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October 2003, Vol. 86, No. 10 JOURNAL OF THE AIR FORCE ASSOCIATION

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- 4 Letters
- 14 Aerospace World
- 18 Index to Advertisers
- 18 Senior Staff Changes
- 22 Action in Congress
- 24 Verbatim
- 39 Flashback
- 74 AFA/AEF National Report
- 78 Unit Reunions
- 79 Books
- 80 Pieces of History

3 Editorial: Toward Battlefield Air Operations
By Robert S. Dudney
Airpower is now a "distinct maneuver element."

8 Washington Watch
By John A. Tirpak
The End Strength Issue; Reviewing "Don't Ask, Don't Tell"; Barrett for SECAF

26 The Blended Wing Goes to War
By John A. Tirpak
The unique Joint STARS unit composed of active and ANG airmen was a big-time success in Operation Iraqi Freedom.

32 The Redefinition of Strategic Airpower
By Rebecca Grant
Before Gulf War II, few could imagine how diverse and flexible the airpower instrument had become.

40 Jersey Pipeline
Photography by Guy Aceto and Paul Kennedy
The tanker units at McGuire AFB, N.J., pump the gas that helps fuel USAF's global reach and power.



32

48 Lighter Footprint, Longer Reach
By Peter Grier
A great redeployment of forces is reshaping the US network of overseas military facilities.

54 The Legacy of the Bottom-Up Review
By John T. Correll
It was an exercise to justify a blind budget cut, but it shaped the force for a decade.

60 Ambush at Najaf
By Richard J. Newman
Was it just poor tactics or some deeper problem that caused the failed Apache mission?

64 The Future Missile Force
By Adam J. Hebert
The ICBM force is being slimmed down, firmed up, and made ready for a long haul in uncertain times.

70 Adventures in Bare Bones Basing
By Adam J. Hebert
Four days after the first Air Force officer arrived at Tallil, operations commenced.



About the cover: A KC-10 lines up for refueling. See "Jersey Pipeline," p. 40. Staff photo by Guy Aceto.



64

AIR FORCE Magazine (ISSN 0730-6784) October 2003 (Vol. 86, No. 10) is published monthly by the Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Phone (703) 247-5900. Second-class postage paid at Arlington, Va., and additional mailing offices. **Membership Rate:** \$36 per year; \$90 for three-year membership. **Life Membership (nonrefundable):** \$500 single payment, \$25 extended payments. **Subscription Rate:** \$36 per year; \$29 per year additional for postage to foreign addresses (except Canada and Mexico, which are \$10 per year additional). Regular issues \$4 each. USAF Almanac issue \$6 each. **Change of address** requires four weeks' notice. Please include mailing label. **POSTMASTER:** Send changes of address to Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association. Copyright 2003 by Air Force Association.

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By Robert S. Dudley, Editor in Chief

Toward Battlefield Air Operations

GEN. Charles F. Wald is a true 33rd-degree fighter pilot, and he recently noted a key aspect of today's Air Force. "When I started flying [F-15] fighters," he said, "I was an air-to-air guy, and that is all we did. ... We were specialists."

That changed, however.

"In 1983," Wald continued, "at Langley Air Force Base, ... we were dropping bombs off the F-15C"—which had always been a pure air-to-air fighter. "Not very many people know that. We actually went out and started doing air-to-ground." Wald later flew F-16s. "I did very little air-to-air," he noted. "Mostly air-to-ground. A lot of close air support."

Wald's point: USAF has a deep and long-standing interest in air-ground operations.

Wald, now deputy commander of US European Command, concedes one can still hear "old rhetoric" about a supposedly "weak" Air Force commitment to ground forces. The charge was always shaky. Now, it's risible.

In Afghanistan and Iraq, Air Force A-10 attack aircraft flew 7,000 close air support sorties. Other fighters and heavy bombers also helped obliterate Iraqi land forces—including Iraq's Republican Guard—easing the task of coalition ground forces. In western Iraq, airpower allowed a small number of US forces to control a huge swath of territory.

Air Combat Command notes that 78 percent of all of the aim points attacked in Gulf War II were struck in support of ground forces.

It is true that USAF has not always done a stellar job in "JAGO"—joint air-ground operations. And despite recent improvements, Air Force officers say USAF can do more.

At Air Combat Command, moreover, officers now are poised to take another step. Some key concepts were unveiled in a recent *Field Artillery* article by Maj. Gen. David A. Deptula, ACC director of plans and programs, and Col. (sel.) Sigfred J. Dahl. Deptula's imprimatur was important, given that he was a principal planner of the 1991 Gulf War air campaign and ran the combined air

operations center during the 2001 Afghanistan war.

The authors begin with the premise that tomorrow's foes will often be shadowy and elusive. The US frequently will confront "ubiquitous networks of hostile opponents," fighting on a "discontinuous" battlefield devoid of fronts.

In this situation, they say, air and

Airpower is now a "distinct maneuver element."

ground forces, to be effective, must be integrated, agile, lethal, and armed with the most precise information.

As Deptula and Dahl tell it, one key Air Force requirement will be to reshape terminal air control units to mesh with transformed Army brigades now coming into view.

Army plans call for creating six fast-moving brigades of lightly armored wheeled Stryker vehicles, with higher-tech Future Combat Systems coming later. These swift ground units will create a need for more Tactical Air Control Party specialists—airmen who control air attacks.

For its TACPs, Air Combat Command seeks advanced targeting and communications equipment. The airmen who travel with the troops will also need Stryker vehicles, according to Deptula and Dahl.

The Army wants its own Fire Support Team members to control air strikes, too. USAF does not oppose this on principle, but insists they be trained to a high standard.

A second critical requirement, according to Deptula and Dahl, is to give the Joint Force a true "common operating picture," one that integrates data on friendly and hostile air and ground forces, as well as maritime forces. The services, they say, must ditch the vertical, "stovepiped" systems from Cold War days.

Gen. John P. Jumper, USAF Chief of Staff, has described the current process in this way: "You collect [data]. You analyze it to death. You

circle the things on the pictures. Then you send it out to people who are going 500 miles an hour trying to find the target and kill it."

In the ACC view, a three-dimensional picture must move up, down, and outward to provide "real-time, actionable information."

Finally, the authors call for the definition of an entirely new mission—"Battlefield Air Operations"—which would fall between Close Air Support (attacks close to friendly forces, under ground control) and Air Interdiction (attacks on forces not in contact, under air component control.)

"BAO" events would feature asymmetrical air attacks on enemy ground forces in places where there are few if any "friendlies." In Afghanistan and Iraq, the US employed airpower in conjunction with a small number of SOF or controllers as human sensors. In these operations, say the ACC authors, airpower functioned as a "distinct maneuver element"—a role always reserved for ground forces (or, at sea, naval forces).

Existing doctrine does not adequately cover these kinds of air operations, say the two officers. They raise issues about lines of control and employment doctrine.

Deptula and Dahl argue that Battlefield Air Operations could "significantly enhance, if not revolutionize," the way the US fights wars.

There are implications for forces and hardware. Jumper, for example, has noted that a stealthy, long-legged fighter such as the F/A-22 can penetrate even dense air defense, go deep, and precisely attack small, rapidly moving enemy forces. That is a textbook definition of war on a discontinuous battlefield.

Gulf War II took air-ground integration to new heights. New concepts have been made possible by advanced technologies such as stealth, precision, miniaturization, and data networks.

The new joint air-ground combat ideas make sense. They can be achieved, and they show every sign of bringing a major payoff on the battlefield. ■

On Mobility

Nice article about the shortage of airlift. [See "Editorial: The Mobility Edge," August, p. 2.] However, it seems that the C-5 didn't play an important part in Gulf War II or Afghanistan, since it isn't mentioned in the article. The C-5 has lots of airframe service life left, but it is running around the world on some of the oldest jet engine technology currently in service.

Why are we going to purchase 42 more C-17s that carry half the load of a C-5 instead of putting new engines on a proven airlifter? As long as DOD and our leadership are going to maintain a CONUS-based military, we will need massive airlift capability, and the C-17 doesn't fit that role very well.

Maj. Garry Grimes
Dover AFB, Del.

Thank you for your outstanding article "The Mobility Edge." I was impressed by your succinct summation of mobility contributions and requirements.

While few would argue the overall importance of mobility to our nation's security, many key issues remain on the table for senior decision-makers. By informing the public about our role, past and present, you play a vital part in protecting America's future—one I truly appreciate.

My thanks for the support of both the Air Force Association and your fine magazine.

Gen. John W. Handy,
Commander,
US Transportation Command
and Air Mobility Command,
Scott AFB, Ill.

I understand the buzz with the new KC-767 tanker, and it's great, but it seems everyone is forgetting the great work of the KC-10 world.

We have proudly served this Air Force for over 20 years. We came on the scene in 1981 and have provided air refueling and cargo transportation ever since. We may not have hundreds of airplanes, but our little band can help take the fight anywhere, anytime. We are still alive and

kicking, and we plan on being here another 20 years.

MSgt. Stephen H. Boonstra,
USAF
Westampton, N.J.

CSAR, Not an Afterthought

Thank you for the great article in the August edition about upcoming CSAR changes in our Air Force. [See "CSAR, Under New Management" p. 84.] I appreciate your efforts to inform readers about this important Air Force reorganization. As usual, the article was clear and most informative.

Unfortunately, the article mistakenly stated that the rescue mission was "an afterthought ... in ACC." On the contrary, on Oct. 1 of this year, Air Force Special Operations Command will gain a vital new mission, more than 9,000 highly professional airmen and unmatched combat search and rescue capabilities. Such world-class capabilities and people do not come about as an "afterthought." They are the product of superb leadership and hard work by outstanding professionals all across the Air Force—starting in Air Combat Command. The professional service of these airmen sustained world-class rescue capabilities through an era of very limited resources and an unprecedented operations tempo. Many of our fellow warriors owe their very lives to these heroic airmen and these unrivaled capabilities.

Air Force Special Operations Command is excited about gaining the responsibility for this important mission. The CSAR mission will continue to remain separate in many ways from

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AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

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Donald L. Peterson

Editorial

afmag@afa.org

Editor in Chief

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Contributing Editors

John T. Correll

Bruce D. Callander

Rebecca Grant

Peter Grier

Tom Philpott

Advertising

adv@afa.org

Advertising Director

Patricia Teevan

1501 Lee Highway

Arlington, Va. 22209-1198

Tel: 703/247-5800

Telefax: 703/247-5855

Industry Relations Manager

Jennifer R. Anderson • 703/247-5800

US and European Sales Manager

William Farrell • 847/295-2305

Lake Forest, Ill.

e-mail: BFarr80708@aol.com



Circulation audited by
Business Publication Audit

the special operations mission; however, the synergy resulting from this reorganization will ensure the Air Force continues to possess and commit to the battlefield the world's finest combat search and rescue capabilities.

Lt. Gen. Paul V. Hester,
Commander, AFSOC
Hurlburt Field, Fla.

Rumsfeld and the Army

Rumsfeld's recent [choice] of retired Army General Schoomaker for Army Chief of Staff was unprecedented and unwarranted. [See "Washington Watch," August, p. 7.] Generals Keane and Franks respectfully declined—I suspect because they wanted nothing more to do with Rumsfeld and his underlings.

Apparently, deliberate and systemic advances are viewed as resistance to change. The superb performance of ground forces in Iraq [resulted from] a balance [between] advanced technology and conventional wisdom.

While the Army has been moving toward a "smaller, lighter, and more mobile force," the powerful, lethal, and agile performance of mechanized and armored units in the Iraq War was telling. Nonetheless, a lighter and more mobile Stryker brigade will soon rotate into Iraq. It is the product of years of research and development, not some instantaneous "transformation."

The Secretary is also on the horns of a dilemma regarding end strength: He seeks to reduce Army forces while increasing deployments. An Army of 480,000 has some 370,000 deployed in 120 countries. That does not include thousands of National Guard and Reserve members. Some active duty units are being deployed twice in the same year. Morale is a vital ingredient in the profession of arms, and current missions are beginning to have a deleterious impact on morale.

Abolishing the division and reintroducing the battle group is pure nonsense. Doesn't anyone in this Administration review military history? Gen. Maxwell Taylor's misguided installation of the battle group in the late 1950s was a costly and needless organizational change. It was an abysmal failure. Elimination of the division and reintroduction of the battle group is specious at best. A battle group (5,000 troops) can sustain itself for only three days, a division (17,000-20,000) about 10 days. Combat support is absolutely critical to the initial stages of sustained combat. Such a change may gain badly needed spaces to pay for technology, but it portends unthink-

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able consequences to combat readiness.

Will advancing technology dictate organizational change? Probably. But it better be measured with wisdom and experience rather than whim and fancy.

It is my observation that Mr. Rumsfeld's heavy-handed approach to leadership is destroying the morale of senior officers in the armed forces. It has become apparent that it is his way—only—thereby effectively shutting down constructive and experienced input. We should also keep in mind the armed forces habitually ranks highest among all institutions by Americans and has for many decades. I sincerely hope the essential ingredients of that trust are not likewise destroyed. Corporate America, of which Rumsfeld is a scion, has not fared so well.

Brig. Gen. Nathan C. Vail,
USA (Ret.)
Fort Worth, Tex.

This Is Support?

I am bewildered, dismayed, and fighting mad.

[In] a *New York Times* May 27 op-ed article on the assumed demise of the A-10 Warthog, the writer, Robert Coram, insinuated that the Air Force was going to retire the A-10 fleet, taking out of context information from a memo written by Air Combat Command Maj. Gen. David A. Deptula. [See "Washington Watch," August, p. 7.] He neglected to insert into his article that the B-1, F-16, B-52, and F-15E also provided close ground support to our forces. Perhaps Mr. Coram should become more familiar with the capabilities of the F/A-22 Raptor and attack the politicians who want to reduce the total numbers of this 21st century multitask weapons system. He might then realize that destruction of an enemy—without put-

ting the pilot and aircraft at risk—is the more desirable solution.

Undermining the F/A-22 buy to budget plan really takes the cake for inanity. [See "Aerospace World: Raptor Cuts Undermine 'Buy to Budget' Plan," August, p. 11.] Politicians are again chipping away [at the program] after they authorized buy to budget in the first place. Ideally, the Air Force should have 750 F/A-22 Raptors and 200 FB-22s. The more of an item you manufacture, the lower the cost of one becomes. Besides, the commonality of parts, avionics, stealth, etc., between the F/A-22 and the possible FB-22 is not only an accountant's dream—saving the taxpayer countless billions—it would enable the Air Force to reduce or eliminate other platforms that these two aircraft would make obsolete. This would reduce the countless maintenance issues in keeping a wide range of different aircraft flying and the cost of pilot training.

Here we go again: Politicians want to reduce the funds for the F/A-22 Raptor, which is the weapons platform of the future and could lead into the development of the FB-22—which could possibly replace the B-1, B-2, and B-52 fleets—in favor of keeping more B-1s than the Air Force says it needs. [See "Aerospace World: Lawmakers Want B-1s Back," August, p. 13.] USAF states that to be operationally and economically prudent it wants to reduce the B-1 fleet from 93 to 60. What makes more sense, keeping a fleet of 93 marginally maintained B-1s, which would cost billions more and put the pilot's life and the aircraft itself at risk, or having a fleet of 60 B-1s that are exceptionally maintained?

Let the politicians eliminate their pork barrel spending and equip our military men and women with what is needed. A major part of homeland

Letters

security is having a mobile, well-equipped, and well-trained military as a deterrent, like we did during the Cold War, which saved this country from possible total destruction.

Philip E. Giammarco
Glendale, N.Y.

When Did it Start?

In the July issue, both Adam Hebert [*"The Baghdad Strikes,"* p. 46] and Rebecca Grant [*"Hand in Glove,"* p. 30] assure readers that severing the Republican Guard was the key to success in Iraq and that the operation began on March 20. As we know from General Moseley's debrief of the action, the operation began not in March of 2003, but in the fall of 2002. More than 20,000 sorties were flown against targets in Iraq during that period leading up to the March 2003 "beginning" of the war. Destroying the communications network was a primary goal, because without the ability to coordinate their response, the Republican Guard lost much of its effectiveness and its priority as a target. Hopefully, future issues of the magazine will provide a more thorough presentation and examination of the real "beginning," as well as the role performed (and still being performed today) by the tanker force that made those 20,000 plus sorties so effective.

Col. Ronald K. Sable,
USAF (Ret.)
Arlington, Va.

■ *The "official" start of the war was determined by DOD, not us. Both articles contained references to the "prehostilities" preparation, as General Moseley termed it. One mentioned the weeks of intense prewar activity, and the other noted the increased activity from June 2002 to March 2003 described by General Moseley and the Chief of Staff, Gen. John P. Jumper. Another July article, "The Iraqi File," also cited the year-long stepped-up activity as well as the full 12 years' worth of Southern and Northern Watch patrols that enabled the coalition to quickly establish air dominance.—THE EDITORS*

Broken Promises

There are thousands of American veterans who were disabled due to the wars. They [may] all have different problems, but they all have one thing in common—broken promises. [See *"Action in Congress,"* August, p. 19.]

The United States government promised these men and women that when all was said and done and

their time of service was up, they would be taken care of. Yet here we are, years later, and these veterans who fought to keep us safe are now being kicked to the curb. Not only is the government trying to keep H.R. 303, the bill that permits retired members of the military to receive both their military retirement pay and disability compensation, from passing, they are now trying to cut veterans health care.

Without these veterans, there wouldn't even be an America today. It's the very men and women who stood up for their country who are now being told that they aren't important. How can we as a nation sit back and watch this happen? How can we sit here and not do anything to help the great American veteran who provided us with the security we have now?

Audrey Adkins
Harned, Ky.

Command From the Air

In response to the article entitled "Command From the Air," August [p. 70]: The E-10 will be a great aircraft, but we could do better. The E-8 Joint STARS and E-3 AWACS radar systems alone cannot be integrated without modifying them to work together. If the systems were re-engineered with that as a main goal, the E-10 could host both the air moving target indicator and ground moving target indicator systems. Whether or not this will actually happen is up to the contractors, as they will have to work together to achieve this goal.

The EC-135 Rivet Joint will not be as easily implemented on the E-10, if both radars are installed on the same air frame. The goal of the Rivet Joint is to listen to anything it can electronically hear. The less electrical noise (or interference) that the aircraft produces, the more easily the radios can [overhear] the enemy on their cell phones. Having two radars onboard the same airframe with advanced receiving equipment is not a good idea. To limit the effects of the radar on the receiving radios, you will need to carry some more weight.

My final point is the biggest one that the article missed. Every time one of our aircraft takes off and flies over (or on the edge of) hostile territory, and then lands, there are human lives at stake. The ultimate platform for a surveillance aircraft would be a larger UAV, around the size of the Global Hawk, equipped with smaller electronic systems. The human element would then be removed from the risks



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of flight, and we would have a more cost-effective solution that could remain on station for a longer time period. Receiving equipment is already being tried in the Global Hawk. One hopes the UAV's uses would continue to expand to an airmobile GMTI and AMTI surveillance platform. After all, radarscopes are nothing more than data, and information superiority is what will win the battles ahead.

Christopher M. Coville
Aurora, Ohio

Apples and Oranges

It is very inaccurate to state that the circular error probable for a B-17 was 3,300 feet. No bombardier would have made it through phase training with such a record. Individual bombardiers were graded on circular error average (CEA) rather than CEP. [See "Letters: On Casualties and the CEP," August, p. 4.]

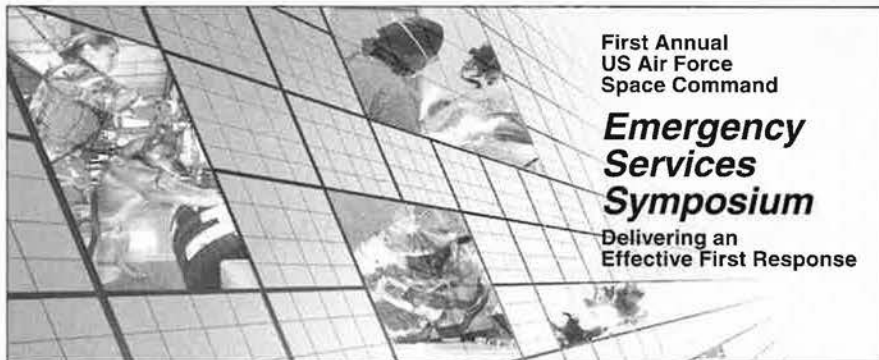
Now, if we are referring to a B-17 group, under combat conditions, dropping [bombs] on an assigned target, that is a different matter. In formation bombing, only the lead bombardier synchronized the bombsight during the bomb run. The others in the formation toggled when they saw the lead aircraft's "bombs away." Obviously, there was an inherent delay and the lateral spread of the formation would spread the bombing pattern. So, in reality, comparing World War II accuracy with current bombing results is an "apple and orange" situation. Considering the tactics and the combat environment in which the B-17s flew, 3,300 feet was pretty darn good.

Col. Robert E. Mullin,
USAF (Ret.)
Spokane, Wash.

The real performance capabilities of the Norden and Sperry (and probably the German Luft7B) synchronous bombsights, without the distortion of propaganda, can be appreciated from this description of "pickle barrel bombing": On a firmly mounted test stand, on a factory floor, the bombsight under test functioned with very little or no error. In fact, if there was any error in test results at the factory, calibration adjustments were made to produce zero error.

Those were the conditions necessary for "pickle barrel bombing" on the factory floor. And that is where the standard of pickle barrel bombing was appropriate—in the factory on the shop floor.

Those factory tests did not pretend to simulate conditions in combat on a bomb run. From my point of view, using the Norden bombsight to bomb from 25,000 feet was analogous to



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using an exquisitely exact telescope sight on a smooth bore musket aimed at a four-inch circle from 150 yards and fired while galloping on the back of one of the world's best horses.

Our usual bombing altitude in our B-17F and G was 25,000 feet or higher because B-24s were usually below 25,000. I once bombed Osna-bruck from 33,000 feet in an old F model with the hydraulic turbo controls functioning at the limits so that my turbos surged to run away well over 50 inches with every movement of my throttles. I was moving them carefully because I was in a wing position that I had to hold in the squadron formation. I think that contributed something substantial to the Eighth Air Force CEP that day, but I never knew how much—and I didn't give a damn, either.

Col. Charles A. Callahan,
USAF (Ret.)
Albuquerque, N.M.

How Times Change

I have to wonder where USAF has been all these years. In 1975, while stationed in Iceland, we marveled at [Britain's] VK2 tanker and F-4 interceptor teams that commonly operated far out into the Norwegian Sea looking for Soviet Bear bombers.

The VK2 tanker carried a "box" that

allowed the fighter to link communications on just about any frequency from FM to HF, a handy capability that the Air Force seems to just have discovered. [See "100 Tankers," August, p. 64.]

Not really. We tried to get that same capability inserted into the Air Force budget back in 1982, but no one was interested. How times change. Or do they?

Col. J.E. Frisby,
USAF (Ret.)
Henderson, Nev.

Corrections

In "The Iraqi File," July, the caption for the photo on p. 53 should not have identified the missiles as Scuds. The official DOD caption describing the photo did not specifically identify the type of missile.

Also in the July issue, the article "It Means 'We Didn't Buy Enough,'" states that there are only two combined air operations centers. It should have said only two in Southwest Asia (now only one, since the one in Saudi Arabia has been deactivated). There are other CAOCs in other parts of the world.

Washington Watch

By John A. Tirpak, Executive Editor

The End Strength Issue; Reviewing "Don't Ask, Don't Tell"; Barrett for SECAF

Rumsfeld's "Open Mind" on Troops

Secretary of Defense Donald H. Rumsfeld faces mounting pressure to increase the number of airmen, soldiers, sailors, and Marines in the US military—and it may be having an effect.

In recent remarks, Rumsfeld declared that he is "absolutely open-minded" about possible increases in end strength.

At a minimum, it is a notable change in tone. Rumsfeld has consistently resisted calls to raise troop levels, despite major operations in multiple theaters. He has argued that outsourcing and wider use of technology can free up many uniformed people to move to true fighting duties.

However, Rumsfeld went on the defensive after his handpicked nominee for Army Chief of Staff, Gen. Peter J. Schoomaker, seemed to lay down a challenge.

"Intuitively, I think we need more people," Schoomaker told the Senate Armed Services Committee. "I mean, it's just that simple."

Schoomaker hedged a bit, saying he needs time to "formally assess" the issue. However, he acknowledged he was taking "a little risk, here" by suggesting a need for more troops.

In response, Rumsfeld said he expects Schoomaker to be "a terrific Chief of Staff." He also said, "I don't think you'll find a lot of daylight between his views ... or mine."

Then, Rumsfeld asserted: "We're absolutely open-minded about how many people we have in the services. We want to have the right number."

The supposed insufficiency of end strength is often presented as an Army problem, but the Air Force has been at least equally stressed by its numerous worldwide deployments. The problem is felt most acutely in the so-called low-density, high-demand fields such as intelligence-surveillance-reconnaissance and security forces.

After his statement, Rumsfeld outlined—in great detail—his effort to identify military jobs that could be transferred to private contractors.

"Depending on who you talk to, it's 300,000 or 320,000 or 380,000 people," said Rumsfeld. "That is a pile of people. They need to be doing military functions."

He said that Marine Gen. Peter Pace, the vice chairman of the Joint Chiefs of Staff, and other senior leaders have been studying revisions and alternatives in deployments, exercises, war plans, etc. The Pentagon is also reassessing long-standing overseas deployments.

Rumsfeld said he is still unconvinced more troops are the answer to the situation, which he describes as a "spike" not a long-term condition.

USAF Gen. Richard B. Myers, the JCS Chairman, asserted that increasing end strength will not translate into a quick fix for overwhelmed troops.

"It takes time to recruit, train, and so forth," Myers said. Meanwhile, increasing end strength is "one of the most expensive things you can do in the Department of



Schoomaker (center) in Iraq: Army needs more troops.

US Army photo by SSgt. William Armstrong

Defense." Personnel costs account for 60 percent of Pentagon spending, he noted.

"It's a very expensive solution," said Myers, "and it's not a solution that comes online right away. ... If you're going to do it, you're going to have to live with it, probably, for a long time, and you better think it through carefully, since that's a significant part of your budget."

Rumsfeld pledged that if objective analysis points toward bigger forces, he'll call for them.

He said, "I can assure you that if, at some point, the circumstances in the world are such that the President and the Congress and the country believe that we need to be doing so many things that it appropriately calls for an increase in end strength, we certainly would ask for an increase in end strength. We do not have a bias for it or against it."

Policy on Homosexuals Gets Review

In the wake of the Supreme Court decision striking down a Texas sodomy law, the Pentagon is reviewing its policy regarding homosexuals in the uniformed ranks.

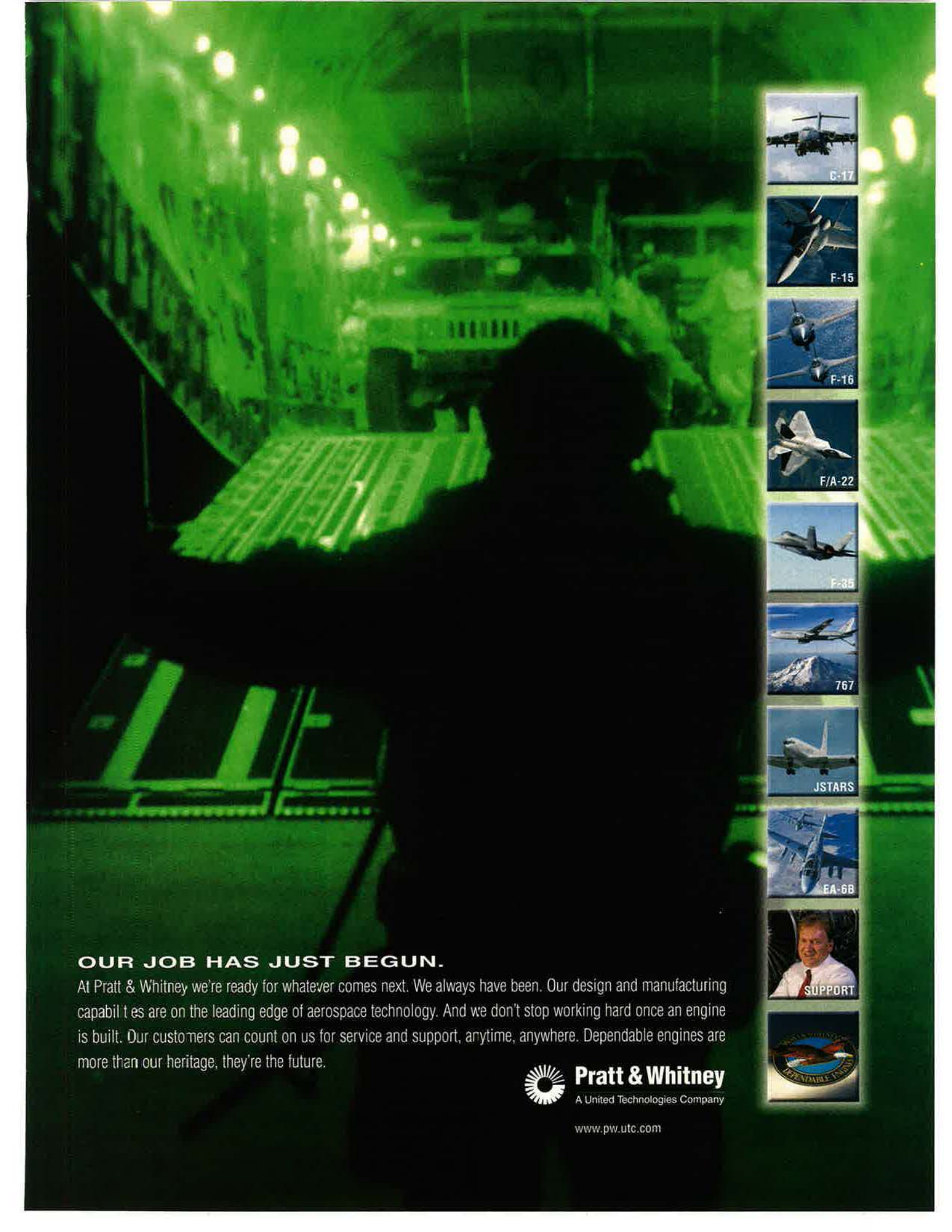
The review began after the court's June decision prompted a number of lawsuits challenging the military stance on gays.

In *Lawrence v. Texas*, the Court ruled that the state sodomy law was unconstitutional because it restricted personal liberties without serving a "legitimate state interest."

