol the zones, AWACS radar airplanes to control the fighters, intelligence and surveillance aircraft of all types to monitor Iraq, and tankers to keep them all fueled and flying.

The collection of 10 AEFs provided a mechanism by which Air Force people could know in advance

when they and their machines might be deployed, so they could prepare both professionally and personally. The AEF system also allowed them to know when they would come home to reconstitute their units through training and maintenance and have family time.

Ryan noted at the time that, for the first couple of years, the senior Air Force leadership expected the operations to be temporary, and so the Air Force did not immediately "institutionalize" around them.

### The New Steady State

Now, Jumper said, Northern and Southern Watch are part of the "steady state" of Air Force operations. They are expected, planned for, and counted as part of the routine operating requirements of the service, as has long been true of deployments in South Korea and Europe.

One senior USAF officer noted that "for people retiring now with 20 years [in the service], they've spent half their careers at this."

Besides helping contain Iraq, the no-fly zones have helped the US build a better military relationship with other countries in the Gulf region. This has produced standardized procedures, air traffic control, air tasking orders, and joint exercises and training. Another result has been an alliance in practice if not name between the US and the nations of the Gulf Cooperation Council. These relationships have given the US ac-

cess and alternative basing options if its relations sour with any particular member. As relations with Saudi Arabia cool over US intentions toward Iraq and the ongoing war on terrorism, a welcome for a US air operations center in the region was found in Qatar.

"Our relationships with the other GCC [countries] have really blossomed since we became less Saudi-centric," one Pentagon official observed.

Enforcement of the zones has produced a windfall of intelligence, much to the benefit of the United States.

USAF has "developed a very solid understanding of how the Iraqi air defense system is working," a senior USAF official observed. "They have evolved—not quite as fast as we thought they would—over 10 years of watching us, but they have evolved."

Coalition pilots have developed a solid understanding of Iraqi geography, particularly how the Iraqis deployed their air defenses. However, one senior USAF official warned against the view that US pilots have been "getting combat experience."

While it is true that the venues of Northern and Southern Watch are considered combat zones and patrols take off with live ammunition and have made an average of 70 strikes per year over the last five years, most pilots are "just boring holes in the sky," the official reported, actually getting less valuable training than when they are at home. The no-fly zone patrols have been "accumulating hours without training events."

Another side benefit of the no-fly zones has been the ability to try out new concepts and equipment, officials reported.

### Generating New Concepts

"It's a wonderful 'battle lab,'" one said, noting that new systems like Predator have been the subject of no-fly zone experiments, as were new techniques and tactics. He added that the current high-order functioning of the modern Combined Air Operations Center owes much to the running of the no-fly zones.

"These operations have forced us to reconcile our size with a multiplicity of taskings," he said. Concepts like the AEF and reachback—

*Continued on p. 50*



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Continued from p. 48

wherein forces deployed abroad can rely on home-based specialists to provide information and expertise without actually deploying forward—were spurred by the need to manage the watches more efficiently, he said.

“These things all came about as a child of necessity,” he added. “When we hit the wall on optempo and perstempo, we knew we had to do some radical things. And that in turn has made us more flexible and more expeditionary, so, on the whole, it’s been a good thing.”

### Uncalculated Costs

Still, the no-fly zones have created a drag on the Air Force that could only be partially measured in dollars. While running the two zones has cost the Defense Department about \$12 billion—as defined in annual supplemental funding bills approved by Congress over the last decade—there have been other costs in terms of the rapid aging of aircraft and overwork of USAF people.

Jumper said that, while it’s true the zones are causing the Air Force to fly some aircraft more than expected, “it remains to be seen” whether this will actually wear out the fleet. He noted that the majority of missions do not involve violent maneuvering and the aircraft would be flying at home anyway. “So, we’re sort of looking at that to see what’s really going on, and we



**An F-16 from the 27th Fighter Wing, Cannon AFB, N.M., patrols southern Iraq carrying a load of AGM-88 HARM. USAF aircraft supporting the no-fly zone operations carry a mix of air-to-air and air-to-ground munitions.**

haven’t found the answer to that question yet,” said Jumper.

Northern Watch was the first no-fly zone. It began as part of Operation Provide Comfort, the effort to provide humanitarian relief and some protection for the Kurdish people of northern Iraq who attempted an uprising in the aftermath of the 1991 Gulf War. Iraqi attack helicopters went after the Kurds to repress their revolt, and coalition allies established a no-fly zone north of the 36th parallel on April 10, 1991, to provide a “safe haven” for the Kurds.

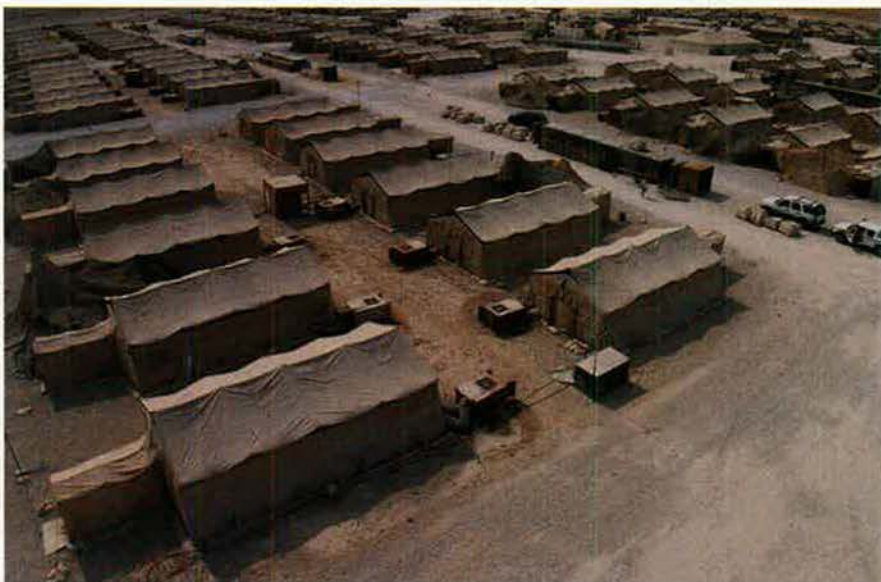
Coalition aircraft were sent to pa-

trol the zone and were cleared to shoot down any Iraqi military fixed-wing aircraft in the exclusion area. Coalition aircraft were authorized to defend themselves if fired upon by aircraft or ground unit. Patrol aircraft carried a mix of air-to-air weaponry and air-to-ground munitions, such as the High-speed Anti-Radiation Missile, or HARM, and laser-guided bombs with which to attack Iraqi radar, missile, or artillery sites that fired on them.

As part of the cease-fire talks at Safwan, Iraq was prohibited from flying fixed-wing aircraft in its northern and southern regions. US Central Command chief Army Gen. H. Norman Schwarzkopf had, however, acceded to an Iraqi request to fly helicopters, thinking the aircraft might be the sole means of long-distance communication in a country where the telephone lines and other communications infrastructure had been cut or destroyed. Schwarzkopf later admitted he hadn’t considered the possibility of helicopter gunships being used to subdue an insurrection. The no-fly zones subsequently closed this loophole.

Provide Comfort was renamed Northern Watch on Jan. 1, 1997, with headquarters at Incirlik AB, Turkey, and orchestrated by US Air Forces in Europe. British aircraft patrolled intermittently in the northern operation. France had flown patrols during Provide Comfort but stopped in December 1996.

USAF photos by TSgt. Jack Braden



**Gen. Michael Ryan restructured USAF into the Expeditionary Aerospace Force in 1999, largely to deal with the burden of running the no-fly zones. Tent cities, such as this one in Qatar, are common sights in Southwest Asia.**



Operation Southern Watch was similarly born of Iraqi repression, this time against the so-called “marsh Arabs” of southern Iraq. In response to air attacks against this group, the US announced that Iraq, after Aug. 27, 1992, could not fly military aircraft below the 32nd parallel. Patrols for Southern Watch initially were flown by French and British forces, as well as US.

The first casualty of the southern operation was the pilot of an Iraqi MiG-25, who locked his radar onto an Air Force F-16 on Dec. 27, 1992. The MiG was promptly shot down. Soon thereafter, Iraq began moving more anti-aircraft batteries into the no-fly zone.

The no-fly zones were not specifically created at the behest of the United Nations, but they flowed from UN resolutions concerning Iraq’s 1990 invasion of Kuwait. Resolution 688 specifically demanded that Iraq cease repression of its civilian population. Security Council Resolution 678 authorized the use of “all necessary means” to implement Security Council resolutions and restore peace and security in the region. Later, Security Council Resolution 949 called for Iraq not to build up its forces in the southern region near Kuwait, and the southern no-fly zone is there in part to prevent that from happening.

### Enforcing UN Resolutions

The US and UK created the exclusionary zones to fulfill the UN resolutions, but Iraq never acknowledged the authority of the coalition to im-



*Photographs show an Iraqi truck-mounted surface-to-air missile battery tracking and firing on coalition aircraft in July 2001. Over the three-year period ending in 2001, Southern Watch logged some 1,200 provocations.*

pose such controls. Nor did it ever accept them. Iraq views coalition aircraft flying over its territory as “aggressors.” It has fired more than a thousand missiles at patrol airplanes or intelligence, surveillance, and reconnaissance aircraft monitoring Iraqi compliance with weapons controls in the ensuing decade.

Through 11 years of enforcement of the no-fly zones, the coalition lost not a single manned aircraft to enemy fire, despite the fact that Iraqi air defense operators became more cunning and went to school on American air operations in Bosnia and Kosovo in the intervening years. At least three pilotless drones have been lost to accidents or enemy fire, however.

Senior Air Force leaders tout the professionalism of their people—and that of aviators from the Navy, Marine Corps, and UK, who also fly such missions—as playing a big part in avoidance of losses during the hundreds of thousands of sorties supporting the two operations. However, they conceded that another factor was sheer luck.

One Air Force general observed that USAF “sweated every day, flying single-engine aircraft way into Iraqi territory. Mechanical failures happen, and you always have the chance of the ‘golden BB,’” the pilot’s term for a lucky shot.

The darkest hour of Northern Watch, however, occurred on April 14, 1994, when USAF F-15 pilots

patrolling the northern no-fly zone spotted two helicopters below. They were not aware that US Army Black Hawk helicopters, carrying military and humanitarian relief officials, were in their area. The F-15s shot down the Black Hawks, killing all 26 people aboard.

In August 1996, Iraq unleashed a brutal ground action against the Kurds north of the 36th parallel. While ground forces were not prohibited under the no-fly zones, the US warned Iraq that its repressive acts would not go unchallenged. Less than a week later, the US launched Operation Desert Strike, a punitive sea- and air-launched cruise missile attack against surface-to-air missile

sites and command and control sites in southern Iraq.

When it was over, the US proposed creating a third no-fly zone, this time in western Iraq.

A senior USAF official familiar with the proposal said such an exclusionary zone offered the benefits of being able to watch the western Iraqi desert more closely; Iraq had tended to deploy its Scud missile launchers in the area. It also would have given the coalition an opportunity to “get between” Israel and Iraq and better monitor the border with Jordan, which was considered “porous” and a key smuggling route in defiance of the economic sanctions against Iraq.

However, France, the UK, and Saudi Arabia vetoed the idea of a western no-fly zone. Instead, the limit of the southern zone was moved northward, to the 33rd parallel, just south of the Iraqi capital of Baghdad. This move effectively included the areas of interest in the west that the US most wanted to observe.

France objected to the expansion of the no-fly zone and limited its patrols to the 32nd parallel.

The other coalition allies also introduced new terms for the zones, pledging a disproportionate response if allied aircraft were attacked or threatened while performing patrols or if Iraq attempted to repair anti-aircraft sites the coalition had destroyed within the southern zone. This response was limited to the sites that had made a direct attack on coalition aircraft, however, and created the chance for Iraq to exploit this rule.

“You never want to be predictable,” said Maj. Gen. Leroy Barnidge Jr., who was deputy commander of Central Air Forces in 2000–01. Predictability of operations could have allowed the Iraqis to set up hidden anti-aircraft sites at times or places where coalition aircraft were known to transit, allowing them to launch a surprise attack that could have knocked down coalition aircraft. Alternately, Iraqi aircraft would sometimes flirt with the no-fly zones, hoping to lure coalition aircraft into what former CENTAF commander (now US European Command deputy commander) Gen. Charles F. Wald termed “SAM-bushes.”

The rules were changed, permitting coalition aircraft to attack any site in Iraq deemed an enabling part of its integrated air defense system

or command and control network. Retaliations no longer had to take place within a set period, either. The new rules of engagement permitted the coalition more flexibility in its responses, as well as greater unpredictability.

### Rules Change

Maj. Gen. David A. Deptula was commander of Northern Watch from April 1998 to October 1999. The new rules, he explained to *Air Force Magazine* in 2001, could be summed up as follows: “When they act in an aggressive fashion, with the intent to kill or harm our people, the response needs to be one which reduces their capacity to do that in the future.”

Thus, an Iraqi air defense site “painting” coalition aircraft with search-and-track radar near Baghdad one day might be answered with the destruction of a communications node a hundred miles to the south a week later.

A US Central Command spokesman said coalition aircraft have been threatened or fired on “thousands of times” in the last decade but have only retaliated about 500 times. During the five-year period ending in December 2002, coalition forces responded an average of about three to five times per month.

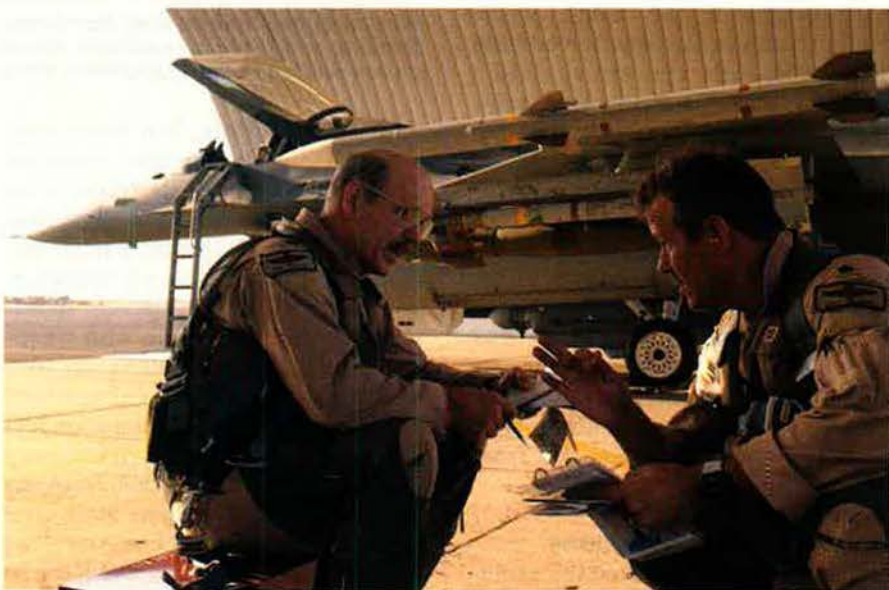
Not counted in those statistics is Operation Desert Fox, a four-day operation in December 1998 intended to punish Iraq for its expulsion of UN arms inspectors. The raid fo-

cused on places where Iraq was suspected of developing, making, or hiding weapons of mass destruction, as well as air defenses, communications nodes, Republican Guard facilities, airfields, and an oil field at Basra, believed to be illegally exporting oil. It was after Desert Fox that the rules of engagement for the no-fly zones expanded to include any threatening capability of Iraq’s, not just those that had directly threatened patrol aircraft.

Due partly to its larger area, and partly because of the location of sensitive Iraqi sites, Southern Watch has typically seen much more activity than its Northern counterpart. Over the three-year period ending in 2001, Southern Watch logged more than 1,200 provocations and responded about 125 times. By contrast, Northern Watch logged only about 400 violations but mounted 161 responses.

