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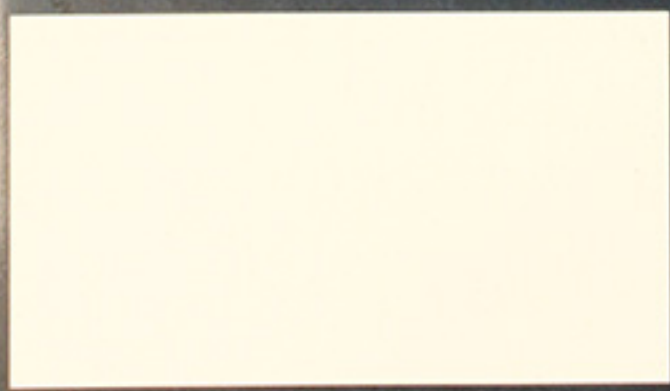
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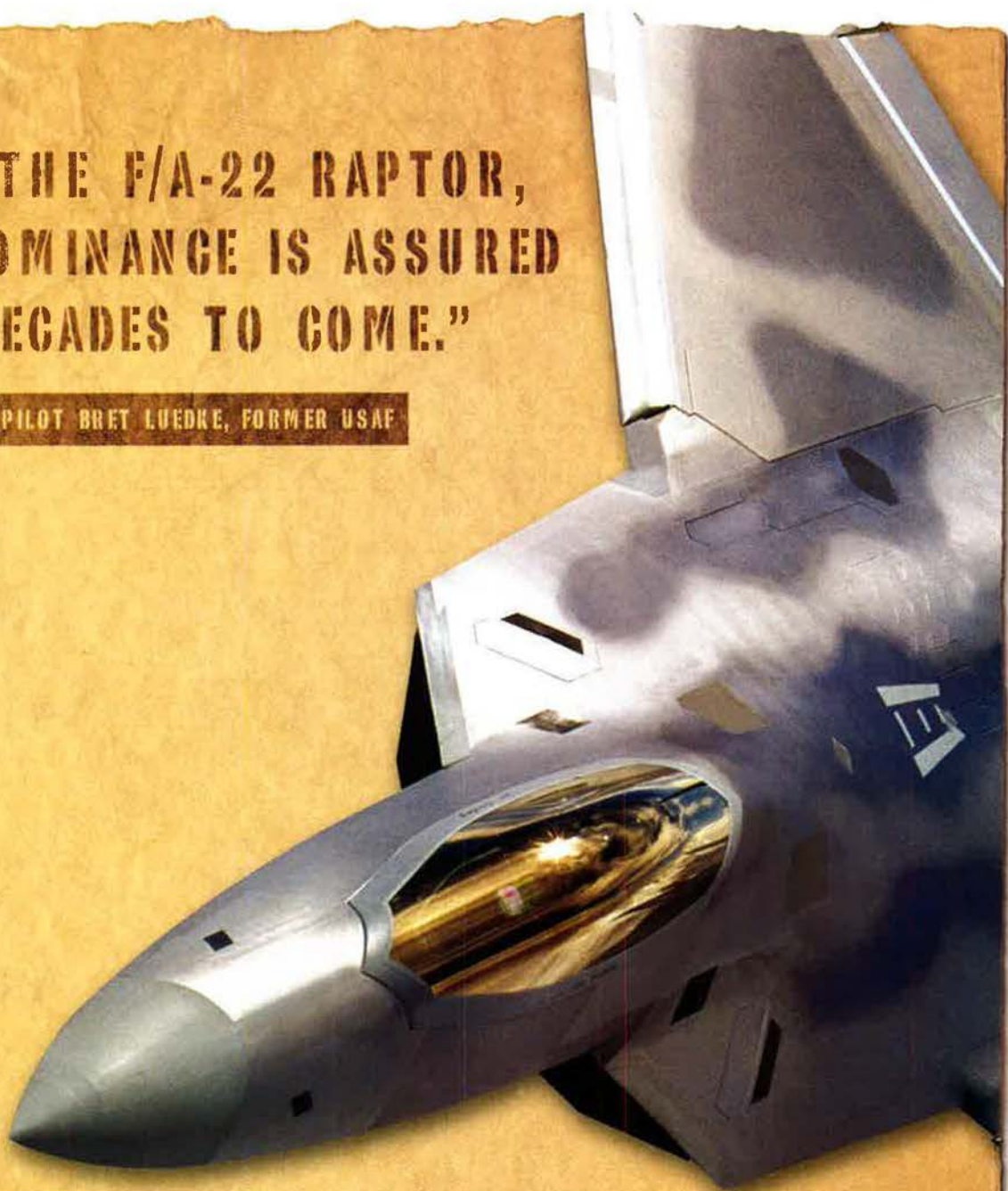
Long-Range Strike in a Hurry

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November 2004, Vol. 87, No. 11

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- 4 Letters
- 14 Aerospace World
- 21 Senior Staff Changes
- 22 Index to Advertisers
- 23 Action in Congress
- 33 Verbatim
- 55 This Is AFA
- 106 Field Contacts
- 107 Books
- 108 AFA/AEF National Report
- 111 Unit Reunions
- 112 Pieces of History



About the cover: A B-2 refuels in midair. See "Long-Range Strike in a Hurry," p. 26. Photo by Ted Carlson.

2 **Editorial: Pressure on Pre-emption**
By Robert S. Dudney
Faced with a mortal threat, the US must have the will to strike first and hard.

10 **Washington Watch**
By John A. Tirpak
Druyun Admits Guilt; B-2 Improvements Coming; F-35 Loses Weight

26 **Long-Range Strike in a Hurry**
By Adam J. Hebert
The Air Force has decided to speed up its bomber replacement with a "system of systems" approach.

34 **Things To Come**
By John A. Tirpak
Gen. Gregory Martin says USAF is looking for capabilities that will redefine air warfare—again.

40 **The Sharper Talon**
Photography by Greg L. Davis
The T-38C has the basic T-38 airframe, but it is an altogether different bird to fly.

46 **Sense-and-Respond Logistics**
By George Cahlink
Soon, a computer-based system will decide who gets what supplies, and when.

50 **Swamp of Terror in the Sahara**
By Stewart M. Powell
Vast, trackless, and ungoverned, Africa's sprawling desert is now a magnet for terrorists.



46

56 **Igloo White**
By John T. Correll
It began as "the McNamara Line" across Vietnam. It led to the seeding of the Ho Chi Minh Trail by air with 20,000 sensors.

62 **Poles Apart**
By Bruce D. Callander
For Byrd and Balchen, the epic South Pole flight began 75 years ago this month.

66 **Air & Space Conference**
By Robert S. Dudney
AFA's first-ever conference was an event unique in the business of airpower.

70 **Airpower and "The Long War"**
By John A. Tirpak and Peter Grier
The battle against terror is reshaping Air Force priorities.

80 **Technology Exposition**
Photography by Guy Aceto and Paul Kennedy

84 **The Outstanding Airmen**
By Tamar A. Mehuron

88 **AFA National Convention 2004**
By Tamar A. Mehuron

94 **Air and Space Power and the Nation at War**
The Air Force Association 2005 Statement of Policy, adopted by the delegates to the AFA National Convention meeting on Sept. 12, 2004, in Washington, D.C.

99 **Awards**
By Tamar A. Mehuron
These are the Air Force Association National Awards for 2004.

105 **Councils**
Air Force and AFA councils appointed for 2004-05.

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By Robert S. Dudney, Editor in Chief

Pressure on Pre-emption

COUNT Bush's Doctrine of Pre-emption as a Casualty of the Iraq War," declared a recent headline in the *Los Angeles Times*.

The *Times* reported that, while the ouster of Saddam Hussein initially stoked public enthusiasm for preventive war, political support was blown apart by America's failure to find banned weapons, a bloody postwar occupation, and massive cost.

Pre-emption is not necessarily dead, said the newspaper, but the public won't go for another "regime change" war anytime soon.

If the overall concept of pre-emption acquires too negative an image, the US could lose a potentially valuable tool in the war on terror.

No one doubts that fanatical terrorists are seeking horror weapons to use against us. The leaders of al Qaeda openly declare their determination to inflict mass casualties and economic devastation with nukes, germs, and poisons.

Rogue states are possible sources of such weapons. The need to ward off apocalyptic attacks—especially a nuclear one—may force Washington to disarm more of these states. Faced with a mortal threat, the US must have the will to strike first and hard.

In 2002, the Air Force Association stated, "We agree fully with the policy ... that we will hold open the option for pre-emptive action if that is needed in order to forestall destructive acts against us." AFA recently noted the key role of airpower. (AFA's Statement of Policy begins on p. 94 and is posted at www.afa.org.)

All US presidents have reserved a right to pre-empt an imminent threat to national security. George W. Bush—spurred by the Sept. 11 attacks—openly codified this view. In his 2002 "National Security Strategy of the United States of America," Bush asserted a right to disarm any nation whose weapons of mass destruction directly threaten us or could be given to terrorists.

It is worth noting that Sen. John Kerry, in the presidential campaign,

also claimed "the right to pre-empt in any way necessary to protect the United States of America."

A key point, however, is that Bush's stance went beyond traditional "anticipatory self-defense." Pre-emption, he noted, need not be reserved for an urgent threat (such as an imminent missile attack). It could also be used against a regime to prevent a "gathering" danger from ever materializing.

Faced with a mortal threat, the US must have the will to strike first and hard.

Bush reasoned that, if a suspect state never acquired terror weapons, it could never supply them to terrorists. Conversely, once it had them, it would be too late to prevent their spread.

Critics argue that pre-emption requires US leaders to have near-perfect threat intelligence, a standard Washington will never be able to approach.

These opponents of preventive war cite Iraq as Exhibit A for their case. Under the circumstances that existed in 2003, they say, the US had no business taking the risk of going to war.

The fact that Iraq possessed no stockpiles of weapons of mass destruction reflects poorly on the world's major intelligence services, all of whom said they existed. However, it didn't necessarily nullify Bush's decision to go to war, given the data with which the US had to work.

It won't be the last time a president confronts the need to make a high-stakes decision on the basis of sketchy knowledge.

Bush and Kerry agreed that the principal danger to the nation was nuclear proliferation. The nightmare is that terrorists will get their hands on a nuclear weapon, smuggle it into New York or some other major city, and detonate

it. That kind of nuclear attack could instantly cause 500,000 deaths.

Who might supply the weapons for such an "American Hiroshima"?

At present, worried attention has begun to focus on Iran, the world's No. 1 state sponsor of terrorism. Tehran is thought to be within a few years of producing an indigenous bomb.

Iranian nukes, if built, will rest in the hands of fanatical Islamic mullahs who are hostile to America and who are on close personal terms with some of the world's most cold-blooded killers.

The critics are wrong if they think the US can afford to rule out pre-emption as one possible means for coping with this problem.

Without question, pre-emption brings risks. In purely military terms, the US must make sure it strikes the right target. It also must have high confidence that pre-emption can succeed.

The critical question is how Washington can make sound decisions about pre-emptive war with less-than-perfect knowledge.

The record is not good. Proliferation expert Henry Sokolski, writing in *The Weekly Standard*, cataloged some of the surprises experienced by the US over the years: Russia's first nuclear test in 1949; India's in 1974 and 1998; Israel's efforts in the 1960s; and the actions of Iraq, Iran, Pakistan, and North Korea in the 1970s, 1980s, and 1990s.

Given the record, one should not expect unambiguous intelligence.

The US was never likely to go off on a binge of pre-emption. The problems in Iraq make that even less likely. Time-tested concepts of deterrence and containment are available, as are diplomacy and sanctions. Pre-emption should be viewed as simply one of many implements in the nation's security tool kit.

Americans may now be more reluctant to pre-empt, and the bar to such action may be higher, but, in the current world situation, the US is in no position to be giving up any of its options. ■



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It's Tentative

I found the article on B-52 upgrades very informative. (See "Washington Watch: Toward an 80-Year-Old BUFF," September, p. 14.) However, I was dismayed to see that USAF support for re-engining still appears tentative.

A March 2003 report by the Defense Science Board Task Force on B-52 Re-Engining established the strongest rationale yet for this program. They determined the reduced fuel burn would yield a greater than 40 percent range increase in some scenarios and cut required tanker support by up to two-thirds. Economic benefits were equally striking. The projected savings exceed \$13 billion and are rising as fast as the price of oil.

The report also offered a solution to financing this program—the Energy Savings Performance Contract authorized by Executive Order 13123 in 1999. Under this arrangement the private sector would fund the project and be paid back with annual savings until the negotiated "loan" was paid off. USAF would receive the operational and economic benefits of re-engining for the same price as if using the TF33 engine. Seems like a good approach!

The DSB made a compelling case for re-engining the B-52H, but a year-and-a-half has passed without further word on this subject. If we are going to keep the B-52 and contemplate scenarios where range is a key attribute, doesn't re-engining make sense? If we are unable to maintain an adequate number of tankers, shouldn't we work the other end of the problem and develop more fuel-efficient receivers? If we have a way to fund this program with zero impact to the annual budget, shouldn't we use it? It's time to get off the dime and get moving on this very appropriate program. The operators need it, and the taxpayers deserve it.

Col. Ron Thurlow,
USAF (Ret.)
Beavercreek, Ohio

They'll Last Longer

The Air Force Fleet Viability Board is to be commended for its review of the C-5A. The board's conclusion that

C-5As are structurally sound, that ongoing modernization programs pay significant benefits to the Air Force, and that the fleet can effectively serve for decades to come should be reassuring to key decision-makers. Your recent article, however, mistakenly states that C-5As could probably fly to 30,000 flight hours. (See "Washington Watch: USAF: C-5As Could Be Upgraded," September, p. 12.)

C-5As were re-winged in the 1980s, and Air Force studies affirm that they can serve through 45,000 flight hours (or approximately 2040, at current usage rates). It is worth noting that the C-5A fleet has fewer flying hours on its wings than the C-5B. The Air Force's approved acquisition strategy supports modernizing the entire C-5 fleet, and with approximately 70 percent of service life remaining, this simply makes sense. Air Force and industry studies repeatedly show the fiscal value of C-5 modernization and that these programs will deliver the reliability, maintainability, and availability expected by the warfighter.

Mark F. Johnston
Fort Worth, Tex.

■ *Mr. Johnston is correct. The board said the C-5A could probably run to 45,000 hours. Without modifications, the service life is expected to be 30,000 hours.—THE EDITORS*

Tommy Franks and Jointness

You correctly take Gen. Tommy R. Franks to task for attacking the separate services (and even the Joint Staff) for "nitpicking" his Afghan War

plan and for his proposal that service Chiefs be excluded from Iraq War planning because they had insufficient joint background "to be operationally useful." (See "Editorial: Listening to General Franks," September, p. 4.) However, the problem of "jointness" and unified commands is more serious than you indicate and is now reaching a crisis of epic proportions. Your analysis should be extended.

When I studied matters of joint responsibilities as an Air Staff member (1963-66), it seemed obvious that the Defense Reorganization Act of 1958 was schizophrenic in concept.

The "unified command" was born of the misplaced conclusion that while we won World War II, our victory was the product of the "wrong" organization. I remain astonished that anyone would still believe that we could have combined MacArthur, Nimitz, and Arnold (the official commander of the Pacific B-29s) into a single "unified" command. As to Europe, Eisenhower did not have real control over the strategic bombers. My worry is a bit different.

As the Iraq War demonstrated, logistics operations [have been] turned over to private contractors who may or may not be prepared to function within theaters that are not completely "safe." We now have military forces without mess sergeants, but with contractor-operated kitchens that may shut down when danger arises. Logistics support is constantly threatened by insurgents who are learning to instill fear in contractors by kidnapping employees. The split responsibilities of the 1958 reorganization have produced a wholly military combat operation supported by a wholly civilian logistics operation that even has to provide for its own security forces.

The replacement of military logistics with a purely civilian operation is something we all should worry about. Troops in the field are not well-served by towels that bear the logo of civilian contractors, nor by mess halls that threaten to close down because the prime contractor has not paid a

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

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Col. Frederick Thayer,
USAF (Ret.)
Pittsburgh

Remembering the Vietnam War

Thank you for the flood of memories. [See "The Vietnam War Almanac," September, p. 42.] I was a tactical air controller and later operations officer at the 505th Tactical Control Group, Tan Son Nhut ("Paris Control") from February 1968 to February 1969. I enjoyed the pleasure and privilege of working with some of the finest aircrews and ground radar controllers anywhere. Although the volume of air traffic was incredible, we never experienced one aircraft accident, but had a lot of close calls with bad weather, hung ordnance, etc. I feel very proud to have been a member of a great team when the term warrior really meant something!

Col. George A. Moyer Jr.,
USAF (Ret.)
Honolulu

I was assigned to the 8th Aerial Port Squadron, Tan Son Nhut AB, Vietnam, from 1966-67, as a transportation staff sergeant assigned to the vehicle dispatch and maintenance section. One of my duties was flying to all our aerial port detachments up and down South Vietnam, inventorying vehicles (Army and Marine GIs had a habit of "borrowing" forklifts to sustain their operations, because they had a difficult time getting their own from the supply system). I took many photographs of Vietnam, including some over strike zone craters, with smoke still billowing as we flew over the country. Your September article brought back many memories of my tour.

Thank you for bringing us a recollection of that war. You could have used the entire issue and still not covered all, but I'm pleased with the article as it does most of us "Nam" vets proud!

CMSgt. Louis A. Georgieff,
USAF (Ret.)
San Antonio

Articles in your last two issues assert that during the Vietnam War, the US military performed with "courage, competence, and honor" and "honor, courage, dedication, and capability." I agree completely with respect to the combat forces and most of their support brethren (of whom I was one in 1967-68). However, one reservation has always troubled me.

At Air Command and Staff College in 1972-73 and Air War College in 1979-80, flag-level speakers described

civilian mismanagement of air operations in Vietnam. Further, they said such mismanagement frustrated the proper employment of airpower and cost a significant number of American lives. The question I shall always regret not asking was, why didn't you retire and expose the abuses that were killing your subordinates and squandering the nation's reputation and opportunity for victory?

I recognize that it is easy to say what another man ought to have done, but in my view, officers who executed policies and decisions known at the time to be counterproductive for the nation and unnecessarily lethal to their subordinates did not perform honorably and courageously.

Col. Franklin P. Flatten,
USAF (Ret.)
Schertz, Tex.

I read the Vietnam Almanac with great interest. I enjoy reading the "Letters" column, noting that most address the writer's perception of omissions and errors. I have hesitated in the past to give my opinions, but since the time (1968-73) in my case does seem like yesterday, I felt compelled to fill in an important omission. During this period, B-52s were flying round-the-clock missions from Guam, U Tapao, and for a lesser period, from Okinawa. The almanac recognized the considerable B-52 effort but did not mention that Guam-originated sorties required air refueling (for D models both pre- and poststrike).

The bomber support mission was in addition to "Young Tiger" tanker support of fighter missions in Vietnam. The only mention of the refueling effort was a sentence that there were tankers at U Tapao and a photo of a KC-135 refueling F-105s.

During most of the Vietnam War, Strategic Air Command combat crews were deployed regularly to Southeast Asia on temporary duty status. These TDY tours ranged from 60 to 180 days. Eighth Air Force at Guam controlled activities of those crews and support personnel, plus tanker operations for shorter periods at Clark AB, Philippines, and CCK air base in Taiwan.

To give an idea of the scope of the operation, during Linebacker II there were 200 B-52s, both D and G models, on Guam, supported by 100 Kadena-based KC-135s and 45 B-52Ds and 25 tankers at U Tapao. The Guam missions were long, with minimum legal crew rest between flights. Not a real fun time for those crews.

Col. Jack Tetrick,
USAF (Ret.)
Port Orange, Fla.



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F-16



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F-35



C-17



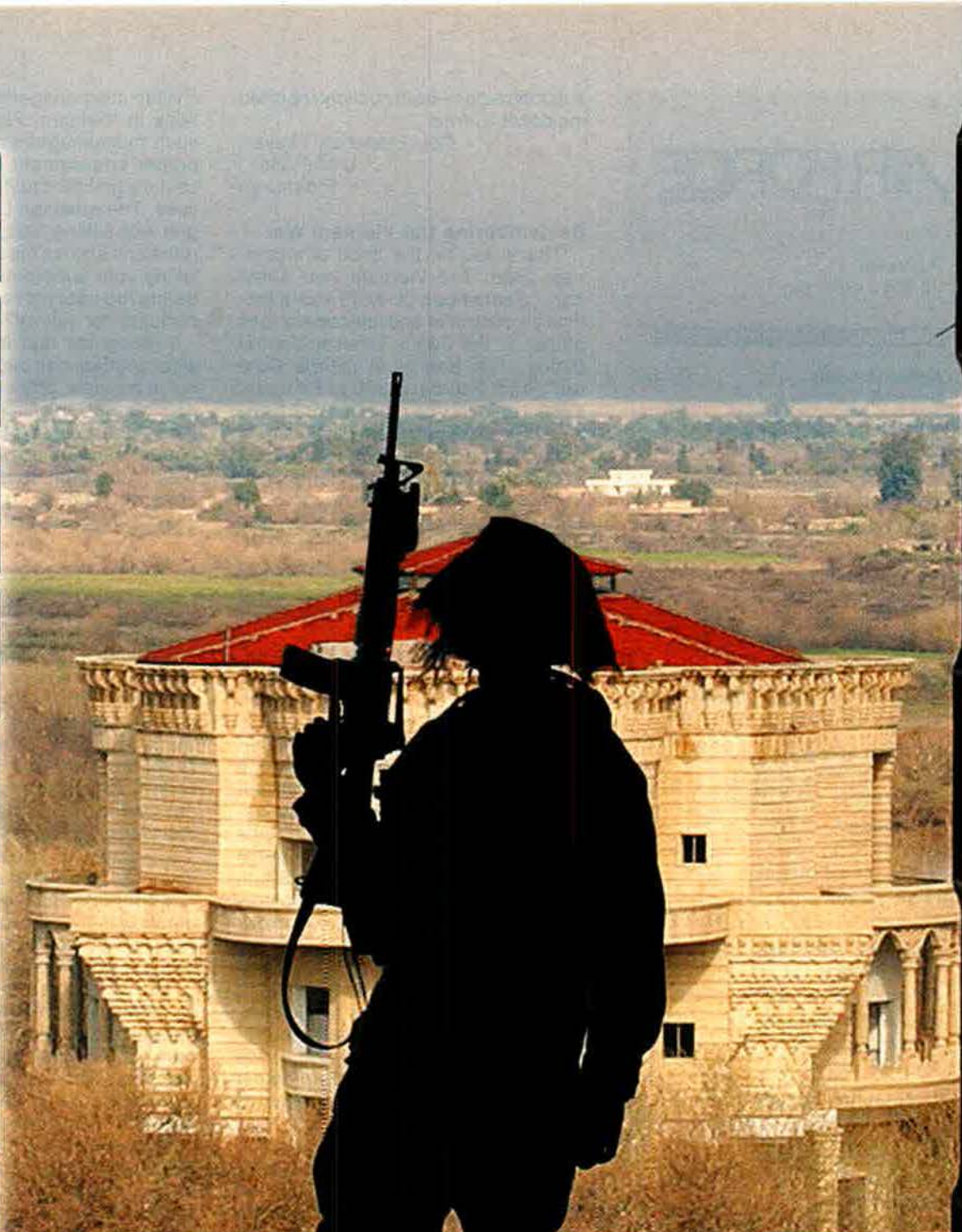
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I enjoyed your September article and appreciate seeing the photos of the MiG-17 from my gun camera on p. 55. However, the photos are printed from reverse image. The MiG-17 was in a downward left turn with the left wing down. The 20 mm shell entered his left wing and exploded into his left fuel tank and the ensuing fire was attached to his left wing. I regret that my photos are often published in reverse image.

Col. Ralph L. Kuster Jr.,
USAF (Ret.)
San Antonio

■ *We were provided the images as shown, but, having heard from Colonel Kuster, we plan to print them in the correct view in a larger version of the Vietnam Almanac to be published in December by the Aerospace Education Foundation.—THE EDITORS*

On p. 63, the caption below the C-130 photograph says "C-130s resupplied the Marine garrison under siege at Khe Sanh." You left out the C-123s of the 315th. Early in the Khe Sanh siege the C-130s had to stop landing because they kept getting holes punched in their "wet" wings. That left the C-123s, with their self-sealing fuel tanks, to continue landing to deliver stuff that couldn't be air-dropped, such as 155 mm shells, and to deliver replacements and pick up the wounded and killed in action. I know because I was there with the 311th Air Commando Squadron.

The marines were so appreciative that they presented each aircrew member who landed at Khe Sanh with the Marine Corps Presidential Citation. The ribbon really stands out among the various Air Force decorations.

Col. Emmett A. Niblack Jr.,
USAF (Ret.)
Highlands, N.C.

It would appear that the sources from Col. Perry Lamy and the Nov. 30, 1973, USAF Operations Report are incomplete. There was another component of the 3rd Tactical Fighter Wing at Bien Hoa that played a vital role in the war effort, and that was the A-37 community.

I was a young lieutenant in the 604th Special Operations Squadron, call sign RAP, from late 1969 to late 1970. I had originally deployed from England AFB, La., as a member of what became known as the 90th Attack Squadron, which joined the newly formed 8th AS, making the 3rd TFW a four squadron wing—604th, 8th,

90th, and the 531st Tactical Fighter Squadron, an F-100 unit. In fact, the 604th SOS, I think, had been at Bien Hoa since 1968, and, when the 531st [deactivated] in early 1970, the 3rd TFW became an all A-37 wing.

Also, the chronology might have included the initial attacks into Cambodia on April 1, 1970. Our three A-37 squadrons flew a slew of sorties deep into Cambodia on that day and continued to fly significant numbers throughout the next few days. Every pilot and airplane was on alert starting at 0001 hours on the 1st, and I remember that we launched just about everybody by sunrise.

We weren't very big, but we could deliver some nasty ordnance with some awesome accuracy. Our "business cards" had the saying, "When you care enough to expend the very best, wire RAP, Bien Hoa."

Lt. Col. Stephen C. Mish,
USAF (Ret.)
Corinth, Tex.

Mr. John T. Correll presents a well-documented account of the US Air Force involvement ("by the numbers") and the chronology of events during the period from 1960 to the fall of Saigon in April 1975. However, after finishing the last sentence of the article, my mind kept asking a question which resurfaced again and again as I read through the article. I wanted to know: Where's the recon?

During the entire conduct of the war, a tremendous reconnaissance effort was put forth by the dedicated and highly motivated flight crews and aircraft maintenance, security service, and support personnel of the 55th Strategic Reconnaissance Wing, the 82nd Strategic Reconnaissance Squadron, the 9th Strategic Reconnaissance Wing, and the 6990th Security Squadron.

Flight crews from the 55th flew combat missions in RB-47 aircraft from Yokota AB, Japan, and Bien Hoa/Da Nang, South Vietnam. On April 30, 1965, an RB-47 flew a route that took the aircraft south along the North Vietnam coast from the China-North Vietnam border to the DMZ.

The 82nd Reconnaissance Squadron flew RC-135 M "Combat Apple" missions from Kadena AB, Okinawa. Security squadron personnel were on these flights. The 82nd had only five aircraft to provide 24-hour, 365-day electronic intelligence/communications intelligence coverage of the combat zone over North and South Vietnam. The missions lasted about 18 hours (12 hours on station) and

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Letters

required two aerial refuelings. Every crew flew one of these missions three to four times a month. Over the course of the war, that was a lot of gas and a lot of flight time. It was a maximum effort by an outstanding organization. The 82nd SRS was awarded the Cullen Trophy for Outstanding Reconnaissance in 1970.

The 9th Strategic Reconnaissance Wing flew the SR-71 Blackbird "Giant Scale" missions which provided high-quality photo and radar imagery of the entire North Vietnam combat zone and then some. The North Vietnamese continuously attempted to track and shoot down one of the Blackbirds but were never fast enough on the draw.

Maj. George V. Back,
USAF (Ret.)
Navarre, Fla.

You had an excellent summary of our force activity. I looked in vain for reference to the contributions of the U-2, but assumed that since your USAF Order of Battle listed only attack aircraft, we were in the "other" category listing.

In the chronology section of the article you state that the Air Force moved aircraft into Southeast Asia in force in August 1964. The U-2s arrived at Bien Hoa on Feb. 14, 1964, at which time they began routine daily flights over North Vietnam, Cambodia, and Laos. On April 5, 1965, the U-2 found the first evidence of SA-2 sites being deployed around Hanoi.

By the end of 1965, 56 SAM sites had been identified. As one of the longest "in theater" aircraft, the U-2 squadron flew their last mission in SEA from U Tapao on March 15, 1976, for a total of over 12 years in the theater. The U-2 organization received their third Outstanding Unit Award for their early work in SEA.

Maj. Gen. Pat Halloran,
USAF (Ret.)
Colorado Springs, Colo.

Enjoyed your Vietnam Almanac issue very much; however, there is an error in a caption on p. 61 concerning the Medal of Honor presentation to John Levitow. His rank at that time was sergeant, not senior airman as stated.

Nelson Lee Ragan,
Former USAF sergeant
Odessa, Tex.

■ *Mr. Ragan is correct. Several readers caught the same error.*—THE EDITORS

In reviewing your disposal of aircraft in Thailand, there was no mention of gunships at Nakhon Phanom. The 18th Special Operations Squadron, flying AC-119 gunships, call sign Stinger, operated out of NKP during 1971 and 1972. I personally am aware of that. A detachment from the 18th was also deployed at Da Nang. Aircrew personnel were rotated between the two bases.

I was assigned to the 18th SOS in the fall of 1971. I flew my first combat mission on Oct. 6, 1971, from NKP and my last mission was on Nov. 4, 1972, from NKP. Shortly after that date, all aircraft were transferred to Vietnam. I believe that they were to be transferred to the Vietnam Air Force.

The 18th SOS operating from NKP flew missions primary in Laos. During my tour, the 18th had one plane shot down, losing three crew members. One other plane sustained considerable damage from anti-aircraft fire and had to make an emergency landing at another base in Thailand. Da Nang had one crew member die of wounds received during a rocket attack on the base. During another rocket attack, one AC-119, after just completing a mission, sustained considerable damage on the ground.

Lt. Col. Charles G. Waple Jr.,
USAF (Ret.)
Derby, Kan.

John T. Correll's article does not mention the contribution of the F-111As. There were three aircraft lost in 1968 during Combat Lancer and six aircraft lost in 1972 during Linebacker I and II. The total loss of crews was seven. All targets for the lost aircraft were in North Vietnam.

As far as I can remember, there were also two aircraft lost in the "other category." One in a midair [collision] over Cambodia in 1973 and the second a RTO at Tahkli made famous by a cartoon in your magazine.

Bill Wilson
Seattle

More on the Herk

Great article on the Herk. (See "The Immortal Hercules," August, p. 90.) One note: On p. 93 it says, "About 50 C-130s were lost in combat between 1965 and 1972. Few if any of the losses stemmed from accidents." Disregarding accidents in Taiwan, Okinawa, etc., related to the war effort, there were 66 Herk losses (62 USAF).

There were 31 combat losses: 22 USAF Slicks, six USAF gunships, one



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AFA's Mission

Educates the public about the critical role of aerospace power in the defense of our nation.

Advocates aerospace power and a strong national defense.

Supports the United States Air Force and the Air Force family.

MATS-USN, and two USMC KC-130Fs. There were 13 destroyed on the ground by sapper, rocket, and missile attacks. There were 22 accidents, of which 21 USAF Slicks were lost in accidents (not including five in Taiwan, one in Okinawa, and one USAF aircraft operated by the CIA lost in Laos), and one USMC 130 was lost in a midair. Thanks again for a great article about my favorite airplane.

Bob Daley
Dallas

Walter Boyne's article on the ubiquitous C-130 was welcome and timely. I know the virtues of the Herk myself, having transferred as a navigator from KB-50 tankers to the 61st Troop Carrier Squadron, 314th Troop Carrier Wing, in 1964. Comparatively, it was like getting into fighters!

However, I wanted to expand on and correct some of his comments about C-130s in the signals intelligence (Sigint) collection mission. Eight of the first batch of 10 modified C-130A-IIs went to the 7406th Support Squadron (USAFE) in 1958-60. PACAF's counterpart 6091st Reconnaissance Squadron received 12 updated C-130B-IIs (most of which eventually were transferred to the 7406th) in 1961.

The 7406th, together with the back-end crew members supplied by Air Force Security Service's Det. 1 of the 6911th Radio Group Mobile, received the first C-130s as replacements for their obsolescent RB-50s. Unfortunately, one of the first of the C-130s was shot down by Soviet MiG-17s over Soviet Armenia on Sept. 2, 1958, after an inadvertent penetration. Seventeen fine young men were lost.

But the units soldiered on and completed uncounted missions (probably thousands) in the C-130A-II, and later the C-130B-II, throughout the European and Middle East areas from then until 1974, when SAC's RC-135s assumed the mission. The USAF/AFSS aircrew combination contributed heavily to our growing understanding of Soviet, Warsaw Pact, and Middle Eastern target countries during this stressful period of the Cold War.

In the mid-1970s, three newer C-130Es were assigned to USAF's 7405th Operations Squadron, replacing old C-97s in the multisensor collection role in Europe. These Herks plied the Berlin Corridors and other European areas from then until just a few days before the formal reunification of Germany on Oct. 3, 1990, again providing vital intelligence in-

formation for our conduct of the Cold War.

The National Vigilance Park, adjacent to the National Security Agency at Ft. Meade, Md., has a C-130 on display as a memorial to the September 1958 loss (and to all personnel lost in the airborne Sigint effort). Also, the nearby National Cryptologic Museum can give you a better understanding of the sacrifices and accomplishments of these crews, support personnel, and indeed the entire Sigint community.

Lt. Col. John F. Bessette,
USAF (Ret.)
Springfield, Va.

C-124s in Hawaii

I have to agree with retired Col. Al Vivona, as I was stationed with the 50th Air Transport Squadron at Hickam AFB, Hawaii, from 1962 to 1965 and was the squadron operations clerk. (See "Letters: C-124s Were First," *September*, p. 6.) The 50th ATS flew the C-124s to places like Wake Island, Guam, Kadena, Tachikawa, Midway, Travis, McChord, and even back to Pope AFB, N.C., and Ft. Campbell, Ky. When we flew back to Pope and Ft. Campbell, it was for a one-week period to drop troops from the 101st and 82nd Airborne.

TSgt. Thomas A. Scheel,
USAF (Ret.)
West Chester, Pa.

More on Dien Bien Phu

The earlier role played by USAF personnel mentioned in the August article "Dien Bien Phu" [p. 78] was not accurately portrayed and indeed has never been officially and accurately recognized as it happened. I have been unable to find any official USAF history of this operation, although several civilian books have told part of the story. To me, a participant in this action, it is indeed ironic that the French Air Force has given USAF actions of 1953-54 more coverage in their 2003 history *Aviateurs en Indochine, Dien Bien Phu* than our own service has.

The statements in "Dien Bien Phu" that "France only requested use of 25 B-26s bombers and 400 USAF support personnel to maintain them" and that "Eisenhower sent only 10 B-26s and 200 airmen to maintain them" are not factual. After December 1950, US aircraft shipments started with 90 F-8F Bearcat fighters delivered to the French in Indochina in February-March 1951. In July 1951, five RB-26s arrived in-country and were turned over to the French. In December 1951, 33 B-26 bombers were renovated and turned over to the French at Tourane AB. In

March-April 1952, 10 C-47s were turned over, and in September-October 1952, some 60 additional C-47s were delivered.

These additional aircraft, however, completely overwhelmed the French maintenance capability, and as a result, in January 1953, approximately 28 USAF maintenance and support personnel from the 24th Air Depot Wing at Clark Field, Philippines, were dispatched to Nha Trang AB, Indochina, to provide needed support. This team remained at Nha Trang until August 1953. This was the first contingent of USAF personnel (outside of the MAAG) to be assigned to Vietnam.

When the French paraded into Dien Bien Phu on Nov. 20, 1953, they immediately discovered that they could not support the airlift requirement needed to maintain their new base. No land resupply was possible, so everything had to arrive by air. Consequently the French Air Force again requested support, and a detachment of C-119s from the 315th Air Division in Ashiya, Japan, was sent TDY to Cat Bi Air Base outside Haiphong, and, on Feb. 5, 1954, some 200 USAF personnel were sent from Clark Field to Indochina. Half of the personnel went to Tourane (Da Nang) and established a B-26 maintenance facility, while the remainder went to Do Son (east of Haiphong on the Gulf of Tonkin) to establish a C-47 maintenance facility. These teams remained in place during the entire Dien Bien Phu operation, and the units at Cat Bi and Do Son came under attack by the Viet Minh forces.

I could go on about this operation, but the one major point I wanted to establish is that there exists no official USAF history about this period. And, as I stated earlier, the French Air Force Historical Division book gives more coverage to USAF support than my own service has done. While I am considered a Vietnam veteran due to a 100-plus mission combat tour with AC-130s, I find it hard to reconcile the fact that the ones I served with in 1953-54 are not considered Vietnam veterans.

Lt. Col. Jack E. McDonald,
USAF (Ret.)
Warrenton, Va.

■ *Thanks to Colonel McDonald for peeling back the onion layers on an even more extensive Eisenhower Administration effort to help out the French with airpower assets. Dien Bien Phu remains a fascinating first look at the USAF experience in Vietnam and is worthy of more attention from historians.—Rebecca Grant*

Washington Watch

By John A. Tirpak, Executive Editor

Drayun Admits Guilt; B-2 Improvements Coming; F-35 Loses Weight

Drayun's Downfall

Darleen A. Drayun, the Air Force's top career civilian acquisition official from 1993-2002, was sentenced Oct. 1 to prison time and later probation after she admitted that, while in her USAF position, she gave Boeing preferential treatment on numerous contracts. Among these was a controversial \$20 billion lease program for Boeing KC-767 aerial tankers.

Drayun confessed that she performed the favors to "ingratiate" herself with the company in order to win a high-paying executive position for herself after retiring from the Air Force and to secure employment with the company for her daughter and son-in-law.

She received a sentence of nine months in prison, followed by additional, undetermined detention or house arrest, and three years' probation.

The sentence and the confessions shocked the Air Force. Drayun had been expected to receive a six-month suspended sentence—or less—for conspiracy. She had previously admitted having inappropriate negotiations with Boeing officials about a potential post-retirement job, but had denied offering any kind of quid pro quo for Boeing while she was still working for the Air Force.

However, during the US attorney's investigation of the matter, Drayun failed a polygraph test and then admitted she had lied about the facts. She admitted fabricating diaries to support her original version of the story.

Drayun did, in fact, sign on with Boeing, after leaving the Air Force, as head of its missile defense business activities in Washington, D.C. Her compensation (\$250,000 a year and a \$50,000 signing bonus) was more than double what she earned with the Air Force. She was terminated from the Boeing post when the allegations about the conspiracy first surfaced last year.

In a statement issued as part of a plea agreement, Drayun admitted awarding Boeing a \$4 billion contract to upgrade the avionics on C-130 aircraft when an "objective" source selection process may not have given the work to Boeing. She considered herself indebted to Boeing for employing her daughter and son-in-law, she said in court papers.

She admitted passing to Boeing information about the offer of rival European Aeronautic Defense and Space Co. to supply aerial tankers and then negotiating a lease deal with Boeing for 767 tankers that she believed gave the company a better deal than was "appropriate."

There were other favors. She agreed the Air Force would pay Boeing a \$412 million settlement in a dispute over C-17 production and agreed to a price for Boeing to upgrade NATO AWACS aircraft that was \$100 million more generous than she believed the work was worth. The latter deal, she said in court papers, was a "parting gift" to the company before she left office. However, Drayun also said the AWACS move was motivated by the fact that Boeing had agreed to reassign her daughter, who was facing dismissal



Drayun admits favoring Boeing. She goes to jail.

from the company for poor performance. Drayun's daughter later left Boeing, but her son-in-law was still employed with the company at the time of Drayun's sentencing.

Drayun's power was so great during the nearly 10 years she held the USAF post that it eclipsed that of the political appointees for whom she supposedly worked. When she left in 2002, the Air Force did not replace her. A service spokesman said that "by virtue of the fact that this position usually had a significantly longer tenure than the assistant secretary of the Air Force for acquisition, [she] was able to exercise more authority than the position warranted."

Prosecutors in the case asked for a 16-month sentence, but US District Court Judge T.S. Ellis said he had been moved by many testimonials touting Drayun as a diligent public servant who made her mistakes only at the end of an otherwise spotless career.

Nevertheless, Ellis said at the sentencing hearing, "I think an example needs to be set" to discourage other public servants from making similar "mistakes."

The Air Force Reacts

The Air Force said in a statement that Drayun's mistakes were her own and don't "reflect the high levels of integrity and accountability within the Air Force acquisition community." The service said its recent changes to the acquisition system will "strengthen" the system and "reduce the likelihood of this happening again." (See "Operational Acquisition," August, p. 54.)

USAF also noted that, shortly after Drayun's initial misbehavior came to light, Air Force Secretary James G. Roche asked the Pentagon's inspector general to "fully investigate" her contracting activities in the two years leading up to her retirement. That probe was still under way in mid-October.

Reacting to the revelations, the chief critic of the proposed tanker deal, Sen. John McCain (R-Ariz.), said the confessions prove that the leasing scheme "was a folly from the start."

A Pentagon spokesman said that the NATO AWACS contract is being renegotiated. He also said that if the Pentagon IG discovers wrongdoing on more contracts, they, too, will be renegotiated.

Active Stealth for B-2

Improvements for B-2 stealthiness are available, if USAF wants to buy them.

At some point in the future, according to Northrop Grumman Integrated Systems Government Relations Manager Harry H. Heimple, it will be necessary for the B-2 to employ "active" stealth—wherein the airplane feeds an inverse radar wave back to a radar transmitter, masking the aircraft electronically. Today, tracking radars are fooled by the B-2's passive systems, where the radar signal is either redirected away from the transmitter or absorbed or attenuated by the aircraft's skin and structure.

"The question is, when," Heimple said. So far, the Air Force has not stated a requirement for the B-2 to have capability for active stealth, and the B-2 is considered highly effective against emerging air defense systems. Heimple said, though, that when the time comes, the processing power of computers already extant would make it "very feasible" to undertake this approach.

He also said the Air Force has not forgotten that the B-2 has space for a third seat in the cockpit, and Northrop has proposed several ideas for how to employ a possible third crew member.

So has the Air Force. One of the service's ideas, Heimple reported, is to put a third pilot in the aircraft, both to spell the other crew members on particularly long missions and to provide in-flight target updates to the many weapons in the bomb bay. Modifications now under way will enable the entire fleet of B-2s to carry 80 500-pound Joint Direct Attack Munitions on a single mission.

Heimple also reported that the B-2s will soon be able to carry highly asymmetric bomb loads. One bomb bay may be fitted with racks to carry 40 500-pound JDAMs, while the other may house a rotary launcher able to carry the large, 2,000-pound JDAMs and other weapons. Tests have shown that the B-2's handling is not greatly affected by carrying a huge 25,000-pound bunker buster in one bay while the other bay is empty.

Although the Air Force has no stated requirement to put the 250-pound Small Diameter Bomb on the B-2, Heimple said racks could be developed to allow the B-2 to carry 240 of the weapons.

Another important upgrade would retrofit the B-2, which still has a nuclear attack mission, with the Advanced Extremely High Frequency satellite data link system.

The chief drawback of modifying the fleet so slowly is that there is likely to be a perpetual mismatch in the configuration of the B-2s. Technology will advance rapidly in the seven years between programmed depot maintenance, meaning there will be significant differences between a B-2 at the front of the line and one at the end, Heimple noted.

In proposing ideas to the Air Force on future long-range strike options earlier this year, Northrop did not offer to restart the B-2 production line.

F-35's Diet a Success—So Far

An aggressive weight-cutting program has brought the short takeoff and vertical landing (STOVL) version of the

F-35 Joint Strike Fighter down by about 2,700 pounds, well back into the range of achieving requirements, program officials said.

The aircraft is once again meeting "key performance parameters," according to Tom Burbage, Lockheed Martin executive vice president and F-35 general manager.

Along with the weight, concerns about the aircraft's aerodynamic performance "have diminished," he told reporters at the Air Force Association's Air & Space Conference and Technology Exposition in September.

The STOVL version of the triservice airplane is the most technically challenging. It involves running a shaft from the front of the main F135 engine to a lift fan positioned vertically behind the cockpit. The cool thrust from the lift fan coupled with the hot downward thrust of the engine's swiveling nozzle in the back gets the fighter vertically off the ground.