Article 125 of the Uniform Code of Military Justice prohibits "unnatural carnal copulation" and has been used, albeit rarely, to court-martial military personnel.

In 1992, the Court of Appeals for the Armed Forces upheld Article 125, citing a 1986 case—*Bowers v. Hardwick*—in which the Supreme Court held that the constitutional right of privacy did not apply to homosexual sodomy, and the states were free to make it a crime. However, *Lawrence* now supercedes *Bowers*.

Pentagon General Counsel William J. Haynes II has



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ordered the services to review Article 125, given the ruling in *Lawrence*.

Rep. Barney Frank (D-Mass.), an openly gay member of Congress, on July 9 introduced a bill that would amend Article 125 to decriminalize sexual contact between consenting adults.

The *Lawrence* decision has also prompted challenges of the "Don't Ask, Don't Tell" rule, which was promulgated in 1993 when President Clinton moved to allow openly gay persons to serve in the military.

The law codifying this policy holds that the military can't initiate an investigation of a service member's sexual orientation (don't ask) unless he or she openly professes homosexuality (don't tell). Once a service member publicly asserts a gay sexual orientation, he or she may be prosecuted or expelled from the military.

More than 9,000 military men and women have been discharged for cause since the rule was adopted.

An immediate, though indirect, legal challenge to "Don't Ask, Don't Tell" and other restrictive laws was filed by Steve Loomis, a former Army lieutenant colonel. Loomis, a decorated Vietnam War veteran, was discharged for homosexuality only eight days short of fulfilling 20 years of service. He is suing the Army for more than \$1 million in claimed pension benefits.

Loomis's suit argues that the military ban on gays is "not rationally related to any legitimate government interest," echoing the language used by the Supreme Court in *Lawrence*. He argues that his career and decorations are adequate proof that homosexuality is not an impediment to good order and discipline in the ranks.

Loomis's case and several others now in the courts do not directly challenge the constitutionality of the military ban on open homosexuality. Opponents of the law are studying the June ruling to see if a constitutional challenge can be made using it.

Unlike civilians, military personnel do not expressly possess a right to privacy, because the military makes demands that supercede personal liberty. This fact has been routinely acknowledged by the courts, which have given the military great leeway in setting highly restrictive rules on its personnel.

The 1993 law notes that military persons must "involuntarily ... accept living ... and working conditions that are Spartan, primitive, and characterized by forced intimacy with little or no privacy," and under such conditions, homosexuality poses "an unacceptable risk to the armed forces' high standards of morale, good order, and discipline, and unit cohesion that are the essence of military capability."

The law was promoted by then-Sen. Sam Nunn, the powerful Georgia Democrat who headed the Senate Armed Services Committee, and Gen. Colin Powell, who was JCS Chairman, as well as the other service chiefs. It was signed by President Clinton.

Barrett Tapped for SECAF Post

President Bush has nominated Barbara M. Barrett, an Arizona lawyer and businesswoman, to be the next Secretary of the Air Force. If confirmed, Barrett would succeed James G. Roche, who earlier was nominated to become Secretary of the Army.

In her career, Barrett has moved between public and private enterprises, frequently dealing with aviation issues. She is currently on the board of Raytheon. During the Reagan Administration, she was deputy administrator of the FAA and served as vice chairman of the Civil Aeronautics Board.

She served on the Defense Advisory Committee on Women in the Services during the George H.W. Bush Administration.

In 1994, Barrett unsuccessfully challenged incumbent and fellow Republican J. Fife Symington for the Arizona governor's post. Barrett holds B.A., M.A., and law degrees from Arizona State University. She has held instrument pilot ratings and is president of a Montana resort.

The Senate plans called for confirmation hearings this fall.

Iran: Nukes? What Nukes?

Iran—viewed by Washington as the world's top state sponsor of terrorism—is now embarking on a cat-and-mouse game of "hide the nukes" from nosy foreigners.

There is little question Iran is close to building nuclear bombs, but the Islamic Republic is doing its best to bamboozle international inspectors.

In a June report, the director-general of the International Atomic Energy Agency, Mohamed ElBaradei, criticized Iran for denying IAEA inspectors access to all its nuclear facilities, which Iran insists are for peaceful purposes—nuclear research and power generation.

In a follow-up visit and report, the IAEA found traces of highly enriched uranium, prompting ElBaradei to assert in an interview with the German magazine *Stern*, "This worries us greatly."

President Bush has said that a nuclear-armed Iran is not acceptable, but he has stopped short of declaring what steps the United States might take.

Iran is signatory to the Nuclear Nonproliferation Treaty, which allows it to have nuclear power plants so long as they are open to IAEA inspection. The inspections are meant to ensure that nuclear materials are not illicitly diverted to bombs.

Iran plainly deceived inspectors about a secret facility in Natanz, which it had not declared as a nuclear-related plant. An opposition group in exile tipped off the IAEA about the facility, which was eventually opened to inspection. Investigators in May found more than 100 centrifuges for enriching uranium to bomb-grade material. The centrifuges appeared to be of Pakistani design.

In the follow-up visit report, leaked to reporters in August, IAEA inspectors said they detected traces of highly enriched uranium at the Natanz plant. The Iranians explained that it must have been on the equipment when it was purchased from another country. The Iranians declined to name the country that sold them the



Iranian nuclear plant—"This worries us greatly."

AP photo by Vahid Salemi

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gear, but promised the IAEA it would eventually do so. Iran also delayed access to the Kalaye Electric Co. plant near Tehran. Iran eventually admitted it had been used for assembly of the centrifuges.

Iran is also known to have received help from North Korea, both on its nuclear program and in development of the Shahab-3 intermediate-range missile. Pyongyang is also reportedly helping Iran develop a nuclear warhead for the Shahab-4, which could reach most of Europe from Iranian soil.

Tehran has also now admitted receiving a shipment of 1.8 tons of uranium ore from China in 1991.

In addition to pursuing enriched uranium as a source of fissile material, Tehran is constructing a heavy-water plant near Arak, which it has told the IAEA is producing radioisotopes for medical purposes. The heavy-water method is considered a shortcut to production of plutonium.

In developing its nuclear program, Iran seems to have taken pains to protect it, distribute it, and put it well out of range of most US aircraft.

The Natanz facility, for example, comprises deeply buried bunkers with eight-foot-thick concrete walls. Its construction appears to have been designed to survive an air raid similar to the Israeli attack on the Iraqi Osirak reactor in 1981.

Iran's nuclear facilities are spread out, eliminating the possibility of a quick, single-point surprise attack such as was seen at Osirak more than two decades ago.

Iran's nuclear facilities are protected by new, state-of-the-art S-400 air defense systems.

However, Iran's facilities may now be in the wrong place, from a defensive standpoint. It broke ground long ago, before the United States had gained access to air bases in the region. As a result of recent wars, US forces have gained access to bases in Azerbaijan, Uzbekistan, and Kazakhstan, not to mention Pakistan and Iraq itself. All could greatly simplify planning for a pre-emptive air attack on Iranian facilities.

China Focuses Power on Taiwan

Although China is pursuing vigorous economic ties with the US—it is America's No. 1 trading partner—China's military modernization plans are based on the prospect of conflict with the US, especially over Taiwan.

So says the Pentagon's official assessment of Chinese strategy and force capabilities, contained in an annual report to Congress, "The Military Power of the People's Republic of China."

China's efforts at buying top-line fighters from Russia, developing military data networking systems, and developing long-range precision strike technology are geared—for now at least—toward thwarting a US defense of Taiwan, the Pentagon said.

"Preparing for a potential conflict in the Taiwan Strait is the primary driver for China's military modernization," according to the report. China is also seeking "ways to target and exploit the perceived weaknesses of technologically superior adversaries."

China increased its defense budget by 17.5 percent last year and now spends \$45 billion to \$65 billion annually on defense. This puts China on a par with the military spending of Japan and the UK.

The Pentagon determined that China's technology priorities are aimed at defeating stealth aircraft and precision munitions and thwarting US electronic warfare and reconnaissance. It is improving the quality of its officer corps and mechanizing more of its ground forces. China



China's military: Thinking big.

is also improving its use of combined arms, with frequent exercises aimed at coordinating land, air, and sea forces, as well as special operations units.

With 450 short-range ballistic missiles already on hand, China will be adding 75 SRBMs to its inventory every year, at the same time improving their accuracy and lethality. All of these are positioned on the mainland in an arc facing Taiwan.

China is modernizing its ICBM force, replacing all its CSS-4 missiles with longer-ranged CSS Mod 2 models.

In addition to consistently adding new squadrons of top-line Russian Su-27 Flankers and Flanker variants, China is obtaining Advanced Medium-Range Air-to-Air Missile-equivalent AA-12 missiles for them and antiship missiles for a navalized Flanker to be deployed on a Chinese aircraft carrier.

Electronic warfare versions of fighters are being developed, and China is looking to acquire Antonov A-50 Mainstay Airborne Warning and Control System-equivalent command and control aircraft as well. Pilot training "is becoming more advanced," and China's air tactics "continue to evolve."

While the ship-based, Russian-built SA-N-7 surface-to-air missile represents Beijing's best air defense system right now, China is expected within the decade to acquire or develop its own version of the SA-10/20 land-based SAM series. These systems will be improved with Western electronics.

The new Type 093-class attack submarine is nuclear-powered and will have torpedoes on a rough par with those in the West—both wire-guided and wake-homing. China has also purchased four Kilo-class very quiet diesel subs from Russia and is sending its submarines on farther, longer patrols.

Production of the newest Chinese tank, the Type 96, is continuing, and 1,500 are expected to be deployed within two years. Another 1,000 older Type 59 tanks are being upgraded with a 105 mm gun, of the same size as on the US Abrams tank.

China has cut its 100 Army divisions to 40—a reduction of 500,000 troops—and plans to use the savings to modernize and focus on improving the quality of those it retains. China announced in September a further cut of 200,000 troops by 2006. Meanwhile, China has worked hard to improve its logistics, develop new armored vehicles, and improve its amphibious attack capabilities.

Improving command and control is a top priority, but China has not caught up to the US and its allies. ■

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Aerospace World

By Adam J. Hebert, Senior Editor

F-16s Scramble During Blackout

US Northern Command launched two F-16 fighters out of Andrews AFB, Md., as a precaution during the massive power outage that affected a huge swath of the United States and Canada on Aug. 14.

The command also increased the alert status for other air defense units in the eastern US. However, US officials quickly determined the outage was not caused by terrorists and was, instead, the result of problems caused by the age of the power grid system.

Formed just last year, NORTHCOM is the first unified command with responsibility for defense of the US homeland.

Wald: Some Bases Irreplaceable

US European Command's move into new Eastern European operating locations does not mean established Western European bases such as the Air Force airlift hub at Ramstein AB, Germany, have outlived their usefulness, said Gen. Charles F. Wald, deputy EUCOM commander.

Wald said during an Aug. 5 visit to the Pentagon that Ramstein, the Grafenwoehr Army training area, and EUCOM's Stuttgart headquarters, all in Germany, should be retained because they offer irreplaceable benefits.

"What good would it do to give something like that up, just to say you did it?" Wald asked.

Nonetheless, Wald said he expected to see US power continue to move to new locations, possibly as force levels are reduced at existing facilities. Bulgaria, Lithuania, and Romania were cited as possible homes for new operating locations. (See "Lighter Footprint, Longer Reach," p. 48.)

AMC To Reorganize

Air Mobility Command announced a major reorganization that will reduce its numbered air forces from two to one and create two expeditionary mobility task forces. Plans called for the changes to take effect Oct. 1.

AMC will redesignate its two existing NAFs—15th at Travis AFB, Calif., and 21st at McGuire AFB, N.J.—as EMTFs. They will each report to a

Moseley Details "The War Before the War"

The daily confrontations between US and Iraqi forces in the southern no-fly zone dramatically increased in the summer of 2002 and continued at that accelerated pace until the official start of Operation Iraqi Freedom, said Gen. T. Michael Moseley.

Moseley is now the Air Force vice chief of staff, but he was US Central Command's air boss during that time.

The Iraqis began "more numerous and more threatening attacks" on coalition aircraft patrolling the no-fly zone, Moseley said at a "lessons learned" conference at Nellis AFB, Nev., in late July. In response, he said, CENTCOM approved a "wider set of air defense related targets."

Beginning in June 2002, in an operation known within CENTCOM as Southern Focus, coalition airpower responded to 651 Iraqi attacks by dropping 606 bombs. The operation ended with the F-117 strikes in Baghdad on March 19.

Under the more liberal rules, coalition aircrews were authorized to attack military targets that hadn't directly threatened patrolling aircraft. The result: The coalition was able to attain air supremacy more rapidly once OIF kicked off. Southern Focus strikes were aimed at air defense installations such as radars and surface-to-air missile sites, as well as against command and control targets intended to degrade Iraq's overall ability to wage war.

Fiber-optic cable repeaters were one target of particular interest. As they gave Iraqi commanders in Baghdad the ability to communicate with fielded forces, Moseley said destroying the repeaters was a priority. Because the repeaters are about the size of manhole covers, targeting them "required incredibly accurate attacks," he said.

new NAF—18th Air Force—to be headquartered at Scott AFB, Ill.

Leading 18th Air Force will be a three-star general, who will be responsible for "all presentation of forces to the warfighter," said Gen. John W. Handy, commander of US Transportation Command and AMC. The NAF commander will oversee the Tanker Airlift Control Center, the flying units, the two EMTFs, and the en route system, explained Handy.

The EMTF commanders—both of whom will be brigadier generals—will lead and have administrative control over AMC's four air mobility operations groups. The AMOGs provide the multifunctional teams that create working airfields at bare bones bases anywhere in the world.

The two commanders also will be "deployable directors of mobility forces during contingency operations," serving as the "designated agent for all air mobility issues" in a theater, according to an AMC statement.

DOD Cancels Bright Star

The high demand for US forces

worldwide prompted the Pentagon to cancel Exercise Bright Star, a major biennial multinational desert training exercise held in Egypt. Canceling Bright Star was "an extremely difficult decision," Defense Secretary Donald H. Rumsfeld said in an Aug. 9 announcement.

Bright Star, which began in 1981, was to have taken place in September. It normally features more than 70,000 troops from 10 nations.

The release noted that, because of the demands of the war on terrorism and the continued US military presence in Iraq, Afghanistan, and elsewhere, 49 of DOD's 182 military exercises scheduled for this fiscal year have been rescheduled or canceled.

USAF May Seek Common Helo

Air Force officials believe the service could save more than \$600 million over 30 years by replacing its 62 Vietnam War-era UH-1 helicopters with a variant of the same helicopter it plans to buy to replace its combat search and rescue HH-60 Pave Low.

USAF's requirements board ap-

Air Force Bids Farewell to Prince Sultan

The Air Force on Aug. 26 officially ended its presence at Prince Sultan Air Base near Riyadh, Saudi Arabia. The service held a small ceremony to commemorate the end of 13 years in the kingdom.

The 363rd Air Expeditionary Wing, which oversaw US Air Force operations at the base, was deactivated at the same time.

At the ceremony, Maj. Gen. Robert J. Elder Jr., 9th Aerospace Expeditionary Task Force vice commander, said, "The end of ... Saddam Hussein's government means the American military mission here is over."

The Air Force presence in Saudi Arabia began in 1990 after Saddam Hussein's regime invaded Kuwait. US forces stayed in the country after the Persian Gulf War, eventually building PSAB into a state-of-the-art facility. The advanced combined air operations center—used to help coordinate Gulf War II this spring—had already been dismantled, and the coalition force housing complex had been returned to Saudi officials in July.

From the close of the 1991 Gulf War through Operation Iraqi Freedom, the Air Force provided protection to the Saudi kingdom through its presence and used Prince Sultan for missions enforcing UN mandates and the no-fly zone over southern Iraq.

However, the US presence in the conservative Islamic country had been controversial from the beginning and was frequently a focal point of criticism among radicals, including Osama bin Laden. The Air Force presence in Saudi Arabia was consolidated at PSAB in 1996 after the Khobar Towers bombing in Dhahran killed 19 airmen.

The Air Force will in the future use al Udeid Air Base in Qatar to host many of the activities previously performed at PSAB.

proved the tentative plan for a common helicopter in June, said Lt. Col. Griffith S. Massey, but the plan had not been reviewed by the Pentagon's Joint Requirements Oversight Council.

The common helicopter program would be an annex to the service's plan to buy a new CSAR helicopter to replace the HH-60s, said Massey, who is USAF's chief of CSAR and special operations force requirements.

USAF plans not only to purchase a more advanced and capable helicopter but to increase the size of its CSAR fleet from 104 aircraft to 132, beginning in 2005. Increasing the fleet size by more than 25 percent reflects the growing demand for search and rescue forces.

Potential replacements include a modified Sikorsky S-92 or Lockheed Martin-Agusta Westland US101—either of which would be significantly larger and more capable than the UH-1 or HH-60.

USAF To Test New BDUs

The Air Force is evaluating a new battle dress uniform that would look distinctly different from today's version, which is the same as the one worn by the Army. More importantly, it would be easy to maintain.

Officials said the new BDU would eliminate the need for professional laundry service, saving each airman up to \$240 a year.

For 20 years, airmen have worn the same woodland camouflage BDUs used by soldiers, as did Marines until a few years ago. In that time, said

Gen. John P. Jumper, Air Force Chief of Staff, "material technology has improved greatly." He said that the current BDU has been "adequate," but it is time to consider how and where the uniform is used today.

The new uniform is designed to be more versatile. With a blue and gray color scheme, it should provide camouflage in a wider range of visual conditions—such as for urban areas and for night operations. It will also be suitable for a greater range of climates, officials said. The service plans to use the same fabric the Marines identified as best for durability and wash-and-wear characteristics.

USAF will begin a six-month wear test in January. Personnel at nine bases, representing various operating environments, will test 300 of the

new BDUs. Officials emphasized that the wear test is designed to solicit feedback from airmen in the field that will lead to a decision sometime late next year.

Questioned about the new uniform on a visit to Fairchild AFB, Wash., Jumper said that nothing is final and the service is "still playing with the different camouflage patterns."

DOD Slows V-22 Production

Acting Pentagon acquisition chief Michael W. Wynne decided in August to slow the planned increase in the V-22 tilt-rotor's production rate.

The first bump up—from 11 per year to 15—was expected in Fiscal 2005. (See "Aerospace World: DOD OKs V-22 Osprey Production," August, p. 17.) Now, according to an Aug. 8 acquisition decision memo, the 2005 rate will remain at 11, while the 2006 rate—cut by at least three aircraft—will be capped at 17.

Wynne indicated he wanted any savings generated by this move to go toward V-22 interoperability improvements, such as installation of the Joint Tactical Radio System and the Link 16 data link.

For 2007 and beyond, "production rates should increase by about 50 percent per year for a total of 152 aircraft through FY09," said Wynne. He expects to accelerate multiyear procurement "as soon as possible."

The Osprey combines the speed of a prop airplane with the takeoff and landing capabilities of a helicopter, but two deadly crashes in 2000 forced an extended grounding and redesign of the aircraft.

USAF intends to buy 50 CV-22s for special operations missions to replace its fleet of MH-53 helicopters.

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Air Combat Command and Air Force Reserve Command officials said they

Army To Re-evaluate Apache Tactics

The Army is reviewing how it employs its AH-64 Apache attack helicopters after being forced to modify its tactics during Operation Iraqi Freedom.

"We are taking a look at aviation doctrine and how to use Apaches at long distances," said Gen. John M. Keane, Army vice chief of staff. The goal is to answer the question, "Does our doctrine still make sense?"

Apache helicopters, operating forward from supporting assets, were damaged—some heavily—early in the war. The force "ran into an organization that was much more spread out" than expected, Keane explained.

The Republican Guard's defense surprised the attacking Apache force, damaging most of them, with small arms and rocket-propelled grenades. One helicopter was shot down in the battle and its two crew members captured by Iraqi forces. (See "Ambush at Najaf," p. 60.)

For subsequent missions, Apache flights were led by Kiowa Warrior scout helicopters used to validate targets. The Army "also brought in close air support," said Keane. "In other words, we had airpower with them as well."



The B-29 Enola Gay at the Udvar-Hazy Center.

A Preview of the *Enola Gay*

The Smithsonian's National Air and Space Museum gave the news media an advance look Aug. 18 at the newly restored *Enola Gay*, the B-29 that dropped the first atomic bomb in 1945, on Hiroshima. The famous airplane had not been fully assembled for more than 40 years.

The preview was held at the museum's Udvar-Hazy Center, under construction near Dulles Airport, about 25 miles west of Washington, D.C. The facility, built as a huge aviation hangar, will open to the public Dec. 15. There will be an open house Dec. 9 for military aviation veterans who obtain tickets in advance from the museum.

For the media event, the *Enola Gay* rested on the hangar floor, but it will be displayed on an eight-foot-high platform with a basic descriptive label alongside. Museum Director John R. Dailey said the exhibit "delivers the facts" and "allows people to understand these facts within the context of their own beliefs."

This is the third shot at displaying the *Enola Gay*. Ten years ago, the museum—then under different management—planned to use the aircraft as a prop in a political horror show that played down Japan's role as aggressor in World War II. That show was canceled in response to public outrage, and the museum director was fired.

From 1995 to 1998, the main Air and Space Museum in Washington displayed, in a depoliticized setting, the *Enola Gay* forward fuselage, the tail fin, a propeller, and two of the engines. That exhibit drew four million visitors, the most by far for any special exhibition in the museum's history. Visitor comments were overwhelmingly favorable.

There is again some clamor to show the *Enola Gay* in a less objective context. At the Udvar-Hazy preview, Hideki Yui of the Japanese radio-television conglomerate NHK told the Associated Press that "Japanese survivors want to focus attention more on the damage of the atomic bomb."

In Tokyo, Akito Suemune of the Hiroshima Council Against Atom and Hydrogen Bombs, said, "The exhibition is seen as a campaign by the US authorities to support the use of atomic bombs and show off its nuclear power."

The Udvar-Hazy Center will eventually house about 200 aircraft, some of them on the floor, others hanging from the ceiling, and none of them will be accompanied by extensive explanations.

The restoration of the *Enola Gay* took about 300,000 hours. The aluminum skin has been polished to its original shine, and the configuration is authentic, inside and out. Parts and systems are of World War II vintage, and many of them are original.

The Norden bombsight, for example, is the one that flew on the Hiroshima mission. The tires—treated with material to help preserve the rubber—are the ones that were on the aircraft when it was delivered to the museum in 1949. The museum tracked down Boeing logo caps for the center of the pilot's and copilot's control wheels. The radio tubes were a gift from a World War II veteran.

Two World War II fighters, a P-38 and a P-47, will be parked under the wings of the *Enola Gay* in the exhibit.

—John T. Correll

are ready to hire experienced Reserve instructor pilots and aircraft maintainers to launch the Fighter Associate Program at five active duty bases starting in October. They expect to have FAP fully implemented by spring 2004.

The program, which began as a test in 1998, is designed to increase fighter pilot experience levels throughout the Air Force. To accomplish this, ACC and AFRC plan to place experienced Reservists in active flying units and inexperienced active pilots in Reserve units.

AFRC will place a detachment of four Reserve IPs—one full-time and three traditional—within active duty units at Eglin AFB, Fla., Hill AFB, Utah, Langley AFB, Va., Nellis AFB, Nev., and Shaw AFB, S.C. At some of these bases, AFRC will also have six enlisted maintainers—two full-time and four traditional.

For its part, ACC will embed three active duty pilots—one trained IP and two inexperienced pilots fresh out of fighter upgrade training—in Reserve squadrons. ACC plans to send active duty pilots to AFRC units at Hill AFB, Utah, Homestead JARB, Fla., NAS JRB Fort Worth, Tex., NAS JRB New Orleans, La., and Whiteman AFB, Mo.

GAO Sees Force Structure Strains

The Defense Department has not transformed its force structure to meet post-9/11 defense requirements, so missions such as homeland air defense are straining imbalanced military resources, asserted the General Accounting Office in a new report.

"The present force structure may not be sufficient to address the increase in domestic and overseas military missions," the Congressional watchdog agency said. The reason: The new missions have been heaped on top of DOD's existing responsibilities.

For the Air Force, Stateside post-9/11 missions have included nonstop support for Operation Noble Eagle. Combat air patrols and air defense alerts often prevent pilots from keeping up with combat training needed to stay proficient for deployments.

In its response to the report, DOD said it is "studying and implementing significant changes" to the force structure. No increases in topline end strength are currently planned, however.

CSAF Unveils New Fitness Test

Gen. John Jumper, the USAF Chief of Staff, announced in late July that the Air Force will be going back to

The Iraq Story Continues

DOD Recovers Iraqi MiGs Buried in Sand

A Defense Department search team operating in Iraq recently discovered several MiG-25 and Su-25 fighters buried in the sand at al Taqqadum airfield west of Baghdad. The search team uncovered and removed a partially dissembled MiG-25 Foxbat B interceptor, the fastest fighter in operation today.

The fighters were buried in an area coalition forces had been operating in for weeks, prompting Defense Secretary Donald H. Rumsfeld to comment Aug. 5 on how difficult it can be to find things the Iraqis had concealed.

"You don't know it's there because you don't run around digging into everything on a discovery process," Rumsfeld said at a Pentagon briefing. "So until you find somebody who tells you where to look, or until nature clears some sand away, ... we're simply not going to know" where all of Iraq's buried weapons are located.

In answer to a question specifically about the hunt for weapons of mass destruction, Rumsfeld added, "The absence of evidence is not evidence of absence."



USAF photo by MSGT. T. Collins

"Chemical Ali" Captured

US Central Command officials announced in August they had captured Ali Hassan al-Majid, commonly known as "Chemical Ali" for his role in overseeing the deadly chemical weapons attacks against the Kurds in northern Iraq after the 1991 Persian Gulf War.

Majid was taken into custody in Mosul, the same city where Saddam Hussein's sons Uday and Qusay were killed July 22.

Majid, the fifth most-wanted Iraqi on CENTCOM's list of former regime officials, had previously been thought dead, after a British attack targeted his compound. Senior US and British officials believed—but never expressed certainty—that coalition forces had killed Majid in the April attack against his residence in Basra.

"Obviously he was not there, [or] if he was, he survived the attack," a CENTCOM spokesman told Reuters.

More Saddam Henchmen Captured

In August, Kurdish militiamen captured Taha Yassin Ramadan, a former Iraqi vice president nicknamed "Saddam's Knuckles."

Ramadan was No. 20 on CENTCOM's list of the 55 most-wanted fugitives from the former regime. Kurdish officials in Mosul captured Ramadan without a fight and handed him over to US forces.

The spate of recent captures, months after the collapse of the Hussein regime in April, prompted President Bush to comment from his ranch in Texas that "slowly but surely we'll find who we need to find."

CENTCOM also announced the capture of Rashid Mohammad, a leader of Saddam's Fedayeen paramilitary force. Based on his position as leader of a paramilitary group and some of the items found in his possession, officials believe Mohammad was still actively planning attacks against US and coalition forces in Iraq.

Transports Keep the Goods Flowing

While most Air Force assets have returned from their Iraqi Freedom deployments, Air Mobility Command is still running at full speed to support the large ground force presence that remains in Iraq, AMC officials reported.

Lt. Col. Zyna Captain, commander of the 436th Aerial Port Squadron at Dover AFB, Del., told *Stars and Stripes* that the 436th has worked 60-hour weeks for 12 of the 13 months she has commanded the unit. "We're in a marathon ... [but] still sprinting," Captain said.

All told, AMC flew 8,500 missions in support of OIF between Jan. 1 and July 28. The command delivered 196,000 tons of cargo and brought 462,500 troops to and from the theater.

Administration officials expect the US ground force level to remain at some 156,000 troops into next year.

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basics for its physical fitness regime. The service is dumping the bicycle ergometry test as its primary tool to gauge physical fitness.

"The amount of energy we devote to our fitness programs is not consistent with the growing demands of our warrior culture," Jumper said. "I think all of us can agree that we were disappointed with the fitness standards."

The new physical fitness test will measure activities that airmen can do while deployed. That means a return to traditional activities such as the push-up, the sit-up, and the 1.5-mile run.

The testing standards are slated to go into effect Jan. 1.

Bush Wants England at Navy

In an unusual move, President Bush announced on Aug. 22 his intent to nominate Gordon R. England to serve a second tour as Secretary of the Navy. England resigned from the Navy's top civilian spot in January to become the deputy director of the new Homeland Security Department.

England's nomination was prompted by the recent death of Colin R. McMillan, the Administration's choice to succeed England as Navy Secretary. Bush announced on May 7 his intent to nominate the New Mexico businessman for the job. McMillan, who had battled cancer for a year and underwent cancer-related facial surgery in early July, committed suicide July 24.

Upon the Administration's renomination of England, Defense Secretary Donald H. Rumsfeld said that England "did a fine job as the Secretary of the Navy prior to moving to the Department of Homeland Security, and I look forward to working with him again."

Serving as acting Navy Secretary since Feb. 7 has been retired Air Force Gen. Hansford T. Johnson, who is the Navy undersecretary for installations and environment.

DSB To Endorse Sea Basing

The influential Defense Science Board is expected to endorse the sea-basing concept that would create mobile offshore bases to improve military reach.

The DSB will release a report that supports sea basing, according to *Jane's Defense Weekly*, but that calls for development of fast sea-lift capabilities to move large loads quickly from ship to shore and among maritime vessels. The DSB maintains the fast sea-lift capability is essential for the concept to be effective.

Officials told *Jane's* that what sea

basing will ultimately look like is still undecided. Competing approaches include using a small number of large platforms or using a large number of smaller vessels that are capable of acting as a base when working together.

By late August, the science board's report had not yet been released.

Russia, China Seek Space Talks

Russian and Chinese officials opened the door for discussions with the US on how to avoid the weaponization of space. They told attendees at the 65-nation Conference on Disarmament in August that now they would be willing to talk even if the discussions do not lead to a formal treaty.

The concession is viewed as a key step in moving forward with discussions on the issue. Previously the two governments had pressed solely for formal treaty negotiations.

The US has opposed a treaty banning weapons in space, but officials had indicated a willingness to enter into nonbinding negotiations.

Strykers Arrive at Osan

A detachment of the Army's new medium-weight Stryker combat vehicles arrived at Osan AB, South Korea, in August. They were delivered by C-17, giving Air Force and Army crews the opportunity to practice transporting and off-loading the vehicles.

The Strykers are an integral part of the Army's transformation effort. They

are lighter and more mobile than the heavy Abrams tanks and Bradley fighting vehicles.