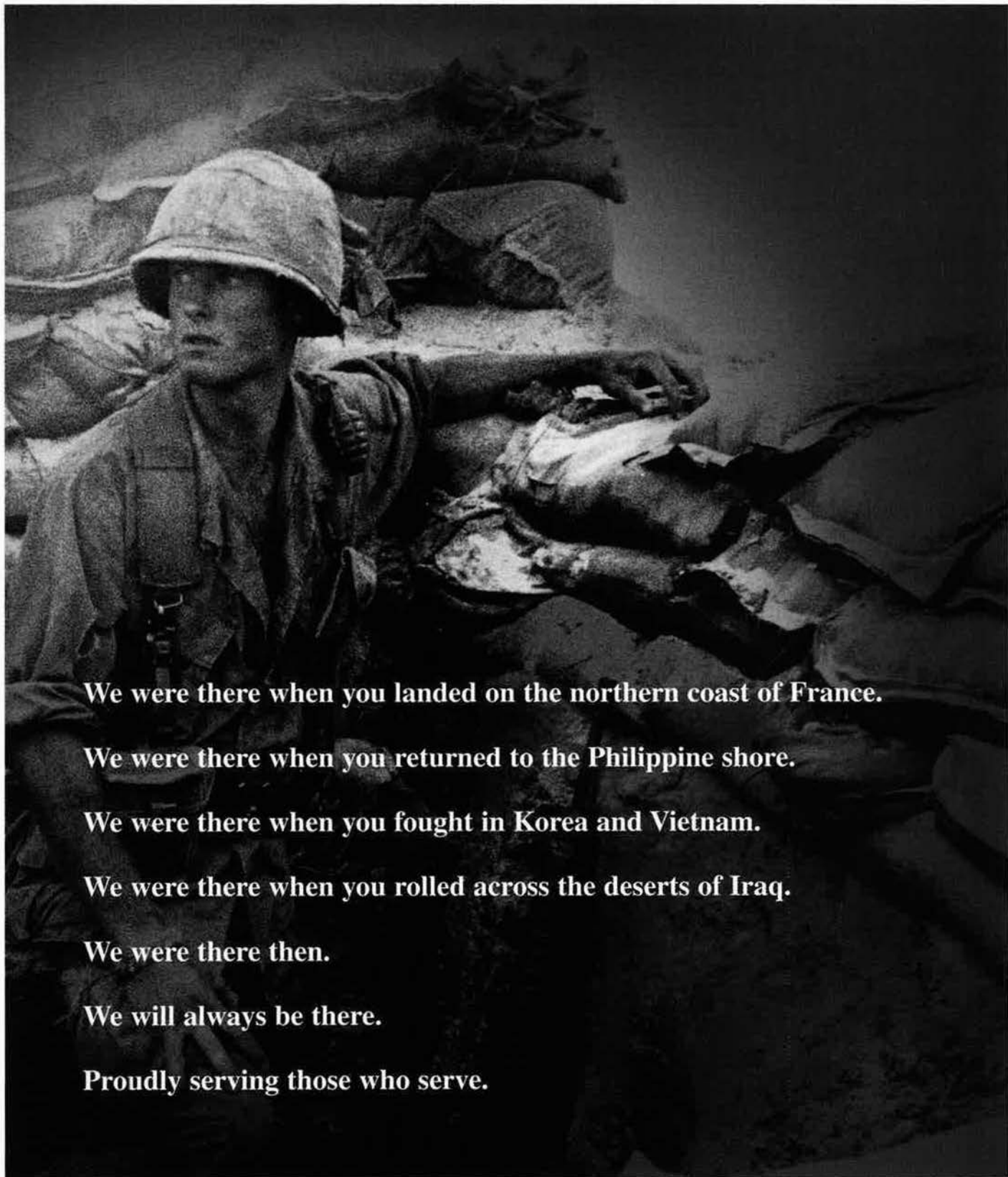
As the rhetoric between the Bush Administration and Iraq heated up in 2002, so did the number of provocations and responses. In 2002, “Iraq fired at coalition aircraft nearly 500 times,” a CENTCOM spokesman reported. About 90 retaliation missions were flown in response.

This official added that since the approval, on Nov. 8, 2002, of UN Resolution 114, which governs Iraq’s disclosure of weapons of mass destruction, Iraq fired on coalition aircraft on 32 of the first 47 flying days. ■



**AFRC pilots Col. Chip Taylor, Fort Worth, Tex., and Maj. Mike Vaught, Phoenix, plan the morning's alert mission. Various international efforts have done nothing to slow Iraqi attacks on coalition aircraft.**

USAF photo by MSgt. Dave Nolan



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**The struggle isn't over by a long shot, but new pride in the mission has kept pilots in—and brought some back.**

# **New Gains** on the **Pilot Retention Front**

**T**HE Air Force has dramatically reduced its pilot shortage since the Sept. 11 terrorist attacks as the war on terror has inspired higher retention rates and the voluntary return of hundreds of pilots who had left the service.

Short 1,200 pilots in September 2001, the Air Force managed to cut the deficit nearly in half by December 2002. The service, needing 13,280 pilots, finished the year with 12,648. That was 632 pilots, or five percent, short of requirements. As recently as last April, the service forecast the shortage would be 915 pilots at year's end.

The pilot shortage, which developed into a serious problem in 1997, has been felt most acutely in unfilled staff positions reserved for fliers.

Officials say the improvement stems from many factors, not the least of which is a renewed patriotism that has come with the missions of defending US airspace and defeating terrorists overseas.

Maj. Gen. Richard A. Mentemeyer, USAF's director of operations and training, said the increase in retention is largely attributable to the global war on terror. "Even though people are gone from home a lot more ... they feel very good about what they are doing, and so do their families," he noted.

It's happened before, Mentemeyer continued. After the Gulf War, pride in the Air Force mission led to "some pretty high retention rates."

Retention began to suffer when the Air Force mission became less clear. Pilots were being deployed around the world repeatedly and unpredictably, and they were faced with an enticing alternative: lucrative and stable airline jobs.

"Over the years, people were on their third and fourth rotation and not seeing a lot of change" through the 1990s, Mentemeyer said. That led to dissatisfaction and lower retention.

At the same time, the Air Force had cut back new pilot production and was competing with the airline industry's voracious appetite for new pilots. By 1999, the Air Force was short 1,355 pilots.

A series of initiatives has stabilized the situation, but officials note that the logistics of the problem mean the deficit will continue to be large through at least 2011. The classes produced when pilot production was cut in the 1990s will always be small. The Air Force cannot solve the problem simply by cranking out new pilots, because there are not enough experienced pilots to train larger numbers of inexperienced fliers.

Still, the pilot shortage clearly has

**By Adam J. Hebert, Senior Editor**

*USAF's T-38s are busy again. New pilot production has increased dramatically from lows in the mid-1990s, and better retention has made it easier for units to absorb new pilots. Continuation training has also largely recovered from the initial demands of the war on terror.*



Staff photo by Guy Aceto

ceased even in the face of high optempo. "It is really what you are doing during that optempo that has an impact on retention," Mentemeyer said. "When you come in the military and you get to do what you came in the military to do, you tend to hang around," the general said.

### Recent Successes

The factor that has most improved pilot staffing levels is the recent return to the Air Force of more than 250 pilots who had left active duty, according to Lt. Col. David Moore, USAF's chief of rated force policy. After 9/11, the Air Force undertook rated-recall programs to bring back pilots who had retired or separated recently.

The removal of Stop-Loss, instituted after the 2001 terrorist attacks, also went better than expected. There was concern that when Stop-Loss ended there could be an exodus of pilots. This exodus never occurred and the service retained more pilots than expected, Mentemeyer said, even in low-density, high-demand areas.

For example, retention of unmanned aerial vehicle operators was a major concern heading into the end of Stop-Loss, but "all the numbers we've got show they've hung in there," he said.

Pride in the mission has also translated into a major improvement in the number of pilots agreeing to stay after their initial service commit-



Photo by Paul Kennedy

**Better retention since 9/11 means more pilots are available to train new fliers while still keeping all cockpits filled. The shortage is felt most acutely in staff positions reserved for pilots.**

ments are completed. Before Sept. 11, the Aviation Continuation Pay "take rate" was about 30 percent, Mentemeyer said.

"This year, it is up to 47 percent—and that is the long-term bonus," he added.

Normally, the Air Force would be happy with a take rate of 50 percent, he said, because if things are in equilibrium the service "could never handle 100 percent retention." The Air Force does not need as many colonels as captains, so, over the long haul, a certain amount of pilot

attrition is expected and at times encouraged.

### Years To Go

Pilot staffing is not in equilibrium, however. Improved retention has reduced but not eliminated the pilot shortage, which will not dissipate completely until the small production classes of the mid-1990s have completely worked their way through the system. Pilot production fell to fewer than 500 a year, compared to three times that many before and twice as many since.

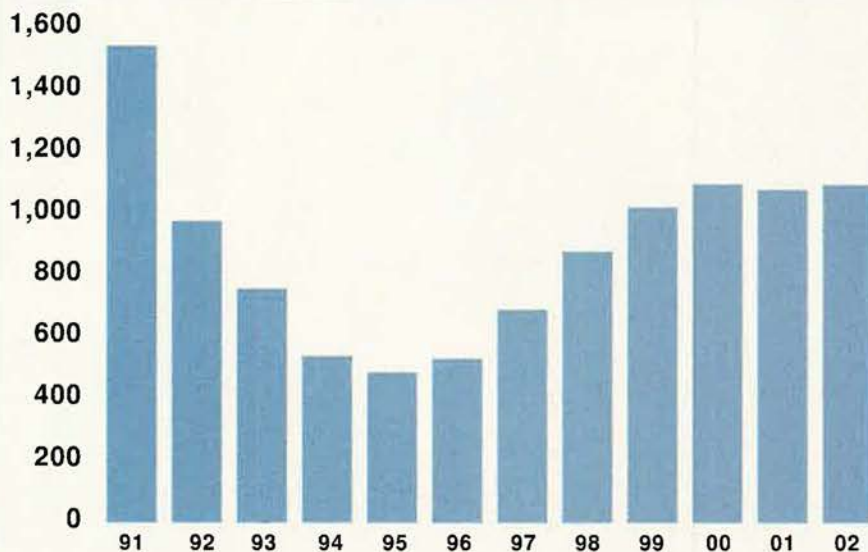
Though the long-term goal is for about 50 percent of its pilots to sign on for additional years, the service is trying to hang onto every experienced pilot it can.

"With these small year groups, ... in theory, if we could retain 100 percent, that would be great," Moore said. Mentemeyer noted that the three-year shortage of pilots "just flows through the system until it squirts out the other end, which is what we are really looking forward to some day."

The Air Force changed the service commitment for new pilots from eight years to 10 beginning in 2000, but Air Force Academy upperclassmen at the time were "grandfathered" under the old rules. Therefore, the service will not "see any effective increase in population until at least '09," Mentemeyer said.

Just before the longer service commitment kicks in, the shortage is

## The Production Trough



**USAF sharply cut pilot production after the Cold War. Since then, production has returned to a steady state of about 1,100 per year, but the shortages caused by the small-class years will affect the force for a long time.**



expected to return to its worst levels. The last available estimate was that the shortfall will peak again in 2008 and 2009, at nearly 1,000 fewer than required, according to Col. Jim Brooks, chief of operational training under Mentemeyer.

The lingering shortage has most affected pilots assigned to staff assignments. Air Force policy is to ensure all cockpits are filled, meaning officials in headquarters and staff positions feel the brunt of the shortage.

"We are literally sharing some of the pilots on the staff now," Mentemeyer said. "We used to have the

luxury of having an F-16 pilot in almost every office on the Air Staff," but today a single pilot may be available to three different offices needing Falcon expertise, the general said.

However, staff positions are considered critical for career development. There is concern that, if pilots spend too many assignments flying, it could hurt them professionally. Although less than a fifth of USAF's officers fly, pilots absolutely dominate the Air Force's top leadership positions. The shortage means many of today's pilots are being kept away from those staff jobs that will pre-

pare them for later roles as senior leaders.

Mentemeyer said most pilots are not complaining about cockpit time, though, since flying is what pilots joined the Air Force to do.

### Juggling Experience

One of the most vexing problems for the Air Force in solving the pilot shortage is balancing the need for new pilots with the need for experienced pilots.

Although USAF may have turned the corner on pilot retention, years of attrition have left the service in a tough position, according to a 2002

## Straining the Training

In the days after 9/11, when nonstop Combat Air Patrols were being flown to guarantee air sovereignty over US cities, fighter pilots began to accumulate severe training backlogs. The units flying Operation Noble Eagle CAPs overflew their regular flying hours significantly, leaving precious little time for other flights. And the demands of Operation Enduring Freedom in Afghanistan meant that other aircraft and crews normally available for continuation training were tied up elsewhere.

With a few exceptions, the Air Force has worked through this problem and is getting pilot training back to the necessary levels. Fighter pilot training levels are now in good shape, despite the dual pressures placed on them by Noble Eagle and Enduring Freedom.

According to Col. Ted Kresge, chief of Air Combat Command flight operations at Langley AFB, Va., fighter units are plentiful enough that they have been able to rotate taskings and keep up with both overseas commitments and training requirements. "Everyone hurts for a finite period of time, then they get over it," he noted. Air Expeditionary Force schedules have helped simplify these rotations.

The impact of a contingency on training is "abrupt and severe," Kresge said, adding that the use of scheduled AEFs and the predictability they offer is "the best thing that ever happened to flying units."

For a time, the dual requirements of homeland security and overseas needs exacerbated the training problem.

For example, at the New Jersey Air National Guard's 177th Fighter Wing, which was responsible for maintaining the CAPs over New York City and Washington, D.C., pilots were forced to balance the higher operational requirements with the need to maintain proficiency for a scheduled AEF deployment.

According to Wing Commander Col. Michael G. Cosby, the 177th normally flies 3,950 hours per fiscal year. In Fiscal 2002, flying hours increased nearly 50 percent to 5,788—with the same number of aircraft. Further, the wing will support Enduring Freedom and Noble Eagle taskings simultaneously, when 10 F-16s and more than 200 airmen are deployed as part of AEF 9 this spring.

Officials say that training for heavily tasked units such as this one has been eased considerably by the end of round-the-clock CAPs and the switch to greater reliance on aircraft on ground alert for homeland air defense needs.

When it comes to AEFs, not all pilots have benefitted to the degree that the fighter pilots have. Typically, fighter pilots have stuck to the AEF schedules, allowing for downtime and training after a deployment before coming up for another overseas assignment.

The situation has been different for pilots in low-density, high-demand aircraft.

Absent Stop-Loss measures, there will always be some attrition for every weapon system, so it is very important to keep the schoolhouse open and turning out new pilots, said Maj. Gen. Richard A. Mentemeyer, USAF's director of operations and training. For a time, the most critical training shortfall was in the Airborne Warning and Control System community.

Initial training for AWACS pilots and battle managers was nearly shut down last year because of the demand for the system. In fact, the United States temporarily had NATO E-3 AWACS patrolling its borders so that the American E-3s could be deployed overseas.

"We were able to do alternatives and joint planning because there are actually Navy, Coast Guard, and Army systems that can—I won't say replace the AWACS—but they can do a lot of that mission," said Mentemeyer. Consequently, the Air Force was able to bring some of the AWACS aircraft back to Tinker AFB, Okla., to resume training. Readiness levels are still not back to normal, he said, but "we put a stop to the decline."

Preparation of Air Force Combat Search and Rescue pilots remains a major concern. The CSAR community is as heavily tasked today as ever, Air Combat Command officials say. When deployed, search and rescue pilots spend the majority of their time on alert and unable to perform training of any real value.

According to Maj. Gary Henderson, ACC's HH-60G weapons and tactics program manager, CSAR taskings have doubled since 9/11 with no difference in force structure. The Air Force is attempting to limit less-critical CSAR deployments, but the units are in high demand for every combat theater.

Kresge said the search and rescue community is currently facing "serious" training problems and is in an unsustainable position.

Mentemeyer noted that if there were a major contingency along the lines of a confrontation with Iraq, USAF would probably shut down the schoolhouses and "put every asset we could against that contingency, but you only want to do that for a short period of time."

RAND report “Absorbing Air Force Fighter Pilots: Parameters, Problems, and Policy Options.”

The service is now training about 1,100 new pilots annually, the number needed to maintain long-term inventory levels. RAND said the Air Force wants to turn about 330 of these into fighter pilots, but the fighter community only has the ability to absorb about 302 new fighter pilots each year. Yet even 330 fighter pilots falls “far short of the 382 needed to fill existing requirements,” the report added.

Consequently, “there are too few pilots in the active component, yet so many new pilots are entering the force that operational units cannot absorb them without jeopardizing readiness and safety,” said RAND, adding, this may be “the most challenging aircrew management problem” in Air Force history.

The war on terror has paid unexpected dividends in this area as well. RAND noted that there is no single solution to the experience problem and that demand for new pilots will outstrip the ability to absorb them “unless pilot retention behavior can show marked improvement.”



Staff photo by Guy Aceto

**USAF eliminated most of the training backlog that accumulated after the 2001 terrorist attacks, though pilots for some high-demand systems have not caught up. Fighter training is largely meeting requirements.**

Mentemeyer pointed out that Operations Noble Eagle and Enduring Freedom not only have increased retention but also quickly generated experienced pilots.

When pilot production was increased, it quickly filled the ranks with “a lot of young, inexperienced

people,” he said. But because of OEF and ONE, there are now lieutenants with 300 combat flight hours and pilots with experience the Air Force simply did not have before in “many year groups,” Mentemeyer said. “That is going to pay big dividends for the Air Force for the future.”