The Marine Corps and the British Royal Navy were to be the main customers for the STOVL F-35, but the Air Force has also decided to buy "hundreds" of the variant, Air Force Chief Jumper revealed at the conference.

Lockheed managed the weight loss with 400 separate design changes, Burbage said. These ranged from trimming the weight of certain parts to rearranging the airplane's inner structure, reducing the overall weight of wiring and ducting. This went hand-in-hand with boosting the thrust of the engine to lift more weight, without reducing the aircraft's range.

Rather than achieve a certain weight, the F-35 is instead being held to certain performance requirements. Nevertheless, there is a direct correlation between weight and performance.

Other changes involve revamping some performance demands. Adding a few feet to takeoff roll, for example, could result in saving dozens of pounds in engine weight. Similarly, the Marine Corps might reduce the "bring-back" requirement, which mandates that the airplane be able to land with a certain amount of unused ordnance. Being lighter on landing would make it possible to use landing gear that is not as heavy.

The design changes have not come without a penalty, however. Changing the ductwork forced the weapons bay of the STOVL F-35 to be shortened. While it can still carry air-to-air AIM-120 Advanced Medium-Range Air-to-Air Missiles and 1,000-pound JDAMs, some other munitions would be relegated to wing stations, which could only be used when the aircraft doesn't need to be stealthy.



The F-35 STOVL loses weight, performs well.

The Air Force's stated intention to buy some STOVL aircraft also adds another complication—and potentially more weight—to the design. The Marine Corps baseline aircraft calls for mounting a gun externally in a pod, but the Air Force wants an internal gun. It would also like to have capability to refuel from a boom-equipped aerial tanker, while the baseline STOVL aircraft is to be equipped with the Navy-style probe-and-drogue, which is incompatible with USAF boom tankers.

Air Force officials said they may simply bite the bullet and accept their STOVL airplanes in the baseline configuration, but this could have a ripple effect on, for example, the number and type of tankers needed to support the fighters.

"Our largest concern, as we go through the weight issue, is anything having to be redesigned inside the plane that would cause outer mold line changes," Roche told reporters at the conference. If the outer mold line changes, the F-35's stealth design could be compromised, rendering it less survivable.

Roche said the Air Force is fully aware that the STOVL version will be able to carry less firepower than the conventional takeoff model, but it offers the ability to operate close to the troops and support them rapidly if they call for help.

"We want the time of flight to be very, very short," he said. "We don't want to fly an hour and a half to get there."

The Defense Acquisition Board was to review the JSF program in October.

Air Mobility Key to European Restructure

To carry out its planned base restructuring, US European Command is going to need a lot of air mobility assets, which suggests that the Joint Staff's ongoing Mobility Capability Study will call for even more airlift than previously thought.

Marine Corps Gen. James L. Jones Jr., who commands EUCOM and NATO forces, said in September testimony before the Senate Armed Services Committee that the planned basing changes acknowledge that the Soviet threat has indeed vanished and that the US must redistribute its capabilities to deal with more likely scenarios, such as those posed by the war on terrorism.

The US will leave some number of well-established, full-service bases in NATO partner countries and switch to a range of bases that will better facilitate the quick deployment of US and NATO forces to where they're

needed. Some of the big existing bases, such as Ramstein AB, Germany, will see few changes. Some that are poorly positioned to facilitate quick deployments will be closed. Many new ones will be austere but stocked with pre-positioned supplies and equipment, to be activated only when needed.

It will take lots of airlift to get those bases quickly up and running, Jones said. The plan demands that US strategic airlift and sealift remain modern and up to the task, he told lawmakers.

In computing the requirement for strategic lift—now set at 54.5 million ton miles a day (MTM/D)—the Joint Staff takes into account various war plans and the needs of special operations forces. The requirement goes up if new missions are added on top of old ones. This new demand for enough lift to rapidly deploy virtually whole air and ground force bases on short notice likely will raise the bar again.

Air Force leaders have said they expect the new Mobility Capability Study under way by the Joint Staff to come back with a figure of at least 60 MTM/D to accommodate the increased demands of the new, highly mobile strategy. (See "The Airlift Gap," October, p. 34.) The shift in focus of EUCOM, however, will add another three to five MTM/D to the requirement, Pentagon officials said.

The number is not dramatically higher because "some of that increase is already built in" to the basic assumption of the MCS, one official said. However, "it certainly looks like EUCOM is going to have to have a significant number of C-17s close by and ready to go, which may or may not be under [Air Mobility Command's] control," he added.

Jones laid out a new lexicon of base terminology that explains the variety of facilities the command will use in the future.

- **Joint Main Operating Bases:** These bases will be like today's Ramstein, described as "an enduring strategic asset established in friendly territory" and equipped with permanently stationed combat forces, command and control capabilities, and family support facilities. They'll be close to established training areas and have the ability to process large amounts of cargo and personnel on their way to other locations.

- **Joint Forward Operating Site:** Jones described this facility as a "warm site" in a friendly country. There would be a small contingent of permanently assigned people and pre-positioned equipment at a JFOS. Such a facility would also likely be a local focal point for regional training and could be expanded for longer-term use.

- **Joint Cooperative Security Location:** A host-nation site with little or no permanent US presence, it would be periodically updated by a contractor so that it could be quickly turned on as needed. A JCSL likely would be used for tactical purposes but could be scaled up to a JFOS. There would be no family support at a JCSL.

- **Joint Pre-position Site:** A secure site where pre-positioned equipment and supplies would be stored, either for nearby use or rapid shipment to a battle theater in the region. These would be "maintained by contractor support and may be sea-based."

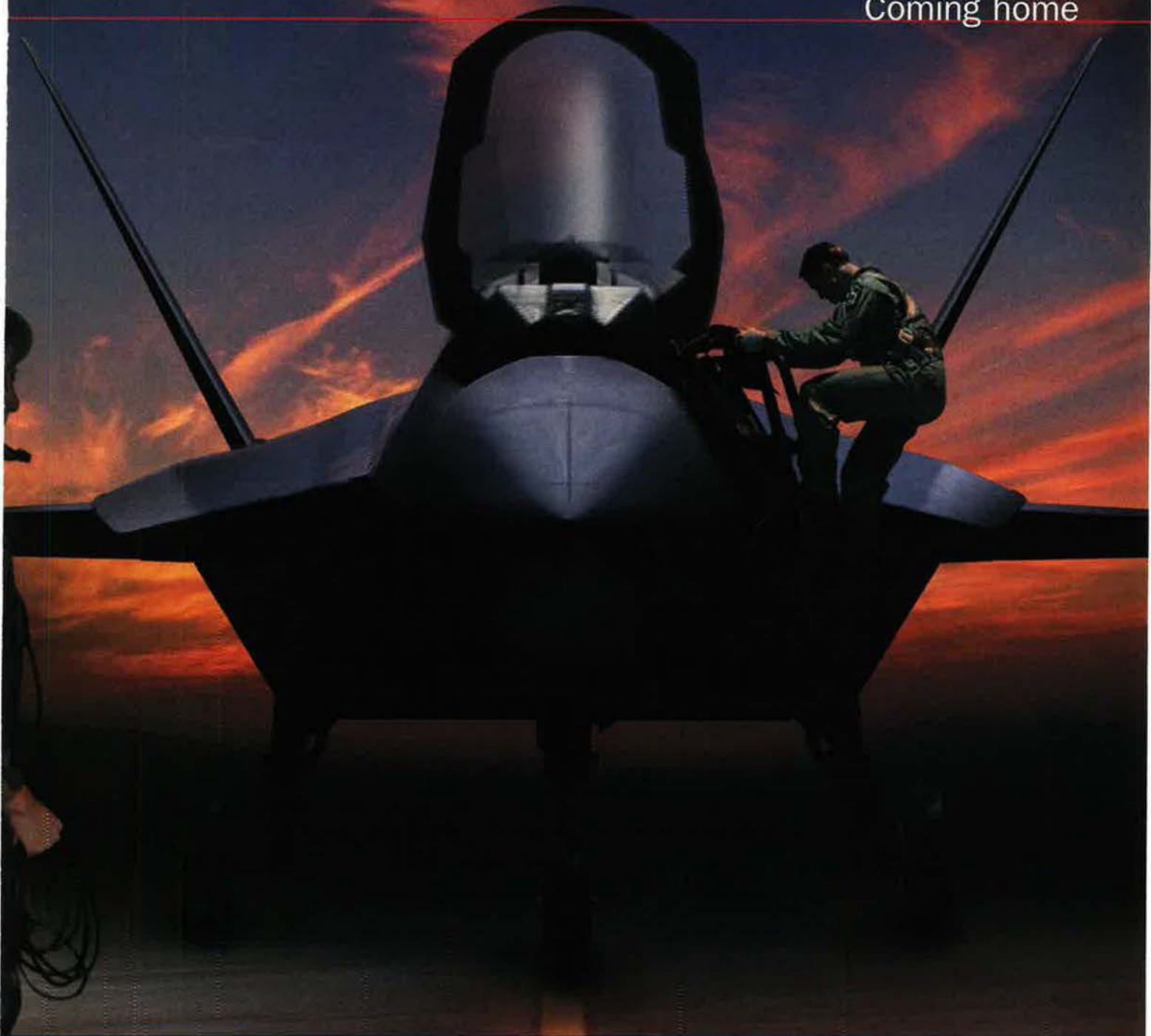
- **En Route Infrastructure:** A larger facility that would be used for refueling and transshipment of gear and personnel. Jones described these as "anchor points for throughput, training, engagement, and US commitment." He said they also might be "a JMOB or JFOS." ■



NATO photo

USMC Gen. James Jones Jr.: More airlift, please.

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By Adam J. Hebert, Senior Editor

Tanker Lease Is Dead

Congress has stopped the Air Force plan to lease aerial refueling aircraft, shifting USAF to an all-procurement strategy. However, the way ahead on new tankers was not made immediately clear.

The 2005 Defense Authorization Bill, which cleared the House-Senate conference on Oct. 7, bars the Air Force from leasing any specially modified aircraft for the aerial refueling mission and authorizes the service to procure up to 100 new aircraft. The conferees provided nearly \$100 million to get the ball rolling.

Lawmakers were at odds over what the bill actually specifies.

Sen. John McCain (R-Ariz.), the chief Capitol Hill critic of the tanker lease, said on the Senate floor that the bill forces the Air Force to "start from the beginning" and requires USAF to compete the tanker replacement program. Sen. John Warner (R-Va.), chairman of the Senate Armed Services Committee, agreed with that view.

However, Rep. Duncan Hunter (R-Calif.), chairman of the House Armed Services Committee, and other House members do not agree with the McCain characterization of the bill. They maintain that Boeing would build the airplanes. Hunter said on the House floor that "a provision requiring bringing in outside competitors ... was stricken" from the bill.

The bill did specifically bar the Air Force from awarding Boeing a sole-source \$6 billion contract to support the aircraft, as the service originally had planned to do. It also said that any further moves on tanker replacement must await the completion of several studies being conducted to determine the true condition of the Air Force's KC-135 fleet—specifically whether some elements are too badly fatigued and corroded to economically repair and operate.

Air Force Grounds 29 KC-135Es

Gen. John W. Handy, commander of Air Mobility Command, pulled 29 older KC-135Es from the flying schedule, the service announced Sept. 16.



USAF photo by Scott H. Spitzer

SMSgt. Thomas Kenny, 6th Airlift Squadron, McGuire AFB, N.J., waves an American flag and unit flag from the last active duty C-141 as it is about to depart the base on its last flight. (See below.)

Last Active Duty Starlifters Retire

The last two C-141 Starlifters in active duty use were retired Sept. 16. They belonged to the 305th Air Mobility Wing at McGuire AFB, N.J. Following a first flight on Dec. 17, 1963, the C-141 served as an operational Air Force strategic airlifter for nearly 40 years.

Air Mobility Command chief Gen. John W. Handy, in an official news release, described the C-141 as the "backbone of the mobility fleet for decades."

Starlifters performed a number of noteworthy missions over the years, including:

- Flying the first direct aeromedical evacuation service from Vietnam to the United States in July 1966.
- Landing in Hanoi to pick up Vietnam War prisoners of war for Operation Homecoming in February 1973.
- Performing "the bulk of strategic airlift" for Operations Desert Shield and Desert Storm in 1990 and 1991.
- Flying more than 3,900 aeromedical evacuation sorties supporting Operations Enduring Freedom and Iraqi Freedom.

The C-141 was the first jet aircraft designed solely as a troop and cargo carrier. Contractor Lockheed Martin said that a total of 285 Starlifters were built between 1963 and 1968. Beginning in 1977, nearly all were "stretched" to the C-141B configuration to increase carrying capacity.

The 20 remaining C-141Cs, with upgraded avionics, are being flown by Air Force Reserve Command units at March ARB, Calif., and Wright-Patterson AFB, Ohio. They will remain in AFRC use through 2006.

The decision came after USAF's Fleet Viability Board identified engine strut problems.

Air Force Secretary James G. Roche in June instructed the board to conduct

an independent, in-depth analysis of the portion of the KC-135 fleet that Air Force Materiel Command's Oklahoma Air Logistics Center tagged as having excessive corrosion in the struts—the

Ivan Forces Major Evacuations

The threat from Hurricane Ivan in September caused the Air Force to evacuate nearly 300 aircraft from nine military installations near the Gulf of Mexico.

On Sept. 15, the service announced it had relocated the aircraft normally based at Duke Field, Eglin Air Force Base, Hurlburt Field, and Tyndall Air Force Base, all in Florida. Evacuations were also made from Ft. Rucker and Maxwell Air Force Base in Alabama, Keesler AFB, Miss., Moody AFB, Ga., and NAS JRB New Orleans.

The aircraft were sent to a variety of host bases out of Ivan's path. For example, more than 30 special operations forces aircraft were pulled from Hurlburt for safekeeping at Ft. Campbell, Ky. They returned on Sept. 19, officials said.

In the immediate aftermath of Ivan, Duke Field became a focal point for the disaster recovery effort. The Federal Emergency Management Agency used Duke Field as a logistical staging area, a storage point for food, ice, water, and other commodities before they were shipped to various distribution points in the area, a Sept. 22 announcement read.

The field's flight line housed "hundreds of tractor-trailers filled with supplies ranging from baby food to bug spray," the release stated.

Recovery required a cleanup effort. It was up to the 203rd RED HORSE Squadron, a Virginia Air National Guard unit, to return the Pensacola Regional Airport to usable condition. (The squadron had deployed from Virginia Beach to help with Hurricane Frances recovery efforts and stayed in Florida when Ivan approached.)

Lt. Col. Paul Julian said of the need to clear the runway and repair damage, "This is what we do in a wartime scenario."

section holding the engine on the airplane. The ALC found 30 suspect KC-135E tankers.

The board evaluated those 30 aircraft over a two-month period.

Handy was briefed on its draft recommendations on Sept. 13. He grounded the problematic aircraft while the results are evaluated further.

Up to \$2 Billion for Guam ...

Defense officials say the Air Force may spend up to \$2 billion over the next decade to improve the military capabilities at Andersen Air Force Base on the Pacific island of Guam.

Col. Steve Wolborsky, vice commander of the 36th Air Expeditionary Wing at Andersen, said in a Sept. 20 news release that the Air Force anticipates investing up to \$2 billion in the base over the next five to 10 years. Wolborsky said this reflects Andersen's role as "the most significant US Air Force base in the Pacific region for this century."

Top officials at Pacific Air Forces have been touting Guam's potential for years. The island is strategically located near potential hotspots in the Pacific and is US territory—which eliminates access concerns and possible flight restrictions that can arise in foreign countries.

Col. P.K. White, 36th AEW commander, said that Andersen's 7.5 million square feet of ramp space provide "a lot of room" for airplanes. "There's a ton of room here to put a lot of new infrastructure," he said.

... For an ISR-Strike Task Force?

Gen. Paul V. Hester, Pacific Air

Forces commander, told attendees at the Air Force Association's Air & Space Conference in September that the command wants to establish an ISR-Strike Task Force on Guam.

PACAF officials have said the island is a logical host for long-range systems that are unhindered by the vast distances that must be covered in the Pacific Theater.

Bombers are now deploying to Guam in regular air and space expeditionary force rotations, and many of USAF's intelligence-surveillance-reconnaissance systems also offer long-range capability.

"We are looking for a potential ISR-Strike Task Force out in Guam," Hester said Sept. 14. "We look forward to trying to develop some of those plans ... through the next four or five years out in the Pacific."

Hester told reporters after his presentation that the funding needed to begin creating the ISR-Strike Task Force could appear as soon as the service's 2006 budget request. That budget will be sent to lawmakers early next year.

F/A-22 Successfully Drops JDAM

An F/A-22 Raptor on Sept. 12 dropped a satellite-guided Joint Direct Attack Munition, successfully striking its ground target. In the test, the F/A-22 flew at 30,000 feet and dropped a 1,000-pound JDAM.

The developmental test at Edwards AFB, Calif., "marked the first complete mission demonstration of the Raptor's air-to-ground attack capability," the Air Force stated in a Sept. 14 news release.

In September 2002, the F-22 was

redesignated F/A-22, with the "A" added to reflect the aircraft's ground attack capabilities.

"The F/A-22 will be able to conduct both air-to-air and air-to-ground attacks when it reaches initial operational capability, currently planned for December 2005," said Maj. Gen. Richard B.H. Lewis, program executive officer for the Raptor program.

Airman Dies in Qatar

Capt. John J. Boria, a KC-135 pilot, died Sept. 6 while deployed to Doha, Qatar. He died several days after crashing a rented recreational vehicle on Aug. 31, while off duty. Because of his deployed status, the Pentagon says Boria died while supporting Operation Iraqi Freedom.

Boria, from Broken Arrow, Okla., was permanently assigned to the 911th Air Refueling Squadron at Grand Forks AFB, N.D.

Jumper Says No Forced Cuts

Speaking to airmen at Ramstein AB, Germany, in late August, Gen. John P. Jumper, Air Force Chief of Staff, emphasized that USAF leaders plan to cut the force to its Congressionally mandated end strength level without "any forced reductions." The service must drop 20,000 airmen from its books by the end of Fiscal 2005.

Jumper said that the previously announced reduction in enlisted accessions—from 34,000 new recruits to 24,000—for Fiscal 2005 should get the service "back to the numbers" it is authorized.

However, he added, "We've never tried this before."

Jumper went on to say that recruiting and retention have "remained superb" despite fears that airmen would leave once Stop-Loss actions were lifted. "I don't want anybody to be forced to leave," said the Chief, adding that reducing recruiting is "the right thing to do."

The Air Force also plans to restrict the career field options for its new recruits. Currently, officials say "about half" of the 2005 enlistments will be in one of 56 Air Force specialty codes "identified as critical by manpower specialists."

For 2006, service officials expect enlisted accessions to return to normal levels, about 36,000.

US May Sell F-16s to Pakistan

Fourteen years ago, the US canceled a sale of F-16 fighters to Pakistan in response to that country's pursuit of nuclear weapons. Now, the two nations are again discussing an F-16 purchase.

RAND Proposes Test of "Up or Out" Alternatives

Citing criticism that the Pentagon's "up or out" promotion policy fails to make the best use of its officers, the federally funded think tank RAND recently proposed a study of alternatives. RAND analysts believe a "perform or out" policy might better serve DOD.

Defense Secretary Donald H. Rumsfeld "has expressed concern that current promotion policies risk driving experienced people to leave the military too early," RAND reported in the study, "New Paths to Success: Determining Career Alternatives for Field-Grade Officers." The report was prepared for the Office of the Secretary of Defense.

In studying the Air Force, RAND found that there are several career fields (pilot, developmental engineer, manpower, scientist, and public affairs) that are significantly below their ideal staffing levels for majors and lieutenant colonels. Following the policy set in 1947, field grade officers who are passed over for promotion twice are discharged or permitted to retire, as the situation warrants. If the system were changed to a perform or out approach, the RAND analysts believe, those highly experienced individuals who continue to perform but are passed over for promotion could stay to serve full careers, helping alleviate manpower shortfalls.

Since its inception, critics of the current system have called it "wasteful and illogical for the technical services," stated the RAND report. The 2001 US Commission on National Security/21st Century said the system did "not fit contemporary realities."

RAND proposes a controlled field experiment for the Air Force to allow a "small number" of majors and lieutenant colonels to remain in service. This could help meet pilot community requirements, where the "effective manning" rate for lieutenant colonels is as low as 35 percent.

Essentially, there would be two alternative career paths. One would move individuals toward command, with its requirement for increasing rank and a broader experience base. The other would develop "deep functional expertise," stated the report.

This approach could benefit pilots in both staff assignments and flying billets. There are desk-job assignments that require rated officers. "If the Air Force could lengthen the amount of time a rated officer cycled through one of those billets, it would free flying time for other officers," said the report.

The report noted that Gen. John P. Jumper, Air Force Chief of Staff, has said USAF "will make sure that qualified people who do not pursue the command path will not be denied advanced professional development and a rewarding career to retirement."

weapons program. By that time, 28 fighters had already been paid for and built, and it took a decade for Pakistan to get its money back. Those 28 Falcons were later reconditioned and delivered to the US Air Force and Navy for test and training purposes.

Luftwaffe To Cut Holloman Force

The German Air Force will scale back its training force at Holloman AFB, N.M., the Luftwaffe's Chief of Staff said during a visit to the base.

"The Luftwaffe is getting smaller" and will reduce its numbers of aircraft and fighter wings, said Lt. Gen. Klaus-Peter Stieglitz, the *Alamogordo Daily News* reported. "So we will see a decrease in terms of number of aircraft and numbers of personnel here at Holloman."

The reduction will be in the neighborhood of 20 to 25 percent, meaning roughly 175 German airmen will be departing New Mexico. The Luftwaffe currently maintains a force of approximately 750 German airmen at the base, with an additional 1,500 family members accompanying them.

Stieglitz added that Germany will "stay here at Holloman because we will continue the training with the Tornados. That is the mainstay here."

The German Air Force moved its Tornado fighter training to Holloman in 1996 to compensate for a shortage of airspace for training in Europe.

Bush Nominates Harvey for Army

President Bush on Sept. 15 nominated industry executive Francis J.

"This is not a rumor; it is a statement by the American government," said Air Chief Marshal Kaleem Saadat, Pakistan's air force chief, at a defense exhibition in Karachi.

Because of Pakistan's cooperation in the US-led war on terror, "there is a change in [Western countries'] attitude," Saadat told reporters. "They have indicated that they are ready to give us F-16s," he said, adding that negotiations had been paused because of the US election in November.

Pakistani public opinion remains biased against the US because Pakistanis "think the Americans want to keep them weak," Saadat said. He has urged the US to work to change this perception.

Pakistan purchased 40 Lockheed Martin F-16s in the 1980s, but a follow-on order was canceled in 1990 after sanctions were imposed on the country for its clandestine nuclear



A tornado that touched down Sept. 28 in New Castle, Del., pushed a C-130 transport aircraft under the tail of another Hercules at the Delaware Air National Guard's 166th Airlift Wing.

USAF photo by SrA Melissa E. Chatham

Harvey to be the next Army Secretary. The Senate Armed Services Committee on Oct. 11 sent the nomination to the full Senate. If confirmed, Harvey would succeed Thomas E. White, who resigned in April 2003 after repeated disagreements with Defense Secretary Donald H. Rumsfeld.

Air Force Secretary James G. Roche was the Administration's previous pick for Army Secretary. Roche asked that his name be removed from consideration earlier this year, after his nomination languished in the Senate amid ongoing controversies about the Boeing tanker lease and sexual assault complaints at the US Air Force Academy. (See "Aerospace World: Roche Withdraws Name," April, p. 13.)

Harvey is vice chairman of Maryland-based Duratek, Inc., and had earlier served as head of defense and electronics systems for Westinghouse Electric Corp.

New Command Covers Capital

The Defense Department on Sept. 22 formally activated its new joint headquarters charged with coordinating homeland defense efforts around the national capital. It is located at Ft. McNair in Washington, D.C.

The Joint Force Headquarters-National Capital Region unifies all DOD elements engaged in homeland defense efforts, plus the Coast Guard. The new command is led by Army Maj. Gen. Galen B. Jackman, who reports to USAF Gen. Ralph E. Eberhart, head of US Northern Command.

Defense Secretary Donald Rumsfeld ordered creation of the new joint headquarters in June 2003. It was initially formed in October 2003 and began developing a joint operations center, which formally opened in August. The JOC has more than 50 workstations with networked links to federal agencies and area law enforcement and civilian agencies. It is also integrated with NORTHCOM's secure communications system. In addition to the JOC, the JFH-NCR has a 41-foot-long mobile command center and a smaller communications vehicle.

According to Jackman, the new command has been activated six times during the past year for activities ranging from cleanup after Hurricane Isabel to the February ricin incident on Capitol Hill.

The JFH-NCR's primary role is to "work with all jurisdictions to form plans in the event of attacks and will support national-level ceremonies," according to a DOD news release.

The command's Air Force elements are the 11th Wing at Bolling

AFB, D.C., and the 89th Airlift Wing at Andrews AFB, Md. Other components are the Army Military District of Washington; the Naval District of Washington; and the Marine Corps National Capital Region Command.

Airman Heads Prevention Effort

Air Force Brig. Gen. K.C. McClain in September was named commander of the Defense Department's Joint Task Force for Sexual Assault Prevention and Response. McClain will be the "single point of accountability for all sexual assault policy within the Department of Defense," stated a Sept. 9 news release.

McClain's task force will report to David S.C. Chu, undersecretary of defense for personnel and readiness. It will advise the Secretary of Defense on all policy and program development, budget, and program oversight matters relating to sexual assault prevention and response.

McClain previously served as deputy director of operations for technical training at Air Education and Training Command, Randolph AFB, Tex. In that capacity, she led AETC's sexual assault awareness review, surveying 13 AETC bases.

NATO Renames Air Headquarters

As part of the NATO military structure reorganization, the alliance recently renamed two air headquarters: Gone are AIRNORTH and AIRSOUTH, and in their place are Air Component Command Ramstein and Air Component Command Izmir.

The air component headquarters remain at Ramstein AB, Germany, and Izmir AS, Turkey. The name changes simply reflect the new NATO reality that it no longer makes sense to arbitrarily divide Europe into a North and South for control of air forces.

"It's part of a wider command structure [and] NATO rearrangement," explained RAF Air Marshal Philip Sturley, chief of staff for CC-Air Ramstein. "From the airman's point of view, there are no boundaries in the air, so for us to be North or South is meaningless."

Each headquarters can "cover something happening anywhere in the NATO area," Sturley added, so the alliance discarded the Cold War division in favor of "a more collective way to approaching NATO problems."

CC-Air Ramstein aligns with Joint Force Command in Brunssum, Neth-

Continued on p. 21.

The Iraq Story Continues

Casualties

By Sept. 29, a total of 1,053 Americans had died during Operation Iraqi Freedom. The fatalities included 1,050 troops and three Defense Department civilians.

Of those casualties, 800 Americans were killed by enemy action, including the three DOD civilians. The other 253 troops died in noncombat incidents, such as accidents.

Fallujah Brigade Disbanded

With officials calling the Iraqi-led Fallujah Brigade a "fiasco," the force that was supposed to bring order to the violent city in the Sunni Triangle was disbanded in September.

"The Fallujah Brigade is done. Over," said Marine Col. Jerry L. Durrant.

The brigade was created in April, three days after US marines began an assault on the city to put down an Iraqi insurgency that seemed to originate there. It was hoped the Fallujah Brigade would quell the insurgency and forestall a bloody US-led assault on the city. Unfortunately, the brigade proved, at best, ineffective and, at worst, a supporter of the terrorists.

Fallujah became a magnet for insurgents and a safe haven for terrorists amid reports that US-equipped brigade members were actively supporting the attacks on Iraqi and coalition government forces.

"We're trying to go in and recover the stuff we gave them, but I'm not sure it's worth it," Durrant said.

Air Strikes: Effective in Fallujah

With US marines stationed outside Fallujah's city limits and the city's Iraqi-led brigade ineffective, the US increasingly turned to air strikes to target insurgents holed up in the rebellious city.

Air Force Brig. Gen. Erwin F. Lessel III said continued air strikes in Fallujah prevented terrorist attacks elsewhere in Iraq. "We're confident that, through these air strikes, we have been able to thwart many large-scale attacks and suicide bombings that were in the planning process," said Lessel, deputy director of operations in Iraq, at a press briefing.

The strikes have specifically targeted insurgents loyal to Iraqi strongman Musab al-Zarqawi. "We've gotten some of [Zarqawi's] associates and emerging leadership in his organization," Lessel said.

News Notes

By Tamar A. Mehuron, Associate Editor

■ USAF is bringing back the William Tell air-to-air competition after an eight-year absence, said an Oct. 8 news release. It is to be held Nov. 8-19 at Tyndall AFB, Fla. USAF shut down the competition because of the service's high operations tempo, but the service now believes it will help foster an exchange of tactics that will aid the F-15 force in combat operations.

■ The Air Force plans to relocate the famous World War II B-17 *Memphis Belle* to the US Air Force Museum in Dayton, Ohio. The move, said an Oct. 4 news release, should take place before the end of the year. *Belle* resided in Memphis, Tenn., since 1946, originally on loan from USAF to volunteers and aviation enthusiasts. In the 1980s, the *Memphis Belle* Memorial Association became the leaseholder. The USAF museum plans further restoration and will make *Belle* the centerpiece of its World War II aircraft collection. "We will give it a level of care and public visibility befitting its legacy," said Charles D. Metcalf, director of the USAF museum.

■ The Senate voted 77-17 on Sept. 22 to confirm Rep. Porter J. Goss (R-Fla.) to be the new director of the Central Intelligence Agency. He replaces George J. Tenet, who resigned this summer.

■ Concerns about a return of the military draft continue to swirl, despite claims to the contrary, according to two recent polls. President Bush and Congress have forcefully denied it, but the National Annenberg Election Survey showed that 51 percent of adults age 18 to 29 believe Bush wants to reinstate the draft. A survey by the Marist College Institute for Public Opinion revealed that more than a third of Americans believe a new draft is possible. An Annenberg analyst noted that older respondents were more likely than younger ones to know that neither Bush nor Democratic candidate Sen. John Kerry favors reinstating the draft.

■ The last Atlas IIAS rocket launched a National Reconnaissance Office satellite into orbit Aug. 31 from Cape Canaveral AFS, Fla., according to *Florida Today*. The launch concluded a perfect record for Lockheed's Atlas II rockets, which completed 63 launches since 1991.

■ Air Force Reserve Command will transfer Operation Deep Freeze air-

lift missions to Antarctica to the active duty 62nd Airlift Wing at McCord AFB, Wash. The last AFRC C-141C mission to Antarctica will be in February 2005. AFRC adopted the mission in 2000 when McCord began replacing its C-141s with C-17s. McCord C-17s will handle the mission for the new airlift season, beginning in August 2005.

■ According to Textron, a B-1B during a mid-September test at Hill AFB, Utah, successfully dropped CBU-105 sensor fuzed weapons (SFWs), striking a moving tank target "multiple times." It was the final test point for a weapons upgrade for the B-1B, said Maj. Chris Abramson, a weapons officer at Hill. The SFW did not carry a seeker; instead it was directed to the target by the bomber's ground moving target tracking radar.

■ AFRC recruiters bested their recruiting goal for the fourth straight year. They signed up 9,636 recruits by Aug. 31, a month ahead of the Sept. 30 deadline. The command's goal was 9,600 recruits.

■ Electronic Systems Command officials at Hanscom AFB, Mass., are testing Internet capability aboard a Joint STARS aircraft in an effort to provide an interim airborne networking capability until the arrival of the joint tactical radio system wideband network. The Internet capability was slated for demonstration in an October Red Flag exercise at Nellis AFB, Nev.

■ An Air Force accident investigation, released Aug. 31, concluded that loss of situational awareness by pilot Maj. Thomas R. Sims led to the May 17 collision of two Air National Guard F-16s in midair over Indiana. Maj. William E. Burchett was killed; Sims ejected safely. (See "Aerospace World: Pilot Killed in Midair Collision," August, p. 12.) Sims was making a 180-degree left turn after performing a weapons check. During the check, he did not notice that Burchett, in the lead F-16, had changed airspeed and altitude. Both pilots were assigned to Indiana ANG's 113th Fighter Squadron in Terre Haute.

■ USAF awarded a \$9 billion, five-year contract to NCI Information Systems, Inc., Reston, Va., for a Network-Centric Solution Program. The contract calls for a huge array of engineering, technical, and network services for USAF, DOD, and other federal customers.

■ Northrop Grumman received a \$1 billion contract from the Defense Advanced Research Projects Agency, to build and flight-test three demonstration unmanned combat aircraft, one for the Air Force and two for the Navy, officials announced Aug. 19. The X-47B vehicles are slated for demonstration flights beginning in 2007.

■ DARPA took over the X-37 program in September from NASA after the space agency decided not to pursue reusable launch technology. The X-37 is a reusable launch vehicle technology demonstrator.

■ The United States, Russia, and Germany are the top leaders in the global arms market, according to the annual Congressional Research Service report "Conventional Arms Transfers to Developing Nations," released in August. The US led with agreements valued at more than \$14.5 billion in 2003, or 56.7 percent of all arms deals, principally to developing nations.

■ Boeing received an \$892 million contract in August for C-17 sustainment. Work is to be completed by September 2005.

■ An F-15 Eagle crashed on St. George Island, Fla., May 21 because the pilot accidentally ejected, Air Force investigators concluded in an accident report released in September. The pilot, Lt. Col. Patrick Marshall, 1st Fighter Squadron, Tyndall AFB, Fla., ejected safely. He was on an air combat training flight when an air-regulating valve separated from his torso harness and got stuck in the ejection seat handle. As he turned his head to check his position and pulled the control stick toward him, the movement created enough tension on the detached valve to raise the ejection seat handle, causing him to eject. The aircraft loss was valued at \$36.5 million.

■ BAE Systems received a \$174 million contract to upgrade electrical components of F-16s. Work is scheduled to be completed by August 2009.

■ The Missile Defense Agency on Sept. 25 placed its fifth interceptor missile in an underground silo at Ft. Greely, Alaska. One more was scheduled to be installed at Ft. Greely by mid-October, and two interceptors are scheduled for emplacement at Vandenberg AFB, Calif., late this year. All interceptors are part of an integrated system to detect, track, and destroy an incoming missile warhead before it reaches a target in the United States. Despite naysayers, officials still predict the system will be operational by year's end.

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WINNING TECHNOLOGY

Martin Withdraws Nomination for US Pacific Command Post

Air Force Gen. Gregory S. Martin formally withdrew his name from nomination to be the commander of US Pacific Command following an acrimonious Oct. 6 Senate Armed Services Committee confirmation hearing. Martin, the commander of Air Force Materiel Command, will remain at that post.

During the hearing, Sen. John McCain (R-Ariz.) promised to delay Martin's confirmation indefinitely, pending more investigations and hearings about the Air Force's controversial plan to lease Boeing KC-767 aerial refueling aircraft. McCain was also angry that some internal Air Force e-mails which he had long demanded, regarding the lease deal, had not yet been provided.

"I will strongly object to your nomination leaving this committee until we get all the e-mails and all the answers," McCain said after a heated exchange with Martin over whether some KC-135E tankers are actually so badly corroded that they require replacement.

Martin said the next day that he believed it to be "in the best interests of the Pacific Command and Air Force Materiel Command for me to withdraw my nomination, even though I have not been involved with the KC-767 tanker program." He said he expected further investigation would take months, leaving both PACOM and AFMC in limbo as to their leadership.

McCain became especially upset during the questioning when Martin insisted he had not witnessed any wrongdoing on the part of Darleen A. Druyun, the disgraced former USAF acquisition official. (See "Washington Watch: Druyun's Downfall," p. 10.) Martin worked with Druyun as a three-star general in acquisition at the Pentagon in 1998-99.

Five days before the hearing, Druyun, formerly the No. 2 civilian acquisition official in the Air Force, received a nine-month federal prison term after she confessed to showing favoritism to Boeing in multibillion-dollar contracts, including the tanker lease.

Martin said he couldn't vouch for the veracity of Druyun's remarks in her plea statement, to which McCain replied, "I'm questioning your qualifications for command."

Martin himself has not been implicated in any wrongdoing pertaining to the tanker lease or other contracts affected by Druyun's actions.

Air Force Secretary James G. Roche and Chief of Staff Gen. John P. Jumper, in a joint statement, said they were "saddened by General Martin's decision to withdraw his name from the nomination process but fully understand his reasons." The statement continued, "We have full faith and trust in his ability to continue in his command of our outstanding men and women in the Air Force Materiel Command, where his command performance has been superb."

In an interview with *Air Force Magazine*, Martin said he understood McCain's desire to hold the nomination up, pending further scrutiny of the e-mails in question. They had only reached McCain shortly before the hearing. Withdrawing from the nomination was the only reasonable thing to do, Martin said, because no matter how fast the documents were provided, "it was pretty clear the process was going to be bogged down for quite some time."

McCain previously had delayed for a year Roche's nomination to be Secretary of the Army over the tanker

issue and a brewing sexual assault scandal at the Air Force Academy. Roche, too, withdrew his nomination when it became clear it would not be resolved on a predictable timetable.

Martin said that he had no indication that his nomination was headed for a holding pattern until just a few minutes before the hearing. He had met with members of McCain's staff in early September to discuss some e-mails about which they had questions, and Martin came away feeling that the Senate staffers were "satisfied" with his answers. He said he tried to contact, but had been unable to reach, McCain's staff in the weeks after that initial meeting to answer subsequent questions.

For the official Senate hearing transcript, Martin inserted a revision to his remarks, explaining that he did not question Druyun's guilt, but that he could not understand how she could have duped the Pentagon's acquisition community. He acknowledged that his initial response was not clear.

Martin maintained that Druyun's actions need to be considered within the "full context" of the acquisition-review process as it exists today. It had not yet been fully explained, he said, whether Druyun falsified source selection documents, or gave Boeing inside information that allowed the company to make a better bid, or rigged the contract awards in some other way.

"The admissions that were made were unexplainable to me," he told *Air Force Magazine*.

Martin said that he worked with Druyun for 18 months and he would have noticed if she had done something wrong.

Martin noted, though, that Druyun had held her position through a period of prolonged and pronounced change in the acquisition process.

"She became the corporate knowledge," he said in the interview. "She became the person that everyone depended on and trusted," not only within the Air Force but within other services as well.

As a result, Martin said, the system became "responsive to that individual's direction." He added: "If that individual happens to be a criminal, then we're going to have some problems. And apparently, that's what happened here."

Martin said the Air Force must now be as "aggressive and positive" as it can be in providing information that Congress has requested on the tanker issue. The goal should be to get the review completed "as fast as possible."

Air Force leaders, he said, must be "as supportive and as helpful to Senator McCain's review as we can be."

While Martin will continue to serve as AFMC commander, Adm. Thomas B. Fargo, the current PACOM chief, will continue in that post until another nominee can be selected and confirmed.

Gen. Bruce A. Carlson, now head of 8th Air Force, had been confirmed by the Senate to succeed Martin at AFMC. At press time, it had not been decided where he will now be assigned. Maj. Gen. Kevin P. Chilton had been nominated, but not yet confirmed, for promotion to lieutenant general and to be 8th Air Force commander.

—John A. Tirpak

C-130 Designer Hawkins Dies

The lead designer for the C-130 Hercules airlifter, Willis M. Hawkins, died at his home in Woodland Hills, Calif., on Sept. 28. He was 90.

Hawkins, who was born in Kansas City, Mo., worked as an aerospace engineer and designer with Lockheed Martin's legacy companies for nearly 50 years. During that time, he worked in various capacities on numerous aircraft, including the P-38 Lightning, P-80 Shooting Star, and F-104 Starfighter.

He began work at Lockheed Aircraft Corp. in 1937. His first projects as a structural component designer were the P-38, Hudson bomber, and Lodestar transport. He then headed the design teams for the P-80, XF-90 experimental fighter, XFV vertical takeoff and landing prototype, F-104, and Constellation transport-airliner. In 1947, he led the X-7 ramjet test vehicle development team. Later, he directed the X-17 re-entry test vehicle program, pioneered analytical antisubmarine warfare studies, led development of the Polaris—the Navy's first sea-launched ballistic missile—and headed the Corona reconnaissance satellite program.

Hawkins started the Lockheed Missiles and Space Co., serving as its president. In 1963, he left Lockheed briefly to serve as assistant secretary of the Army, where he started development of what would become the Abrams M1 battle tank.

He retired from Lockheed in the early 1980s but was often recalled to work as a consultant, including work on the latest in the Hercules line, the C-130J.

Continued from p. 17.

erlands, one of the two new standing commands responsible for conducting NATO operations. CC-Air Izmir falls under the Joint Force Command at Naples, Italy.

New Deal for ICBM Maintenance

The Ogden Air Logistics Center at Hill AFB, Utah, and contractor Northrop Grumman recently signed a partnership agreement for ICBM maintenance work. Air Force and contractor personnel will work side by side at each other's facilities as a solution to a "facility shortfall," said Christina Hernandez of the Ogden ALC.

The \$176 million arrangement is to help overhaul the Air Force's 586 Minuteman III propulsion system rocket engines to keep them operational through the year 2020, according to a Sept. 9 Air Force news release.

Work will be performed both at the depot and at Northrop Grumman facilities. Officials said an additional benefit of the agreement is that it will combine the maintenance experience resident at Hill with Northrop's advanced technology, manufacturing processes, and materials.

Academy Unveils New Slogan

The Air Force in late September installed a new slogan—"Integrity First. Service Before Self. Excellence in All We Do."—at an Air Force Academy entranceway. It replaces the "Bring Me Men" slogan that was removed 20 months ago.

The previous statement was pulled in March 2003, at the height of the sexual assault scandal at the academy. It came down shortly after the Air Force Secretary and Chief of Staff

ordered sweeping changes at the academy, in response to complaints of institutional problems that made the academy's atmosphere hostile to female cadets.

The new slogan was approved by Lt. Gen. John W. Rosa Jr., academy superintendent. It was the winner from among more than 1,500 suggestions sent to the academy's Association of Graduates.

Senior Staff Changes

RETIREMENT: Brig. Gen. Kelvin R. Coppock.

NOMINATIONS: To be **General:** Ronald E. Keys, Bruce A. Wright. To be **Lieutenant General:** Kevin P. Chilton, William M. Fraser III, Dennis R. Larsen, Stephen R. Lorenz, Stephen G. Wood.

To be **ANG Major General:** David A. Brubaker, Alan L. Cowles, Allen R. Dehnert, Harry W. Feucht Jr., Charles A. Morgan III, Mark R. Musick, Frank Pontelandolfo Jr., Annette L. Sobel, Frank D. Tutor, John M. White. To be **ANG Brigadier General:** Michael G. Brandt, Hugh T. Broomall, Robert B. Buehler, William S. Busby III, Charles M. Campbell, James J. D'Agostino, Eugene J. Delgado, Richard G. Elliott, John B. Ellington Jr., Steven E. Foster, Donald D. Harvel, Thomas J. Haynes, Allison A. Hickey, David E. Holman, Richard D. King, James M. Lillis, Dennis W. Menefee, Peter S. Pawling, Richard J. Prosek, Don E. Reynolds, Stephen M. Sischo.

CHANGES: Maj. Gen. (sel.) John T. Brennan, from Dep. Dir., Reaction Force Air Staff, Allied Command Europe, NATO, Kalkar, Germany, to Cmdr., Air Forces Europe, Ramstein AB, Germany ... Brig. Gen. Andrew S. Dichter, from Dep. Cmdr., Canadian NORAD Region, Winnipeg, Canada, to Dep. Dir., Jt. Integration, Operational Capabilities Rqmts., DCS, Air & Space Ops., Pentagon ... Brig. Gen. (sel.) Randal D. Fullhart, from Cmdr., Center for Aerospace Doctrine, Research, and Engineering, AETC, Maxwell AFB, Ala., to Commandant, Air Command & Staff College, AU, AETC, Maxwell AFB, Ala. ... Brig. Gen. Ralph J. Jodice II, from Cmdr., 80th FTW, Sheppard AFB, Tex., to US Defense Attache to China, DIA, Bolling AFB, D.C. ... Brig. Gen. Ronald R. Ladnier, from Commandant, Air Command & Staff College, AU, AETC, Maxwell AFB, Ala., to Dir., Log. Readiness, DCS, Instl. & Log., Pentagon ... Brig. Gen. K. C. McClain, from Dep. Dir., Ops. for Tech. Tng., AETC, Randolph AFB, Tex., to Cmdr., JTF Sexual Assault Prevention & Response, USD (Personnel & Readiness), Pentagon ... Brig. Gen. Stephen J. Miller, from IG, ACC, Langley AFB, Va., to Dep. Chief, Central Security Service, NSA, Ft. Meade, Md.

