

January 2005/\$4

AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE

Stories in Stripes The USAF Enlisted Heritage Hall



Supremacy in Space
The Raptor as Bomber
Combat Systems Officers



In the Know

A strong alliance of innovators.

Standardizing and modernizing air and space operations centers while they're in use for critical missions is a daunting task that can only be handled by the industry's best. Leveraging our experience in advanced, complex

systems integration, and net-centric and service-oriented architectures, the General

Dynamics AOC Alliance will provide the Air Force with enhanced operational efficiencies while delivering secure information – on demand. Providing true net-centric space and air operations that are second to none.

www.gdds.com/aoc

GENERAL DYNAMICS
C4 Systems

Trusted. Core to Edge.



AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE

January 2005, Vol. 88, No. 1

www.afa.org

- 4 Letters
- 7 Verbatim
- 12 Aerospace World
- 18 Senior Staff Changes
- 19 Index to Advertisers
- 20 Action in Congress
- 55 Field Contacts
- 73 Books
- 74 AFA/AEF National Report
- 79 This Is AFA
- 80 Pieces of History



About the cover: Photo taken at the Enlisted Heritage Hall, Maxwell AFB, Gunter Annex, Ala. See "Stories in Stripes," p. 40. Photo by Paul Kennedy.

2 Editorial: The Unified Air Force

By Robert S. Dudney
Broad and deep integration would help USAF get through the budget crisis.

8 Washington Watch

By John A. Tirpak
Resignations, Continued Turmoil; Airpower in Fallujah; Acquisition Reform Goes Too Far?; And More

22 Toward Supremacy in Space

By Adam J. Hebert
Space Command seeks to instill a "warfighter ethos" and acquire the means to guard the high ground.

28 The Raptor as Bomber

By John A. Tirpak
The FB-22 is a leading candidate to fulfill USAF's need for an "interim bomber."

34 Disunity of Command

By John T. Correll
Unity of command—a long-held principle of war—was an early casualty in Vietnam.

40 Stories in Stripes

Photography by Guy Aceto and Paul Kennedy
The Enlisted Heritage Hall preserves stories of airmen over the past century.

48 Calculated Conversion

By Tom Philpott
With fewer blue suits in the medical field, USAF can save money and increase combat power.

52 Suicide in the Ranks

By Bruce D. Callander
Air Force leaders have been jolted by a rise in self-inflicted deaths.



28

57 Combat Systems Officers

By Suzann Chapman
An Air Force plan aims to generate a new breed of upwardly mobile navigators.

60 Snapshot of the Force

Gen. John P. Jumper talks about the Air and Space Expeditionary Force, F/A-22, Total Force, and today's troops, among other things.

62 Operation Lusty

By Robert L. Young
Harold Watson's "Whizzers" went hunting for German jets—and came back with several jewels.

68 Bomber Harris

By Rebecca Grant
He built Bomber Command into a mighty force, but his reputation has suffered.

AIR FORCE Magazine (ISSN 0730-6784) January 2005 (Vol. 88, No. 1) is published monthly by the Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Phone (703) 247-5800. Second-class postage paid at Arlington, Va., and additional mailing offices. **Membership Rate:** \$36 per year; \$90 for three-year membership. **Life Membership (nonrefundable):** \$500 single payment, \$525 extended payments. **Subscription Rate:** \$36 per year; \$29 per year additional for postage to foreign addresses (except Canada and Mexico, which are \$10 per year additional). Regular issues \$4 each. USAF Almanac issue \$6 each. **Change of address** requires four weeks' notice. Please include mailing label. **POSTMASTER:** Send changes of address to Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association. Copyright 2005 by Air Force Association.

By Robert S. Dudney, Editor in Chief

The Unified Air Force

IN 1967, Air Force mobility wings began fielding Reserve associate units. Many long-range airlift and refueling wings now have one. These units—Reserve elements embedded within active units—use the same aircraft and fly the same missions as their active duty cohorts.

In the mid-1990s, USAF conducted an F-16 Reserve associate test program at Shaw AFB, S.C. In the early 2000s, it created a "blended" active-Air National Guard Joint STARS wing at Robins AFB, Ga.

ANG and AFRC units that deployed overseas were integrated with active units. The "integration" idea, however, did not exactly catch fire at home. Most active, Guard, and Reserve units continued to organize and train more or less as they always had.

That was then. Today, the Air Force is poised to take a new and dramatic step. It is prepared to fully integrate active, Guard, and Reserve personnel formally, across the board, in peacetime as well as during operations, at home as well as overseas.

This is the objective of the Future Total Force plan, major elements of which were unveiled Dec. 1. The service said it was embarked on six actions to help reshape the way it trains, equips, and employs active, Guard, and Reserve members.