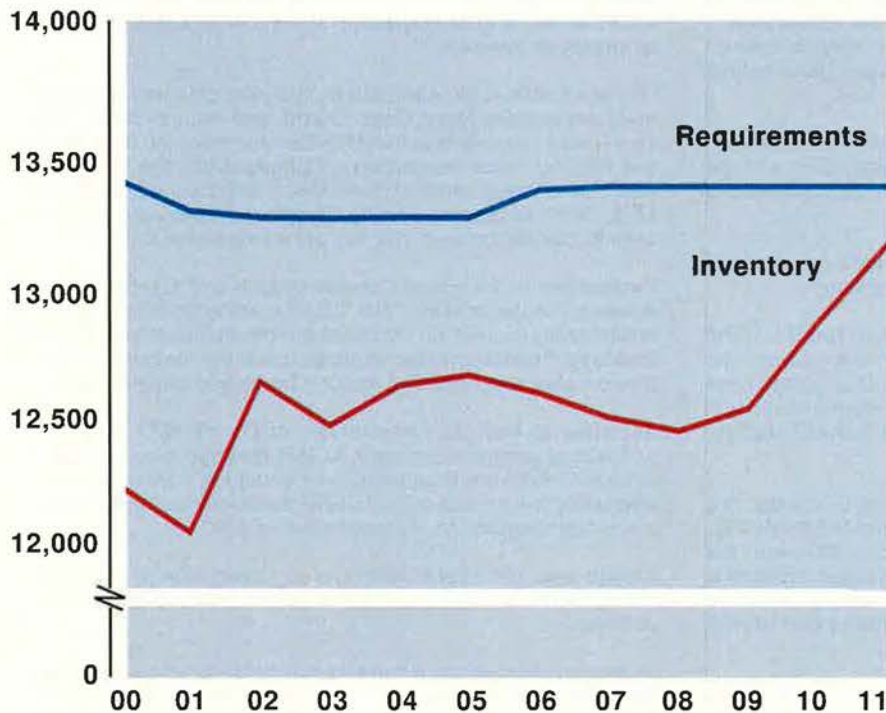
Having experienced pilots at all career levels will continue to be critical for USAF because the lure of the airlines is not going away.

“Many pilots are unaware that there are still opportunities at every level” in the commercial aviation industry, according to Aviation Information Resources, Inc., a pilot placement firm. Former military pilots are always in high demand, but they will be competing against some 8,000 pilots the airlines cut after 9/11. (See “Grim Days for the Airlines,” p. 76.)

USAF is keeping its Aviation Continuation Pay program in place and has even expanded the ACP bonuses to include certain navigators and air battle managers, who remain in short supply.

Independent analyses have found that, even with continuation bonuses, military pilots earn considerably less than they would in airline jobs. But as Mentemeyer noted, there are those who want to “stay in uniform now that we are in [a] contingency, rather than be flying in airlines.... We were going through some really unique times and still are.”

### Pilot Inventory Catching Up With Requirements



**USAF staffing levels benefitted from pilots who returned to active service. Retention rates also improved and helped cut the deficit in half. New, longer service commitments should further ease the problem—but not this decade.**

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**USAF has launched a sweeping overhaul of its personnel system.**

# Curtain Up on "FORCE DEVELOP

By Bruce D. Callander

**A** few years ago, Air Force leaders began questioning whether the service's current education and training approach—the process used to groom individuals for increased responsibility—amounted to little more than helping members “fill the right squares” on their service records. They discovered, unfortunately, that while the approach might improve promotion chances, it did not necessarily make individuals more productive on the job or materially advance their overall careers.

To remedy the situation, the Air Force has embarked on a sweeping overhaul of its personnel system. It has dubbed the new approach “Force Development.”

In announcing the initiative, Gen. John P. Jumper, Air Force Chief of Staff, said it not only will tie training and education more closely to an individual's career development but also tailor assignments and other personnel actions toward the same end.

“As we transformed our Cold War structure into an Air and Space Expeditionary Force, it follows that we should transition the way we train, educate, promote, and assign our

Total Force,” said Jumper. Force Development applies equally to active duty officer and enlisted, reserve components, and civilians—across all specialties—“whether at home or in a tent city, on the flight line or the launchpad, in the air or in the lab,” he added.

The new undertaking is being applied first to officers, but the Air Force already is working on a parallel program for civilian employees and beginning a similar overhaul for enlisted members and the reserve forces. The service expects to apply the approach to the whole force within the next year.

## **The Custom Fit**

The Force Development goal is to “move away from a one-size-fits-all approach,” said Brig. Gen. Richard S. Hassan, director of USAF's Senior Leader Management Office and point man on many of the changes. He said the Air Force recognizes that each individual's career consists of a number of experiences and those experiences are not necessarily the same for all members. The goal is to match those experiences closer to the needs of the individual and the service.

*TSgt. Kenneth Allbrooks, with the 363rd Expeditionary Services Squadron Education Office, assists TSgt. Scott West in signing up for a test. USAF has embarked on a program that leaders hope will better link education and training to an individual's career.*

“We want to do what makes sense for both the service and the individual,” said Hassan.

He continued, “If you understand the needs of the Air Force and you understand what people like to do in career development, why can’t we marry that up better by matching education and training opportunities more to the individual career as opposed to saying, again, one size fits all?”

For example, Hassan said that to become competent as a pilot, there is a standard set of functional experiences the pilot must go through. “We understand that pretty well,” he said. “I call that ‘occupational competence.’ The other piece of the equation is what education and training opportunities we offer. Our terminology is that they are the ‘enduring competencies.’ So the key is how to tie all of that together in a way that makes sense.”

One way the service plans to do that is to redirect its approach to Professional Military Education. “We want to stop thinking about one op-

portunity for everybody, which is what we do today in PME,” said Hassan.

The Intermediate Service Schools level, such as Air Command and Staff College, provides a good illustration of the problem, said Hassan. Under the old system, USAF simply selected a certain number of people to go to ACSC or some other service equivalent. “That doesn’t really meet the future needs of the Air Force nor does it meet what the individuals may need,” he said.

Hassan said the service asked the most recent ISS selection board to act not just as a PME selection board but as an educational development board. “That can mean we have a certain number of people we want to send to PME, a certain number we want to get advanced academic degrees, a certain number we want to send to some fellowship programs, and a certain number of people, say in the acquisition world, that we want to send to some education-with-industry program,” he explained.

Connecting individuals more closely with their career development should

# MENT”



USAF photo by SSgt. Timothy Cook



*In a revamp of Air Command and Staff College, officers, such as this pilot, will concentrate on one of a group of occupational skills during the last portion. That skill will help determine the pilot's next duty assignment.*

make the Air Force stronger, said Hassan. "The engineer who goes to Stanford to get his engineering master's or Ph.D. likes that," he added. "It makes that individual a lot more competent and credible within his career field."

This does not mean all members will follow separate routes throughout their training, Hassan said. Rather, they will take some blocks of training together and then branch into different channels.

### First Up

The service plans to change ACSC into three modules. "Module 1 will be called Leadership and Joint Development and focus on things we hold dear such as doctrine, strategy, and leadership principles," said Hassan. The module probably would be from 10 to 16 weeks long. "Everybody would take that part so they're all grounded in the same thing," he added.

Module 2 would focus on the operational art of war. ACSC is the intermediate level of PME and it's there that individuals should shift their focus from the tactical to the operational and staff issues. It helps the individual, said Hassan, transition beyond the wing level. The module would be about three months long. With Module 1, a student would have completed approximately the first six months of the normal ACSC 10-month cycle.

"Module 3 is the really unique part of the new approach," said

Hassan. "The training will be related to what I call a satellite group of occupational skills." For example, he said a fighter pilot generally will concentrate on one of five occupational areas: acquisition, plans and programs, politico-military, space, and a "sort of superoperations area." Whichever skill the pilot chooses will be the deciding factor in the pilot's next duty assignment. In the past, the Air Force simply would

project a post-ACSC assignment based on whatever job might be open. Module 3, in effect, said Hassan, will help prepare an individual for his or her next duty assignment.

He noted that the service may conduct additional training for a particular occupational skill at Maxwell AFB, Ala., the home of ACSC, or elsewhere. For instance, Hassan said that if the Air Mobility Warfare Center has the premier mobility operations course, "we might take the five or 10 or 15 people who are going through mobility ops as their connected skill and send them to [the center] for 10 weeks."

The Air Force has also made evolutionary improvements in some of its training programs largely to accommodate a smaller, more scattered force. Much of this effort exploits modern technology, and it is not without its problems.

### Making the Connection

"In a generic sense, I would say that access to courses has improved for deployed members," said Jim Sweizer, chief of Air Force's Voluntary Education Branch, which monitors off-duty study programs. He said that USAF has established some learning centers overseas, especially in Saudi Arabia, where service members can take required tests

## Everyone Should Be an Instructor

As part of its new approach to education and training, Air Force leaders want to make becoming an instructor a more acceptable choice for service members.

"Each of us who makes the Air Force a career is obliged to invest some part of that career in training or educating the airmen who will take our place," said Gen. John P. Jumper, Air Force Chief of Staff, when he announced the service's new Force Development initiative.

Service leaders believe the Air Force no longer has a representative set of skills within its instructor force. "We need to commit resources so that people want to instruct and we send our best and brightest to train our youngest, the people who are going to replace us," said Brig. Gen. Richard S. Hassan, director of USAF's Senior Leader Management Office.

"In the other services, it's considered important for people to have been instructors at academies or recruiters or things that we in the Air Force, for whatever reason, have not held dear," he explained.

The Air Force must develop a system to support its instructors, he said. More importantly, "we, as individuals, have to rethink how we view them, because, today, most people don't view such assignments as something they need to do," emphasized Hassan. "We have to make everybody think about [instructing] being a duty, to leave the legacy to the youth."

and where there are computer labs to help them.

"The biggest issue with trying to get this information over to deployed folks in an electronic format is connectivity," Sweizer said, adding, "That's a big problem when you're in somebody else's country." He noted, too, that the cost is high in many countries.

"I think we're meeting the needs of those people who are going over and doing a better job of counseling them before they depart," said Sweizer. "There is nothing to prevent them from signing up for a course in a distance learning format, be that computer-based training or Internet Web-based courses, before they leave. Depending on the length of deployment, we can get them into a quick course or something that they can start and continue when they get back."

The Air Force increasingly is turning to the electronic world for in-house training efforts. "Our main goal is to leverage technology so that we can meet the warfighter's needs anytime, anywhere," said Maj. Buster McCall, chief of Advanced Distributed Learning. "Right now, all enlisted and officer PME levels offer courses via Advanced Distributed Learning."

Currently, more than 53,000 student per year participate in distributed learning courses, the majority of which are in 100 percent ADL format, said McCall. "Almost 11,000 officers are enrolled each year in intermediate and senior service pro-



**A college field representative assists A1C Robyn Dorocak, 86th Airlift Wing, Ramstein AB, Germany. Surveys show that education and training are major incentives in the service's ability to retain personnel.**

grams and complete a part of their programs using CD-ROM products," he added.

Beyond serving as a career development tool, Air Force officials are well aware that education and training play a major role in recruiting and retention. Sweizer said the service has documentation from 1996 through 2000 that shows that continuing their education is the No. 1 reason persons joined the Air Force.

When airmen in Basic Military Training are asked why they enlisted, he said, "for the most part, 'continuing education on active duty' is the

No. 1 reason." The No. 2 and 3 spots fluctuate between "training in a skill" and "a secure job," he added.

Surveys also show that education and training are major factors in the decision to remain in service, particularly for enlisted members. Officers, who must have at least one degree before they are commissioned, less often list these as top reasons for staying, but they still count them high among the favorable influences.

Congress has provided several education incentives to enhance military recruiting and retention efforts. For example, the Tuition Assistance Program, which allows service members to work toward college degrees while still on active duty, recently received a boost. Last October, the government began paying full tuition and mandatory fees up to \$250 per semester hour or a maximum of \$4,500 per year. The previous rate had been only 75 percent of tuition, with a \$3,500 ceiling.

### Expand the GI Bill?

In the past two years, Congress also increased the benefits paid under the Montgomery GI Bill by some 46 percent. Last year alone, the benefits rose to \$900 per month and will rise to \$985 in October 2003 for veterans who served at least three years and are enrolled in full-time study. Service members contribute a portion of their pay to an education fund to be able to participate in the GI Bill.

There is also a push in Congress to



**TSgt. Rick Seward, 317th Recruiting Squadron, checks out the data collection functions on a Raptor mobile recruiting office. Educational benefits are the chief reason individuals join USAF.**



**As the Air Force implements its new Force Development program, it also must balance competing personnel issues, such as a proposal to boost the GI Bill—it might aid recruiting efforts but could negatively impact retention.**

increase benefits further, essentially taking the GI Bill back to its World War II status. According to Darryl Kehrer, staff director for the benefits subcommittee of the House Veterans Affairs Committee, in today's environment a veteran attending a public, four-year institution as a commuter student would need a monthly allowance of \$1,409.

"We talk about the all-volunteer force, but we all know what it is—it's an all-recruited force," he told a conference last summer. Returning to the post-World War II-era GI Bill would send a message to the youth of America and to "middle-class parents who are priced out of student aid programs."

Conversely, while services tout the GI Bill in recruiting ads, military officials worry that making the program too generous could work against retention efforts. They are concerned that the new push to boost the GI Bill could serve as a reverse incentive to making the service a career.

"Measured increases such as going from \$800 to \$900 or \$985 are a good thing," said Sweizer, "but I would be remiss if I said that we weren't concerned about some of these proposed increases, where they want to go to anywhere from \$1,300 per month to actually paying for full education and maybe giving a nice stipend along with it."

He said that "kind of carrot ... could serve as an incentive to leave."

Ideally, officials would like more

members to use training and education opportunities available to them while in the service as a foundation they would build upon after they serve a full career. One of the best methods for doing that for enlisted members, said Sweizer, is the Community College of the Air Force.

On average, an airman will spend about 12 years to earn a CCAF degree. Spending that length of time in the service virtually guarantees the airman will make the Air Force a career, staying for at least 20 years.

CCAF gives airmen credit for technical training they receive in the Air Force and allows them to add to those credits with off-duty study that can lead to an associate degree. Later, many graduates use their credits to enter four-year colleges to earn bachelor's degrees. However, some people charge that CCAF credits are not accepted at face value by many civilian institutions. Sweizer argues that "CCAF is fully accredited by the Southern Association of Colleges and Schools."

He emphasized, though, that some students may have trouble transferring highly technical credits. "That's something that any student will run into," said Sweizer. For example, he said that CCAF offers an associate of applied science—a technology-based

degree that derives largely from technical training gained in the Air Force. It will be unlikely that an airman could transfer those technical training credits directly into a liberal arts or history degree program. "After all," he asked, "how many places have a bachelor's degree in avionics systems technology?"

On the other hand, there are many civilian institutions that have partnered with the Air Force for years, said Sweizer. Some accept all credits from CCAF degrees. He noted that USAF education counselors advise airmen "of the pitfalls in transferring technical types of credit and that they may have to do a little more work to get a nontechnical type degree."

Overall, officials say, USAF education and training programs are healthy and growing. However, they maintain that new approaches may be needed to expand opportunities for a force that is smaller and yet called on to do more.

As the Air Force becomes a smaller, more deployed force, "we have to do a better job of using technology to help our people no matter where they are," said Sweizer. One of those new measures, he said, is a Web-based progress report developed by CCAF to show airmen specifically what courses they still need to complete their degree requirements. They don't have to go through an education office to keep up-to-date. Another effort involved developing a virtual education center to let individuals enroll from their work places or from home, request tuition assistance, and do other types of educational processing.

On the new Force Development initiative, Hassan cautioned that the service will need to work its way into change, especially with the rated force, where there has been such pressure to fill cockpits.

He emphasized, though, that the initiative works within the Expeditionary Aerospace Force concept. "The module idea may offer even more flexibility in determining when people go on and off deployment," he added. "Actually, we may be able to accommodate some people that we might not have in the past." ■

*Bruce D. Callander is a contributing editor of Air Force Magazine. He served tours of active duty during World War II and the Korean War and was editor of Air Force Times from 1972 to 1986. His most recent article for Air Force Magazine, "The Subtle Art of Evaluation," appeared in the December 2002 issue.*



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**Who knew, 25 years ago, that the humble little GPS satellite would mean a revolution in accuracy?**

# The SENSATIONAL Signal

**O**n Feb. 22, 1978, the first Block I Navstar Global Positioning System satellite was launched from Vandenberg AFB, Calif. The event received little notice in the press. At the time, even many Pentagon officials were not exactly sure what this unheralded new system would do. They were aware of its capability—the provision of pinpoint location information—but had little idea how that could be exploited to increase the effectiveness of United States forces.

Twenty-five years later, they have figured it out, and GPS has become one of the most successful and versatile high-technology projects of all time. Conceived as a navigational aid for ships, it is now a sort of sextant to the world, as important in its own way as the discovery, in the 18th century, of means of measuring longitude at sea. It has also turned out to be one of the most important US government investments in space, creating a \$30 billion a year civilian market in GPS-related devices.