COMMAND CHIEF MASTER SERGEANT CHANGE: CMSgt. Jackson A. Winsett, to CCMS, AFRC, Robins AFB, Ga.

Obituaries

Retired Brig. Gen. Frank K. "Pete" Everest Jr., record-setting USAF test pilot, died Oct. 1 in Tucson, Ariz., at the age of 84. He was born in Fairmont, W.Va., and entered Army Air Forces pilot training in November 1941. He flew a total of 161 combat missions in the Mediterranean and China-Burma-India Theaters.

Following the war, Everest became a test pilot, flying the Bell X-1, X-2, X-3, X-4, X-5, XF-92, and YB-52, as well as the 100-series fighters. In 1953, he set a world speed record of 755.149 mph in a YF-100. He also set an unofficial speed record of 1,957 mph in the X-2 rocket plane. In his later career, he served in various command positions, retiring as commander of Aerospace Rescue and Recovery Service in 1973.

Retired Col. L. Gordon Cooper Jr., one of the original seven Mercury astronauts, died Oct. 4 at his home in Ventura, Calif. He was 77.

Cooper was born in Shawnee, Okla. His initial Air Force assignment was flying F-84s and F-86s in Germany. In 1957, he became an aeronautical engineer and test pilot at Edwards AFB, Calif., where he logged more than 7,000 hours of

Officials Break Ground for Soaring Air Force Memorial

Active duty and retired USAF officials, key lawmakers, and Air Force Association leaders gathered in the rain in Arlington, Va., on Sept. 15 for the groundbreaking and site dedication of the Air Force Memorial. The Air Force is currently the only branch of the armed forces without a memorial in the national capital area.

The memorial will feature three stainless steel spires, the tallest of which is to stand 270 feet high. Expected to be completed in 2006, the 27-story monument will instantly become a prominent part of the Washington area skyline. It will be visible from the National Mall.

The groundbreaking came 13 years after Sen. Ted Stevens (R-Alaska) wrote the legislation that began the process of building the memorial. Early plans called for a different memorial design to be located near the Marine Corps' Iwo Jima memorial. Those opposed to that location felt the Air Force's proposed site infringed upon the Marine Corps memorial.

After a protracted dispute, Congress offered the Air Force Memorial Foundation the option of placing the memorial on the grounds of the to-be-demolished Navy Annex, adjacent to Arlington National Cemetery and overlooking the Pentagon. That option had been considered initially but discarded because its availability was uncertain since the federal office buildings located there were still in use by DOD.

Stevens said, "It's been a long process, but we never doubted we'd achieve this goal."

Also speaking at the event, Air Force Secretary James G. Roche said, "Human beings need symbols," and "the beauty of this structure will be like that of all good art: It will mean different things to different people."



Wielding ceremonial spades are (l-r) Ross Perot Jr., chairman of the Air Force Memorial Foundation; CMSAF Gerald Murray, USAF's top-ranking enlisted member; Gen. John Jumper, Chief of Staff; James Roche, Secretary of the Air Force; Rep. Jim Moran (D-Va.); and Sen. Ted Stevens (R-Alaska). Behind them are AFA and Air Force Memorial Foundation officials.



Despite the rain, quite a crowd gathered to witness the site dedication. Well-wishers included such airpower notables as retired Gen. Bernard Schriever, here with his wife, Joni James-Schriever.

flying time. In 1959, he was selected for the astronaut program. Over the years, he piloted several spacecraft, logging 222 hours in space, and became the first man to make a second orbital flight. He also set a space endurance record with Charles Conrad Jr. on the eight-day, 120-revolution Gemini 5 mission in 1965. Cooper retired from the Air Force and NASA in 1970 and pursued a career in business. ■

Index to Advertisers

Agusta Westland	3
BAE	13
Boeing	Cover IV
Lockheed Martin	Cover II
Northrop Grumman	32, Cover III
Pratt & Whitney	6, 7
Raytheon	25
Textron	19
<hr/>	
New at AFA	109

Action in Congress

By Tom Philpott, Contributing Editor

Tax Relief Temporary; Scurrilous Schemes; Unlimited Mobilizations?; Part B Fix

Combat-Zone Tax Relief

The Working Families Tax Relief Act of 2004, passed by Congress Sept. 23, provides only temporary relief from reduced tax benefits for an estimated 10,000 military members serving in Iraq, Afghanistan, and other combat areas.

Combat-zone tax exclusions typically boost take-home pay of those fighting overseas, but some military families recently have seen a net loss in tax breaks. The reason is that wartime tax exclusions disqualify them for more valuable tax breaks offered through the Earned Income Tax Credit (EITC).

Recent victims of the lost tax benefits—more than \$4,200 a year for some—have been lower-grade enlisted members or junior officers who served at least seven months in a combat zone, were married with children, and had little or no other family income.

The new law brings two years of relief—for tax years 2004 and 2005—from loss of EITC.

"It's a victory, but there's still more work to be done," said a staff member for Sen. Mark Pryor (D-Ark.). Pryor was primary sponsor of the original Tax Relief for Americans in Combat Act (S. 2419), which got rolled into the larger tax bill.

Income earned in war zones is tax-exempt for enlisted members. Officer exemptions are capped, for 2004 at \$6,315.90 a month. The exemptions affect EITC by lowering the service member's taxable income below qualifying thresholds. For example, earned and adjusted gross income must be below \$33,692 for a worker with more than one qualifying child (or \$34,692 if married, filing jointly).

EITC eligibility not only lowers tax bills but can provide refundable tax credits. Because lower-income military families don't pay income taxes anyway, eligibility for combat tax exclusions can wipe out tax credits which otherwise would have boosted family incomes.

The new law reverses this effect by allowing tax-exempt combat pay

to be counted as earned income for purposes of EITC. Because the change is not permanent, however, lower-income members who serve in combat zones in 2006 and later would again lose EITC unless Congress acts.

"Too Offensive"

The House in September took steps to block the sale of questionable financial products to military members after a hearing by a House Financial Services subcommittee confirmed reports of scams and abuses.

The Military Personnel Financial Services Protection Act (H.R. 5011), a bill offered by Rep. Max Burns (R-Ga.), would end on-base sales to service members of high-priced securities and controversial life insurance products.

The bill specifically would ban "mutual fund contractual plans," an investment option that "disappeared from the civilian market 20 years ago," Burns said, but continues to be "pawed off on unsuspecting young service people as part of 'approved' savings and insurance plans."

Such investments carry sales commissions as high as 50 percent on first-year contributions by buyers. Most reputable mutual fund charges are less than six percent annually.

H.R. 5011 also would allow state insurance laws to apply on federal military property, removing a protective bubble for insurance companies that have sold overpriced policies to service members as investments.

Finally, the bill would mandate that insurers conducting business on base disclose to service members the availability of government-subsidized life insurance instead of more costly products. Insurers who fail to comply with the new law could be barred from bases and see their state insurance licenses revoked.

Panel chair Rep. Richard H. Baker (R-La.) called the peddling of high-priced financial products to service personnel "almost too offensive for words."

Full-committee chairman Michael

G. Oxley (R-Ohio) said the abuses are not isolated incidents but involve "some of the biggest names in the mutual fund business."

He said it is unconscionable if, as reported, firms use retired military officers to make sales pitches for mutual funds with inflated commissions.

Elizabeth W. Jetton, president of the Financial Planning Association, said young service members with families can buy government-subsidized coverage known as Service-members' Group Life Insurance. For those who want more coverage, Jetton noted, \$167 a year in premiums can buy for a young enlisted member another \$250,000 twenty-year term policy. By contrast, the "seven-pay, twenty-year term" policy marketed on military bases has a death benefit of less than \$30,000 and first-year premium of \$900.

Oxley said it's "a systemic problem that needs to be fixed."

Unlimited Mobilizations?

Facing critical personnel shortages for a protracted war on terrorism, defense officials recently considered removing a 24-month cumulative limit on the length of time individual Guard and Reserve members can be mobilized involuntarily, the Government Accountability Office revealed.

In a lengthy report on a range of mobilization and demobilization issues, GAO auditors explained that partial mobilization authority for a national emergency has limits. It allows involuntary call-ups of not more than a million reserve component members at a time, and for not more than 24 consecutive months of service.

Soon after the Sept. 11, 2001, terrorist attacks, DOD issued more specific guidance, telling the services to limit initial mobilizations to 12 months and allowing service secretaries authority to extend orders an additional 12 months—as long as "cumulative service" for individuals did not exceed 24 months.

The demands of Iraq and Afghanistan are high. GAO said it is pos-

sible that, if DOD continues the more relaxed 24-month cumulative rule, it "will run out of forces."

One way to expand the pool of available reserve personnel would be to drop the cumulative rule. If it did, DOD could mobilize forces for fewer than 24 consecutive months, send them home for an unspecified period, and remobilize them, over and over. Repeating this cycle would essentially produce an unlimited flow of forces, said GAO.

However, defense officials told auditors they have decided to retain the 24-month cumulative ceiling for involuntary mobilizations.

GAO suggested that is not a good idea. Because availability of reserve component forces "is greatly influenced" by how partial mobilization authority is used, GAO said, it's time for DOD to replace its piecemeal approach, with its focus on short-term service needs, with a broader strategic framework aimed at meeting longer-term personnel requirements for a long global war on terrorism.

Reserve Retirement

Another GAO report has tossed cold water on potential legislation to lower the age at which reserve retirement begins.

Faced with a slew of bills to drop the threshold age for payment of reserve annuities from 60 to 55 or younger, Congress asked GAO to weigh potential costs against the benefit of retaining more reservists.

GAO concluded that it cannot determine whether the services are keeping enough reserve members for 20 years or more because DOD doesn't collect adequate reserve attrition data. However, GAO believes Congress should move cautiously, or perhaps not at all, in changing reserve retirement. It listed five reasons:

Costs. Lowering the age at which annuities start would boost retirement fund obligations and defense budgets a combined \$4 billion to \$35 billion over 10 years. The totals include both the cost of providing earlier annuities and earlier health benefits.

Few Gain. Because only one out of four reservists serves long enough to retire, earlier annuities won't benefit most reservists serving in Iraq and Afghanistan. At the same time, many reservists who never deployed for war would see the value of their retirement raised.

Better Alternatives. There are more efficient ways to raise compensation of deployed reservists, including hazardous duty pay, family

separation allowances, and a new, still unused special deployment allowance for military personnel who see frequent or longer deployments.

Shifting Skills. DOD is shifting skills previously concentrated in the Guard and Reserve to active duty forces. This should relieve operational stress for reservists in high-demand occupations, GAO said, thus reducing the need for improved retirement.

Side Effects. Changing reserve retirement could have unintended consequences on the services' ability to keep active duty forces. For example, if reserve retirement is changed to provide immediate annuities after 20 years—as one bill proposes—some members who planned to remain on active duty until retirement might leave to finish careers as reservists.

Part B Fix Pleases, Baffles

Tricare and the Centers for Medicare and Medicaid Services moved in September to implement the Medicare Part B waivers that Congress enacted last December. But a requirement that younger retirees with Medicare-eligible disabilities pay Part B premiums for the first time caught some retirees by surprise.

The government granted relief in September to 60,000 military beneficiaries who faced financial penalties or loss of Tricare eligibility because they delayed enrollment in Medicare Part B after reaching age 65 or after qualifying for Medicare and Social Security disability payments.

Changes mandated by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 impact a mix of retirees, family members, survivors, and un-remarried former spouses. They fall into three categories:

■ **Automatic Enrollees.** About 32,000 beneficiaries in September were enrolled automatically in Medicare Part B, ensuring their eligibility for Tricare or Tricare for Life without a surcharge on Part B premiums for delayed enrollment. This group includes 26,000 Medicare-eligible beneficiaries under age 65 who draw Social Security Disability Insurance (SSDI) payments. Until now, weaknesses in data cross-matching and beneficiary education gave almost 16,000 SSDI recipients access to Tricare though they were ineligible for lack of Part B enrollment.

■ **Waived Surcharges.** About 18,700 elderly beneficiaries since 2001, the start of Tricare for Life, had enrolled late for Part B, despite an

extra surcharge, in order to qualify for TFL coverage. In September, these beneficiaries saw their higher monthly premiums lowered to \$66.60, the regular Part B rate. These beneficiaries also will receive refunds of premium surcharges paid back through January 2004. Part B surcharges are not waived for those who enrolled late before 2001.

■ **2004 Enrollees.** More than 9,000 beneficiaries who enrolled in Part B during the general enrollment period, from Jan. 1 through March 31, 2004, with coverage effective July 1, 2004, will see their surcharges waived, too.

As welcome as surcharge relief is for many Medicare-eligible retirees, automatic Part B enrollment confused and even angered some under-65 retirees. What some disabled retirees didn't understand, say officials, is that, by law, they were ineligible to use Tricare, despite the access granted in error, until they enrolled in Part B. The government was complicit in the error, doing a poor job tracking and communicating with this group.

When the magnitude of the glitch was discovered last April, defense officials initially moved to cut off Tricare access. Under pressure from service associations, Tricare eligibility for the disabled retirees was restored. They now are enrolled automatically in Part B, and, from now on, Tricare and Medicare will cross-match data on this beneficiary population at least monthly.

USFSPA Court Challenge

Federal District Court Judge James C. Cacheris of Alexandria, Va., heard arguments Sept. 10 on a government motion to dismiss a court challenge to the 1982 Uniformed Services Former Spouses Protection Act, which claims the law is unconstitutional. (See "Action in Congress: Divorced Retirees File Lawsuit," August, p. 23.)

The judge, acknowledging much public interest in the case, said he might need up to eight weeks to rule on the motion. If he denies the motion, the litigants will present fuller arguments on the merits of the case at a future date.

The legal challenge in *Adkins, et al vs. Rumsfeld* is brought by 58 divorced service members and retirees who formed the ULSG (USFSPA Litigation Support Group). They charge widespread violations of "due process" and "equal protection" rights in the way the law is written and enforced.

The USFSPA allows state courts to divide military retirement as marital property in divorce settlements. ■



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Long-Range Strike in a Hurry

By Adam J. Hebert, Senior Editor

The Air Force has decided to speed up its bomber replacement with a "system of systems" approach.



IN RECENT US wars, heavy bombers played starring roles, reaffirming the value of aircraft that can deliver huge payloads, cover long distances, strike with precision, and loiter over a battlefield for extended periods. The Air Force wants more of this long-range strike capability, and is moving to get it.

USAF in recent months has gone beyond its former roadmap for sustaining bomber forces. That plan, hammered out during the Clinton Administration, would have delayed the fielding of *any* new long-range strike system until the mid-2030s or beyond. Air Force leaders now say the nation can't wait that long.

As a result, the service is preparing to move faster to acquire new systems and capabilities. The first actual hardware—an “interim” strike system of some type—could be on the ramp in a decade. The Air Force, judging from its public statements, also wants to speed delivery of a second, much more advanced “next generation” system, which would follow the interim system.

Meanwhile, USAF is moving out to upgrade, strengthen, and increase the combat power of its existing fleet of B-1B, B-2, and B-52H heavy bombers, all of which are expected to play pivotal combat roles for decades to come.

Maj. Gen. (sel.) Stephen M. Goldfein, former Air Force requirements director, said the service has concluded that “out in the 2030s” is “just too far away.” Goldfein said the Air Force wants the new “interim” system to become operational around 2015.

Gen. T. Michael Moseley, Air Force vice chief of staff, announced that the next generation system could be ready as early as 2025.

The service has embarked on an effort to meet these demanding goals. Air Combat Command is studying the “mission area” to determine what might be needed, and Air Force

Materiel Command is working with industry to identify realistic options.

It is apparent that there will be no single “solution” to the Air Force’s overall long-range strike needs. “It’s not going to be just about a bomber or just a weapon,” Goldfein noted. He expects to see a “system of systems.”

In fact, the Air Force has abandoned the notion that future systems have to be bombers at all, at least in the classic sense of the word. A broad range of options—including new unmanned systems, updated bombers, an F/A-22 derivative, and conventionally armed ballistic missiles—are all being weighed as options for meeting future strike requirements.

Do It Faster

In a reversal of form, USAF has now formally concluded that its existing bomber fleet, upgraded and modernized though it may be, will not meet all future long-range strike needs.

The service last April issued to industry a request for information seeking new ideas to meet the challenge on an interim basis. According to the RFI, “a development effort could start as early as 2006,” with initial operational capability coming as soon as 2015.

Goldfein said in an interview that “it became clear that enough studying had probably been done,” and it was time to move ahead with a new program. Long-range strike, he said, is “at the heart” of the Air Force’s ability to hold targets at risk on a global basis.

The RFI noted that new capabilities are needed to “ensure that the Air Force can strike a variety of targets, including hardened or deeply buried targets ... in nonpermissive environments.”

Long-range strike proponents have long argued that the mission area needed more attention. The Air Force is investing heavily in short-range

fighters, bomber advocates say, but potential enemies, with sophisticated air defenses and anti-access strategies, could limit the initial effectiveness of short-range aircraft.

This argument was under way long before the Sept. 11, 2001, terrorist attacks made it necessary for Air Force bombers to strike targets half a world away in Afghanistan.

Retired Air Force Gen. Richard E. Hawley, the former commander of Air Combat Command, wrote in early 2001 that it would be "far more prudent" to optimize US airpower for strike over long ranges.

At that time, Hawley had in mind Russia, China, and Iran. "The common challenge posed by all these threats is strategic depth. ... A bomber-centric attack force has much more relevance in all of these scenarios," Hawley wrote. The Global War on Terror, however, raises many of the same issues.

Similarly, an industry analysis last year noted that "only the stealthy B-2 possesses the right combination of attributes ... to even begin addressing" the Air Force's global strike requirements. "Unfortunately, B-2 production was capped at just 21 total aircraft, ... so the B-2 force's aggregate capability remains distinctly, if arbitrarily, limited."

The Air Force now agrees with this line of reasoning, hence its two-step approach to the problem.

The Air Force is reviewing a host

of ideas submitted by contractors that could meet USAF's interim strike requirement. Of all the options, the best known is the FB-22. This would be a two-seat, extended-range derivative of Lockheed Martin's F/A-22 single-seat, short-range Raptor.

Speaking in February, Gen. John P. Jumper, Air Force Chief of Staff, described the concept thus:

"The FB-22 would carry some 30-plus Small Diameter Bombs, have a range of about 1,600 miles, and be able to persist behind enemy lines and penetrate with some element of supercruise—and still [have] some element of maneuverability and the ability to protect itself."

Jumper described the FB-22 as a "regional bomber."

The Congressional Research Service noted in a report that this FB-22 idea "appears to be the only bomber concept that Air Force leaders are discussing with any enthusiasm."

However, a regional bomber may not meet long-range strike needs, CRS observed. With a range of 1,600 miles, the FB-22 "appears to be clearly a different class of aircraft than today's long-range bombers, which typically exhibit unrefueled combat radii of 3,400 to 4,400 miles."

The much-prized "long loiter time," CRS added, "is a direct function of long range."

Actually, however, the FB-22 is only one of many options available

to the service. Over the summer, the Air Force reviewed more than 20 specific proposals submitted by the defense industry for new long-range strike capabilities.

Options Abound

Air Force Magazine spoke with representatives from Boeing, Lockheed Martin, and Northrop Grumman about their responses to USAF's April request for information. Here, in a nutshell, are their responses:

■ **Northrop Grumman.** The program manager for future strike systems, Charles Boccadoro, said the firm submitted eight concept proposals. These included a B-2 Global Strike Capabilities Initiative, a low-risk block upgrade to the highly successful stealth bomber. (The company did not propose restarting new B-2 production.) A higher risk, "cutting edge" option was an Unmanned Regional Attack aircraft derived from existing unmanned aerial vehicle programs. Finally, there was a "niche" option—a conventionally armed intercontinental ballistic missile. Boccadoro noted that a conventional ICBM could quickly destroy a hardened or buried target anywhere in the world. However, it could not maintain a persistent presence in the battlespace.

■ **Lockheed Martin.** Kevin J. Renshaw, manager of advanced air combat programs, outlined four system proposals. These included the FB-22; an "arsenal ship" aircraft based on the C-130 airframe; a hypersonic missile tipped with the so-called "Common Aero Vehicle"; and a "clean sheet bomber" built from scratch. The FB-22 and the arsenal ship are probably "easier to get to," he said, but all of the concepts were deemed achievable by 2015. John Perrigo, another Lockheed manager, asserted that USAF might go for an unmanned system, even for the interim capability.

■ **Boeing.** The director of global strike integration, Rich Parke, noted that his company had submitted six proposals. These included a Prompt Global Strike Missile using decommissioned ICBMs; an X-45D direct-attack unmanned combat air vehicle with increased range and payload; a blended wing body arsenal ship aircraft that could hold 96 cruise missiles; and a "B-1R" bomber. Parke said the B-1R (R stands for "regional") would be a Lancer with advanced radars, air-to-air missiles,

Northrop Grumman photo



Upgrade. B-2s are getting a new stealth coating that will improve their combat readiness. USAF plans upgrades to each of its current bombers to keep them viable, even as it moves to field a new long-range strike system.

and F/A-22 engines. Its new top speed—Mach 2.2—would be purchased at the price of a 20 percent reduction of the B-1B's combat range.

Some analysts are looking longer term. A Defense Science Board study released this year contemplated USAF strategic strike requirements 30 years in the future. The DSB determined that the long-term mission requires systems that can do three things:

- Hit time-critical targets quickly, from long range, in bad weather.
- Destroy hardened and deeply buried targets.
- Be more reliable, accurate, and stealthy than "battlefield systems."

The DSB recommended converting 50 Peacekeeper ICBMs, now being decommissioned, to "a conventional role" and relocating them to Vandenberg AFB, Calif., and Cape



Future Strike? The Air Force does not rule out the use of unmanned air vehicles for long-range strike. Boeing, Lockheed Martin, and Northrop Grumman included unmanned systems among their proposals.

Bombing With Electrons

The Air Force plans to add a standoff jamming capability to the B-52 bomber in the near future. Gen. John P. Jumper, Chief of Staff, noted in February that the Air Force has "a growing need for adequate standoff jamming" and that the B-52 flies with empty wingtip fuel tanks simply to help stabilize the wing.

The wingtip pods are so large, Jumper said, that "when you open one up, you can build a small condominium."

The Air Force wants to create a missionized standoff jammer (SOJ) system that can be added and removed from B-52s as required.

"It wouldn't be a dedicated capability," Jumper noted, but one that "takes advantage of the superb range of that airplane, to be able to stand off and provide jamming."

Boeing believes that with a Fiscal 2005 start, a full reactive SOJ capability could be operational aboard six B-52s by 2012, giving the bombers simultaneous jamming, decoy, and strike capability.

The newsletter *Inside the Air Force* reported this summer that USAF would like to modify 76 of its B-52s to carry these electronic warfare pods. That is every B-52 the Air Force considers a requirement. (The Air Force also owns 17 additional BUFFs, in attrition reserve status, that it considers excess.) One B-52 is on permanent loan to NASA to serve as a "mothership."

A long-standing disagreement between the Air Force and Congress over the proper number of B-52s has developed an annual solution. Every year, the Air Force requests funding for 76 B-52s. Lawmakers then provide additional funds to keep the 17 additional B-52s active at Minot AFB, N.D. The Air Force typically rotates individual bombers in and out of the attrition reserve fleet.

Canaveral AFS, Fla. "These weapons would give the United States a 30-minute response capability for strategic strike worldwide," the report noted.

The Air Force still plans to field a separate, breakthrough long-range strike capability, so scientific development work will continue. Future

technologies incorporated into a "2030 system" could include sustained hypersonic flight, directed energy weapons, or orbital or semi-orbital vehicles.

Air Combat Command recently completed a functional area assessment, which determined what long-range strike capabilities the Air

Force will probably have available around 2011, based on current programs.

A functional needs analysis was also conducted this summer, according to Lt. Col. M.D. Dates, deputy chief of ground dominance requirements for ACC. The needs analysis compared what USAF should have in 2011 to what it needs to have around that time.

The two studies will feed into a formal analysis of alternatives (AOA) that will provide a roadmap for the future long-range strike capability. The AOA is scheduled to be completed in 2007.

Meanwhile, the Air Force has launched far-reaching programs to keep its current bomber fleet ready for combat for decades.

Expanding the B-1 Fleet

The B-1B, once the target of gibes and harsh criticism, has proved so valuable that the Air Force has scaled back a 2001 decision to retire 33 of the long-range "Bones."

Seven retired Lancers are on their way back to active status. When they are on station, they will increase the size of the B-1 fleet from 60 to 67 aircraft. All the B-1s will get additional upgrades (as will the Air Force's 21 B-2 bombers and 76 B-52 bombers, which have proved just as valuable in recent years).

The mission capable rate for the B-1B is 69 percent this year, a significant improvement from MC rates

that were typically around 60 percent in the 1990s. (See "The Long Reach of the Heavy Bombers," November 2003, p. 24.)

Higher MC rates translate into additional B-1s ready to perform their primary mission at a given time. This became possible when the Air Force pledged to fully fund the operation and maintenance accounts for its Lancers by redirecting the maintenance money saved by retiring 33 aircraft. Prior to the full program funding, the B-1s ran annual deficits, and upgrade programs were languishing.

The B-1B proved itself to everyone's satisfaction in Operation Enduring Freedom, the 2001 war in Afghanistan against al Qaeda and its Taliban supporters. Boeing noted in



USAF photo by SSgt. Joanna E. Hensley



USAF photo by A1C Michael B. Keller

More Bones. USAF is bringing back some B-1Bs from the retired list. At top, airmen at Ellsworth AFB, S.D., load up a B-1B destined for Southwest Asia. Below, a pilot and crew chief conduct preflight checks.

a fact sheet that the B-1, with only five percent of the OEF strike sorties, dropped 40 percent of the total weapons—including more than 70 percent of the near-precision Joint Direct Attack Munitions.

The B-1 further distinguished itself in Operation Iraqi Freedom, when the Bones set up round-the-clock orbits over Iraq, available to deliver huge payloads of satellite-guided weapons whenever needed.

The B-1's Block E computer upgrade program, now coming on-line, will allow a Lancer to carry different weapons in each of its three weapons bays. The B-1 is further scheduled to have the Joint Air-to-Surface

Standoff Missile (JASSM) added to its arsenal in 2005, and the Small Diameter Bomb will become available in later years.

The recently passed 2005 defense money bill funds 67 B-1s, Air Combat Command officials noted. "One aircraft came out of retirement" and was recovered from the "boneyard" at Davis-Monthan AFB, Ariz., according to ACC. The other six never actually made it to the boneyard and required minimal rework.

In 2003, Congress nearly ordered the Air Force to return 23 B-1s to active service. With the eventual size of the fleet in flux, six decommissioned aircraft stayed on the ramps

at Dyess AFB, Tex., and Ellsworth AFB, S.D., Air Force officials noted.

Subsequent analysis (and negotiations with Congress) determined that 67 B-1s should meet requirements.

According to Parke, a B-1B fleet larger than 67 aircraft would likely face initial engine shortages.

The seven additional aircraft "will initially be utilized as backup inventory while the entire fleet is undergoing extensive upgrades and modernization," ACC officials wrote in a response to questions.

Currently, there are 38 B-1Bs at Dyess and 29 at Ellsworth. One B-1B will eventually be sent to Edwards AFB, Calif., to serve as a test asset.

Better Health for Stealth

The B-2A stealth bomber has recently shown a dramatic rise in availability. After posting an MC rate of 32 percent in 2001, the B-2s are now up to a 45 percent MC rate.

Sixteen of the 21 B-2s are combat-coded. Typically, seven stealth bombers are ready to go to war at a given time. This has not caused problems in recent operations, which have required small numbers of B-2 sorties.

The B-2's low MC rate is largely attributable to its intensive stealth maintenance requirements. If aircraft panels are opened after a mission, returning that B-2 to combat status can take up to two days. Large amounts of tape and caulk must be applied and given time to cure, so the bomber can maintain its low observable (LO) profile.

But the B-2 performed well in war.

The Pentagon's director of operational test and evaluation (DOT&E) explained in a report released earlier this year that B-2s deployed for Operation Enduring Freedom sustained high mission capable rates—85 percent, to be exact.

The high MC rate for deployed bombers "was sustained due to the availability of two deployable B-2 shelters at Diego Garcia and the exceptional performance of deployed maintenance personnel," the DOT&E report read.

The Air Force hopes the Alternate High Frequency Material (AHFM) program will give major LO maintainability improvements. AHFM will eliminate 3,000 feet of tape and allow maintainers to "spray on" stealth coating, reducing maintenance times from days to hours.

According to Capt. Jason Lindsey, a requirements officer with ACC at Langley AFB, Va., an Air Force study projects that AHFM will increase B-2 MC rates by 15 percent. "Subsequent analysis supports this projection," he explained, but it will be years before the full impact of the program is known.

B-2s are receiving the upgrade to AHFM as they go through programmed depot maintenance at Northrop Grumman's Palmdale, Calif., facility. The first AHFM aircraft was delivered to the bomber's operating base just this August. With three B-2s going through PDM a year, it will be seven years before the entire fleet gets the upgrade.

Lindsey noted that AHFM is not designed to make the B-2 more stealthy, but will "make it easier to sustain the B-2 in its intended 'stealth' configuration."

The B-2 will also be receiving an extremely high frequency satellite communications system, Link 16 data link, and additional weapons.

Duke Dufresne, B-2 program manager for Northrop Grumman, told *Air Force Magazine* that integration of a new smart bomb rack this year will allow the bomber to deliver 80 independently targetable JDAMs. That will allow the bomber to hit five times as many targets as it can today, with 2,000-pound JDAMs offering 16 aim points.

Should the Air Force wish to equip it, the B-2 could also deliver 240 or more Small Diameter Bombs. However, there is currently no requirement for it to carry the SDB.



USAF photo by SSGT. Jocelyn Rich

The Old Bull. The B-52 bomber is old but remains highly versatile, carrying a wide array of weapons. At issue is whether it is economically feasible to re-engine the big bomber.

The bomber's radar modernization program will move improved B-2 radars to a new frequency. This upgrade is necessary "to avoid interference with primary authorized users" of the frequency, the DOT&E report noted. Dufresne said the B-2 is a secondary user of this particular frequency, and at least six B-2s will have new radars operational by the end of 2008.

Workhorse BUFFs

The venerable B-52H remains the Air Force's most cost-effective and versatile bomber. Mission capable rates of about 75 percent are the highest of the three bombers, and the B-52 can carry the widest variety of weapons.

Boeing noted that the B-52s flew four percent of the combat sorties over Afghanistan and three percent of the sorties over Iraq, yet the bombers delivered 28 percent and 29 percent of the bomb tonnage, respectively, for those two conflicts.

New capabilities are coming online continually. These include the much-publicized ability to perform close air support strikes from high altitude, by using JDAMs to strike coordinates called in by ground units in close contact with enemy forces.

The B-52 is also the only bomber capable of launching the Conventional Air Launched Cruise Missile and should further enhance its weapons arsenal later this year, when the JASSM cruise missile is added to the B-52's operational repertoire.

One possible major change to the B-52 fleet that has not been approved is re-engining. A recent Defense Science Board task force, led by retired Air Force Gen. Michael P.C. Carns, determined that the "economic and operational benefits [of re-engining] far outweigh the program cost."

The task force recommended in June that the Air Force put a B-52 re-engining program on a "fast acquisition track," to be completed not later than 2010.

The Air Force has rejected this idea in the past. The DSB report noted that three Air Force-led studies since 1996 each determined that re-engining was not economically justifiable. The DSB task force believed the economic assumptions used in previous studies are obsolete.

For example, the cost of fuel is 17 times greater than the cost USAF applied, the task force asserted. And expected maintenance costs for the B-52's engines have more than tripled.

The DSB believed new engines make both financial and combat sense. A re-engining program offers "greater operational flexibility and range, reduces fuel burn and tanker demand, and produces significant depot and field maintenance cost and manpower savings," the report read.

In sum, the Air Force is preparing for major changes in long-range strike capabilities—a mission area that not too many years ago seemed to be of secondary importance. Nobody is making that case today. ■

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By John T. Correll, Contributing Editor

NORAD Sees All

"On the morning of Sept. 11, 2001, there were 3,000 aircraft flying, and NORAD saw less than 20 percent of those because of where our radars were. Now we have the means to cover 100 percent of the airspace."—*Maj. Chuck Thinger, spokesman for North American Aerospace Defense Command, Los Angeles Times, Aug. 26.*

Beyond Mass

"Mass and numbers was last century. Sitting around counting up how many troops are here, how many ships are there, how many tanks are here, how many bombs are located there, is not going to be the way that intelligent people who understand these things are going to be measuring capability. ... We will be increasing our capability because of speed and deployability and usability and lethality."—*Secretary of Defense Donald H. Rumsfeld, news conference in Huntsville, Ala., Aug. 18.*

What the Public Doesn't Know

"The vast majority of Americans believe that the United States can defend itself against a ballistic missile attack."—*New York Post, Aug. 23.*

All-Star Airplane

"As a career mobility pilot, I am convinced that the C-130 is one of the greatest aircraft ever built."—*Gen. John W. Handy, commander of US Transportation Command and Air Mobility Command, on 50th anniversary of service by the C-130 Hercules, Aug. 23.*

Iran's Declared Threat

"The entire Zionist territory, including its nuclear facilities and atomic arsenal, are currently within range of Iran's advanced missiles."—*Yadollah Javani, head of the Iranian Revolutionary Guard political bureau, Washington Times, Aug. 24.*

SWAT Style

"The special operations strategy is essentially a SWAT team approach: Highly trained operators swoop down on the enemy and clean house. It works well for the police, because

the bad guys are usually holed up somewhere. You can't surround a whole city or country, though. By the time we kick in the doors, the bad guys have often scattered. Or they were never at that particular address to begin with; witness the still-futile search for Osama bin Laden and Mullah Mohammed Omar."—*Defense analyst William M. Arkin, Los Angeles Times, Sept. 5.*

OK Is Good Enough

"We can't afford to demotivate employees who are just OK. OK is OK. We are not like the mythical town of [Lake] Wobegone where all the children are above average."—*Jeffrey Neal, director of human resources at Defense Logistics Agency, Federal Times, Sept. 6.*

Parts Make a Difference

"We've got better budgets over the last three years than we've had in many years. ... We've got airplane parts, and we've got mission capable rates in our airplanes higher than what they've been for years. Why? Because we've had money to buy the parts for the first time in years and years."—*Air Force Chief of Staff Gen. John P. Jumper at Ramstein AB, Germany, Aug. 30.*

Act Now

"It has been three years since Sept. 11, and we have already had another intelligence failure—this time in Iraq. We should not wait until another failure takes place, until another commission has a task as somber as ours. We welcome refinements to our recommendations through the legislative process. But the time has come to act."—*Thomas H. Kean and Lee H. Hamilton, chairman and vice chairman of the 9/11 Commission, on the need for intelligence reform, Washington Post op-ed, Sept. 8.*

Stay Committed

"When you order elements of a Marine division to attack a city, you really need to understand what the consequences of that are going to be and not perhaps vacillate in the middle of something like that. Once you commit, you got to stay committed."—

Marine Lt. Gen. James T. Conway on decision last April to withdraw US forces from Fallujah after three days, Washington Post, Sept. 13.

Starlifter Flies into History

"Some airplanes are designed to have a short lifespan. ... There are also sorts of also-rans and not-quiters. But if *Consumer Reports* rated airplanes, it would get a check-plus in every column. It did everything we ever asked it to do."—*Michael Leister, director of Air Mobility Command Museum, on retirement of active duty C-141 Starlifter, Air Force Times, Sept. 20.*

Alliance Not Over

"I am well aware that the ROK-US relationship is not what it used to be, and there are lots of challenges and even problems. However, the two countries will remain a key and strong alliance for another 50 years."—*Christopher Hill, US ambassador to South Korea, Korea Times, Sept. 3.*

Dump Pre-emptive Strategy

"Before the Iraq fiasco, American leaders rightly viewed war as a last resort, appropriate only when the nation's vital interests were actively threatened and reasonable diplomatic efforts had been exhausted. That view always left room for pre-emptive attacks; America is under no obligation to sit and wait, if it is clear that some enemy is actually preparing to strike first. But it correctly drew the line at preventive wars against potential foes who might, or might not, be thinking about doing something dangerous. As the Administration's disastrous experience in Iraq amply demonstrates, that is still the wisest course and the one that keeps America most secure in an increasingly dangerous era."—*New York Times editorial, Sept. 12.*

Whistle-Blowers, Arise

"It's time for truth-telling. It is a time for unauthorized disclosure."—*Daniel Ellsberg, leaker (in 1971) of the Pentagon Papers, calling on another generation of whistle-blowers to disclose classified information, GovExec.com, Sept. 9.*

Gen. Gregory Martin says USAF is looking for capabilities that will redefine air warfare—again.

Things To Come

STEALTH, lasers, satellite-based guidance, and endurance airframes transformed the Air Force during the last two decades, and advances in propulsion, directed energy, robotics, and information technology will transform the service again over the next 20 years.

That is the view of Gen. Gregory S. Martin, head of Air Force Materiel Command, which oversees USAF's science and technology efforts. Besides being the service's top technologist, he has held a number of key USAF acquisition and operational posts in his 34-year career.

In an early fall interview with *Air Force Magazine*, Martin said the Air Force is not spending enough to develop innovations that will provide the service its future decisive edge. However, he added, the funds that are available are being allocated in a balanced way.

Martin also observed that, while the pace of invention and innovation is speeding up, the demand or "appetite" for new capabilities is increasing even faster, creating an unhealthy "tension" between requirements and the ability of technologists to fulfill them.

"The technologies that give us the dominance that we have today, [as compared to] where we were" in the Vietnam era "are GPS [Global Positioning System], stealth, endurance airframes, and laser technology," Martin asserted.

The GPS constellation underpins precision attack. Martin pointed out that it is not really a space system but an exquisite timing mechanism "enabled by a space vehicle." It is a

John A. Tirpak, Executive Editor



According to Gen. Gregory Martin, USAF's push for advanced technologies is creating increased "tension" between operational desire and technological capability. Above is a stealth transport concept.

system that still holds “immense potential” for the military.

Stealth has given USAF “a solid way to present massive amounts of firepower with acceptable risk,” he said.

While aircraft such as the manned U-2 could fly long distances at high altitudes, the need for a human pilot was their limiting factor, Martin said. Uninhabited vehicles such as the Global Hawk and Predator “can do what man can’t do” by holding a position for very long periods of time. This staring, persistent presence over the battlefield has been “very important” and will become more so, Martin said.

Lasers, he remarked, have not yet been used as weapons per se—the Airborne Laser is still in development—but have yielded huge advances as target designators, in communications, in laser gyros for navigation, and in their application as optical readers. He also noted that lasers “produced things of significance for our military forces very quickly, within a decade” of their invention.

The Power of Synergy

Yet it was not these isolated advances that made USAF dominant in air combat. It was, rather, the blending of them that yielded the huge successes seen in battles in the Balkans and Southwest Asia. Stealth, coupled with laser designators and GPS-guided munitions, vastly reduced the number of aircraft needed to successfully strike heavily defended targets.

Predator’s optical sensors and laser designators made it possible for attack aircraft to pinpoint and hit targets in complex terrain. Global Hawk helped US operators “see” through sandstorms to find the Iraqi Republican Guard, transmitting target GPS coordinates to aircraft with precision weapons.

“We found out in Iraq the first time, in Kosovo, [and] in Iraq the second time ... [that] stealth and endurance can give you immense capability,” Martin said.

The Air Force is looking for capabilities that will similarly redefine air warfare in the years to come. Martin believes AFMC is pursuing the right mix.

“The ones that are on the horizon ... are directed energy, information technology, and propulsion,” he said. “Those are the ones that I think offer



The Airborne Laser carries a chemical system to power its destructive laser. USAF has not yet found a destructive laser system that can be carried on fighters, but researchers have some leads.

Charge Phasers, Mr. Sulu

Lasers and other forms of directed energy offer some of the most promising technologies for future Air Force needs—not just in weaponry but in sensors and communications. Their big drawback is the power required to make them useful.

Directed energy is “inherently inefficient,” according to Lt. Col. JoAnn L. Erno, power division director of the Air Force Research Laboratory’s Propulsion Directorate.

When firing a laser, for example, “90 percent of the energy is lost to heat,” she said.

To compensate, AFRL is working on small generators that can provide a power source able to generate “megawatt range” power for directed energy weapons. Although it had been hoped that future engines for fighters and even large reconnaissance platforms would be able to generate the necessary wattage to electrically power directed energy weapons, none now in the pipeline will be able to do so and still power all the aircraft’s own organic needs.

The Airborne Laser generates its power using a chemical system that would be too large and bulky to be practical as a weapon on gunships or fighters.

Moreover, the power of a directed energy weapon diminishes over distance, so such a weapon employed from the air must have that much more power to begin with to be effective.

A small engine, about the size and shape of a garbage can, is being developed that will be able to generate four megawatts of power. Called the Multimewatt Electrical Power System, it would be mounted on the wing root of an aircraft such as the E-3 AWACS.

“We will do a megawatt demonstration in ’07,” Erno reported, and she hopes a four-megawatt, deployable system will be developed by 2009.

The device, which will have a motor spinning at 16,000 rpm, will be useful for “any platform with multimewatt power requirements,” such as Joint STARS or AWACS, Erno said.

Air Force Special Operations Command is also showing interest. AFRL is looking at a directed energy weapon that can cause “a sensation of pain and heat in the skin ... in the meters to kilometers range,” Erno reported. This nonlethal weapon would have many uses in the fight against terrorism.

The generator will also be useful for powering millimeter-wave radars that will be able to see through foliage and other obscurants and produce highly detailed imagery.

A destructive laser that would fit on a fighter is the “Holy Grail” of directed energy research right now, Erno said. Promising work is taking place in this regard, using superconductivity, she asserted, but details are classified.

the greatest near-term potential to our military and particularly our air and space forces.”

Directed energy—which encompasses not only lasers of high and low power but also high-powered microwaves, supermagnetic devices, and other energies that can be focused—will provide “the effects of kinetic power as we know it today” from an almost limitless magazine of ammunition, Martin asserted.

The Airborne Laser’s mission is not to shoot down enemy aircraft, but “it’s just a matter of time before we have a system that can also provide some sort of air superiority capability” with lasers, Martin forecast. Lasers and other such devices will also provide aircraft facing enemy air-to-air and surface-to-air missiles “a measure of protection ... that we’ve never had before.”

In propulsion, a big breakthrough could not only make possible advanced long-range strike systems—such as hypersonic cruise missiles or aircraft—but also provide a quick and responsive “tactical insertion of assets into orbit.” This ability to lift “relatively inexpensive projectiles into space for short periods of time—short meaning maybe a couple of months—gives us an option” to gain persistent intelligence-surveillance-reconnaissance “anywhere in the world whenever we want it.” Such propulsion capability doesn’t exist yet.

The Funding Picture

The Air Force’s Fiscal Year 2005 budget request includes \$1.4 billion for science and technology efforts. These are defined by categories. Category 6.1 is basic research into areas with high potential for a military payoff. Category 6.2, which gets more than half of S&T funding, is aimed at solving specific military problems or creating specific capabilities. Category 6.3 is advanced technology development, which involves building hardware that could actually be used in the field in an experimental way.

Gen. Gregory S. Martin would like to see a 20 to 25 percent increase in S&T funding, specifically for “wildcatting” more concepts in areas 6.2 and 6.3.

The Air Force determines its priorities for spending on science and technology by comparing guidance from a number of sources. These include the National Military Strategy, internal defense planning documents, Joint Staff guidance, and the Air Force’s own Strategic Plan.

Beyond that, the service engages in exercises that determine capabilities the service knows it will need in the near- and long-term future. It then balances these needs with spending on technologies that can cut operating or ownership costs or revolutionize military operations.

“Our corporate investment strategy also zeroes in on evolutionary technologies like the scramjet, which in the near term can function as a hypersonic cruise missile and in the midterm is envisioned as an affordable, on-demand access to space with airplane-like operations,” said Maj. Gen. (sel.) Perry L. Lamy, head of the Air Force Research Laboratory.