The move is vital because USAF faces both growing modernization needs and budget shortfalls. FTF, said Air Force leaders, can be used to increase combat power for less cost. Lt. Gen. Stephen G. Wood, deputy chief of staff for plans and programs, said it will squeeze maximum use from aircraft, reduce redundancies, and end outdated operations.

Thus, broad and deep integration would help USAF get through the budget crisis that is about to hit.

The Air Force sees three compelling reasons for the changes:

First, integration will permit USAF to smooth the work tempo of its personnel and fully man its aircraft—a force multiplier that does not generate expensive overhead costs.

Second, integration would bring

out strengths of each component. Guard and Reserve members are few but experienced. Young active duty members would benefit from association with seasoned airmen.

Third, integration will help USAF stabilize and expand its "brainpower" fund. With expanded duties, ANG and AFRC will be able to absorb experienced airmen leaving active service.

The magnitude of the coming change is amply demonstrated by the sweep of the six new FTF proposals:

■ The Virginia ANG's 192nd Fighter Wing will team with the 1st FW, Lang-

Broad and deep integration would help USAF get through the budget crisis.

ley AFB, Va., to fly the F/A-22 Raptor—marking the first time the Air National Guard has helped bring on a new fighter system. Experienced ANG pilots are to help squeeze maximum combat power from the Raptor.

■ USAF will move some active enlisted personnel to the Vermont ANG's 158th FW. The expectation is that relatively green actives will quickly learn technical skills from experienced Guardsmen. The test will be used to aid future transfers of active airmen.

■ Two F-16 outfits—the Reserve 419th FW and active duty 388th FW—reside at Hill AFB, Utah. USAF will blend them in an "integrated fighter associate unit," using Reservists to support the 388th's missions.

■ Texas and Arizona ANG's will acquire new squadrons of Predator unmanned aerial vehicles. Home-based operators will fly the UAVs around the world, using reachback technologies, but will train in their states, where there is good weather and empty skies.

■ ANG and AFRC forces will team with the Army and Army National Guard in the operation of a global intelligence ground station in western New York. This project will pave the way for use of Air Reserve Com-

ponent forces in reachback missions.

■ The Air Warfare Center at Nellis AFB, Nev., suffers from high optempo, heavy training loads, and low experience levels. The Air Force will push Reserves into all AWC mission areas to alleviate the problems.

These steps no doubt are harbingers of things to come. As one officer noted, "I don't think there's much chance that these things are going to fail."

Moreover, said Lt. Gen. Daniel James III, director of the Air National Guard, FTF will help the reserve components move into "new, relevant missions"—intelligence, space, command and control, UAVs, and cyber-warfare.

The world of the reservist is changing, and not everybody is cheering. Some preferred the old, slower-paced ways. Others fear that Guardsmen and Reservists will be shunted into homeland defense duties and other missions with little martial flavor, or that the reserve components will lose their distinct "cultural identities."

Others worry that FTF portends a major reduction in traditional flying forces. That is a special concern to ANG, which is loaded with F-15, F-16, and A-10 fighter units.

Still, it seems clear that the service has little choice but to press on. The Air Force has a huge set of modernization needs, but it is becoming painfully obvious that sufficient funding won't be forthcoming. Efficiencies are needed, and FTF promises to deliver them.

Moreover, with the services facing a new round of base realignment and closure—BRAC—this year, the FTF concept would allow the Air Force to make better use of infrastructure and maximize the return on its investment in new weapons.

Critics often accuse the services of clinging to hidebound practices and refusing to break institutional crockery. The FTF certainly undercuts that claim. At this point, everyone should stand aside and let the Air Force give this idea its best shot, and hope matters work out as well as it seems they may. ■



Your mission is our mission.

Flexibility. Reliability. Performance. For over 40 years the Atlas launch vehicle system has been providing exceptional rides to orbit, building a solid history of over 580 flights and an unparalleled reliability record of 100% for the Atlas II, III and V series. Born out of a unique partnership, the Atlas V Evolved Expendable Launch Vehicles build on the capabilities and performance that have made the Atlas rockets the premier rides to space. And with an unparalleled breadth of lift capabilities, the Atlas V family is uniquely capable of launching all present and future orbital requirements. Atlas. Your assured access to space.

www.ilslaunch.com

LOCKHEED MARTIN 



International Launch Services

Debating Pre-emption

The "arrow" of pre-emption within the US National Security Strategy (NSS) represents a dangerous opportunity to accomplish "well-intended" ends through immoral means. [See "Editorial: Pressure on Pre-emption," November 2004, p. 2.] You correctly identified the critical question as "how Washington can make sound decisions about pre-emptive war with less-than-perfect knowledge."