Strykers can be transported within a combat theater by C-130 airlifters. If delivered by air, the larger tanks and armored personnel carriers require use of C-17s or C-5s, which are far less numerous than C-130s. And, in the case of the C-5, the number of possible landing locations is greatly reduced.

USAF Tests Anticollision System

Two F-16s flying out of Edwards AFB, Calif., on Aug. 7 successfully tested an Automatic Air Collision Avoidance System—the world's first such system.

During the test, two F-16s—one equipped with Auto ACAS, the other not—repeatedly flew toward each other. The system prevented a collision each time, without pilot input, said Steve Markman, flight test director for Air Force Research Laboratory's air vehicles directorate at Wright-Patterson AFB, Ohio.

The Auto ACAS takes over control of an aircraft to maneuver it out of harm's way. Current collision avoidance systems only provide pilots with audio and visual notice of a potential collision. That works for transports and other slower-moving aircraft but not for fighters engaged in high-speed maneuvers near other aircraft, said Markman. He noted that midair collisions are a major cause of USAF fighter aircraft losses.

The new system provides the usual

Index to Advertisers

Agusta Westland	Cover III
Air Force Space Command	7
Bell Helicopter	2
EMS Technologies	13
Franklin Mint	11
GEICO	25
Mitchell Lang	17
Motion Models	5
Northrop Grumman	Cover IV
Pentagon Federal Credit Union	19
Pratt & Whitney	9
Storz	17
Textron	Cover II
AFA National Symposium—Los Angeles	69
New at AFA	78

Senior Staff Changes

The Senior Staff Changes listing will appear in next month's issue.

warnings, then, at the last instant, when it's clear the pilot has not responded, takes control just long enough to maneuver the aircraft to avoid the collision. "Auto ACAS returns control to the pilot as soon as the aircraft begin to separate, typically in a second or two," said Markman.

AFRL plans further flight tests of the system, which was the result of two years' effort, including simulations on the ground and with single aircraft flying against computer-generated aircraft. It will also be used for unmanned aerial vehicles.

Maj. James Less, one of the pilots on the Auto ACAS-equipped F-16, believes fighter pilots, once they see the system work, will have no qualms about using it.

Eglin Hosts Combat ID Exercise

A joint combat-identification exercise was held in August to help warfighters solve the vexing problem of what to do when there is disagreement over exactly where targets are located.

A common problem, said officials, is that two sensor aircraft could designate the same target, but they may cite coordinates that vary by almost a mile.

To help resolve this type of issue, the Joint Combat ID Evaluation Team at Eglin AFB, Fla., organized an exercise at the Combat Readiness Training Center in Gulfport, Miss. Some 2,000 troops—using their normal equipment and procedures—participated in the event, which officials called a realistic simulation of the fog of war.

US Joint Forces Command analysts pored over the data generated at the exercise to determine where inconsistent targeting information originates. Their recommendations on how to improve tactics, techniques, and system compatibility were sent to senior leaders.

Pilot Yields on Anthrax Shots

A Dover AFB, Del., pilot who had asked for a court-martial to argue against taking the anthrax vaccine has relented and taken the shots, reported *Stars and Stripes*. Lt. Col. Jay Lacklan, an Air Force Reserve Command C-5 pilot, told the publication he had concluded that he could not win his case and risked going to prison.


Several hundred personnel have been disciplined for refusing to take the shots. At least two Dover pilots were given general discharges in 2000. Reportedly, there were many incidents of serious reactions to the vaccine among personnel at Dover.


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Lacklan had planned to argue the shot program was illegal because the vaccine contained a booster the Food and Drug Administration had not approved for the anthrax vaccine. The booster is squalene, a naturally occurring substance in human livers. DOD officials admit squalene has been found in minute amounts—less than the level of squalene found in the human bloodstream—in some of the vaccine lots, but they insist it is

not the reason for side effects experienced by some personnel.

According to DOD, the FDA said that its own tests could have introduced the squalene into the vaccine samples. The FDA found trace amounts of squalene in diphtheria and tetanus vaccines, as well as the anthrax vaccine.

DOD has recorded about 1,000 adverse reactions—with nearly 900 of them minor—among almost 530,000

Gen. W.L. Creech, 1927-2003



Retired Gen. W.L. Creech, head of Tactical Air Command from 1978 through 1984 and one of the most influential Air Force officers of recent times, died Aug. 26 at the age of 76.

Creech helped create a culture of excellence at TAC, setting high standards for performance and integrity that permeated the entire service and persists to this day. He was also a champion of new technologies and ideas—stealth and precision weapons among them—that created the foundation for

the Air Force's successes in the Balkans, Afghanistan, and Iraq.

After retiring from the service in 1984, Creech became a guru of leadership training. He was credited with coining the term "Total Quality Management" and wrote a book that has become a staple of leadership and management courses on the topic ever since.

Creech was "a great air and space pioneer who personified leadership," said Air Force Chief of Staff Gen. John P. Jumper. "From flying combat missions over Korea and Vietnam to building Tactical Air Command into a dynamic, proud organization, General Creech leaves us with a lasting legacy of mentorship and friendship."

Born in Argyle, Mo., in 1927, Creech, at 17, enlisted in the Army, hoping to enter flying training. He was selected for the reserve aviation cadet program and called to active duty in June 1945, as World War II ended. He decided to stay in the Army as an enlisted man, serving as a travel clerk in finance. In 1946, he got out of the service to attend college on the GI Bill, but, in 1948, he tried the aviation cadet route again. This time, he succeeded.

Creech was commissioned and received his wings in 1949. He flew 103 combat missions over North Korea and also served a tour as a forward air controller with the Army's 27th Infantry Regiment, 25th Infantry Division.

In 1953, Creech joined the Thunderbirds aerial demonstration team. Three years later, he became the commander and leader of the Skyblazers, the demonstration team for US Air Forces in Europe.

During six months in Vietnam in 1968, Creech flew 177 combat missions with the 37th Tactical Fighter Wing. For his combat actions in Korea and Vietnam, he received three Distinguished Flying Crosses, 14 Air Medals, and the Silver Star.

Creech commanded two flying wings in Europe, served as vice commander of Aeronautical Systems Division at Wright-Patterson AFB, Ohio, and was head of Electronic Systems Division at Hanscom AFB, Mass.

It was at TAC, however, that Creech made his greatest mark. As its commander for six years, he raised sortie pro-

duction by 80 percent and cut the accident rate by more than half, while driving retention numbers from historic lows to historic highs. He was famous for his statement—often quoted by Jumper—"If you measure something, it will improve."

A stickler for professionalism, Creech also trained a generation of USAF leaders to get top productivity out of their people.

Creech championed stealth technology "at a time when many people in the system wanted to kill it," said retired Gen. Joseph W. Ralston, former NATO Supreme Allied Commander, Europe. It was largely due to Creech's backing "from within the Air Force" that the F-117 stealth fighter went from an idea to an operational capability, Ralston asserted.

Creech recognized the potential of precision attack and nighttime capability, said Ralston, who served under Creech at TAC. When the LANTIRN targeting system was in danger, Ralston accompanied his boss as they went "door to door" in Congress to get the program restored. Creech also pushed through the AIM-120 Advanced Medium Range Air-to-Air Missile.

"Precision attack, stealth technology, and all-weather day and night attack were a gift to the Air Force of General Creech's vision and leadership," Ralston said.

Retired Gen. Ronald R. Fogleman, a former USAF Chief of Staff, was a "Misty Fast Fac" flying under Creech in Vietnam in 1969. He described Creech as "a superb aviator." However, he said, the reason Creech's influence has been felt so long—it is now more than 18 years since his retirement—was that "he required the colonels in TAC to attend courses designed to impart values and teach leadership skills for all the various operational and support functions in the command. He personally taught these courses and turned the attendees into disciples, who then went on to teach their subordinates the same principles and values."

Fogleman's own bid to create an Air Force ethic—"Service Before Self"—echoes Creech. Fogleman said that, when he was Chief of Staff in the mid-1990s, he was "still referring to notes" he had taken in Creech's courses 10 years earlier.

"In my view, his mastery of the operational arena allowed him to explore and focus on the other elements of the force—particularly people—required to produce effective combat power," Fogleman said.

Ralston noted that Creech "was a teacher who spent an enormous amount of his time and talent educating succeeding generations." He said, Creech "taught us all to establish high standards, give the troops a stake in the outcome, measure performance, and let people know when they were meeting the standard—and let them know when they weren't."

Gen. Charles F. Wald, vice commander for US European Command, said Creech "will no doubt go down in Air Force history as a Jimmy Doolittle or a Tooeey Spaatz." Wald added, "He was the architect of the modern Air Force, and we owe him a giant debt of gratitude for who we are."

Creech "was more responsible than anyone I know for building the Air Force we have today," Ralston said. "All who knew him will see his hand in our Air Force for many decades to come."

—John A. Tirpak

members who have been vaccinated against anthrax since it began the program in 1998.

Vandenberg ATC Goes Private

In a first for the active duty Air Force, Vandenberg AFB, Calif., on Aug. 1 ceded air traffic control tower operations to a private contractor.

The switch to a contractor will save the Air Force \$520,000 over three years and "frees slots in a critical career field," said Capt. Michael Horowitz, of the 30th Operations Support Squadron at Vandenberg.

USAF will pay Serco Management Services \$1.3 million over three years. Four of the five air traffic controllers

working for Serco at Vandenberg are former military controllers.

The Vandenberg contract may be just the first of several as Air Force officials try to find ways to relieve the stress on one of its shortage career fields. The service is looking at other installations with "slower towers," said Horowitz, for potential outsourcing.

Obituary

George W. Marquardt, an Army Air Forces B-29 pilot who flew on both atomic bomb raids at the end of World War II, died Aug. 15 in Murray, Utah. He was 84 and had suffered from Parkinson's disease for many years.

On Aug. 6, 1945, Marquardt flew bomber No. 91, equipped with spe-

cial cameras, and accompanied Col. Paul W. Tibbets Jr. as he flew the *Enola Gay* on the bombing of Hiroshima, Japan. Three days later, he substituted for Tibbets as pilot of the *Enola Gay* on a weather reconnaissance sortie in conjunction with *Bockscar's* attack on Nagasaki.

Marquardt was a native of Princeton, Ky., and left Illinois Wesleyan

University in March 1941 to join the service. He left the AAF shortly after the end of World War II and settled in Utah, where he became a steel company executive.

In a 1995 interview with the *Salt Lake Tribune*, he said: "I have never for one moment regretted my participation in the dropping of the A-bomb. It ended a terrible war." ■

News Notes

By Tamar A. Mehuron, Associate Editor

■ Gen. Robert H. Foglesong on Aug. 12 succeeded Gen. Gregory S. Martin as commander of US Air Forces in Europe, Ramstein AB, Germany. Foglesong had been Air Force vice chief of staff.

■ On Aug. 22, Martin replaced Gen. Lester L. Lyles as head of Air Force Materiel Command, Wright-Patterson AFB, Ohio. Lyles retired.

■ The Missile Defense Agency on Aug. 15 announced that Adak Island, Alaska, will be the primary support base for the sea-based X-band radar, which will provide ballistic missile tracking information as part of the Ground-based Midcourse Defense system. MDA plans to modify the SBX vessel, a self-propelled oil drilling platform, for the radar and begin operations by 2005.

■ The B-2 test team at Edwards AFB, Calif., successfully dropped two live 5,000-pound enhanced GBU-28 munitions from a B-2 bomber for the first time Aug. 14. The test took place over the Utah Testing and Training Range. The GBU-28 B/B is an upgrade of the GBU-28 A/B designed specifically for the B-2.

■ The Missile Defense Agency has temporarily halted plans for a space-based kinetic energy boost-phase intercept capability, according to *Defense Daily*. Industry officials said MDA believes the technology is not mature enough. The agency is proceeding with its ground-based KE-BPI program.

■ According to the *Seattle Post-Intelligencer*, Boeing has received a USAF contract to develop and demonstrate by 2007 new systems for the service's E-3 Airborne Warning and Control System aircraft. Planned upgrades include new mission computing hardware and software, improved console displays, and advanced radar equipment. The contract may be worth about \$1 billion—the same amount Boeing lost when the Air Force stripped the company of several gov-

ernment launch contracts as punishment for ethics violations in the Evolved Expendable Launch Vehicle competition with Lockheed Martin. (See "Washington Watch," September, p. 8.)

■ The Russian government in August approved the privatization of the Mikoyan Gurevich (MiG) design bureau. The state-owned aircraft builder will be privatized in 2004, as part of a government program to restructure the defense sector.

■ Northrop Grumman completed, earlier this summer, preliminary compatibility testing of the EADS electronic intelligence payload with Northrop's Global Hawk UAV. The company next plans a series of flight tests in late fall at Edwards AFB, Calif., and next year in Germany. German officials are interested in a variant of Global Hawk—dubbed Euro Hawk—as an eventual replacement for its older Breguet Atlantic signals intelligence aircraft.

■ USAF awarded a Lockheed Martin-led team a potential three-year, \$50 million contract to develop a communications architecture for the next-generation command and control satellite constellation, a global network of C2 and ISR systems and platforms. The network would link air-land-sea-space-based sensors to speed information to warfighters. Lockheed leads team members Boeing, Raytheon, IBM, and L3 Communications.

■ Northrop Grumman on Aug. 1 completed the first production version RQ-4A Global Hawk for USAF. Company officials rolled out the UAV in its new gray and white operational paint scheme at Palmdale, Calif., where it was to undergo a final series of systems tests before being sent to Edwards AFB, Calif., for flight tests. It is the eighth Global Hawk air vehicle built; the first seven were developmental versions.

■ Interfax-Military News Agency reported that the Russian Air Force would start receiving an upgraded MiG-29

fighter and an upgraded MiG-31 next year. According to the news service, the plans revealed on Aug. 8 by Col. Gen. Vladimir Mikhailov, Russia's Air Force chief, also included deployment of the new S-400 long-range air defense missile and new Mi-28 helicopter. Moscow passed on the development-plagued An-70 military transport. (NATO countries in 2000 had dropped consideration of the An-70 in favor of the Airbus A-400 transport.)

■ The list of staff sergeant promotions USAF released in August showed a selection rate of 49.79 percent—13,651 of 27,416 eligible senior airmen. The rate last year was 62.98 percent.

■ At least two European firms are offering their helicopters to South Korea, which needs to replace its elderly fleet of US-built UH-60 Black Hawk helicopters. South Korea has traditionally purchased most of its military equipment from US firms, but the recent rise in anti-American sentiment may lead Seoul to seek other suppliers. The London *Times* reported that both Westland, a UK-Italy firm, and French-owned Eurocopter plan to bid for the right to supply some 500 helicopters over the next decade.

■ Starting Oct. 1, about 370 recruits can sign up for the new, short-term 15-month enlistment under the Congressionally mandated National Call to Service program. They must first complete basic training and technical training. At the end of their enlistment, they can choose whether to extend their active duty commitment by 24 months or spend 24 months in the reserves.

■ On July 22, an Air Force promotion board selected 1,824 line captains out of 1,973 considered for promotion to major in the zone—for a selection rate of 92.4 percent. The 2003 rate is slightly below the 2002 rate of 92.6 percent; the rate in 2001 was 88.3 percent.

Action in Congress

By Tom Philpott, Contributing Editor

Waiting Game on Tricare Benefit; TSRx and the Medicare Bill; Relief From the Medicare B Penalty

Guard, Reserve Tricare On Hold

It appeared in early fall that drilling National Guard and Reserve members will have to wait another year at least to gain access to year-round military health care benefits.

In passing its version of the 2004 defense authorization bill, the Senate included a provision that would allow Guardsmen and Reservists to enroll in Tricare for modest fees.

DOD balked because of cost concerns, and the Senate and Bush Administration agreed to study the issue another year.

Bipartisan support for the plan had appeared strong. However, Sen. Lindsey Graham (R-S.C.), a leading advocate of the effort, agreed to the study compromise brokered by Sen. John Warner (R-Va.), chairman of the Senate Armed Services Committee.

The Senate plan would allow Selected Guard and Reserve personnel to enroll in Tricare for premiums equal to 28 percent of actual cost. The government would pick up the rest of the cost. Estimates of costs to enrollees were under \$600 for individuals and under \$1,500 for families.

Cost Dispute Snarls Benefit

In this latest Tricare debate, the Administration indicated it was inclined to support a reserve medical benefit of some kind, if Congress provided funds. Funding was clearly the key.

Secretary of Defense Donald H. Rumsfeld opposed the Senate plan, claiming it could add an unfunded \$5.1 billion per year liability to the defense program and force DOD to shortchange other needs.

Guard and Reserve advocates said Rumsfeld's cost estimate was far too high. They noted that only about 20 percent of Guardsmen and Reservists lack coverage and most are insured through employers or other means, but that Rumsfeld's figure assumes that all eligible Guardsmen and Reservists would enroll in Tricare.

The Senate, for its part, projected



USAF photo by TSgt. Justin D. Pyle

USAF reservist in Sierra Leone. Is year-round reserve Tricare too costly for DOD?

the annual cost at \$2 billion, less than half the DOD estimate. However, because the program was not funded, Republican leaders agreed to a delay.

TSRx Unaffected by Medicare

Tricare officials say passage of a prescription benefit for all Medicare recipients will not affect the Tricare Senior Pharmacy program (TSRx), which is viewed as an employer provided benefit plan.

Legislation progressing in Congress would have Medicare subsidize prescription drugs for the elderly and disabled. Senate and House bills would allow enrollment for monthly premiums of \$35, a cost-sharing formula, and an annual deductible.

The military's 1.4 million beneficiaries age 65 and older will continue to enjoy a triple-option plan:

- Free prescriptions on base.
- The Tricare Mail Order Pharmacy program with co-payments of \$3 (generic) or \$9 (brand-name) for a 90-day supply of most drugs.
- A retail pharmacy network plan with \$3 and \$9 co-pays for a 30-day supply of most medicines.

The co-payments will rise with the adoption next year of a uniform military drug formulary.

Coming: Part B Penalty Relief

Though most are not affected, some elderly military retirees do have a significant stake in the Medicare prescription bills (H.R. 1 and S. 1).

Both would waive the Medicare Part B enrollment penalty that military retirees now pay for waiting beyond age 65 to enroll in Part B.

About 90,000 elderly retirees declined Part B coverage, for physician services and outpatient care, when they turned 65. Many of them did so assuming they always would have access to military care or to health insurance through spouses or second-career employers. Thus they avoided Part B premiums, now \$58.70 a month and rising to \$66 next year.

To qualify for Tricare for Life—the so-called “golden supplement” to Medicare—65 and older military retirees must be enrolled in Part B. Under current law, those who enroll late face a 10 percent penalty on premiums for each year they delayed enrollment past age 65. Therefore,

a 70-year-old who enrolls today would pay 50 percent more in monthly premiums, or \$88.05.

The Medicare reform bills would drop the premium penalties on military retirees who enrolled late, after Dec. 31, 2000, and waive the penalty provision for beneficiaries through Dec. 31, 2004. The Senate bill would delay Part B coverage for new late enrollees until January 2005. The House bill would implement it this year.

Tricare Can't Track Docs

The General Accounting Office, Congress' watchdog agency, has informed lawmakers that no one knows if enough physicians are participating in Tricare Standard, the military's fee-for-service health insurance program.

GAO contended that Tricare officials have not established the systems needed to measure whether there are enough doctors to meet beneficiary demands.

Military beneficiary groups testified last year that many Standard users had difficulty finding physicians who accept Tricare. They blamed low reimbursement rates and administrative hassles.

Congress asked GAO to investigate. The auditors couldn't confirm a shortage of participating physicians but said Tricare officials can't rule it out. GAO said oversight of doctor networks was hindered by inadequate data collection.

Congress Eyes Force Levels

Congressional auditors charge that the military's expanded role in homeland security since 9/11 is affecting readiness and possibly troop morale.

The agency examined the strain on US forces from new domestic missions and criticized Defense Department officials for delaying changes in force structure to address homeland security needs until a Quadrennial Defense Review in 2005.

The Bush Administration hasn't tailored forces to avoid degradation of training and combat readiness, said GAO. It noted that seven Air National Guard fighter wings are heavily tasked with homeland security missions. In one, it said, "the average pilot was unable to meet training requirements in nine out of 13 months" after Sept. 11, 2001.

Meanwhile, GAO said, the pace of operations is so high that thousands of personnel are exceeding personnel tempo ceilings set by Congress to protect troop morale. As a

result GAO warned of "future personnel retention problems."

After release of the GAO report, defense officials announced they won't wait until 2005 to work on rebalancing forces. A study is under way.

VA Plan Stirs Opposition

Some lawmakers predictably are expressing outrage at a draft health care reorganization plan put forward by the Department of Veterans Affairs. In the plan, VA facilities in certain states and districts are targeted for closure or downsizing.

The plan—Capital Asset Realignment for Enhanced Services, or CARES—aims to shift VA staff and resources, by 2020, to the places most in need. The VA intends to make final decisions this December. Between now and then, CARES will be analyzed by an independent commission.

VA Secretary Anthony J. Principi calls CARES the most comprehensive assessment of VA facilities since World War II. He says it will make health care available to more veterans and reduce waste by closing underused facilities.

However, the plan has angered members of Congress who have constituents destined to lose VA services or health care jobs.

With veterans in much of the country facing long waits for VA medical appointments, veterans groups oppose the closing of any facility. They say new facilities should be built where needed.

The draft plan would close seven hospitals and realign services at many other facilities. Other areas would benefit from new medical centers and the opening of more outpatient clinics where veteran populations are rising. The entire plan can be viewed online at: <http://www.va.gov/cares>.

VA would close older hospitals in Brecksville, Ohio, Canandaigua, N.Y., Gulfport, Miss., Lexington, Ky., Livermore, Calif., Pittsburgh, and Waco, Tex.

It would open new hospitals in Las Vegas and in Orlando, Fla.

Also opening would be centers for the blind in Biloxi, Miss., and Long Beach, Calif., as well as spinal-cord injury centers in Albany or Syracuse, N.Y., Denver, Little Rock, Ark., and Minneapolis.

Ex-Students Get Loan Reprieve

President Bush in August signed legislation that gives the secretary

of education authority to allow deployed service members and mobilized reservists to delay repayment of education loans.

Freshmen Rep. John Kline (R-Minn.) introduced the bill to bring "a little more peace of mind" to service members and ease their financial problems when deployed.

The Department of Education will administer the Higher Education Relief Opportunities for Students Act of 2003 (HEROES), screening applications of reservists and deployed active duty students to delay student loan payments and spare their families lender collection calls.

The authority is set to end Sept. 30, 2005. The Education Department must report to Congress before that date on whether the program should continue.

War Pay Flap

The Bush Administration said in mid-August that it would work to preserve for each service member in Iraq and Afghanistan up to \$225 in special wartime pay increases enacted last April. The Administration earlier had called for allowing the special pay increases to expire.

Democrats claimed it was a politically driven change of heart. Rep. Ike Skelton (D-Mo.) and Rep. John Spratt (D-S.C.) said in a statement that the Administration's earlier position was "a direct affront" to all service members.

Rumsfeld had opposed "unrequested" increases. Among these were a \$150 hike in the monthly Family Separation Allowance (FSA) and \$75 boost in Imminent Danger Pay (IDP). The increases were set to expire on Sept. 30 unless Congress voted to extend them.

The combined increases came to about \$25 million per month.

DOD said the increases were an inefficient way to help troops in Iraq and Afghanistan. Much of the \$25 million per month increase went to service members deployed elsewhere.

FSA is paid to any service member forced to live away from family for more than 30 days. IDP goes to members serving in scores of designated danger areas.

David S.C. Chu, undersecretary of defense for personnel and readiness, claimed in an Aug. 14 news conference that DOD never intended to take the increases away from troops serving in Iraq and Afghanistan but merely wanted a more efficient plan. ■

Verbatim

By John T. Correll, Contributing Editor

Volkswisdom

"Almost one in three Germans below the age of 30 believes the US government may have sponsored the Sept. 11, 2001, attacks on New York and Washington."—*Reuters, citing poll by German language weekly Die Zeit, July 23.*

Trashing Saddam

"Saddam Hussein is no longer bad news. He's a piece of trash waiting to be collected."—*Secretary of State Colin Powell, Reuters, July 30.*

On, Brave Old Army Team

"I've always liked the Army. Things that get printed about that tend to be false."—*Secretary of Defense Donald H. Rumsfeld, Army Times, Aug. 4.*

Strategic Masochism

"South Koreans regularly demonstrate against the US presence in their country. Since the reason for that presence is for Americans to die in defense of Seoul, one has to ask oneself at what point strategic altruism becomes strategic masochism."—*Charles Krauthammer, Time, Aug. 4.*

Letter From Two Soldiers

"The majority of us are professionals who will do what it takes to complete the mission, whether it is a wartime or a peacekeeping operation. For every soldier you read about who writes a letter to his Congressional representative imploring the government to bring us home, there are many more who are proud to be performing their duties."—*Army SSgt. Clay Grimes and Cpl. Jesse Allen, 101st Airborne Division, Mosul, Iraq, letter in New York Times, July 20.*

Unsafe and Insecure

"George Bush has left us less safe and less secure than we were four years ago."—*Rep. Richard A. Gephardt (D-Mo.), speech to San Francisco Bar Association, July 22.*

Keeping His Perspective

"By its actions, the Bush Administration threatens to give a bad name

to a just war. ... What made this war just was the clear evidence of 12 years of Saddam Hussein's brutality and evasion of responsibility. And that is not diminished by those 16 misleading words in George W. Bush's speech."—*Sen. Joseph I. Lieberman (D-Conn.), Washington Post, July 29.*

Space Is a Means, Not an End

"First of all, space people—just like fighter people and bomber people and ground people and naval people—need to worry first about winning the war. And what we all need to do is worry less about being protective of our platforms and environment and more expressive of the need to aggressively make them contribute to the problems that we face. We need to be able to put a cursor over the target. ... If you get the systems integrated properly to get that cursor over the location, there shouldn't be an argument about which technology put the cursor there. The argument should be about what you do with it next."—*Gen. John P. Jumper, Air Force Chief of Staff, Space News, July 15.*

The Fastest With the Mostest

"The case for [flying] fast has been strengthened [by Operation Iraqi Freedom]. If we have to make a choice to retire some aircraft early, the A-10 is a good candidate."—*Retired Gen. Merrill A. McPeak, former Air Force Chief of Staff, Inside the Pentagon, July 17.*

Too Few Black Airmen

"We haven't done enough or paid enough attention to demographics in looking at what we need to do to help minorities in the aviation field."—*Gen. Lester L. Lyles, then commander of Air Force Materiel Command, noting that only 2.5 percent of active duty USAF pilots and navigators are black, Denver Post, Aug. 10.*

Not Going There Alone

"In the last 180 years of American military strategy, ... there is not a single example of an Army expeditionary force succeeding without control of the intervening sea by the US Navy. Since 1941, no American sol-

dier has set foot on foreign soil or entered an enemy capital without the US Air Force in control of the skies overhead. Thus, any new force design for the US Army must be based on the strategic assumption that Army combat units will be organized for expeditionary warfare to conduct both operational, as well as tactical, maneuver and strike as part of a larger joint force."—*Army Col. Douglas A. Macgregor, author of Breaking the Phalanx (1997), in forthcoming book, Transformation Under Fire, quoted from prepublication copy, Washington Post, July 28.*

From the Ayatollah's Grandson

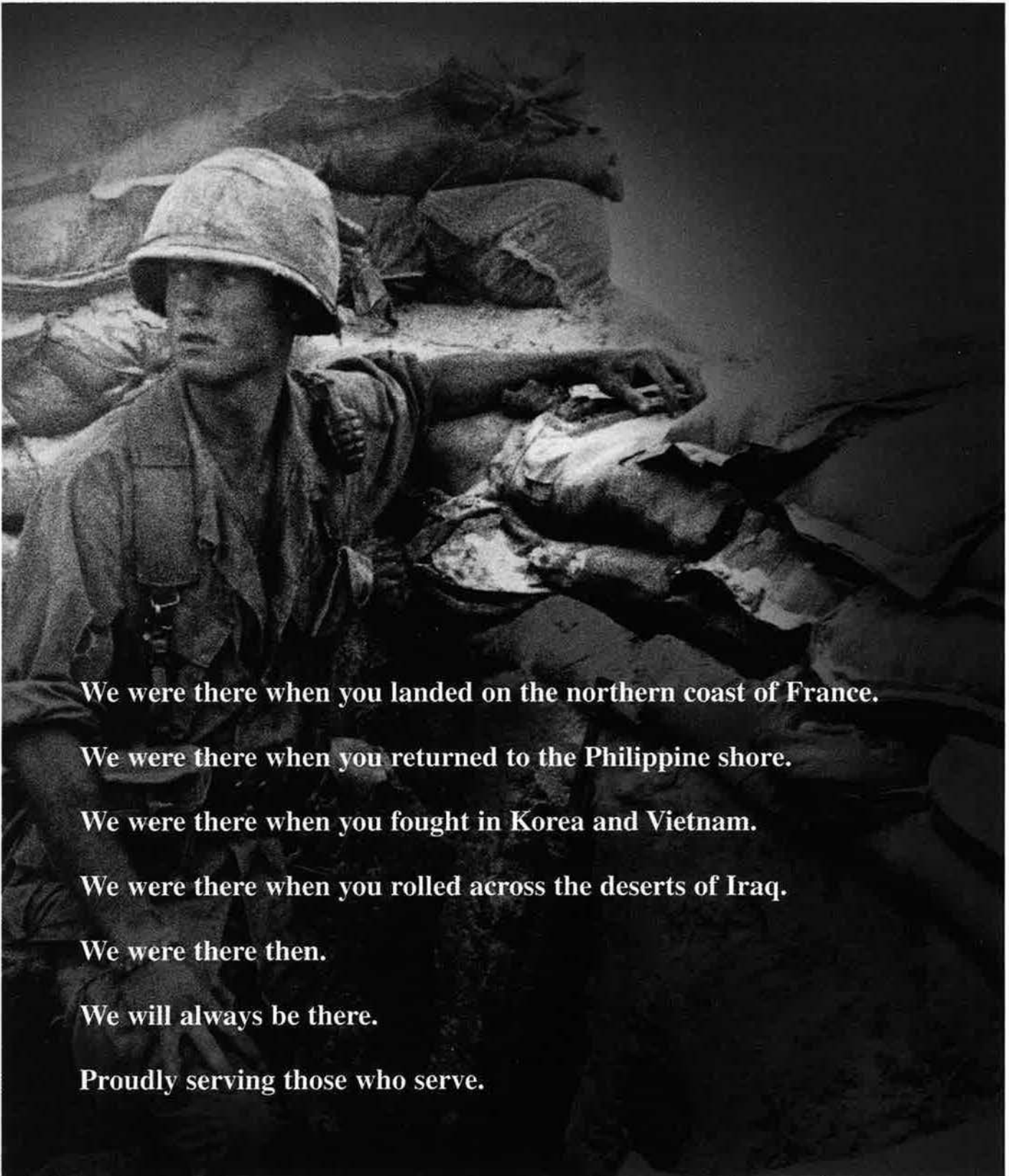
"Iranians insist on freedom, but they are not sure where it will come from. If it comes from inside, they will welcome it, but if it was necessary for it to come from abroad, especially from the United States, people will accept it. I as an Iranian would accept it."—*Sayyid Hussein Khomeini, grandson of the late Ayatollah Ruhollah Khomeini, New York Times, Aug. 6.*

Earful From Okinawa

"I feel bad that I have to bring up nothing but harsh and unpleasant issues to you for your first visit. The ultimate desire of Okinawan people is to reduce the presence of the military, not only the base land but also the number of troops stationed on the island. We also hope that training conducted on the island will be minimized and, if possible, held outside Okinawa—or outside Japan."—*Keiichi Inamine, governor of Okinawa, to Lt. Gen. Robert R. Blackman, new commander of 3rd Marine Expeditionary Force, Pacific Stars and Stripes, Aug. 13.*

MiGs in the Sand

"If it's possible to hide 30-plus aircraft for several months with 150,000 troops on the lookout, secreting vials of poison gas or anthrax has got to be a cinch."—*Wall Street Journal editorial, Aug. 4, about dozens of Iraqi Air Force jets found buried in the sand at an airfield west of Baghdad.*



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The unique **Joint STARS** unit composed of active and ANG airmen was a big-time success in **Operation Iraqi Freedom**.