For the military, GPS has been revolutionary, taking the “search” out of search and rescue, guiding troops through trackless deserts, and—perhaps most importantly—providing US airpower with the basis for unmatched all-weather Precision Guided Munitions.

For PGMs, GPS capability is as much of an advance over laser guidance as laser guidance was over “dumb” bombs, noted Air Force Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, last year.

“When the Global Positioning Sys-

**By Peter Grier**

*GPS offers support for a host of vital military operations. The system provides position and elevation information used by engineers building an aircraft parking ramp in the desert and data used by search and rescue personnel to name a few. Perhaps most importantly, GPS has transformed USAF munitions capabilities by providing the basis for unmatched all-weather Precision Guided Munitions, such as 2,000-pound JDAMs.*

USAF photo by SSgt. Tony Tolley



USAF photo by TSgt. Mike Boytas



USAF photo by MSgt. Greg Kobayashi



tem was being developed and first deployed, no one was talking about using it for bombing," Myers told the Senate Armed Services Committee. "It was seen as a better navigational tool."

### Beyond Navigation

"So, essentially, we've linked incremental improvements in several different technologies to achieve today our precision-strike capability, with accuracy that I believe amounts to truly transformational change."

Today's Global Positioning System is a constellation of satellites that beams navigational data to anyone in the world with the proper equipment to receive it.

The satellites travel in 12-hour circular orbits at an altitude of approximately 12,500 miles above Earth, in six different orbital planes. There are four operational satellites to a plane, spaced so that a user on the ground will typically have access to the signal from a minimum of five different "birds" at any one time.

The GPS satellites are, in essence, extremely accurate clocks in the sky. They broadcast precise time information toward the ground via coded radio transmissions, which are picked up by receivers that can range from small handheld units to the guidance systems of ballistic missiles.

The receivers calculate how long it has taken them to receive the radio pulses from different GPS satellites—and use the barely perceptible differences in time to figure out a position on the face of the Earth, as well as velocity at which one is traveling.

The signals are so accurate that time can be determined within a millionth of a second and speed within a fraction of a mile per hour. Location can be pinpointed to within 33 feet.

The devices can do this, that is, if the US allows such accuracy. GPS in fact broadcasts two different kinds of signals—a Coarse/Acquisition code intended for civilian use and an encrypted Precision code for the US military. If necessary, the Pentagon can induce an error into the C/A signal, decreasing accuracy to 330 feet or so. In practice, the military has been reluctant to engage in this dilution, partly because civilian receivers have been a lifeline for individual soldiers in the past.

On May 1, 2000, President Clinton

ordered that this intentional error, known as selective availability, be turned off. Turning it back on would require Presidential authorization.

### The Navy Heritage

Man's desire to guide himself safely across the trackless ocean has long been an engine of scientific advance. Mariners' needs have led to everything from the development of astronomy to accurate chronometers and radio navigation. Thus, it is perhaps unsurprising that the GPS story began with a Navy program—a simple, reliable system named Transit.

The first Transit satellite was launched in 1960. (A prototype was launched in 1959 but failed to reach orbit.) Developed by the Johns Hopkins University Applied Physics Laboratory, the system eventually consisted of seven low-altitude polar-orbiting satellites. Users could figure out their position on Earth by measuring the Doppler shift of the satellite's extremely stable radio transmissions.

But navigation by Transit required a long observation time, as well as correction for velocity. Coverage was limited, because the US launched only a few satellites. Position data covered only two dimensions. Overall, it was not useful for such fast-moving vehicles as aircraft.

So both the Air Force and Navy began working on more sophisticated techniques. The Navy's contribution was an experimental satellite program named Timation. The Air Force's was a design concept eventually named System 621B, which drew from pioneering work done by The Aerospace Corporation and its renowned founding president, Ivan A. Getting.

By 1970, all of the services were working on navigation systems intended to provide all-weather, around-the-clock, three-dimensional position data. Eventually, the Defense Department leadership moved to rationalize the research. In April 1973, DOD tapped the Air Force to lead a multiservice program—the Defense Navigation Satellite System.

DNSS blended the Air Force's proposed signal structure and frequency with the Navy's satellite orbits and atomic clock research. The result, whose development was approved in December 1973, is the sys-

tem known today as the Navstar GPS. The Air Force launched 11 GPS development satellites, designated Block I, between 1978 and 1985. Midway through this series, designers added nuclear explosion detectors to aid in verification of treaty compliance—a subsidiary mission of GPS spacecraft that continues to this day. Eventually all Block I satellites failed as their atomic clocks or attitude-control system ceased functioning. Most, however, lasted much longer than their design life of three to five years.

### Surviving Budget Cuts

GPS development was not always smooth. In 1979, the system's planned 1981 to 1986 budget was cut by 30 percent. In 1986, the loss of the space shuttle *Challenger* resulted in a 24-month delay in the launch of the first Block II operational satellite (which, like Block Is, were built by Rockwell). That convinced the GPS Joint Program Office to switch from shuttles to Delta II rockets as its primary means of access to space.

The 24th Block II was launched in March 1994, completing the GPS constellation. The Defense Department, along with the Department of Transportation (the overseer of GPS civilian use) formally declared that the system had reached Initial Operational Capability in a Dec. 8, 1993, announcement.

Today GPS "is able to support a wide variety of operations, including aerial rendezvous and refueling, all-weather airdrops, instrument landings, minelaying and mine-sweeping, antisubmarine warfare, bombing and shelling, photomapping, range instrumentation, rescue missions, and satellite navigation," concludes an Air Force Space Command Space and Missile Systems Center history of the system. However, there is a big difference between inherent capability and translation of that capability into increased military effectiveness. US armed forces had to learn to use and appreciate GPS.

"When it first came on board, about 1991, I recall that some of the services didn't want it at the time and didn't have a use for it," said retired Gen. Donald J. Kutyna, former Commander in Chief of US Space Command. "Now the world relies entirely on GPS systems."

Two major factors hampered service assimilation of the GPS system.

One was its status as a support system, as opposed to a weapon. It did not have a history of well-defined operational concepts, noted a RAND study of GPS usage. Its value is not as obvious as that of a new tank or aircraft model.

Second was its status as a joint program. While the Global Positioning System had some eager supporters in all the services, top generals had to be sold on the need to part with scarce funds. No one wanted to shoulder the burden of paying the entire cost of something that would benefit everyone.

Thus GPS had service support difficulties, according to RAND. In budget negotiations, it was zeroed out by the services in 1980, 1981, and 1982, only to be reinstated by the Office of the Secretary of Defense.

"It appears that OSD support contributed to the survival of the program," said the RAND report.

It was the Gulf War that really opened the eyes of the services. GPS navigation proved to be a revolutionary advance in desert warfare. Ground units found GPS extremely useful for finding their way through the featureless Gulf terrain, so much so that the GPS Program Office had to make emergency buys of small, lightweight GPS receivers. By the end of the war, GPS equipment was affixed—sometimes with tape—to the instrument panels of everything from Humvees to F-16s, KC-135s, and B-52s.

For the first time, operational US commanders were using GPS and other space systems in their daily decision-making. That led to a new appreciation of space as a factor integral to USAF operations, according to Air Force Space Command officials.

### "Almost Indispensable"

A few years later, the air war over Kosovo showed many that GPS was much more than an electronic direction finder. In the Gulf, generally clear weather and open spaces had been an optimal environment for laser-guided weapons. In the cloudy, rainy Balkans, lasers were often

blocked, and GPS-guided munitions came into their own.

"It got to the point where they [GPS-guided weapons] were almost indispensable," said Gen. Lester L. Lyles, now commander of Air Force Materiel Command, not long after the war. "Everything that a warfighter, or CINC, or war planner is trying to do relative to attacking targets has become more and more dependent on precision-guided weapons. We saw the beginning of this during Desert Storm and saw it in spades over Kosovo."

Civilian use of GPS developed in a pattern similar to that of military use. Application after application was added as more and more people understood what it could do.

The first US government dictum about GPS civilian use came in response to an enormity—the 1983 downing of Korean Air Lines Flight 007 by Soviet fighters after it inadvertently strayed into Soviet airspace. In response, President Reagan announced that the new Global Positioning System upon its completion would be made available for international civilian users. In 1987 the Department of Transportation set up its office for responding to civil GPS users and working with the Defense Department on GPS policy.

The first GPS civilian market, however, was not airlines but surveyors. Their need for accuracy made GPS invaluable, and surveyors' demand for receivers led to R&D and production efficiencies that lowered prices and opened up further markets.

Today, handheld GPS equipment guides hikers through the wilderness. Panel-mounted receivers guide luxury cars down streets unfamiliar to their owners. Geologists use GPS data to measure minute movements in the Earth's crust, with an eye to better understanding of the location of earthquake zones. Even farmers use GPS to help them grade their land to precise slopes and apply fertilizers and seed in patterns designed to maximize yields.

Of course, ships and airlines use GPS, too, to the point where President Clinton felt it necessary to reaffirm the US commitment to provide the signals to the international com-

munity, free of direct-user fees, in a letter to the International Civil Aviation Organization in 1995.

In the war on terrorism, GPS has been woven into operational concepts in ever more complex ways. Secure in the system's accuracy, airmen have dropped ordnance on enemy units within 75 feet of friendly positions. GPS positioning data from Predator Unmanned Aerial Vehicles, integrated with real-time video, have been data linked directly to strike aircraft, enabling them to hit targets of opportunity within minutes.

### Even Greater Accuracy

Over the years, there have been advances in the system's capability. Since 1997 the system has been upgraded with Block IIR satellites, which officials say opened a new era in GPS performance.

Even after five years in orbit, the Block IIR models are maintaining a signal-in-space accuracy of better than 3.3 feet, according to US officials.

Current plans call for upgraded Block IIF satellites to be placed in orbit beginning in 2005. Per Presidential order, Block IIF will add a third civil frequency for all users. The GPS joint program office ordered its first batch of long-lead parts for Block IIF last March; maker Boeing has a contract for six satellites, with a US option for six more.

A recent snag has affected the program. USAF wanted to move on to GPS III, the next-generation system, but plans ran afoul of budget constraints. Until recently, USAF expected a 2012 launch of GPS III, which was to feature more signal power to thwart adversary jamming. In January, according to press reports, USAF imposed a two-year delay in selecting a contractor.

The military has considered charging civilian entities for use of GPS. After all, 90 percent of users are nonmilitary. But whoever pays for it, GPS is likely to become only more important to US commanders in the years ahead.

"In spite of the fact that we are using the word 'precision' now, I think we are going to become even more precise as we get more and more refined capabilities," said Lyles. "GPS has been very helpful, but we are going to try to find ways to make that precision even tighter to accomplish the job." ■

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*Peter Grier, a Washington, D.C., editor for the Christian Science Monitor, is a longtime defense correspondent and a contributing editor to Air Force Magazine. His most recent article, "Desert Chill," appeared in the January issue.*

**These USAF engineers are at the leading edge of one of the largest military construction efforts since Vietnam.**

# The RED HORSE Way

By Peter Grier

**T**HE Air Force's elite corps of rapid deployment civil engineers is working miracles in Afghanistan, Qatar, Kyrgyzstan, and other austere locations that are the scenes of Operation Enduring Freedom and other US actions in the region.

They are the Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer, better known as RED HORSE, units.

These outfits have undertaken huge tasks ranging from the largest aircraft parking ramp project in history to renovation of living quarters at former Taliban bases in Afghanistan. They've repaired runways in blackout conditions and, at one forward base, laid enough gravel to build a road that would stretch from the Pentagon to Langley Air Force Base in the Tidewater area of southeastern Virginia.

With an estimated \$100 million worth of projects under way at the end of 2002, RED HORSE squadrons are the leading edge of one of the largest military construction

programs since Vietnam. "These are awesome accomplishments," said Col. Fred Wieners, director of Task Force Enduring Look, an Air Force effort to document lessons learned in the war against terrorism. "What other country could go halfway around the world and do that?"

Consider the scale of the ramp project—the biggest single job a RED HORSE unit has ever undertaken.

In this venture, Air Force engineers from the 820th and 823rd RED HORSE units spent five months transforming a scrub-and-sand Gulf desert site into a paved airfield the size of about 20 combined football fields.

Members of the 820th, who deployed from Nellis AFB, Nev., and 823rd, from Hurlburt Field, Fla., and an assortment of other Air Force engineering personnel worked around the clock to finish the project early. The ramp—at al Udeid in Qatar—is some 44,000 square feet larger than the previous record holder's ramp,

*At right, members from the 819th/219th Expeditionary RED HORSE fit together building arches at al Udeid AB, Qatar, on New Year's Eve 2002.*



USAF photo by SSgt. Matthew Hanner

which was built by the 554th RED HORSE in 1967 at Phan Rang Air Base in what was then South Vietnam.

### Record Time

“They built this thing [at al Udeid] in record time,” noted Maj. Gen. Earnest O. Robbins II, the Air Force civil engineer, at the Pentagon. “Outside contractors estimated it would take months.”

The project called for pouring more than 1,000 cubic yards of concrete every 24 hours. A typical work day saw movement of up to 350 trucks on and off the site.

“They actually had to build up this entire area by about three and a half feet,” said Robbins. “It was a rather incredible construction project.”

Besides the ramp, RED HORSE members built at the same base some 124,000 square feet of covered maintenance space and a new fire station, warehouse, four hangars, and a squadron operations facility. They laid 10,000 feet of conduit and built water-handling facilities for both

fire-fighting and personnel consumption.

RED HORSE units are the civil engineering SWAT teams of the Air Force. They are 404-person units whose mission is to move quickly to support special operations or contingency deployments worldwide.

They are trained to operate in high-threat environments with little or no contractor support, and they are so self-contained that they can deploy with their own weapons, equipment, and even food service and medical support if need be.

Their specialty is what Air Force officials have called “horizontal capability”—runway and ramp construction, maintenance, and repair. However, they are meant to be extraordinarily flexible, and they can do virtually all civil engineering tasks, from damage assessment to the erection of buildings on previously bare bases.

Some units possess special capabilities. These range from well-drilling to explosive demolition and quarry

operations. In Fiscal 2003, plans even call for the addition of airdrop capability to some squadrons, allowing them to deliver light equipment and personnel by airdrop or other air transport means.

Current doctrine organizes the squadrons into four deployment echelons. The first has 16 persons who are capable of assessment and site preparation and ready to move within 16 hours of notification. The second—with 148 people—can be ready to deploy within 96 hours and adds heavy bomb damage repair and light base development to the capabilities mix. The third element—with 120 personnel—moves six days after notification, and the fourth—with another 120 personnel—moves two days later and brings a RED HORSE unit to full strength.

Four of the Air Force’s seven RED HORSE squadrons are active duty. The remainder are provided by the Air National Guard and Air Force Reserve Command. The latter are split units, with the two halves being located at different bases and

serving under different commanders. For example, the 200th RED HORSE, Port Clinton, Ohio, combines with the 201st RED HORSE, Fort Indiantown Gap, Pa., to form a full unit.

### Vietnam Roots

The roots of RED HORSE are in the Vietnam era, when then-Secretary of Defense Robert S. McNamara asked the Air Force to develop an in-house combat construction capability similar to that of the Navy's Seabees. RED HORSE was the result, with the first units deployed to Phan Rang in 1966.

Since that time, the squadrons—whose emblem is a snorting, armed red horse driving a bulldozer—have played a key role in Air Force contingency operations. In the 1991 Gulf War, for instance, a composite RED HORSE force drawn from a number of squadrons completed more than 25 construction projects at 12 different sites in the Gulf region.

Much of the work was in Saudi Arabia. At al Kharj, just south of Riyadh, RED HORSE personnel supervised the construction in a matter of weeks of an air base capable of handling five fighter squadrons. They built berms to protect Patriot missile sites for the Army. At the end of the war, per order of the Gulf War air boss, then-Lt. Gen. Charles A. Horner, they essentially destroyed two air bases in southern Iraq by cutting

runways and blowing up hardened aircraft shelters.

In the war on terrorism, the RED HORSE units have had a chance to really stretch their legs. The work the units have undertaken for Enduring Freedom has been perhaps their biggest challenge ever.

"Certainly in terms of magnitude, the size of the projects, their duration, these are the most sustained RED HORSE operations" since the 1960s, said Robbins.

Since the United States on Oct. 7, 2001, launched its attack on Taliban forces in Afghanistan, RED HORSE units have gone to a total of 26 sites in the region. At 12 of these bases, the units did actual construction. At 14 they did site surveys or other assessment work.

Some 1,400 RED HORSE personnel, from five different squadrons, have cycled through the Enduring Freedom theater of operations. Specialties most in demand have been those associated with runway work, which includes everything from concrete mixing to airfield lighting installers.

RED HORSE work for Operation Enduring Freedom can be essentially divided into two main categories, according to Air Force officials.

The first is the construction of new air capacity in expectation of future requirements. The construction at al Udeid is a good example of this. Air Force personnel have essentially created a giant new forward operating

base in months—one that is the equal of facilities in Saudi Arabia.