Imperfect information, whether based on US/allied intelligence or even rogue nations misreading our strategic intent, will continue to cause friction and challenges to achieving US security objectives. No bar should be higher for clarity of intelligence than pre-emptive action. We are, presumably, invading sovereign countries. But as past events have demonstrated, our intelligence assets are not dialed in at the correct fidelity.

I agree with the editors that pre-emption must remain on the table for imminent threats, but I believe such options are not required to be "in writing" within the NSS. A written policy of pre-emption only feeds the fire of anti-American propaganda and further cements the perception (maybe reality) of US unilateralism/hegemony.

Greg Gagnon
Honolulu

Your editorial concerning pre-emptive military strike as an element of US power focuses on the risk of inaction and the difficulty of recognizing and striking the right target at the right time. On the other side of the equation, seemingly absent from recent debate, are the risks inherent in taking action without compelling and independently verifiable justification.

The only thing that makes pre-emption an easy doctrine for Americans to accept is the implicit assumption that it happens to someone else, somewhere else. If the FBI pre-emptively and violently invaded our homes because they thought we might be up to no good, but then could produce no compelling evidence and discovered the warrant had been based on bad intelligence, there'd be

a public uproar and lawsuits and Congressional inquiries.

We pride ourselves on our history of defeating the unjust use of power, both abroad and at home. Any assumption that we are the only people who are powerfully motivated by injustice or that our perception of justice is the only one that matters is shortsighted and dangerous. The long-term risk of pre-emptive action without compelling, independently verifiable justification must be part of the debate.

Maj. Dean M. Vinson
Wright-Patterson AFB, Ohio

I want to express my extreme dismay at the tone and content of your editorial about the necessity of pre-emptive war against states around the globe. Pre-emptive war has NEVER been the usual policy of our country and to suggest we should now go about the globe taking out those countries that we "think" are our enemies is ridiculous. This is especially true in light of recent events when totally bogus intelligence was used to justify a war and where the outcome is dubious at best (Anyone there remember Vietnam?).

The only thing the US will get out of this war is dead Americans and thousands of Iraqi civilian losses—and that, sir, is unacceptable! The old saying, "With friends like us, who needs enemies," may very well apply.

Maj. Frank Bass,
USAF (Ret.)
Montgomery, Ala.

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

The Long War

I found the "Airpower and 'The Long War'" article [November 2004, p. 70] great reading and immediately keyed in on some of the wise notes. It refers to the Vietnam conflict with a thought not often heard today: "Ultimately the war was a holding action that allowed varied political and economic systems to take root in other parts of the region."

James Woolsey shows his inner knowledge of the workings of the Middle East as he drops the phrase "war on terror" for an all-together more accurate one, "The Long War of the 21st Century." Mr. Woolsey unravels the term "insurgents" to one that includes Baath Party Fascists, the Shiite Islamists, and a third group, Sunni Islamist terrorists. This to me is better description when describing our enemies in Iraq.

Lt. Col. Sid Howard,
USAF (Ret.)
Niceville, Fla.

The Druyun Affair

Having followed the Darleen Druyun bribery case with interest, I question the reporter's statement, "The sentence and the confession shocked the Air Force." [See "Washington Watch: Druyun's Downfall," November 2004, p. 10.] In all my years of respect and support for the Air Force, I don't understand how it can be shocked, considering all the reports on this scandal. Perhaps they were shocked by the minor nine-month sentence. After Druyun spent nine years in her position and shamed her USAF colleagues, I am somewhat shocked that she is the only one being (barely) punished.

Lt. Col. Stephen Riethof,
USAF (Ret.)
Haworth, N.J.

It's sad to see that Darleen Druyun weakened in her final hours. However, that is no excuse for a public servant. It was very clear that she had little love for the other two major aerospace contractors, which begs the question: Did the Department of Defense get the best weapon sys-

Publisher

Donald L. Peterson

Editorial afmag@afa.org**Editor in Chief**

Robert S. Dudley

Editor

Suzann Chapman

Executive Editor

John A. Tirpak

Senior Editor

Adam J. Hebert

Associate Editor

Tamar A. Mehuron

Managing Editor

Juliette Kelsey Chagnon

Assistant Managing Editor

Frances McKenney

Editorial Associate

Chequita Wood

Art Director

Guy Aceto

Assistant Art Director

Heather Lewis

Production Manager

Butch Ramsey

Research Librarian

Pearlie M. Draughn

Contributing Editors

John T. Correll

Bruce D. Callander

Rebecca Grant

Peter Grier

Tom Philpott

Advertising adv@afa.org**Advertising Director**

Patricia Teevan

1501 Lee Highway

Arlington, Va. 22209-1198

Tel: 703/247-5800

Telefax: 703/247-5855

Industry Relations

Tel: 703/247-5800

US and European Sales Manager

William Farrell • 847/295-2305

Lake Forest, Ill.

e-mail: BFarr80708@aol.com

tems available, in light of the fact she had such a bias for Boeing?