The Blended Wing Goes to War

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

IRAQI soldiers, interviewed by US troops during and just after Gulf War II, commonly reported that their morale collapsed when, in the midst of a raging sandstorm, armored vehicles began exploding all around them. They knew then that the blowing, obscuring sand was no refuge from American sensors and bombs. There was no place to hide.

Watching the Iraqis from high above the billowing clouds of sand were E-8C Joint STARS surveillance airplanes, whose ground moving target indicator radars could clearly see convoys of vehicles inching along a major highway. Battle managers aboard the Joint STARS were able to cue other aircraft, as well as special units on the ground, to confirm the locations and types

of the vehicles and execute their wholesale destruction.

To the terrified Iraqis, it made little difference that the crews of those radar aircraft, as well as the maintenance people supporting them at forward locations, were part of a unique USAF experiment in managing its force. The Joint STARS systems belong to the 116th Air Control Wing—the first and, so far, only “blended wing” comprising active duty and Air National Guard personnel.

The unit had been in existence only three months when it went off to take part in Operation Iraqi Freedom. By the end of major combat operations, it had logged more than 300 sorties and 3,000 hours of flying time, said Col. Tom Lynn, commander of the 116th. And, while Lynn





would not say so, others have described the Joint STARS operation in the sandstorm as a key event—maybe *the* key event—in the brief but intense drive on Baghdad.

This marked not only the first combat deployment of a blended wing but also the first time that Joint STARS had gone to war as a mature system. In the 1991 Gulf War, two developmental A models went to the Gulf, providing limited but valuable information to war commanders. Developmental E-8C models were used in Operation Allied Force in 1999 and early production models in Operation Enduring Freedom in 2001. This time, the full E-8C version went in nearly full wing strength.

Nine of the 15 Joint STARS aircraft that were in the USAF inven-

tory deployed forward to bases on the Arabian peninsula. The 116th set up shop for about 600 airmen in two locations, the largest E-8 deployment ever. The Air National Guard provided about a tenth of the air crew members and about one-fourth of the support team members. More Guardsmen would have deployed had there been enough time to train them. As it was, many were new to the Joint STARS mission.

The E-8 has the capacity to observe the terrain and spot moving objects. Though it cannot yet distinguish between civilian and military vehicles, it can distinguish between tracked and wheeled vehicles. By coordinating information with satellite data and with intelligence from Predator and Global Hawk unmanned re-

connaisance platforms, Joint STARS battle managers put symbology on particular targets, identifying them for attack aircraft and Army ground and helicopter units. This was done via use of both voice and digital means. The information was also forwarded to the combined air operations center, where commanders can use Joint STARS data to get a feel for the “big picture” of the unfolding battle.

Such was the demand for Joint STARS information that some missions lasted 23 hours. At times, two or more E-8s (the precise number is classified) were in the air simultaneously, to provide both an overall battle picture and a tightly focused one on certain areas of interest, such as Baghdad.

The mission shifted rapidly from



Gulf War II generated the largest Joint STARS deployment to date, with nine aircraft and about 600 airmen sent to two forward locations. Joint STARS' performance during the sandstorm was a turning point in the war.

"intelligence preparation of the battlefield" to command and control of strike assets, according to the wing vice commander, Col. Mark Hall.

"Baptism by Fire"

Lynn, himself a Guard member, said OIF proved to be a "baptism by fire" for the unit, a "steep learning curve, instant maturation for a lot of these guys. They acquitted themselves incredibly well."

Joint STARS performance during the dust storms proved to be "a major turning point" in the war, according to Air Force Chief of Staff Gen. John P. Jumper.

At that point in late March, Jumper told *Defense Daily*, "The Iraqis, who thought we couldn't see them any better than they could see us, boldly struck out on roads, to try to reinforce [their units], especially the Medina Division" of the Republican Guard. He said, the Iraqis "essentially got torn apart, and, as a result, walked away from their equipment."

The E-8Cs were able to directly cue both Army AH-64 Apache helicopters and USAF F-15Es through data links, and—through data-sharing systems with the combined air operations center—with virtually all of the strike aircraft involved in the war.

On one mission, an E-8 lost one of its four engines but stayed on station for three hours to provide intelligence-surveillance-reconnaissance and command and control support to

US Marines advancing on Tikrit. After the war, a Marine report singled out Joint STARS: "No other collection asset provided the wide area, all-weather coverage of the battlespace that the JSTARS did." The report went on to relate that the combination of the airborne E-8 and its Army ground communications crews ensured the Marines "were not blind on the battlefield."

The Army changed its tactics to include use of Joint STARS with its Apache helicopters when the Apaches ran into trouble with sand and enemy tactics. Maj. Gen. David H. Petraeus, the Army's 101st Airborne Division commander, said, "When we could not get the target definition that we needed, we went to daylight, deep armed reconnaissance operations [that had] JSTARS supporting them, to direct them." This combination, he said, enabled the Apaches to destroy "very significant targets on a number of occasions."

The OIF air boss, Gen. T. Michael Moseley, credited Joint STARS in combination with other airborne sensors, strike aircraft, and special operations forces with preventing Saddam Hussein from unleashing Scud missiles, as Saddam had done during Gulf War I. "I believe he has not shot one because we've been out there," he told reporters on April 5. "We rehearsed the command and control of this. We rehearsed all of the orchestration and lash-up of supporting and complementing assets."

Despite its high profile as an enabler of the fast-paced attack on Iraqi forces, much of the detailed experience of the Joint STARS unit in OIF will, at least for the moment, remain hidden.

"I think you'll find that, with any ISR system, they tend to hold those cards pretty close to the vest," said Lt. Col. John LaBuda of the 116th.

A senior Air Combat Command official put it more bluntly: "As long as things are still pretty warm in SWA [Southwest Asia] and in Korea, I don't think anybody's going to be telling ISR war stories. It's ... a good idea to keep your tricks to yourself."

Seeking a Mission

The blended wing came into being as a political expedient. Robins AFB, Ga., home of the 116th, had been host to a Guard unit—the 116th Bomb Wing—that was flying B-1B bombers. The Air Force in 2001 decided to retire 33 B-1Bs assigned to Guard units at Robins and McConnell AFB, Kan., and an active unit at Mountain Home AFB, Idaho. The move came as a shock to ANG and state officials, who did not want state ANG members (some 1,150 at Robins) left without a mission.

Maj. Gen. Paul A. Weaver (now retired) was the director of the Air National Guard at the time. He was determined to get "the best possible outcome for Georgia and Kansas."

Air Force Secretary James G. Roche came up with the idea of the blended wing, Weaver said. It was a notion that would "benefit the Air Force" and make good use of the leverage provided by the Air National Guard.

The adjutant general of the Kansas ANG did not want a blended wing, so the focus fell on Robins. Joint STARS aircraft already were based there with the 93rd Air Control Wing. Could the Air Force actually conduct such an experiment with one of the service's most heavily tasked aircraft?

"We never, quite frankly, considered JSTARS," Lynn recalled. "It was a mission still in growth," meaning it had not yet received all its personnel or aircraft. Moreover, Joint STARS was a so-called low-density, high-demand system.

Roche, however, believed that Joint STARS was an excellent platform on which to try out the blended



Air Force officials and Georgia lawmakers worked closely to craft the first blended wing. Here, Sen. Saxby Chambliss (R-Ga.) and Col. Tom Lynn, 116th ACW commander, listen to a briefing on the unit's Gulf War II exploits.

wing concept because, if it worked, it could usher in even tighter coordination between active and Guard forces. Success could conceivably spell an end to the Guard operating “hand me down” aircraft from the regular Air Force.

In February 2002, Roche told Congress that blended units “will integrate active, civilian, Guard, and Reserve capabilities in creative new ways that may appear as radical departures from the past but which have already been part of the Air Force business practice for years.” Flying and support functions, he said, would become so integrated between the force components “as to be invisible to outside observers.”

Roche subsequently suggested that blended wings could work even with a brand-new system such as the F/A-22 fighter. Service officials see such possibilities as a potential consolation prize to constituencies that take hits in the next round of base closures, slated to be announced in 2005.

Both the 93rd Air Control Wing and the 116th Bomb Wing officially stood down in October 2002. The new organization, the 116th Air Control Wing, was the immediate successor. Lynn, who had commanded the old ANG bomb wing, became commander of the new blended wing.

Melding Two Perspectives

Hall said that he, like many in the active force, had only a vague understanding of the Guard and had

some serious concerns about how such an organization could work.

“We always looked at the Guard as ‘weekend warriors,’” Hall noted. “We thought, ‘Here we are, an LD/HD, and we’re going to deploy all the time, and what is the Guard going to do?’ ... We really didn’t understand all the differences in the Air National Guard, or the Reserves, for that matter.”

ANG personnel fall into two basic categories: part-time and full-time personnel. The first, or “traditional,” group comprises those who drill one weekend a month and two weeks a

year, the so-called weekend warriors. These can be mobilized at the state or federal level. The second category—full time—includes two subgroups: Active Guard Reserve (AGR) and military technicians. AGRs serve in uniform in the same federal pay status as active duty personnel, but, under Title 32, they report to the state. If AGRs are mobilized at the federal level, they serve under Title 10. Military technicians are federal civilian employees who must, by statute (Title 32), serve as weekend-warrior drilling members of their Guard unit. Title 32 also requires the technicians to wear their military uniforms on the job. They can be mobilized with their unit at the federal level.

“About 25 percent of my folks are full time,” said Col. Lois Schmidt, commander of the 116th Mission Support Group. “The rest are what we call traditional Guard members. We don’t like the term ‘part time.’”

While Title 10 federalized Guard officers can write performance reports, recommend promotions, and exercise the Uniform Code of Military Justice over all airmen—active and mobilized personnel—under their command, Title 32 officers cannot.

Normally, Lynn serves under Title 32. For this reason, Hall, the active duty vice commander, holds a unique, second, and simultaneous office. He is the “116th Air Control Wing active duty element commander.” He handles all UCMJ actions. He is the



The feared “clash of cultures” between active and Guard airmen has proved to be mostly a nonissue. The biggest problems tend to be mundane, such as who pays travel vouchers.

senior rater for promotion board endorsements. "I do all that stuff for the active duty side, because I'm a Title 10 person," said Hall.

However, after Hall has "racked and stacked" airmen for promotions, for example, he gives all of the packages to Lynn. If there is a disagreement, Hall said, he defers to Lynn's judgment. Under the law, however, he does not have to defer.

Lynn likewise confers with Hall on the Guard personnel issues. "It's a leadership thing based on mutual trust," Lynn observed. "There are no problems."

Changing the Law

Nevertheless, the situation is an unwieldy one, and the Air Staff has proposed some legal changes that could smooth the way.

Weaver said that, after retirement, he consulted for the Air Force to work the blended wing legislative issue, among others.

"We had to change the language of the law," Weaver asserted.

One solution was to get the states to offer active duty officers assigned to Guard units a temporary Title 32 commission, which they would hold

simultaneously with their Title 10 commission. This would give them temporary authority over Guardsmen in their units. However, the law specifically forbade the reverse, of Guardsmen being given temporary Title 10 commissions within the boundaries of the US.

Weaver reworked the language allowing such a dual commission—which would be limited only to the commander of a dual or blended organization—and the Office of the Secretary of Defense took an interest.

"They asked me to pull it back, run it past [OSD] general counsel, run it past the Justice Department. ... It passed everybody's test," Weaver said.

The proposed law would put such commanders in two reporting chains—one to a state governor, one to the President.

By late summer, the legislation was included in the Senate Armed Services Committee defense authorization bill for Fiscal 2004, and Weaver said he'd received assurances that the House Armed Services Committee would defer to the SASC language in conference.

"So Tom Lynn will have both a Title 10 and a Title 32" commission, Weaver said.

After Lynn leaves as wing commander, his successor will be decided jointly by the adjutant general of the Georgia ANG and the commander of Air Combat Command. If an active duty commander is selected, the vice commander will be from the Guard, to preserve the dual nature of the organization's leadership.

When USAF announced the blending, there was some concern that the cultures of the Guard and active force might clash, said CMSgt. Donald Cays, Lynn's command chief master sergeant.

Clashing Cultures?

"Yes, there are cultural differences," Cays said. Most of these have to do with the way that Guardsmen and active duty personnel are evaluated, paid, and promoted. There are two systems, and they are not easily meshed. This can cause friction.

Enlisted people in the Guard are hired directly into a "slot" and don't compete for jobs as their active counterparts do. To be promoted, Guardsmen must hire into a slot that carries a higher rank. Moreover, not all Guard slots are considered supervisory, whereas all active duty non-commissioned officers are trained to be leaders, Cays noted.

A senior technician with 25 years of service may well bridle at "working side by side with active duty people of lesser military rank," or working for a younger person or one with fewer stripes, Cays said. This was a problem that was anticipated before the blend but for which there is no easy solution. "Most people just suck it up," Cays said.

The Guard also has a reputation for informality, he said.

"First name, that type of stuff," he explained. "It's not anything other than, you work with somebody for 20 or 30 years, you tend to lose that formality. The active duty's not like that." Regulations call for greater formality, which is rapidly sinking in, Cays added.

While Guardsmen are evaluated strictly on performance of their stated duties, active duty people must also score points for "above and beyond stuff," Cays said, as well as time on station, awards, schools, etc.

Finally, Guardsmen compete dif-

USAF photo by SSgt. Matthew Hannen



SrA. Robert Vance runs an engine test at a forward location. During the war, many Guard members were still in training. Now, however, air and ground crews are much more balanced between active and Guard members.

ferently for recognition, such as in Airman of the Quarter awards. While active duty personnel compete within the wing, then the base, and then their major command, Guardsmen go through a different process, focused on the state. Even physical training tests are different.

There are some "tribal" tendencies between the two groups, possibly because nearly all Guard enlisted people live off base while many enlisted active airmen live in the dorms, and the Guard people stay put while the active duty rotate out after two or three years.

Still, "we let them in our club, they let us in their club," said SSgt. Joseph Stuart, an active duty NCO.

"There is a sense of family and belonging in the Guard" which is appealing, Stuart said. "In the Guard, you really get to know people, and there is a tremendous esprit de corps."

However, there remain vexing, Catch-22 problems regarding things such as travel vouchers. People sometimes "bounce" between the wing, base headquarters, and ops group because clear lines have not been completely established about financial responsibilities, Stuart said.

The unit is working through most issues. "I think the blending is going well," said Cays. "We've come a long way in a short period of time."

There are solid benefits to the blending. Because the Guard typically has veterans with long experience, while the active element has many junior airmen, the result is an in-house mentoring system, Lynn said. The junior members have the benefit of watching and learning from old hands, most of whom have at least some active duty experience.

Operational benefits accrue, too, from the experience of flight crews. When the B-1Bs departed, many of the wing's offensive and defensive weapons systems officers cross-trained to be air battle managers in the E-8C, Hall reported. The ABM specialty is one in which there is a chronic shortfall in the Air Force.

"The thing that's exciting to me," Hall said, is that individuals who were on the tip of the spear as strike aircrew members in the B-1B will now be "in the back of our jet talking to someone who is now tip of the spear. ... They will bring some insight" to that conversation. Likewise, bomb loaders and people in other



USAF photo by MSgt. Mark Bucher

After the success of a blended wing with Joint STARS—a new system and a low-density, high-demand asset—the Air Force may try the concept with another new system, the F/A-22.

specialties that didn't have an exact analogy with an intelligence-surveillance-reconnaissance unit have had a "great opportunity" to cross-train into flight operations, such as becoming flight engineers.

"The differences ... are slowly dissolving away," Lynn said, "and I think that just comes from working together and building relationships."

For the most part, the functioning of the wing is "transparent," Hall said, and there are no discernible differences between active and Guard personnel. The wing leadership was not told how to manage the blend, but was left to figure out the details on its own.

Cays said there is little trouble getting volunteers to go on deployments, some of which are open-ended in length. Why do the Guardsmen raise their hands to go?

"Patriotism," Cays offered, "or they just want to do it. I've found out from my career in the Guard that the people are there because they want to be there, not because they have to be there. Some people do it for educational benefits [or] extra income, but the majority of our people do it because they like it."

While the wing is not writing a how-to book on building a blended wing per se, Lynn said it is capturing all the "lessons learned." Should there be another blended wing, it would be easy for that wing to review the 116th's experience. However, so much of the 116th's experience is

necessarily unique that "we're not naive enough to think that is the end solution" to all future blending initiatives.

Lynn said the 116th has entertained a steady stream of visitors, not only from the media but from other Guard units

Lt. Gen. Joseph H. Wehrle Jr., then USAF's assistant vice chief of staff, said the senior leadership has kept a close eye on Robins but maintained a hands-off approach.

"They are smart people, and we know they will figure these things out," Wehrle said. "They have pride of ownership of this concept."

The senior USAF leadership was very pleased with the wing's performance in Gulf War II, Wehrle said, and hopes the success of the unit in combat will make it easier to develop similar units in other systems.

"They did very well," Wehrle said. "We would hope people don't forget just how well they did."

Weaver said he has participated in a number of what-if drills, scrutinizing other missions and other bases where blended wings might be employed.

"There are a multitude of scenarios where this might work very well," he said. "Blending is one of the smart things we might do to ease the opstempo and perstempo in our force."

What Robins has done, he added, "is give us a roadmap for how we might do this elsewhere." ■

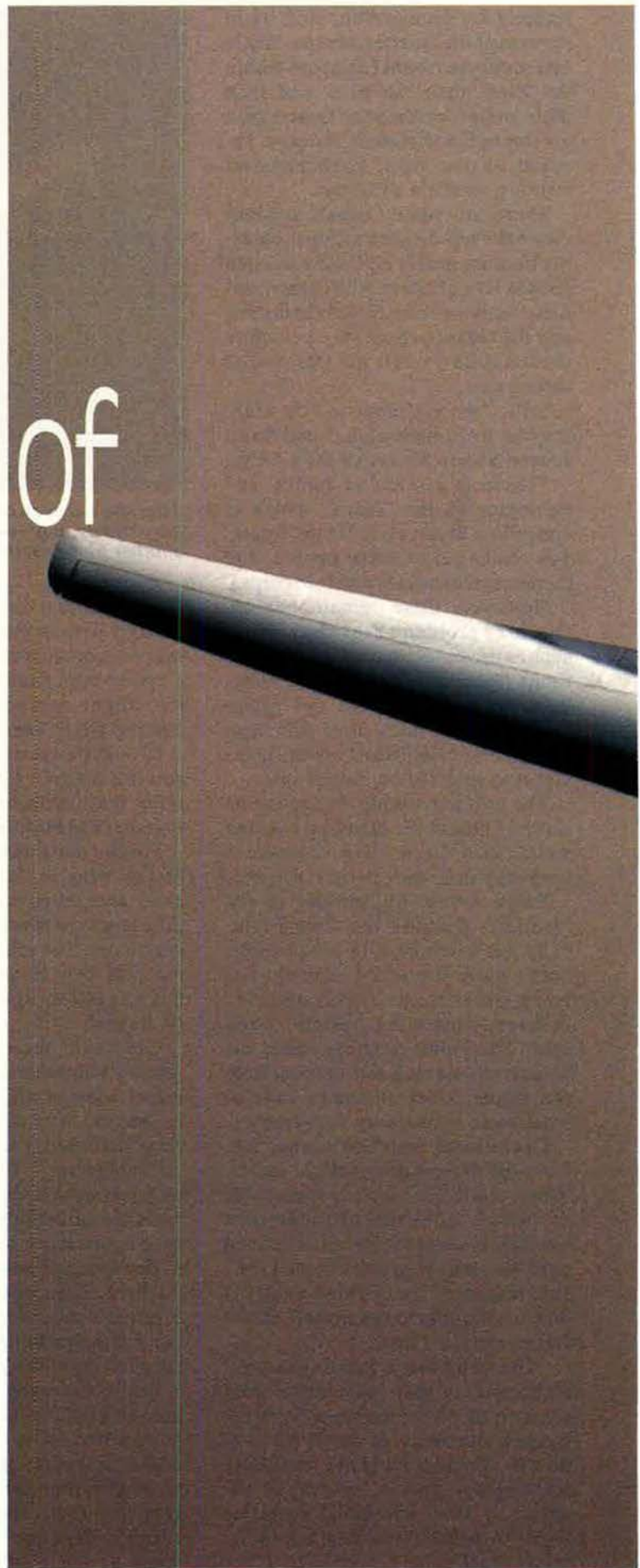
Before Gulf War II, few could imagine how diverse and flexible the airpower instrument had become.

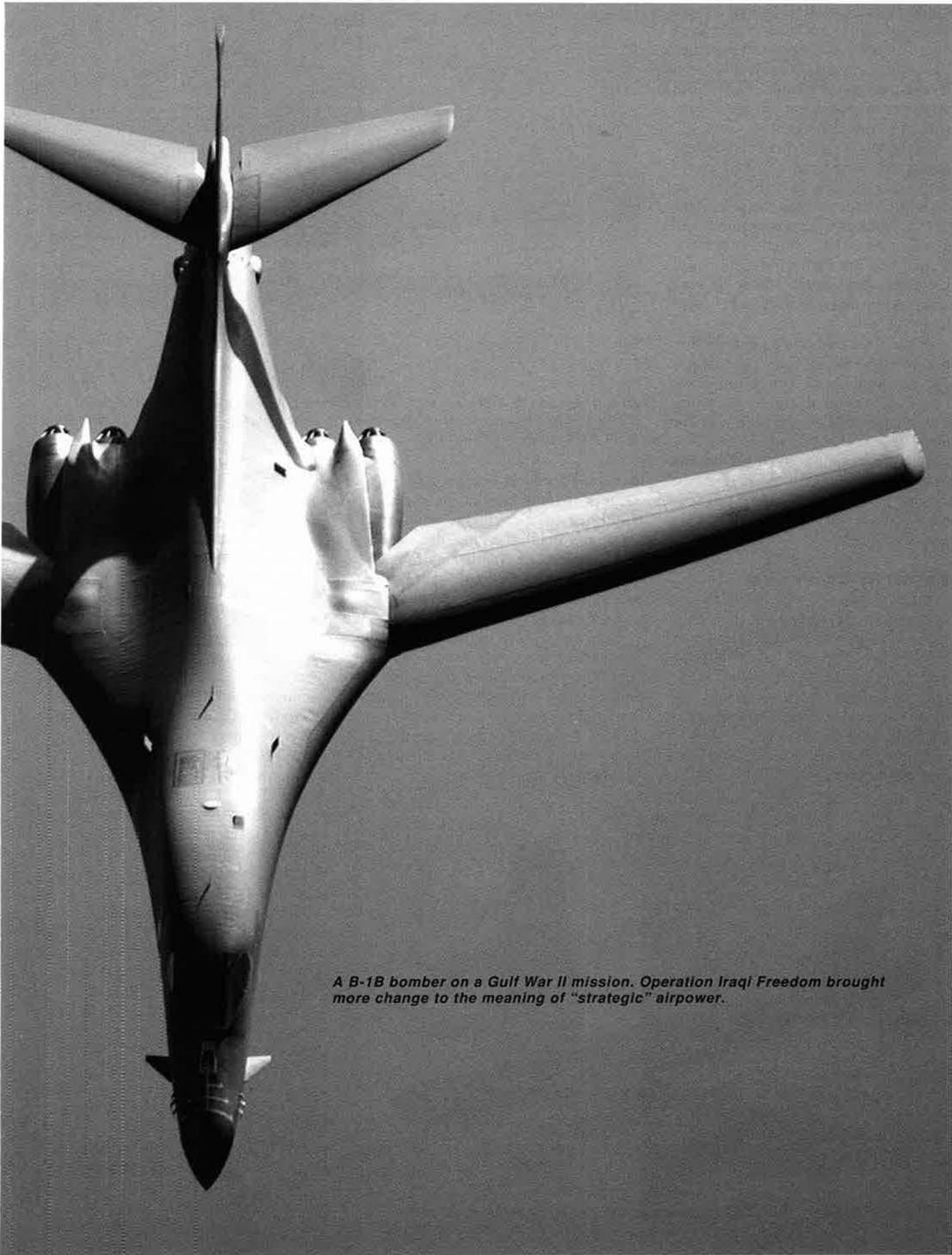
The Redefinition of Strategic Airpower

By Rebecca Grant

STRATEGIC airpower. ... The words still bring to mind the image of B-29s launching from Saipan or B-52s over Hanoi. Since Gulf War I in 1991, however, the concept of “strategic” airpower has been stretched to include not just heavy bombers but bomb droppers of all types—from stealthy F-117 fighters to pilotless cruise missiles.

It was Operation Iraqi Freedom, though, that redefined the planning and execution of strategic airpower once and for all. B-52s equipped with targeting pods dropped laser





USAF photo by SSGT. Cheryl A. Thurby

A B-1B bomber on a Gulf War II mission. Operation Iraqi Freedom brought more change to the meaning of "strategic" airpower.

guided bombs. A B-1B carried out a quick-response strike targeting Saddam Hussein and his top henchmen. Stealthy B-2s attacked Republican Guard targets. In sum, all the old strategic airpower targeting categories went out the window.

Gone, too, were preconceived ideas about phasing and timing, overwhelming blows, and the place of strategic attacks within the joint campaign. Neither the most enthusiastic airman nor the “shock-and-awe” crowd nor the media pundits could have foreseen exactly how diverse and flexible strategic airpower would turn out to be.

With clever advance preparation, and overwhelming force, the strategic air attacks of Operation Iraqi Freedom closed the door on many old verities and cleared the way for new ones.

The success of strategic attack operations in Gulf War II came against a backdrop of continued suspicion about the concept of strategic airpower itself.

Magnet for Controversy

Strategic attack long has been one of the most potent and controversial forms of modern airpower. The massed raids of World War II helped win the war, but they also left behind long-lasting images of devastation that made strategic airpower a magnet for political controversy.

Even the recent buildup of precision guided weapons did not end the



USAF photo by SSGT. Derrick C. Goode

Black Jet. As in 1991, stealthy F-117 fighters flew strategic bombing missions against key leadership targets during Gulf War II. Here, an F-117 returns from a March 20 strike on Iraq.

debate. Precision bombing of fixed targets in and around Belgrade in 1999 attracted criticism and fretful comparisons to the past, despite the fact that NATO member nations approved each and every target before it was struck.

Strategic airpower’s controversial image was still alive in 2003. The first television pictures of bombs exploding in Baghdad triggered an outburst of criticism, even though one such picture showed several Joint Direct Attack Munitions going off in a well-placed line, signifying extraordinary accuracy.

Reporters pelted US military briefers with questions about the bombing. One asked, “When will you show us pictures of what happens when precision bombs don’t go where they are supposed to, when they fail to hit their designated targets, or if they fail to go off at all?”

With the cessation of major combat operations came charges of ineffectiveness.

One such complainant was Thomas Houlihan, a former Army officer and now director of the Military Assessment Program at James Madison University in Virginia. In an April 23 UPI dispatch, Houlihan opined that “dramatically increased bombing accuracy notwithstanding, strategic bombing once again failed to bring Saddam Hussein’s regime to its knees.”

The recycled complaints missed a more important point. History aside, the actual employment of strategic airpower had changed—dramatically and for the first time in decades.

From 1918, when US airpower was first used in true combat, right through the end of the 20th century, the tools of strategic airpower changed but the underlying principles did not. Take, for example, the first American treatise on the subject. In 1919, Maj. Edgar S. Gorrell, US Army Air Service, wrote up the history of “strategical” bombardment in World War I. He observed that both sides realized “that to affect the armies in

USAF photo



BUFFs on Target. This B-52 drops a weapon during an evaluation of its newly installed Litening II targeting pod. During OIF, the big bombers made extensive use of their PGM capability.

the fields it is necessary to affect the manufacturing output of the countries" supporting them.

The 1991 Gulf War marked immense improvement in the technical capabilities of airpower. US airplanes struck more targets on the first day of Gulf War I than Eighth Air Force struck in the entirety of the combined bomber offensive of 1942-43. However, the style of strategic attack in the 1991 war would have been recognizable to planners in 1943 or even to Gorrell.

Case in point: The Gulf War I targeting categories—airfields, industries, lines of communications, and so on—were roughly analogous to those of the earlier wars. Moreover, strategic attacks were planned and assessed as an independent component of the overall campaign. Strategic airpower focused on key target sets measured and sequenced to create specific effects on the enemy's will and capacity to fight. It was the same whether it was Breguet biplanes bombing German towns in World War I or F-117 stealth fighters striking Baath Party headquarters in 1991. Rules of the road for strategic airpower in 1991 were not so different from those in 1918 or 1943.