### Bomb and Build

The second is repair work on existing but decrepit facilities. A perfect example of this is Bagram, the main air base in Afghanistan. Built by the Soviets during their ill-fated Afghan occupation of the 1980s, Bagram suffered considerable damage during the brief allied campaign against the Taliban. RED HORSE was then charged with going in and rebuilding what 500-pound Air Force bombs had torn asunder.

US runways typically feature smooth and continuous concrete surfaces. The Soviet style, however, was to build in concrete slabs. In theory, this makes construction easier. In practice, upkeep becomes a nightmare.

"You have all these joints running laterally and horizontally," said Robbins. "It is a constant maintenance problem to try to keep the airfield smooth."

Each 11-by-13-foot concrete slab takes an hour or more to repair. RED HORSE teams—in conjunction with other USAF civil engineering units—repaired or replaced more than 2,500 of them.

"Allied forces had done a really good job of destroying that airfield," said the top Air Force civil engineer.

At one point during this process, US commanders at Bagram decided the security situation was such that some of the repairs should take place at night, with the RED HORSE members using night vision equipment. Partly for this reason—and partly because it was a good training opportunity—the 200th/201st RED HORSE went out and successfully poured concrete in complete darkness, using only night vision equipment.

"That's the first time we've ever done that, to my knowledge," said Robbins.

The difficulty of this operation was compounded by the fact that the crew was using a deployable pavement repair system. This mobile concrete machine is designed for rapid repairs and thus produces only limited quantities of concrete quickly. It is a high-performance machine that is sensitive to such variables as the size of stone and quality of sand.

Yet RED HORSE used the deployable system for half their Bagram

USAF photo by SSgt. Michael Gaddis



Members of the 823rd RED HORSE level an area of the desert in preparation for a new aircraft parking ramp. The region's harsh conditions make the engineering unit's job a particular challenge.



repairs—running it continuously for three months. In between the slab repairs, the units found time to reconstruct the base Air Force Village, build new showers and laundry facilities, put up several hundred feet of security walls, rewire the air traffic control tower, and pave a basketball court.

Installations from Qatar to Kyrgyzstan have received a similar, full-court-press RED HORSE treatment—all in a region where everything from the climate to the scarcity of local resources makes construction difficult.

“It has been a test unlike any that we have ever experienced,” said Robbins.

### Hard Rock

In Qatar and other Gulf-side locations, the temperature can hit 120 degrees and humidity about 90 percent. In those conditions, Air Force construction personnel can only work about 30 minutes at a time before they have to take a break, and concrete does not pour well. The ubiquitous sand fouls work and machinery alike.

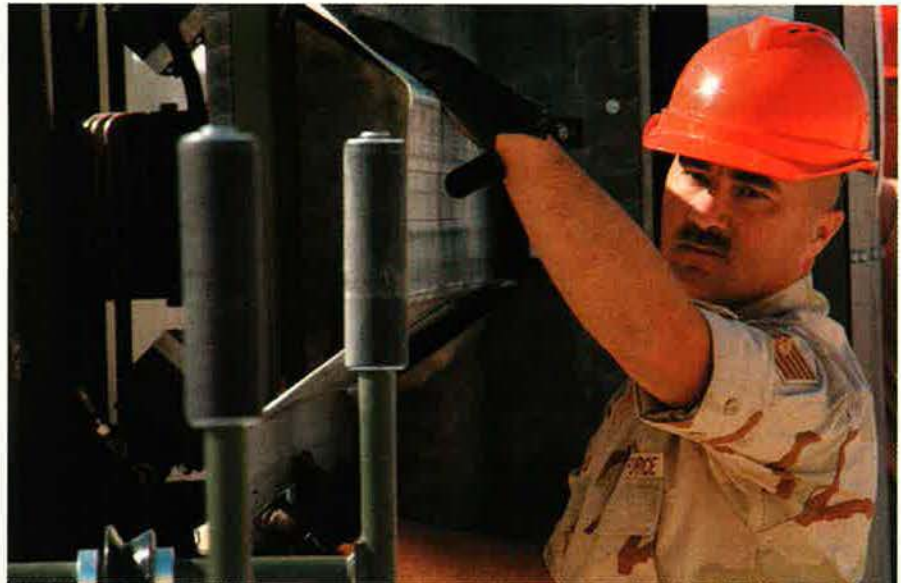
“Plus,” noted Robbins, “we learned that some of the hardest rock in the world exists over there.”

In the buildup to the 1991 Gulf War, contractor support was plentiful, as the US was operating with Arab allies and staging from some of the wealthiest nations in the Middle East. But Afghanistan and Pakistan are not Saudi Arabia or even Qatar. Much of the challenge to RED HORSE in recent months has come from operating virtually alone.

“In one instance [at an undisclosed location] we found one guy with one dump truck,” recalled Robbins. “He was the sum total of our contractor capability.”

This person performed valiantly in delivering aggregate, added Robbins, and became highly popular with the RED HORSE leadership. Overall, however, this problem represents one of the primary civil engineer lessons learned from the Enduring Freedom operation.

“Assumptions regarding host nation support are not always valid,” said Robbins.



USAF photo by SSgt. Matthew Hannon

**TSgt. John Deyo, 819th/219th RED HORSE, works on the construction of a new transportation building. Members worked 12-hour days, six days a week, to prepare forward locations for operations in support of Enduring Freedom.**

Elsewhere, RED HORSE made extensive use of the Air Force Contract Augmentation Program. AFCAP allowed Air Force planners to go to contractors and simply say they needed a particular piece of equipment at a particular place and time. It was up to the private sector to find the equipment and ship it to the port nearest the location in question.

One reason service logisticians like this approach is that it often results in new, or nearly so, heavy machinery for Air Force use. Most service equivalents are old and in need of replacement.

“This gives us a way ahead,” said Robbins. “More and more we are looking at augmenting Air Force personnel with leased private sector equipment.”

### There Were Others

The intensive OEF experience has also taught the Air Force that its reserve RED HORSE units are as capable as their active duty equivalents. And it has reconfirmed the fact that RED HORSE squadrons are only one part of the service’s civil engineering equation.

RED HORSE represents an “incredible capability,” said Robbins. It kicks down the door and readies locations for all that follow. Other ser-

vices, however, have contributed to this effort in Afghanistan—notably the Seabees. And the majority of Air Force civil engineering personnel are not RED HORSE but members of Prime BEEF combat support units.

Prime BEEF, for Base Engineer Emergency Forces, has deployed to Afghanistan and other Middle East sites in the wake of RED HORSE to pick up maintenance and continued construction at key bases.

At Bagram, for instance, Air Force civil engineers drawn from four different units helped RED HORSE repair concrete slabs and installed a lighting system that allowed the field to go from a covert no-visible-light landing status to overt landings.

“Many are deployed for a long time,” said Robbins. “They are carrying a huge part of this load. It’s a total team effort.”

And that effort is invaluable to the war on terrorism as a whole. Task Force Enduring Look—the war on terror lessons-learned project—has listed the ability to provide base operations support early as key to the allied success.

“There is a tendency to want to put iron down first—those weapons we can use to do harm to the enemy,” Wieners told an Air Force News interviewer earlier last year. “But it is important to find that right balance to ensure your people can survive, so that they can operate. It is a difficult challenge, especially at austere basing, as we saw in Central Asia.” ■

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*Peter Grier, a Washington editor for the Christian Science Monitor, is a longtime defense correspondent and a contributing editor to Air Force Magazine. His most recent article, “Desert Chill,” appeared in the January issue.*

## Big



The 1947 press release from Consolidated Vultee Aircraft Corp. proclaimed this XC-99 transport—shown in flight off southern California—as “the world’s largest land plane.” It was 182.5 feet long and 57.5 feet tall—longer and taller than its sister aircraft, the B-36, though they both had a 230-foot wingspan. The XC-99 had two levels of cargo decks. Its interior volume equaled that of 10

railroad freight cars, and it could haul 400 troops, 100,000 pounds of cargo, or 300 patients in litters. Each of the six pusher-type engines generated 3,000 horsepower. Wing tanks held more than 21,000 gallons of fuel, giving the mammoth transport an 8,000-mile range. USAF took delivery of this one-of-a-kind aircraft in 1949. However, the approach of the jet age and realization that the

aircraft was much larger than needed for USAF’s future requirements sealed the fate of the XC-99. The service retired the sole aircraft in 1957, just eight years after taking delivery.



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Several converging factors—not just terrorism—have made life difficult for the nation's commercial carriers.

# Grim Days for the Airlines

By Richard J. Newman

**J**UST about every traveler in America is aware of the havoc the Sept. 11 terrorist attacks have wrought on the US airline industry. After losing \$7.7 billion in 2001, the airlines are set to post a \$9 billion loss for 2002 and another \$4 billion to \$5 billion in 2003—all told, enough red ink to wipe out all the profits from the boom years of the late 1990s.

Terrorist fears and the hassle factor associated with X-rayed baggage and confiscated tweezers and other rigorous new security precautions drove away passengers. The airlines mothballed at least 600 perfectly good airplanes and cut thousands of jobs, including nearly 8,000 pilots. Profitability won't return until 2004 at the earliest—barring any more unforeseen catastrophes.

"What will emerge over the next months and years will be a very different industry than what we see today," predicted Carol B. Hallett, president and chief executive officer of the Air Transport Association, in a speech last fall.

## No Longer Such a Magnet

Needless to say, the prospects for military aviators looking for civilian airline jobs are grimmer than three or four years ago, a time of record hiring. Most major airlines have furloughed pilots, with bankrupt US Airways cutting furthest into the seniority ranks. Many of the fur-

loughed pilots, in fact, are military aviators brought on board in the hiring binge of the late 1990s, when the Air Force raised bonuses and took other measures to stanch a torrent of pilots flooding into the private sector. That's one reason military Stop-Loss provisions, which have prevented pilots and other specialists from separating or retiring during a time of multiple military operations, have met with fewer protests than in prior eras.

Airline jobs haven't completely disappeared, however. At least five airlines have still been hiring, including Southwest, FedEx, and Alaska. Since pilots furloughed from other airlines tend to wait for their jobs to return—so they retain their seniority, instead of starting at the bottom with another airline—fresh jobs often remain open to new pilots. "It's not that you won't have a job when you get out," said Kit Darby, president of Aviation Information Resources Inc., an Atlanta-based employment consulting firm. "You're just not going to get the job you want." Darby estimated that airlines may hire about 500 new pilots in 2003.

Tangible villain that he is, Osama bin Laden is only partly responsible for the snarl facing the perennially turbulent airline industry. Also culpable are airline executives who made decisions assuming the boom times would never end. Flush with cash in the late 1990s, airlines ordered new

fleets of airplanes that even ordinary traffic flow probably couldn't have sustained. United Airlines—which declared bankruptcy in December—and other carriers struck lavish deals with pilot, mechanic, and flight attendant unions, and most management teams generally failed to anticipate an inevitable downturn in the economy.

"The problem is a number of cumulative events," said John F. Walsh, president of consulting firm Walsh Aviation in Annapolis, Md. "It's difficult to sort out what's mismanagement and what's terrorism."

Industry representatives like it that way. They're quick to point out that overall revenues for 2002 will likely be at least 20 percent below levels in 2000, the last full year before the terrorist attacks. That's a severe shock in an industry that pops the champagne if it can achieve a five percent profit margin. And before Sept. 11, annual revenues had never fallen—not even in 1991, when the Persian Gulf War spooked air travelers for several months.

Less than 18 months after the terrorist attacks, two leading carriers—United and US Airways—had been forced to declare bankruptcy. Many analysts think Delta Air Lines and American Airlines could face similar hardships in 2003.

## Long-standing Troubles

Although they are often attributed to the shock waves of Sept. 11, the



**The 9/11 terrorist attacks deserve some of the blame for airline troubles, but analysts say the problems are deeper and more long-standing. One reason is the drop in prices as travelers use the Internet to find the lowest fares.**

airlines had troubles that probably would have surfaced anyway. The terrorist attacks can plausibly be blamed for traffic that fell about eight percent in 2002, after a 6.6 percent drop in 2001. But the other major contributor to revenue—prices—has been falling for 40 years, a trend that has been exacerbated by the very technology boom that fueled the US economy in the late 1990s and helped make 1999 the most profitable year ever for airlines.

The rise of Internet travel sites like Orbitz and Expedia has helped consumers find low fares they may not have been aware of when they booked through a travel agent or directly through an airline. The result: Average fares in 2002, after adjusting for inflation, were comparable to those in 1988. “Airlines used to get a premium for an imperfect market, because consumers didn’t know the lowest prices every day,” said Duane E. Woerth, president of the Air Line Pilots Association, the largest pilots’ union. “Airlines lost control of the pricing model.”

Price-conscious leisure travelers have always looked for the lowest fares, but business travelers—who account for 60 percent of revenue and typically book the most costly seats—have joined their league. A sluggish economy, characterized by intense pressure on many companies to cut costs, has led to a surge of business travelers booking cheap

fares on the Internet, too, or flying discount carriers such as Southwest or AirTran.

Some airlines have further alienated their most prized customers by reducing the number of frequent-flier lounges and cutting back on waivers and favors, such as free booking changes, extended to top-tier customers. “It’s almost like the airlines have decided the customer is the problem,” complained consultant Michael Boyd of The Boyd Group/ASRC in Evergreen, Colo. “The message is, we’re going to nail you every chance we get.”

At least a couple of airlines may have gotten the message. Delta and American, for example, began experimenting with lower fares for “walk-ups”—last minute customers who would normally pay full price—last fall in a small number of markets. Early results suggested the reduced fares might actually enhance revenue by attracting more fliers.

Several of the major airlines have also been slow to respond to the dramatic change in the nature of flying and the demand for air travel since Sept. 11. Last year, the airlines reduced the frequency of flights, canceled service to some communities, and replaced larger jets with smaller ones. Even with about a seven percent cut in capacity, for most of 2002 the percent of seats filled with passengers, known as the load fac-

tor, was lower than it was in 2000. When there was a short-lived rise in traffic last spring, carriers immediately began adding flights to protect their market share, which proved to be a costly defensive maneuver when a rebound in air travel failed to materialize.

### The Blame Game

“It’s like an oil cartel, where all blame each other and want everybody else to cut capacity,” said Woerth. That causes worry that undisciplined recovery strategies and a need to protect share at any cost could quickly undercut reforms. Morgan Stanley analysts William Greene and Robert Susman wrote in a note to investors last fall: “We are ... concerned that at the first sign of an uptick in traffic, the airlines will increase aircraft utilization and thereby create more capacity (as they did in spring 2002).”

The major airlines’ biggest problem, however, is a cumbersome cost structure that makes quick adjustments to their business plan difficult and leaves them increasingly vulnerable to the most efficient carriers, such as Southwest—which has added capacity, not reduced it, since Sept. 11. Over the last 18 months, the airlines have announced billions of dollars in cost reductions. However, that’s not nearly enough to generate profits, raise battered stock prices, or persuade analysts that they are financially sound.

A Morgan Stanley analysis argued that American and US Airways each need to cut more than \$3 billion in costs—on top of savings already announced—to remain competitive. And many experts remain skeptical that planned savings will actually materialize. United, which lost at least \$7 million a day in 2002, claimed that it had plans to cut costs by nearly \$6 billion by 2004 when it applied for a \$1.8 billion federal loan guarantee. Yet the Air Transportation Stabilization Board, established after Sept. 11 to administer such assistance, found United’s plans to be unrealistic and rejected the application in early December, leaving the carrier with no alternative but to file bankruptcy.

The ATSB provided few specifics, but industry analysts have questioned United’s goals, too. About 25 percent of \$2.2 billion in pay cuts

that pilots agreed to in November, for example, was in “nonwage areas and foregone wages,” according to Credit Suisse First Boston analysts James Higgins and Christopher Kennedy. Such savings, they claimed, are “either suspect or not meaningful from a cash flow standpoint.”

The airlines face numerous problems, and critics differ over what may be the best structural reforms or government initiatives. Most agree that labor costs, which equal 40 percent of airline revenues, are too high for many airlines to survive as they are. United is the poster child for exorbitant labor costs. In 2000, when the company was near the peak of its profitability, the airline’s pilots extracted a 40 percent pay hike over five years that raised the top salary for a 747 captain from about \$250,000 a year to nearly \$350,000. That made them the highest-paid pilots in the industry. Mechanics got a more than 30 percent raise, and flight attendants 25 percent.

The United deals set the bar for unions negotiating with other airlines—leading to a huge disparity between the labor costs for big carriers like United, US Airways, and Delta, and low-fare airlines with nonunionized employees. On a typical 2,700-mile trip, for example, pilot wages account for \$7,259 of costs at US Airways and \$6,342 of costs at United, according to the Morgan Stanley study. For the same trip on

Southwest, pilots account for just \$2,931 of expenses. The difference at the big carriers must either be passed on to consumers in the form of higher fares or be deducted from revenues.