The “cornerstone” of all Air Force S&T investments is balance, Lamy said.

USAF has 10 major technology areas, of which the largest share of investment goes to propulsion, basic research, and space and air vehicles (see chart p. 37).

Stymied

Martin noted that hypersonic manned flight dates to the 1960s, when the X-15 research craft took men to the edge of space and back in a controlled way. However, he said, “we’ve gone nowhere in hypersonics because of a failure to produce a propellant—and primarily an air-breathing type of propellant. That’s where we’re stymied.” The Air Force has not seen a value in hypersonics unless it worked on a reusable, air-breathing vehicle.

“That’s coming along very slowly,”

Martin admitted. The fuel and the engine have to be developed in tandem. “We’re not spending enough money on those kinds of things right now to create that breakthrough,” he said.

There’s another good reason that hypersonics research shouldn’t be rushed, Martin added. Right now, there’s no value in going faster until the other parts of the Air Force’s global strike capability can keep up.

Martin noted a study in which the National Academy of Sciences “took a look at hypersonics, and they said, frankly, ‘You don’t have an information/decision process that can respond fast enough to make hypersonics useful to you.’”

As an example, Martin recalled an attack, late in Gulf War II, on a purported hiding place of Saddam Hussein. It took 35 minutes from receiving a tip-off regarding Saddam’s whereabouts until the decision was made to order a B-1B bomber to attack the site. The B-1B’s ordnance hit the target a scant 12 minutes later.

“Thirty-five minutes to get the data, determine its value, understand what we had, and make a decision to then execute,” Martin lamented. “So, again, the hypersonics wouldn’t have solved this problem. You have to make the decision inside of two or three minutes and then have a machine that can get there within two or three minutes in order to ... do that. That’s what the academy ...

Photo illustration by Erik Simonsen



Technologists don’t believe a reusable single-stage-to-orbit vehicle is possible in the near future. In the interim, USAF hopes to have a two-stage vehicle for quick access to space by 2013.

was saying.” He added that “we’re getting there.”

What’s needed is a complementary development called Predictive Battlespace Awareness, said Martin. In this concept, the US military’s network of sensors would track vehicles and enemy commanders. Computers would analyze the movements, patterns, and history of those being watched and deduce what they will do next, under certain pressures.

“That’s where that technology has to come,” Martin said. “What I don’t want to do is ... wait until I get that, then wish I had a kill vehicle. So, I need to [simultaneously] pursue them both. ... I can’t overemphasize the importance of our predictive knowledge, ... to be able to know where something’s going to be.”

Speed of Light

Complementing high-velocity analysis, decision-making, and vehicles would be directed energy weapons, which could then attack at the speed of light. Right now, state-of-the-art attack systems “will not be able to respond” at the speed that will be demanded by such future predictive methods, “so we should pursue that,” said Martin.

Information technology has greatly



USAF photo

New propulsion technology is at the heart of today’s R&D. Martin said not enough money is going to the effort, though. Above, an AFRL technician examines a new heat-resistant material for use with new power systems.

advanced USAF’s ability to spot and track targets and manage large numbers of vehicles, personnel, and supplies. Yet the trick that is still to be mastered is “for us to do a much better job of fusing and animating the information in a way that it is useful at a glance to the decision-maker,” Martin explained. “Today we’re into data streams, streaming video, and all kinds

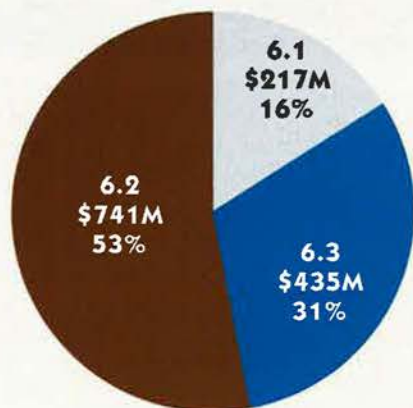
of data but not actionable information, in many cases.”

While some technologies tend to advance at a nearly predictable rate—computer processing speed, for example, doubles every two years or so—other areas, such as propulsion, depend on big breakthroughs that come many years apart.

“This technological explosion has

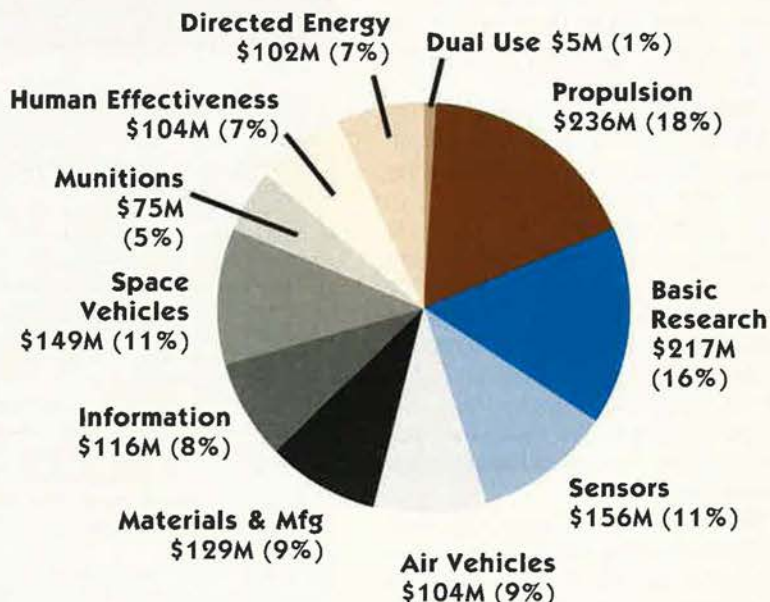
Fiscal 2005 President’s Budget Air Force S&T Budget

By Budget Category



The Administration’s 2005 defense budget included a total of \$1.4 billion for S&T. Basic research (6.1) accounts for less than 20 percent of those dollars. Applied research (6.2) and advanced technology development (6.3) make up the dominant share.

By Directorate/Technology Area



Values may not add due to rounding.

The Air Force has two goals for its high-speed propulsion work: It wants to develop a capability to get anywhere on the globe within a couple of hours, and it would like this same technology to offer a route to low Earth orbit.

The Air Force Research Lab is working on scramjet (supersonic combustion ramjet) propulsion that may be able to do the trick, but progress is slow, requiring simultaneous advances in aerodynamics, wind tunnel development, materials, fuels, and other disciplines. USAF has devoted \$134 million of its own funds and is getting \$53 million more from the Defense Advanced Research Projects Agency to find the answer.

There are almost limitless applications of such a technology, according to Robert A. Mercier of AFRL's Propulsion Directorate.

"In the near term, you could see a hypersonic cruise missile that can travel hundreds of nautical miles in just a few minutes," Mercier said. Such a vehicle would be highly valuable in strikes against time-critical "as well as deeply buried targets," he said. A hypersonic missile would be able to use its velocity to burrow down through hardened structures or the earth to reach bunkers far underground, he said. Hypersonic missiles could also carry submunitions which, released in the target area, could quickly seek out and destroy targets of interest.

A notional vehicle, 168 inches long and carried by an F-15E or in the bomb bay of a B-1B or B-2, it would rely on a booster rocket to get up to about Mach 4, Mercier said. At that point, the scramjet would kick in and accelerate the vehicle to Mach 6.5 to 7.0.

Although simple in theory, the scramjet has proved elusive technologically. Leading edges of the vehicle would

heat up to about 3,000 degrees, requiring use of advanced composite materials. The vehicle's shape would also have to be carefully controlled, and, within the skin, the fuel would also have to act as a cooling agent.

USAF also wants the fuel to be fairly standard issue, so that no special handling is required. AFRL is looking to use JP-7, the same fuel that was used by the SR-71 Blackbird.

The Propulsion Directorate is studying ways "to 'crack' the fuel module," Mercier said, to make it burn faster. Combustion must take place during the millisecond that the molecule enters the engine and exits the exhaust.

AFRL does not yet have high-fidelity, high-Mach wind tunnels for testing these devices, so "flight testing is necessary," Mercier said. A goal has been set of flight testing five to eight vehicles in 2009 at Edwards AFB, Calif.

For a manned vehicle, or one that can attain orbit, the challenges increase. It is not easy to simply "scale up" the missile-sized vehicle, said Thomas A. Jackson of the Propulsion Directorate. While the scramjet missile's inlet and combustion chamber will probably be boxy and rectangular, a larger one might have to be round—with a whole different set of fluid dynamic computations to make.

Moreover, a larger vehicle would have to get to high speed on its own—and without rockets. A "combined cycle" craft with a combination of turbojet and scramjet is envisioned, where the turbojet would accelerate the vehicle to scramjet speed, then either be retracted or faired over while the scramjet engine took over propulsion. The reverse would happen on the return leg. A similar arrangement might be used as a space-accessible vehicle. However, re-entry poses yet another raft of issues for heating and thermal management.

energized a process of developing the next need," Martin observed. He went on to say that appetites for new capabilities are developing "faster than the technology can develop, and there will be a tension there that will not always be healthy."

The Air Force's acquisition and technology apparatus, he said, will get hit with "potshots" for not delivering new capabilities at the desired speed—despite the fact that, on the whole, technology advances are coming faster than ever before.

Asked if there is sufficient money in the Air Force's science and technology (S&T) accounts, Martin replied, "No. There isn't."

He added that the Air Force is "probably at the 75 to 80 percent level, in terms of what I think we should have in S&T." Martin would like to be able to spend more money on ideas that aren't guaranteed to pan out, in "application technology and advanced technology demonstrations" such as those that led to Predator and Global Hawk.

"We really don't have the flexibility to experiment with many rabbit trails," he observed. "I think we can do more prototyping, more wildcatting, if you will, in technology

areas. You may only get one out of 10, but now I'm only trying four, and it's going to take me two-and-a-half times that to get the one."

Friends in High Places

He'd also like to see more ideas from the lowest levels of technology experimentation get a shot at devel-

opment. Most big ideas that have gotten funded—like armed Predator or the Airborne Laser—were the result of a Chief of Staff, having been exposed by chance to something in which he saw potential, directing a program into existence.

Martin pointed out that the Airborne Laser program was generated

When It Has To Be There Overnight

Technologists agree that a reusable single-stage-to-orbit craft is probably not possible in the near future, so the Air Force is looking at a two-stage system that would rely on a hybrid expendable or reusable vehicle for quick access to space, according to Lt. Col. James M. Ceney of the Operationally Responsive Space Technology Office.

USAF wants to be able to loft a small Space Operations Vehicle, with only a few hours' notice, that could remain in orbit for up to several months. The payload might be a reconnaissance or communications satellite, either to replace a lost asset or supplement the existing constellation in a crisis.

"If we can pull the funding together, we hope to fly a demonstrator as early as 2008," Ceney said. The demonstrator would be a "little vehicle," but the objective would be to launch a small fighter-sized craft. If the craft is too small, it won't be able to accomplish missions that are "relevant," Ceney said. The vehicles being looked at commonly resemble "a cylinder with delta wings," he reported.

The demonstrator will "take off vertically, go to Mach 4, and then return to base," but have to fly again in less than 24 hours, Ceney explained.

USAF wants to decide on a system before 2011 and achieve a basic capability by 2013. Ceney said the vehicle will be "all new" and not a rehash of the abandoned X-33 project. It will also not have an aerospike engine as the X-33 had.

The project hopes to achieve "medium lift" capability, meaning that it could loft a payload of 10,000 to 15,000 pounds to low Earth orbit. The Air Force expects the system to be unmanned.

by former Chief of Staff Gen. Ronald R. Fogleman, who happened to be "exposed to" adaptive optics technology at Kirtland AFB, N.M. When Fogleman learned that the biggest problem in laser weapons technology was atmospheric turbulence, he realized that adaptive optics offered a solution, and "he knew we had an answer, and he directed ... a technology effort" that became the ABL, Martin explained.

"Bottom-up" programs atrophied in the last decade, when the Air Force's assorted research labs worked closely with AFMC's product centers, Martin said. The creation of the single overarching Air Force Research Lab was "the right thing to do, because no longer does one technology solve the problem. You need a cross-section of technologies applied towards a capability," he explained.

Beyond the near term, Martin sees tremendous potential in bio- and nanotechnologies.

Biotech will permit the sensing of things that could never be detected before, Martin noted. Included among these are biological agents, chemical signatures, and contaminants.

Nanotechnology—the art of micro-engineering materials and devices—will "allow you to ... operate pieces of equipment so efficiently



Small unmanned aircraft, which can hold positions for very long periods, have a big future. This staring, persistent presence over the battlefield has been "very important" and will become more so, Martin said.

that you can reduce the size, weight, and redundancy in a way that you will be able to do huge work with small things," Martin said. Visionaries have suggested swarms of tiny robots the size of bees searching a landscape for enemies or mines, but a more near-term application will be very small actuators that can cut weight on an aircraft, or airfoils that can adapt their shape at the touch of a button.

Martin believes robots and automation "will become more and more prevalent in our battle force," but he doesn't think they will replace people or reduce the need for manpower.

Predator, he noted, was an idea which, even though it might be seen as replacing a manned reconnaissance aircraft, was actually an add-on, new capability that created hundreds of new billets to fly, maintain, arm, and manage it.

When it comes to replacing humans with uninhabited vehicles and other machines, the real question is going to be "where will the man in the loop be, and how many systems will [he] operate," Martin predicted. "That will be a slower-developing capability," he said.

Such systems will also not be cheap. Although unmanned aerial vehicles are often viewed as inexpensive and disposable systems, they have turned out not to be.

"Global Hawk is very expensive," Martin pointed out. "So when something goes wrong, we don't just have a razor blade you can throw away here. We have a very expensive system that needs to be recovered."

Global Hawks have been lost precisely because "we didn't really have man in the loop."

Martin said he is a fan of UAVs, but he wants to use them first for missions "that we can't do with man. ... So therefore, they're not really replacing man." ■

Down in the Weeds With Nanotechnology

Tiny robots that swarm, adapt, and create virtual sensors—such as those described in Michael Crichton's recent best-selling thriller, *Prey*—are "still science fiction," according to Richard A. Vaia, head of the AFRL Materials and Manufacturing Directorate's nanotechnology efforts.

However, the new science—which allows atoms to be manipulated to create new physical properties of materials—could offer extraordinary benefits in reducing the size and weight of aircraft and missiles.

"Nano will impact everything in the Air Force," Vaia asserted.

Among the applications now in the pipeline are "superstrong metals, inorganic coatings for lubrication of gimbals for spacecraft," atomically structured coatings for adaptive optics, and many more, Vaia said. Inorganic lubrication is a big advance for spacecraft because it "won't seize in the vacuum of space."

Very small, densely packed precise super-lattices, similar to those offered in commercial digital cameras, will make it possible to have extremely sensitive infrared sensors in a small, lightweight package.

Nano-engineered fuel systems will sharply reduce the amount of propellant that is wasted in solid-fuel rockets and missiles, making it possible to have smaller vehicles or make existing ones go farther, Vaia said.

Flexible materials that look like rubber or plastic can be made electrically conductive. They can also be engineered so that they reassume a certain shape when current passes through them. That means nonmechanical actuators, or aircraft wings that change their shape depending on their mode of flight.

Nanotechnology will vastly improve electrical storage, permitting much smaller batteries and solar cells. The same principle will allow new "data storage ... with higher density," meaning more data can be crammed into smaller spaces.

In the near term, Vaia said, expect "electrically conductive adhesives" that will vastly reduce the amount of weight that must be used for electromagnetic shielding of wires and devices.

The T-38C has the basic T-38 airframe, but it is an altogether different bird to fly.

THE SHARPER TALON

Three T-38Cs in their two-tone gray paint scheme fly in formation on a training sortie from the 14th Flying Training Wing, Columbus AFB, Miss.



Photography by Greg L. Davis



The 14th Flying Training Wing at Columbus AFB, Miss., has been flying the new "glass cockpit" T-38 Talon since 1999, when two T-38C aircraft arrived for initial operational test and evaluation. The 14th helped pave the way for production of the converted trainer and became the first specialized undergraduate pilot training (SUPT) unit to exchange all its T-38As for the C model.

The term glass cockpit refers to the digital systems that replaced the T-38's 40-year-old analog instrument package. The new cockpit more closely resembles those found in current and future fighters.

Here, a T-38C student pilot (at right) at Columbus reviews his checklist as his instructor pilot (IP) looks on.



At left, a T-38C IP indicates he is starting engine No. 2. Visible is the aircraft's new head-up display (HUD), part of the upgraded avionics package. Below, an IP and his student in the trainer's tandem seats prepare for takeoff.



The 50th Flying Training Squadron at Columbus trains student pilots in the bomber-fighter track. They are taught advanced aircraft handling, tactical navigation, fluid maneuvering, and more. With the advent of the upgraded T-38C, the transition from trainer to today's sophisticated combat aircraft has become smoother.

USAF received its first T-38s in 1961 and made no major changes to the aircraft (except replacing wings) until 2000. They began a life extension program dubbed Pacer Classic, which includes both the avionics upgrade and a propulsion modernization program. Once T-38A and B models receive the glass cockpit upgrade, they are redesignated C models.





Advanced training in the 50th FTS emphasizes two- and four-ship formation flying, such as that seen in the photo above.

At right, T-38Cs fly a two-ship formation while inverted.

The new cockpit (below) includes the large-field-of-view HUD, multifunctional displays, up-front control panels, electronic engine displays, an integrated Global Positioning System/inertial navigation system, and a traffic collision avoidance system. The head-up display permits the IP and student to maintain situational awareness without having to constantly refocus inside the cockpit to operate or check aircraft systems.



At left, T-38C student pilots review materials for the next block of instruction.

Columbus is also home to another venerable trainer, the T-37 Tweet. The 14th FTW's 37th and 41st Flying Training Squadrons teach basic flying skills in these trainers, which feature side-by-side seating.



Above, IPs and their students head out for training in T-37s. Columbus is slated to replace its T-37s with the new T-6A Texan II aircraft.

The 48th FTS at Columbus provides training in the T-1A Jayhawk (at left) for student pilots who are on the tanker and airlift track of SUPT.

Columbus is also host to an Air Force Reserve Command associate unit that provides IPs to augment the active duty instructor cadre.

At right, four T-38Cs await takeoff clearance as a T-37 lands in the background.

According to the Air Force, the new paint scheme on the upgraded Talons cuts the cost to paint an aircraft by \$2,000 and lets the service run more of the trainers through base paint shops each year.





Once fighter-bound student pilots complete SUPT and receive their aeronautical rating, they must undergo yet more T-38 training. After Columbus, they move on to Introduction to Fighter Fundamentals taught at either Moody AFB, Ga., Randolph AFB, Tex., or Sheppard AFB, Tex. Only Moody has already received its full roster of upgraded T-38Cs.

USAF plans to upgrade all of its A and B model T-38s to C status by 2008 and make propulsion upgrades through 2011. Besides providing state-of-the-art training, the T-38C will reduce maintenance time and cost, Columbus officials have said.



After completion of the Pacer Classic program, the T-38C Talons could remain in service through at least 2020. ■

AT THE peak of Operation Iraqi Freedom in 2003, the Joint Mobility Operations Center at Scott AFB, Ill., was busier than an air traffic control tower on a holiday weekend.

Every four minutes, large digital maps blinked updates showing the paths of 450 cargo aircraft and 120 ships en route to or returning from the Middle East. The traffic system tracked not only the airplanes and ships but also their cargoes—which ranged from Joint Direct Attack Munitions to Meals, Ready to Eat.

Dozens of military and civilian workers from US Transportation Command sat in rows of cubicles below the screens, studying them and an extensive database that tracked the more than five million items heading overseas. That information came in handy as calls and e-mail queries came in from logisticians working at airfields and ports in the Persian Gulf.

Those logisticians wanted answers to questions. How soon would a specific airplane part arrive? When should they expect to see the next batch of troops? What was the due date for the next shipment of meals?

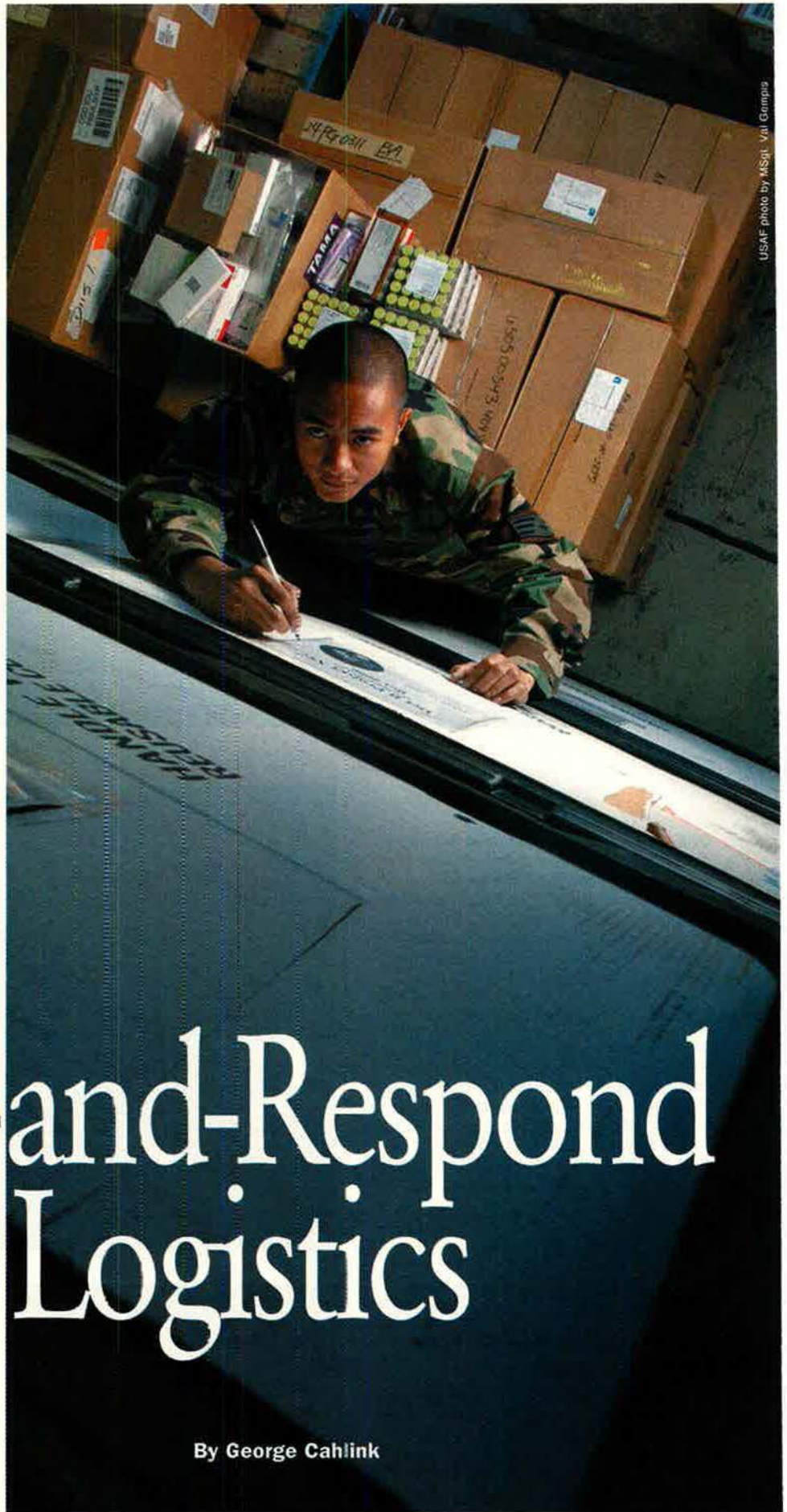
With a few clicks of a computer mouse, the TRANSCOM workers could say not only when a particular aircraft or ship was to arrive but also which shipping container would be carrying what specific item.

In many cases, field logisticians with access to remote terminals could

Sense-and-Respond Logistics

Soon, a computer-based system will decide who gets what supplies, and when.

By George Cahlink



USAF photo by MSgt. Val Gumpia

go online and swiftly receive the answer to their own questions.

This, by all accounts, was a big hit with the loggies, according to Army Maj. Gen. Robert T. Dail, TRANSCOM director of operations. He told a subcommittee of the House Armed Services Committee, "While we certainly have more work to do in transforming DOD distribution, I must emphasize that we achieved incredible success during Operating Enduring Freedom and Operation Iraqi Freedom."

Dail reported that the agency started out tracking 2.5 million items per day and eventually added upgrades that allowed TRANSCOM to monitor nearly six million items flowing through the distribution pipeline every day.

Success Stories Rare

Unfortunately, such was the exception, not the norm. Wartime logistics successes were few and far between, especially once supplies got to the theater.

Rep. Joel Hefley (R-Colo.), chairman of the House Armed Services Committee's Readiness Subcommittee, said the Pentagon had spent vast amounts to upgrade its logistic systems after the 1991 Gulf War, without much to show for it.

"Much has improved, but ... the services [still] have stovepiped systems; the systems need to be integrated; and there is a need for total asset visibility," he said.

The Government Accountability Office, a Congressional watchdog agency, found major wartime logistics problems tended to crop up once the goods got into theater, according to an assessment published late last year. The GAO found:

- Backlogs of hundreds of unloaded pallets and containers at in-theater distribution points.

- A \$1.2 billion discrepancy between what was shipped to the Army and what the Army acknowledged receiving.

- Millions of dollars in late penalties charged for leased containers that weren't unloaded in a timely fashion.

- Cannibalization of equipment for spare parts, caused by lack of spares or an inability to locate them.

- Huge amounts of excess equipment in Kuwait that departing US troops had failed to sort or forward to other units.



USAF photo by MSGlt. Val Gampis

A base warehouse full of parts and supplies is one link in the logistics chain that officials say worked better in recent operations but which must become even more responsive.

An overall assessment of the logistics operations boils down to a single general conclusion: US troops, supplies, and equipment moved to war faster and more efficiently than they had in any previous military conflict, but steep challenges face logisticians trying to keep up with a new type of lightning-fast military operations.

Logistics, as a result, is moving to the forefront of military planning. The Defense Department is now developing new logistics practices and making technology upgrades that will move wartime logistics into the 21st century.

In the 1991 Gulf War, the military relied on a "mass-based" logistics system that built up mountains of supplies to make sure the troops did not run out. Over a decade later, in Operation Iraqi Freedom, the military used computer and tracking systems such as those used by Wal-Mart and other retailers to order supplies "just in time."

For future wars, the military will go a step further with a "sense-and-respond" system that will use networks and sensors to create an agile, real-time supply chain.

"Today's logistics models are based on the types of wars we thought we were going to fight," said Navy Capt. Linda M. Lewandowski, project leader for sense-and-respond logistics in the Pentagon's Office of Force Transformation. However, she asked, "is a mass- and attrition-based

[logistics] model really going to work?"

On Its Own

Simply put, the sense-and-respond logistics concept relies on battlefield sensors, communications networks, and information databases as the basis for deciding when and how supplies should be delivered to troops and from where they should come.

A field commander needing more ammunition would query an automated system connected to all other units and supplies in the field. The system would decide how best to field that order. It would make that decision on the basis of where the supplies were located, what was in stock, and which units had priority call on them. A unit not in the heat of battle might end up giving its ammunition to one engaged in a fight.

In another scenario, a commander might call off a proposed air strike in favor of using ground forces. If the logistics system knew about the change, it might be able to divert support units or supplies from the air unit to the ground forces.

"Sense-and-respond logistics is not just about transporting stuff," said Lewandowski. "What you are really talking about is being able to give a commander more options."

In some cases, she said, a commander could even choose a slower delivery option if a battle or attack were being waged in stages.

James R. Blaker, chief scientist at

Science Applications International Corp., told a conference last December that the new concept would speed combat operations by sensing and responding to troop needs before supplies run out or as the battlefield changes. He noted that when just-in-time systems faltered a bit in Iraq, logisticians began experimenting with basic sense-and-respond logistics practices.

“Instead of waiting for the communication back from the person that [logisticians] were supposed to supply, they tried to get a general idea of what was going on and push supplies forward,” Blaker said.

Lt. Gen. Claude V. Christianson, Army deputy chief of staff for logistics, told the Defense Writers Group in June that the service needs logistics systems that can keep up with the pace of military operations. Before Gulf War II began, he said, the Army in Kuwait was ordering as many as 18,000 parts and supply items per day, using standard logistics systems. However, as the troops moved into Iraq and raced toward Baghdad, logisticians received no orders because the force was moving too fast to connect to the supply chain. Eventually, computer disks were used to track supply shortages. Those disks were shipped back to logisticians for use in filling orders.

Tracking Challenge

Christianson said Army troops probably received only one-third of the



USAF photo by SrA. Karolina Gmyrek

USAF airlifters were central to the movement of materiel into Southwest Asia. Airmen also drove trucks delivering much of those supplies and equipment to key facilities within Iraq during combat operations.

equipment needed, and it usually took two to three days to fill a request.

Brig. Gen. Edward G. Usher III, Marine Corps director of the Logistics, Plans, Policies, and Strategic Mobility Division, told a House panel in March that tracking equipment was the greatest challenge that logisticians faced in the war.

A lack of up-to-date information, he said, “resulted in delays, shortages, and at times an inability to expedite crucial parts.”

The Office of Force Transformation last summer awarded a \$2.9 million contract to Synergy, Inc., to

develop and test a prototype sense-and-respond logistics system that would help solve those problems. The system will use commercial off-the-shelf technology such as an Oracle database and the Tibco software that Wall Street firms use to carry out stock market trades. Thus far, the system has completed six technical assessments. In July, it underwent limited operational testing with the US Marines in the Pacific.

A key feature of the system is its collection of “agents”—sophisticated software codes that can review mission and situational data from sensors or humans and decide what products should be ordered, from what sources.

For example, an agent might receive a sensor signal that a fighter is using up fuel and automatically order more. USAF’s future aircraft, such as the F/A-22 and Joint Strike Fighter, are being designed with diagnostic equipment that can automatically send signals to mechanics and suppliers as parts wear out.

At its most advanced, an agent for a combat unit might receive a human report about an emerging threat and then borrow ammunition from another unit not facing a threat. DOD is developing complex rules that will guide agents in making such decisions. The Defense Advanced Research Projects Agency has spent more than \$70 million on this task so far.

Donald L. Zimmerman, Synergy’s chief executive officer, said sense-

USAF photo by MSgt. Keith Reed



At Ramstein AB, Germany, transportation controllers such as TSgt. Donald Drummer gave directions to airlifters taking supplies into Southwest Asia. Officials want more automation that will “sense” the need for materiel.

and-respond logistics is based on a business philosophy popularized by IBM. The idea calls for developing early knowledge of where the market is going and what customers need.

Lewandowski said the military services need to “buy in” to sense-and-respond logistics, and the system must mature before it can move beyond the prototype stage. Software can be plugged into existing logistics information systems, she added.

Col. Paul Dunbar, USAF’s deputy director for installation and logistics innovation and transformation, said sense-and-respond is one of many future logistics concepts being explored by the Air Force.

Last year, the Air Force laid out a comprehensive future logistics strategy, known as Expeditionary Logistics for the 21st Century (eLog21). The new strategy calls for reforming logistics practices and using modern supply chain technology to improve weapons availability by 20 percent without increasing costs.

Who’s in Charge?

“Right now, you really do not have anyone who is responsible for the supply chain from end to end,” said Dunbar. The service has a variety of logistics systems at base, regional, and national levels for ordering and tracking supplies but no single system providing a complete view of the supply chain, he said.

Beginning next summer, the Air Force will begin creating that common logistics picture by moving toward a Web-based system, known as the Enterprise Supply System. Logisticians will tap into a shared database of the Air Force’s financial, maintenance, personnel, and contracting information.

The Web system will make it easier to share information across the service. Ultimately, the Air Force will build a single Expeditionary Combat Support System to replace the Air Force’s more than 700 unique logistics systems and supply catalogues and provide real-time tracking and inventories.

Dunbar said the service must first establish that system before it can pursue sense-and-respond logistics capabilities. “You need to know what



USAF photo by TSgt. Demeirius Lester

At a Persian Gulf location, SrA. Regina Sewart inventories aircraft propellers delivered for Southwest Asia operations. TRANSCOM managed the flow of nearly six million items each day.

you have to be able to redirect supplies,” he said.

Dunbar said the new logistics system will not be ready for at least five years. It will be paid for with the \$300 million that the service annually spends on more than 700 individual logistics systems and catalogues, he added.

The Air Force is pursuing several other reforms based on logistics lessons from the wars in Iraq and Afghanistan. Various combat support personnel who open expeditionary air bases are now training together in an exercise known as Eagle Flag. In the past, they’d trained separately and did not have a set way to practice opening air bases.

The Air Force also is creating small packages of materials needed to open bases. The goal is to reduce airlift requirements.

For instance, USAF had been sending support equipment for 1,100 airmen when opening expeditionary bases; that required the equivalent of 14 C-17 cargo loads. Now, the Air Force has created 150-airmen support packages that can fit into a single C-130 and supply sufficient gear to get a base running. The Air Force is also examining pre-positioning that equipment at seaports.

Oftentimes, the most successful

military innovations come as a result of wartime pressures.

For example, the Global Transportation Network, a computer system that pulls data from various military networks and outside suppliers to create near-real-time digital maps and databases to track supplies, was in trouble six weeks before the war. The system had been designed to track 2.5 million items and handle 3,200 queries during peacetime, but was handling far more than that as troops and supplies readied for combat. Information normally processed in minutes was taking hours.

Logisticians knew the system needed to be overhauled, but doing so would take nine months and cost tens of millions of dollars. An alternative plan emerged: Buy two new servers and four refurbished models along with other hardware and software upgrades for \$1 million and have a more robust system by mid-March. The plan was risky. Servers would be turned off and backups would be used during the upgrade. If a backup failed, the whole system would crash.

TRANSCOM took the risk—and it paid off. As US troops raced up the Tigris and Euphrates toward Baghdad, the digital maps were blinking in the Joint Mobility Operations Center every four minutes showing some nearly six million items moving toward the Middle East.

Logisticians planning the future supply chain systems hope their ideas take hold just as rapidly. ■

George Cahlink is a military correspondent with Government Executive Magazine in Washington, D.C. His most recent article for Air Force Magazine, “Shaking Up the Alliance,” appeared in the October issue.

Vast, trackless, and ungoverned, Africa's sprawling desert is now a magnet for terrorists.

SWAMP OF TE



Malian infantrymen undergo desert training under the watchful eye of the American military member on the hill.

AP photo by Ben Curtis

TERROR IN THE SAHARA

By Stewart M. Powell

WERE the deadly Madrid train bombings plotted by Muslim terrorists in the Sahara? The answer, quite probably, is yes. The Moroccan daily *Al-Ahdath Al-Maghribia* has reported that those March 11 attacks were conceived and launched from the “terrorism triangle,” a desolate zone encompassing parts of Morocco, Mauritania, Algeria, and Mali.

According to the newspaper, Moroccan intelligence agencies tracked the movements of the terror bombers to what was described as an “al Qaeda rear base” in the Sahara.

That is not the only worrisome sign that has emerged in the past few months from the world’s largest wasteland.

■ According to US military officials, al Qaeda has sent terrorists from Saharan hideouts to join the anti-US jihad in Iraq.

■ Islamic militants in Algeria’s swath of the Sahara used \$6 million in kidnap ransoms to recruit fresh jihadists, buy heavy weapons, and acquire high-tech equipment.

■ Libya recently discovered a desert operations camp used by a hard-line Algerian Islamic militant group linked to al Qaeda.

There is a new front in America’s global war on terrorism, US officials say. Across the broad Sahara—a desolate expanse of sand and rock covering 3.3 million square miles—al Qaeda and its terrorist affiliates are setting up shop, taking advantage of the lawless and trackless badlands stretching from the Atlantic to the Indian Ocean.

Unless checked, the terrorist infes-

tation could turn parts of Africa into launchpads for tomorrow’s murderous outrages.

Some believe the arid, impoverished region could succeed Afghanistan as the world’s No. 1 haven for fanatic Islamic militants. Today, the Sahara region is believed to be home for thousands of the 30,000 or so jihadists who passed through Osama bin Laden’s Afghan training camps in the 1990s.

American military forces dismantled the Afghan terror facilities after the Sept. 11, 2001, attacks in the US. Some of the uprooted al Qaeda fighters are believed to have fled to familiar Muslim outposts in Africa, where they have resumed their activities.

A spokesman for US European Command, whose area of operations includes large parts of Africa, said, “There are clear indications that Muslim extremists from the Middle East and Afghanistan have moved into these massive open spaces.”

A New Haven

For Muslim terrorists, the Sahara is an extremely useful base of operations. Bin Laden himself found sanctuary in Sudan from 1991 until he departed for Afghanistan in 1996.

One major attraction: With more than a dozen nations with 300 million Muslim faithful, most of them in the Sahara, one finds an abundance of fundamentalist Islamic passion.

William Langewiesche, a noted travel writer, spent weeks exploring the Sahara and came back concerned. “The large, vigorous fundamentalist movement,” he wrote, “has become





An American Army Special Forces member works with African soldiers near Timbuktu. Already, African troops have faced terrorist forces in combat.

the dominant political factor in the Sahara.”

And Langewiesche wrote those lines in 1991.

In this region, one finds all sorts of pathologies—arms smuggling, drug trafficking, and free movement of transnational criminals, according to EUCOM. The region is filled with little-patrolled desert crossings and hideouts. It has weak airport security, lax government control, and endemic corruption. Illegal commerce of all kinds—in vehicles, cigarettes, arms, and other goods—has been around for decades.

Most importantly, the Sahara is vast—3,000 miles across, making it as large as the United States. With Africa’s harshest and least populated terrain, and with a nearly total lack of communications, the Sahara mostly defies national government authority. African armies, relatively small and poorly equipped, have difficulty monitoring the huge territories they are supposed to control, say US military officers.

Such “ungoverned areas” are becoming the “melting pots for the disenfranchised of the world—terrorist breeding grounds,” warns Marine Corps Gen. James L. Jones, the NATO commander who heads US European Command.

“We need to drain the swamp,” adds Air Force Gen. Charles F. Wald, deputy commander of EUCOM. “The United States learned a lesson in Afghanistan—you don’t let things go.”

These facts have elevated Africa’s

place in US foreign policy calculations. Once a humanitarian concern only, it now enjoys a strategic place in Washington’s plans. It has a prominent place in the “definition of vital US national interests,” observes a recent report to Secretary of State Colin L. Powell by the Africa Policy Advisory Panel.

Military Clashes

The stakes are high. Africa-based al Qaeda operatives and allies use remote reaches of the Sahara and Horn of Africa to train fresh recruits. The Sahara’s ancient caravan routes serve as unpoliced byways for international

terrorists trying to reach the Mediterranean and slip undetected into Western Europe or the Middle East.

The transformation of the Sahara already has led to sharp military clashes between terrorists and local fighters.

In Algeria, an al Qaeda lieutenant—Emad Abdelwahid Ahmed Alwan—was killed by Algerian forces in a gun battle in September 2002 about 270 miles east of Algiers. Authorities said Alwan had met with Algerian-based Salafists and was coordinating al Qaeda-backed operations across North Africa.

In June, 3,000 Algerian troops tracked down and raided a remote camp used by the 4,000-strong Salafist Group for Preaching and Combat, an al Qaeda-linked terrorist group that killed 43 Algerian soldiers and kidnapped 32 European tourists in 2003. The raid by Algerian forces killed the leader, Nabil Sahraoui, who had forged ties with al Qaeda, and three of his lieutenants.

In March, the forces of Mali drove paratrooper-turned-terrorist Amari Saifi across the Sahara to Niger and into Chad, where he and nine other suspected terrorists were captured by Chadian rebels. The rebels opened negotiations with Algeria, France, Germany, Niger, and the US for his handover.

In February, Algerian forces intercepted a convoy carrying weapons north from Mali. Algerian officials



Nigerian troops patrol near a military base in the Sahara Desert. The small size of the typical African national army makes it difficult for its forces to monitor effectively the huge areas nominally under their control.



A USAF aircrew member checks over his MH-53 helicopter at a former French Foreign Legion base near Djibouti, on Africa's east coast. US Central Command has been intercepting terrorists fleeing Afghanistan.

say the cargo contained mortar launchers, rocket-propelled grenade launchers, and surface-to-air missiles.

American officials say that no US troops have become directly engaged in the fighting. However, local combat operations have been supported by the United States, which has provided communications, intelligence, and reconnaissance support.

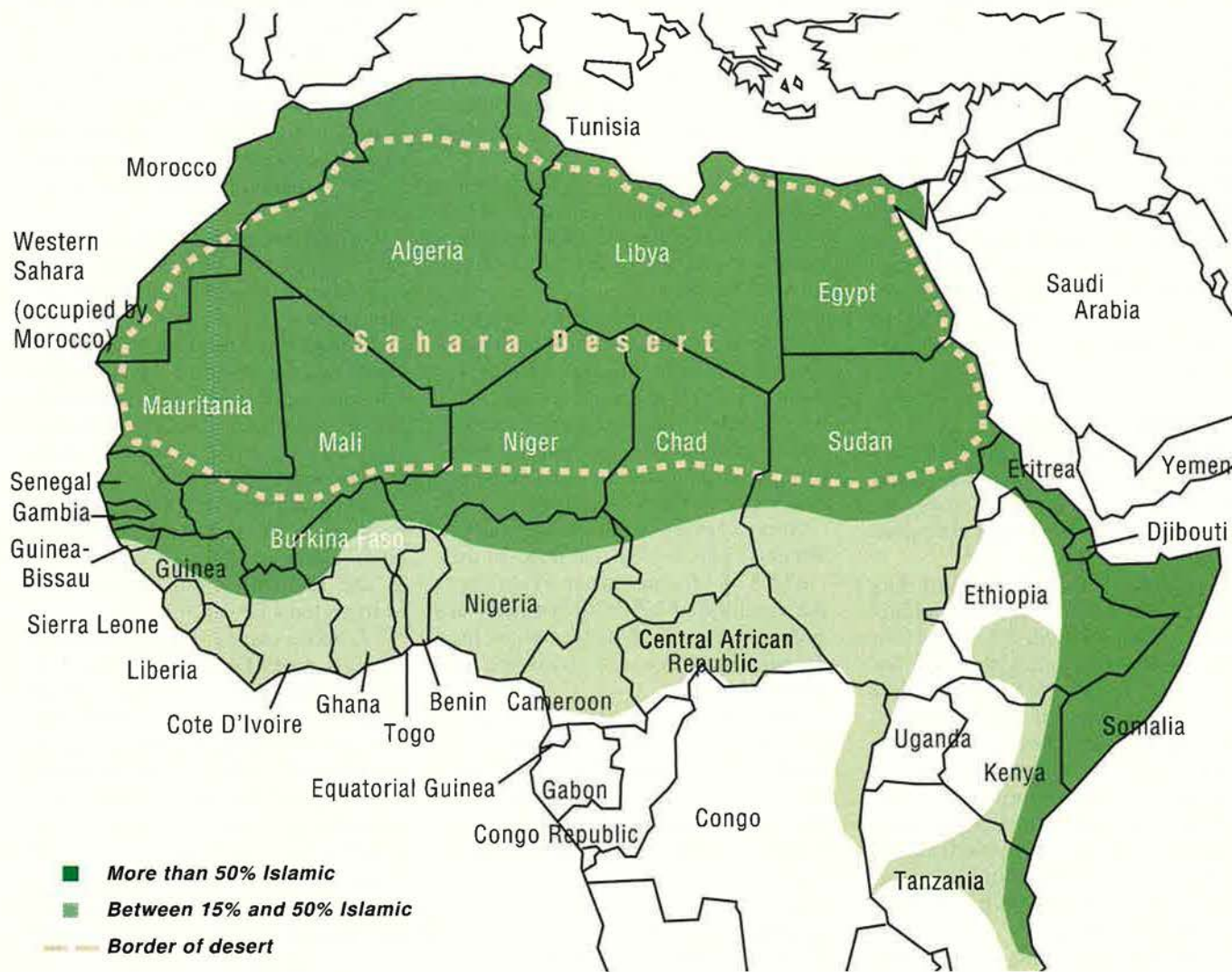
The Voice of America reported in March that the US military delivered food, medical supplies, and other assistance to Chad to support government troops battling suspected terrorists linked to al Qaeda.

US officials say a Navy P-3 Orion reconnaissance aircraft played a key role in guiding troops in Chad to a remote area in the country's far north, close to the border with Niger.

No one denies, however, that US

The New Front in the War on Terrorism

Impoverished areas of Africa with large Muslim populations have become a haven for radical Islamists.