The key step forward in Operation Desert Storm was that multiple types of target sets were attacked at once and with far fewer sorties. In fact, strategic targets took up barely a fifth of the total of 41,309 strike sorties flown during Gulf War I. Direct attacks on fielded forces still mattered greatly, far more than some theorists would concede. More than half of the strike sorties flown in Gulf War I were directed against Iraqi fielded military forces.

Steps Forward

For the rest of the 1990s, strategic airpower capabilities grew and evolved. More fighters became precision fighter-bombers. The JDAM, which was guided by GPS satellite signals rather than by a laser beam or an infrared emanation, conquered weather because it could attack precisely through rain, fog, and clouds. Improved intelligence-surveillance-reconnaissance capability in both manned and unmanned vehicles increased the output of real-time targeting information.



USAF photo by TSgt. Richard Freeland

Strategic Plus. B-52 aircrew members check their JDAMs before flying a mission. In Afghanistan, USAF used heavy bombers outside their traditional roles and, in Iraq, expanded their use even further.

The debut of the stealthy B-2 with JDAM in Operation Allied Force in 1999 and the dominance of precision weapons in the NATO-led campaign hinted at what was to come.

Theories about strategic airpower flourished, too. Most concentrated on gains in precision and information technologies, as they seemed to promise that parallel warfare might now be possible for strategic airpower.

Next came a concept of rapid dominance that seemed a perfect fit with strategic airpower. Seductive and empirical, rapid aerospace dominance and parallel warfare became popular themes of future military planning.

Harlan K. Ullman and James P. Wade and their collaborators put these thoughts into a 1996 book under the terminology "shock and awe." Although it came from outside official government circles, this concept captured the hopes that precise, discriminate airpower might now be capable of inflicting that overwhelming blow. As applied to strategic airpower, the shock-and-awe concept also retained the core DNA of strategic campaigns: the notion of independent effects so powerful they would put all other aspects of air warfare and joint operations in the shade.

Those who had experience in employing strategic airpower knew better than to expect such miracles. Moreover, the 1990s crop of strate-

gic airpower theories dwelt too much on features of strategic airpower that were about to pass: isolation, rigid synchronization, and targeting to paralyze a whole state.

Operation Enduring Freedom, the 2001 war in and over Afghanistan, pruned open the concept a bit more. The war opened with a short, sharp air campaign to firmly establish air superiority, but the main action centered on air strikes to aid attacks by Afghan irregular forces on the strong points of the ruling Taliban.

As Secretary of Defense Donald H. Rumsfeld said at the time, there were "not a lot of high value targets" in Afghanistan, and thus there was scant reason to conduct a traditional strategic campaign. Rather, the role of strategic airpower was to work with special operations forces on the ground and carry out swift strikes that stayed in step with constantly shifting command priorities—for example, hitting leadership targets.

If the Afghan war stretched the concept of strategic airpower, Gulf War II broke it wide open. As late as March 2003, it seemed that US Central Command might begin the war with an air campaign of a few weeks in advance of ground operations. Gen. Richard B. Myers, the Chairman of the Joint Chiefs of Staff, implied this on March 4. Just over two weeks later, however, the old ideas about phasing and target categories fell by the wayside. CENTCOM first launched

a sudden, highly constrained surgical strike in an attempt to kill Saddam Hussein. Then came the ground campaign.

The full force of the air campaign (“A-day”) did not begin “in earnest” until half a day after the start of the ground war. On March 21 at about 9 p.m. local time, bombers, fighters, and cruise-missile-firing warships unleashed precision attacks on numerous fixed, strategic targets throughout Iraq. Thirty minutes later, Rumsfeld announced at a Pentagon press conference that A-day was under way. “Their [Iraqi] ability to see what is happening on the battlefield, to communicate with their forces, and to control their country is slipping away,” Rumsfeld said as the attacks started. The precision-heavy strikes fanned out across Iraq’s major military centers. “Several hundred military targets will be hit over the coming hours,” Myers added.

The opening salvo left observers wondering why the strategic air war didn’t unfold differently. In fact, the air component had already accomplished the most vital task assigned to strategic airpower: gaining access to the battlespace. With that advantage, CENTCOM could juggle its opening move.

More important, the opening rounds of Operation Iraqi Freedom proved that 21st century strategic airpower was no longer tied to traditional

timetables. Strategic forces did not mount a parallel attack in isolation. Rather, strategic airpower bent and flexed to fit an array of campaign objectives, ranging from suppressing enemy communications to pursuing time critical targets. Strategic airpower could operate anywhere, anytime, and commanders varied the phasing of strategic attacks with other jobs of the air and land campaign.

The objective was not, as some anticipated, to affect the will, perception, and understanding of the Iraqi leaders. A-day strikes were more focused, with more specific objectives. The more than 500 cruise

missile strikes and about 700 aircraft strikes, carried out across Iraq, went after command and control, communications, and Republican Guard headquarters and facilities.

The strategic air campaign of Operation Iraqi Freedom was guided by a philosophy wholly different from what had come before. It was one of a handful of distinct air battles being waged by the air component. Its goals came directly from the broad joint campaign objectives articulated by Rumsfeld and Gen. Tommy R. Franks, commander, US Central Command. It was not crafted to overturn the regime in a single night or to send messages. Planners



USAF photos by TSgt. Michael R. Nixon



Paving the Way. The 1999 debut of the B-2 with JDAM in Operation Allied Force lifted the veil on a shift in strategic airpower theory. At top, a B-2 launches for an OIF mission. Above, a munitions crew works with a JDAM.

made no attempt to lace together clever patterns of air strikes in hopes of breaking the “will” of the people or deflating the regime by destroying categories of “strategic” targets it held most dear.

Gen. T. Michael Moseley, who was the combined force air component commander, declared that strategic attacks formed but a single portion of the spectrum of airpower at his command. The spectrum included—besides strategic attack—counterair, interdiction, close air support, mobility operations, and ISR, all employed simultaneously.

Nowhere was this refinement of thinking more evident than in the change in the strategy for targeting the electrical grid.

In 1991, electricity was one of the 12 major strategic targeting categories set forth by coalition plan-

ners working in “the Black Hole,” the nickname given to the Riyadh, Saudi Arabia, workplace used by a special Air Force planning group. Shutting down the electric grid—to undermine the enemy’s will to fight—was an idea that harkened back to strategic bombing theories of World War II. Desert Storm aircrews flying B-52s, A-6s, F-111s, F-16s, F/A-18s, and GR1s carried out 202 strikes on electricity targets. Ships at sea struck the grid with 63 Tomahawk land attack cruise missiles. While this was a small fraction of the master target list’s 9,731 total “strategic” strikes on targets ranging from airfields to Scud sites, the electricity targets represented an effort to paralyze Saddam’s regime and to do it with discrimination, to lessen the impact on civilians.

The Air Force’s postwar survey found that the attacks shut down 88 percent of Iraq’s generation and distribution capacity, leaving in operation only smaller, local plants that had not been attacked. However, the survey also found that these attacks pushed “the Iraqi leadership and military on to backup power.” Turning the lights out in Baghdad did not leave Saddam Hussein in the dark. Nor did it cut off military communications or darken the screens of surface-to-air missile operators and other forces with their own power generators.



AP photos by Jerome Delay

Lights On. The Gulf War II target list did not include taking out the Iraqi power grid. Today’s precision capabilities offer other ways to negate integrated air defenses. This is Baghdad after a March 31 strike.

In Gulf War II, the power grid did not occupy the same central place in airpower calculations. “There are other ways of taking down the integrated air defenses,” Vice Adm. Timothy J. Keating, the Navy’s 5th Fleet commander, told the *New York Times*. “You can disable the radars by striking them. You can take down the facility itself by putting a bomb in the roof. Or you can disable the means of communicating the information drawn by the radars and observers to higher headquarters.”

Lt. Gen. Daniel P. Leaf, Moseley’s point man working with the land

component commander, concurred, noting in a *New York Times* interview that there were many ways to attack “without really turning off the juice.”

Commanders now had minute control over the effects to be produced by strategic airpower. In the past, it would have been impossible to identify and strike enough individual pieces of the air defense network to make a difference. The theory of targeting electricity sought to boil down to a manageable group the number of strike sorties needed to achieve an effect such as disabling air defenses. Now, with the guarantee of precision, there was no need to take such a secondary route.

Nor were specific assets dedicated to “strategic” attacks. Instead, bombers, fighters, and unmanned aerial vehicles shared responsibilities for attacking strategic targets. Moseley’s strategic campaign was defined by its output—the product, such as targets killed—not by the input—the number of sorties and tonnage dropped.

OIF’s greatly enhanced ISR architecture made strategic airpower more efficient, flexible, and discriminate. “In Desert Storm, pilots used target photos that were often two or three days old,” Myers said. “Today, our aircrews have photos that are often only hours old and can determine coordinates for precision engagement in just 20 minutes.” In some cases, the process moved even faster.



Cutting the Timeline. The April 7 B-1B strike on this suspected leadership meeting site took only 45 minutes, from intelligence tip to bomb drop. It may have narrowly missed Saddam Hussein.



Gotcha. USAF's "strategic" arsenal now includes the Hellfire-equipped MQ-1 Predator, such as this one on a training flight. One shut down Iraqi TV by destroying a satellite dish next to the Grand Mosque in Baghdad.

In the 2003 Iraq war, strategic airpower had four major roles. First, already achieved by March, was to guarantee access to the battlespace by neutralizing Iraq's integrated air defenses. Second, strategic attacks sought to "strategically dislocate" the regime and narrow command and control of Iraqi military forces to a trickle. Third, the air component moved to maintain air superiority and extend it by destroying SAM batteries in the north. The fourth role was to go after the three categories of time sensitive targets: leadership, terrorists, and weapons of mass destruction.

These goals had to be pursued with the utmost effort to avoid collateral damage and deaths of civilians. This became an essential part of strategic airpower. "Do you want to see pictures on CNN of the baby who died because power to the incubator was cut off?" asked one planner, talking with *Washington Post* reporters.

Air strikes in Baghdad were not approved unless they met rigorous criteria. By the time Gulf War II began, the layout of the capital had been examined in minute detail, with the data going into a database of potential collateral damage metrics.

Next, the real-time control gave the air war planners the ability to chase time sensitive targets, such as Saddam and his two sons. The April 7 B-1B strike on a suspected leader-

ship meeting site took about 45 minutes—first intelligence tip to bombs on target—and may have missed Saddam by minutes.

This strategic air campaign also made the most of an unprecedented ability to go after other fixed targets, like communications antennae. Part of the task of the strategic air campaign was to develop and pursue both fixed and mobile targets as the theater commander's requirements dictated. Taking part were all types of aircraft, from B-2 bombers to Predator UAVs.

Gen. John P. Jumper, the Air Force Chief of Staff, described efforts "to shut down Iraqi TV" with a Predator strike. Iraq had a portable satellite dish, he said, "and they put it right outside the Grand Mosque in Baghdad. And of course we weren't going to use a 1,000- or a 500-pound or a 2,000-pound bomb that close to the Grand Mosque." An F-15 pilot, who happened to be "flying" an armed Predator UAV that day, blasted the antenna with a Hellfire missile, said Jumper.

In all, the coalition claimed to have struck 156 true TSTs and another 686 "dynamic" targets. It was

a display of strategic airpower at a level of precision and responsiveness that could scarcely have been imagined only a decade earlier. Instead of delivering a massive blow, the air component provided rapid response to meet the commander's intent.

Control over attacks on fixed targets far exceeded anything seen in previous wars. On the first day of the air war, Rumsfeld grew annoyed at comparisons with World War II. "There is no comparison," he said. "The targeting capabilities and the care that goes into targeting, to see that the precise targets are struck and that other targets are not struck, is as impressive as anything anyone could see," Rumsfeld said.

This high level of control and accuracy transformed the application of "strategic" airpower.

"I think you have seen, time and time again, military targets fall while the civilian infrastructure remains in place," Franks said a week into the campaign. "And it's the same with civilian lives." Bombs did sometimes malfunction, or go long and miss targets, but the coalition's ability to adjust its attacks to minimize collateral damage was remarkable.

Strategic airpower remains one of the unique tools that airmen bring to warfare. No other implement can so rapidly reach so many types of targets—all at minimum risk and maximum effect. It is strategic airpower that takes the fight deep and can strike even the most heavily defended targets.

Gulf War II should put to rest the false debate about what strategic airpower can or cannot do on its own. Operation Iraqi Freedom was a mosaic of action at all points on the compass and at different levels of intensity. Fighters, bombers, and even Predator UAVs served as "strategic" weapons by striking high-value targets. Strategic airpower will continue to be a major advantage for US military forces, but it need no longer be tied down to its historical baggage. ■

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, "Saddam's Elite In the Meat Grinder," appeared in the September issue.

Skyblazers



The Skyblazers aerobatic team, part of US Air Forces in Europe, was formed in 1949 when a group of pilots from the 36th Fighter Wing at Furstenfeldbruck AB, Germany, began performing coordinated formation stunts in F-80 Shooting Stars. Soon, the Skyblazers were conducting aerial demonstrations throughout Europe and northern Africa. Original Skyblazer pilots were Capt. Harry Evans, Capt.

Vincent Gordon, and brothers Lt. Cuthbert A. "Bill" Pattillo and Lt. Charles C. "Buck" Pattillo. The team pictured above, from the final years of Skyblazers, were (l-r) Lt. Charles R. Carney, alternate; Lt. Gordon Eells, right wing; Capt. W.L. Creech, leader; Lt. Gordon Scharnhorst, left wing; and Capt. Nevin Christensen, slot. The Skyblazers were deactivated in 1962.



The tanker units at McGuire AFB, N.J., pump the gas that helps fuel USAF's global reach and power.

Jersey Pipeline

Contact is just moments away as the crews of two KC-10 Extenders from the 305th Air Mobility Wing line up their aircraft on a refueling training mission.



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Photography by Guy Aceto, Art Director, and Paul Kennedy

Nobody flies without gas. McGuire AFB, N.J., has three wings—one active duty, one Air National Guard, and one Air Force Reserve Command—that conduct aerial refueling operations. The 305th Air Mobility Wing (the active and host unit) and AFRC's 514th AMW share KC-10s and C-141Bs. The New Jersey ANG's 108th Air Refueling Wing flies the KC-135E.

At right, one of the KC-10s returns from a sortie. Although the KC-10's primary mission is aerial refueling, it can perform the tasks of a tanker and a cargo aircraft simultaneously.



At left is a KC-135E Stratotanker from the 108th ARW. The Air Force's fleet of nearly 600 KC-135s provides aerial refueling support for Air Force, Navy, Marine Corps, and allied nation aircraft.

Most of the 108th ARW's KC-135s have now returned from extended overseas deployments in support of Operation Iraqi Freedom.

Since 9/11, the refuelers at McGuire have been operating virtually nonstop.





The 108th became a tanker wing in September 1991. Less than four months later, the wing flew its first operational mission, refueling an aircraft bound for the Persian Gulf. It got its combat-ready certification in December 1992 and immediately deployed to spearhead the air bridge for Operation Provide Hope. Since then, the operations supported by the 108th have included Restore Hope, Deny Flight, Northern Watch, Enduring Freedom, and Iraqi Freedom.



The wing also refuels aircraft engaged in Operation Noble Eagle, within the United States.

The KC-10's dual capabilities—refueling and airlift—keep the 305th and 514th AMWs in high demand.

At right, a Tunner loader moves carefully into position at a KC-10's side loading door. KC-10s can transport up to 75 troops and nearly 170,000 pounds of cargo over 4,400 miles without refueling.



Staff photo by Guy Aceto



Photos by Paul Kennedy

Above, Amn. Laura Caballero guides the Tunner to the loading spot and (at left) uses the KC-10's powered rollers and winches inside the cargo compartment. With no passengers, the cargo compartment can accommodate 27 pallets.

The average age of the KC-10 aircraft is more than 17 years. Maintenance crew members at McGuire work hard to keep each heavily tasked aircraft in good flying order. At right, a crew checks over the center engine, mounted high up at the base of the vertical stabilizer.



Staff photo by Guy Aceto

Refueling missions send McGuire airmen all over the world. Survival technicians at the base seek to familiarize crew members with difficult situations, including use of an inflatable raft (right). A live tarantula and boa constrictor are also on display at the life support shop.



The boomer's position in the KC-10 is different from that in the KC-135. It is more like an office, in which the operator sits in a seat instead of lying on his stomach. The KC-10 boom operator has two refueling options—an advanced aerial refueling boom or an independent hose-and-drogue system. With these two systems, the KC-10 can refuel aircraft from each service and US allies. At right, boomers train on a simulator.



The KC-10 boom operator can see the aircraft being refueled through a wide window. During boom refueling operations, fuel is transferred to the receiving aircraft at a maximum rate of 1,100 gallons per minute. The hose-and-drogue refueling maximum rate is 470 gallons per minute. The KC-10 has also been modified with wing mounted refueling pods.

The KC-135Es of the 108th ARW are among the oldest tankers in the USAF inventory. The average Stratotanker is 43 years old. KC-135s provide almost 86 percent of USAF tanking capability. The 108th has more than 1,300 members and 20 Stratotankers.



Staff photos by Guy Aceto



MSGt. Joseph Lamantia, a KC-135 boomer, gets into a prone position and readies himself to refuel a "customer."



Lining up for refueling is an F-16C from the 177th Fighter Wing, New Jersey ANG. Ongoing missions in the US and Southwest Asia keep the 108th humming. For its efforts in 2001, the 108th ARW was selected as that year's best ANG unit within 21st Air Force.



The KC-10 is the only tanker that can be refueled by its own type, a capability that greatly increases its delivery range. This made KC-10s particularly important in the recent air operations over Southwest Asia. The Extender can also take on fuel from a KC-135. At right and below, a KC-10 maneuvers to refuel another KC-10.



The tanker fleet contains just 59 KC-10s. Pictured below is the flight deck of the KC-10, which is 88 percent common with commercial DC-10 aircraft.



Staff photos by Guy Aceto



These Total Force units are key to effectively fighting the global war on terror. Their efforts keep the air bridge strong, fighters over major US cities, and coalition aircraft in the skies above Southwest Asia. ■



By Peter Grier

Lighter Footprint,

A great redeployment of forces is reshaping the US network of overseas military facilities.

A C-17 delivers humanitarian supplies bound for Afghanistan to an airfield in Turkmenistan—one of the many new locations at which USAF has been operating.



Longer Reach

AS THE US military transforms itself from a tank-heavy Cold War bulwark into a more mobile, flexible, and quick-striking force, the Pentagon is poised to remake the look and locations of its bases abroad. More units likely will be moved closer to the Middle East's zone of instability, while some of the big garrison bases of Europe and northeast Asia shrink—or, in some cases, disappear.

The US faces a new kind of war that may demand new dispositions.

Speaking before the House Armed Services Committee in June, Paul D.

Wolfowitz, deputy secretary of defense, said, "We have been focusing significant attention on realigning our global military footprint, ... tailoring the mix of our military capabilities stationed or deployed in key regions to the particular conditions of each region and strengthening our capabilities for prompt global military action anywhere in the world."

Over the past decade, US forces in Europe have been moving south and east. Analysts say the US should now view these moves as a permanent shift, not a temporary one.

One such temporary base—Bul-

garia's Graf Ignatievo military airfield—first hosted American aircraft participating in Operation Enduring Freedom in Afghanistan. The former Warsaw Pact base would not be mistaken for a clean, clipped US Air Force installation. It is a home for rusting MiG-21s, and even its operable aircraft—a wing of MiG-29s—have seen better days. Enlisted barracks are dilapidated, with washing hung out of windows to dry. Electricity is erratic, and groundskeeping is not a priority.

In recent years, though, the Bulgarian government made a substan-



tial investment in Graf Ignatievo, bringing runways and aprons up to NATO standards. The surrounding valley is sparsely populated, making it ideal for training ranges.

While making the base habitable for US personnel might require substantial sums, Graf Ignatievo has much to recommend it as a USAF outpost—not the least of which is its relative proximity to the Middle East.

Moving to “Lily Pads”

New US installations may look much different from the old. Many will be bare bones—holding areas to warehouse pre-positioned material—and used mainly for periodic exercises with host nations. Some US commanders use the analogy of “lily pads” to describe this concept of jumping-off points. Others call them frontier posts along the US security perimeter.

Whatever the name, this realignment is seen by many to be an important part of the Administration’s plans for military transformation—as important, perhaps, as new weapons and force reorganization. If the US is to find and disrupt networks of terrorists before they attack, it may

have to become used to maintaining a presence in new parts of the world.

“Our concept is framed to position US forces optimally to influence the threats we now face and create presence and capacity through a network of joint forward operating bases and locations,” Marine Gen. Peter Pace, vice chairman of the Joint Chiefs of Staff, told Congress this summer.

The current network of US forward deployment locations was created to counter a threat now long gone. Eighty percent of US personnel in Europe are still in Germany, despite base closings and troop reductions since the end of the Cold War. Seventy-five percent of US personnel in Asia remain in South Korea and Japan in bases established some 50 years ago.

This network was, in essence, a defensive trench line. Much of it was intended to protect against a possible Soviet thrust into Western Europe or another North Korean attack south. The paradigm of the time called for these bases to be large—cities unto themselves, really. Units had all the heavy equipment and supplies they would need to counter a

“Frontier Bases” and “Lily Pads”

US forces are seeking military ties in new areas. Washington wants to keep some garrisons in Western Europe and the Pacific, but most attention focuses on the zone of instability in the Middle East–Central Asia region.

The US wants units, training, and facilities—permanent or temporary—close to this area. Nations that figure



USAF photo by SSgt. Dennis J. Henry, Jr.

Operation Northern Watch is officially over, but Incirlik AB, Turkey, remains a key USAF facility near the Middle East zone of instability. Here, an F-16 deployed as part of ONW prepares to leave Incirlik and return to the US.



prominently in US thinking are shaded in green. As the map shows, the US is concentrating on three areas—Eastern Europe, the Islamic lands east of Iran, and the rim of the Arabian heartland.

Most US bases will be of the bare bones variety, useful for jumping off on distant military operations. Some US commanders call them “lily pads.” Others view them as frontier posts on the US security perimeter.

full-scale combined arms assault that might come at any time.

Today, bases that were once seen as the front line of US security are now in the rear echelon, strategically speaking. A recent Pentagon study concluded that at least 20 percent of the 499 US military installations in Europe are no longer particularly useful. Among the very few that do retain strategic value is Ramstein AB, Germany, which has developed into an irreplaceable logistics hub. Another is Incirlik AB, Turkey, straddling the line between Western Europe and Central Asia, and serving for years as the home base for Operation Northern Watch missions patrolling the northern no-fly zone over Iraq.

The US could replace many others in Western Europe with cheaper, smaller bases in locations with less urban sprawl and fewer restrictions on training activity.

An almost perfect example of such a new forward operating base is Camp Bondsteel, in Kosovo, according to Marine Gen. James L. Jones, Supreme Allied Commander, Europe. A 1,000-acre installation that sprang up on farmland virtually overnight, four years ago, Camp Bondsteel now is home to roughly 3,000 troops involved in peacekeeping in the Balkans. Its structures are wood frame on concrete pads, not tents. Its amenities include a Burger King and a cappuccino bar.

“I don’t think we’re talking about

building another Ramstein or another strategically big installation where you have the small-town USA come with it, like families and schools and everything else,” Jones told defense reporters this spring. “What we’re trying to do is develop a family of bases that can be scalable—that can go from being cold to warm to hot if you need them—to be very efficiently and economically built.”

Prime Candidates

The former Communist states of Eastern Europe are prime locations for such forward deployment, noted Jones. US aircraft operated out of Bulgaria’s Graf Ignatievo and Burgas airfields during Enduring Freedom and Operation Iraqi Freedom and might conceivably return. The same situation holds with Romania, whose Mihail Kogalniceanu Airport north of Constanta was a major route for refueling and supply of US units during Iraqi Freedom.

Poland and Hungary are also possible locations. Some exercises once held in Germany have already shifted to Poland and the Czech Republic. Poland, which is purchasing the F-16 as its new front-line fighter, is well-positioned to help as part of an air bridge toward the east.

At the other end of the so-called zone of instability—which stretches from the Mediterranean up through Afghanistan—lies Kyrgyzstan. It is another potential US host. During Enduring Freedom in Afghanistan,



USAF security forces TSgt. John Owen briefs Bulgarian counterparts at Camp Sarafovo, Bulgaria. Bulgaria's Burgas Airport proved to be a valuable location for mobility forces supporting Operation Iraqi Freedom.

some 1,500 US and coalition personnel operated out of this former Soviet republic. That was more than in any nation in the area except Afghanistan itself.

Former members of the Warsaw Pact are generally eager for a US presence, seeing it as an opportunity to integrate themselves with the West.

While some view the shifting of bases from "old Europe" to "new Europe" as a means for the US to punish Germany and other traditional allies who opposed the Iraq war, that is not the case, say US officials. The idea of such a shift actually predates the ousting of the Saddam Hussein regime. The 2001 Quadrennial Defense Review outlined, in general terms, the need for a more flexible US basing system. Furthermore, Europe is not the only region affected. US bases are in flux around the world.

One example is the removal of some 10,000 uniformed and civilian personnel from Prince Sultan Air Base. That was most of the US permanent military presence in Saudi Arabia. USAF announced in late April that it will base its regional command and control capabilities in Qatar rather than Saudi Arabia. This shift was driven not only by military factors but also geopolitical concerns. Muslim radicals have long objected to the presence of the US military in the land of Islam's holiest sites. Removal of US troops might ease domestic and regional unrest on this score.

The Iraq security situation remains unstable, increasing the likelihood of a US presence there for months, if not years, to come. However, Washington has denied reports that DOD was seeking permanent air bases in Iraq.

In East Asia, the US proposes to redeploy forces based in South Korea along the border with North Korea and to significantly reduce the heavy concentration of US forces in downtown Seoul. No longer will US units serve simply as a political "trip wire," say US officials. Instead, they will have far greater flexibility and

room to maneuver in the event of a Pyongyang attack.

In Africa, a small US force has been deployed in tiny Djibouti since the spring of 2002. Located at the strategic strait where the Red Sea meets the Gulf of Aden, Djibouti is a short flight from Yemen, the homeland of many al Qaeda leaders. It is close to Sudan and Somalia, two other nations with histories of Islamic fundamentalism.

Djibouti's Camp Lemonier, home to the US Combined Joint Task Force Horn of Africa, is another prototype of the new American frontier post. A compound of cinder block buildings at one end of a civilian airport, it makes Kosovo's Camp Bondsteel look palatial. A tent serves as the medical facility. Videos provide what passes for entertainment.

US officials say they want to prevent patches of Africa from developing into new Afghanistans—ungoverned areas that become terrorist redoubts. They are seeking basing agreements with Mali, Nigeria, and other nations in both north and sub-Saharan Africa. Forward operating bases in the region might house 3,000 to 5,000 troops in times of need. These could be augmented with forward operating locations—even more austere facilities—from which special operations forces or other mobile units could move throughout Africa as needed.

"We're going to have to engage more in that theater, and part of the



This Army-Air Force exchange opened in Romania for troops supporting Iraqi Freedom. A Romanian air base served as a stopover for the air bridge transporting troops and supplies to Southwest Asia.

basing realignment and proposals that we are coming up with will establish some footprints at a very low cost," Jones told lawmakers in late April.

The NATO Factor

Not everyone in the US national security community believes it is a good idea to radically change the current basing structure. Primary among the critics' objections is possible damage to NATO.

Removing most US troops from Germany might call into question American commitment to the alliance and would damage local economies in a nation whose population, if not always its political leadership, wants to maintain a close US relationship. "If NATO is reduced to a hollow shell, the strategic center of gravity for the use of military force by European nations will shift to the European Union, a forum ... in which the US has no seat and only an indirect voice," retired Gen. Montgomery C. Meigs, former commander of US Army Europe, told a House panel this spring.

Meigs and other critics argue that restationing forces in Europe to the south and east may put them physically closer to potential problem areas, but there are disadvantages. For one thing, the cost of bringing new training ranges up to the standards of those already available in Western Europe might be very high. The Soviet style of training was different from that of the US, according to Frederick W. Kagan, associate professor of military history at the US Military Academy. The need to continually imbue a flood of draftees with basic skills meant there was little focus on maneuver training above company level. Maneuver areas at former Soviet bases in Bulgaria and Romania are thus small and broken up, said Kagan at a House Armed Services Committee hearing in June. Large sums might be needed to construct larger, US-style facilities.

Another drawback, say critics, is that operational deployments from these new locations might be difficult. Rail transport in former Warsaw Pact nations is inferior to the



A C-17 at Burgas Airport awaits a load of humanitarian supplies destined for Iraq. Some analysts worry that the move to such locations could undermine access to "old Europe."

Western network. International treaties restrict the passage of warships through the Turkish Straits, possibly delaying any shipment of US troops from Bulgarian and Romanian ports on the Black Sea. Aircraft deployments would be only slightly faster from southern Europe than from current locations.

"The measure of proximity for military forces is not in miles but in minutes, and moving our forces into Eastern Europe will not substantially reduce, and in some cases may increase, the time it would take to get them to areas of importance to us," said Kagan.

Then there is the possible strain on US troops. Troops view assignments to European bases, including Incirlik, much as assignments to Stateside locations; most can bring their families and find the other usual comforts of home. The lily-pad base concept espoused by Jones and others envisions rotating troops through austere facilities for four to six months at a time. Loading such a new rotational schedule on US forces—hundreds of thousands of which are still reeling from months of deployments for the operations in Afghanistan and Iraq—might have a dramatic and negative effect on morale.

"If forces in Korea and Europe are put on a rotational basis, will the structure of the Army and Air Force be able to sustain the [personnel tempo] involved?" asked Meigs.

Yet, many Pentagon leaders are convinced that some sort of reorientation is necessary. Currently, US forces are deployed to some 40 nations, many of them along the edge of the instability arc in the Middle East and Asia. Changing a base structure that has remained the same for generations seems a logical way to improve the effectiveness of these far-flung units. Consequently, they feel America's need to maintain a central role in NATO and Western Europe may have to be balanced against the likelihood of a semipermanent presence in Southwest Asia. The US may also need renewed access to whole regions that were of little importance to US national security for years. Much of Africa and the island archipelagos of Southeast Asia fall into this category.

"The geostrategic environment around the globe continues to change quickly," Wolfowitz told Congress. "Our capability and capacity to influence and support these changes must keep pace to remain effective. Our concept is framed to position US forces optimally to influence the threats we now face and create presence and capacity through a network of joint forward operating bases and locations." ■

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, "Jewel of the Air," appeared in the September issue.