Still, few complained about generous labor deals back in 2000. The roaring economy filled airports with business travelers who didn’t mind paying \$2,000 for a ticket. In the summer of 2000, load factors hovered near the record level of 80 percent. “We were flying the socks off of every airplane that we had,” said David A. Sweirenga, chief economist for the Air Transport Association. Aircraft-makers Boeing and Airbus were competing fiercely for business and offering deals that airlines, with cash on hand, couldn’t pass up. With income and spending relatively lavish, labor unions seemed to have a good case for raises that would make up for earlier years when they had gone without any.

In ways that few airlines appreciated at the time, the industry was slowly changing in a manner that would put traditional “network” carriers at a sudden disadvantage after Sept. 11. In addition to Internet pricing, low-fare “discount” carriers were making inroads in an increasing number of markets. Southwest continued its steady expansion into communities served by smaller airports. Other carriers, such as AirTran, the descendant of Atlanta-based ValuJet,

and JetBlue, which began flying to Florida and the West Coast out of New York’s Kennedy airport in 2000, got airline passengers’ attention with rock-bottom fares.

Start-up airlines offering cheap fares have been a perennial nuisance for the major carriers since the airline industry was deregulated in 1978. For most of the time since then, though, discounters typically appealed to the least profitable customers—including some who probably wouldn’t fly at all if not for the bargain rates. The most profitable business customers preferred big airlines that provided more perks and better service. Besides, most discounters didn’t last long anyway. The major airlines could usually match their low fares on a small number of seats without losing much money. Of perhaps 100 new carriers to enter the market since deregulation, only a few still were flying by the late 1990s.

### Discounters Gain Credence

With almost no notice, however, the economic downturn and the reverberations from the Sept. 11 terrorist attacks made low-fare airlines a prominent force in the industry. Discounters now account for about 23 percent of the market, up from just five percent 10 years ago. With most airline stock prices thoroughly depressed, Southwest Airlines now represents 70 percent of the entire industry’s market capitalization, and Morgan Stanley predicts that within 10 years the once-humble puddle jumper will board more passengers than any other US carrier.

Perhaps most worrisome for the traditional airlines, Southwest and JetBlue have begun to invade the highly profitable long-haul routes long considered the exclusive domain of big carriers like United and American. Southwest recently introduced nonstop service from Baltimore to Los Angeles, and JetBlue provides flights from New York to the Los Angeles and San Francisco areas.

Some traditional advantages the discounters and new carriers have over established carriers often diminish over time. Southwest, for instance, has carefully selected lower-cost markets that are underserved by larger carriers, while avoiding head-to-head battles out of costly, clogged

AP photo by Toby Talbot



**Two leading carriers—United Airlines and US Airways—have already declared bankruptcy, and some others may not be far behind. On the other hand, some new, smaller start-up airlines, like JetBlue and AirTran, are doing quite well.**



**Capt. Steven Rosborough, 128th Air Refueling Wing, Wisconsin ANG, pilots a KC-135 in support of Operation Enduring Freedom. The prospects for military aviators looking for airline jobs are slimmer now than a few years ago.**

airports like Newark, O'Hare, and Atlanta. Newer carriers also typically have minimal retirement expenses and lower pay scales, since all of the employees are new.

Additionally, Southwest has been able to keep costs low by persuading its pilots to remain nonunionized and to take retirement benefits largely composed of the airline's stock. Its strategy of flying just one kind of airplane—737s—has been so successful at increasing the flexibility of crews and mechanics and reducing maintenance expenses that it is now considered a virtual prerequisite for starting a new airline. Not just that, but the big carriers are following suit. United, for instance, plans to cut its fleet from about 10 types of aircraft to five.

The lower cost structure of discount airlines produces a dramatic competitive advantage over larger carriers that has been sharply defined with the sudden, unrelenting pressure to slash expenses. According to Morgan Stanley, the estimated cost for Southwest to make a 1,100-mile flight, for example, is about \$9,861. That's about 36 percent less than the industry average of \$15,516. AirTran, JetBlue, Frontier, America West, and Alaska all registered costs below average, while Northwest, Continental, Delta, American, US Airways, and United all come in above the industry average. United's costs, at

the top of the scale, hit \$21,428—or more than twice Southwest's. The upshot is that discounters can offer break-even fares that are about 33 percent lower than those of the big carriers. In other words, the discounters could make a profit while charging fares that would lose money for bigger competitors.

In fact, that happens frequently and, under recent cost pressures, has led some airlines to reconfigure service where they are not competitive—often to their own detriment. A Merrill Lynch analysis of the Phoenix–Los Angeles market—a strong Southwest bastion—highlights how airlines have altered their operations to deal with lower-margin routes. After Sept. 11, American and United both pulled their mainline jets out of that market and replaced them with smaller aircraft flown by regional affiliates. Both lost market share. Southwest and America West, meanwhile, split the extra share abandoned by their larger competitors.

Other problems lie beyond the industry's control. Government, for instance, has been less than helpful, despite debate over indemnifying airlines against terrorist events and the creation of the Air Transporta-

tion Stabilization Board. According to the Air Transport Association, federal fees and taxes account for about a quarter of the cost of an average airline ticket, up from 15 percent in 1992. New security measures and losses associated with the airport-hassle factor could cost the industry another \$2 billion to \$4 billion.

Yet air travel remains one of America's most cutthroat businesses, and the most prominent carriers are baring their knuckles against upstarts and other competitors. The hub-and-spoke systems operated by virtually all the big airlines still offer efficient, powerful ways to funnel thousands of passengers into profitable air routes. To make better use of their hubs, airlines like American and Delta are spreading out flights instead of concentrating them during the morning and afternoon rush hours.

In addition to the universal war on costs, the established carriers seem to be taking cheaper competitors seriously. Delta plans to form a new low-cost unit to take on AirTran and JetBlue; the subsidiary is likely to fly just one kind of airplane, for greater efficiency, and concentrate on only the most profitable routes. United is considering a similar project, although skeptics think a mere resuscitation of the United Shuttle, which failed to match the service or prices of West Coast competitors, will be doomed. And the big airlines are making better use of regional affiliates like United Express and American Eagle, which increasingly fly small, efficient jets that are more comfortable than the turboprop aircraft travelers often associate with smaller carriers.

The battles aren't just between brash new carriers and their grayer brethren, either: Delta, Continental, and American have all lobbied against federal assistance for United, arguing such a move would let it off the hook for bad management decisions and give it an unfair competitive advantage. If the industry could just eke out a profit, the clamor might sound just like old times. ■

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*Richard J. Newman is a former Washington, D.C.-based defense correspondent and senior editor for US News & World Report. He is now based in the New York office of US News. His most recent article for Air Force Magazine, "Masters of Invisibility," appeared in the June 2002 issue.*



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**Maj. Gen. Benjamin D. Foulois was the Army's first pilot, a "one-man" Air Force, and a founding father of airpower.**

# Foulois

**B**ENNY Foulois's name may not be as familiar to many Americans as other airpower greats such as Hap Arnold, Jimmy Doolittle, Billy Mitchell, or Tooey Spaatz, but it should be. Foulois was not only the Army's first pilot but also a vital component of the early fight to establish an independent air force.

Born Dec. 9, 1879, in Washington, Conn., Benjamin Delahauf Foulois had completed 11 years in a one-room schoolhouse when he was given a choice of continuing his education or entering the family plumbing business. He chose the latter, but when the Spanish-American War loomed, he enlisted, on July 7, 1898, in the 1st United States Volunteer Engineers.

Six months later, when the engineers mustered him out as a sergeant, Foulois enlisted in the Regular Army infantry. He participated in intense jungle fighting in the Philippines, became first sergeant of his unit, and, to his surprise, received orders to take the examination for a commission.

On July 9, 1901, the Army made him a second lieutenant—launching a career in which Foulois would pit his intelligence, daring, and integrity against any odds.

His first brush with flying machines came when he flew the airship, Signal Corps Dirigible No. 1, after its August 1908 acceptance tests at Ft. Myer, Va. Once the dirigible had passed its flight tests, Foulois was checked out to pilot the craft after just a few takeoffs and land-

ings, gaining distinction as the Army's first pilot. While he was at Ft. Myer, though, Foulois watched Orville Wright demonstrate his Military Flyer and became convinced that the future belonged to the airplane.

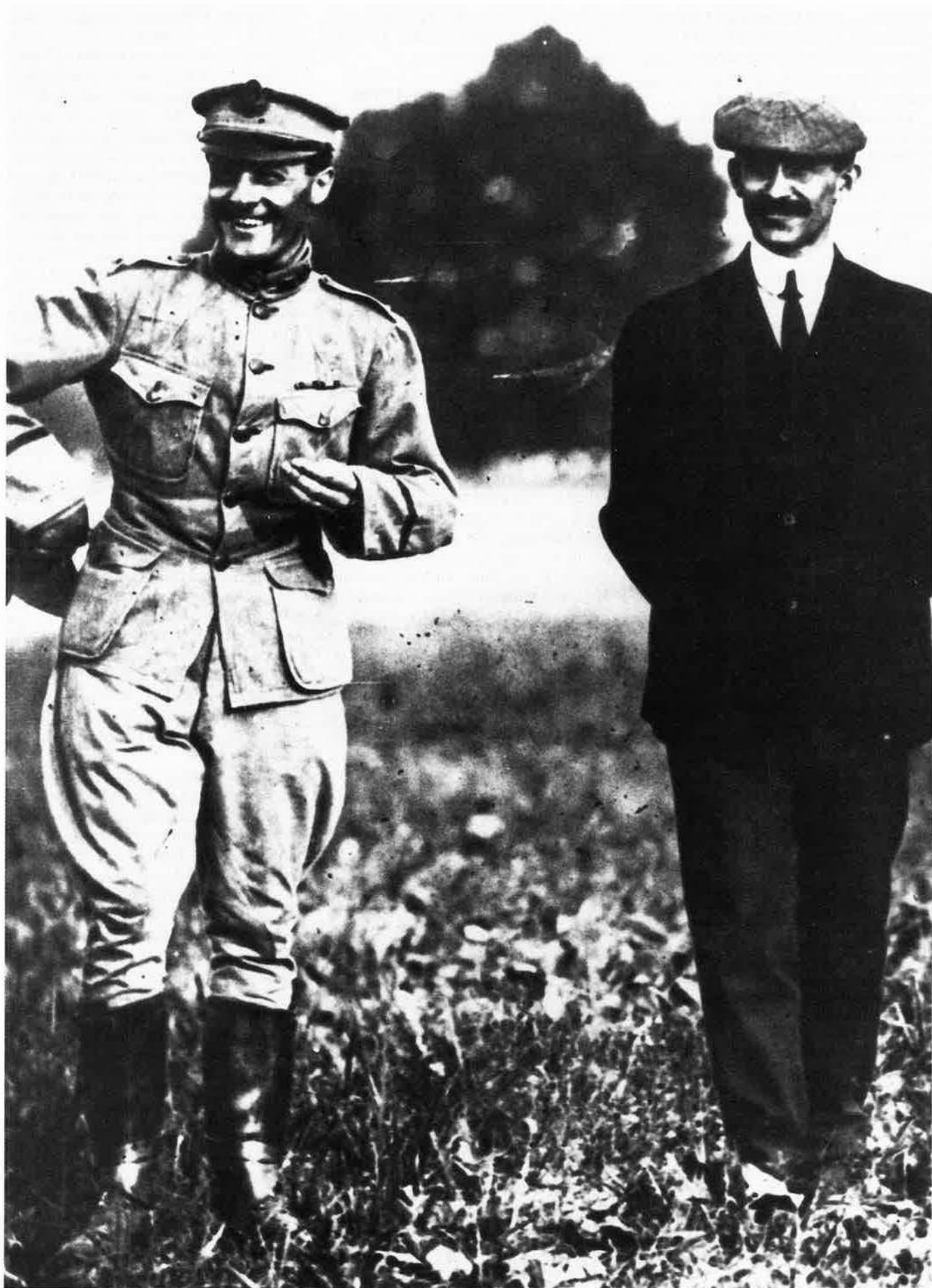
Foulois's presence at Ft. Myer was no accident. In 1908, he graduated from Signal Corps school with a radical thesis entitled "The Tactical and Strategic Value of Dirigible Balloons and Aerodynamical Flying Machines." In it he predicted engagements between hostile aerial fleets, a struggle for air supremacy, the replacement of the horse by the airplane in reconnaissance, and wireless air-to-ground communications that included the transmission of photographs. The staff of the chief signal officer read the thesis and selected Foulois for the aeronautical board designated to conduct the 1908 airship and airplane trials.

Despite the Sept. 17, 1908, crash of the Military Flyer that killed 1st Lt. Thomas E. Selfridge and severely injured Orville Wright, Foulois was committed to aviation and continued flying and teaching in Dirigible No. 1, even though he had misgivings about its efficiency. The following year, when Orville and Wilbur Wright returned to Ft. Myer, Foulois gained their respect by donning coveralls, getting his hands dirty, and asking intelligent questions.

The Army selected Foulois to accompany Orville, on July 30, 1909, as an observer on the final and most important qualifying flight. In his memoirs, Foulois jokingly stated that he liked to think he was chosen on

**By Walter J. Boyne**

*Then—Lt. Benjamin Delahauf Foulois and Orville Wright after the completion of a 10-mile round-trip qualifying flight on July 30, 1909. The Wright Model A was formally accepted by the Army, becoming Signal Corps Aeroplane No. 1, following that flight. About one year earlier, he was checked out to fly an Army dirigible, thus becoming the service's first pilot.*



the basis of intellectual and technical ability, but he realized later that it was his 5-foot-6-inch stature, light 126-pound weight, and map-reading ability that turned the trick.

Orville and Foulois flew the course at a sizzling average 42.5 mph and climbed to 400 feet. The Army purchased the Wright Model A, Serial No. 1, their Military Flyer. It became Signal Corps Aeroplane No. 1.

Foulois's goal had been to learn to pilot the aircraft from the Wright brothers; instead the Army sent him to attend an aviation congress in Europe. In actuality, it was a knuckle-rapping assignment because of an adverse recommendation he had made about dirigibles.

Shortly after his return from Europe, Foulois received about 54 minutes of flying instruction from Wilbur Wright, not enough to solo. The Wrights had fulfilled their contract by teaching 1st Lt. Frank P. Lahm and 2nd Lt. Frederic E. Humphreys to fly. On Nov. 5, 1909, Lahm and Humphreys crashed Aeroplane No. 1. They were not hurt, but the Army returned them to their normal assignments. Foulois, though not fully trained, became the Army's only pilot. With repairs made, he was told

to transport the Military Flyer to Chicago for display, then to Ft. Sam Houston in San Antonio.

### Correspondence School Pilot

Brig. Gen. James Allen, Army chief signal officer, told him to "take plenty of spare parts and teach yourself to fly." He did exactly that and on March 2, 1910, during several flights, made his first takeoff, first solo, first landing, and first crash.

For repairs, the government appropriated \$150—a gross underestimate. Foulois got help from Army craftsmen and used his own money to keep the Military Flyer airborne. He later called himself the first "correspondence school pilot," for after each mishap, he would write to the Wrights to learn why it had occurred. In this long process the one-man air force invented the seatbelt and made a tricycle landing gear by bolting wheels from a farm cultivator to the Flyer, thus freeing it from its catapult launches. To get attention for his new weapon, he buzzed his fellow officers' tents and, on another occasion, horse artillery. Upon landing from that flight, he narrowly missed the tent of future General of the Army Douglas MacArthur.

Flying a Wright B aircraft, Foulois, within a few months, made the first official Army reconnaissance flight, established US records for weight carried and distance, and conducted the first practical use of the radio in reconnaissance missions. Over the next few years, he won his Military Aviator pilot rating and established an aviation center at Ft. Leavenworth, Kan. He also wrote to the chief signal officer, recommending against ill-considered legislation calling for the removal of aviation from the Signal Corps and creation of an "Aviation Corps" as part of the line of the Army. Other fliers also opposed the 1913 measure, which got nowhere. To the eternal thanks of fliers, Foulois successfully lobbied Congress for the radical concept of flying pay.

Then, as commander of the First Aero Squadron at the Signal Corps Aviation School in San Diego, he suffered through the terrible period when the adverse flying characteristics of the Wright and Curtiss pushers were killing students at a vicious rate. He recommended the Army scrap the pushers and go to tractor-type aircraft.

Pancho Villa's March 9, 1916, raid on Columbus, N.M., presented Foulois and the First Aero Squadron, with its eight Curtiss JN-2s biplanes, with a major opportunity. On March 19, he led his squadron to Casas Grandes, 125 miles south of the Mexican border.