An Air Force MH-53 Pave Low SOF helicopter takes off from Djibouti. EUCOM hopes to set up numerous standby bases in Africa. They would be activated periodically to train African forces.

forces are on the ground in Saharan nations. Washington has dispatched special operations forces teams to train local forces and sometimes patrol with them. The SOF teams also provide basic gear such as radios, GPS receivers, and vehicles.

In Timbuktu, Mali, for example, US Army soldiers of 1st Battalion, 10th Special Forces Group (Airborne), based in Stuttgart, Germany, are training Malian soldiers deployed on the fringe of the Sahara.

SOF training focuses on mobility, communications, land navigation, and small unit tactics in order to enhance border capabilities throughout the region.

Expanded Training

US leaders are expanding military training and assistance for local armed forces in those African nations thought to be most vulnerable to terrorist infestation.

The Bush Administration has launched the so-called Pan-Sahel Initiative. It will provide \$7.75 million for US military training this year for the armed forces in the four West African nations of Mali, Niger, Mauritania, and Chad.

The Pentagon wants \$125 million over five years to permit special operations forces to build surrogate anti-terrorist forces and provide training to Morocco, Tunisia, and Algeria, where threats by Islamic terrorists have been growing.

The United States also is fostering

pan-Saharan defense cooperation. In March, for example, EUCOM hosted the first meeting of defense chiefs from eight African nations—Algeria, Chad, Mali, Mauritania, Morocco, Niger, Senegal, and Tunisia. At this meeting, recalls Wald, the defense chiefs of neighboring Niger and Chad met face-to-face for the first time.

Senior US military officers consider these kinds of personal relationships to be essential for the gathering and sharing of intelligence on terrorist activities.

Apart from training activities, the United States has taken some tentative steps toward building a US presence. EUCOM plans to establish a half-dozen or so bare-bones facilities in various African nations. The on-call bases would be activated periodically to train local forces.

Some of these would be at airports. Others would be located deep in the outback of African nations. Wald cites the example of US-built facilities at Entebbe airport in Uganda, where the on-call facilities are available as needed.

The US continues to seek permanent sites. Wald has visited the 371-square-mile island nation of Sao Tome in the Gulf of Guinea, 120 miles off the coast of Gabon on Africa's west coast. He hopes to build relationships

that one day might permit US forces to use the tiny island in crises, much as they use the British-owned Indian Ocean atoll of Diego Garcia.

"I can see the United States potentially having a forward operating location in Sao Tome," Wald said in 2003, relishing the possibilities in the former Portuguese protectorate.

Jones says carrier battle groups or Marine contingents that routinely patrol the Mediterranean Sea on six-month rotations may soon be devoting half of their deployment times to patrols, training, and goodwill visits along Africa's west coast.

In the Horn

Three thousand miles away, on Africa's east coast, US forces have taken up positions on a dusty, 88-acre base in Djibouti, formerly used by the French Foreign Legion. It is part of US Central Command's effort to intercept al Qaeda operatives fleeing Afghanistan for East Africa.

Apart from military operations, the Combined Joint Task Force Horn of Africa also has engaged in civil affairs operations designed to strengthen the ability of local governments in Djibouti, Eritrea, Ethiopia, Kenya, Somalia, and Sudan to improve the lives of citizens to help forestall inroads by Islamic fundamentalist recruiters.

US soldiers earlier this year arrived in a remote area of Ethiopia, where they have set up a bare, forward operating base.

Though the American presence is small and discreet, all signs are that US forces are in the Sahara to stay. Senior American officers seem resigned to the need to operate there for the indefinite future.

The rationale is summed up clearly by Lt. Gen. Wallace C. Gregson Jr., commander of Marine Corps forces in the Pacific, which support the Marine-led JTF in Djibouti.

"Trouble comes from ungoverned places," notes Gregson. "[The] 9/11 [attacks] showed us how a guy sitting in a cave with access to worldwide transportation and worldwide financial networks could take out the World Trade Center and the Pentagon in a single morning. It used to take nations to do that much killing." ■

Stewart M. Powell covers the White House and national security affairs for Hearst Newspapers in Washington, D.C. His most recent article for Air Force Magazine, "Russia's Military Retrenchment," appeared in the August 2001 issue.



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It began as "the McNamara Line" across Vietnam. It led to the seeding of the Ho Chi Minh Trail by air with 20,000 sensors.

Igloo White

By John T. Correll

BY THE spring of 1966, Secretary of Defense Robert S. McNamara had soured on the air campaign against North Vietnam.

The Operation Rolling Thunder air strikes, which had begun in March 1965, had not accomplished much. The strategic results might have been better, except that US airmen were severely constrained in where and what they could bomb.

The targets were selected, one by one, by the White House. Strikes on major military targets around Hanoi and Haiphong were seldom approved.

The campaign was a "measured and limited air action" to signal US "determination and commitment" to Hanoi. Administration officials did not want to provoke "a wider war." They feared that stronger use of force might lead to a confrontation with the Soviet Union or China.

Weapons, supplies, and troops streamed south from North Vietnam, along the Ho Chi Minh Trail. North Vietnam's military activities were not seriously interrupted.

McNamara was opposed to any increase in bombing of the North. In his view, the United States was not at war with North Vietnam. He saw the conflict as one of insurgency in the South. The US objective, he said, was not to overthrow or destroy North Vietnam but rather to stop its infiltration and aggression in the South.

Within six months of the start of Rolling Thunder, McNamara was rethinking the role of the air campaign in the overall US effort.

He was looking for an alternative.

The idea that McNamara seized upon came from professor Roger



An airman gets ready to hurl a seismic sensor from an HH-3 helicopter over Vietnam to form part of the electronic infiltration barrier approved by Defense Secretary McNamara.

Fisher of Harvard Law School, a part-time consultant to McNamara and John T. McNaughton, the assistant secretary of defense for international security affairs.

In January 1966, Fisher wrote to his friend, McNaughton, to suggest that a 160-mile barrier be built across Vietnam and Laos. It would consist of minefields, barbed wire, ditches, and "military strong points flanked by a defoliated strip on each side." If the barrier could stop the infiltration, the bombing of North Vietnam could be stopped, too.

The Jasons

Six weeks later, McNaughton passed the idea on to McNamara with only slight revisions.

Around the same time, McNamara was approached by several top scientists from MIT and Harvard who envisioned possibilities for a technical solution in Vietnam.

McNamara asked the military for

comment. The Joint Chiefs of Staff were against the whole thing, saying it would take six or seven Army divisions to clear and secure the terrain and up to 48 months to complete the barrier. Gen. William C. Westmoreland at Military Assistance Command Vietnam, Adm. U.S. Grant Sharp at US Pacific Command, and all of the other senior commanders in the Pacific were also opposed.

McNamara went ahead anyway. He asked a group of university scientists called the Jasons to undertake a summer study looking into the feasibility of the proposal.

The Jasons were organized in 1959 by the Institute for Defense Analyses, a think tank near Washington, D.C. The "Jasons" name was suggested by the wife of one of the founders, who thought the group's original name, Sunrise, sounded like a shaver.

The summer study was conducted by 47 Jasons, augmented by 20 IDA analysts. They presented their re-

port in person to McNamara on Aug. 30. They said the bombing of North Vietnam had had “no measurable direct effect on Hanoi’s ability to mount and support military operations in the South.”

The report proposed building an antipersonnel barrier across Vietnam below the Demilitarized Zone and an antivehicular barrier, consisting of mines and battery-powered sensors, along the Ho Chi Minh Trail in Laos.

“The construction of the air-supported barrier could be initiated using currently available or nearly available components, with some necessary modifications, and could perhaps be installed by a year or so from go-ahead,” the Jasons said.

US aircraft had been flying interdiction missions in the Laotian panhandle since December 1964. Air Force and Navy airmen were forbidden to strike at the sources of supply in North Vietnam, so they chased down trucks, one by one, on the jungle trails.

The Starbird Task Force

McNamara sent the Jason study to the Joint Chiefs of Staff for evaluation, but he did not wait for their response before setting the project in motion. On Sept. 15, he appointed Army Lt. Gen. Alfred D. Starbird, a research and engineering officer, to head Joint Task Force 728 to develop the barrier.

Starbird was given a target date of Sept. 15, 1967, to achieve initial operational capability. The date was later extended but only to Nov. 1, 1967.

In a follow-up memo to President Lyndon B. Johnson in October 1966, McNamara said that Rolling Thunder had neither “affected infiltration or cracked the morale of Hanoi.”

McNamara proposed an infiltration barrier, which he said “would lie near the 17th parallel—would run from the sea, across the neck of South Vietnam (choking off the new infiltration routes through the DMZ), and across the trails in Laos.”

McNamara went on, “This interdiction system (at an approximate cost of \$1 billion) would comprise to the east a ground barrier of fences, wire, sensors, artillery, aircraft, and mobile troops; and to the west—mainly in Laos—an interdiction zone covered by air-laid mines and bombing attacks pinpointed by air-laid acoustic sensors.”

The barrier, McNamara said, “would

be persuasive evidence ... that our sole aim is to protect the South from the North.”

Starbird’s task force was given the cover name of Defense Communications Planning Group, which was meant to sound as bland and as nondescriptive as possible. The project was called Project Practice Nine. The Vietnam portion was Dye Marker. The Laos segment was Muscle Shoals, and the technology for it was Igloo White. Igloo White would be the name by which the entire program would be best remembered.

MACV commander Westmoreland met with Starbird and concluded that the plan was “a noble idea” but “also highly theoretical.” In his memoir, *A Soldier Reports*, Westmoreland said, “As any experienced military man would know, the concept had a basic flaw in that no fence—electronic or otherwise—would be foolproof without men to cover it by fire, which raised the specter of tying down a battalion every mile or so in conventional defense.”

The McNamara Line

In January 1967, the White House, in National Security Action Memorandum No. 358, gave Project Nine

the “highest national priority” for expenditures and authorization.

The program was freewheeling and free-spending. It was a heady atmosphere for the scientists. They went to the front of the line for materials and services. Whatever they asked for, they got.

“If DCPG said it needed 10,000 chocolate cream pies from the Army by noon the next day, it would get them and without any questions,” said a project member quoted by Paul Dickson in *The Electronic Battlefield*.

Along with its more solid work, Project Nine generated several exotic schemes that were soon discarded. One such notion was to train pigeons to carry munitions, land on North Vietnamese trucks, and explode on touchdown. Among other difficulties, the pigeons couldn’t tell a communist truck from a noncommunist one.

Another bizarre idea was to develop sensors that resembled dog excrement. It was canceled after it was learned that there were no dogs on the Ho Chi Minh Trail.

The task proved to be more difficult than the Jasons had figured. Existing technology was not sufficient. The project required further devel-



The most widely used sensor for Igloo White was the air-delivered seismic detection sensor, which detected ground vibrations caused by enemy troops or vehicles. It was small and light, appearing much like the surrounding foliage.



Nakhon Phanom, Thailand, was home to the Igloo White Infiltration Surveillance Center. Security was so strict at the ISC that access was limited room by room, and project airmen did double duty as janitors.

opment and engineering on the sensors, aerial delivery, monitoring equipment, processing and display, and other equipment.

Sketchy stories about a barrier in Vietnam showed up in the press in 1966 and 1967, but the Pentagon professed to have only a limited interest in any such idea.

Meanwhile, McNamara was increasingly vocal in his criticism of the air campaign. "I don't believe that the bombing up to the present has significantly reduced, nor any bombing that I could contemplate in the future would significantly reduce, the actual flow of men and material to the South," he said at a Senate Armed Services Committee hearing in January 1967.

Work on the Dye Marker barrier in Vietnam began in the summer of 1967. The job fell to the Marines, in whose area of responsibility in Quang Tri Province the barrier was supposed to be built. It did not go well. The Marines, who disagreed vigorously with the concept, had to divert to it troops and resources that they could not readily spare.

McNamara revealed the project to the public at a press conference on Sept. 7, 1967, where he announced that a plan was under way to build an electronic barrier south of the DMZ. (In fact, the project was nearly a year old and parts of it were almost complete.) Syndicated columnists Rowland Evans and Robert Novak reported that the Air Force and the Navy were particularly opposed.

The press conference stimulated several popular names for the barrier, but the one that stuck was "the McNamara Line."

Igloo White

In January 1968, the Dye Marker sensors and other equipment, intended for deployment along the DMZ, were commandeered for the defense of the Marine outpost at Khe Sanh. The sensors were very effective in tracking the enemy at Khe Sanh—even the Marines said so—but, when the siege lifted in April, work on the barrier did not resume.

By then, McNamara was gone, having left office Feb. 29, 1968. The demise of Dye Marker was not made formal and public until March 1969, when Secretary of Defense Melvin R. Laird announced the cancellation of the barrier project, saying, "It did not work out as expected."

All that remained of the McNamara Line was Igloo White. Ironically, the part that survived belonged to the Air Force, the service that had been most opposed to McNamara's idea to begin with.

The bombing halt of 1968 marked the end of Rolling Thunder and a change in the direction of the war. The focus of the bombing effort shifted to interdiction of the Ho Chi Minh Trail, and Igloo White, newly operational, was there to help.

Igloo White consisted of three parts: the sensors, the orbiting aircraft to relay the signal, and the In-

filtration Surveillance Center at Nakhon Phanom Air Base in Thailand.

The sensors—a network of some 20,000 of them—were planted mostly by Navy and Air Force airplanes, although some of them were placed by special operations ground forces. They were dropped in strings of five or six to be sure that at least three sensors in each string would survive and be activated. The sensors operated on batteries, which ran down after a few weeks, so replacement sensors had to be dropped.

Most of the sensors were either acoustic or seismic. There were two kinds of acoustic sensors, both derived from the Navy's Sonobuoy, to which microphones and batteries were added. These sensors could hear both vehicles and voices.

The Acoubuoy (36 inches long, 26 pounds) floated down by camouflaged parachute and caught in the trees, where it hung to listen. The Spikebuoy (66 inches long, 40 pounds) planted itself in the ground like a lawn dart. Only the antenna, which looked like the stalks of weeds, was left showing above ground.

The ADSID (Air-Delivered Seismic Intrusion Detector) sensed earth motion to detect people and vehicles. It resembled the Spikebuoy, except it was smaller and lighter (31 inches long, 25 pounds). It was the most widely used sensor in the program.

The challenge for the seismic sensors (and for the analysts) was not so much in detecting the people and the trucks as it was in separating out the false alarms generated by wind, thunder, rain, earth tremors, and animals—especially frogs.

There were other kinds of sensors as well. One of them was the "people sniffer," which chemically sensed sweat and urine.

Batcats and Big Computers

The nerve center for Igloo White was located at Nakhon Phanom, which the Americans called "NKP," in eastern Thailand, across the Mekong River from Laos.

The Infiltration Surveillance Center was the biggest building in Southeast Asia. The project broke ground in July 1967 and was in operation before the end of the year. It had several names (including "Dutch Mill" and "Operating Location No. 1"), but the most popular one was Task Force Alpha.

Security in the center was tight. The people who worked there were limited in which rooms they could enter. The janitors were all off-duty Task Force Alpha airmen in the grade of E-5 or above.

About 400 Air Force people were assigned to Task Force Alpha, and a brigadier general was in charge. In the operational chain, the center reported to 7th/13th Air Force at Udorn AB, Thailand.

The darkened war room contained rows of scopes. Its walls featured large situation displays. Two IBM 360-65 computers—the most powerful then available—collated and processed the sensor data for use by the target analysts. The computers also contained extensive electronic maps of the Ho Chi Minh Trail and knew the precise locations of the sensors. When something tripped one of the sensors, the computers knew instantly where it had happened.

The sensor signals were too weak to reach NKP directly, though, so aircraft orbited the trail, 24 hours a day, monitoring the sensors on their radio receivers and relaying the information to Task Force Alpha.

From 1967 to 1970, the aircraft flying the orbits were EC-121Rs from the 553rd Reconnaissance Wing at Korat AB, Thailand. The EC-121 was a variant of the Lockheed Constellation airliner. It had four propeller-driven engines and three distinctive tail fins. The EC-121R differed from Air Defense Command's airborne



Sensor signals were too weak to reach the ISC directly, so aircraft, such as this EC-121R—call sign Batcat—monitored the sensor line 24 hours a day, relaying data back to Nakhon Phanom.

warning and control version of the EC-121 in that the radomes had been removed and special electronics and antennas had been installed.

The 553rd RW—its call sign was “Batcat”—flew its first operational mission on Nov. 25, 1967. The EC-121R carried a crew of 17 or 18, including a combat information center crew of six or seven working the Igloo White gear in the back of the aircraft.

It was a long duty day. To provide round-the-clock coverage of the sensors, the Batcats orbited the Ho Chi Minh Trail in eight-hour shifts. With

transit times, the flights lasted about 10 hours. Briefing and debriefing made the missions still longer.

The 121s sent a live feed of the sensor alarm data to the computers at Task Force Alpha. (Airmen working the scopes at NKP could not listen directly to the sensor microphones, but the mission crews on the aircraft could and did.) Input from the audio sensors was also recorded and kept on tape.

For several reasons, the Batcat crews simultaneously tracked and analyzed the sensor data they were relaying. Doing so maintained continuity if the link to NKP was lost or in case a Task Force Alpha computer or other piece of equipment crashed. In addition, several parts of the trail were outside the range of the relay equipment. At those locations, the aircrews processed the sensor signal data manually and called it in to 7th Air Force.

The EC-121R did a good job, but it was expensive to operate and it exposed a large crew to enemy fire. Consequently, it was replaced by a smaller airplane.

The QU-22B Pave Eagle was a single-engine, propeller-driven aircraft, a modified Beech Model 36 Bonanza, designed to fly in either a manned or unmanned mode. All of the operational flights, however, had a pilot. There was no room for anyone other than a single pilot. The rest of the cabin was filled with electronic monitoring equipment.

The QU-22, sometimes called the



Running near the 17th parallel, the McNamara Line cut across the Ho Chi Minh Trail in Laos. After McNamara left, the USAF-maintained Igloo White portion aided in air interdiction of the Ho Chi Minh Trail.

"Quacker," was based at NKP, considerably closer to the trail than were the Batcats at Korat. In September 1970, the 553rd RW commander certified that Pave Eagle was performing satisfactorily and that it could accomplish its combat objectives. The 553rd was deactivated in December and the QU-22s took over. The QU-22 program itself was canceled in 1972.

Plugged In

"We wire the Ho Chi Minh Trail like a drugstore pinball machine, and we plug it in every night," an Air Force officer told *Armed Forces Journal* in 1971. "Before, the enemy had two things going for him. The sun went down every night, and he had trees to hide under. Now he has nothing."

Seventh Air Force in Saigon, which had operational control of air strikes on the Ho Chi Minh Trail, ruled that Igloo White would augment, not replace, the other interdiction efforts. Strikes on the targets developed by sensors were controlled by an airborne command and control center, just as other strikes in Laos.

The sensors tracked the direction and speed of the truck convoys. From those data, it was easy to figure out where the trucks were going and when they were likely to get there. If circumstances warranted, strike aircraft might be on the scene in five minutes. The sensors continuously updated the location of the trucks as the strike aircraft approached.

At a Pentagon news briefing in February 1971, Brig. Gen. William G. Evans, Air Force special assistant for sensor exploitation, explained that the sensors were identifying a strike zone.

"We are not bombing a precise point on the ground with a point-target bomb," Evans said. "We can't determine each truck's location that accurately with ground sensors, which are listening—not viewing—devices. Since we never actually 'see' the trucks as point targets, we use area-type ordnance to cover the zone we know the trucks to be in. ... [Thus] we have an interdiction system which can hurt the enemy, even when he seeks the cover of foliage, weather, or darkness."

The sensor data were also used to develop non-time-sensitive targets such as truck parks and storage areas, which could be struck at any time.

Many kinds of aircraft flew missions against the Ho Chi Minh Trail. Among them were B-52s, B-57 light bombers, F-4s, and assorted Navy aircraft.

However, the most effective weapon of all against trucks on the trail was the AC-130 gunship. It had its own sensors, including low-light-level TV, forward-looking infrared, and the shadowy "Black Crow," which could detect truck engines from 10 miles away. For the most part, the AC-130s found their own targets, but they also received and used information from Task Force Alpha.

The North Vietnamese were aware

of the Igloo White sensors and took countermeasures. They destroyed some and tried to induce false reports by others. Among other techniques, the North Vietnamese drove animals up the trail and hung buckets of urine in the trees to foil the sensors.

The acoustic sensors picked up some memorable moments, all of which were duly recorded by the EC-121 crews. In *The Electronic Battlefield*, author Dickson described a tape recording that was played for him:

"It contained a few critical minutes in a North Vietnamese truck park along the Ho Chi Minh Trail in Laos and was recorded during an Igloo White mission," Dickson wrote. "The first sound heard is that of a single truck parked with its engine running. It can be heard for several minutes during which time the only other sound one can make out is distant artillery.

"Then a voice can be heard shouting excitedly. The first truck is now moving and others are starting and some drivers are using their horns. Suddenly, there is the unmistakable sound of a jet zeroing in, followed by a quick series of sharp explosions and the jet pulling away. Save for the sound of a few of the surviving trucks which are getting more and more distant, there is relative quiet for a few moments and then comes the sudden and loud *pockata-pockata* of anti-aircraft fire."

The Air Force played another tape for a Senate committee. The sound of axes could be heard as an inept work crew chopped down a tree to obtain a sensor caught in the branches overhead. That was followed by the sound of a crash and screaming as the tree fell on them.

In another documented instance, a North Vietnamese NCO is heard telling a trooper to climb a tree to get the parachute from an Acoubuoy snagged in the foliage. He wanted to give the material to his girlfriend to make a dress.

One limitation was that not every branch and offshoot of the trail was wired. There were entire routes that Igloo White did not know about. Even at the peak of the bombing, the North Vietnamese were building one or two miles of new road a day. In 1972, North Vietnamese tanks appeared in South Vietnam, having come all the way down the trail without being detected, much less stopped.

In March 1970, President Richard



Using the EC-121R was too expensive and put a large crew at risk, so USAF turned to the QU-22B Pave Eagle, a Beech Model 36 Bonanza loaded with electronic gear and flown by a single pilot. It was also called the "Quacker."

M. Nixon publicly acknowledged the US military involvement in Laos. As further details were disclosed, Igloo White came under considerable scrutiny.

Doubts and Quips

Did it work? Unquestionably, the sensors detected tens of thousands of trucks, and the strike aircraft destroyed many of them. Some of the anecdotal evidence is spectacular. In one instance, the bombs squarely hit a target—either a fuel or ammunition storage area—that had been found by the sensors, and the mushroom cloud from the secondary explosion rose 8,000 feet into the air.

Seventh Air Force reported that, during the 1968-69 dry season, 6,000 trucks were destroyed or damaged on the Ho Chi Minh Trail. (Traffic on the trail surged during the dry season, from November to May, and slackened or stopped in the wet season, from June to October.) The total reported for the 1969-70 dry season was 10,000, and for 1970-71, it was 20,000.

The published data does not say how many of these trucks were destroyed or damaged as the result of identification by the Igloo White sensors.

Not everybody believed 7th Air Force's numbers. For example, the sarcasm fairly dripped from an April 1971 commentary prepared by the staff of the Senate Foreign Relations Subcommittee on US Security and Commitments Abroad.

"These figures are not taken seriously by most US officials, even Air Force officers, who generally apply something on the order of a 30 percent discount factor," the staffers said. "One reason why there is some skepticism about the truck kills claimed by the Air Force is the total figure for the last year greatly exceeds the number of trucks believed by the embassy to be in all of North Vietnam."

The Central Intelligence Agency chimed in, saying that 7th Air Force's "numbers game" was refuted by the CIA's own "highly reliable sources," referring to its agents in the enemy ranks. The CIA and the Defense Intelligence Agency developed a formula that arbitrarily discounted 75 percent of the pilot claims.



Although USAF's AC-130 could find its own targets using onboard systems like "Black Crow," the gunship also made use of Igloo White data to locate and strike enemy vehicles, such as those seen in this image from an AC-130 strike.

However, if Air Force claims could be cast into doubt, so could the criticism. Intelligence data and CIA reports were not always accurate. As for comments by Congressional staffers, politics might be suspected to be a leading ingredient.

Then, as now, the bomb damage assessment process was flawed on both ends: Operations tended to claim too much; Intelligence tended to validate too little.

Two facts seem indisputable: The air strikes got a lot of trucks, but a lot of other trucks got through. The bomb damage claims may have been high, but perhaps not as high as the critics have alleged.

In a recent analysis, Air Force historian Eduard Mark has calculated "a rough correspondence between the number of trucks the North Vietnamese imported from their allies and the number of those the Air Force claims to have destroyed in Laos. This does not prove the validity of the claims; but there is at least not the kind of gross discrepancy that would discredit them *prima facie*. It is, accordingly, not unreasonable to take the claims for trucks destroyed as a basis for discussion."

Fade-Out

The war entered a different phase in the spring of 1972, when North

Vietnam launched a major military invasion. The North Vietnamese Army crossed the DMZ directly and in strength to challenge the South Vietnamese ground forces, who were increasingly on their own.

After a four-year hiatus, the bombing of North Vietnam resumed in Operations Linebacker I and Linebacker II. The weight of US air strikes, which had been concentrated on the Ho Chi Minh Trail, shifted to targets in North Vietnam. Troops and supplies were bombed north of the DMZ, before they could move onto the trail.

After January 1972, the Igloo White sensors detected a big drop in the number of trucks moving through Southern Laos.

US objectives had also changed. A major goal of the bombing was to push North Vietnam toward a negotiated settlement of the war. In aid of that, the air strikes concentrated on Hanoi, Haiphong, and military centers in the north.

Igloo White operations on the trail diminished in 1972 and then stopped altogether. The computers at Nakhon Phanom were packed up and shipped home to the United States.

There was, however, one last footnote. On March 29, 1973, 7th Air Force left Saigon and moved to NKP. It set up headquarters in the Task Force Alpha building, where it took on an additional role as the US Support Activities Group. It operated there in that capacity until it was deactivated on June 30, 1975. ■

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

For Byrd and Balchen, the epic South Pole flight began 75 years ago this month.

Poles Apart

By Bruce D. Callander

In 1968, the late Rear Adm. Richard E. Byrd was enshrined in the National Aviation Hall of Fame. The hall, in its statement about the great polar explorer, noted that, in November 1929, he participated in the first-ever flight over the South Pole.

Five years later, in 1973, the hall enshrined USAF Col. Bernt Balchen. It said that Balchen, who served as chief pilot of Byrd's Ford trimotor during the 1929 Antarctic expedition, was the first man to *pilot* an aircraft over the South Pole.

It is a well-established fact that, on Nov. 29, 1929, Byrd and Balchen—with two other crew members—became the first men in an aircraft to reach the South Pole. That epic feat unfolded 75 years ago this month.

It turns out that Byrd, an American, and Balchen, a Norwegian native, had quite a bit of mutual history, and their 1929 South Pole adventure was only a part of it.

The hall's biographies describe Byrd as the first to "fly" over *both* the North Pole and South Pole. Balchen is described as the first to do so as a pilot. In 1926, Byrd and a Navy pilot made a flight that was said to have reached the North Pole. In 1949, Balchen piloted an Air Force



Honors. Navy Lt. Cmdr. Richard Byrd (left) and his 1926 North Pole expedition pilot, Floyd Bennett, both received Medals of Honor. Bennett died before the 1929 South Pole expedition. Bernt Balchen took his place.

C-54 that beyond doubt went over the North Pole.

Some have questioned whether, in 1926, Byrd's Fokker monoplane could have reached the North Pole in the amount of time it was away from its base on Spitsbergen, an island north of Norway. Byrd always said the 1926 trip was quick because he enjoyed tailwinds in both directions. Weather reports did not support that claim, but it was widely accepted; Byrd and his pilot, Floyd Bennett, were awarded Medals of Honor. Balchen, however, later contended that Byrd never made it.

Byrd and Balchen actually worked together on that 1926 flight, as well as on a 1927 transatlantic flight and the 1929 South Pole flight. In the

aftermath of those cooperative years, however, Byrd and Balchen became estranged. Byrd evidently believed Balchen was plotting against him. Balchen believed that Byrd was bent on sabotaging his military career. Balchen had suspicions about Byrd's self-proclaimed 1926 North Pole flight. He raised them after the admiral's death, provoking an outraged response from the admiral's family and friends.

Balchen and Bennett

Their story begins in the early years of aviation. Byrd was a handsome, ambitious naval officer. A 1912 graduate of the US Naval Academy, he earned his aviator wings in 1918 and spent the last

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months of World War I in Canada, responsible for two air bases in Nova Scotia. After the war, Byrd was reassigned to Washington and was credited with helping convince Congress to establish a Bureau of Aeronautics.

For his part, Balchen began his military flying career in 1920 when he joined the Norwegian naval air force and attended flying school. He served as a test pilot and maintenance engineer.

In 1924, Byrd was picked to be navigator for a US Navy dirigible flight from Alaska to Spitsbergen. When President Coolidge called off that flight, Byrd went on leave and organized his own, privately financed mission to the North Pole. In 1925, in the months leading up to that attempt, Balchen signed up to help Byrd and Bennett prepare their Fokker trimotor ski plane for that controversial mission.

Byrd claimed that he and Bennett conquered the North Pole during an epic flight on May 9, 1926.

After that flight, Byrd and Bennett planned to fly across the Atlantic in another trimotor. On a test flight with aircraft designer Anthony Fokker, however, the airplane crashed. Byrd and Fokker were only slightly hurt, but Bennett suffered major injuries. He was unable to make the Atlantic flight. Byrd invited Balchen to join his crew, and he did.

Byrd soon began making plans for a South Pole flight. Bennett, despite his injuries, continued his strong relationship with Byrd and was to have been on the crew, but he was the victim of terrible luck. In 1928, when a German airplane crash-landed near Newfoundland, Bennett joined the rescue effort. He contracted pneumonia and died in a Canadian hospital.

With Bennett dead, Byrd again chose Balchen to fill the gap. As a skilled pilot and mechanic experienced in cold weather operations, Balchen was ideal for the job. He was responsible for the maintenance and operation of the three airplanes that would make exploratory flights and, eventually, try for the pole. Byrd was the expedition leader.

Byrd and Balchen apparently never understood or trusted one another. Balchen kept compulsively detailed flight logs, and Byrd seemed suspicious that the Norwegian was trying to catch him at something.



Polar Stars. Bennett (left) and Balchen, two of the world's premier polar exploration pilots, became friends. Balchen and Byrd, however, apparently never understood or trusted each other.

For his part, Balchen disliked the admiral's habit of taking different members of the expedition into his confidence, apparently inviting competition.

While he served with the expedition, Balchen kept his mouth shut and gave Byrd the respect due him as the boss. And, while Byrd may have disliked Balchen personally, he recognized his true talents and picked him as pilot for the South Pole flight.

Four Pilots on Board

All four men on the mission were pilots. Balchen took the controls, while Harold I. June was co-pilot and radio operator. Ashley C. McKinley, a former Army captain, was aerial photographer, and Byrd was flight leader and navigator. The airplane, a Ford trimotor, was named *Floyd Bennett*, for the man Byrd would have preferred to have with him.

The crew's main concern was the weather. Laurence M. Gould, geologist, geographer, and expedition second in command, had gone ahead weeks earlier with a small party and 42 sled dogs. From a base camp in Antarctica that Byrd called "Little America," they were to explore the region, check the weather, and be ready to rescue the crew if necessary. On Nov. 27, Gould radioed that the weather was good.

Balchen had weighed and precisely

balanced the cargo, which included emergency food and supplies. At the last minute, Byrd ordered two more 150-pound sacks of food put aboard, making the airplane dangerously heavy.

There are three different versions of the flight. In the early 1930s, Byrd and McKinley wrote separate articles for *National Geographic*. Balchen's version of the expedition appeared in his 1958 autobiography, *Come North With Me*.

McKinley's description deals largely with his photographing the Antarctic throughout the flight, to create a long montage from which maps could be drawn. He gives little detail about the flight itself other than to praise Balchen's flying.

The other two accounts mostly agree, but Byrd and Balchen put themselves at the center of the action and minimize the contributions of the other.

Byrd's narrative deals with his role as mission organizer and leader. He takes credit for supervising the airplane loading and making certain every safety precaution had been taken.

In his account, Balchen says Byrd emerges from his quarters "in a big fur cap and parka and polar bear pants, poses a moment beside the plane as the movie cameras grind, and waves to the crowd."

The weather was clear and the air team was able to find and follow the tracks of the dog team. Before long,



North. On May 9, 1926, Byrd and Bennett took off for the North Pole in their Fokke trimotor, Josephine Ford—named for the daughter of Edsel Ford, a key backer of Byrd's expedition.

they caught up with the men and dropped supplies, cigarettes, and messages.

Toward the Mountains

Soon, however, the crew faced a problem that could have ended the mission. Their route lay over the Queen Maud Mountains, and, as the heavily loaded airplane strained for altitude, it was unable to get high enough without losing weight. June poured several five-gallon cans of fuel into the fuel tanks and threw the cans overboard. It made little difference.

In his memoirs, Balchen recalls being at 8,200 feet, "just about the Ford's ceiling with its present loading. I wave frantically to catch the attention of June, who is bent over his radio, and signal him to jettison some of our weight. His hand reaches for the gasoline dump-valve, and I shake my head and point to the emergency food. He kicks one of the 150-pound sacks through the trapdoor, and the plane lifts just enough to clear the barrier.

"A final icy wall blocks our way, steeper than all the others. A torrent of air is pouring over its top, the plane bucking violently in the downdraft, and our rate of climb is zero. June jettisons the second sack, and the Ford staggers a little higher," Balchen wrote.

In his *National Geographic* account, Byrd gives a different version of events. He wrote:

"Above the roar of the engines, Balchen yelled, 'It's drop 200 or go back.'

"'A bag of food overboard!' I yelled at McKinley. Over went a 150-pound brown bag. ... Slowly, we went higher. Again, the wheel turned loosely in Balchen's hands. 'Quick,' he shouted. 'Dump more.'

"I pointed to another bag. Mac nonchalantly shoved it through the trapdoor."

McKinley, meanwhile, treated the incident as an interruption in his filming. He wrote that as he was "methodically and carefully snapping the

photographs and keeping the record of the exposures, the plane began to wallow."

As June emptied a gas can into the reserve tank, McKinley wrote, "he would pass it back to me to drop through the trapdoor, between 'shots' with the camera. Then came word from the commander that we must drop the emergency rations. Again, it was necessary for me to leave the camera to drop the bags of food."

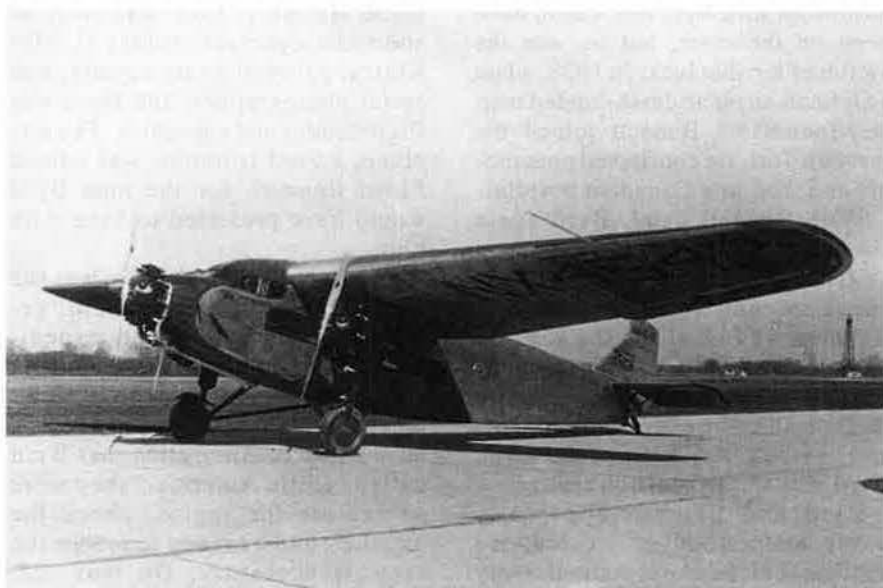
Ultimately, the lightened airplane lifted—but still not enough. Balchen gambled on finding an updraft he could ride up and over the ridge. He found it, and the aircraft reached the flat polar plateau.

There was another tense moment when the right engine backfired and missed. Balchen adjusted the setting and the engine smoothed. "At our altitude of 11,000 feet, two engines could never could keep the Ford airborne," he wrote. There was no further trouble on the approach to the South Pole.

Balchen wrote, "According to my dead reckoning, we should be at the pole in another 14 minutes. Our position is Lat. 89 degrees 40 minutes south, about 20 miles away, so our goal must actually be in sight."

Fourteen minutes later, at 1:14 a.m., Byrd sent a message to the cockpit for June to broadcast to the base.

Byrd's version read, "That imaginary point—the aloof and lonely bottom of the Earth—was beneath us. I handed June a message to radio to



South. For the audacious South Pole flight, Byrd chose the tougher, more powerful Ford trimotor, which he named Floyd Bennett. The 1929 flight drew worldwide attention, particularly to Byrd.

Little America! 'My calculations indicate we have reached the vicinity of the South Pole. Flying high for survey. Soon turn north.'

McKinley, still busy with his camera, almost missed the big moment. He wrote, "Between each shot, I glanced at the commander, hoping to have him signal that we had arrived." Suddenly, the airplane turned to the right and circled. "The commander opened the trapdoor and saluted as he dropped the Stars and Stripes," McKinley said.

The flag Byrd dropped was weighted with a stone from Bennett's grave at Arlington National Cemetery.

Balchen was introspective, writing that he was glad to leave the pole. "Somehow our very purpose here seems insignificant, a symbol of man's vanity and intrusion on this eternal white world," he said. "The sound of our engines profanes the silence as we head back to Little America."

The return was uneventful. "Eight hundred miles more of terrain were to be photographed, but this was done almost without incident," McKinley said.

Byrd described the scene as the airplane landed: "We were deaf from the roar of the motors, tired from the strain of the flight, but we forgot all that in the tumultuous welcome of our companions."

Of the landing, Balchen says, "The whole flight crew is picked up and carried on swaying shoulders to the mess hall for a celebration. I have been sitting so long in the pilot's seat that I am cramped and sore, and so I slip out of the mess hall quietly." He went skiing.

Fame for Byrd

The flight drew worldwide attention, particularly to Byrd, who was promoted to rear admiral on the retired list. Of the others, only June returned to Antarctica with Byrd. He served as chief pilot on the second expedition.

McKinley returned to the Army Air Corps, ferried airplanes to the Soviet Union, and was involved with cold weather testing and operations in Alaska. In 1943, he and another officer were given responsibility to



Recognition. Balchen (left) became a US citizen by act of Congress in 1931 and joined the Army Air Forces in 1941. Here, Gen. Frank Armstrong Jr. presents an award commemorating Balchen's 1949 flight over the North Pole.

develop a new type of weather testing lab. McKinley suggested a refrigerated hangar. On June 12, 1971, the facility was dedicated at Eglin AFB, Fla., as the McKinley Climatic Hangar. McKinley had died in 1970.

Byrd continued to return to the Antarctic to explore by dogsled and air. On one visit, he spent six months alone in a hut, almost dying of carbon monoxide poisoning from his stove. He continued his polar research until his death in 1957.

Balchen also continued to work in the Arctic and Antarctic. He was made a US citizen by act of Congress in 1931. In 1941, he joined the AAF as a captain and was given command of Bluie West Eight air base in Greenland. In 1942, he was a colonel, and, the following year, he joined Eighth Air Force in Europe and established an evacuation route between the UK and Sweden for those fleeing occupied Europe.

Late in the war, Balchen worked with the underground in occupied Norway and commanded the air operations that chased the Nazis from northern Norway and Finland. After the war, he returned to Norway.

In 1948, he asked for recall to active duty with the US Air Force and was named commander of the 10th Rescue Squadron at Ft. Richardson, Alaska.

In 1951, he came to USAF headquarters as a special assistant on Arctic problems.

Byrd died in March 1957. Evidently, Balchen had by that time begun writing a book. In a letter dated March 9, 1960, Balchen wrote to a friend about his book: "I had not written anything derogatory about Byrd. I had simply stated what I know to be a fact, that he had not reached the North Pole on his flight in 1926. I know this for two reasons: first, because the plane was incapable of making this flight in 15-and-one-half hours, which is the time Byrd was away from Kings Bay and, secondly, because Floyd Bennett told me so."

Eventually, Balchen's suspicions about the supposed North Pole flight came out publicly. The late admiral's son and other supporters protested what they considered a slander on the aviation pioneer.

Historians remain divided on the subject of whether Byrd actually made it to the North Pole in 1926. Some now concede that Byrd's claim is disputable. Many others continue to credit him with having accomplished what he set out to do. The argument is likely to continue for some time. It is not the sort of thing you can settle with DNA testing.

Balchen retired from the Air Force in 1956 and died in 1973. Like Byrd and Bennett, he is buried at Arlington National Cemetery, across the Potomac River from Washington, D.C. ■

Bruce D. Callander is a contributing editor of Air Force Magazine. He served tours of active duty during World War II and the Korean War and was editor of Air Force Times from 1972 to 1986. His most recent article for Air Force Magazine, "Tricare on the Rise," appeared in the October issue.

Air & Space



By Robert S. Dudley, Editor in Chief

OVER three extraordinarily busy days, throngs of Air Force officers and enlisted members joined with civilian professionals, officials, and academics to launch the Air Force Association's inaugural Air & Space Conference and Technology Exposition.

Some 1,000 blue-suiters attended the Sept. 13-15 event in Washington, D.C. They came from around the US and the world.

It was a conference unique in the business of airpower. Events were

Conference



and Technology Exposition

AFA's first-ever conference was an event unique in the business of airpower.



Some 1,000 blue-suiters jammed the rooms and halls at the AFA conference.

pitched to the professional requirements of a broad range of Air Force personnel—USAF enlisted members and officers, Guardsmen and Reservists, and civilians.

Numerous workshops and forums unfolded before standing room only crowds. Featured speakers included James G. Roche, Secretary of the Air Force; Gen. John P. Jumper, Air Force Chief of Staff; and R. James Woolsey, former Director of Central Intelligence.

That was only the start. Conference

attendees were given opportunities to attend forums and workshops on a wide range of Air Force and national security topics, many of which are covered in the following pages.

The companion Technology Exposition included displays of cutting-edge aerospace technology. The exposition was subscribed to by 141 exhibitors (see p. 80).

On hand to cover the speakers and events were 116 reporters and other news media representatives.

Honored guests were USAF's 12



CMSAF Gerald Murray (left) talks with Lt. Gen. George Taylor Jr., USAF surgeon general, during the conference. Murray chaired the Command Chiefs' Forum (see p. 74). One of the many forum speakers, Taylor gave a presentation on the state of military medicine.

Outstanding Airmen of the Year, who were recognized at a special AFA dinner addressed by Gen. T. Michael Moseley, Air Force vice chief of staff, and hosted by CMSAF Gerald R. Murray.

The speakers and workshops drew large crowds of service members intent on learning more about their profession. For example, the conference featured forums of four-star officers, command chief master sergeants, senior space officials, and top acquisition officers.

Leaders of the Air National Guard and Air Force Reserve Command each gave a heavily attended briefing. So did Brig. Gen. Richard E. Webber, commander of 21st Space Wing, Peterson AFB, Colo., who



Above, Gen. T. Michael Moseley, Air Force vice chief of staff, converses with Air Force Secretary James Roche. Moseley addressed the special dinner recognizing the Air Force's 12 Outstanding Airmen for 2004.



Gen. Gregory Martin, commander of Air Force Materiel Command, spoke at two forums—one on acquisition and one on USAF policies and plans.



James Webb (left) spoke about the similarities between the war in Vietnam and the war in Iraq. (See "James Webb: The Real Vietnam War," p. 76.) John Correll (right) recounted the history of the Enola Gay controversy, which surfaced again recently with the opening of the Smithsonian's new Udvar-Hazy Center near Dulles Airport. The B-29, which dropped the atomic bomb on Hiroshima, has long been the target of antiwar and antinuclear partisans.

spoke on the topic of space operations. Also getting lots of attention was military history. Former Navy Secretary James H. Webb offered a thought-provoking comparison of Vietnam and Iraq, while former *Air Force Magazine* Editor in Chief John T. Correll revisited the *Enola Gay* controversy. Historian Howard M. Hensel gave two lectures on federal strategy in the Civil War.