It was an exercise to justify a blind budget cut, but it shaped the force for a decade.

THE LEGACY OF THE BOTTOM-UP REVIEW

By John T. Correll

THE Bottom-Up Review, completed 10 years ago this month, is one of the stranger episodes in the annals of Pentagon force planning.

Briefly, what happened was this. In March 1993, Les Aspin, the new Secretary of Defense, announced a whopping cut to the defense budget. Incredibly, he made his cut without calculating the impact the reduction would have on force capability. That and other details would be worked out in a "Bottom-Up Review" to follow.

The Joint Staff struggled through the summer to bridge the gap between Aspin's arbitrary budget and a credible defense program. No solution had been found when the report was published in October.

The report called for a substantially reduced force structure, but thus cut, the force could not meet its specified responsibilities. To make matters worse, Aspin admitted that the budget he had announced in March wouldn't cover even the scaled-down program proposed in his report.

There was a torrent of criticism, but Aspin stood by the Bottom-Up Review, and it became policy. In fact, it went on to shape the defense programs for the rest of the 1990s.

But that gets ahead of the story, which began earlier when Aspin was chairman of the House Armed Services Committee.

Aspin had been a Rhodes scholar, an economics professor, and, for a short time in the 1960s, was a systems analyst in the Pentagon for Secretary of Defense Robert S. McNamara. Aspin had been in Congress since 1970 and was a leading voice on defense matters.

He had supported the Bush Administration on the 1991 Persian Gulf War, but he hammered the Pentagon regularly. By 1992, he was committed to a very deep reduction of the defense budget and a restructuring of the armed forces. His ideas found favor with Presidential candidate Bill Clinton, whose campaign Aspin joined as an advisor.

"Desert Drizzle"

As Aspin readily acknowledged, the armed forces were already several years into a major drawdown, instigated by Gen. Colin Powell, Chairman of the Joint Chiefs of Staff, with the concurrence of Secretary of Defense Dick Cheney.

At the end of the Cold War, Powell and Cheney had revamped the de-



Rep. Les Aspin supported the 1991 Gulf War, but he soon became committed to deep reductions in the defense budget. As Defense Secretary in 1993, he first crafted a budget and then tried to shape a military force to fit it.

fense strategy to focus on regional conflict. They also adopted a new force structure—called the “Base Force”—that would reduce military strength by about 25 percent over six years. Numerous overseas bases were to be closed, and US forces in Europe would be cut by half.

Aspin was not impressed. The Base Force, he said in a speech to the Atlantic Council in January 1992, “did not represent a new conceptual approach for a new security era but was essentially ‘less of the same,’ that is, a downsized force largely shaped by Cold War priorities.”

He said that “American concern about economic threats means that the new American force must be a less expensive one” and that it “must be created from the bottom up, not just by subtracting 25 or 30 or 50 percent from the old Cold War structure.”

Not satisfied with the Base Force projections, Aspin developed “four illustrative options” of his own for sizing the armed forces. He described these in a February 1992 report to the House Armed Services Committee.

Some of his options were more extreme than others, but Aspin signaled that the one he meant to be taken seriously (“the most prudent and promising,” he called it) was Option C.

Option C proposed to cut the Base Force by eight more Air Force wings, three more Army divisions, and 110 more ships. It called for a further

reduction of 233,000 military personnel, 93 percent of them to come from the active duty forces.

Aspin developed a benchmark he called “the Desert Storm Equivalent,” the force that was supposedly employed in Gulf War I and approximately the force that would be required for a major regional conflict in the future.

He said that the Desert Storm Equivalent, “the force that mattered,” consisted of “six heavy divisions, an air transportable, early arriving light division, one Marine division on land and an excess of one brigade at sea, 24 Air Force fighter squadrons, 70 heavy bombers, and two early arriving carrier battle groups, building up over time to four carrier battle groups including surface combatants providing Aegis defenses and capability for launching large numbers of cruise missiles.”

Powell and others objected to Aspin’s numbers and conclusions. Powell said that Aspin’s force alternatives were “fundamentally flawed” and “overly simplistic.”

Gen. Merrill A. McPeak, the Air Force Chief of Staff, said that Aspin’s figure of 24 fighter squadrons amounted to “Desert Drizzle,” not Desert Storm. He said the actual Desert Storm force had been about 11 US Air Force fighter wing equivalents (33 fighter squadrons) plus eight FWEs from allies for a total of 57 land-based fighter squadrons.

Aspin shrugged off the criticism. “McPeak is wrong and the Desert Storm equivalent could do the job,” he said.

The Blind Budget Cut

President Clinton came to office in January 1993 without much interest in foreign policy and spring-loaded to cut defense. When a member of Congress sought to engage him in a discussion about Russia and China, Clinton interrupted, saying, “I just went through the whole campaign and no one talked about foreign policy at all, except for a few members of the press.”

Powell recalled that, at his first meeting with defense leaders, the only defense issue of interest to Clinton was gays in military, and so “we spent the next 105 minutes solely on homosexuals in the armed forces.”

Clinton had chosen Aspin to be his Secretary of Defense, and Aspin had honed and polished his Option C theories. His opportunity to implement them was at hand.

The heyday of big defense budgets was long past, having topped out in 1985. Defense had been cut every year since 1986, but the federal deficit continued, with no politically acceptable way found to resolve it. At a “Budget Summit” in 1990, the Bush Administration and Congress suspended the Gramm–Rudman–Hollings deficit reduction act and in its place established reduction targets for specific categories of spending.

The Budget Summit projected defense cuts of \$325 billion between Fiscal 1993 and Fiscal 1997. However, the Bush Administration ordered still more cuts. Bush’s final five-year budget, proposed in January 1993, took defense \$113.5 billion below the Budget Summit baseline.

What Aspin had in mind went much beyond that.

In a March 27, 1993, briefing to reporters at the Pentagon, Aspin announced a further reduction of \$131.7 billion. Aspin’s proposal roughly doubled the cumulative reductions since 1990 and put defense \$245.2 billion below the Budget Summit target. “This budget begins to use resources freed by the end of the Cold War to help at home,” Aspin said. “The President has made clear that the chief threat

we face is failure to revitalize our economy.”

Incredibly, Aspin did not know what kind of force the new budget would buy. That would be determined later, he said, in a “Bottom-Up Review.” For the moment, Aspin said, the Administration had only “marginal control” of the details and “what we’re doing is kind of treading water.” However, the general inspiration for his plan was Option C.

Sam Nunn, chairman of the Senate Armed Services Committee and Aspin’s fellow Democrat, was appalled. “We have been dealing with numbers grabbed out of the air,” he

said. “No one knows where these cuts are going to come from.”

As it turned out, the people working on the Bottom-Up Review did not know either where the cuts were to be found. Through the summer of 1993, the Joint Staff worked on force structure options that might fulfill Aspin’s arbitrary budget projections. Details soon leaked to the press.

Win-Hold-Oops

One of the possibilities explored was a concept called “Win-Hold-Win,” in which US forces would fully prosecute one regional conflict and conduct a holding action on a second front. The second front would not

get full attention until victory on the first front.

Win-Hold-Win was subjected to withering criticism, ridiculed as “Win-Lose-Lose” and “Win-Hold-Oops.” Within weeks, it became an untenable position. Aspin soon gave up on Win-Hold-Win, declaring, “After much discussion, we’ve come to the conclusion that our forces must be able to fight and win two major regional conflicts and nearly simultaneously.”

An assumption of the Bottom-Up Review, Aspin said, was that “we don’t know where trouble might break out first or second. We can predict, however, that wherever it

1 DOWN TO THE BOTTOM-UP REVIEW

COMPETING PROJECTIONS FOR A SMALLER FORCE

	The Force 1991 (Actual)	Base Force 1997 (Proj.)	Option C 1997 (Proj.)	BUR Force 1999 (Proj.)
Air Force				
Fighter Wing Equivalents (active/reserve)	22/12	15/11	10/8	13/7
Personnel (active/reserve)	511,000/202,000	430,000/200,000	364,000/193,000	—
Bombers	268	181	—	Up to 184
ICBMs	1,000	550	—	500
Army				
Divisions (active/reserve, cadre)	16/10/0	12/6/2	9/6/0	10/15
Personnel (active/reserve)	725,000/741,000	536,000/567,000	476,000/550,000	—
Navy				
Total ships	528	450	340	346
Carriers	15	13	12	12
Attack submarines	87	80	40	—
Assault ships	65	50	50	—
Personnel (active/reserve)	571,000/150,000	501,000/118,000	432,000/112,000	—
Marine Corps				
Divisions (active/reserve)	3/1	2.3/1	2/1	3/1
Personnel (active/reserve)	195,000/44,000	159,000/35,000	137,000/49,000	—

The force cut projected by the Bottom-Up Review went much deeper than that projected in the Base Force. The influence of “Option C” was apparent. The BUR did not specify personnel strength. However, Aspin’s defense budget, submitted six months later, forecast 1999 active duty levels at 390,000 for the Air Force, 495,000 for the Army, 394,000 for the Navy, and 174,000 for the Marine Corps. An overall reduction of 133,000 reserve personnel was projected from 1994 through 1999.



At end of the Cold War, Gen. Colin Powell, JCS Chairman, began a major force reduction, but the cuts were not deep enough for Aspin. Powell believed Aspin's vision for the US military to be "fundamentally flawed" and "overly simplistic."

does, we don't have sufficient forces there."

The Bottom-Up Review envisioned that deploying US forces would respond to regional crisis in four stages:

- Phase 1: Halt the Invasion. Minimize the territory and critical facilities an invader can capture. US forces deploy rapidly to the theater and enter battle as quickly as possible.

- Phase 2: Build up US combat power in the theater while reducing the enemy's.

- Phase 3: Decisively defeat the enemy in a large-scale air-land counteroffensive.

- Phase 4: Provide for postwar stability.

Of these tasks, Aspin said, "achieving an ability to stop an attack quickly is the most critical element in dealing with multiple contingencies." Airpower was obviously critical in this formulation.

The Four-Option Fig Leaf

The Joint Staff studied requirements for response to two major regional conflicts (MRCs) simultaneously, one MRC at a time, and Win-Hold-Win. Their initial conclusions are shown on the accompanying "Three Alternatives" chart.

When Aspin moved from Win-Hold-Win to two MRCs, he was cornered. On the one hand, he could not walk away from his budget cuts. On the other hand, the two MRC standard was the minimum he could get away with. But the reduced budget

he had announced in March was not enough to pay for the two MRC force.

In the formal publication of the Bottom-Up Review, this problem was covered by a fig leaf of sorts. "Simultaneous MRCs" had become "nearly simultaneous MRCs." (See chart, "A Fourth Choice," p. 58.) There were now four options instead of three for the force-sizing standard. A new level, "Two Nearly Simultaneous MRCs Plus," had been added at the top. It was there, obviously, for the purpose of being rejected.

The Bottom-Up Review would go, as Aspin said, with the standard of two nearly simultaneous MRCs. However, the number of Air Force fighter wing equivalents was now the same as for Win-Hold-Win. The previously calculated requirement for 24 wings had been shifted to the new "Plus" level.

Aspin's Bottom-Up Review force was basically the same as the Win-

Hold-Win force, except for the addition of one active and one reserve aircraft carrier. The Bottom-Up Review found 10 carriers sufficient for two nearly simultaneous MRCs, but added the others for "overseas presence."

Even with the cutting and relabeling, the Bottom-Up Review failed to produce a credible defense program to match the arbitrary budget cuts. Aspin revealed in October that his budget ("the President's target") was still \$13 billion short of covering the BUR force.

The Flaw That Persisted

It soon became obvious to almost everyone that neither the budgets nor the forces projected were sufficient to cover two MRCs. Defense analyst Anthony H. Cordesman reported, "Senior officials in the comptroller's office of the Department of Defense and the Office of Management and Budget privately admit that the Bottom-Up Review is underfunded by at least \$100 billion in outlays over the period through Fiscal 1999, or by a total of at least seven percent to 10 percent."

Nunn pointed out the fundamental imbalance of requirements and forces. "Our military forces are not capable of carrying out the tasks assumed in the Bottom-Up Review with this kind of eroding defense budget," he said. "We are either going to have to adjust the resources or our expectation of what military forces will be able to do, because the two are going in opposite directions."

Rep. Ike Skelton (D-Mo.), chairman of the House Armed Services subcommittee on military forces and personnel, said that "simple third-grade arithmetic" showed that the Bottom-Up Review force could not cover two major regional conflicts.

Aspin was gone within three months—fired in December 1993 in

② CUTBACKS FROM THE BUDGET SUMMIT

Defense Budget Authority Projected for 1994-1998 (Billions of Current Dollars)

Budget Summit Baseline 1990	\$1,523.3
Bush/Cheney, January 1993	\$1,409.8
Clinton/Aspin, March 27, 1993	\$1,278.1

The five-year budget forecast by the Budget Summit in 1990 incorporated a substantial reduction for defense. Bush's "Base Force" budgets went even lower. Clinton doubled the Bush cuts, taking the Future Years Defense Plan \$245.2 billion below the Budget Summit baseline.

3 THE BUR PONDERS THREE ALTERNATIVES

(FWE = Fighter Wing Equivalent, MRC = Major Regional Conflict)

Sizing Standard	Force Structure
2 simultaneous MRCs	24 FWE 12 active Army div. 12 carriers
Win-Hold-Win	20 FWE 10 active Army div. 10 carriers
1 MRC at a time	16 FWE 8 active Army div. 8 carriers

Trying to match the budget cuts with a credible strategy, Aspin initially floated a concept called "Win-Hold-Win," but he was forced to abandon it under fire. He then returned to the "2-MRC" option.

4 A FOURTH CHOICE—AND A DECISION

2 Nearly Simultaneous MRCs Plus	14 active FWE 10 reserve FWE 12 active Army divisions 12 carriers
2 Nearly Simultaneous MRCs	13 active FWE 7 reserve FWE 10 active Army divisions 12 carriers
Win-Hold-Win	13 active FWE 7 reserve FWE 10 active Army divisions 10 carriers
1 MRC	10 active FWE 6 reserve FWE 8 active Army divisions 8 carriers
Bottom-Up Review Force Decision	13 active FWE 7 reserve FWE 10 active Army divisions 12 carriers (11 active)

In September 1993, the Bottom-Up Review reported not three but four force-sizing alternatives. The new top category, "2 MRCs Plus," was an obvious throwaway, setting up two MRCs as a reasonable-looking option. However, the numbers associated with two MRCs had changed and, for the Air Force, were the same as for Win-Hold-Win.

the aftermath of the "Black Hawk Down" incident in Somalia. Following Aspin's policy of using the armed forces more freely in limited conflicts, 18 US soldiers died in a firefight. The brunt of the blame for this fiasco fell on Aspin, who had denied a request for armor to support the force deployed to Somalia.

A major part of the legacy Aspin left behind was the Bottom-Up Review. Despite the critical flaws, the BUR configuration and the two MRC force-sizing standard were the basis for the defense program through the 1990s.

The Shape of the Force

The Base Force is mostly remembered—when it is remembered at all—as the departure point from which the Bottom-Up Review cuts were made. In that context, the Base Force is often regarded as a conservative mark.

In actuality, the Base Force had carried considerable risk, and it took some doing by Colin Powell to convince the military services and the Administration to go along with it.

The Base Force cut of 25 percent was predicated in part on the collapse of the Soviet Union and the demise of the Warsaw Pact. A "new world order" was anticipated. There would be fewer challenges to US interests and security, and the US could rely more on periodic deployments of forces to demonstrate commitment and protect American interests.

However, there were indications that assumptions about force structure were optimistic. For example, Gulf War I—fought while the Base Force reductions were in progress—required a third more fighter forces than the strategy had estimated.

The Base Force reductions, structures, and budgets might have worked, but the additional cuts piled on by Aspin, Clinton, and the Bottom-Up Review wiped out the possibility.

The expectation of reduced commitments abroad did not last long.

In the 1990s, US forces deployed overseas more frequently than expected, and the deployments were more extensive and longer lasting than anyone had imagined. The force was a third smaller, but the operational tempo was four times what it had been during the Cold War.

The Quadrennial Defense Review in 1997 reconfirmed the two-MRC

	Actual Force 1991	BUR Projection 1999	Actual Force 2001
USAF Fighter Wing Equivalents (active/reserve)	22/12	13/7	12+/7+
Bombers	268	Up to 184	154
ICBMs	1,000	500	550
Army Divisions (active/reserve)	16/10	10/15	10/8
Navy Ships	528	346	317
Aircraft Carriers	15	12	12
Marine Corps Divisions (active/reserve)	3/1	3/1	3/1

There was general agreement that the military was too small and therefore overworked, but, at the turn of the century, force structure essentially matched the Bottom-Up Review projection.

force-sizing standard although it changed the MRC terminology to MTW (major theater war). The armed forces said repeatedly that they did not have the capability to fight two regional conflicts simultaneously.

(The two MTW force-sizing standard remained in effect until September 2001, when it was replaced by a new standard that was at least as demanding, if not more so.)

The mismatch between strategy and resources persisted through the 1990s—and worsened. The defense budget did not bottom out until 1998, by which time it had been cut for 13 years in a row. Readiness rates were down. Older equipment wore out and was not replaced.

US forces relied on technology—especially long-range precision strike and information technology—to compensate for their smaller size in the conflicts of the 1990s. They were able to strike more targets, more accurately, and from a greater distance than ever before.

But there was no escaping the fact that the force was overused and underfunded. Clinton's last Secretary of Defense, William S. Cohen,

said in 1999, "We simply cannot carry out the missions we have with the budget that we have; there is a mismatch. We have more to do and less to do it with, and so that it is starting to show in wear and tear—wear and tear on people, wear and tear on equipment. ... We're either going to have to have fewer missions or more people, but we cannot continue the kind of pace that we have."

One contingency deployment followed another, and the optempo was too much for the regular force to handle, even in peacetime. A stop-gap solution has been to keep large numbers of National Guard and Reserve forces constantly mobilized, but that has become a problem in itself.

The present Secretary of Defense, Donald H. Rumsfeld, opposes increasing the size of the armed forces. Instead, he wants to transfer 320,000 military support jobs to the Civil Service or the private sector.

Shedding support jobs, however, does not fix the shortage of people in operational roles. For that, the services will need to keep many of the

320,000 personnel authorizations formerly filled by support troops and convert them to core military skills. In the aggregate, the number of military, civilian, and contractor personnel must rise.

The imbalance between requirements and resources is not yet solved, and that tracks back to the Bottom-Up Review.

US military force structure at the turn of the century was essentially the Bottom-Up Review force with some further reductions made along the way.

That is impressive staying power for a decision made in 1993 by a Secretary of Defense in office for two months, who had "marginal control" of details, who was blind to the consequences of his action, and who admitted he was "treading water" while he looked for a way to justify his actions. ■

John T. Correll was editor in chief of Air Force Magazine for 18 years and is now a contributing editor. His most recent article, "The Heritage of the Force," appeared in the September issue.

Was it just poor tactics or some deeper problem that caused the failed Apache mission?

Ambush at Najaf

By Richard J. Newman

DURING Gulf War II, the Army sent its Apache helicopters to mount a “deep attack” against an Iraqi unit. Small-arms and anti-aircraft fire downed one Apache, and the other helicopters retreated, some damaged so seriously they had to be grounded for weeks. That aborted mission has become the subject of one of the most controversial postwar debates.

There’s little dispute about what happened. On March 24, Lt. Gen. William S. Wallace, the Army’s V Corps commander, ordered 32 AH-64 Apaches from the 11th Aviation Regiment to mount an attack behind enemy lines against the Iraqi Republican Guard Medina Division. The corridor near Najaf that the Apaches planned to fly through was modestly populated, so commanders decided against the usual suppression fire—mainly artillery—used to silence enemy forces that could threaten the helicopters. That opening gave the Iraqis one of their few battlefield victories of the war.

A fusillade of small-arms and anti-aircraft fire downed one Apache and its two-man crew. The other heli-

copters in the raid retreated before the mission could be accomplished.

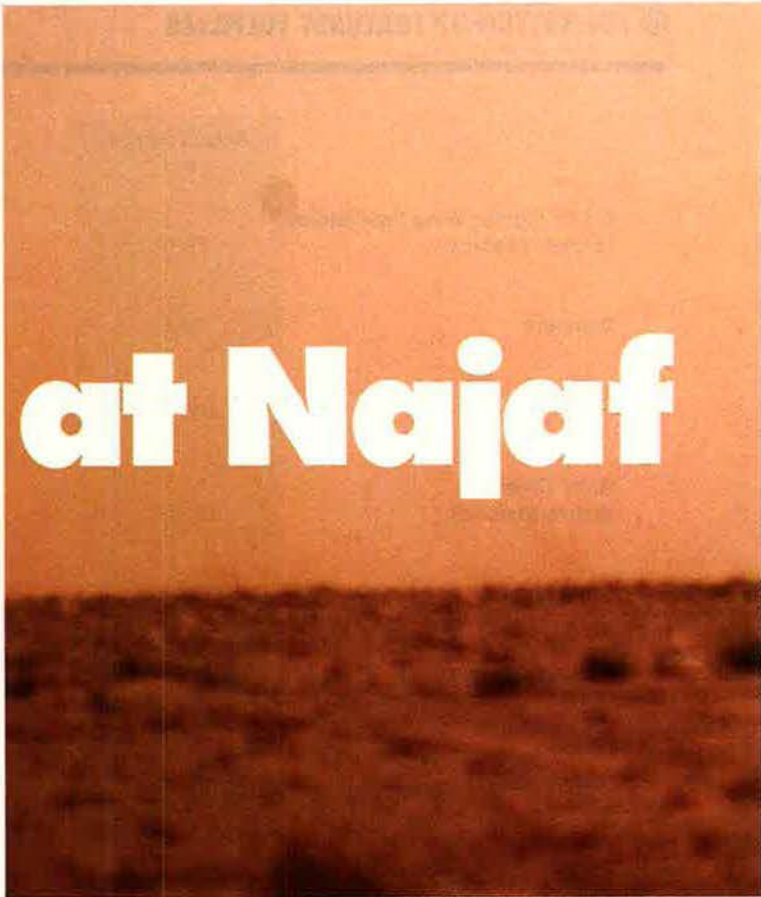
Despite this failed mission, the Army insists the Apache was indispensable during the war, providing critical close air support for ground troops engaged in combat and armed reconnaissance by helping to destroy Iraqi armor and other key equipment lurking on the edges of the battlefield. “Our Apaches did great for us,” said Maj. Gen. David H. Petraeus, commander of the 101st Airborne Division, during a briefing after the war. “We were flexible and adaptable in the way that we used them.”

“Little Big Horn”?

But critics of the multimillion-dollar chopper view the Najaf retreat as the Apache’s “Little Big Horn”—proof that it is too vulnerable to survive modern combat. They argue that the Apache is a relic of Cold War planning that failed at its primary mission—deep attack.

“The Army,” wrote former Air Force Chief of Staff Merrill A. McPeak after the war, “should restrict the Apache to close air support—or, if it must go deep, hand it over for joint tasking.”

Those are precisely the kinds of



A US Army AH-64 Apache in Iraq. Critics view the failed March 24 mission as the Apache’s “Little Big Horn.”



issues facing defense planners as they attempt to fulfill Defense Secretary Donald H. Rumsfeld's goal of making the military more nimble and versatile.

Whatever its limitations, few deny that the Apache is a fearsome weapon system. The helicopter can carry 16 fire-and-forget Hellfire missiles, each capable of taking out a tank. The newer and more advanced version—the AH-64D Longbow—can track and process up to 256 different targets at once. It also carries a millimeter-wave radar for improved performance during bad weather and other poor-visibility situations. At combat altitudes of less than a hundred feet, Apaches can often sneak below an enemy's radar coverage, which made them the weapon of choice in the opening phase of the 1991 Persian Gulf War. Before any Air Force or Navy aircraft had dropped their bombs, a fleet of Apaches had slipped into Iraq and attacked key nodes of the air defense system—the opening shots of the war.

Army commanders expected the Apaches to play a similar role in Gulf War II.

In January and February 2003, Apaches from the 101st Airborne, the

11th Aviation Regiment, and other units participated in an exercise called Victory Scrimmage at the Army's training range in Grafenwoehr, Germany. The exercise was a dress rehearsal for the war, with units practicing roles they anticipated they would fulfill in Iraq. Some went after artillery, for example, while others attacked mechanized units. Risky operations behind enemy lines were the focal point. "It was typical use of the Apaches," recalled Lt. Col. Steve Smith, commander of the 2nd Battalion, 101st Aviation Regiment. "We thought we'd be doing night and deep attacks."

The Mission

Then came the mission against the Medina Division on March 24, four days into the war.

Army officials now believe that the aviation assembly areas the Army established in the Iraqi desert had been under surveillance by enemy observers, who noticed battle preparations on the night of the 24th. After the war, Wallace, the V Corps commander, told reporters that an Iraqi two-star general in Najaf had used a "cellular telephone to speed-dial a number of Iraqi air defenders" and

tell them to prepare for a helicopter raid.

As the Apache pilots flew toward their attack positions, the Iraqi power grid in the Najaf area went black for a few seconds—likely a signal to Iraqi gunners that the Apaches were approaching. Then the sky filled with lead. The fire was so dense that when the Army tried to mount a search and rescue operation for the two-man crew of the Apache that was shot down, the rescuers couldn't get through. Iraqi forces captured the two pilots.

Two days later, the Army again used Apaches to carry out another nighttime deep attack. But the Army used different tactics this time.

First, it preceded the Apache raid with a four-minute artillery bombardment to make sure Iraqi gunners wouldn't catch the helicopter crews by surprise. As the Apaches approached the city of Karbala, where the Army expected to find Iraqi armor, the lights once again went out, just as they had when the 11th had been ambushed. "That put a little lump in my throat," said Smith, who was flying one of the choppers.

Initially, the Apaches took little fire. However, south of the city, they

found the Iraqi units they were seeking and quickly came under attack from anti-aircraft artillery. The Apaches fired back on the move—rather than using the Army’s typical tactic of hovering over the battlefield. That made them harder to hit from the ground but reduced their accuracy. The Army choppers also coordinated the attack with several F/A-18s and other fixed-wing fighters. The fighters guarded the choppers’ flanks, enabling the Apaches to get in close and quickly pass the precise locations of the Iraqi military vehicles and anti-aircraft guns to the fighters overhead.

The results of the attack were respectable, if not spectacular: seven Iraqi air defense guns destroyed, along with three artillery systems, five radars, and 25 vehicles or other weapons systems. Not one Apache was shot down. Shortly afterward, the 3rd Infantry Division slashed through the Medina on its way toward Baghdad.

The contrast between those two missions has fueled the debate. Did the Army merely need to tweak its attack aviation tactics as it adapted to the battlefield in Iraq or was a broader revamping of the entire Apache mission required? “One key question,” wrote Anthony H. Cordesman of the Center for Strategic and International Studies, “is whether the loss of tactical surprise [on the 24th] was a freak incident or more typical of what can be expected of an alert enemy in the future.”



USAF photo by SSGI. Cherie A. Thurby

After the March 24 retreat, Apaches coordinated attacks with fighters such as these F-16CJs, flying over Iraq. Some say the failed attack was poorly planned. Others say the Apache is inadequate for its deep-attack mission.

Critics like McPeak argue that the Apache simply lacks the stealth and the range to penetrate enemy lines without being detected. Others have speculated, less publicly, that the March 24 raid was simply poorly planned, with a predictable flight path and a breach of operational security. Cordesman pointed out that the “critical mission limitations” placed on Apache units after March 24 “may have occurred because it was already clear that the US could win this particular war without taking major losses.”

One thing is certain, though: The

Apache mission changed significantly during the course of the war.

Military officials have pointed out that fighting conditions in Iraq weren’t well-suited to the Apache’s classic, deep-attack mission. For instance, instead of massing in formation—an ideal posture for an Apache raid—Iraqi units dispersed and moved away from the American lines, making themselves less vulnerable to the kind of concentrated firepower that attack helicopters bring to bear. The fine dust of the Iraqi desert also inhibited flight operations, fouling engines and power units and making visibility treacherous. At least one crash was largely caused by such poor environmental conditions.

Still, the March 24 setback clearly alarmed senior commanders and forced rapid changes. “Everybody in this country has a weapon,” observed Wallace in a *USA Today* interview, “and if they all shoot them up in the air at the same time at every helicopter that flies over, it becomes a very lethal environment for low-flying aircraft. He later told reporters, “Our attack aviation performed a significant role during the fight, but I must admit it didn’t perform the same role that I had envisioned.”

Revised Tactics

Instead of conducting raids, Apaches ended up spending most of their time executing other missions from the Army aviation playbook: armed reconnaissance and close support of

US Army photo by Sgt. Igor Paustovski



This AH-64 crashed during landing in Iraq on March 30. The Apaches suffered from mechanical problems and poor visibility caused by the fine dust of the Iraqi desert.

ground troops. Armed reconnaissance missions often resembled deep attacks, since many took place behind enemy lines. Some covered distances of nearly 100 miles. But there were important differences. Many of the reconnaissance flights were during daylight. They were often packaged with other air assets, such as USAF's E-8 Joint STARS radar, E-3 AWACS command and control aircraft, and F-16s with High speed Anti-Radiation Missiles, and Navy EA-6B electronic jamming aircraft. The Apaches would gather intelligence on how Iraqi forces were arrayed and scout for targets—but husband their own ordnance. If they came across hot targets, they'd call for strikes from Army artillery or from fixed-wing fighters overhead. Only when the Apaches were running low on fuel and were near the end of their time on station would they fire their own missiles, if targets were handy.

There was more shooting during close air support missions, when ground troops from the 101st and the 3rd Infantry Division were battling Iraqi units. As those troops punched through areas such as the Ramadi Gap, al Hillah, and Karbala, Apaches often hovered "over the shoulder" of ground units, guarding their flanks, protecting supply lines, and conducting standoff attacks of enemy troops up to five miles ahead. At al Hillah, for instance, an Apache company from the 101st "fought very, very hard," according to Petraeus, and was a key factor in the defeat of a Republican Guard battalion. Eight helicopters took fire.

In a half-dozen such battles during the first two weeks of April, attack aviation units from the 101st destroyed more than 200 Iraqi air defense guns, 100 artillery pieces, nearly 35 radars, and hundreds of other weapons. The Apaches found some of the equipment abandoned, beneath trees or in the open desert, but, at other times, Iraqi defenders put up a fight. Overall, the 101st Apaches and Kiowa Warrior scout helicopters fired more than 40,000 rounds of ammunition, along with nearly 1,000 2.75-inch rockets and Hellfire missiles.