Unfortunately weather, terrain, inexperienced pilots, lack of maps, and no communications combined with the terrible shortcomings of the underpowered JN-2s (modified over time to be JN-3s) to pose unsolvable problems. Crashes and maintenance troubles steadily reduced their numbers until, by April 14, the First Aero Squadron was down to its last two aircraft. He begged the Army for new aircraft, parts, medicine, and food. When new aircraft at last arrived they were Curtiss R-2s, which Foulois promptly pronounced unsuitable for operations.

Despite all their difficulties, Foulois and his men did a great deal of scouting and maintained an aerial mail route for the Mexican Punitive Expedition troops—commanded by Brig. Gen. John J. Pershing. Foulois's candid and comprehensive report on the operations, plus the support of Pershing and Secretary of War Newton D. Baker, led to the first substan-



**Captain Foulois in 1914, standing in front of a Burgess-Wright tractor-type aircraft. Foulois pushed hard for the new, safer type of aircraft in his role as commander of the First Aero Squadron at San Diego's Signal Corps Aviation School.**

tial US aviation appropriation—\$13,281,666, approved by Congress on Aug. 29, 1916. It was not much, given that the major nations of Europe had been at war for two years and were employing large modern air forces, but it was a start.

### Establishing Airpower

The Army posted Foulois to work with the National Advisory Committee for Aeronautics to draw up an aircraft production plan in the event the US entered the war. (It did on April 6, 1917.) Once the US was committed, French Premier Alexander Ribot sent a telegram requesting the United States form a flying corps of 4,500 aircraft, with 5,000 pilots and 50,000 mechanics. He wanted the US to produce 2,000 aircraft and 4,000 engines each month, so that 16,500 could be delivered in the first six months of 1918.

Foulois, now a major and chairman of the Joint Army and Navy Technical Aircraft Committee, performed what he later considered to be his greatest contribution to aviation. He had to transform Ribot's request into detailed programs. Foulois estimated the number of student pilots required, located training fields, determined budgets, selected aircraft companies, and much more.

Once that was done, Foulois then had to sell the absolutely unprecedented program to the Army General Staff and Congress. He did it. Congress quickly passed a bill for \$640 million, then the largest amount for a single purpose in American history. The President signed it on July 24, 1917, only eight weeks after the receipt of Ribot's telegram. On that same day, Foulois was promoted to brigadier general. Pershing, now commander of the American Expeditionary Force, wanted Foulois to come to France immediately. However, Foulois asked for six months so he could oversee implementation of the production plan.

That was a tactical error. Lt. Col. Billy Mitchell, who had been in France since March 1917, became the premier US aviation representative there. Mitchell was promoted to colonel in August 1917. About three months later, Foulois arrived and officially took over as Chief of Air Service, American Expeditionary Force. It was not an easy transition.

Mitchell complained about an "in-



*Generals Foulois (left) and Pershing at Issoudon Aviation Camp, France, during World War I. As commander of the American Expeditionary Force, Pershing wanted Foulois by his side immediately, but Foulois was delayed by several months.*

competent lot of air warriors" who came in as "carpetbaggers." Foulois ranted about Mitchell's insubordination and ignorance of aviation matters, particularly logistics and training. (Mitchell had been given a Junior Military Aviator rating without taking the required exam.)

Ultimately, Pershing placed Maj. Gen. Mason M. Patrick over both Foulois and Mitchell, with orders to settle them down. As Patrick's deputy, Foulois devoted himself to the technical and tactical training of American air units. Despite their disagreements, Foulois had recommended Mitchell for a combat assignment, instead of dispatching him back to the United States. With his successful conduct of combat operations, Mitchell emerged as a public figure, with many decorations and promotion to brigadier general. Foulois, on the other hand, received little acclaim for his invaluable work.

### Demobilization and Demotion

After the war, the Army quickly demobilized the Air Service officer corps. Virtually all of those who remained reverted to their permanent ranks as a means to save money. When Foulois returned to the United

States in 1919, he went from brigadier general to his permanent rank of captain in the Infantry and temporary rank as major in the Air Service. In contrast, Mitchell retained his rank as brigadier general and became assistant director of the Air Service, under Maj. Gen. Charles T. Menoher.

In October 1919, Foulois was called to testify before the Senate military affairs committee on a bill that was to have created a "Department of Aeronautics ... and Administration of a United States Air Force." He answered questions and left a 30,000-word statement in which he attacked the Army's failure to build up the Air Service and the Navy's efforts to tear it down. Foulois's testimony was accurate but extremely impolitic. It antagonized his superiors in the War Department where many officers were not comfortable with him, a mustang up from the ranks. He also alienated the assistant secretary of the Navy, the up-and-coming Franklin D. Roosevelt.

Conscious that he was without friends in Washington, Foulois took the position of air attaché in Germany, arriving in May 1920 for a four-year tour. There, as everywhere, he did an excellent job, sending an

enormous amount of technical material back to McCook Field, Ohio.

It was during this time that Mitchell began his fall from grace. Foulois and Mitchell were the vital components of the early fight to establish an independent air force. However, Foulois liked to work within the system, while Mitchell took his case directly to the press and public, ultimately leading to his court-martial in 1925 and resignation in February 1926.

Foulois returned from Germany and attended the Command and General Staff School at Ft. Leavenworth, Kan., where he watched with mixed emotions as Maj. Gen. James E. Fechet became assistant to the Chief of the Air Service. Fechet was a cavalryman who learned to fly at 41. He served for 30 months as Patrick's assistant deputy, before becoming Chief of the Air Corps in 1927. However, Fechet rightly gauged Foulois's worth and picked him to become his assistant.

### Working Toward Chief

Foulois traded lieutenant colonel oak leaves for brigadier general stars (he never held the rank of colonel) and began a campaign to prepare himself to become the Chief of Air Corps. Fechet helped by allowing Foulois

great latitude in his work and giving him challenging assignments.

For instance, to learn about current logistics programs, ongoing research and development, and, most important, the cooperation between the Materiel Division and operational units, Foulois swapped jobs for a year with Brig. Gen. William E. Gilmore, becoming head of the Materiel Division at Wright Field, Ohio. However, it was the great Air Corps Coast Defense Exercises of May 1931 that gave Foulois the exposure he needed to cinch his elevation to Air Corps Chief.

During the exercise, Foulois led 672 aircraft—virtually every operational bomber, fighter, attack, and observation airplane in the Air Corps—on flights that included practice bomb runs over many cities, including New York and Boston, and finally en masse to Washington, D.C. Foulois, for once, received positive press attention, matched by accolades from the Secretary of War and the presentation of the Mackay Trophy for the most meritorious flight of the year.

Foulois became Chief of Air Corps on Dec. 20, 1931. He was a flier's flier, logging more flying time each year (much of it solo) than all but a

handful of junior pilots in operational units. He enjoyed inspecting operational units and liked flying his personal Douglas O-38F to the inspection sites. He began work as Chief with goodwill and in his usual systematic fashion.

Foulois gave the task of creating future doctrine to his assistant chief, Brig. Gen. Oscar Westover, and the Air Corps Tactical School at Maxwell Field, Ala. He also charged Westover with formulating the plans that led to the establishment of the provisional General Headquarters Air Force, which was to have reconnaissance and bombardment as primary functions.

Foulois concentrated on research and development. He established requirements that led to Project A, the Boeing XB-15 long range bomber. He fostered a permissive atmosphere, urging major aviation firms to continue their own research. One result was that Boeing built upon its XB-15 work, proposing a four-engine B-17 prototype for the 1935 multiengine bomber competition.

Unfortunately Foulois's positive efforts were swallowed up in what unfairly became known as the Air-mail Fiasco. Because of alleged irregularities in their award, President Roosevelt instructed Postmaster General James A. Farley to cancel all airmail contracts. He ordered Foulois, who had said the Air Corps could take over, to begin airmail operations on Feb. 19, 1934. Foulois initially assigned 122 aircraft, 200 pilots (half of whom had less than two years of experience), and 340 enlisted personnel to handle the job. The operation began amidst predictions of disaster. Few Air Corps aircraft were equipped to fly under instrument conditions and a very small number of pilots were trained to do so. Most pilots were not even qualified to fly at night.

Despite Foulois's emphasis on safe operations, there were 66 crashes and 12 fatalities while the Air Corps carried the mail. Part of the problem was the enthusiasm of young pilots who believed they were invulnerable and flew when they should have stayed on the ground. Morale remained high even through the losses and terrible working conditions. Most hangars became chilly, dirty dormitories, and enlisted personnel often did not have money for food.

Nonetheless, Foulois became the



*During his tenure as Chief of the Air Corps, Foulois logged more flying time each year than all but a handful of pilots. Much of it was solo in his personal aircraft.*

target of the press, Congress, and President Roosevelt, who was embarrassed by the political backlash of canceling the mail contracts. Roosevelt gave Foulois a severe reprimand. Foulois's troubles did not end there.

### Trouble With Congress

On May 7, 1934, a subcommittee headed by New Hampshire Congressman William N. Rogers charged that Foulois had violated procurement regulations by negotiating contracts with aircraft manufacturers rather than always giving contracts to the lowest bidder. After four months of hearings, the subcommittee recommended that Foulois be relieved of his position as Chief of the Air Corps. Foulois was given a chance to rebut the charges and made his case so convincingly that Secretary of War George H. Dern, no friend of his, wrote a letter in his defense.

The matter was dropped, but the Rogers subcommittee wasn't through. It next attacked Foulois on the formation of the GHQ Air Force, charging that the Air Corps had no right to plan an air force that could fly beyond the coastline to repel the enemy. Rogers pressed for an Army investigation. Although the Army inspector general report exonerated Foulois of all wrongdoing, it criticized his "exaggerated, unfair, and misleading statements to a Congressional committee." Foulois received a slap on the wrist to mollify the Rogers subcommittee and was admonished not to use "unorthodox language" against the War Department General Staff.

It was the last straw. Foulois was tired and asked for a three-month leave of absence, which would expire just a few days before he completed his four-year tour as Chief of Air Corps. On Christmas Day 1935, he made his last flight, taking his O-38F on a 4.5-hour flight from Bolling Field, D.C., down to Kitty Hawk, N.C., and back. On Dec. 31, his last day as Chief, he returned to his office to clean out his desk. Not a single person from the War Department dropped in to say good-bye. He found no parade sched-

***Foulois in his later years turned down offers for a job in industry. Instead, he devoted the more than 30 years remaining to him to public speaking, writing, and to his family. Ever a flier, he refused to be recalled to active duty in 1941 because he didn't want a desk job.***



uled, no party arranged, no invitations to dinner. There were not even any phone calls, messages, or letters of farewell.

It was a sad and lonely end to a 36-year career during which Foulois had done much to advance American airpower. He was Chief during the very worst years of the Depression, when Congress had reduced already limited budgets. Despite low pay and limited promotions, he created a climate that retained many of the men who would emerge as leaders in World War II. He saw to it that men such as Hap Arnold, Frank Andrews, and Tooey Spaatz were given positions of real responsibility so they could demonstrate their skills.

Foulois's efforts to maintain a viable aircraft industry were important, and the requirements for many of the great Army Air Forces aircraft of World War II were formulated on his watch. He also went to great lengths to take care of enlisted and noncommissioned

personnel. Yet many things—bad luck, the Depression, old enemies, and his own less-than-sparkling personality—combined to deny him the recognition he deserved until many years after his retirement.

Foulois turned down several job offers from industry, preferring to live on his retirement pay and spend his time writing and speaking. He ran for Congress from New Jersey in 1941, losing by a narrow margin. Somewhat surprisingly, given his love of the service, he refused an offer to be recalled to duty in 1942 because he did not want a desk job.

He lived quietly near Ventnor, N.J., until 1958, when his wife became ill and was hospitalized at Andrews AFB, Md. Foulois moved in to the visiting officers quarters and remained there after her death in 1961. He was a familiar sight at the Andrews Officers Club, where he enjoyed talking to young officers until late in 1966 when he suffered a heart attack. Foulois died on April 25, 1967, and was buried in his hometown of Washington, Conn.

This time, however, he received a fitting honor—a fly-over of USAF aircraft in the missing-man formation. ■

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*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 400 articles about aviation topics and 29 books, the most recent of which is The Two O'Clock War: The 1973 Yom Kippur Conflict and the Airlift That Saved Israel. His most recent article for Air Force Magazine, "Tex," appeared in the July 2002 issue.*

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By Frances McKenney, Assistant Managing Editor

## AFA Presents Space Award

It was "a year of unprecedented change," noted his award citation, but retired Lt. Gen. Roger G. DeKok, former vice commander of Air Force Space Command, led USAF's space forces "with a steady hand and steadfast purpose."

In recognition of his leadership, DeKok received the Gen. Thomas D. White USAF Space Award at the 31st Air Force Ball at Los Angeles in November.

The black-tie gala at the Beverly Hilton Hotel is a highlight of a week-long series of events, called the Los Angeles Space Celebration, organized around the AFA national symposium on space. The events are sponsored by the Air Force Association and the **Gen. B.A. Schriever Los Angeles Chapter**, with assistance from the **General Doolittle Los Angeles Area Chapter** and the **Orange County/Gen. Curtis E. LeMay Chapter**.

AFA and the Schriever Chapter have sponsored the White Award—established in 1961 by the National Geographic Society—since 1996. White was USAF's fourth Chief of Staff.

Along with the White Award, a special presentation at the ball honored G. Wesley Clark, who was named an Aerospace Education Foundation General Bernard A. Schriever Fellow. Clark is a retired USAF major general and a Schriever Chapter former president and chairman of the board. He received the award from AEF President L. Boyd Anderson and Schriever Chapter President Rick L. Randall. The award is named for the four-star general described as "the architect of the Air Force's ballistic missile and military space program."

This year's Air Force Ball raised \$95,000 for AEF and for the Schriever Chapter's Education Foundation, which focuses on aerospace education initiatives in the Los Angeles area as well as at the state and national level.

In remarks to the Air Force Ball audience, Jim F. Albaugh, executive vice president of Boeing and the general chairman of the ball, reminded the audience that aerospace education develops scientists, engineers,



USAF photo by Ron Hall

**AFA Board Chairman John Politi congratulates retired Lt. Gen. Roger DeKok at the presentation of the space award at the Los Angeles Ball in November. Looking on is Schriever Chapter Board Chairman Sebastian Cogliore.**

and technological leaders who shape the future.

He listed AEF's achievements over the past year and introduced three special guests who had benefitted from the foundation's programs: Visions of Exploration teacher John Ortega from Griffith Middle School in Los Angeles; SSgt. Josephine J. De Guzman, a Pitsenbarger Award recipient from Travis AFB, Calif.; and Spouse Scholarship awardee Crystal Grandy-Richardson from Edwards AFB, Calif.

These individuals' accomplishments are just a few examples of what your contributions to aerospace education make possible, said Albaugh.

## Good Grades for Visions

"Visions of Exploration," an educational program sponsored by AEF, *USA Today*, and AFA chapters, received an A from teachers who said it encourages youngsters to study math and science.

Debby Dodge and Jeanne Fetner, representatives from *USA Today*, presented the report card from the teachers to a **Central Florida Chap-**

**ter** council meeting in November. Through the Visions of Exploration program, elementary and middle school classrooms receive *USA Today* for 18 weeks, along with lesson plans focusing on math, science, and technology.

Each year, the newspaper mails out a survey to Visions teachers, according to Fetner, a national account manager who oversees the Visions program for the newspaper. She and Dodge, national sales manager in charge of *USA Today's* educational initiatives, told the Central Florida Chapter that 78 percent of the survey respondents said Visions was very good or excellent at increasing student interest in science, math, and current events. Ninety-four percent would recommend the program to others.

Dodge and Fetner added that Visions has been updated with more activities incorporating Air Force, space exploration, aviation, war on terror, and centennial of flight topics.

Visions of Exploration started in 1991 with 30 classrooms participating. AEF reported that for the last school year, 66 AFA chapters in 32

states sponsored Visions programs in more than 1,200 classrooms in the continental US. This represented more than 30,000 students.

According to Richard A. Ortega, the Central Florida Chapter Vice President, the chapter sponsors 200 classrooms in public and private schools in four counties.

### Over the Narragansett

Members of the **Metro Rhode Island Chapter** and the **Newport Blue & Gold (R.I.) Chapter** saw the contrast between old and new when they toured a state-of-the-art C-130J at Quonset State Airport, R.I., and then flew in a venerable C-130.

The joint chapter activity, sponsored by Metro Rhode Island and including students from the Naval War College at Newport, began on an October afternoon at the operations facility of the Air National Guard's 143rd Airlift Wing, where the visitors received a briefing on the C-130J's capabilities and technologies. USAF began deploying the J model in 1999. It climbs faster and higher than earlier versions of the Hercules. It also flies farther at a higher cruise speed and can take off and land in a shorter distance.

The visitors went out to the flight line for a firsthand look inside a J model. Lt. Col. Kevin S.C. Darnell, an AWACS navigator and president of the Newport Blue & Gold Chapter, said the group—even B-2 pilot Maj. Paul W. Tibbets IV—was impressed.