Lt. Gen. Ronald E. Keys, deputy chief of staff for air and space operations, presented a close-up review of how things are going for the air expeditionary force concept. Airpower expert Rebecca Grant reviewed Air Force operations in the first 600 days of the Global War on Terror.

In between sessions, the narrow hallway between the main salons and the side conference rooms was full of small groups comparing notes and deciding who would go where next. There were many options, including topics such as "Communicating the Air Force," by Col. James DeFrank III, the Air Force's deputy director of public affairs.

Rep. Jim Marshall (D-Ga.), a member of the House Armed Services Committee, presented an overview of the future of Iraq that sparked such a lively audience response that he ran far past his allotted time and a second speaker on the subject had to be rescheduled.

At the same time, the conference displayed an unprecedented human relations component. Service personnel wheeled toddlers into a family support seminar. Listeners jammed into

Ron Culberson's presentation, "Humor in the Workplace." Also popular were presentations such as "Issues of the Mobile Child" by Jean L. Silvernail, "Air Force Family Support and Crossroads" by Linda Smith, and "Military Medicine and the State of Tricare" by Lt. Gen. George Taylor Jr., the Air Force surgeon general.

In that same vein, attendees saw a presentation on the "VA Today and Tomorrow" by Darryl Kehrer, staff director of the House Veterans' Affairs Subcommittee on Benefits, and an Air Force "Recruiting Showcase" by Brig. Gen. Robertus C.N. Remkes, commander of Air Force Recruiting Service, Randolph AFB, Tex.

Subjects that reflected on current operations seemed the biggest drawing cards. Thus the Air Force reserve component sessions drew big crowds and produced lively question-and-answer sessions. Grant's briefing filled two-thirds of a sizable ballroom.

The fact that the US is engaged in combat in Iraq and Afghanistan was a prominent factor in the week's events. Pedestrians walking up the driveway toward the hotel were required to produce picture identification for security's sake. Questioners prefaced queries with references to their own experiences in Afghanistan or in Iraq.



Staff photo by Guy Aceio

Rebecca Grant gave a presentation based on her work with USAF's Task Force Enduring Look, a review group which studied the lessons to be learned from Air Force operations in Afghanistan and Iraq.

Airpower and "The Long War"



The battle against terror is reshaping Air Force priorities.

By John A. Tirpak, Executive Editor, and Peter Grier

AT THE Air Force Association's inaugural Air & Space Conference, held in Washington, D.C., three featured speakers took up issues ranging from USAF's top priorities to the state of the Global War on Terror.

The three major addresses were delivered by James G. Roche, Secretary of the Air Force; Gen. John P. Jumper, Chief of Staff of the Air Force; and R. James Woolsey, Director of Central Intelligence in the period 1993-95.

In one way or another, the remarks of all three speakers dealt with or expanded on what Woolsey described as "the Long War of the 21st Century." By that, he was referring to Washington's global struggle against the toxic combination of political fascists and religious extremists in the Islamic world. As Roche and Jumper suggested, this war against terrorists has become a driving factor in Air Force planning and operations.

What follows are summaries of presentations and press remarks. Full transcripts are posted at www.afa.org. Remarks of other speakers can be found there as well.

James G. Roche

The Air Force has shifted from a force that merely coordinates with the other services to one that is "thoroughly integrated" with them and is now focused tightly on supporting ground units, Roche said.



Photo by Paul Kennedy

R. James Woolsey, former CIA director, likens "the Long War" to the Cold War. By Woolsey's count, the free world is engaged in combat against at least three totalitarian movements in the Middle East: Secular fascists, Shiite extremists, and fundamentalist Sunni Islamists.

"In the past, air and space power operations were planned and executed in concert with ground operations but not as part of an integrated campaign," said Roche. "That's changed."

Roche laid out USAF's transformation efforts, as well as its new priorities in operations and funding.

According to Roche, special operations forces, once considered "peripheral" to USAF's main mission, are "now part of the mainstream." In fact, he went on, "we cannot perform our mission without them."

Recent technical advances have given battlefield airmen the ability to designate targets for overhead bombers even when the objective is more than six miles away, achieving an accuracy of within about 17 feet, a sequence that now takes "well under three minutes." This, Roche declared, "is a change to war."

The Air Force's fighter and strike aircraft must be "rapidly ... available to land forces, particularly the American Army, when they need us," he continued.

"Our ability to support land forces will grow as we field the F-35," said Roche. USAF plans to purchase the short takeoff and vertical landing version for land support, but service leaders have not specified the number. At a press conference, Roche said simply, "We have time" to make that decision.

Likewise, the Air Force's considerable powers in intelligence, surveillance, and reconnaissance must adapt to new targets, which are "smaller, more fleeting, dispersed, and located around the world," he said. The Air Force must concentrate on delivering "persistent surveillance" to deny an enemy sanctuary from which to plan and launch an attack.

The Air Force will "examine lift requirements in light of the emerging new doctrines of the Army and Marine Corps," which will also be deployed in smaller, widely dispersed units, said Roche. Airlift



Photo by Paul Kennedy

Secretary James Roche says USAF is more "thoroughly integrated" with other services than it was in the past and that special operations forces, once on the periphery, are now "mainstream" Air Force.

forces will be adapted "the better to support this concept," and it will be up to USAF, with its fighter attack fleet, to "create corridors that are protected in order to resupply these folks," he said.

Future ground forces must not be "weighed down with a lot of trucks full of artillery shells," said Roche. As he put it, "We will be providing them power, and we may have to do it in [the face of] hostile defenses."

In the press conference, Roche outlined USAF's top three priorities.

First is "to be able to support Army units that are deep [within enemy territory]," said Roche. Sec-

ond is to "make sure that the joint forces can operate in an air environment that is not precluded by the greatly increasing surface-to-air missile capabilities" of potential adversaries. Third, he said, is to cope with "a cruise missile attack against deployed forces at some point in the future, and that's not an easy problem, technologically or militarily."

The F/A-22 and F-35 fighters, with their stealth and precision weapons, will take care of ground forces and provide a permissive air environment for US forces overall, he said.

Roche also pointed to the future E-10A airborne battle manager and

Rep. Jim Marshall: The Future of Iraq

Staff photo by Guy Aceto



Rep. Jim Marshall (D-Ga.) addresses one of the conference forums.

Rep. Jim Marshall (D-Ga.), a member of the House Armed Services Committee, gave a mixed report on US progress in Iraq. He said that, while positive things are happening there, tough problems remain.

"It has been and it will be a difficult go for us," said Marshall.

On a trip to the region, Marshall and others in a Congressional delegation attended a meeting with the top officers of the US Navy's 5th Fleet in Bahrain. They spent some 20 minutes hashing over the possible whereabouts of six individuals that US Intelligence believed constituted a terrorist cell in Bahrain or Saudi Arabia.

Bahraini authorities were reluctant to cooperate in finding the suspects, so US dependents were ordered home for their safety, said Marshall.

"We are not set up to find six people," said Marshall. "For us to be successful in this kind of effort, we've got to have local help."

Photo by Paul Kennedy



Gen. John Jumper, USAF Chief of Staff, mingles with conference attendees between sessions. His remarks covered topics ranging from space applications to the next generation gunship.

sensor aircraft, coupled with the F/A-22, as the best likely solution to the cruise missile threat.

He also reported that the Air Force is under orders from Defense Sec-

retary Donald H. Rumsfeld not to incur any "bow waves" of funding in the service's plans.

Rumsfeld, Roche said, has warned the Air Force to budget as if there

will be a "leveling" of funding in the future. Roche noted that "a leveling in current year dollars is a decrease in real dollars."

Roche wants integration of the active, Guard, and Reserve forces that is even greater than is now the case. He announced that Guard and Reserve units or personnel will "participate fully in space operations, in the world of remotely piloted aircraft, and other fields" which have traditionally been staffed only by active forces.

He forecast a move to more blended wings—such as the one that operates the E-8 Joint STARS aircraft—and more variations on associate wings, which will feature combined ranks of active and reserve component personnel.

Roche also announced a new approach to the ongoing education of Air Force people. "We're getting out of the business of filling squares for promotion," Roche said. In other words, the Air Force wants to make sure that advanced education meshes with the needs of the Air Force.

He explained that the service in-

Gen. Hal Hornburg: Next Steps in Combat Airpower

Air Combat Command is rapidly improving its capabilities most relevant to future warfighting—capabilities such as time-critical targeting, said ACC Commander Gen. Hal M. Hornburg.

It is taking less and less time for Air Force attackers to run through the "kill chain"—the process of finding, fixing, tracking, targeting, engaging, and assessing an attack on a particular target.

Air Force combat forces have shown dramatic improvement in recent years. Hornburg told a conference audience Sept. 15 that the average time required has dropped from 120 minutes in 2002 to 10 minutes today.

The forecast is that the time required will drop to only nine minutes in 2005, Hornburg said.

It has been a long-standing priority of Gen. John P. Jumper, Chief of Staff, to be able to execute an attack in single-digit minutes. That is because fleeting and time-critical targets are becoming more and more important.

Hornburg sees exponential growth in use of distributed mission operations (DMO) for training. DMO refers to large, multiplayer exercises that actually take place in different parts of the world but which are linked together in a "virtual world," via computers and networked communications systems.

Hornburg said there were 25 command and control DMO events last year—and 410 this year. The forecast for 2005 is 600 DMO events.

Distributed training allows airmen to have realistic training much more frequently than is possible if they must pack up and deploy to a common site.

Hornburg, who is retiring at the end of the year, also said ACC is working on a new concept of operations to make better use of intelligence-surveillance-reconnaissance capabilities.

He told reporters at a media roundtable that Air Force Space Command recently completed a command and control CONOPS heavy on space systems.

ACC seeks a similar CONOPS for air-breathing ISR systems to create "balance" with the space assets, Hornburg said.

One goal is to highlight the use of unmanned systems for battlespace awareness missions. The CONOPS "should define the concept of operations to use present and future UAV systems," Hornburg said, and it should decide "in a broad sense, what systems might fill 'niches and voids' in the future." Hornburg estimated the ISR CONOPS will be complete in six months.

Hornburg also told reporters that ACC plans to upgrade every viable A-10. Previous plans called for retiring some A-10s, as a cost-saving move, to free up funds for upgrades of the remaining Warthogs. Financial retirements are no longer deemed necessary.

Desired upgrades include a precision attack capability, new engines, and a service life extension. This can be done within the A-10 budget, Hornburg said, but ACC "will probably still want to retire some of them, because it won't be worthwhile to modernize airplanes that basically are ... about to go off the end of the cliff with respect to their service life."

The A-10 has been heavily tasked in both Afghanistan and Iraq, Hornburg noted. "I would not want to retire any of these airplanes if they weren't approaching a service life issue, because we need them," he said. But "at some point, with any airplane, you cross a line of diminishing returns."

The Air Force's Fleet Viability Board will assess how much service life the A-10s have remaining.

—Adam J. Hebert, Senior Editor

tends to pick up the cost of higher education—both for enlisted troops and officers—if the degree is one the service wants the person to have.

The Air Force is awaiting the results of several ongoing studies before a plan emerges on recapitalizing the aerial tanker fleet, which USAF must do, Roche reported.

Gen. John P. Jumper

The Air Force's top uniformed leader said the the service is grappling with many questions about how it will go forward in the areas of space, unmanned vehicles, special operations, and long-range strike, all of which could soon see big new initiatives.

USAF space leaders are trying to figure out "how we can take space and bring it in a focused way to the operational and tactical level of war," Jumper said.

He wants to know how much capability can be packed into 1,000-pound "smallsats" or "microsats" to help with communications, sensors, and blue force tracking. He also wants new ways to launch such satellites "reliably, in hours instead of weeks, days, and months, and put them into orbit over a focused point on the Earth to deal with the spe-

Lt. Gen. John Bradley Jr.: Focus on the Air Force Reserve

The Air Force Reserve has improved its recruiting in recent years, but still falls short of its authorized end strength, said Lt. Gen. John A. Bradley Jr., chief of the Air Force Reserve.

The Reserve will be roughly 98.7 percent manned at the end of the year, he said, "which is not good."

Air Force Reserve Command missed its recruiting target each year from 1998 through 2000, but has met its goals every year since, Bradley said. "This year, we've already exceeded our goal," he said.

Despite reaching the Reserve's recruiting goal in the period 2001-04, "we haven't met our end strength, and we're not going to meet our end strength this year," said Bradley.

The problem is not retention—Bradley said command retention is currently at 89.9 percent, which is better than the average since 2000. Part of the manpower shortfall is attributable to the economy, he said, but part of the problem probably has to do with the goals themselves.

"Maybe our goals should be a tad higher. ... It's an area I'm greatly concerned about," Bradley said.

cific situation for a certain amount of time."

Jumper noted that lighter-than-air vehicles could be positioned in "near space," which he described as "that area between 65,000 feet and about 300 kilometers [982,080 feet] which is governed neither by treaty nor by other convention." Such vehicles would be able to provide persistent surveillance, one of

the top requirements for the future USAF.

Jumper told reporters that USAF has yet to define how many short takeoff and vertical landing F-35s the service wants to acquire, but it will be "in the hundreds."

The Chief of Staff also acknowledged that the great capability resident in the F/A-22 and F-35 fighters, along with new munitions such

Lt. Gen. John Baker: Getting the Joint Force to the Fight

Setting up an air base in an austere location on virtually no notice is going to be an increasingly important mission in the future, and Air Mobility Command has further refined the existing tanker airlift control element concept to do it, according to Lt. Gen. John R. Baker of AMC.

AMC is forming 120-person contingency response groups that will function "like a TALCE on steroids," Baker asserted. They will be able to assess conditions at an operating site, call forward the necessary gear to set up a working air base, and make a "smooth transition to combat operations," Baker said.

This new organization is being tested in Eagle Flag exercises, in which airfields are built from scratch in a matter of days or even hours, he reported.

Baker said that it has been difficult to keep up with the Army's new concept of operations, which calls for rapid air mobility with the new Stryker fighting vehicle.

The Army's plan was to have a C-130 carry two Strykers at a time, but, Baker said, the weight and clearance of the vehicle has grown to 30,000 pounds each. Some variants are 40,000 pounds.

"That's not easy to load," he said, adding that only one Stryker will fit on a C-130.

Also, because the C-130 must keep fuel in its center tanks to stiffen the wings when carrying a heavy load, the distance that Strykers can be moved before landing to refuel has also shrunk, Baker explained. Under very high-altitude, high-temperature conditions, he said, Strykers on C-130s "can't get there."



Photo by Guy Aceto

Lt. Gen. John Baker reports that AMC is further refining its expeditionary airlift control element.

The Stryker mobility concept is having to be redefined. The new metric is "three on a C-17," Baker said.

He also said he is getting "very concerned" about the Civil Reserve Air Fleet. While CRAF has been an invaluable partner in picking up the extra load during the last few years, the industry has been steadily moving "toward smaller and smaller ... airplanes, which are less useful to me."

Command Chiefs' Forum: Training for Combat

CMSAF Gerald R. Murray selected a panel of six command chief master sergeants to represent the enlisted force in a panel discussion. The chiefs spoke at the Air Force Association's Air & Space Conference Sept. 13.

Proper training for combat missions—and the lack of it—were major concerns.

The Air Force is taking on new roles, such as providing the Army with convoy drivers in Iraq, as combat force imbalances across the Defense Department have required creative solu-

tions. There is a need for balance. The Air Force does not want to overtrain forces for combat skills, because those are for limited missions—and new training has to come at the cost of something else. However, airmen must always be ready to go to war.

New missions continue to accumulate. USAF security forces were to take over security at Abu Ghraib prison in Iraq in the fall, officials noted.

At Air Mobility Command, said CMSgt. Michael R. Kerver, everyone has "struggled" with how to balance combat training. Until recently, most career fields never received "any kind of contingency training at all," he said.

The recent creation of Eagle Flag, at which airmen practice establishing bare bases, has been successful, he said, but it does not solve the main issue: "How do we supplement the combat skill training that our troops aren't getting?"

How much of such training is enough? According to Kerver, the answer is, "enough to survive in [a combat] environment." Combat support airmen will soon be getting additional combat skills training, because the airmen are still "not prepared as well as like we'd like [them] to be," he said.

CMSgt. Karl W. Meyers, command chief of Air Education and Training Command, said he recently visited Kuwait, where airmen were "very concerned" that they did not have the training needed for their safety and survival.

AETC is now sending teams through combat convoy training as complete units, as they will deploy. They "go on an actual on-the-road convoy before they leave," he said, which has proved to be "exactly what was required."

Photo by Paul Kennedy



USAF command chief master sergeants tackle tough questions from the enlisted force.

—Adam J. Hebert, Senior Editor

as the Small Diameter Bomb, will permit the service to shrink its fighter fleet while gaining even greater capability. (See "The New Fighter Debate," September, p. 34.)

Roche in a press conference noted that in initial operational test and evaluation of the F/A-22, the aircraft is proving "more than twice as capable" as the F-15C.

Roche revealed that USAF now intends to replace the F-117 first-generation stealth attack airplane with F/A-22s, even though the Air Force's stated requirement for F/A-22s remains at 381 aircraft—enough to equip each of USAF's 10 air expeditionary forces with one full squadron.

The Air Force will hang onto some number of F-15C air superiority airplanes, as well as many F-15E strike models, for some time to come, Jumper said. "The F-15Cs that we decide to keep will have an air-to-ground capability," Jumper explained. This will allow them to play a role in "the execution phase" of a future campaign "and be active in all phases of combat rather than just [in] ... the air superiority phase."

Roche also revealed that while all

Lt. Gen. Ronald Keys: Expeditionary Force Close-Up

The Air Force is searching for creative ways to bring more airmen into its 10 air and space expeditionary forces (AEFs), said Lt. Gen. Ronald E. Keys, USAF deputy chief of staff for air and space operations. (Keys has been nominated for a fourth star and reassignment as commander of Air Combat Command.)

Most notable is the likely creation of "expeditionary AFSCs," which will be new Air Force specialty codes that airmen master strictly for deployed assignments.

Currently, some categories of airmen, such as missileers with alert duty or uniformed scientists, are largely exempt from AEF deployments simply because their primary jobs do not exist in forward locations. But, Keys noted, that does not mean those airmen could not perform other missions, if trained.

For example, missileers could be trained to coordinate air traffic, while scientists may have actually helped develop the software used at an air operations center.

The issue becomes one of balance, he said. Airmen "ought to have a skill where they can go," Keys noted, but whether program managers or highly specialized experts should be pulled from their primary jobs is a matter that must be decided on a case-by-case basis. For a certain number of airmen, Keys conceded, deploying with an AEF is "just not worth it."

The Air Force is looking for additional AEF personnel because it needs to spread expeditionary duties over a larger number of airmen, thereby lessening the pressure on each individual.

In a list of AEF "lessons learned," Keys said something always proves to be in short supply, but the Air Force may not know in advance what that shortage is.

—Adam J. Hebert, Senior Editor

Gen. Donald Cook: Educating and Training the Force

Photo by Paul Kennedy

Gen. Donald G. Cook, AETC commander, said Sept. 15 that the Air Force continues to make investments in recruiting, training, and education to best prepare airmen for an expeditionary culture.

Recruitment efforts were highly successful as the result of an addition of 700 recruiters, a national advertising campaign, and a continuing willingness of young persons to join, in the wake of the Sept. 11, 2001, terrorist attacks.

Cook believes USAF faces a challenge in maintaining the momentum of training. The focus must stay on expeditionary skills in an Air Force context.

"Airmen training airmen is a big deal to me," he said, asserting that most airmen should be trained by blue-suiters. Too much cross-service training could lead airmen to "become people they are not."

AETC has developed a Basic Combat Convoy Escort Skills Course, drawing from field experience in Operations Enduring Freedom and Iraqi Freedom. The course, located at Ft. Hood, Tex., includes weapons training, use of night vision goggles, vehicle driving, and dealing with ambushes and night attacks. There are about 500 Air Force transporters supporting Army convoy operations.

Education initiatives include a new senior chief master sergeant course and the granting of master's degrees from the Air War College and Air Command and Staff College as a result of their recent accreditation by the Southern Association of Colleges and Schools. The Community College of the Air Force also earned another five years' accreditation.

USAF will change the training of its navigators and change their title to combat systems officers. Further training will



Gen. Donald Cook (left) talks with Gen. Gregory Martin. Cook's forum dealt with USAF's training challenges.

open up such fields as air battle management and electronic warfare to them.

USAF continues its Classroom 2005 program, equipping all classrooms with technological upgrades. Use of these classrooms yielded a 35 percent lower retest rate and much higher certification rates. Cook sees these statistics as a "good solid return on investment."

Distance learning courses are now available to forces in Kyrgyzstan, and, in November, CCAF courses will be online for remote locations.

—Tamar A. Mehuron, Associate Editor

F-15Es will receive a radar upgrade to improve their ground-attack capability, only one F-15C will be so modified. The upgrade will be available on short notice if conditions dictate an F-15C fleet retrofit, he said.

The Air Force is also considering "the next generation of gunship," Jumper said, to replace the AC/MC-130 and is trying to define "how much stealth is appropriate in the special operations mission."

The Air Force is trying to reach some decisions about a new long-range attack capability—whether it should be manned or unmanned, reusable or disposable, how fast it needs to go, how soon it needs to be available.

According to Jumper, hypersonic technology is not yet mature enough to go forward into a system development so USAF is pursuing an "intermediate step" with some type of bridge bomber. Filling that role could be an FB-22 or other "regional bomber" with "the characteristics that we value," said Jumper.

Those characteristics include stealth, high speed, and the ability to defend itself if attacked, he said.

(At the joint press conference

Lt. Gen. Michael Wooley: SOF in the Global War on Terror

The Global War on Terror is a new type of battle, one that Air Force Special Operations Command is well-suited to fight, said Lt. Gen. Michael W. Wooley, commander of AFSOC.

"Quiet operations" are AFSOC's forte, Wooley said, and many of the nations that help the US battle terrorism worldwide seek to do so "covertly." Fear of antagonizing political and religious factions in many nations make overt support of the United States untenable.

"We at AFSOC are uniquely capable of working with these coalition partners clandestinely, and often ... no one even knows we are in the country," Wooley said.

AFSOC's 6th Special Operations Squadron has a history of working quietly with nations to train allied forces. In fact, Wooley said, the 6th SOS, out of Hurlburt Field, Fla., was in Uzbekistan performing language training on Sept. 11, 2001.

The relationship the commandos had already established with Uzbekistan paid "immediate basing benefits," when Operation Enduring Freedom required access to bases near Afghanistan, he said.

with Jumper, Roche said the putative aircraft would have a range in excess of 2,500 miles. In some 14 scenarios gamed in computer simulations pitting various potential future US Air Forces against a variety of threats, said Roche, "some number of those, to augment the existing long-range strike fleet, and

as a transition to something longer [ranged], seemed to make sense.")

If it appears that the next big leap in high-speed capability will not be available until "20 or 25 years from now," said Jumper, the need for a "bridge capability" will become more apparent.

"I personally believe we're going

James Webb: The Real Vietnam War

In three decades since the end of the Vietnam War, the US has forgotten the reasons it became involved in that conflict in the first place, former Secretary of the Navy James H. Webb told an AFA conference audience.

Webb said that, in his opinion, there was more justification for US involvement in the Vietnam War than there is for its action in Operation Iraqi Freedom.

Webb, now a best-selling author, served in the Marine Corps in Vietnam and has since returned to that country numerous times.

Communist leader Ho Chi Minh trained for years at the Soviet Comintern and was committed to spreading communism through all of Southeast Asia, said Webb. He executed as many noncommunist nationalist leaders as he could.

The first big increase in US presence in Vietnam came in 1961 in response to terrorism, said Webb. Communist cadres were killing 11 South Vietnamese government officials a day.

"It was similar to what we're seeing in Iraq," said Webb, who served as Secretary of the Navy during the latter days of the

Reagan Administration. "They were targeting anyone with ties to the new [South Vietnamese] government."

The US military had to fight the war with one hand tied behind its back, Webb noted. Too many targets were ruled off-limits for political reasons.

"Never did we use strategic bombing on strategic targets until it was too late, in political terms," said Webb.

The US then began to hand over responsibility for the war to a South Vietnamese military that was only partly prepared for the burden. Some units were good. Some weren't. Reductions in US aid undercut South Vietnamese officers who continued to fight.

Ultimately, the war was a holding action that allowed varied political and economic systems to take root in other parts of the region. Ironically, pressure from an expansionist China may today be ameliorating the behavior of Ho Chi Minh's successors.

"In the end, you're going to see what we wanted: a government that treats its people well," predicted Webb.

to need a midterm solution, and I think the Secretary agrees with that," Jumper said. He expects the answer to emerge in the "next couple" of years.

R. James Woolsey

Former CIA director R. James Woolsey does not believe that the term "war on terror" is the best way to describe the conflict in

which the United States is currently engaged.

Instead, he calls it "the Long War of the 21st Century."

Like the Cold War, the Long War could last decades, Woolsey told AFA conference attendees. Actual combat might be episodic. And there is a deep ideological divide between the US and its enemies.

According to Woolsey, "We are

in a war against, I would say, at least three totalitarian movements from the Middle East." The first of these, said Woolsey, is a fascist movement. The Baath Parties of Iraq and Syria were—and are—structured like the European fascist movements of the 1920s and 1930s, and they are similarly anti-Semitic. To call the remnants of the Saddam Hussein regime "insurgents" is thus

Lt. Gen. Roger Brady: Update on Force Development

Speaking on Sept. 14 in a room jammed with officer and enlisted airmen, Lt. Gen. Roger A. Brady, deputy chief of staff for personnel, addressed force development, customer service, and force shaping efforts.

A key force development issue, he said, is the Air Force push to instill in airmen a "wider perspective" of the service and its many interlocking career fields. Ultimately, the goal is to expand the leadership pool by growing as many prospective leaders as possible through "systematic and deliberate" development, in which today's airmen "master the necessary skills" and "enduring competencies" of leadership.

USAF expects its future senior officers to be skilled at multiple jobs and future command chief master sergeants to be capable of even greater roles than today.

At the same time, the service still must address a basic manpower question: Can a civilian, Guardsman, or Reservist handle a particular task or does it require an active duty member? The answer to that question will help the service further develop its force shaping plans and help define its necessary end strength, said Brady.

He also talked about the push toward more and more automation. USAF plans to deliver about 80 percent of its military and civilian personnel services through self-service Web sites. Another 15 percent of services will be handled by call-in centers, leaving only five percent that would require face-to-face interaction.

—Tamar A. Mehuron, Associate Editor

Maj. Gen. John Speigel: New DOD Civil Service System

Now that the National Security Personnel System has become law, the process of working out all the details has begun, Maj. Gen. John M. Speigel, director of personnel policy, said on Sept. 13. He offered a status report of NSPS progress so far and steps soon to be taken.

He called it a "multilayered, multiyear" process, one that is being developed jointly by DOD and the Office of Personnel Management, with the input of DOD employees and unions.

The legislation was prompted by the realization that DOD's current civil service system is inadequate to manage its civilian workforce in the 21st century. The hiring process is far too slow and adversely affects recruiting top prospective employees.

Outstanding performers are paid the same as less productive employees, he said. Currently, managers have limited flexibility to reassign people, and there is limited accountability, Speigel noted.

Provisions already implemented under NSPS include employer authorizations to hand out retirement pay, leaves, and so forth. DOD managers can also now hire highly qualified experts at special salary rates for specific periods of time.

In the planning stage is the Senior Executive Service Performance System.

Speigel said the first implementation "spiral" will begin in July 2005 and that the goal is to have everyone in the new system by 2008. He referred attendees to the Air Force Web site, www.dp.hq.af.mil/dpp/dppn/nsps.

—Tamar A. Mehuron, Associate Editor

to be too kind. "They're fascists," said Woolsey.

The second group comprises Shiite Islamists. Woolsey maintained that these extremists don't represent Islam any more than Torquemada, the cruel Grand Inquisitor of the Spanish Inquisition, represented 15th century Christianity.

The third group is composed of Sunni Islamist terrorists. Al Qaeda is the embodiment of these terrorists, but their roots lie in the anti-Christian, anti-Jewish, anti-female, anti-modern Wahabism prevalent most notably in Saudi Arabia. "Not all Saudi Wahabis become Islamists or terrorists, but the link is there," said Woolsey.

These groups, Woolsey went on, are united by their deep, abiding hatred of American freedoms. In addition, they all think Americans have little regard for Arabs, seeing them only as a source of oil.

Most critically, these groups believe that Americans will cut and run if sufficiently bloodied.

"No combination of messages to ... totalitarians—especially in that part of the world—could be more provocative than that," said Woolsey.

At home, fighting these enemies will require the US to weigh trade-offs between liberties and security for decades to come. Many Americans might not like that, but the nation has made such compromises in wartime before. The Constitution historically has given the President



Staff photo by Guy Aeno

Lt. Gen. Dick Scofield, USAF (Ret.), argued that the Air Force should go "back to the future" and retool its acquisition system to more closely resemble that which existed in the early 1970s. It was during that period, said the former Aeronautical Systems Center commander, that USAF launched highly successful programs such as the F-15, F-16, and A-10 fighters. A new study Scofield prepared for AFA, "Delivering Combat Capability at Home and Abroad," can be found at www.afa.org.

the flexibility to make those trade-off decisions.

The Long War may also make the West painfully aware of its reliance upon hundreds of complex networks, from the Internet to food processing to chemical production and transportation. These networks have been designed for ease of access and maintenance. Now they need to be recast with security in mind.

"We're not used to thinking about

how these networks can be utilized in order to kill us intentionally, and we have to deal with both malignant and malevolent problems," said Woolsey.

The Cold War was won by building the West's military deterrent, maintaining strong alliances, and drawing the line against Soviet expansionism. It was also won via ideological battle, which helped to convince dissidents of the communist world that the Soviet Union offered

Science and Technology Forum: The Challenge to Adapt

When it comes to science and technology funding, the sky is not falling, declared Air Force acquisition chief Marvin R. Sambur.

Sambur, heading an S&T panel comprising himself, Air Force Materiel Command chief Gen. Gregory S. Martin, and Air Force Chief Scientist Mark J. Lewis, said USAF spending for science and technology continues to go up, thanks largely to annual add-on funding provided by Congress.

Budget pressures on S&T, Sambur said, are not a problem.

What is a constant challenge, however, is the speed at which new technology can be pushed out to the field. That process needs to become much faster, Sambur said.

He noted, for example, that Air Force scientists are working hard to develop ways to counter improvised explosive devices, which are taking a toll on US service members in Iraq.

Such threats, Sambur said, are wholly different from the "somewhat predictable" ones faced during the Cold War years, and the Air Force technology engine is adapting, he said.

The Air Force is pursuing many ideas for speeding the process. These include the recent restructuring of the program executive officer organization and AFMC. (See "Operational Acquisition," August, p. 54.)

Another approach is to shoot for less capability in the first versions of a new technology and add on more capability later and incrementally. Requirements officers traditionally demand more than they really need, in hopes that, falling short, the new technology will still be better than if the demand had been more realistically stated in the first place, Sambur said. More discipline will be put into the requirements process.

Likewise, Sambur warned contractors that the Air Force will be highly suspicious of bids that come in well below what the service thinks new technology should cost. Lowballing bids leads to exaggerated expectations, delays, and restructures, which the service can't afford.

From now on, if you bid low, because you think that low bidders win, you do it at your own peril, Sambur warned. Unrealistic bids will be considered a risk factor, he said.

Brig. Gen. Charles Ickes II: Focus on the Air National Guard

The Air National Guard is looking for creative Total Force arrangements to help it carry out future missions, said Brig. Gen. Charles V. Ickes II, ANG chief operating officer. The Guard is fighter-centric and upcoming reductions in USAF's fighter force could bring serious problems.

The Air Force plans to retire old aircraft faster than it replaces them with new fighters. Moreover, new fighters will be purchased in small numbers. Therefore, the Guard needs to reshape its force structure to match the reduced buys of new weapons systems, Ickes said.

"We would anticipate somewhere around a 33 percent reduction [in airframes] ... through 2025," he said.

Meanwhile, the coming base closure round could eliminate as much as 25 percent of the Air Force's base infrastructure, stated Ickes. Though BRAC is looming, he said, it is not the primary concern. "Whether BRAC occurs or not, the Air Force is going to recapitalize and restructure," he said.

Therefore, the Guard is looking to reshape to make the most of the reduced buys of new weapons systems. The likely decline in "tails" could threaten the existence of some Guard units, Ickes said.

Secretary of Defense Donald H. Rumsfeld on numerous occasions has asked the Air Force to look at its active-reserve mix, Ickes said, and the Joint Staff is conducting its own operational availability study, which is "looking at processes and ways to better utilize the Total Force."

In response, the Guard has created a Vanguard program to build a strategy for the future. Ickes said Vanguard will ensure the Air Guard remains "very accessible to the active component" even as it carries out its homeland defense and state missions.

New ANG-active duty teaming arrangements—along the lines of the associate units and blended wings that have already proved successful—are also likely.

The Guard is also searching for organizational efficiencies. For example, ANG tanker and fighter squadrons typically contain 12 to 15 aircraft. Ickes said 18 or 24 aircraft is the vision for the future.

These enlarged units will then be "perfectly structured" to receive the F/A-22 or the F-35 Joint Strike Fighter in later years, he said.

—Adam J. Hebert, Senior Editor

only tyranny, while the West represented freedom.

To win the Long War, the US may have to make this same appeal to the Islamic world.

"We're going to have to convince hundreds of millions of good and decent Muslims around the world—who don't want to live in dictatorships, who don't want to be terror-

ists—that they and we are on the same side," said Woolsey.

The task sounds daunting, he said, but the rise of democracy around the world shows that it can be done. Since the end of World War II, the number of democratic nations has increased from 20 to 117, with 88 of those operating under the full rule of law.

Adversary regimes might want to note that the big totalitarian empires of this century, from Hitler's Germany to Stalin's USSR, have all crumbled, while the US remains.

Woolsey quoted the poet Carl Sandburg's famous statement about the strength of the American people. "This old anvil laughs at many broken hammers," he said. ■

Space Forum: The Road to Space Dominance

Conventional booster rocket technology has been in use for 45 years, but something better is needed. Military space leaders are still waiting for the next big leap in launch technology that will bring about "responsive" access to space, top Air Force space officials told a conference audience Sept. 14.

Revolutionizing access to space will require a breakthrough akin to the invention of the jet engine, said Undersecretary of the Air Force Peter B. Teets, who serves as the nation's point man for military space matters. "We have not had a revolution" in space launch capability, he said.

"What we need in the rocket world, what we need in the space-launch access world, ... is that 'jet engine' of revolutionary technology," said Teets. "We don't have it yet." Developing a new, incrementally better rocket engine isn't going to meet the true needs.

Two of the three space "needs" outlined by Teets relate to this search to improve space access. He outlined a requirement for a strong, consistently funded space industrial base and more investment in leading-edge space technology.

Teets said proper investment could lead to a "two-stage, fully reusable, horizontal takeoff [and] landing" vehicle that reaches "into low Earth orbit, with a meaningful payload." Such a capability would "revolutionize the way we think about space," Teets said.

The third military space need identified by Teets: a strong government "space cadre." Both he and Gen. Lance W. Lord, Air Force Space Command chief, touted the merits of a space



Photo by Paul Kennedy

Peter Teets (center) and Gen. Lance Lord (right) discussed space dominance, while NASA head Sean O'Keefe dealt with civilian space issues.

cadre—but were strongly opposed to the creation of a separate space service. Teets said the space mission will probably never be so manpower-intensive that it will justify creation of a separate corps or service.

Lord said he did not think creating a separate space force (and new layer of bureaucracy) would "serve us in any way."

—Adam J. Hebert, Senior Editor

Four-Star Forum: Eyes on the Future

The Air Force is going to get smaller in numbers of people but "not a lot smaller," said Gen. John P. Jumper, who led a panel of four-star generals in discussing challenges for the Air Force.

The Air Force is already over its statutory end strength—permitted as a temporary, wartime measure by Congress—and will have to reduce its personnel for the long run, Jumper said.

The service will get "smaller in equipment, but not necessarily that much smaller" in people, he noted.

The panel also included Gen. Donald G. Cook, head of Air Education and Training Command; Gen. Paul V. Hester, head of Pacific Air Forces; Gen. Hal M. Hornburg, head of Air Combat Command; Gen. Lance W. Lord, chief of Air Force Space Command; and Gen. Gregory S. Martin, chief of Air Force Materiel Command.

According to Jumper, the reduction in the size of the Air Force will be made possible, in part, by having fewer airframes to crew and maintain, since dramatic new capabilities are reducing the number of aircraft required. However, the Air Force is trying to determine the number of places in which it may conceivably be called to fight.

The force drivers, said Jumper, will be the operating tempo and coverage needs, not capability per aircraft.

Jumper said more and more people not already available for expeditionary, deployable service will be tapped. Also, new wing structures will ensure that "we ... get the packages right" so that a deployment of most of a unit doesn't stop the regular training and maintenance routine for the rest of the unit dead in its tracks.

The Chief of Staff also acknowledged that the base realignment and closure (BRAC) process, coupled with reductions in the number of fighters—the mainstay of the Air National Guard—will force rethinking of traditional Guard and Reserve roles. To that end, he envisions improved "virtual crew ratios" in which more pilots will be available to fly fewer aircraft in wartime.

Martin said BRAC quite possibly will lead to "joint sustainment centers" that will perform depot maintenance on equipment for all the services, not just the Air

Force. This could increase efficiency and "synergy" between the services to find the most effective way to perform certain functions.

Cook agreed that BRAC and other initiatives will work to combine the functions of several services, but he warned that this should be done "only where it makes sense." He added, "It doesn't make sense to go too far."

Cook noted that the Air Force is about 40 percent smaller than it was during the Cold War and that further integration of some functions will result in the loss of needed specialization.

The Air Force should develop the expertise and status of rated non-pilots, Cook said, by expanding the definition of combat systems officers. He said unmanned aerial vehicles might be operated by non-pilots.

Jumper, however, said the question of who should be a UAV operator remains open.

The Air Force must meet Federal Aviation Administration requirements when UAVs transit civil airspace. Jumper also said UAV operators need to have the "airmanship" to know how to react to unexpected situations that put UAVs in conflict with other air traffic. For the time being, UAVs must be operated by "credentialed warriors" who must "feel the full weight of responsibility" for the aircraft, he said. "It is not a video game," he added.

The whole notion of what the Air Force wants from UAVs is still very much open to debate, Jumper added.

"It's not that we don't embrace it," he said. "It's that we're not sure what to do with it. We have to be careful."

What would be most valuable in a UAV, he said, is swift time of flight to a target, long persistence in the battle area, ability to carry a large variety of weapons in one load, ability to communicate with ground troops, and ability to employ weapons with less than a minute's notice.

Experience with Global Hawk and Predator has shown that UAVs are not disposable, but expensive, and they should only be used for those missions where "they considerably advance the art of war."

This is an area where "we have to think it through and get it right," Jumper insisted.

—John A. Tirpak, Executive Editor



Photo by Paul Kennedy

Left to right, Gens. Paul Hester, PACAF; Donald Cook, AETC; Gregory Martin, AFMC; John Jumper, CSAF; Hal Hornburg, ACC; and Lance Lord, AFSPC. Discussion ranged from personnel reductions to who should fly UAVs.

Technology Exposition

AFA's technology showcase offered conference attendees a glimpse of tomorrow's advanced capabilities.



Staff photos by Guy Aceto

The Air Force Association's annual Technology Exposition featured 141 exhibitors, showcasing aerospace technologies that will help keep USAF at the forefront of air and space power.

At top, BAE Systems emphasized its role in development of USAF's new F/A-22 stealth fighter and the F-35 strike fighter. At right, a Boeing display promoted the company's C-17 airlifter and provided a look at its X-45 Joint Unmanned Combat Air System.



At left, TSgt. Mike Rivers, a C-130 flight engineer from Little Rock AFB, Ark., takes the controls of one of the many hands-on simulators at the show.



Among the exhibits were displays explaining the accomplishments of the five teams selected for the 2004 Chief of Staff Team Excellence Awards. At left, MSgt. Timothy Lauber and MSgt. Robert Keifer from the 18th Flight Test Squadron, Hurlburt Field, Fla., show off their team's trophy.

The "Life in the Fast Lane" Test Team at Hurlburt created a training course that helped shorten training time for weapon system test directors, which allowed the unit to eliminate a backlog of tests for systems used in recent operations.

The Textron display at right featured a sensor fuzed weapon of the type used in combat in Iraq. Below, another exhibit featured the AIM-9X and some air-launched ground attack weapons.



Special operations forces are expected to continue to play a key role in the war against terrorism. One of the many exhibits with a special ops emphasis was this model of the CV-22 tilt-rotor developed by Bell Boeing. USAF plans to purchase the CV-22 variant for Air Force Special Operations Command.



At left, USAF officers talk over the benefits of the single panel touch screen cockpit display developed by Rockwell Collins. The new avionics panel will be used in the F-35. The expo, which had several international exhibitors, attracted the attention of foreign military attendees. Below, two members of the Czech Republic's military force tour the exhibits.



The expo had an abundance of aircraft models and numerous hands-on displays. At right, Elan Smith, a General Dynamics engineer detailed to Air Force Research Laboratory, shows Maj. Mark Durrell the fine points of maneuvering space vehicles.



Among the Air Force exhibitors was the Information Warfare Center, headquartered at Lackland AFB, Tex. At left, TSgt. Nadina Szeredy explains the center's work to an attendee.



Pratt & Whitney used a cutaway F-35 model to showcase its F135 propulsion system. The F135 must meet requirements for the three F-35 variants—conventional takeoff and landing, carrier takeoff and landing, and short takeoff and vertical landing. At left is the STOVL variant.

At right, conference attendees from Air Force Space Command talk with an airpower legend, retired Maj. Gen. John Alison of Flying Tiger fame. Below, two former Air Force Academy classmates, retired Lt. Col. Doug Fry (left) and Maj. Gen. Jack Catton Jr., now on the joint staff, chat during the expo.



The expo had an abundance of computers and software experts showing off technologies that help gather and consolidate information and help put bombs on target.

The 2004 expo drew more than 6,000 attendees, including 116 news media representatives. ■

The Outstanding Airmen

By Tamar A. Mehuron, Associate Editor

TSgt. (now MSgt.) Stephanie D. Clark. Air Freight Supervisor, 88th Aerial Port Squadron (Air Force Reserve Command), McGuire AFB, N.J.—Deployed to Charleston AFB, S.C., to support Operation Iraqi Freedom. ... Directed movement of thousands of tons of war materiel in record time. ... Deployed to Baghdad as passenger service supervisor. ... Oversaw transit of nearly 18,000 passengers. ... Selected as noncommissioned officer in charge of managing all air logistics operations for Coalition Provisional Authority personnel. ▶



SSgt. Aaron D. Davenport. Explosive Ordnance Disposal Equipment Technician, 56th Civil Engineer Squadron (Air Education Training Command), Luke AFB, Ariz.—Named as 19th Air Force NCO of the Year. ... Deployed to Afghanistan, then Iraq. ... Destroyed weapons caches. ... Coordinated joint service disposal operations. ... Uncovered and disposed of several suspect terrorist devices endangering coalition personnel in Saudi Arabia. ... Trained Saudi Arabian explosive ordnance disposal team. ... Located crashed Saudi Arabian F-15 and disposed of damaged missiles.

SMSgt. Michael W. David. Missions Systems Flight Superintendent, 437th Communications Squadron (Air Mobility Command), Charleston AFB, S.C.—Spearheaded basewide installation of fiber-optic cable. ... Led deployment of mobile navigation equipment to Southwest Asia. ... Ensured airfield equipment fully operational upon setup at austere locations. ... Fixed poor base cellular telecommunications at home base. ... Engineered a fail-safe wireless network to provide secure command and control communications in event of commercial communications breakdown. ▶



The Air Force Outstanding Airman award is an annual program that recognizes 12 outstanding enlisted members for superior leadership, job performance, community involvement, and personal achievements.

The program was initiated at the Air Force Association's 10th annual national convention, held in New Orleans in 1956. The Chief Master Sergeant of the Air

Force and the command chief master sergeants from each USAF major command form the selection board. The selections are reviewed by the Air Force Chief of Staff.

The 12 selectees are awarded the Outstanding Airman ribbon with the bronze service star device and wear the Outstanding Airman badge for one year.