To the Apaches fell another new



US Army photo by Sgt. Igor Paustovski

As part of its revised tactics, the Army shifted the Apaches to new missions: armed reconnaissance, close air support, and urban warfare. They proved highly effective in supporting ground forces in the urban setting.

mission, filling the security vacuum created as the lead Army battalions briskly bypassed cities such as an Najaf and Karbala. When the 101st moved into some of those areas to begin peace enforcement operations, Apache helicopters turned out to be invaluable: Hovering over buildings gave them an ideal perch for intelligence gathering and taking direct action. They were far more effective than artillery when US ground forces needed offensive fire. When Iraqi irregulars belonging to the Fedayeen Saddam militia fired on a US brigade commander's convoy in Najaf, for instance, an Apache aircrew had the mobility—and the lethality—to track the attackers and destroy their vehicles. By the time US forces reached the Iraqi capital, Apache crews found themselves in an unprecedented role, essentially flying air combat patrols for troops engaged in urban combat. "I never thought I'd be flying an Apache over the rooftops of southern Baghdad," recalled Smith. "But there I was."

Was that a new role for the Apache? Or an anomaly? The question may not be answered until the next war, but Apache pilots know they never could have flown over Iraqi cities if fixed-wing fighters and other weap-

ons hadn't neutralized Iraqi air defenses and friendly ground troops hadn't secured the territory beneath them. There's also an important degree of symbiosis between the Apaches and their enablers. Attack helicopters helped identify and destroy many air defense weapons, and they served as aerial protectors for the very troops whose presence on the ground made it safer to fly.

That may argue in favor of new procedures for Apache units and for greater integration with other aircraft. The kinds of "pop-up" tactics and earth-hugging flight profiles that are effective at the Army's National Training Center—where tactical surprise is often assumed and where few civilians roam the terrain—may turn out to be inappropriate for combat on many of the world's potential battlefields, where concerns about collateral damage trump standard operating procedures. Greater coordination with fixed-wing aircraft—as was apparently the case during the battle of Karbala—may enhance the survivability and effectiveness of the Apache.

Cordesman suggested that long-range helicopter raids might be more successful if the helicopters attack armor while overhead fighters suppress air defense weapons.

If the Apache is indeed more effective in the next war, then the March 24 retreat at Najaf might turn out to have been one of the most productive defeats in modern warfare. ■

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, "War From Afar," appeared in the August issue.

The ICBM force is being slimmed down, firmed up, and made ready for a long haul in uncertain times.

The Future Missile Force

By Adam J. Hebert, Senior Editor

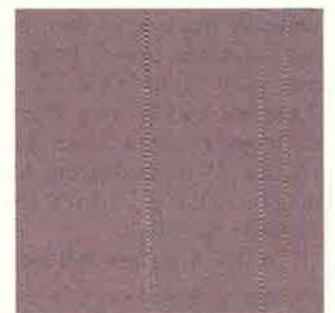


IN OCTOBER 2005, the Air Force will decommission the last of the 50 LGM-118 Peacekeeper missiles that entered service at the height of the Reagan Administration arms buildup. The nation's newest class of ICBM—each fitted with up to 10 independently targetable warheads—was a key bargaining chip as Washington negotiated nuclear weapons reductions with Moscow.

The Peacekeeper retirement will free resources to carry out modernization of 500 remaining ICBMs—the LGM-30 Minuteman IIIs. Some Peacekeeper components actually will be shifted to the Minuteman IIIs, which are in the midst of a top-to-bottom modernization program expected to keep them in service until roughly 2020. USAF expects to field, at that time, a new capability to replace them since, officials say, the strategic value of the nuclear missile has not changed.

In fact, one official said, the ICBM mission may be more important today than ever. Col. Jack Weinstein, the 90th Space Wing's operations group commander, F.E. Warren AFB,

Staff photo by Guy Aceto





A technician places a Peacekeeper re-entry vehicle into the nosecone of the missile. Plans call for the Air Force to pull the last of its 50 Peacekeepers from service in 2005. Until then, any missiles still in the ground will be fully maintained and on alert.

Wyo., noted that the missile forces can quickly “go anywhere,” unencumbered by basing or access concerns. An ICBM can reach a target anywhere in the world within 35 minutes—something a potential enemy must consider when planning hostile acts against the US or its allies.

The land-based segment of the nation’s strategic nuclear triad remains as ready as it ever was. Company grade officers still sit in hardened, blast-resistant capsules buried deep underground. Maintenance on the missiles is continuing. The Minuteman IIIs and Peacekeepers remain on alert, posting a 99.5 percent readiness rate.

On the Great Plains

Approximately 1,150 company grade officers serve on missile combat crews, each spending roughly 177 days a year in the underground launch control facilities on the Great Plains. Many of the Air Force’s new space operations officers begin their careers there. And, despite the coming reductions in the Peacekeeper force, officials said, the career field remains a promising one. It is one of the few places (other than on the flight line) in which lieutenants and captains can gain operational experience—and have command responsibility.

In some ways, the mission is the same as in the Cold War. Missile crews serve 24-hour shifts underground in their blast-resistant command modules, connected electronically to the National Command Authority.

Capt. Angela Sharber, a missile combat crew commander, noted the responsibility the crews have: Each two-person team is directly responsible for monitoring 10 ICBMs and is interconnected with the other four missile alert crews—also monitoring 10 ICBMs each—in their squadron.

During a four-year initial tour, missileers progress from trainee, to deputy on a missile crew, to missile combat crew commander. In addition to ensuring the capsule is running correctly, Sharber said one of the main responsibilities of an MCCC is to help train a deputy to take over as a commander—which can happen in as little as two years.

If a launch order were to come down, both members in the pri-

mary capsule would have to verify the order before turning their keys. The same process must also be followed at another launch control center.

For each alert, the missile officers actually spend about 30 hours on duty, counting their mission briefing and driving up to 300 miles round-trip to and from the alert facility. Traveling to and from the facilities, which are located in sparsely populated areas, frequently takes airmen off the major highways and onto unpaved roads for much of the time. There is so much distance to be covered by the missile teams, including combat, maintenance, and security crews, that team members stopping at the handful of fast-food restaurants along the major roads typically meet up with other in-transit crews.

While ICBM teams “deploy in place,” said Maj. Gen. Frank G. Klotz, commander of 20th Air Force and of US Strategic Command’s Task Force 214, which oversees the nation’s ICBM force, they face many of the same inconveniences—such as irregular, inflexible schedules—that USAF forces deployed overseas face.

The missile force overall has seen its operational tempo rise over the past two years. Col. John Faulkner, commander of the 90th Space Wing maintenance group, called July 2003 “the busiest month in the busiest year in ICBM history.” Peacekeeper

deactivations, Minuteman III modernization and sustainment programs, and increased security demands since the 9/11 terror attacks are all being handled by a workforce that Faulkner said was sized with a lower optempo in mind.

Deactivating Peacekeeper

In October 2002, USAF removed the first Peacekeeper from service. That marked the beginning of a three-year campaign in which USAF will decommission 17 missiles in each of the first two years and the remaining 16 in year three. Deactivation of a missile takes 15 days from the time a prep team arrives at the launch facility

The Air Force essentially is “parting out” Peacekeeper components. Some are being destroyed, some stored for future use, and some made available for commercial space launch vehicles.

According to Adm. James O. Ellis Jr., commander of STRATCOM, the retirement of Peacekeeper does not signify any reduction in the importance of the strategic triad of land-based missiles, submarine-based missiles, and long-range bombers. Ellis told *Air Force Magazine* that each leg of the nuclear triad, including ICBMs, continues to give the United States unique and valuable capabilities.

The ICBM force provides “responsiveness,” said Ellis, while the strategic submarine fleet offers “surviv-

ability,” and the bomber force gives planners “recall and flexibility.” Those are still very essential characteristics,” he added, noting that proposals to change the makeup of the nuclear triad need to be examined “very carefully.”

Ellis said that the plan to keep the Minuteman III in service is robust and fully funded. Under terms of the Administration’s 2002 Nuclear Posture Review, however, the number of deployed ICBM warheads will continue to decline.

The review, completed after President Bush’s November 2001 meetings with Russian President Vladimir Putin, calls for cutting the US nuclear stockpile from nearly 6,000 warheads to 2,200 or fewer deployed warheads by 2012. Bush said in 2001 that the US will retain the minimum number of nuclear weapons “consistent with our national security needs” and obligations to allies.

Plans call for making an interim reduction to about 3,800 warheads by 2007. Much of the initial reductions are coming from force structure decisions taken in the Clinton era.

The Peacekeeper, though newer than the Minuteman, represented a logical starting point for ICBM reductions, officials said. The primary reason: The Peacekeeper, which was capped at just 50 missiles in 1990 as the Cold War wound down, represents only about 10 percent of the total ICBM inventory, but it requires its own infrastructure, supplies, and specialized cadre of operators and maintainers.

Peacekeeper deactivation is “something the Air Force has wanted to do for some time,” said Klotz. “Because of the expectation that this weapon system would eventually go away, [the Air Force] had not planned for sustaining it for a long period of time,” he said.

In fact, USAF has been looking forward to the Peacekeeper deactivation since 1992, when the missiles were just six years old. Though fielded in limited numbers, Peacekeeper provided the threat that pressured the Soviet Union to negotiate away its monster SS-18 ICBM under START II. Since then, the US has wanted to get rid of Peacekeeper.

The Administration has not announced how it intends to handle

USAF photo by SrA. Stephen Schester



Two-person teams of company grade officers spend their 24-hour shifts monitoring ICBMs in hardened capsules roughly 65 feet underground. Each missile combat crew team oversees 10 missiles.

the second round of reductions that will take the nation's nuclear force down to the 2012 level of about 2,200 operationally deployed warheads. Officials do expect to remove additional warheads from the triple-warhead Minuteman III. In 2001, USAF "downloaded" the 150 Minuteman IIIs operated by units at Warren, from three warheads apiece to a single-warhead configuration. The remaining 350 missiles—operated by Malmstrom AFB, Mont., and Minot AFB, N.D.—still have the capability to carry up to three warheads each.

According to Maj. Gen. Robert L. Smolen, USAF's director of nuclear and counterproliferation operations at the Pentagon, not all the Minuteman ICBMs will go down to single-warhead configuration. Current plans call for maintaining a total of 800 warheads among the 500 ICBMs. For instance, 150 missiles could remain capable of deploying three re-entry vehicles each, leaving 350 limited to only one.

Retaining those 500 missiles is "the right number," said Col. Richard M. Patenaude, chief of deterrence and strike requirements for Air Force Space Command.

That view is shared by retired Gen. Larry D. Welch, a former Air Force Chief of Staff and now head of the Institute for Defense Analyses. He has said that as the US draws down the number of warheads it has in the field, it needs to retain enough



Staff photo by Guy Aceto

Nuclear missile alert facilities are scattered across the Great Plains. The facilities, such as this one for the Minuteman III, have a topside home for security and support personnel and a capsule down below.

delivery vehicles to ensure flexibility and survivability. For any given number of deployed warheads, a force of single-warhead ICBMs would exact a high cost from an enemy attempting to eliminate that deterrent.

The exact configuration of those missiles will be determined by STRATCOM. Ellis said warhead configurations "are driven by the target characteristics and are part of the overall concepts for [ICBM] employment." Flexibility and the range of options needed must be addressed. "It's inappropriate to say one size

fits all and one configuration fits all needs," said Ellis.

While the missiles are responsive, they are clearly not as flexible as the Air Force's nuclear bomber force—once ICBMs are launched, there is no calling them back. This fact is directly responsible for the system of multiple checks and safeguards used to prevent any accidental or unauthorized launch. It also resulted in the "default" targets for the missiles being changed from their Cold War targets to a destination over the ocean.

Though the Air Force does not reveal targeting information, Lt. Col. Tim Adam, commander of the 321st Missile Squadron at Warren, said each missile has a preplanned target, determined by STRATCOM, that can be entered before launch. This offers the President an "off-the-shelf war plan" that is "ready to go," Adam said.

What's Next

The Air Force has launched a series of programs to ensure the Minuteman remains reliable and effective until it fields a next-generation, land-based, long-range nuclear system.

Minuteman III's primary upgrades include:

- Propulsion Replacement Program—replaces propellants, EPA-restricted materials, and adds redesigned Stage 3 motors, among other

After Peacekeeper

The Peacekeeper ICBM—the system the Air Force terms the most powerful weapon ever created—"did its job," said Col. Thomas G. Shearer, former commander of the 90th Space Wing at F.E. Warren AFB, Wyo.

Until USAF decommissions the last Peacekeeper, its crews will continue to stand full alert and be available to US Strategic Command. The 604 personnel in the Peacekeeper squadron will remain with the unit until the end. After that, they likely will move to related fields, such as the Minuteman III or space operations.

The launch and missile alert facility infrastructure are considered "national assets" that the Air Force probably will mothball.

Maj. Gen. Frank G. Klotz, commander of 20th Air Force and of STRATCOM's Task Force 214, which oversees the nation's ICBM force, opposes destruction of the Peacekeeper silos, as has happened with other ICBM silos. "It doesn't make sense," he said. "For one thing, it costs money to implode them."

Retaining the Peacekeeper infrastructure also leaves open a wider range of possible future moves. Maj. Gen. Robert L. Smolen, USAF's director of nuclear and counterproliferation operations at the Pentagon, explained that it would not cost much to "keep the infrastructure warm" almost indefinitely. It would cost far less—perhaps \$15 million a year—to maintain the existing infrastructure than it would to build a single new silo if one were needed at a future date, he said.

"It's prudent government policy to not throw these away, since the maintenance costs are so low, until we're convinced there isn't some valid military use that might be served by keeping them," said Smolen.



ICBM maintenance is continuous, so components are replaced before they have a chance to age out. Above, a maintainer checks the fit as two Peacekeeper sections are brought together.

improvements. Completion: Fiscal 2008.

- **Guidance Replacement Program**—improves the maintainability and on-alert reliability of the guidance systems. Completion: Fiscal 2010.

- **Safety Enhanced Re-entry Vehicle Program**—replaces Mk 12 warheads with Peacekeeper's newer, safer Mk 21 warheads. Number to be replaced undecided, but transfers begin in Fiscal 2006. Completion: 2011.

Patenaude said the service is considering, in addition to these upgrades, a "Minuteman Elite" system—a modified Minuteman III offering improved accuracy. Modifying a limited number of existing Minuteman re-entry vehicles could create an "enhanced arsenal," he noted. Minuteman Elite is neither funded nor approved for production, but is envisioned as a possible solution to emerging STRATCOM requirements.

Patenaude maintained that, although Peacekeeper-like accuracy is "very desirable," the most efficient approach to achieving that level of accuracy is to field a next generation system, not by making upgrades to existing missiles.

The Air Force expects that, by 2020, it will be replacing the Minuteman III. Service officials recoil from referring to the next generation as "Minuteman IV," because USAF wants the widest possible range of ideas brought forward. Labeling the new

system Minuteman IV might lead some to prejudge the outcome of an upcoming analysis of alternatives.

Patenaude said the Pentagon has validated the need for a next generation land-based strategic deterrent, and, this fall, the Air Force plans to send out formal requests for information from industry. The service wants to retain the best features of the existing systems while seeing major improvements.

Among the anticipated improvements are a new command and control approach and smaller manpower footprint, to enhance logistics and security.

Currently the service has 55 dispersed missile alert facilities that provide command and control for 535 ICBMs. Advances in technology and a desire to reduce manpower could force a shift to a smaller number of control centers. The correct number of MAFs is perhaps less than 50, the number dedicated to the Minuteman III fleet, Patenaude said.

The service also wants to field a system that would require fewer maintenance personnel. And, like other elements within the Air Force, the ICBM force has been hit hard by the need for increased security since the 9/11 terror attacks. At F.E. Warren, a major ICBM base, 208 people deploy daily to locations up to 150 miles away to support ICBM operations. Many of those personnel, especially support personnel at the MAFs and security forces securing launch silos, deploy for several days at a time.

The Air Force's Cold War system, while still effective, is not necessarily best for the future security environment, said Patenaude.

A Conventional ICBM?

Also attracting attention is the concept of a non-nuclear ICBM, which could enhance STRATCOM's global strike mission. Such a weapon would offer the ability to destroy a target anywhere in the world, within 30 to 35 minutes, with no forward basing requirements.

However, Klotz said, there are numerous questions to be answered before developing such a weapon. He defined the bottom line this way: "For the number of dollars expended, do you achieve [enough] additional interesting capabilities and effects?"

The issue is a complex one, for several reasons.

There are numerous other ways to strike targets, many of which are more accurate than an intercontinental ballistic missile, said Ellis. ICBMs offer "very rapid response, long-range capability, [but] they don't have as much precision associated with them as our current, tactically delivered precision guided munitions," he said. The utility of a conventional ICBM must be weighed against the capabilities and costs of a broad range of other options, Ellis added. Finally, intercontinental boosters are expensive, and there are overflight issues to consider when weighing a conventional ICBM against other strike options.

Moreover, a conventional ICBM launch could easily be mistaken for a nuclear attack. According to Wade Boese, research director for the Arms Control Association, the US would have to come up with measures to reassure Russia that it was not in the crosshairs. Russia would need to know that a conventional ICBM launch is not nuclear—and not aimed at it. Otherwise, Russia might counterattack with nuclear weapons.

Smolen said that the ability to strike quickly, anywhere in the world, without having to worry about moving forces into position is intriguing, but the Pentagon has "a long way to go" before making a final determination on a conventional ICBM.

Despite reservations, though, Ellis believes that it is a concept "certainly worth exploring." ■



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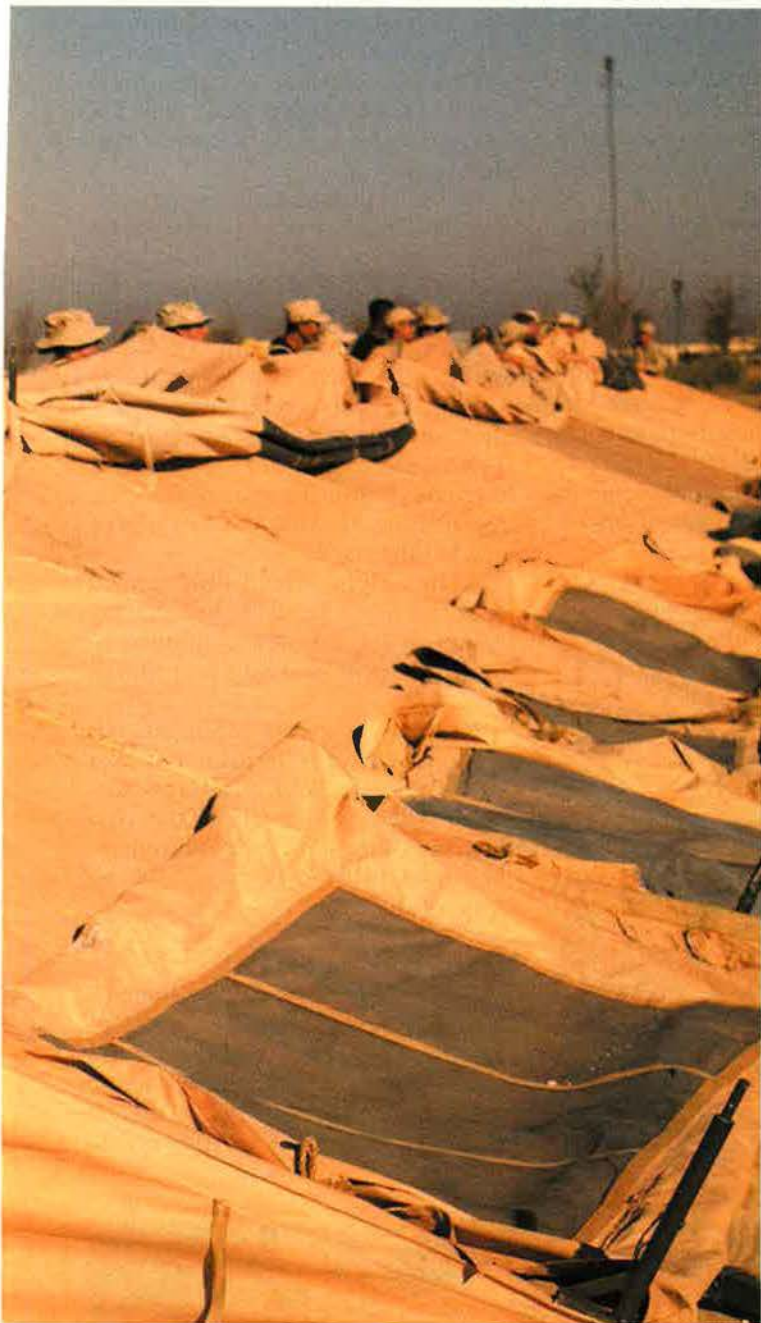
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Adventures in **Bare Bones Basing**

Four days after the first Air Force officer arrived at Tallil, operations commenced.



Airmen with the 407th Expeditionary Services Squadron set up tents at Tallil AB, Iraq. Existing buildings at the base were little more than shells when the Air Force arrived.

By Adam J. Hebert, Senior Editor

THROUGHOUT Gulf War II, coalition forces used Iraqi territory to maximum advantage. Land forces bypassed major cities and took to the open desert to avoid bottlenecks on the march to Baghdad. Coalition air forces, meanwhile, set up shop at captured airfields. This latter step pushed Air Force, Navy, Marine Corps, and allied aircraft much closer to the action.

Take the case of Tallil, a facility near Nasiriyah. It was among the first air bases to be captured and put to coalition use. The distance between Baghdad and Tallil is about one-third of that between Baghdad and either al Udeid AB, Qatar, or Prince Sultan AB, Saudi Arabia, two key coalition air bases.

Aircraft flying out of Tallil could get on station faster and stay there longer. Tallil, thus, became a prime staging point for various aircraft, notably A-10 fighters and C-130 transports.

Deploying airpower quickly to Tallil became a high priority for US Central Command, which wanted a forward operating location (FOL) that would permit aircraft and helicopters to more effectively support ground forces as they advanced toward Baghdad.

Setting up Tallil was an adventure in bare bones basing. Even before the war, the air base was in disrepair. However, just for good measure, Iraqi forces had sabotaged it, too. Runways were blocked. Inside buildings, wiring had been pulled from the walls. Outside roamed about 500 wild, hungry dogs, living in trenches that Iraqi soldiers had dug on the base grounds.

Before it could commence operations, the coalition air component

had to turn this husk of an air base into a functional expeditionary location. Tallil needed everything, quickly, but it lay in a section of Iraq where fighting still raged and where supply lines were insecure and under frequent attack.

That did not stop the base builders. The first Air Force officer arrived on March 26. Four days later, aircraft began to land at Tallil for stopovers. Only three days after that, the base began bedding down its own contingent of A-10s.

Because they were so close to the battlefield action, the Warthogs were able to destroy roughly 1,100 targets in the major combat phase of Gulf

airmen who arrived early in the war and rapidly built the new setups.

As later analysis showed, however, USAF lacked the equipment to run these forward bases in the most effective manner. The service failed to anticipate the need to set up so many FOLs in a short time, according to an Air Force report.

Task Force Enduring Look, charged with quickly identifying lessons from the global war on terror, determined in an October 2002 report on airfield operations that Enduring Freedom unexpectedly pushed requirements to maximum surge levels. Consequently, airfield operations elements “deployed to the theaters of opera-

tion with ailing 1970s-era equipment (1950s-era for Air National Guard), a deficient concept of operations, and separate management controls for personnel and equipment,” said the report.

Specific problems included sporadic availability of airfield lighting and radar systems and unreliable supply lines. In Iraq, these problems would recur.

Lt. Col. Dave Kennedy, commander of the 110th Operations Group at al Jaber AB, Kuwait, was the man responsible for turning Tallil into a base. On March 23, three days after the start of the war, Kennedy got word the Air Force needed the base.

At first, flying from Tallil “seemed back burner,” he said, but the urgency of the mission continued to build. He deployed into Iraq March 26.

Kennedy is also a Michigan Air National Guard A-10 pilot, based at Battle Creek’s W.K. Kellogg Airport. When he arrived as the first member of the Air Force contingent, he found Tallil to be in a shocking state of disrepair.

Starting From Scratch

Tallil was “absolute bare bones,” Kennedy said. The base was in Operation Southern Watch’s no-fly zone, so the Iraqis had been unable to use it since the 1991 Gulf War. It showed. There was no power, no

USAF photo by SSgt. Quinton T. Burris



War II. These targets included tanks, armored vehicles, munitions storage bunkers, and parked aircraft. The primary mission of the A-10 was to provide close air support to Army and Marine units as they approached Baghdad.

Enduring Challenge

Since the Sept. 11, 2001, terrorist attacks in the US, the Air Force has had plenty of experience setting up bases in remote locations. For Operation Enduring Freedom—the war against the Taliban and al Qaeda in Afghanistan—USAF established and operated dozens of expeditionary bases, in locations that typically lacked basic utilities and services.

Officials say that Bagram Air Base (in Afghanistan) and Manas Air Base (in Kyrgyzstan), became vital Air Force sites as a result of the labor of



At top, EOD teams at Tallil were kept busy dealing with unexploded munitions. Above, airmen erect a tent for dining. Such niceties came later since initial logistics operations were erratic because fighting still raged nearby.

USAF photo by SSgt. Shane Cuomo

water, no supplies, not even any windows in any of the buildings. Twelve years of sandstorms had dumped a layer of sand onto everything left behind.

Further, the Iraqis went out of their way to make Tallil unusable. Example: To prevent quick restoration of Tallil's airstrips, the Iraqi forces buried destroyed vehicles under sand every 100 feet along the runways.

From the time it was captured, Tallil served as an Army encampment. Troops had to clear the runways of vehicle carcasses, but even after the strips had been cleared, Army units had to be ordered not to park tanks on the runways.

American forces also found that hundreds of Iraqis, who described themselves as "caretakers," had been living on the base and in its underground tunnels. "It was obvious there were people living all over the place," said Maj. Keir Knapp, part of the initial USAF contingent at Tallil. However, by the time the Air Force arrived, security forces had cleared out the squatters.

Another problem was unexploded ordnance. Retreating Iraqi troops had scattered all kinds of weapons around the base. As the Air Force presence at Tallil increased, disposal became critical, and not just to clear out a munitions storage area. Kennedy said a British tracked vehicle hit a mine. In one of the hangars, Iraqi troops had booby-trapped a door with a rocket propelled grenade wedged under the hangar door.

Despite Tallil's sorry initial state, the coalition quickly ramped up operations.

Kennedy reported that fighting outside the base gates continued for several days after he arrived, and the battle for Nasiriyah continued unabated the entire time the Michigan Guard was there. There was no water on base except for that which people brought with them. As a result, fire trucks had to venture to town for water.

The base, with its large Army and security force presence, was nominally secure, but "could [the Iraqis] have lobbed in mortars or rockets? Absolutely," Kennedy said.

The Air Force presence quickly increased. About 50 airmen from al Jaber arrived to erect a tent city. By the third day, about 100 people were



USAF photo by MSGT. Terry L. Blivins

Once troops cleared the runways of obstacles, Tallil became a key A-10, C-130, and helicopter base. Here, weapons loaders repack a Maverick missile on Tallil's flight line.

setting up aircraft fuel bladders, repairing taxiways, building berms, and completing runway work.

Plans called for Tallil to go operational within two weeks. However, the first aircraft arrived just 12 hours after Kennedy received notice that flight operations would begin—about 10 days earlier than expected.

On April 2, Tallil became host to its own detachment of A-10s from Battle Creek, via al Jaber.

Lights Out

Kennedy reported that Tallil operated without radar and that the lack of reliable lighting "was an issue at first." For the first week of operations, Tallil carried out daylight operations only, until a light system could be installed. Even that was not perfect, however. For nighttime operations, if an aircraft was not night-vision-goggle capable, airmen "had to run down to the runway" to turn the lighting system on, then turn it off again so that the NVG aircraft could land.

Another problem at Tallil was logistical support. The report noted that, for Enduring Freedom, it was "very difficult to receive equipment and parts in the field," including radios, boots, weapons, and spare parts. Kennedy confirmed that the Air Force was to a large degree limited to using what it brought along to Tallil.

The supply lines were extremely strained. On three occasions, Air

Force personnel at Tallil were denied either food or water from convoys.

The A-10 was ideally suited for these austere conditions, Kennedy said, so parts issues weren't nearly as critical as they might have been for other aircraft. The Warthog is "built for that," he said. "It's rugged. It's very easy to maintain." He noted that A-10s also operate from Bagram, which was similarly rough around the edges.

Rapid establishment of Tallil as an FOL paid off in big ways. The A-10s were in place to support the Army's drive toward Baghdad, and Tallil devoted most of its sorties to the close air support mission. Kennedy said, "I don't know of any [A-10] pilots who didn't at least stop over" at Tallil during the war.

The base now serves as a key logistical center to support residual coalition military forces with food, fuel, water, bullets, and other supplies. It is also used for the import and distribution of humanitarian and medical aid for Iraqis.

Airmen deployed to Tallil now are using air traffic control landing systems, called "an airport in a suitcase," to help aircraft land safely in low-visibility conditions.

Despite its initial deficiencies, Tallil boasts two good size parallel runways, so "down the road, when they get that place fixed up, it will be an outstanding facility," Kennedy said. ■

By Frances McKenney, Assistant Managing Editor

Convention in Austin

Air Force Association Chairman of the Board John J. Politi was keynote speaker for the Texas State Convention, hosted by the **Austin Chapter** in July.

Politi spoke about patriotism at a dinner where 29 national and state awards were presented. The AFA leader joined Dennis Mathis, state president, for presentations to several honorees.

National-level AFA awards for 2003 went to R.W. Beezley and Clayton A. Church from the **Fort Worth Chapter**; Carlos H. Massiatte and Daniel O'Neal of the **Alamo Chapter**; William J. Redmond and Helen S. Seidel from the **Dallas Chapter**; Robert L. Slaughter, **Denton Chapter**; Jackson Smith, **Concho Chapter**; and William L. Sparks, **San Jacinto Chapter**.

The Fort Worth Chapter was named Texas Chapter of the Year, and David A. Dietsch, the chapter's government relations VP, received the Texas Member of the Year award.

Also taking home awards were active duty and reserve USAF members; AFROTC and AFJROTC cadets; civilians; and Air Education and Training Command personnel. AETC commander, Gen. Donald G. Cook, from Randolph AFB, Tex., was the convention's luncheon speaker.