The visitors then took a C-130 familiarization flight over Narragansett Bay, to see the Rhode Island ANG's training area and to compare differences between the J and an older model, initial versions of which USAF began receiving in 1956.

The visitors then enjoyed a steak dinner at the all-ranks club at Quonset, located on the western side of the Narragansett. Blue & Gold Chapter member Col. Roger H. Ducey was guest speaker for the gathering. Now the senior Air Force advisor to the Naval War College—where the Blue & Gold is located—Ducey spoke about his experiences early last year when he commanded an Operation Enduring Freedom expeditionary group.

Among the AFA leaders who turned out for this joint chapter event were David T. Buckwalter, region president of the New England Region; Wayne R. Mrozinski, state president; and Joseph N. Waller, Metro Rhode Island chapter president.

### Hearts and Cookies

For the **Frank Luke (Ariz.) Chapter**, it was a matter of hearts and cookies.

*William Brown of the Concho (Tex.) Chapter mans a griddle at the chapter's seventh annual pancake breakfast. The chapter raised more than \$900 through the event, at Goodfellow AFB, Tex.*



USAF photo by A1C Kevin Brosius

In November, the chapter contributed \$200 each to Luke Air Force Base programs called Hearts Together and Operation Warm Heart/Christmas Help. Community Partner John H. Nix matched the donations.

In addition, the chapter gave \$80 to the base chapel's Cookies for the Flight Line program. Nix will help the chapter meet this monthly obligation, too.

Operation Warm Heart/Christmas Help provides assistance—usually a check for use at the commissary—to active duty or civilian personnel stationed at Luke, the auxiliary field at Gila Bend, or serving on a remote tour.

The Family Support Center, services squadron, and chapel on base sponsor Hearts Together. The program offers information and monthly social activities to help families cope while a service member is deployed, on extended temporary duty, or on a remote assignment.

Harry H. Bailey, Luke Chapter president, said 150 USAF dependents recently went to a Hearts Together function at an ice skating rink. They were treated to three hours of ice skating, refreshments, and a goodies basket. The chapter's donation paid for about one-third of the cost for the event.

Participation in Hearts Together increased by 60 percent after Sept. 11, 2001, according to the base. Funding, on the other hand, began declining. Bailey said, "Our donations to Luke Air Force Base recognition and welfare programs are our way of providing essential supplemental support to underfunded activities."

### For a Strong Defense

USAF Gen. Charles R. Holland, commander of US Special Operations Command at MacDill AFB, Fla., received AFA Florida's Jerry Waterman award in September.

"His participation in the war on terrorism and his support for the Air Force Association have been unwavering," noted Bruce E. Marshall, region president of the Florida Region. Marshall presented the award to Holland at a Tampa, Fla., dining-out for MacDill's 6th Air Mobility Wing. The event celebrated the Air Force's 55th anniversary.

Holland's remarks to the audience highlighted air mobility's importance to special operations forces, according to Marshall. It takes transport and refueling aircraft for special ops to carry out their charge to go anywhere, Holland said. He is a member of the **Jerry Waterman (Fla.) Chapter**.

Among other AFA notables at the dining-out were Robert F. Cutler, president of the **Gen. Nathan F. Twinning Chapter**, and Kenneth Beers, then president of the **Florida Highlands Chapter**.

The Waterman award is presented annually to an active duty USAF service member in Florida who contributes the most to a strong national defense. It is named for Jerome A. Waterman. He was born in 1883 in Georgia and volunteered for World War I, also serving in World War II. He retired as a National Guard lieutenant colonel in 1948. Waterman was instrumental in establishing such Army Air Corps sites as Drew Field and MacDill Field. Active in military affairs in Florida until his death in 1970, Waterman founded the Florida West Coast Chapter, later renamed in his honor. It was the state's first AFA chapter.

**Salute to Youth**

The **Harry S. Truman (Mo.) Chapter's** annual Salute to Youth honored the state's Teacher of the Year and several AFJROTC cadets.

Scott McQuerry of the Pioneer Ridge Science Education Center in

Independence, Mo., received the 2002 Teacher of the Year award. It was presented by Keith N. Sawyer, region president of the Midwest Region, and Judy K. Church, Missouri state president.

The Truman Chapter, headed by Patricia J. Snyder, had sponsored McQuerry for this state level award. He was a middle school science teacher when he was named chapter level Teacher of the Year. He has since become director of the science center, which is part of the Independence school district.

The AFJROTC cadets recognized at this third annual Salute to Youth were seven of the nine whose attendance at the American Legion's Boys State and Girls State programs last summer was sponsored by the chapter. Boys State and Girls State events teach youngsters the fundamentals of citizenship and give them an opportunity to learn how government works.

The chapter conducted a silent auction, as part of their Salute to Youth, raising more than \$2,000 for support of local AFJROTC programs.

Snyder said the Salute to Youth is "a way to inform our membership on

the many ways we assist the five Air Force JROTC units in the greater Kansas City area." Along with funds for the American Legion summer program, chapter members help provide drill uniforms and trophies for the cadets, assist at drill meets, and attend school booster club meetings to lend support.

**Task Force Report**

Brig. Gen. George B. Patrick III, chief of staff of the South Carolina Air National Guard, was guest speaker at the quarterly chapter meeting of the **Columbia Palmetto (S.C.) Chapter** in November. He spoke about his experiences last fall, commanding a coalition force in Kyrgyzstan. It was made up of members from eight countries and was deployed at Manas airport near the country's capital, Bishkek.

According to Roger Rucker, former state president, Patrick's unit provided base support for coalition aircraft, none of them American. Patrick is a member of the **Swamp Fox (S.C.) Chapter**.

The dinner meeting, held at Ft. Jackson, S.C., was hosted by John Marshall, chapter president. Among the special guests were Donald L. Peterson, AFA executive director; Stanley V. Hood, an AFA national director; and Col. Jay E. Seward II, professor of aerospace studies at the University of South Carolina in Columbia. Seward, who is a Columbia Palmetto Chapter member, was accompanied by several AFROTC cadets from his unit.

**Capitol Flags**

**Northern Shenandoah Valley (Va.) Chapter** officers and the region president of the Central East Region presented AFJROTC cadets at Randolph-Macon Academy with an American flag that had flown over the US Capitol.

In November, Thomas G. Shepherd, region president; Arthur W. Olson II, chapter president; Eric H. Rodney, secretary; George C. Madden, treasurer; and chapter member Ivan G. Mieth participated in a morning chapel service with the cadets at Randolph-Macon, a boarding school in Front Royal, Va.

As part of the service, the school's president, Henry M. Hobgood, accepted the flag on behalf of his students. The academy offers the only AFJROTC program at a co-educational boarding school in the US.

At Olson's request, US Rep. Frank R. Wolf (R-Va.) had arranged for several flags to fly over the Capitol

**Unit Reunions**

[reunions@afa.org](mailto:reunions@afa.org)

**317th FIS**, Elmendorf AFB, AK. April 13-15 at the Hilton Palacio del Rio in San Antonio. **Contact:** Chuck Anonsen, 6230 Inverrary Dr., San Antonio, TX 78244-1519 (210-662-7987) (dmanonsen@aol.com).

**446th BG**. May 15-18 at the Red Lion Hanalei Hotel in San Diego. **Contact:** Bill Davenport, 13382 Wheeler Pl., Santa Ana, CA 92705-1934.

**906th ARS** (1958-present). Sept. 9-14 in Phoenix. **Contact:** William Warwick, 343 Hide-A-Way Ln., Lindale, TX 75771-5201 (903-882-8740).

**Air Transport Cmd. Assn** (WWII). May 8-10 in New Orleans. **Contact:** Rick and Gail Ravitts (815-229-1122) (devonshir@att.net).

**Birkenfeld AB, Germany** (1948-69). May 29-June 2 in Branson, MO. **Contact:** Jackie King, 360 Green Links Dr., Cameron, NC 28326 (919-499-1800) (jackieandirma@hotmail.com).

**Cannon AFB, NM**, all units and civilians. Oct. 1-6 in Clovis, NM. **Contacts:** Virginia (505-763-3356) or Mike Connolly (505-762-5537) (mikec.plateautel.net) or Marian (505-266-6621).

**OCS Class 59-B**. Sept. 11-14 in Dayton, OH. **Contact:** Allen Partin, 114 East Rahn Rd., Dayton, OH 45429 (937-436-9588) (ajpbillyjoe@yahoo.com).

**Thunderbirds Alumni Assn**. Nov. 20-23 at Caesars Palace Hotel & Casino in Las Vegas. **Contact:** Doris Wilson, 7661 Angel Crest Cir., Las Vegas, NV 89117 (702-871-7197) (doewilson@aol.com).

**University of Mississippi ROTC**, joint Air Force, Army, and Navy ROTC reunion. April 11-13 at the University of Mississippi in University, MS. **Contacts:** Angie Gurner or Capt. Ken McDonald (662-915-7166) (adgurner@olemiss.edu).

**USAF Pilot Tng Class 69-04**, Webb AFB, TX. May 1-4 in Atlanta. **Contacts:** John Kapsaroff (ajkapsaroff@bellsouth.net) or John Wiley III (jwiley@mindspring.com).

**WWII bombardiers**, all units. May 15-17 at the Holiday Inn Express in Savannah, GA. **Contact:** Bob Thompson, 280 Sharon Dr., Pittsburgh, PA 15221 (412-351-0483).

Seeking former **Forward Air Controllers** for a reunion in 2004. **Contact:** Glen Bremenkamp, 2216 Popps Ferry Rd., Biloxi, MS (228-388-2817) (gsbrem@aol.com).

Seeking members of **Pilot Tng Class 55-T** for a reunion. **Contact:** George Bass, 923 Burton Mountain Rd., Clarkesville, GA 30523 (706-947-3346) (tsbass@alltel.net).

Mail unit reunion notices four months ahead of the event 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.

on Sept. 18, marking the Air Force's 55th anniversary.

### November in Central Florida

Sixteen AFROTC cadets from the University of Central Florida received a total of \$7,000 in scholarships from the **Central Florida Chapter** during a November dining-out at an Orlando, Fla., hotel.

Harvey W.C. Shelton, the chapter's executive VP, presented a \$1,000 scholarship named for Gen. Bruce K. Holloway, to cadet Robert J. Rock Jr. Cadet Eric Hostetler also received a \$1,000 scholarship. Lt. Col. Timothy D. Wieck, commander of the ROTC detachment as well as a chapter member, joined Shelton for scholarship presentations to the other cadets.

Guest speaker for the evening was Maj. Gen. Scott C. Bergren, commander of Ogden Air Logistics Center, Hill AFB, Utah.

Later that month, a member of the Central Florida Chapter served as guest speaker at a Veterans Day ceremony in Orlando. AFRC Maj. Gen. Douglas S. Metcalf addressed an audience of active duty and reserve members, military retirees, and cadets from several local JROTC units, representing all services. Metcalf spoke about the sacrifice of our veterans, as well as today's military service members. He is mobilization assistant to the commander of Aeronautical Systems Center at Wright-Patterson AFB, Ohio.

Among the Central Florida members at the ceremony were Richard A. Ortega, James J. Burns, Sally A. Kopke, and Wieck.

### More AFA/AEF News

■ In early December, the **Ute-Rocky Mountain (Utah) Chapter** made its annual holiday visit to the Veterans Affairs Medical Center in Salt Lake City, this time including members from the **Northern Utah Chapter** and the **Salt Lake Chapter** and AFJROTC cadets from Northridge High School. The visitors sang carols and, with help from Ute-Rocky Mountain Chapter member Bob Dansie dressed as Santa, distributed 150 gifts to the medical center's patients.

### Corrections

In the January 2003 "AFA/AEF National Report," the Nov. 9 Air Force Academy win was its 24th in the series against Army. Thanks to Lt. Col. Edward M. Sienkiewicz Jr. for correcting this error. Also, it was Clyde S. Judy of the Brig. Gen. Pete Everest (W.Va.) Chapter who received a Medal of Merit from AFA Chairman John Politi.



USAF photo by Henry Grayson

**SMSgt. Daniel Galvin** received the academic achievement award at the **SNCO Academy graduation in November** from retired CMSAF **James McCoy** (left), for whom the award was recently rededicated, and **AFA Board Chairman John Politi**.

Among the holiday visitors were Nathan H. Mazer, an AFA national director emeritus, and Brad Sutton, state chairman of the board. From Ute-Rocky Mountain were Gary Strack, president; Maj. Dave Schlosser, VP; and Richard Flackman, treasurer.

### Have AFA/AEF News?

Contributions to "AFA/AEF National Report" should be sent to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: afa-aef@afa.org. ■



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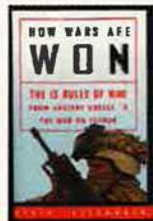
# Books

Compiled by Chequita Wood, Editorial Associate

**The American Fighter Plane.** Amy E. Williams and Ted Williams. MetroBooks, New York (212-685-6610). 176 pages. \$15.98.



**How Wars Are Won: The 13 Rules of War From Ancient Greece to the War on Terror.** Bevin Alexander. Crown Publishers, New York (800-726-0600). 400 pages. \$25.95.



**Norway 1940: The Forgotten Fiasco.** Joseph Kynoch. Stackpole Books, Mechanicsburg, PA (800-732-3669). 174 pages. \$26.95.



**Art of War: Eyewitness US Combat Art From the Revolution Through the Twentieth Century.** Col. H. Avery Cheroweth, USMCR (Ret.). Friedman/Fairfax, New York (212-685-6610). 384 pages. \$50.00.

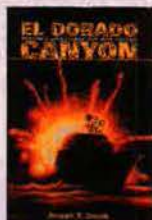


**The Middle East Military Balance 2001-2002.** Shlomo Brom and Yiftah Shapir, eds. The MIT Press, Cambridge, MA (800-405-1619). 465 pages. \$37.95.

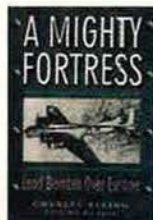


**One Desert Jet Turner: A Perspective on Youth, Fighter Aircraft, and Cold War.** Earl Heron. Order from: Jets Press, PO Box 260088, Ballerose, NY 11426-0088 (718-740-2079). 232 pages. \$26.95.

**El Dorado Canyon: Reagan's Undeclared War With Qaddafi.** Joseph T. Stanik. Naval Institute Press, Annapolis, MD (800-233-8764). 319 pages. \$34.95.



**A Mighty Fortress: Lead Bomber Over Europe.** Charles Alling. Casemate, Havertown, PA (610-853-9311). 186 pages. \$29.95.



**The Republic F-105 Thunderchief: Wing and Squadron Histories.** James Geer. Schiffer Publishing, Atglen, PA (610-593-1777). 350 pages. \$69.95.



**F-105 Thunderchief in Action: Aircraft No. 185.** Ken Neubeck. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 49 pages. \$9.95.



**Milestones of the First Century of Flight.** F. Clifton Berry Jr. Howell Press, Charlottesville, VA (800-868-4512). 214 pages. \$34.95.

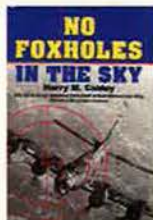


**Stealth Down.** Ross Simpson. Order from: Narwhal Press, 1600 Meeting St., Charleston, SC 29405 (843-853-0510). 352 pages. \$29.95.

**Heinkel He III in Action: Aircraft No. 184.** George Punka. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 57 pages. \$9.95.



**No Foxholes in the Sky.** Harry M. Conley. FNP Military Division, Trumbull, CT (203-261-8587). 330 pages. \$35.00.



**Through Eyes of Blue: Personal Memories of the RAF From 1918.** A.E. Ross, ed. Stackpole Books, Mechanicsburg, PA (800-732-3669). 352 pages. \$34.95.



**Hidden Heroism: Black Soldiers in America's Wars.** Robert B. Edgerton. Westview Press, Boulder, CO (800-386-5656). 271 pages. \$18.00.



**No Room for Error: The Covert Operations of America's Special Tactics Units From Iran to Afghanistan.** Col. John T. Carney Jr. and Benjamin F. Schemmer. Ballantine Books, New York (800-726-0600). 334 pages. \$25.95.



**Vietnam and Beyond: A Diplomat's Cold War Education.** Robert Hopkins Miller. Texas Tech University Press, Lubbock, TX (800-832-4042). 247 pages. \$36.50.



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# Pieces of History

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## Lightweight Fighter



*The YF-16 was the General Dynamics entry in USAF's lightweight fighter prototype competition of the early 1970s. The small, agile, low cost air superiority fighter was selected as the winner in January 1975, overcoming Northrop's YF-17 entry. The F-16 became one of the world's most successful fighter aircraft. Almost immediately, other nations jumped to*

*buy the highly maneuverable fighter, now in service in more than 20 countries. The aircraft pictured here at the Virginia Air & Space Center in Hampton, Va., is on loan from the USAF Museum, Wright-Patterson AFB, Ohio. It is aircraft #72-1567—the first of the F-16 breed.*





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