SMSgt. Trace L. Edinborough. Supply Management Superintendent, Defense Supply Center, Philadelphia—Led Defense Logistics Agency team in support of Operation Iraqi Freedom. ... Revamped DLA's combat zone sustainment plan. ... Expedited shipment of crucial construction supplies from Bahrain to Iraq. ... Negotiated emergency contracts for 900 tactical vehicles. ... Managed parts delivery for rotary aircraft, cutting downtime. ... Helped resolve problems with contracts and purchase requests, reducing shortages of vehicle parts, uniforms, and other essential materiel.

SMSgt. Valise L. Godley. Superintendent, Transmission Systems Section, 735th Communications Squadron, Ramstein AB, Germany (US Air Forces in Europe)—Spearheaded installation of priority circuits for Operation Iraqi Freedom, ensuring zero delays in sending air tasking orders to bare base sites. ... Managed installation of high-priority joint agency attack sensing, warning, and response program, providing wide-area network security. ... Led design of inaugural high-speed circuit for USAFE support of National Airborne Operations Center missions.



MSgt. John W. Knipe. Chief, Special Operations Forces Tactical Air Control Party, 1st Air Support Operations Group (Air Combat Command), Ft. Lewis, Wash.—Jumped with Special Forces team into northern Iraq. ... Planned and controlled coalition air strikes against Iraqi forces near Kirkuk, decimating two Iraqi divisions. ... Provided support for continuous air operations while exposed to heavy enemy fire, enabling his team to move into Kirkuk. ... Helped establish secure operations, working with Iraqi civil leaders and freedom fighters. ... Found and destroyed al Qaeda and Taliban weapons in mountainous caves in Afghanistan. ... Taught mountaineering combat skills to Southwest Asia-bound troops.

AIC (now SrA.) Kurt C. Marunick. Fuel Systems Apprentice, 347th Maintenance Squadron (Air Force Special Operations Command), Moody AFB, Ga.—Performed maintenance and inspection duties with the precision of a staff sergeant. ... Devised way to replace the HC-130P in-flight refueling hose in half the normal time, helping to raise mission capable rates. ... Led team installing upgraded HH-60 fuel lines, completing work two months ahead of schedule. ... Contributed greatly to unit's improved first-time fix rate. ... Devised numerous innovative repairs for broken equipment, saving time and money.



SrA. (now SSgt.) William D. Moore (right). Pararescue Journeyman, 31st Rescue Squadron (Pacific Air Forces), Kadena AB, Japan—Performed heroic acts, including rescue of a diver and emergency medical treatment of a victim of a snowmobile accident. ... Flew 30 combat sorties in Afghanistan. ... Served as the only medical provider at forward firebases. ... Augmented Special Forces reconnaissance team, providing air-to-ground link during enemy engagements. ... Wrote new instruction for high-angle rescues. ... Instructed Japan Air Self-Defense Force pararescuemen in triage techniques.

SSgt. (now TSgt.) Teresa A. Mossoni (left). Services Craftsman, 90th Operations Group (Air Force Space Command), F.E. Warren AFB, Wyo.—Led her team of chefs to an “outstanding” rating in combat capability assessment. ... Selected to manage end of year food inventory. ... Earned error-free ratings in inventory control. ... Managed kitchen equipment at five remote missile sites. ... Trained her team to conduct underground rescues. ... Created a model Career Distance Course testing program. ... Served as chef superintendent during superior's absence.





TSgt. Miguel Ortega-Llarena. Flight Chief, 96th Security Forces Squadron (Air Force Materiel Command), Eglin AFB, Fla.—Served as fire team leader while deployed for Operation Iraqi Freedom. ... Led joint off-base patrols. ... Chosen to run armory, despite no prior experience. ... Volunteered to lead fire team for coalition drive into Baghdad. ... Planned and led sensitive convoy into Tallil AB, Iraq. ... Restructured training for his flight at Eglin, bolstering the base's standards-compliance rating to 100 percent for the first time in five years. ... Implemented a traffic-accident report writing guide, reducing errors in reports. ... Planned hundreds of anti-terrorism measures to bolster base security.

SSgt. Terri D. Palmer. Weather Forecaster Journeyman, 15th Air Support Operations Squadron (ACC), Hunter AAF, Ga.—Served as combat weatherman for the Army's 3rd Infantry Division in Iraq. ... Set up operations in less than 12 hours. ... Transmitted 260 detailed and accurate weather observations. ... Issued 40 weather advisories/warnings which played key roles in mission success. ... Originated and sent nearly 100 wartime reports used to estimate effective range of potential chemical attacks ... Served as convoy driver on 96-hour push into Iraq. ... Forecasted huge sandstorm six days before it arrived. ... Located remote 3rd ID units and initiated weather data broadcasts to them over Army communications network. ▶



MSgt. (now SMSgt.) Jonathan G. Rosa. Combat Control Craftsman, 123rd Special Tactics Squadron (Kentucky Air National Guard), Louisville—Accompanied Army Special Forces unit conducting unconventional warfare in northern Iraq. ... Directed air strikes against 25 enemy targets. ... Helped secure a key mountain stronghold to aid coalition advance into Mosul. ... Controlled more than 40 close air support sorties. ... Relayed commands from Kurdish fighters to AC-130 gunships for strike on key Iraqi position. ... Served as member of security guard for Afghanistan President Hamid Karzai. ... Organized complex helicopter search to find numerous surface-to-air missile sites posing threats to Karzai's aircraft.

National Convention



By Tamar A. Mehuron, Associate Editor



Delegates at the 2004 AFA National Convention elected new officers and adopted a Statement of Policy, among other activities. Presiding over the September assembly were, left to right, National Treasurer Charles Nelson, National President Stephen "Pat" Condon, Chairman of the Board John Politi, and National Secretary Thomas Kemp.



DELEGATES from around the US and the world came to the Air Force Association's national convention, held in September at the Marriott Wardman Park Hotel in Washington, D.C. The event was punctuated by ceremonies and awards that recognized the outstanding leadership and prowess shown by Air Force personnel and the defense industry.

This year's convention preceded AFA's first-ever Air & Space Conference and Technology Exposition (see p. 66).

Many delegates traveled by chartered bus to Arlington National Cemetery for a memorial service held on Sept. 12. Donald J. Harlin, AFA National Chaplain, gave the invocation and closing prayer. The 2004 Memorial Tribute List was read by AFA

then-Chairman of the Board John J. Politi and then-National President Stephen P. "Pat" Condon. After the service, Politi and Condon laid a wreath at the Tomb of the Unknowns on behalf of AFA.

Gen. John P. Jumper, Air Force Chief of Staff, welcomed delegates, Air Force attendees, and members of industry on Sept. 13, marking the official opening of the conference.

A highlight of that ceremony was the award of Silver Stars to two Cold War airmen, Col. John R. McKone, USAF (Ret.), and Col. Freeman B. Olmstead, USAF (Ret.). Assigned to the 55th Strategic Reconnaissance Wing, their RB-47 was shot down by Soviet fighter aircraft over international waters. They were imprisoned at Lubyanka Prison, Moscow, from



At a break and between meetings, delegates gather to discuss strategy as they helped shape AFA's agenda for the coming year. Attending were almost 300 delegates, representing 45 states and the District of Columbia.

July 1, 1960, to Jan. 24, 1961, before being returned to the United States. James G. Roche, Secretary of the Air Force, and Jumper presented the Silver Stars to McKone and Olmstead for their gallantry and courage under constant interrogation, harassment, and extreme hardship in a Soviet prison.

AFA later that day recognized the Air Force's 12 Outstanding Airmen of the Year at a dinner in the airmen's honor. Gen. T. Michael Moseley, USAF vice chief of staff, was the dinner speaker. CMSAF Gerald R. Murray was toastmaster.

The Air Force Anniversary Dinner, held on Sept. 14 was interrupted for almost an hour when a fire broke out in one of the hotel's mechanical systems. Dinner guests repaired to the parking lot, after which they returned to the ballroom. Dinner and the program resumed.

The H.H. Arnold Award, for the year's most significant military contribution to national security, was presented to Jumper.

That same evening, AFA named Peter B. Teets, undersecretary of the Air Force, as the 2004 recipient of the W. Stuart Symington Award for outstanding civilian contributions to national security.

Thomas J. Cassidy Jr., president and CEO of General Atomics Aeronautical Systems, Inc., was honored with the John R. Aliscen Award for industrial contributions to the nation's security.

The association also presented Lifetime Achievement Awards to Gen. Russell E. Deugherty, USAF (Ret.), a former commander of the Air Force's Strategic Air Command, and Florene Miller Watson, an original member of the Women's Auxiliary Ferrying Squadron (later the Women Airforce Service Pilots).

Another highlight of the evening festivities was the appearance of actor Richard Dean Anderson, star of the television show "Stargate SG-1." Anderson said the show sought to create a positive portrayal of the

service and sacrifice of USAF personnel.

Jumper, who made a guest appearance in last season's final episode of the program, "promoted" Anderson from colonel to honorary brigadier general and gave him a pair of stars.

The evening included a musical presentation, "Why an Air Force Memorial," narrated by Tim White and featuring singer Daniel Rodriguez, a former New York City policeman.

Events concluded Sept. 15, with the groundbreaking ceremony and site dedication for the new Air Force Me-



Newly elected National President Robert Largent and his wife, Becky, enjoy one of the evening gala events with former AFA Executive Director John Gray. Largent, from Perry, Ga., previously served as Region President for the Southeast Region.



Florene Miller Watson and retired Gen. Russell Dougherty were the two recipients of this year's Lifetime Achievement Award. (See "Awards," p. 99.)

Three new Leadership Development Directors joined the AFA Board. They are Kevin J. Campbell, Laurel, Md; Timothy Kern, Athens, Ohio; and Carol J. Wolosz, Duluth, Minn.

Five new Region Presidents were elected, and nine Region Presidents were re-elected. Newly elected are Judy K. Church (Midwest Region), Coleman Rader (North Central Region), William G. Stratemeier Jr. (Northeast Region), Jack H. Steed (Southeast Region), and Clarence N. "Buster" Horlen (Texoma Region).

For a complete list of AFA National Directors and Region Presidents, including those re-elected, see "This Is AFA" on p. 55.

AFA's Aerospace Education Foundation re-elected Mary Anne Thompson, Oakton, Va., as President.

memorial to be built on the Navy Annex grounds near the Pentagon. Edward F. Grillo, Jr., president of the Air Force Memorial Foundation, served as master of ceremonies. A narrative paying tribute to airmen past and present was written by historian Walter J. Boyne. The United States Air Force Band performed for the ceremony. The proceedings concluded with the unveiling of the site dedication plaque.

At the convention, there were 278 registered delegates, representing 45 states and the District of Columbia. The Air & Space Conference and Technology Exposition drew some 6,000 attendees and 116 news media representatives.

Holding meetings concurrently were trustees of AFA's affiliate, the Aerospace Education Foundation, and trustees of the Air Force Memorial Foundation. Also meeting were the Air Force's Air National Guard Council, Civilian Advisory Council, Enlisted Council, Company Grade Officer Council, and Reserve Advisory Council.

Election of Officers

At a meeting of AFA delegates on Sept. 12, Stephen P. "Pat" Condon, Ogden, Utah, was elected AFA Chairman of the Board for a first term. Robert E. Largent, Perry, Ga., was elected National President for a first term. Thomas J. Kemp, Fort Worth, Tex., was re-elected National Secretary for a second term, and Charles A. Nelson, Sioux Falls, S.D., was re-



AFAers at the convention present a US flag and an Air Force flag, both of which have been flown over the three 9/11 terrorist attack sites. From left, Robert Braverman, Raymond Hamman, Bonnie Callahan, and James Callahan.

elected National Treasurer for a fifth term.

Other Elections

Elected to the Board of Directors as National Directors for three-year terms were David T. "Buck" Buckwalter, Portsmouth, R.I.; Robert Patterson, Shalimar, Fla.; Joseph E. Sutter, Knoxville, Tenn.; and Keith N. Sawyer, O'Fallon, Ill. Two National Directors at Large were elected: Craig E. Allen, Hooper, Utah, and Bruce E. Marshall, Shalimar, Fla.

AEF trustees newly elected to two-year terms are: William D. Croom Jr., San Antonio; Robert G. Stein, Colorado Springs, Colo.; and Andrew Veronis, Annapolis, Md.

Other AFA Business

Delegates approved the AFA Statement of Policy and Top Issues for 2005. Three changes to the AFA National Constitution were approved: One was to change the name of the Long-Range Planning Committee to the Strategic Planning Committee. The second was to allow the Chair-

man of the Board to serve as an ex-officio, nonvoting member of the Nominating Committee during his second term in office. The third was to approve a change to the definition of AFA membership to include lineal ancestors or descendants of those serving or who have served honorably in the armed forces of the United States, including the Guard and Reserve. Four resolutions were approved. One directed AFA to increase its Congressional efforts on behalf of the Guard and Reserve. Three others called upon AFA to support legislation that would require the VA to provide credentialed physicians for veterans' eye surgery, to increase the VA's burial plot allowance, and to pay the full cost of nursing home care for veterans with 70 percent or higher disability.



Air Force Secretary James Roche (far right) and Chief of Staff Gen. John Jumper (far left) present Silver Stars to retired Cols. John McKone (right) and Freeman Olmstead.

Photos by Paul Kennedy



Rep. Jim Marshall (left) talks with Largent (center), AFA's new National President, and Condon, new Chairman of the Board. Marshall made a presentation titled "The Future of Iraq." (See p. 71.)

Congressional Activity

AFA state delegations sponsored 18 Congressional breakfasts on Sept. 14, with 57 members of Congress participating. Among them were Sens. Saxby Chambliss (R-Ga.), John Cornyn (R-Tex.), and James M. Inhofe (R-Okla.), all members of the Senate Armed Services Committee.

Members of the Senate Appropriations Committee attending a breakfast included Sens. Robert Bennett (R-Utah), Byron L. Dorgan (D-N.D.), and Kay Bailey Hutchison (R-Tex.).

Also participating in an AFA breakfast meeting were Reps. Ike Skelton (D-Mo.), Rob Bishop (R-Utah), Jo Ann S. Davis (R-Va.), Phil Gingrey (R-Ga.), Joel Hefley (R-Colo.), John Kline (R-Minn.), Jim Marshall (D-Ga.), Jeff Miller (R-Fla.), and John M. Spratt Jr. (D-S.C.), all members of the House Armed Services Committee.

Members of the House Appropriations Committee attending a breakfast included Rep. Randy "Duke" Cunningham (R-Calif.), Norman D. Dicks (D-Wash.), Jack Kingston (R-

Ga.), Jim Kolbe (R-Ariz.), James P. Moran (D-Va.), and David E. Price (D-N.C.).

Other Senators attending a breakfast included: Senate Minority Leader Thomas A. Daschle (D-S.D.), Wayne Allard (R-Colo.), Norm Coleman (R-Minn.), Kent Conrad (D-N.D.), Mark Dayton (D-Minn.), Michael B. Enzi (R-Wyo.), who is also co-chairman of the Air Force Caucus, Ben Nelson (D-Neb.), Don Nickles (R-Okla.), John E. Sununu (R-N.H.), and Craig Thomas (R-Wyo.).

Other Congressmen attending a breakfast were Reps. J. Gresham Barrett (R-S.C.), Michael C. Burgess (R-Tex.), Richard Burr (R-N.C.), Howard Coble (R-N.C.), Barbara Cubin (R-Wyo.), Virgil H. Goode Jr. (R-Va.), Bob Goodlatte (R-Va.), Gene Green (D-Tex.), Ralph M. Hall (D-Tex.), J.D. Hayworth (R-Ariz.), David Hobson (R-Ohio), Sam Johnson (R-Tex.), Mark R. Kennedy (R-Minn.), Frank D. Lucas (R-Okla.), Jim Matheson (D-Utah), Betty McCollum (D-Minn.), John Mica (R-Fla.), Sue Wilkins Myrick (R-N.C.), Randy Neugebauer (R-Tex.), Tom Osborne (R-Neb.), Collin Peterson (D-Minn.), Earl Pomeroy (D-N.D.), Pete Sessions (R-Tex.), John Sullivan (R-Okla.), Lee Terry (R-Neb.), and Mark Udall (D-Colo.).

Roche visited breakfasts hosted by Arizona, Colorado, North and South Dakota, and Oklahoma. Jumper attended breakfasts hosted by Arizona, Colorado, Utah, and Virginia.

Moseley visited breakfasts hosted by North and South Carolina, Georgia, and Texas. Murray attended the North and South Carolina and Georgia breakfasts.

Gen. Donald G. Cook, commander, Air Education and Training Command, attended breakfasts hosted by Missouri, Iowa, Illinois, Kansas, and Texas. Gen. Gregory S. Martin, commander, Air Force Materiel Command, attended the breakfast hosted by Ohio. Gen. Robert H. Foglesong, commander, US Air Forces in Europe, attended breakfasts hosted by Montana and Wyoming. Gen. Lance W. Lord, commander, Air Force Space Command, visited the Wyoming breakfast as well.

Meeting separately with their Congressional representatives were the Alabama and Nevada delegations.

Florida presented an award to Rep. John Mica, and the Southeast Region gave a citation to Rep. Jack Kingston and certificates of appreciation to Sen. Lindsey O. Graham (R-S.C.) and Rep. Howard Coble. Minnesota gave engraved bronze plates to legislators in appreciation of their service, while Virginia presented AFA coasters to lawmakers and staffers at their breakfast.

Aerospace Education Foundation

A video on the theme of "Who is your most influential Air Force historical figure and why?" won AEF's annual Jimmy Stewart Aerospace



AEF President Mary Anne Thompson presents the teacher of the year award to Daniel Caron of New Hampshire as AFA Board Chairman Politti (far left) and AEF Board Chairman L. Boyd Anderson look on.

Education Award. The winning entry was from AFJROTC Unit NJ-821 at Scotch Plains High School, Scotch Plains, N.J. The video succinctly summarized the contributions to the Air Force of aviation legends from Jimmy Doolittle through Benjamin O. Davis, but emphasized the work of Henry H. "Hap" Arnold. The video narration said that Arnold "believed that success came from anticipation and research."

Daniel W. Caron, from Kingswood Regional High School in Wolfeboro, N.H., won the Christa McAuliffe Memorial Award as the year's outstand-

ing aerospace science, mathematics, and computer science teacher.

USAF Team Awards

On Tuesday afternoon, Jumper presented the Chief of Staff Team Excellence Awards for 2004 to: the B-1 Next Enhancement Implementation Team, Aeronautical Systems Center, Wright-Patterson AFB, Ohio; the B-52 Formal Training Advanced Communications Team, 11th Bomb Squadron, Barksdale AFB, La.; C-5 CANN (Cannibalization) Jet Rebuild Team, 60th and 349th Aircraft Maintenance Squadrons, Travis AFB, Calif.; Life in the Fast Lane Test Team, 18th Flight Test Squadron, Hurlburt Field, Fla.; and Women's Health Specialty Care Optimization Pilot Program Team, 99th Medical Operations Squadron, Nellis AFB, Nev.

Acknowledgments

Parliamentarian for the AFA national convention was Joan L. Blankenship. Inspectors of Elections were Robert Rutledge (Chairman), William D. Duncan Jr., and Rodgers K. Greenawalt. Judy K. Church chaired the Credentials Committee, serving with James T. Hannam and Raymond Turczynski Jr.

The association is particularly grateful to a corps of volunteers who assisted the staff: Cecil Brendle, Jimmy Canlas, Francisco Flores, Alec Littler, Billie Richey, Debbie and Greg Snyder, Charlie Tippet, Mark Tuturea, and Leola Wall. ■



Conventioners fill the room for the AEF-sponsored Casino Night. AFA and AEF officers served as dealers for the event, one of AEF's fund-raising activities.

Air and Space Power and the Nation at War



The **Air Force Association 2005 Statement of Policy** adopted by the delegates to the AFA National Convention meeting on Sept. 12, 2004, in Washington, D.C.

The Constitution of the United States of America gives great powers to the federal government. The first and most important responsibility of the government is to provide for the national defense.

Since the passage of the Goldwater-Nichols Reorganization Act of 1986, the President has been required to submit a National Security Strategy (NSS) to Congress annually. The NSS articulates the nation's mid- and long-term national security strategy. The current NSS declares that the President should have the option to use pre-emptive military action to forestall or prevent hostile acts by our adversaries.

The National Security Strategy provides the basis for the National Military Strategy (NMS), which outlines the strategic direction for the Armed Forces of the United States in times of war and peace. The NMS describes the ways and means for protecting the nation, preventing conflict and surprise attacks, and prevailing against adversaries. National Military Strategy 2004 rests on three pillars, each of which relies heavily on Air Force capabilities in air and space:

- Winning the war on terrorism
- Improving the military's ability to fight as a joint force
- Transformation

A Dangerous World

The terrorist attacks of 9/11 have



USAF photo by TSgt. Kevin J. Gruenwald

"The 21st Century Air Force brings ... an asymmetrical advantage to joint warfighters."

proven that threats to the homeland and US interests around the world are real, persistent, and cannot be ignored. America has no choice but to fight and win the war against those fanatical groups that resort to the use of terrorism, and those that harbor and support them. The alternative is to suffer more 9/11-style attacks and surrender to uncompromising terrorists—specifically, the al Qaeda network and its affiliates.

The pursuit of weapons of mass destruction (WMD) by terrorists, spawned by fanatical religious or political groups, and by rogue states represents a current and growing

danger to the nation and the world. Cyber attack and other methods of mass disruption could also cause damage comparable to that from use of a WMD. Our government must use all national political, economic, intelligence, and military instruments of national power to prevent this from happening.

Pre-emption places a heavy burden on air and space intelligence collection, human intelligence, and analysis. At the national level, we must be thorough and competent in our assessments of danger in the world. Depending on the threat, the consequences of action, or lack of action, can be tragic.

International alliances and cooperative efforts are other critical elements in the war against those enemy groups that employ terrorism and those that support them. By forging strong alliances, we can deny our enemies sanctuary, restrict their ability to recruit new members, and hamper their attempts to organize and grow financially. When military force is required, it is better to share the burden with other nations which have a stake in eliminating the threat. As a last resort, we must be prepared to act alone to protect our freedoms and way of life.

New Way of War

In recent conflicts in Afghanistan and Iraq, air and space power, combined with the use of Special Operations Forces on the ground, was the key to the swift success of joint and coalition military operations. Through its advocacy of Effects-Based Operations, the Air Force took the lead in further advancing a new American way of war. Its hallmark is rapid dominance, which is achieved by combining modern Air Force capabilities—information superiority, mobility, and precision strike—with complementary capabilities of the other military services and government agencies.

The 21st Century Air Force brings with it an expeditionary mind-set and a capacity for air and space dominance that provides an asymmetrical advantage to joint warfighters.

Warfighters look to Global Vigilance, Reach, and Power to provide around-the-clock C4ISR—command, control, communications, and computers combined with intelligence-surveillance-reconnaissance systems—as well as electronic warfare and special operations capability.

In the air, precision strike assets protect and support US ground forces, whether on patrol or engaged in combat. In Operation Iraqi Freedom (OIF), two-thirds of the ordnance dropped by aircraft was precision-guided. Additionally, 90 percent of air-ground operations were fully integrated, compared to 10 percent of such operations in Operation Desert Storm. In the 1991 Gulf War, it took an average of four aircraft to destroy one target. In OIF, by contrast, it took one aircraft to kill about four targets.

The USAF airlift of recent years has moved more than 1.5 million troops and nearly one million tons of gear and supplies into and out of Iraq—making it one of the largest airlifts ever. During OIF, Air Force airlift and air refueling assets were pressed to the limit. The huge demand on airlift and tankers will only increase as US military forces become more expeditionary.

Demands on space assets are increasing, too. With each passing day, space employment in the combat environment is becoming more and more commonplace. From space, Air Force assets provide surveillance and secure jam-resistant communications, navigation, warning, and weather forecasting. Satellites that saw through blinding sandstorms during the initial phase of OIF continue to lift the fog of war by providing a clear view of the situation on the ground.

Battlefield Airmen

A transformation initiative that blends technology, concepts of operations, and organization is producing a new breed of “Battlefield Airmen.” This group comprises combat controllers, pararescuemen, combat weathermen, Tactical Air Control Party specialists (TACPs), and others. The Air Force intends to bring them together in a common organizational structure to further improve precision strike.

The evolving Battlefield Airmen concept will spur new ways of operating and will be an important addition to joint warfighting. Sensors on unmanned aerial vehicles (UAVs) will extend the Battlefield Airmen’s awareness. In the future, these Airmen will help decrease the load on aircrews, shorten the sensor-to-shooter chain, provide

secure machine-to-machine interfacing, and more.

Future battlefields most likely will be discontinuous, with shadowy hostile forces organized in small unlinked groups. Eliminating these forces will require integration of air and ground forces on a scale greater than today’s. The Air Force is preparing for the future by exploring concepts of operations featuring asymmetrical air attacks on enemy ground forces, wherever they are hiding. The Air Force and the Army are working to strengthen Joint Air-Ground Operations in order to improve combat capability.

USAF proudly defines itself as one Air Force—with Airmen (both uniformed and civilian) executing strike, space, mobility, support, and special operations missions. They are waging war on terrorism, performing joint operations, and transforming in place, all while maintaining America’s air and space dominance.

New Steady State

Compared to the Cold War Air Force, today’s USAF is small and based mostly in the US, necessitating rapid, large-scale deployments over long distances. Over the last two decades, the active duty Air Force was reduced by nearly 40 percent—from 608,000 to 359,000 uniformed members. Higher retention rates have caused the active duty force to expand temporarily to 375,000. The Air Force was allowed to exceed authorized active duty end strength levels for the last two years because of the demands of the war on terror. Now the Air Force must shrink by some 16,000 Airmen in order to meet the FY05 authorized force level of 359,000 people.

It must do this while shaping the force to remedy a skill mix imbalance. The goal is to eliminate overmanning in some career fields and critical shortages in others. Some Airmen will have to retrain. Getting smaller while reshaping the force will be difficult, as retention rates remain high.

While the force shrinks, operations tempo at Stateside and overseas bases remains high. Airmen are working long hours, deploying with ever-increasing frequency to hot spots around the world, and spending more time away from their fami-



"Space employment in the combat environment is becoming more and more commonplace."

lies. To accommodate the new steady state, service leaders have extended overseas rotations for each Air and Space Expeditionary Force (AEF), raising it from 90 days to 120 days. Combat deployments have been extended. Crews are flying longer missions and have less ground time between missions.

At the height of Operation Iraqi Freedom, nearly 55,000 Airmen were deployed against the forces of Saddam Hussein. Currently, more than 23,000 Airmen and 300 aircraft are on duty in Iraq, Afghanistan, and the Balkans. This number does not include forces stationed permanently in United States Air Forces in Europe and Pacific Air Forces.

Over the past decade, total USAF civilian personnel fell from 196,489 to 168,762. During the same period, total Air National Guard and Air Force Reserve numbers remained essentially unchanged. However, today's Guard and Reserve play a much larger role in meeting worldwide commitments.

Across the board, the Total Force is straining to meet new requirements and challenges. The Air National Guard and Air Force Reserve have been activated at unprecedented levels. Since Sept. 11, 2001, the Air Force has mobilized nearly 65,000 Guardsmen and Reservists. Together, they constitute 20 percent of Air Force AEF packages supporting operations in Southwest Asia. Additionally, they conduct 89 percent of

air patrols over American cities in support of Operation Noble Eagle.

Beyond traditional air and space operations, Airmen are carrying out special operations, conducting convoys and security patrols, performing rescue missions, and treating combat casualties. They make up a large part of the approximately 150,000 US service members who are presently engaged in combat and nation building in Iraq and Afghanistan. While interim governments work to restore civil order and basic services, US troops are providing security—an effort which has placed severe strain on current force structure. In the future, more forces may be required to support such transitions to democracy.

In spite of enormous challenges, morale throughout the Total Force remains high. Senior Air Force leaders at present do not seek an increase in USAF end strength. While AFA defers to their judgment, we caution that if the level of operations continues at the current pace, a decision to request more manpower cannot be avoided. The bottom line is that resources must be matched to tasking.

Remaining Vigilant

On the counterterrorism front, there is good news: We are making progress and learning quickly as we wage the war on terrorism. There is also bad news: Terrorism is widespread, deeply rooted, and will take years of effort

and expenditure of considerable resources to defeat. It is aimed directly at the American homeland, and we must not let down our guard.

AFA recognizes the key role that the Air Force plays in support of US Northern Command and homeland defense. From Civil Air Patrol flights to fighters flying sorties defending US airspace, USAF has stepped up in a big way. Since 9/11, the US has quintupled the number of people devoted to the air defense mission, and the Air Force has vastly increased the number of air assets ready to respond to an airborne attack against the US.

The defense of the US homeland against ballistic and cruise missiles remains a requirement. Missile technology is becoming more accessible worldwide. Significant DOD and Air Force initiatives have been mounted to counter this threat. Congress should support an expansion of today's modest missile defense capability until the nation is no longer vulnerable to missile attack.

Until victory is achieved, we must stay focused on eliminating terrorism and remain vigilant about threats to homeland security.

We should also recognize combat against terrorists is only part of the Air Force and DOD mission. A world without terrorism would still be a dangerous place. Air and space forces must continue to be prepared to deal with the full spectrum of threats, from low-intensity war to conventional and strategic conflict.

Fiscal Challenge

A protracted war on terrorism requires a boost in defense spending. America can do more. In 1968, at the height of the Vietnam War, the DOD budget represented 9.4 percent of the Gross Domestic Product (GDP). In 1986, during the Cold War, the defense budget represented 6.2 percent of GDP. In 2005, the defense budget will consume only about 3.4 percent of GDP.

America has never failed to provide resources for the military during times of war. The FY05 defense budget for the steady-state program is projected to increase to more than \$400 billion, which does not include \$25 billion to pay for operations in Iraq and Afghanistan. The Congressional Budget Office went on record stating that DOD budgets need to

grow by 20 percent annually just to maintain the current force structure. Half of the increase is needed to cover increases in pay and benefits and the other half to replace outdated equipment.

Additionally, the US military now spends about \$4 billion a month on operations in Iraq and between \$600 million and \$800 million a month on operations in Afghanistan. Defense is expensive and requires broad support by Congress and the American people. There is no way around it; defense funding will have to increase significantly in order to accommodate the reality of the war on terrorism, the transition in Iraq, and the maintenance and modernization of the standing force.

AFA believes that national security imperatives require the US to commit a minimum of four percent of its GDP to defense for a period of years.

Investing in the Future

US forces are unmatched in their ability to look deep and rapidly project power over vast distances, with great situational awareness. Air Force people, systems, and concepts of operation are at the leading edge of DOD transformation.

Past investments in research and development (R&D) and science and technology (S&T) have produced superb weapons. Still, government and private sector funding for defense related S&T and R&D has been anemic in recent years. The number of new major weapon system program start-ups has also fallen off. These trends must be reversed or the defense industrial base will decline to a dangerous level.

The Air Force of the future will require new and dramatically more capable aircraft such as the stealthy F/A-22 and F-35 fighters, UAVs and UCAVs, new multisensor command and control aircraft, and C-17 airlifters. Tankers will continue to provide the lifeblood for air mobility and Joint Force air combat operations. New tankers must be acquired to replace older ones, which are wracked with corrosion and have become too expensive to repair. The Air Force also will need to upgrade older systems and aircraft such as the C-5s, KC-135s, and B-52s.

The F-15 first flew in the 1970s. In recent mock combat against MiG,

Sukhoi, and Mirage fighters, foreign air forces scored unexpected successes against the Eagles. Once the F/A-22 enters the inventory in numbers, it will easily defeat any adversary fighter in the air or currently on the drawing board. The F/A-22 is key to maintaining air dominance and executing deep strike missions.

The bomber fleet, which numbered 360 in the 1980s, has shrunk. The current bomber roadmap calls for making do with 157 bombers, only 96 of which are kept combat ready. Today's small fleet of B-1Bs, B-2s, and B-52s leaves the US with too little margin for error. New, long-range global strike platforms are needed, and the sooner the better.

The Air Force will also need more-capable airborne and space-based surveillance systems. USAF officials warn that our space systems are vulnerable to disruption, and potential adversaries are trying to exploit space to their own advantage. In OIF, Iraq unsuccessfully attempted to jam Global Positioning System (GPS) satellite signals to defeat precision weapons. In the future, the Air Force will have to prevent adversaries from using space against US forces. This entails improving space situational awareness and developing defensive and offensive counterspace capabilities. As DOD's Executive Agent for Space, the Air Force needs the Administration and Congress to continue funding projects identified to execute the space roadmap.

AFA believes nuclear deterrence provided by the triad of US land-, air-, and sea-based forces is essential to national security. The United States should maintain flexible, reliable, and survivable nuclear forces even as it continues the deployment of a missile defense capability.

Looking further into the future, the Air Force must acquire and field a new land-based strategic missile, directed energy weapons, and more-advanced air-delivered munitions.

Improving Acquisition

AFA applauds USAF initiatives to streamline and improve the acquisition process. Program delays and stretch-outs are all too frequent and leave the Air Force with equipment that is increasingly difficult to operate and expensive to maintain. Some systems are so old that parts are no longer in production and must be produced at exorbitant cost. This siphons funds away from modernization. As the maintenance budget grows, acquisition investments shrink. More importantly, continuing program stretch-outs allow other nations to catch up with American technology. US air dominance could wane as a result.

AFA urges the Administration, Congress, and DOD to work together to stabilize program funding for urgently needed platforms. Air Force-wide, equipment is wearing out at a rapid rate and needs to be repaired



USAF photo by SSgt. Aaron Allmon II

"The evolving Battlefield Airmen concept will spur new ways of operating."



"The Airmen ... in today's Air Force are professionals of air and space power."

or replaced. Munitions stockpiles also need replenishing. The goal should be straightforward—to acquire Air Force systems and capabilities on time and in the quantities needed to meet ever-expanding mission requirements.

DOD's acquisition workforce was cut by nearly 50 percent in the 1990s and needs to be reconstituted. A greater investment in acquisition is needed to attract talented scientists and engineers back to Air Force laboratories and research centers. Additionally, more investment will help industry partners to recruit and retain a high-quality technical workforce to design, develop, and produce the transformational systems of the future.

Right-Sizing Base Structure

On the infrastructure horizon, another Base Realignment and Closure (BRAC) round is set to occur in 2005. BRAC would reduce excess infrastructure and free up scarce dollars for modernization, transformation, and readiness. It must be carefully executed to ensure that the resulting base structure will provide efficient and flexible support to air and space forces. Improvement of remaining Stateside and forward operating bases will also be required so that aircrews, logisticians, and other support personnel have the facilities required for the mission.

The next Quadrennial Defense Review (QDR) will coincide with BRAC. It will be a comprehensive

examination of the defense strategy, force structure, force modernization plans, infrastructure, budget plans, and other elements of the defense program and policies. The coincidence in 2005 of BRAC and the QDR requires careful analysis so that DOD can seize transformation opportunities while avoiding actions that could inadvertently harm the Armed Forces.

Finally, DOD must have access to military ranges and operating areas to provide a realistic training and testing environment to prepare warfighters for combat today and in the future. This must be done in a way that is consistent with the strong record of Air Force environmental stewardship and promotes military readiness.

People—Our Greatest Asset

On a national level, we must foster a spirit of service above self. Our nation benefits whenever young people commit to national service. Serving in the Armed Forces of the United States is one of the most honorable forms of patriotism.

The Airmen (military and civilians) who volunteer and serve in today's Air Force are professionals of air and space power. They are the heart and soul of the world's most highly respected and powerful air force.

AFA believes that the success of the All-Volunteer Force concept is irrefutable and that reinstating a draft would be ill-advised and harm-

ful. For more than 30 years, the All-Volunteer Force has produced a high-quality, educated, and motivated military.

The times demand that today's Airmen be more technically skilled than ever before. Draftees, however, would serve only short periods on active duty and then leave, producing unwelcome turnover and loss of experience. The cost of training would increase substantially. It is more efficient and effective simply to provide the funds that would ensure that Air Force careers and the overall compensation package remain attractive in a competitive job market. The Air Force must continue to invest in quality of life programs, education, and training for enlisted members, officers, and civilians across the Total Force.

Since 9/11, many have made the ultimate sacrifice in the war on terrorism. The Air Force Association and the nation are eternally grateful to these brave men and women. To date, more than 1,100 US service members have died and more than 6,000 have been wounded in Iraq and Afghanistan. We salute all the Airmen, Soldiers, Sailors, Marines, Coast Guardsmen, DOD civilians, and defense contractors who continue to serve in defense of the nation.

Even as we honor those veterans returning from the recent conflicts in Iraq and Afghanistan, we must not forget the thousands of military veterans and retirees still with us today. Many have suffered severe injuries and are in need of long-term medical care and assistance. The families and loved ones of military members endure hardships, too, and deserve our continuing support.

Ongoing Mission

The AFA legacy is deep, reflecting the spirit of Billy Mitchell, "Hap" Arnold, Ira Eaker, Jimmy Doolittle, and other airpower visionaries. We, the members of the Air Force Association, remain dedicated to educating the public about the need for aerospace power, advocating for a strong national defense, supporting the Air Force and the Air Force family, and supporting our nation's efforts to fight and win the global war on terrorism. ■

Awards



These are the Air Force Association National Awards for 2004.

National Aerospace Awards

Award	Recipients
H.H. Arnold Award <i>AFA's highest honor in national security to a member of the armed forces</i>	Gen. John P. Jumper , USAF Chief of Staff
W. Stuart Symington Award <i>AFA's highest honor in national security to a civilian</i>	Peter B. Teets , Undersecretary of the Air Force
John R. Allison Award <i>AFA's highest honor for industrial leadership</i>	Thomas J. Cassidy Jr. , Pres. and CEO, General Atomics Aeronautical Systems
David C. Schilling Award <i>Outstanding contribution in flight</i>	41st Rescue Squadron , Moody AFB, Ga.
Theodore von Karman Award <i>Outstanding contribution in science and engineering</i>	Lt. Gen. Ronald T. Kadish , Missile Defense Agency, Arlington, Va.
Gill Robb Wilson Award <i>Outstanding contribution in arts and letters</i>	Herman S. Wolk , Air Force History Research Center, Washington, D.C.
Hoyt S. Vandenberg Award <i>Outstanding contribution in aerospace education</i>	362nd Training Squadron , Air Education and Training Command, Sheppard AFB, Tex.
Thomas P. Gerrity Award <i>Outstanding contribution in logistics</i>	Lt. Col. Mark S. Forester , 609th Air Support Squadron, Shaw AFB, S.C.
Department of Veterans Affairs Employee of the Year	Kevin Hillegas , VA Regional Office, Houston

Lifetime Achievement Award

Gen. Russell E. Dougherty, USAF (Ret.)
Commander in chief, Strategic Air Command; judge advocate; command pilot; master missileman; AFA executive director.

Florene Miller Watson
Pioneering pilot; instructor pilot for male aviation cadets; first commanding officer of Women's Auxiliary Ferrying Squadron (WAFS)/Women Airforce Service Pilots (WASP) at Love Field, Tex.; college professor.

At the convention awards ceremony, then-AFA Chairman of the Board John Politi (right) presents the H.H. Arnold Award to USAF Chief of Staff Gen. John Jumper. The Arnold Award is AFA's highest honor in national security awarded to a member of the armed forces.



Photo by Paul Kennedy

Crew Awards

Award	Recipients	Achievement
Airborne Battle Management Crew	12th Expeditionary Airborne Command & Control Sq., 116th Air Control Wing, Robins AFB, Ga.	Best ABM crew
CMSAF Thomas N. Barnes Award	SSgt. Jessica L. Pittman, 1st Aircraft Maintenance Sq., Langley AFB, Va.	Crew chief of the year
Lt. Gen. Claire L. Chennault Award	Maj. John D. Caine, ANG/AFRC Test Center, Tucson Arpt., Ariz.	Best aerial warfare tactician
Brig. Gen. Ross G. Hoyt Award	Lt. Col. Kenneth E. Ray and crew, 711th Special Operations Sq., Eglin AFB, Fla.	Best air refueling crew
Gen. Curtis E. LeMay Award	Crew of Throw 35, 40th Expeditionary Bomb Sq., Diego Garcia	Best bomber aircrew
Gen. Jerome F. O'Malley Award	Rivet Joint Crew of Isaac 41, 55th AMS, 97th IS, 343rd RS, Offutt AFB, Neb.; 390th IS, Kadena AB, Japan; 488th IS, RAF Mildenhall, UK	Best reconnaissance crew
Gen. Thomas S. Power Award	Cpts. William D. Bragg and Russell S. Williford, 91st Ops. Support Sq., Minot AFB, N.D.	Best missile combat crew
Space Operations Award	Delta Crew, 3rd Space Ops. Sq., Schriever AFB, Colo.	Best space operations crew
Lt. Gen. William H. Tunner Award	Maj. Richard W. Walker and crew, 711th SOS (AFRC), Eglin AFB, Fla.	Best airlift aircrew
USAF Test & Evaluation Team of the Year	Guidance and Navigation Programs, 746th Test Sq., Holloman AFB, N.M.	Best test team

Air National Guard and Air Force Reserve Command Awards

Award	Recipient	Achievement
CMSgt. Dick Red Award	SMSgt. Lawrence M. Byers, 121st Air Refueling Wing, Ohio ANG	Best ANG aerospace maintenance
Best Air National Guard Unit	123rd Airlift Wing, Kentucky ANG	Top ANG unit
Best Air Force Reserve Unit	711th Special Operations Sq., Eglin AFB, Fla.	Top AFRC unit
President's Award	Crew of Steel 71, 711th SOS, Eglin AFB, Fla.	Best Reserve aircrew

USAF Team of the Year

Recipient	Unit
CMSgt. Michael J. Franklin	AFOSI Det. 262, Bagram AB, Afghanistan
TSgt. Kim R. Gaestel	AFOSI Det. 515, Ramstein AB, Germany
TSgt. Jessie N. Garcia	AFOSI Det. 409, Lackland AFB, Tex.
SSgt. Justin N. Rock	AFOSI, Det. 502, Sembach AB, Germany
MSgt. Michael W. Willoughby	AFOSI, Coalition Provisional Authority, Baghdad, Iraq

USAFA Outstanding Squadron

Cadet Squadron 21
"The Blackjacks"
Fall Cadet Commander
Cadet 1st Class Michael
Chmielewski
Spring Cadet Commander
Cadet 1st Class Chris Marron

Citations of Honor

Recipient

Capt. Danielle L. Barnes, Eielson AFB, Alaska (PACAF)

Crew of Flash 39, 39th Airlift Sq. (AMC), Dyess AFB, Tex.

MSgt. Judith M. Freshwater, Peterson AFB, Colo. (AFSPC)

1st Lt. Corey C. LaLonde, 375th Surgical Ops. Sq. (AMC), Scott AFB, Ill.

Majs. Frank J. Link and Anthony J. Roberson, 32nd Air Ops. Group (USAFE), Ramstein AB, Germany

Robert A. Miskin, 789th Communications Sq. (AMC), Andrews AFB, Md.

Randall J. Redlinger, AFOSI Det. 110, El Segundo, Calif.

Capt. Tammie L. Ridder, AFOTEC Det. 3, Kirtland AFB, N.M.

USAF Band (11th Wing), Bolling AFB, D.C.

18th Air Support Ops. Gp. (ACC), Pope AFB, N.C.

317th Airlift Gp. (AMC), Dyess AFB, Tex.

352nd Special Ops. Gp. (AFSOC), RAF Mildenhall, UK

Achievement

Directed airfield management, weather analysis, intelligence, and air traffic control activities at Kirkuk AB, Iraq, a key facility during combat operations.

Led 12-ship formation for combat paratroop drop into Afghanistan, performing terrain-hugging flight in mountains despite poor visibility and hostile fire.

Ran logistics planning at Manas AB, Kyrgyzstan, ensuring timely fuel delivery and aircraft beddown for combat operations in Afghanistan.

Aided wounded UN delegates after bombing in Baghdad; served as lead for only critical care air transport deployed downrange for Operation Iraqi Freedom.

Devised air attack plans for OIF, taking full advantage of all air and space capabilities of joint and coalition assets.

Led engineering effort to install primary satellite communications system at US Central Command; aided Navy and State Department with SATCOM setups.

Provided critical counterintelligence support for Coalition Provisional Authority; led team that found secret Iraqi command bunker containing war documents.

Coordinated ISR support as key combined air operations center member, supplying time-critical intelligence for operations in Afghanistan, Iraq, and Africa.