During the convention, L. Boyd Anderson, Aerospace Education Foundation president, led an afternoon information session. Presenters included speakers from the Civil Air Patrol and *USA Today* newspaper, AEF's co-sponsor in the Visions of Exploration Program.

Convention-goers elected Edward W. Garland of the Alamo Chapter as the new state president. Slaughter was elected executive VP, with Seidel serving as treasurer and Joan B. Lopez from the Alamo Chapter as secretary. Dietsch, Massiatte, Smith, and Sparks were elected area VPs.

Veterans Stand-Down

The **David J. Price/Beale Chapter (Calif.)** helped organize the annual Veterans Stand-Down held in Marysville, Calif., from Aug. 14 to 17.



AFA Board Chairman John Politi meets the cadets who formed a color guard at the Texas State Convention: (from left) Courtney Costley, Michael Devine, Will Taylor, and Meghan Beatty. See "Convention in Austin."

Veterans Stand-Downs take place in communities across the US. The events give homeless veterans a chance to meet at one location to learn about services available to them and to receive food, clothing, medical, and other assistance.

In Marysville, veterans gathered under tents set up in a park, on the banks of the Yuba-Feather River. Organizations participating in the community's third annual stand-down included social services and church groups and the 9th Reconnaissance Wing's medical group from Beale Air Force Base.

MSgt. Aundre S. Gibson, president of the Beale Chapter; SMSgt. Robert S. Rubio, the vice president; and Lt. Col. Randy J. Lavender, veterans affairs VP, led the effort to round up volunteers from Beale to help run the event. The helpers came from the Air Force Sergeants Association, Beale Junior Grade Officers, 9th Civil Engineering Squadron, and 940th Air Refueling Wing (AFRC), among other groups.

Lavender took charge of the volunteers who pitched four tents and set up the site. Chapter member

TSgt. Josefina Babbitt served food during the stand-down. The chapter coordinated delivery of supplies as well as the vehicles and drivers provided by a transportation squadron from Beale. When the stand-down ended, Rubio managed the site's disassembly.

More than 100 veterans visited the stand-down, said chapter member SMSgt. Victor Taibi. He added that some of the most moving moments for the volunteers took place after hours, when homeless vets came by to talk with the airmen who were providing site security all night.

Veterans Stand-Down is an initiative of the Washington, D.C.-based National Coalition for Homeless Veterans. The first stand-down took place in San Diego in 1988.

"I Had a Blast"

The **L.D. Bell-Niagara Frontier Chapter (N.Y.)** used an AEF Chapter Matching Grant to help bring a NASA traveling-classroom trailer to a middle school in Williamsville, N.Y.

The 53-foot-long Mobile Aeronautics Education Laboratory came from the NASA Glenn Research Center in

Cleveland and spent five days at Mill Middle School. Sixth-graders took classes in the trailer, using 10 workstations to explore math and science topics and aviation technology.

"I had a blast flying the motion flight simulator," wrote sixth-grade science student Chris Toone in a thank-you letter to Chapter President Sandra Reynolds.

Some 600 students at the school had a chance to tour the trailer, and it was open to the public on one of the evenings. Two newspapers and two TV stations covered the MAEL's visit to Williamsville, including the CBS affiliate whose reporter did a live segment from the trailer during a morning news show.

Kenneth Huff, a sixth-grade science teacher at the school and a former Teacher of the Year for the chapter, arranged to have the NASA trailer come to the school. It cost \$7,500, and the AFA chapter joined forces with seven other organizations to foot the bill for the visit.

AEF Chapter Matching Grants are awarded for a minimum of \$200 and can total as much as \$1,000 in a year. Their purpose is to help chapters support educators and activities such as science fairs, technology programs, or career days.

Field Trip: Air & Space Museum

Another AEF Chapter Matching Grant helped send 37 AFJROTC cadets from the Tidewater region of Virginia to the Smithsonian's National Air and Space Museum in Washington, D.C.

William M. Cuthriell, **Tidewater Chapter** president, said the group used the grant to rent a bus that transported the cadets and three instructors—from five AFJROTC units in the area—to the museum.

Cuthriell's friend, NASM docent William Earl Brown Jr., helped arrange the cadets' tour and served as a guide for half of the group. Brown flew 125 combat missions in F-86 Sabres during the Korean War and another 100 combat missions in F-4 Phantoms during the Vietnam War. He retired as a lieutenant general, the commander of Allied Air Forces Southern Europe, in 1984.

Brown never mentioned to the young cadets that the Air and Space Museum features him in its display on African American pioneer aviators, so Cuthriell—who accompanied the students on this field trip—pointed out Brown's photo. Cuthriell said the kids from then on looked at their docent with awe.

The chapter leader said it was the first visit to the museum for many of

the cadets. They asked question after question, seemed especially interested in the space exhibits, and not only thanked him several times on the bus ride home but also sent him thank-you letters. Cuthriell was so impressed by their reactions that the chapter plans to make this field trip an annual event and has already begun fund-raising for the chapter's aerospace education fund.

11th Air Force Anniversary

Newspaper and TV reporters turned out in Anchorage, Alaska, to cover a ceremony hosted by the **Edward J. Monaghan Chapter** to commemorate an 11th Air Force anniversary on Aug. 12.

The day marked 63 years since the first Army Air Corps personnel assigned to Elmendorf Field landed at Merrill Field in Anchorage. The men were forerunners of what became 11th Air Force. So it was fitting that two World War II vets of 11th Air Force—William A. Hamblon of the **Inland Empire Chapter (Wash.)** and Slim Walston—were honored guests at the chapter's anniversary ceremony. Also on hand: retired USAF Gen. Joseph W. Ralston, chapter

member and 11th Air Force commander from July 1992 to July 1994.

More than 100 people attended the event, held at the 11th Air Force Memorial at Merrill Field. An honor guard from Elmendorf posted the colors. The flags were delivered to the site by members of Rolling Thunder, a group of Vietnam-veteran motorcyclists. F-15s from Elmendorf's 90th Fighter Squadron flew a missing man formation overhead, and the US Air Force Band of the Pacific provided music.

Chapter President Jacqueline Burdette led the ceremony. She joined guest speakers Mark Begich, the mayor of Anchorage, and Col. Gregory J. Miller, 11th Air Force vice commander, in laying wreaths at the memorial.

Chapter members Col. Franklin T. Ragland and Capt. Jonathan E. Powell organized the anniversary ceremony.

Walter J. Hickel, twice governor of Alaska and also secretary of the interior during the Nixon Administration, was keynote speaker for a luncheon, hosted by the chapter later that day. The gathering honored World War II veterans and the state Teacher of the Year. He is Roger Weber, a retired Army major and an Army JROTC

AFA In Action

The Air Force Association works closely with lawmakers on Capitol Hill, bringing to their attention issues of importance to the Air Force and its people.

Military training ranges and operating areas face increasing competition for open space and resistance to overflights, supersonic flights, and noise generated by aircraft operations. Such encroachment, with its accompanying restrictions, threatens to make the ranges less valuable for training our armed forces. DOD is working to sustain these test and training areas and to gain certain exemptions that will permit continued realistic combat training.

■ AFA in August contacted the conferees who were to reconcile House and Senate versions of the 2004 defense authorization bill, which included different approaches to encroachment under what is called the Readiness and Range Preservation Initiative. Among the leaders AFA wrote to were: Senate Armed Services Committee Chairman **Sen. John Warner** (R-Va.); **Sen. Carl Levin** (D-Mich.), the ranking member of the SASC; **Rep. Duncan Hunter** (R-Calif.), chairman of the House Armed Services Committee; and **Rep. Ike Skelton** (D-Mo.), HASC ranking member. The AFA letter said, "We support a balanced approach to preserving our environment while maintaining the readiness of our armed forces." The letter included a myth-and-fact information sheet, as well as *Air Force Magazine's* article "The Wild Blue Yonder Is Shrinking" (March 2002, p. 58.).

■ The same encroachment information package went to AFA state presidents in Alaska, Arizona, California, Florida, New Mexico, Texas, and Utah, where military training ranges are located.

■ In September, AFA Executive Director Donald L. Peterson met with **Brian Green**, SASC professional staffer, to discuss the RRPI. It was the first of several such Capitol Hill meetings that AFA has scheduled.

■ Peterson and members of AFA's Government Relations Department also met with **Jan Larkin**, director of sustainable ranges outreach in the Office of the Deputy Undersecretary of Defense for Readiness, to discuss the RRPI. The association will continue to assist DOD in its legislative and public-education efforts to preserve needed military training capabilities.

AFA/AEF National Report

instructor at East High School in Anchorage.

AFA dignitaries who attended both the morning ceremony and the luncheon included Steven R. Lundgren, Northwest Region president, and Gary A. Hoff, state president.

Wright Flyer Plaza

A memorial plaza at Wright-Patterson AFB, Ohio, was dedicated Aug. 2 by the US Air Force and the **Wright Memorial Chapter (Ohio)**, which raised \$200,000 for the project.

The plaza features a full-scale replica—in stainless steel—of the Wright 1909 Flyer. It is raised off the ground by two girders that sit on a platform circled by granite panels. The plaza is paved with granite bricks.

The dedication ceremony took place exactly 94 years after the US Army Signal Corps purchased the 1909 Flyer from the Wright brothers of Dayton, Ohio, for \$30,000. Signal Corps Airplane No. 1, as it was called, was the world's first military heavier-than-air flying machine. First Lt. Frank P. Lahm, 2nd Lt. Frederic E. Humphreys, and 1st Lt. Benjamin D. Foulois learned to fly it before No. 1 was retired and given to the Smithsonian in 1911.

The ribbon-cutters at the ceremony for the memorial plaza were chapter member James R. Heitz, chairman of the project; Steve Brown, the memo-

rial's architect; Larry Godwin, the sculptor; Lt. Gen. Richard V. Reynolds, commander of the Aeronautical Systems Center at Wright-Patterson; Jon S. Ogg, an ASC official who first thought of the memorial; and chapter member Samuel E. Greenwood.

Chapter President Ronald E. Thompson said most of the funds raised for the plaza came from the efforts of Greenwood. He is chairman of Greentree Group, a professional services consulting company in Beavercreek, Ohio.

Thompson said the chapter raised funds for the memorial over a period of 16 months and has ordered bronze statues of Orville Wright and Wilbur Wright to add to the plaza.

The memorial plaza is at Gate 1B and is accessible to the public.

Dayton Air Show

Earlier in the summer, the **Wright Memorial Chapter** participated in what Chapter President Thompson called "the center of the universe" for air shows.

He was describing the 2003 Vectren Dayton Air Show, a four-day event that took place on 135 acres at the Dayton Airport. More than 100 aircraft were on hand, ranging from replicas of gliders and flyers constructed by the Wright brothers to an F-117 attack aircraft and a Predator un-

manned aerial vehicle. Three aerial demonstration teams—the Air Force Thunderbirds, the Navy's Blue Angels, and the Canadian Forces Snowbirds—performed overhead, as well as several aerobatic teams.

The Wright Memorial Chapter hosted two tents, called chalets, on the flight line. They welcomed VIP visitors to the air-conditioned enclosures for lunch, refreshments, and a good view of air show events. Among those stopping by were Gen. Lester L. Lyles, then commander of Air Force Materiel Command at Wright-Patterson AFB, Ohio; Maj. Gen. Daniel Bastien, defense attache from the embassy of France in Washington, D.C.; and Congressional staffers Joni Higgins and Laura Parker. Higgins and Parker are from the D.C. offices of, respectively, Ohio's Republican Senators George V. Voinovich and Mike DeWine.

According to Thompson, nearly 2,000 guests, mostly from the base, enjoyed the hospitality of the chapter's flight-line chalet. The air show's web site estimated that more than 160,000 people attended the event, which has been held in Dayton since the 1970s.

Monument Maintenance

The **Central Oklahoma (Gerrity) Chapter** donated \$4,000 to the local Chamber of Commerce to help refurbish

Air Force Association Balance Sheet

	Dec. 31, 2002			Dec. 31, 2001		
	General Fund	Life Membership Fund	Total	General Fund	Life Membership Fund	Total
Assets						
Cash and Investments	3,533,519	11,352,489	14,886,008	2,871,675	12,984,899	15,856,574
Accounts Receivable	1,422,863	230,568	1,653,431	1,866,404	256,403	2,122,807
Prepaid Expenses	178,347		178,347	468,386		468,386
Inventory	97,585		97,585	108,589		108,589
Property and Equipment (net of depreciation)	9,998,920		9,998,920	10,318,978		10,318,978
Prepaid Pension	5,466,559		5,466,559	5,154,381		5,154,381
Other Assets	1,478,117		1,478,117	1,467,609		1,467,609
Total Assets	22,175,910	11,583,057	33,758,967	22,256,022	13,241,302	35,497,324
Liabilities and Net Assets						
<i>Liabilities</i>						
Accounts Payable	836,068		836,068	683,305		683,305
Premium Refund Payable	383,364		383,364	365,904		365,904
Accrued Expenses	471,025		471,025	697,972		697,972
Deferred Revenue	1,467,828		1,467,828	1,750,165		1,750,165
Note Payable	1,060,000		1,060,000	1,180,000		1,180,000
Total Liabilities	4,218,285	0	4,218,285	4,677,346	0	4,677,346
<i>Net Assets—Unrestricted</i>						
Undesignated	16,158,927		16,158,927	15,779,978		15,779,978
Designated	1,798,698	11,583,057	13,381,755	1,798,698	13,241,302	15,040,000
Total Net Assets	17,957,625	11,583,057	29,540,682	17,578,676	13,241,302	30,819,978
Total Liabilities and Net Assets	22,175,910	11,583,057	33,758,967	22,256,022	13,241,302	35,497,324

bish an Air Force monument in downtown Oklahoma City.

The funds came from chapter members and the booster club of the Oklahoma City Air Logistics Center's Logistics Directorate at Tinker AFB, Okla.

Originally built in 1964 with \$23,000 raised by employees from Tinker, the monument features a 12-foot-tall statue of a figure representing the Air Force. An obelisk about 40 feet high backs the statue.

Ross B. Lampert, chapter president, explained that granite panels have fallen off the edifice, located in Kerr Park. The chapter's donation is to help ensure not only immediate repairs but future upkeep.

Lampert presented the chapter's donation to Richard A. Burpee, president of the Chamber of Commerce and a chapter member, during a July rededication ceremony for the memorial.

Among the guests at the ceremony were city government officials; Maj. Gen. Charles L. Johnson II, Oklahoma City ALC commander; Leonard McMurray, the artist; and Wayne Baughman, the model for the sculpture. Baughman, who grew up in Oklahoma, was a USAF lieutenant and competed on the US Olympic wrestling team in the year the monument was built. He also competed in the 1968 and 1972 Olympics and has been the Air Force Academy's wrestling coach since 1988.

Lampert said the chapter plans to raise another \$1,000 for the monument this fall.

Florida State Convention

At the Florida State Convention hosted by the **Col. Loren D. Evenson Chapter** at Tyndall AFB, Fla., in July, delegates had a chance to see the Air Force's state-of-the-art portable radar enhancement system.

Before the convention began, Maj. Gen. Craig R. McKinley, commander of 1st Air Force at Tyndall, participated in a ceremony that formally brought the Joint Based Expeditionary Connectivity Control Center into the USAF inventory. JBECC links ground and airborne radars, data links, and communications. It provides a better picture of the airspace and thus will help spot cruise missiles and low-flying aircraft. Among other locations, it has already been used at the President's ranch in Crawford, Tex., and in the Washington, D.C., area, said ANG Lt. Col. David L. Webster. He is the chapter president and, at the time of the convention, was chief of communication and information systems of the Southeast Air Defense Sector.

Air Force Association Comparative Statement of Revenues and Expenses

	Year Ended	
	Dec. 31, 2002	Dec. 31, 2001
General Fund		
Revenue		
Aerospace Technology Exposition	1,354,950	712,338
Building Operations	918,592	888,872
Convention	440,919	192,218
Industrial Associates	88,550	94,550
Insurance Programs	2,148,528	1,806,531
Investments	30,558	(65,854)
Magazine	1,420,248	1,456,425
Membership	4,008,640	4,213,596
Patrons	287,994	287,786
Other	399,405	438,370
Total Revenue	11,098,384	10,024,832
Expenses		
<i>Program Services:</i>		
Aerospace Technology Exposition	666,880	209,144
Convention	1,057,307	383,310
Industrial Associates	129,563	130,971
Insurance Programs	2,390,018	2,787,641
Magazine	1,168,702	1,142,994
Patrons	285,120	177,228
Total Program Service Expenses	5,697,590	4,831,288
<i>Supporting Services:</i>		
Building	535,923	496,763
Membership	4,485,922	4,279,682
Total Supporting Services Expenses	5,021,845	4,776,445
Total Expenses	10,719,435	9,670,733
Changes in Net Assets General Fund	378,949	417,099
Life Membership Fund		
Life memberships granted	309,743	373,225
Revenue from investments	(670,279)	145,350
Less: Transfer to General Fund for equivalent annual dues and other costs	(1,297,709)	(1,555,451)
Changes in Net Assets Life Membership Fund	(1,658,245)	(1,036,876)

Treasurer's Note: The figures presented herein have been extracted from audited financial statements submitted previously to the Board of Directors of the Air Force Association. Expenses include chapter commissions, state commissions, and other direct support for field units totaling \$462,641 in 2002 and \$463,820 in 2001.

The JBECC system of tents and radars was set up outside the base officers club, where the convention took place, and attendees were able to check it out in between work sessions.

To kick off the convention, 60 golfers hit the links at Tyndall's Pelican Point Golf Course. McKinley was in a foursome with retired Maj. Gen. Larry K. Arnold, his predecessor as head of 1st Air Force; Donald L. Peterson, AFA executive director; and Bruce E. Marshall, Florida Region president. The tournament raised approximately \$2,000 for scholarships, reported Webster.

McKinley later served as luncheon speaker for the convention, addressing the issue of homeland defense.

Peterson was the gathering's dinner speaker.

Raymond Turczynski Jr. was elected state president during the convention business session. He and the incoming VP, Emil M. Friedauer, are both from the **Hurlburt Chapter**. John T. Brock and Tommy G. Harrison, both from the **Central Florida Chapter**, will serve as secretary and treasurer, respectively.

About NORTHCOM

Gen. Ralph E. Eberhart, commander of NORAD and US Northern Command, was guest speaker for the sixth annual banquet co-hosted by the **Swamp Fox Chapter (S.C.)** and the Greater Sumter Chamber of Commerce in July.

AFA/AEF National Report

He addressed an audience of more than 200 guests, explaining the responsibilities of NORTHCOM. The new unified command—established Oct. 1, 2002—plans, organizes, and executes homeland defense and civil support missions.

The annual gathering, held at a local country club, brings together military and civilian leadership in Sumter, S.C. This year, it also honored William L. Austin as state Teacher of the Year. Austin teaches fifth-grade math and science at Pocala Springs Elementary School in Sumter. He retired from the Air Force after a 21-year career.

Other special guests at the dinner were Brig. Gen. Allen G. Peck, vice commander of 9th Air Force at Shaw AFB, S.C., and Rodgers K. Greenawalt, Southeast Region president.

David T. Hanson, South Carolina state president as well as Swamp Fox Chapter president, was master of ceremonies for the evening.

More AFA/AEF News

■ The **Edward J. Monaghan Chapter (Alaska)** presented \$250 scholarships to three airmen from the 3rd Maintenance Group at Elmendorf. A1C Andrew Hicks, A1C Dakota Smith, and A1C Jennifer Wiseman received their awards from Jacqueline Burdette, chapter president, at the 3rd MG's awards luncheon in July. The scholarships are named for the late chapter member Don H. Delk, who was a civilian maintenance supervisor at the base.

■ The **Iron Gate Chapter** and **Francis S. Gabreski Chapter** teamed up in New York to sponsor a contest for the best teachers' lesson plan and best student essay. Patricia Squicciarini, a fifth-grade teacher at Tooker Avenue Elementary School in West Babylon, N.Y., won an AEF Educator Grant with her lesson plan for creating a Long Island aviation heritage museum in her classroom. Athena Aicher, a fifth-grader at Saxton Middle School, Patchogue, N.Y., wrote the winning essay. The two chapters hosted a reception for the winners at the Cradle of Aviation Museum in Garden City, N.Y., in July. Alphonse

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.

Parise, Gabreski Chapter president, and Wilfred G. Mackey, Irongate's VP for aerospace education, were on hand, along with Colleen McKean, *USA Today* regional education direc-

tor. Educator Grants are \$250 awards that teachers may use for special aerospace activities, such as field trips, books, or items not covered in their budgets. ■

Unit Reunions

reunions@afa.org

178th FW pilots, Ohio ANG. Oct. 24-25 at the Springfield ANGB-Beckley Airport, Ohio. **Contact:** Maj. J. DeNezza (937-327-2201) (jnyvegas@aol.com).

496th FIS. Oct. 20-23 at the Palace Hotel Casino and Resort in Biloxi, MS. **Contacts:** Larry Rouse (228-392-5645) (lhrundriver@aol.com) or Gil Estrada (228-374-2387) (greywolfbil@msn.com).

564th SMS/MS. Oct. 10 at Malmstrom AFB, MT. **Contact:** Capt. Brande Walton (406-731-6880) (brande.walton@malmstrom.af.mil).

AC-119 gunship reunion, including aircrew, maintenance, and family. Oct. 4-6 at the Sheraton Four Points in Fort Walton Beach, FL. **Contacts:** Wayne Laessig (707-592-4492) (qadvocate@msn.com) or Jim Terry (707-422-6774) (shadow70@sbcglobal.net) (<http://www.ac-119gunships.com>).

Iwo Jima Veterans & Family Assn. Feb. 18-22, 2004, at the Radisson Hotel and Suites in Wichita Falls, TX. **Contact:** Howard Phillips, 978 Orangetown Dr., Brea, CA 92821-2514 (714-990-2560) (iwojimavets_family@sbcglobal.net).

Yokota/Kadena ABs, Japan, Combat Apple vets (1967-76). Feb. 8, 2004, Caribbean cruise

departing from Fort Lauderdale, FL. **Contacts:** Robb Hoover (402-292-6616) (robhhoover@aol.com) or George Back (216-663-7046) (rb47290@aol.com).

Seeking members of the **77th FS** for a possible reunion. **Contact:** Lt. Col. David Stilwell (david.stilwell@shaw.af.mil).

For a possible reunion in Branson, MO, seeking American veterans who **enlisted underage**. **Contact:** Robert Thorpe, 6616 E. Buss Rd., Clinton, WI 53525 (608-676-4925).

Seeking members of the **Navy Photo-material Unit**, Inyokern and China Lake, CA (1951-53) for a possible reunion. **Contact:** Otha A. Clark (919-778-6359) (oclark@mymailstation.com). ■

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.

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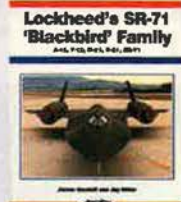
100 Years of Flight: A Chronicle of Aerospace History 1903-2003. Frank H. Winter and F. Robert van der Linden. American Institute of Aeronautics and Astronautics, Reston, VA (800-682-2422). 524 pages. \$39.95.



The Dambusters. John Sweetman, David Coward, and Gary Johnstone. Trafalgar Square Publishing, North Pomfret, VT (800-423-4525). 192 pages. \$24.95.



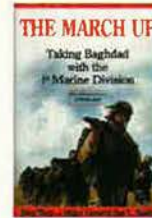
Lockheed's SR-71 'Blackbird' Family: A-12, F-12, M-21, D-21, SR-71. James Goodall and Jay Miller. Specialty Press Publishers and Wholesalers, North Branch, MN (800-895-4585). 128 pages. \$24.95.



The 370th Fighter Group in World War II: In Action Over Europe With the P-38 and P-51. Jay Jones. Schiffer Publishing, Ltd., Atglen, PA (610-593-1777). 448 pages. \$59.95.



Dog-Fight: Aerial Tactics of the Aces of World War I. Norman Franks. Stackpole Books, Mechanicsburg, PA (800-732-3669). 256 pages. \$34.95.



The March Up: Taking Baghdad With the 1st Marine Division. Bing West and Maj. Gen. Ray L. Smith, USMC (Ret.). Bantam Dell Publishing, New York (800-726-0600). 289 pages. \$24.95.

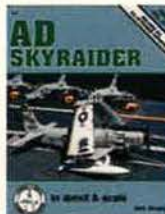
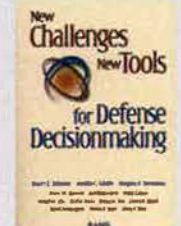
Absolutely American: Four Years at West Point. David Lipsky. Houghton Mifflin, Boston (800-225-3362). 317 pages. \$25.00.



First Over Japan: An Autobiography of a Doolittle-Tokyo Raider. Col. Jack A. Sims, USAF (Ret.), with A.B. Cook. Order from: Southpointe Press, Fort Meyers, FL (239-267-4448). 118 pages. \$31.95.



New Challenges, New Tools for Defense Decision-making. Stuart E. Johnson, Martin C. Libicki, Gregory F. Treverton, et al. RAND, Santa Monica, CA (877-584-8642). 390 pages. \$40.00 (also available at www.rand.org/publications).



AD Skyraider in Detail and Scale. Bert Kinzey. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 79 pages. \$14.95.



Flattop Fighting in World War II: The Battles Between American and Japanese Aircraft Carriers. Patrick Degan. McFarland and Co., Jefferson, NC (800-253-2187). 318 pages. \$35.00.



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Air Support for Patton's Third Army. John J. Sullivan. McFarland and Co., Jefferson, NC (800-253-2187). 186 pages. \$42.50.



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Forgotten Fields of America, Vol. III: World War II Bases and Training Then and Now. Lou Thole. Pictorial Histories Publishing, Co., Missoula, MT (406-549-8488). 177 pages. \$17.95.

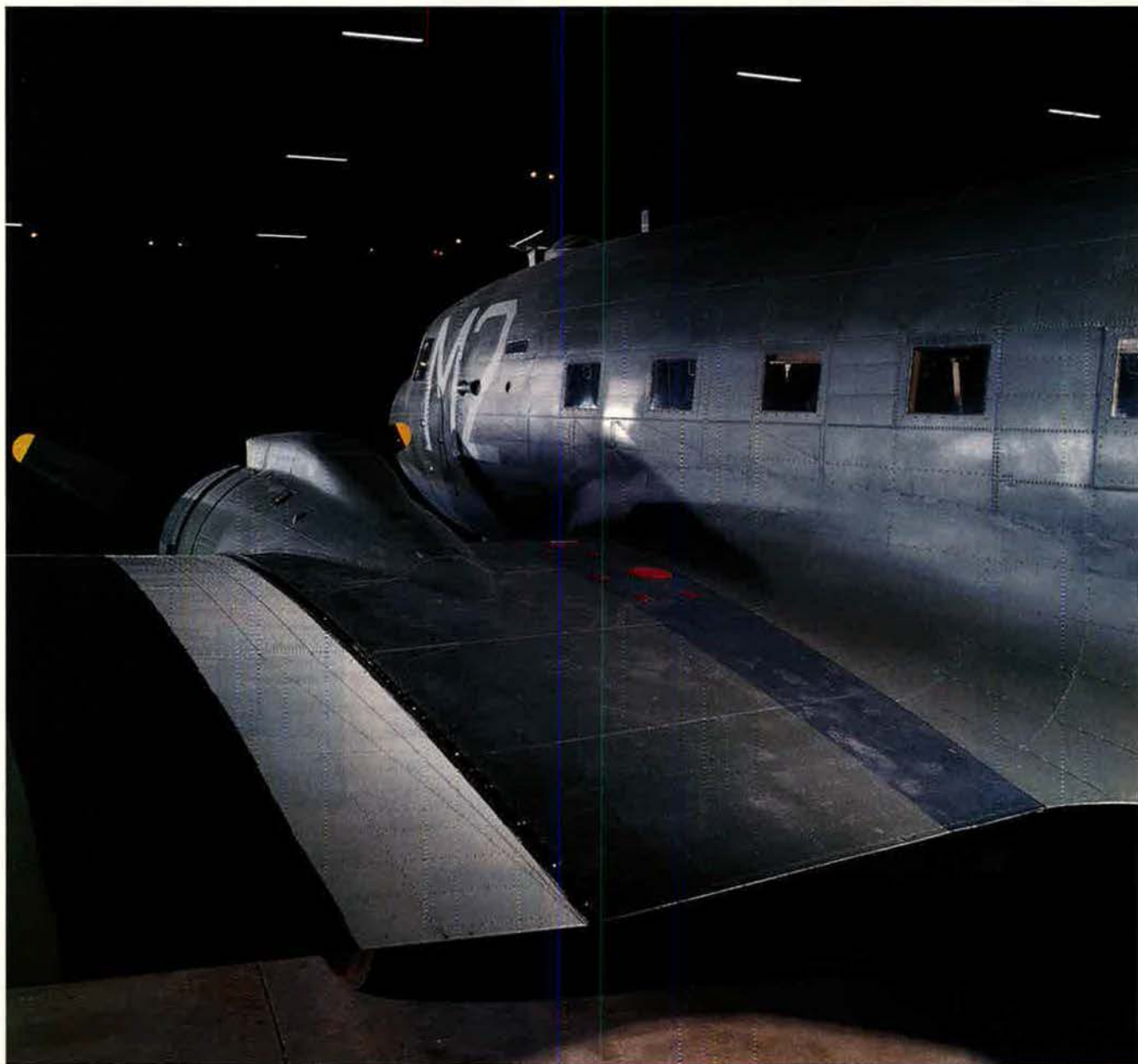


The US Army and the New National Security Strategy. Lynn E. Davis and Jeremy Shapiro, eds. RAND, Santa Monica, CA (877-584-8642). 307 pages. \$30.00 (also available at www.rand.org/publications).

Pieces of History

Photography by Paul Kennedy

Gooney Bird



Douglas' C-47, which began life on Dec. 17, 1935, as the DC-3 Douglas Sleeper Transport, soon went military and served in three wars—World War II, Korea, and Vietnam—and the Berlin Airlift, not to mention other scrapes. Few aircraft were as well-known or long-lived. Its official name was Skytrain, but, along the way, it was unofficially rechristened "Gooney Bird," and the name stuck. C-47s have

hailed supplies, carried paratroopers, evacuated wounded, and dropped flares to guide bomb runs. This C-47D—S/N 43-49507—is on display at the US Air Force Museum. It was the last Gooney Bird in routine USAF use. It was flown to the museum in 1975.

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