Created, produced, and performed "Born of a Dream," a musical presentation commemorating the 100th anniversary of first powered flight.

Provided base operating support, contingency response, terminal attack control, and combat weather support for coalition forces in Afghanistan and Iraq.

Maintained longest combat support operations in Southwest Asia and Africa, delivering 100,000 troops and 75,000 tons of cargo; excelled in maintenance.

Built logistics bridge from Europe to Iraq; took first Special Forces into northern Iraq; became first air unit to conduct combat operations from Iraqi soil.

Professional, Civilian, and Educational Awards

Award

Gen. Billy Mitchell Award for C4 Excellence
Paul W. Myers Award for Physicians
Verne Orr Award for Human Resources
Juanita Redmond Award for Nursing
Stuart R. Reichart Award for Lawyers
Personnel Manager of the Year
Civilian Wage Employee of the Year
Civilian Program Specialist of the Year
Civilian Program Manager of the Year
Civilian Senior Manager of the Year
AFROTC Cadet of the Year
CAP Aerospace Education Cadet of the Year
Joan Orr Award for Air Force Spouse of the Year
Christa McAuliffe Memorial Award for Teachers
Jimmy Stewart Aerospace Education Award

Recipient

Maj. Kimberly C. Ullmann, AF/XI, Pentagon
Maj. Steven G. Venticinque, Lackland AFB, Tex.
41st Rescue Sq., Moody AFB, Ga.
Capt. Jeannie M. Berry, Mountain Home AFB, Idaho
Col. Michael D. Murphy, White House Military Office
Lt. Col. Kenneth C. Sersun, Camp H.M. Smith, Hawaii
Dell C. Barritt, Vandenberg AFB, Calif.
Robert S. Caudle, RAF Croughton, UK
Douglas W. Gray, Scott AFB, Ill.
Susan T. Arnold, Hanscom AFB, Mass.
Timothy A. Soeken, Texas A&M University
Elizabeth Dumont, Cadillac, Mich.
Sandra L. Rodriguez, Moron AB, Spain
Daniel W. Caron, Melvin Village, N.H.
NJ-821 Unit, Scotch Plains High School, Scotch Plains, N.J.

Management and Environmental Achievement Awards

Award

AFMC Executive Management Award
AFMC Middle Management Award
AFMC Junior Management Award
Gen. Edwin W. Rawlings Award for Environmental Excellence (Management)
Gen. Edwin W. Rawlings Award for Environmental Excellence (Technical)

Recipient

Col. Ricky T. Stearman, Hill AFB, Utah
Richard Chance, Wright-Patterson AFB, Ohio
Capt. Chad W. Clementz, Wright-Patterson AFB, Ohio
1st Lt. Naomi Gabriel, NAS JRB Fort Worth, Tex.
TSgt. John E. Newlin II, Kunsan AB, South Korea

2004 AFA Membership and Activity Awards

AFA Member of the Year

Doyle E. Larson, Minnesota

Photos by Paul Kennedy



This year's AFA Member of the Year, Doyle Larson of Minnesota (left), poses with retired Maj. Gen. John Alison, an AFA director emeritus, during the Air & Space Conference and Technology Exposition.

D.W. Steele Sr. Memorial Award

(AFA Unit of the Year)

Carl Vinson Memorial, Ga.



Lynn Morley, chapter president, accepts the unit of the year award for the Carl Vinson Memorial Chapter. She is flanked by then-Chairman of the Board John Politi (left) and then-National President Pat Condon.



Enid Chapter (Okla.) President Bruce Jackson displays a couple of awards the chapter won. At left is Mary Feightner, recipient of the individual Storz membership award.

Jack Gross Award

Small Chapter
Gen. Robert E. Huyser, Colo.

Medium Chapter
Mount Clemens, Mich.

Large Chapter
Enid, Okla.

Extra Large Chapter
Montgomery, Ala.

Chapter Larger Than 1,500
Carl Vinson Memorial, Ga.

Arthur C. Storz Sr. Membership Awards

Chapter Award
Enid, Okla.

Individual Award
Mary Feightner, Okla.

2004 AFA Membership and Activity Awards

Unit Activity Awards

Outstanding State Organization

Florida

Outstanding Small Chapter

Mel Harmon, Colo.

Outstanding Medium Chapter

Savannah, Ga.

Outstanding Large Chapter

Hurlburt, Fla.

Outstanding Extra Large Chapter

Lance P. Sijan, Colo.

Exceptional Service—Best Single Program

Paul Revere, Mass.

Exceptional Service—Communications

Enid, Okla.

Exceptional Service—Community Partners

Enid, Okla.

Exceptional Service—Community Relations

Altus, Okla.

Exceptional Service—Overall Programming

Central Florida, Fla.

Exceptional Service—Veterans' Affairs

Ak-Sar-Ben, Neb.

Community Partner Membership Awards

Gold Award

Carl Vinson Memorial, Ga.
Col H.M. "Bud" West, Fla.
Contrails, Kan.
Diamond State, Del.
Eagle, Pa.
Enid, Okla.
Fairbanks Midnight Sun, Alaska
Fort Wayne, Ind.
Gen. B.A. Schriever Los Angeles, Calif.
Gen. Charles L. Donnelly Jr., Tex.
Gen. David C. Jones, N.D.
Golden Triangle, Miss.
Happy Hooligan, N.D.
High Desert, Calif.
Hurlburt, Fla.
Lance P. Sijan, Colo.
Leigh Wade, Va.
Llano Estacado, N.M.
Lloyd R. Leavitt Jr., Mich.
Mercer County, N.J.
Mount Clemens, Mich.
Richard D. Kislung, Iowa
Richard S. Reid, Ariz.
Steel Valley, Ohio
Swamp Fox, S.C.
Ute-Rocky Mountain, Utah
Wright Memorial, Ohio

Achievement Award

Altus, Okla.
Ark-La-Tex, La.
Bill Harris, Ore.
Cape Canaveral, Fla.
Charles Hudson, Calif.
Chautauqua, N.Y.
Cheyenne Cowboy, Wyo.
Cochise, Ariz.
David D. Terry Jr., Ark.
Delaware Galaxy, Del.
Earl D. Clark Jr., Mo.
Edward J. Monaghan, Alaska
Joe Walker-Mon Valley, Pa.
John W. DeMilly Jr., Fla.
Lt. Col. B.D. "Buzz" Wagner, Pa.
McChord, Wash.
Mel Harmon, Colo.
Monterey Bay Area, Calif.
Montgomery, Ala.
Northeast Texas, Tex.
Palm Springs, Calif.
Panhandle AFA, Tex.
Pope, N.C.
Robert H. Goddard, Calif.
South Georgia, Ga.
Tidewater, Va.
Total Force, Pa.
William A. Jones III, Va.

Named in Memorial Tribute

Deaths during the past year that were formally recognized at the convention

Capt. Robert D. Andrews, USAF
Col. Thomas F. Bailey, USAF (Ret.)
Lt. Col. J. Brandon Barnes, USAF (Ret.)
Richard Becker
John L. Beringer Jr.
Robert L. Burns
CMSgt. James M. Crawford, USAF (Ret.)
Col. Handford Cummings, USAF (Ret.)
Lt. Col. Rene L. Devoucoux, USAF (Ret.)
Milton A. Eheman
J. Reynolds Erickson
Robert Griffin
Lt. Col. Matthew J. Harlin, USAF
Allen G. Harris
Dean Hofstead
Maj. J.R. Kuhlman, USAF (Ret.)
Irwin Levy
Dorothy Lewis
Lt. Col. George Madden, USAF (Ret.)
James A. McDonnell
Don McKellar
Lt. Col. J.R. Osborne, USAF (Ret.)
Col. William A. Parker, USAF (Ret.)
Ronald W. Reagan
Col. William H. Roberts, USAF (Ret.)
Maj. Patricia S. Robertson, USAF (Ret.)
Lucille Schwartz
Ernie Seeling
Norma Smith
Rae M. Smith
Patricia Stearn
O. Earl Toole

Special Recognition—Sustained New Member Recruitment

Big Sky, Mont.
Bill Harris, Ore.
Cape Fear, N.C.
Carl Vinson Memorial, Ga.
Central Florida, Fla.
Charlemagne, Germany
Charles Hudson, Calif.
Columbia Palmetto, S.C.
Columbus-Bakalar, Ind.
Contrails, Kan.
David D. Terry Jr., Ark.
Eagle, Pa.
Earl D. Clark Jr., Mo.
Edward J. Monaghan, Alaska
Eglin, Fla.
Enid, Okla.
Fairbanks Midnight Sun, Alaska
Fort Dodge, Iowa
Gen. Charles L. Donnelly Jr., Tex.
Gen. Joseph W. Ralston, Ohio
Gen. Robert E. Huyser, Colo.
Golden Triangle, Miss.
Happy Hooligan, N.D.
H.H. Arnold Memorial, Tenn.
High Desert, Calif.
Hurlburt, Fla.
Iron Gate, N.Y.
Joe Walker-Mon Valley, Pa.
John W. DeMilly Jr., Fla.
Lance P. Sijan, Colo.
Langley, Va.
Leigh Wade, Va.
Lincoln, Neb.
Long Island, N.Y.
Miami, Fla.
Monterey Bay Area, Calif.
Mount Clemens, Mich.
Paul Revere, Mass.
Pensacola, Fla.
Pioneer Valley, Mass.
Richard D. Kislung, Iowa
Richard I. Bong, Minn.
Roanoke, Va.
Robert H. Goddard, Calif.
Savannah, Ga.
South Georgia, Ga.
Swamp Fox, S.C.
William A. Jones III, Va.

Individual Activity Awards

Gold Life Member

John Alison, Washington, D.C.

Presidential Citation

Harry Bailey, Ariz.
Richard Giesler, Minn.
Richard Hawley, Va.
Ted Helsten, Utah
William Kirk, Fla.
James Lauducci, Va.
Richard Taubinger, Calif.
Edward Wexler, Ga.
Robert Williams, Neb.

Central East Region

Medal of Merit

Nikki Barry, Va.
Dick Bundy, Del.
Joel T. "Tom" Coney, Washington, D.C.
Sam O'Dennis, Md.
John Pfalzgraf, W.Va.
Joe Price, Va.
James L. Quinn Jr., Va.
David F. Slaughter, W.Va.
Ed Spencer, Va.
Jake Tweedy, Va.

Exceptional Service Award

Natalie L. Desmond, Md.
William D. McGuth, Washington, D.C.
Jeff Platte, Va.
Skip Williams, Va.

Far West

Medal of Merit

Robert W. Barrow, Calif.
Joseph H. Battaglia, Calif.
Beverly Brumley, Calif.
Robert Darling, Calif.
Don Eby, Calif.
Irene Graham, Calif.
Lee Greer, Calif.
Wayne R. Kauffman, Calif.
Barbara J. Konieczny, Calif.
Dave Murphy, Calif.
Virginia N. Pribyla, Hawaii

Exceptional Service Award

Seb Coglitore, Calif.
Eugene W. Grimm, Calif.
James L. Grogan III, Calif.
Robert H. Krumpke, Calif.
Kathleen L. Landis, Calif.
Mike Peters, Calif.
Rick Randall, Calif.

Florida

Medal of Merit

Wayne H. Coloney, Fla.
Theresa D. Kemp, Fla.

Medra W. Keyser, Fla.
Henry L. Marois Jr., Fla.
Jeri Ann Martin, Fla.
Norm Mears, Fla.
Robert A. Polhemus, Fla.
Candace Roney, Fla.
Glenn Rutland, Fla.

Exceptional Service Award

Douglas L. Hardin, Fla.
Edwin G. Jordan, Fla.
David O. Miller, Fla.
John E. Schmidt Jr., Fla.
Harvey W.C. Shelton, Fla.

Great Lakes Region

Medal of Merit

Bob Brewster, Ohio
Philip M. Brown, Ohio
Dennis Drayer, Ohio
Bernard Fullenkamp, Ohio
Hanfred Moen, Ohio
Kent Owsley, Ohio
Shiela Wallace, Ohio

Exceptional Service Award

Amy Beth Cervone, Ohio
Samuel S. Conte, Ind.
William E. Jones, Ind.
Patricia M. Ventling, Ohio
Mike Winslow, Ohio

Midwest Region

Medal of Merit

Diane Bartels, Neb.
Mary J. Cain, Iowa
Samuel Digirolamo, Mo.
Stewart Entz, Kan.
Walter J. Evans, III.
Beth Kelley, Neb.
Deborah Livengood, Kan.

Exceptional Service Award

Joan Boyd, Mo.
Robert D. Persinger, Neb.
Carl Willert, Neb.

New England Region

Medal of Merit

Lori Casucci, R.I.
Richard Codling, Mass.
Angela Dupont, Mass.
Patrick S. Ryan, Mass.
Dave Silvia, R.I.

Exceptional Service Award

Joseph P. Bisognano, Mass.

North Central Region

Medal of Merit

Juanita Giesler, Minn.
Jim Simons, N.D.

Donald Solwold, Minn.
Tom Wilk, Minn.

Exceptional Service Award

John Seely, Minn.

Northeast Region

Medal of Merit

William B. Burns, Pa.
Ernest Cribari, Pa.
John Dodsworth Jr., Pa.
Susan M. Griffith, N.Y.
David E. Judson, N.J.
Al Richter, N.Y.
Mary Traver, N.J.

Exceptional Service Award

Barry H. Griffith, N.Y.
Murlin R. Lower, N.J.
Al Parise, N.Y.
Chris Patti, N.Y.

Northwest Region

Medal of Merit

Jacqueline S. Burdette, Alaska
Harry F. Cook, Alaska
Carroll Dickson, Wash.
Frederick Sine, Wash.

Exceptional Service Award

Robert E. Baltzell, Wash.
Gordon Wohlfeil, Wash.

Pacific Region

No awards given.

Rocky Mountain

Medal of Merit

Judee Albert, Colo.
George "Tom" Cavalli, Colo.
Richard W. Hartle, Utah
Paul Hendrickson, Utah
George C. Hitt, Utah
C. Robert Johnigan, Wyo.
Donald Wardle, Utah
Gayle White, Colo.

Exceptional Service Award

Grant Hicinbothem, Utah
Dave Thomson, Colo.

South Central

Medal of Merit

Amy Thompson Brown, Ala.
Wes Padgett, Ala.
Joe Panza, Ala.
Cecil C. Robins, Ala.
James Tynan, Ala.

Exceptional Service Award

Paul Bixby, Ark.
Larry Boese, Ala.
Tom Gwaltney, Ala.

Southeast

Medal of Merit

Jack Boyd, S.C.
Jack T. Hamrick, N.C.
David T. Hanson, S.C.
Delmar T. Jones, Ga.
Will Newson, Ga.
Jim Sams, S.C.
Thomas N. Walker, N.C.
Mary N. Watkins, N.C.

Exceptional Service Award

William D. Duncan Jr., N.C.
Stanley Hood, S.C.
Lynn M. Morley, Ga.

Southwest

Medal of Merit

George D. Gunn, Ariz.
Karen L. Halstead, Ariz.
Wilhelm F. Percival, Nev.
Edward S. Tooley, N.M.

Exceptional Service Award

Peter T. Gillespie, Nev.
Giles D. Leonard, Ariz.

Texoma

Medal of Merit

Gary Beach, Okla.
Jack E. Beam III, Okla.
John Blumentritt, Tex.
Monty Deihl, Tex.
Ric Hamer, Tex.
Norm King, Tex.
Paul T. Lerch, Okla.
Andy Nodine, Tex.
Max J. Stitzer, Tex.
Tommy Thompson, Tex.
Jessica L. Waddle, Tex.

Exceptional Service Award

Robert A. Beers, Okla.
Dave Dietsch, Tex.
Bruce Jackson, Okla.
George C. Pankonin, Okla.



Air Force

Councils

Air National Guard Council



Maj. Gen. David B. Poythress (Chair)

- CMSgt. Lori Ashness
- CMSgt. Robert J. Baggstrom (Ret.)
- Capt. Robert T. Botkin
- CMSgt. Deritha M. Ceaser
- CMSgt. Kevin M. Gadd
- Maj. Randy D. Johnson
- Lt. Col. Craig A. Noll
- SrA. Ashley R. Radel
- Col. William P. Skains
- Maj. Lisa Traynor (Liaison)
- Brig. Gen. David A. Brubaker (Advisor)

Civilian Advisory Council



Joseph M. McDade (Chair)

- Jeffrey C. Allen
- Jay Aragon
- Barbara J. Barger
- James H. Carlock Jr. (Liaison)
- Pete Jones
- Laura L. Loflin
- Michael W. Meyer
- Anthony R. Munson
- Jeffrey D. Specht
- Karen Thomas
- Paul K. Tierney
- Daniel F. Wenker
- Shirley C. Williams (Advisor)

Company Grade Officers Council



Capt. Jason Corrothers (Chair)

- Capt. Wes Adams
- Capt. Geoffrey Billingsley
- Capt. Russ Davis
- Capt. Deedra Fogle
- Capt. Donald Greene
- Capt. Robert J. Jackson
- Capt. Nicholas Mossing
- Capt. Leonard Rose
- Capt. John Schroeder (Liaison)
- Capt. Marjory Stankovich
- Capt. Christopher J. Walters
- Capt. Hewett Wells
- 2nd Lt. Charles Widener
- Maj. Gen. John M. Speigel (Advisor)

Enlisted Council



CMSgt. Trena Voegtle (Chair)

- MSgt. Stephanie D. Clark
- SSgt. Aaron D. Davenport
- SMSgt. Michael W. David
- SMSgt. Trace L. Edinborough
- SMSgt. Valise L. Godley
- MSgt. John W. Knipe
- SrA. Kurt C. Marunick
- SSgt. William D. Moore
- TSgt. Teresa A. Mossoni
- TSgt. Miguel Ortega-Llarena
- SSgt. Terri D. Palmer
- SMSgt. Jonathan G. Rosa
- MSgt. Douglas Ackerman (Advisor)

Reserve Advisory Council



Brig. Gen. Jack W. Ramsaur II (Chair)

- CMSgt. Lawrence Chang
- Maj. Michael Cooper
- CMSgt. Elizabeth Crabtree
- SMSgt. Michael Ferraro
- Capt. Catherine A. Ferris
- SMSgt. Brian Garrett
- Lt. Col. Steve Genn
- SMSgt. Rocky Hart
- Lt. Col. Connie C. Hutchinson
- CMSgt. Carlos Massiate
- Col. Sheryl May
- CMSgt. Troy McIntosh (Liaison)
- Lt. Col. John Silvia
- SMSgt. Julie K. Slagle
- Lt. Col. Meleah Whetstone
- Lt. Col. Roxane Williams
- Col. Joseph Webster (Advisor)

Veterans/Retiree Council



Walter S. Hogle Jr. (Chair)

- Gloria J. Crawford
- David A. Guzman
- Charles E. Lucas
- Russell W. Mank
- Jimmy L. Miller
- John T. Park
- Robert E. Patterson
- James S. Seevers
- Elia T. Vasilopoulos



AFA Field Contacts



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For information on the Air Force Association, see www.afa.org

Books

Compiled by Chequita Wood, Editorial Associate

13th Fighter Command in World War II: Air Combat over Guadalcanal and the Solomons. William Wolf. Schiffer Publishing, Ltd., Atglen, PA (610-593-1777). 336 pages. \$59.95.



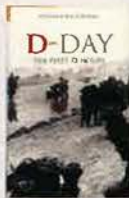
Combating Proliferation: Strategic Intelligence and Security Policy. Jason D. Ellis and Geoffrey D. Kiefer. The Johns Hopkins University Press, Baltimore (800-537-5487). 287 pages. \$48.00.



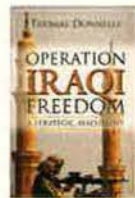
Lost in Tibet: The Untold Story of Five American Airmen, a Doomed Plane, and the Will to Survive. Richard Starks and Miriam Murcutt. The Lyons Press, Guilford, CT (800-962-0973). 210 pages. \$22.95.



Airpower Advantage: Planning the Gulf War Air Campaign, 1989-1991. Diane T. Putney. Air Force History Support Office, Washington, DC (202-404-2167). 481 pages. (Available at www.afhso.book.orders@pentagon.af.mil).



D-Day: The First 72 Hours. William F. Buckingham. Trafalgar Square Publishing, North Pomfret, VT (800-423-4525). 320 pages. \$19.95.

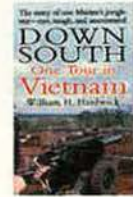


Operation Iraqi Freedom: A Strategic Assessment. Thomas Donnelly. The AEI Press, Washington, DC (800-343-4499). 123 pages. \$20.00.

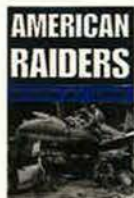
American Combat Planes of the 20th Century: A Comprehensive Reference. Ray Wagner. Jack Bacon & Co., Reno, NV (775-322-1901). 758 pages. \$65.00.



Down South: One Tour in Vietnam. William H. Hardwick. Ballantine Books, New York (800-726-0600). 204 pages. \$6.99.



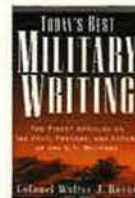
Terrorism, Freedom, and Security: Winning Without War. Philip B. Heymann. The MIT Press, Cambridge, MA (800-405-1619). 210 pages. \$24.95.



American Raiders: The Race to Capture the Luftwaffe's Secrets. Wolfgang W.E. Samuel. University Press of Mississippi, Jackson, MS (800-737-7788). 493 pages. \$35.00.

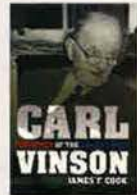


Flying American Combat Aircraft of WWII, 1939-45. Robin Higham, ed. Stackpole Books, Mechanicsburg, PA (800-732-3669). 344 pages. \$19.95.



Today's Best Military Writing: The Finest Articles on the Past, Present, and Future of the US Military. Col. Walter J. Boyne, USAF (Ret.), ed. Forge Books, New York (800-288-2131). 397 pages. \$26.95.

Carl Vinson: Patriarch of the Armed Forces. James F. Cook. Mercer University Press, Macon, GA (800-637-2378). 390 pages. \$35.00.



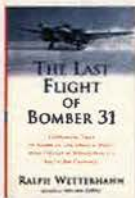
High Noon in the Cold War: Kennedy, Khrushchev, and the Cuban Missile Crisis. Max Frankel. Ballantine Books, New York (800-726-0600). 206 pages. \$23.95.



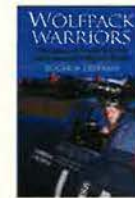
UH-1 Huey Gunships: Walk Around No. 36. Wayne Mutza. Squadron/Sig-nal, Carrollton, TX (800-527-7427). 79 pages. \$14.95.



Combat Jump: The Young Men Who Led the Assault into Fortress Europe, July 1943. Eo Ruggero. HarperCollins Publishers, New York (212-207-7000). 388 pages. \$24.95.



The Last Flight of Bomber 31: Harrowing Tales of American and Japanese Pilots Who Fought in World War II's Arctic Air Campaign. Ralph Wetterhahn. Carroll & Graf, New York (800-788-3123). 357 pages. \$26.00.



Wolfpack Warriors: The Story of World War II's Most Successful Fighter Outfit. Roger A. Freeman. Casemate Publishers, Haverton, PA (610-853-9131). 256 pages. \$37.95.

By Frances McKenney, Assistant Managing Editor

AEF Honors Teacher of the Year

The Aerospace Education Foundation named Daniel W. Caron as the 19th recipient of its Christa McAuliffe Memorial Award for national teacher of the year.

Caron teaches aerospace and technology education at Kingswood Regional High School, in Wolfeboro, N.H. He received the award at the Air Force Association's Air & Space Conference and Technology Exposition in Washington, D.C., on Sept. 13, during the opening ceremonies.

AEF selected Caron because of his initiatives to incorporate aerospace subjects into the curriculum at Kingswood, which has a student population of 1,100. Caron also caught AEF's attention for his efforts to spark community and student interest in aerospace topics.

As a technology education teacher, Caron covers areas ranging from computer-aided design to metals technology to photography. He teaches three courses specifically on aerospace. Students in his Cooperative Satellite Learning Project class study space history and build model spacecraft. Aerospace Pre-engineering requires students to design an experiment that will compete for a place on a NASA sounding-rocket flight. In Aerospace Studies, students develop an independent study plan and carry out aerospace education outreach activities.

Some of Caron's techniques to promote aerospace studies include inviting guest speakers to the school, arranging teacher workshops, calling in organizations such as the FAA to set up career awareness displays, teaching continuing education seminars, and writing about resources available to teachers. He is also aerospace education vice president for the **Pease Chapter (N.H.)**.

The chapter—headed by LeRoy B. Dunkelberger II—nominated Caron for the McAuliffe award. The state's Congressional delegation, its governor, and several students wrote letters of support, too, as part of an application packet so comprehensive



AEF's Christa McAuliffe national teacher of the year award recipient, Daniel Caron, is shown here helping his students at Kingswood Regional High School test a model rocket's stability.

that it had a two-page acronym glossary.

This is the first time AEF's national teacher of the year has come from the same state as *Challenger* astronaut S. Christa Corrigan McAuliffe, for whom the award is named. McAuliffe was a teacher at New Hampshire's Concord High School before she died in the shuttle's explosion in January 1986.

AEF Recognition

AEF awards presented at the AFA Air & Space Conference included two that honor members of the Air National Guard and Air Force Reserve Command and their civilian employers.

George W. Bush Awards honoring traditional ANG officer and enlisted members and their employers went to Lt. Col. Timothy P. Clary, 139th Medical Squadron, Missouri ANG, and employer Atchison Family Medicine of Atchison, Kan.; and SMSgt. Jeffrey R. Lane, 165th Combat Communications Squadron, Maine ANG, and Wright Express of South Portland, Maine.

Citizen Airmen Awards for a Reserve officer and enlisted member and their employers went to 2nd Lt. Eric Turner, 919th Special Operations Wing, Eglin AFB, Fla., and the Henry County Board of Commissioners, Juvenile Court, McDonough, Ga.; and MSgt. Thomas S. Haddock, 711th Special Operations Squadron, Eglin AFB, Fla., and Lockheed Martin Systems Management of Marlton, N.J.

The awards were made possible by donations from AEF and William W. Spruance, an AFA national director emeritus.

In Alabama

Stephen P. "Pat" Condon, then AFA National President, was guest speaker at the annual meeting and Community Partners luncheon for the **Montgomery Chapter (Ala.)**.

The roster of distinguished guests who turned out to hear Condon included Maj. Gen. Robert J. Elder Jr., commandant of Air War College, Maxwell AFB, Ala., and Brig. Gen. (sel.) Randal D. Fullhart, commander of the College of Aerospace Doctrine, Research, and Education. Mary

AFA/AEF National Report

Anne Thompson, AEF president, and John A. Shaud, former AFA executive director, both traveled from Virginia to attend the luncheon.

Condon joined Albert A. Allenback Jr., state president, in presenting awards at the gathering, held at Maxwell's Officers Club. Mark J. Dierlam, Montgomery Chapter president, accepted the State Chapter of the Year award. Tom Gwaltney, chapter VP, received the State Member of the Year award. Among other chapter members honored were Larry Carter and Robert M. Clowers, chapter secretary.

AEF's Thompson helped present the State Teacher of the Year award to Mary Gurley, a kindergarten teacher at Taylor Road Academy in Montgomery. Gurley credits an AFA-sponsored workshop with interesting her in aerospace education in the first place.

ROTC at IU

The Southern Indiana Chapter looked to the future of the Air Force when it invited Lt. Col. Lori M. Bass and a group of ROTC cadets to address its September meeting.

The new professor of aerospace studies at Det. 215, Indiana Univer-



Pat Condon, then AFA National President and now Board Chairman, addresses a Montgomery Chapter luncheon. (See "In Alabama," p. 108.) Condon received orientations at Air University, Senior NCO Academy, and Enlisted Heritage Hall.

sity at Bloomington, Bass spoke about her goals for the unit and said she measures success in terms of how the cadets benefit from the program. She also described problems—smaller force structure and aging weapons

systems, among them—that her graduates may face on active duty and how technology will help the young officers meet these challenges.

Bass, a 1987 Air Force Academy graduate, had been commander of the 60th Component Maintenance Squadron, Travis AFB, Calif., before beginning her assignment at IU in July.

Joining Bass for the evening program, held at a local banquet center, were IU cadets Mike Miller, Kristen Seuberling, and Tim Smith. They talked about their summer experiences at Air Force facilities. Miller took field training at Ellsworth AFB, S.D. Seuberling participated in ASSIST (AS 100 Selective Incentive Shadow Training), a 10-day ROTC program that exposes cadets to the operational Air Force. She went to Columbus AFB, Miss. As part of Operation Air Force, Smith went to Keesler AFB, Miss., to gain exposure to various USAF career fields. The program lasts two weeks and is voluntary for ROTC cadets, mandatory for Air Force Academy cadets.

Bass said the chapter members were so interested in what her cadets had to say that they "wanted more time, more stories." She said the meeting was rewarding for the students, too: "They were impressed, overwhelmed" at a room full of people having so many years of active duty experience and history behind them.

AFA cadet members Steven W. Freeman, Silas W. Gassett, and An-



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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.

AFA Arranges Education Event for Lawmakers

The Air Force Association and the Air Force's House Liaison Office recently sponsored a Congressional Education Program for House members and their professional staff to bring them up to date on a number of USAF initiatives and programs. The theme for the program was Operation Iraqi Freedom: Airmen in Action.

AFA supplied a series of storyboards describing USAF's continuing role in Iraq. The boards emphasized USAF support to combatant commanders, such as deployment of 200 aircraft and 18,000 airmen in the US Central Command area of responsibility, including USAF ground warriors (combat control, tactical control, and more) embedded with Army and special operations forces. Other boards covered topics such as unmanned aerial vehicles, just-in-time logistics, correlated intelligence data, the F/A-22, F-35 Joint Strike Fighter, tanker recapitalization, advanced munitions, the Transformational Satellite communications system, and Space Based Radar.

Among lawmakers attending the program were several House Armed Services Committee members, including ranking member Ike Skelton (D-Mo.), Robin Hayes (R-N.C.), Mike McIntyre (D-N.C.), and Gene Taylor (D-Miss.). Also attending were Rep. Howard Coble (R-N.C.) of the Judiciary Committee, Rep. Norm Dicks (D-Wash.) of the Defense Appropriations Subcommittee, and Rep. Bob Goodlatte (R-Va.), chairman of the Agriculture Committee.

House professional staff members who attended included Sarah Young and Greg Lankler from the Defense Appropriations Subcommittee; Martin Fox, military legislative assistant to Rep. Joel Hefley (R-Colo.); Mac King, deputy chief of staff to Rep. Solomon Ortiz (D-Tex.), Caroline Baird, veterans legislative assistant to Rep. Lee Terry (R-Neb.), and Alan Hill, House staff liaison for the Congressional Air Force Caucus and legislative director for Rep. Cliff Stearns (R-Fla.).

AFA Executive Director Donald L. Peterson and the Government Relations staff represented the association at the event. Leading the Air Force delegation was Gen. T. Michael Moseley, vice chief of staff; Michael L. Dominguez, assistant secretary for manpower and reserve affairs; Lt. Gen. Roger A. Brady, deputy chief of staff (DCS) for personnel; Lt. Gen. Donald J. Wetekam, DCS for installations and logistics; John G. Vonglis, principal deputy assistant secretary for financial management; Maj. Gen. Stephen R. Lorenz, deputy assistant secretary for budget; Maj. Gen. Raymond E. Johns Jr., director, programs; Maj. Gen. Gary W. Heckman, assistant for base realignment and closure; Jacqueline R. Henningsen, director, Air Force Studies and Analyses Agency; and Maj. Gen. Scott S. Custer, legislative liaison director. Also attending was USAF Lt. Gen. Henry A. Obering III, director of the Missile Defense Agency.

AFA Joins USAF in Senate Event

AFA and the Air Force's Senate Liaison Office sponsored a "mixer" for Senate professional staffers when they returned from recess, taking the opportunity to discuss Air Force

programs and herald the new professional development conference conducted by AFA in conjunction with its annual national convention. Sen. James M. Inhofe (R-Okla.) attended the program and discussed his views on the conference schedule for the Fiscal 2005 national defense authorization bill.

Among those attending from the Senate Armed Services Committee staff were Bridget Ward, Brian Green, Paula Philbin, and Scott W. Stuckey, who serves as majority general counsel. Attending from the Senate Appropriations Defense Subcommittee were Greg Lankler and Mark Halland. From the Senate Appropriations Military Construction Subcommittee, professional staff member Jamie Moir attended. Two attended from Inhofe's office: John Bonsell, military legislative assistant, and Lee Ericson, Air Force legislative fellow. Others attending the mixer included Alexis Bayer, senior legislative correspondent for Sen. John Ensign (R-Nev.); Wendy Gnehm, Senate staff liaison for the Congressional Air Force Caucus and military legislative assistant to Sen. Michael B. Enzi (R-Wyo.); Mark Kaniut, Army legislative fellow to Sen. Conrad Burns (R-Mont.); David Montoya, legislative assistant to Sen. Jeff Bingaman (D-N.M.); William Suty, military legislative assistant to Sen. Bill Nelson (D-Fla.); Clyde Taylor, legislative assistant to Sen. Saxby Chambliss (R-Ga.); Russ Thomason, legislative assistant to Sen. John Cornyn (R-Tex.); and Jeffrey Wiener, military legislative assistant to Sen. Mary Landrieu (D-La.).

Top 12 Take the Hill

AFA brought some of the Air Force's best and most accomplished to Capitol Hill during the AFA Air & Space Conference and Technology Exposition, introducing USAF's 12 Outstanding Airmen to several lawmakers. (See "The Outstanding Airmen," p. 84.)

SMSGt. Michael W. David met with Congressman Skelton. SMSGt. Trace L. Edinborough met with Shannon Chapman, military legislative assistant for Rep. Lamar Smith (R-Tex.). SMSGt. Valise L. Godley met with Rep. Danny Davis (D-Ill.). MSgt. John W. Knipe visited with Rep. Adam Smith (D-Wash.), who serves on the House Armed Services Committee, and his legislative director, John Mulligan. SMSGt. Jonathan G. Rosa, TSgt. Miguel Ortega-Llarena, and SSgt. William D. Moore all met with Armed Services and Veterans' Affairs Committee member Rep. Jeff Miller (R-Fla.). MSgt. Stephanie D. Clark met with Rep. Jim Moran (D-Va.). TSgt. Teresa A. Mossoni met with Rep. George Nethercutt (R-Wash.). SSgt. Aaron D. Davenport visited with Rep. Trent Franks (R-Ariz.), a member of the House Armed Services Committee. SrA. Kurt C. Marunick met with Rep. John Dingell (D-Mich.), who honored Marunick with a tribute read on the House floor. SSgt. Terri D. Palmer met with Congressman Stearns, who is on the Veterans' Affairs Committee and chairman of the House Congressional Air Force Caucus.

The 12 Outstanding Airmen are now members of the Air Force's Enlisted Council and will meet several times with AFA over the coming year to discuss issues affecting the enlisted force.

drea M. Kern have descriptions of their past summer training experiences posted on the detachment's Web site: <http://www.indiana.edu/~afrotc/cadetstories.htm>.

Return of the Representative

The Iowa State Convention, hosted by the **Fort Dodge Chapter** in August, featured Rep. Tom Latham (Iowa) as keynote speaker.

It was a return engagement for the five-term Congressman. A year ago, he helped launch the Fort Dodge Chapter by presenting an AFA charter to Justin M. Faiferlick, chapter vice president. This time, the Congressman fielded questions on a range of military issues: the war on terror, veterans benefits, military health care, and local community concerns. Latham has been a member of the House Appropriations Committee and its Subcommittee on Homeland Security.

AFA National Treasurer Charles A. Nelson addressed the convention's opening event, a Friday night banquet. Keith N. Sawyer, Midwest Region president, and Marvin L. Tooman, state president, also spoke that evening. Another special guest was the state's first president, Carl Zimmerman from the **Northeast Iowa Chapter**.

Iowa's four AFA chapters all sent members to the convention. From the **Richard D. Kisling Chapter**, Donald Persinger was elected state president. Faiferlick was elected state VP. **Gen. Charles A. Horner Chapter** members Charles H. McDonald, Bruce R. Bachellor, and Tooman were elected state treasurer, secretary, and VP for leadership development, respectively.

Although less than a year old and chartered with 31 members, the Fort Dodge Chapter volunteered to organize the convention. Faiferlick credits chapter members Luke T. Ascherl, Charles F. Carlson, and Deann Faiferlick, along with state president Tooman, with carrying out the task. Their roster of convention activities

included a tour of the Fort Museum, which recreates frontier life at the Army post founded in the 1850s, and a tour of the Air National Guard's 133rd Test Squadron.

More AFA/AEF News

■ With National Guard Command Sgt. Maj. Gary W. Andrews as guest speaker for its September meeting, the **Pasadena Area Chapter** turned its attention to the California National Guard's role in the war on terror. Andrews is assigned to the Army National Guard's 40th Infantry Division (Mechanized), located at Joint Forces Training Base Los Alamitos. Martin W. Ledwitz, chapter council member, reported that Andrews described the National Guard mobilization process, from the Soldier Readiness Program to arms training to medical, legal, and records reviews that troops undergo before deploying.

■ For the **Col. H.M. "Bud" West Chapter** in Florida, nothing beats experience: M.F. Caruthers was re-elected as treasurer—a post he has held since the chapter's formation. The chapter's new president, John E. Schmidt Jr., reported that Caruthers, who joined AFA in 1950, has served continuously as treasurer since 1968. Schmidt, VP Kevin Vislocky, and Secretary Gary B. Sharpe all are experienced chapter leaders themselves. Richard Schaller, an AFA national director from the **Hurlburt Chapter (Fla.)**, attended the chapter's August meeting to swear them in.

■ **Central Florida Chapter** President John Timothy Brock and Richard A. Ortega, state aerospace education VP, attended the commissioning ceremony in August for Det. 159 at the University of Central Florida in Orlando. Afterward, Brock presented each new Air Force second lieutenant with the chapter's traditional "starter kit": a set of second lieutenant bars, the USAF training ribbon, a hat insignia, and a three-year membership to AFA. The new lieutenants are Nathan T. Dennen, Daryl M. McCormick, and Andy Y.M. Wang. ■

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(1) Sales Through Dealers and Carriers, Street Vendors, and Counter Sales (Not mailed)	13	4
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c. Total Paid and/or Requested Circulation (Sum of 15b(1) and 15b(2))	133,396	134,351
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e. Free Distribution Outside the Mail (Carriers or other means)	253	251
f. Total Free Distribution (Sum of 15d and 15e)	2,483	2,397
g. Total Distribution (Sum of 15c and 15f)	135,879	136,748
h. Copies not Distributed		
(1) Office Use, Leftovers, Spoiled	5,465	3,810
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(signed) Date: 10-7-04

I certify that all information furnished on this form is true and complete. I understand that anyone who furnished false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including multiple damages and civil penalties).

Reunions

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58th FG (WWII), **58th Fighter-Bomber Wg/Gp (Korea)**, including 69th, 310th, and 311th Sqs; **474th Fighter-Bomber Gp (Korea)**, including 428th, 429th, and 430th Sqs; and **210th Mexican FS (WWII)**, June 15-20, 2005, at the Days Hotel & Conference Center in Herndon, VA. **Contact:** Jean Kupferer, 2025 Bono Rd., New Albany, IN 47150 (812-945-7649) (jkupferer@iglou.com).

OCS Class 57-D, April 11-14, 2005, at the Imperial Palace Hotel in Biloxi, MS. **Contact:** Gordon Schiefelbein, 815 Edgewood Dr., Lake St. Louis, MO 63367-2403 (636-625-2695) (gordylsl@aol.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.

Pieces of History

Photography by Paul Kennedy

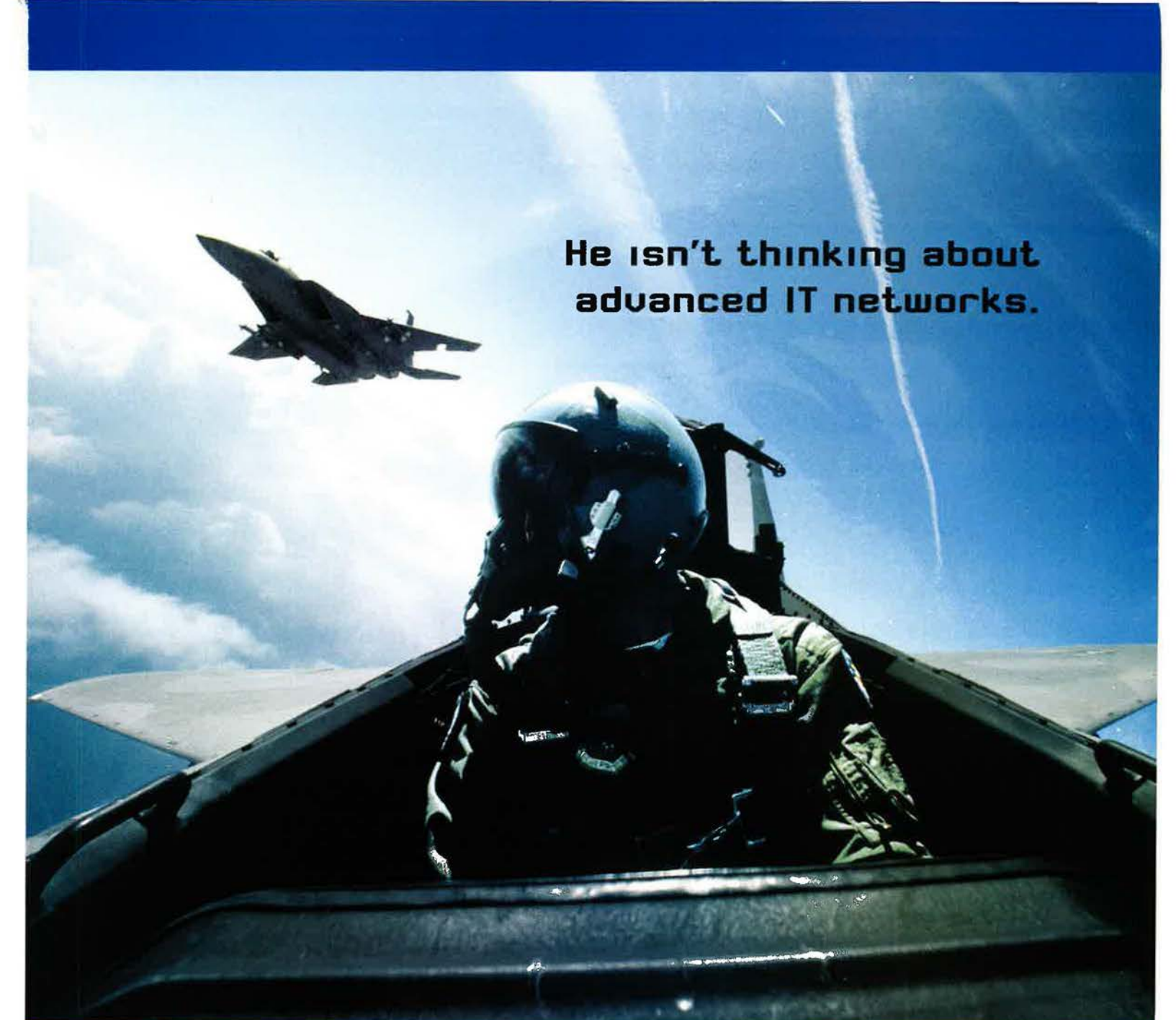
Dragonfly



In the early 1960s, the Air Force was looking for a low-cost aircraft to use in counterinsurgency operations. It chose the T-37 Tweet trainer as the basis for the A-37 Dragonfly, which would serve extensively in the Vietnam War in attack and observation roles. Except for their basic shapes, the Dragonfly and Tweet were different aircraft. The A-37 had upgraded avionics, in-flight refueling

capability, a 20 mm Gatling cannon, a nose minigun, and hardpoints for up to 4,800 pounds of ordnance. The cockpit had armor plating. The additional weight called for larger engines and stronger landing gear. Cessna built almost 600 A-37s over a 10-year period. The last US Air Force A-37, an OA-37, was retired in 1982, but many Dragonflies remained in use by foreign military

forces. The A-37 pictured above, which is on display at the United States Air Force Museum in Dayton, Ohio, was designated YAT-37D initially and retired in December 1964. It was recalled in 1966 to serve as a final design test bed and redesignated YA-37A. USAF retired it again in July 1970.



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