MSgt. Paul Stout,
USAF (Ret.)
Redding, Calif.

Igloo White

I read with great interest John Correll's article "Igloo White" in the November 2004 issue [p. 56]. I flew in the 553rd Reconnaissance Wing EC-121Rs as an electronic warfare officer from April 1969 until February 1970. A review of my logbook shows many missions that were 12 hours or longer. Also, the QU-22B Pave Eagle had another unofficial nickname, "Baby Bat."

As an additional duty, I was information officer for the wing and had frequent contact with the base information officer, one John T. Correll. I hope he has good memories of Korat also.

Lt. Col. "Kin" Smith,
USAF (Ret.)
San Antonio

From October 1969 to October 1970 I flew the EC-121R as a member of the 553rd Tac Reconnaissance Squadron. Most of our missions were even longer than the 10 hours mentioned in the article—scanning my Form 5 for the last few months of my tour, most of my flights covered 10.5 to 13.5 hours.

To get that kind of endurance out of the old Connie, we flew our orbits in spark advance setting on the engines and at max endurance airspeed. The engineer closed the cowl flaps as much as he could to reduce drag. This reduced cooling airflow and engine life. I encountered far more engine failures in one year with the EC-121 than in eight years flying the KC-97 for SAC.

When I first arrived at Korat, the standard procedure was to continue the mission on three engines if one failed, dumping fuel to reach a safe orbit altitude, if necessary. Eventually an inspector from higher headquarters warned the wing commander that he should consider three-engine operation an emergency and have crews return to base ASAP.

From your article, I see that the QU-22B program was a success. I had heard that several were lost due to mechanical problems or pilot error. I understand that the QU-22B was being flown above 20,000 feet so the pilot had to be on oxygen continuously, and aircraft performance was marginal at that altitude.

Lt. Col. George O'Malley,
USAF (Ret.)
San Antonio

I enjoyed reading your "Igloo White" article; however, I'm always disappointed when articles refer to the gunships that flew the Ho Chi Minh Trail yet only mention the AC-130. Hardly a word is ever mentioned of the AC-119K. As a former illuminator operator flying with the 18th Special Operations Squadron, I can tell you firsthand, when it came to interdicting the Ho Chi Minh Trail, there was most definitely a gunship just as deadly as the AC-130, one with a proud and remarkable record against the trail and other targets. It was the formidable AC-119K Stinger. Same time, same place, same mission.

CMSgt. Bill Petrie,
USAF (Ret.)
Oklahoma City

John Correll displayed a good knowledge of the sensors used along the Ho Chi Minh Trail, but he needs to broaden his research on the aircraft used to shoot trucks. He didn't even mention the "most effective" gunship, the AC-119K. The AC-119K was designed specially for the truck-hunting role. It had two 20 mm Gatling guns, two added J85 jet engines, and a Texas Instruments forward-looking infrared sensor that we used to locate and aim at the trucks.

Lt. Col. Max C. Kennedy,
USAF (Ret.)
Omaha, Neb.

"Igloo White" is *deja vu*. From July 1968 to July 1970, I was assigned to the Tactical Air Warfare Center at Eglin AFB, Fla. During this time frame, TAWC was evaluating Igloo White. The evaluation was a simulation of the operational procedures as conducted in Vietnam. At a point in this evaluation in 1969, Col. Dennis Crisp, project officer, informed the TAWC commander, Maj. Gen. Andrew Evans Jr., that the system was not feasible and that the evaluation and reports from the field both confirmed an excessive reaction time.

Although the C-130 gunships were somewhat effective, the overall reaction time was excessive. Both simulation and reports from the field indicated an average response time of 20 minutes. With this time frame, the target was well past current data position and in many cases parked in a jungle truck park. The prime lag areas were evaluation and frag frag time. The sensors reported good and timely target information, but evaluation, to include type of weapon at Nakhon Phanom and frag determination at Air Force Saigon, were the stumbling blocks. The information I had was that the new Secretary of

Letters

Defense, Melvin Laird, canceled Igloo White shortly after he deep-sixed Dye Marker.

Lt. Col. Tom Connors,
USAF (Ret.)
Redding, Calif.

I was on the A-26 flight line at Nakhon Phanom. The A-26 was a modified version of the B-26. We originally had three airplanes, then we got six more. The article was very good and informative, but, in mentioning the type of airplanes used on the trail to attack the trucks, he did not mention the A-26s. During one month of my stay at NKP, the A-26s recorded the highest number of truck kills on the trail than any other plane. The old A-26 was hard to maintain, but it did the job. Most of the pilots loved to fly it.

There were two other maintenance people in the 609th Special Operations Squadron besides myself who had been in SAC a long time. It took a while to get used to the commando way of doing things.

CMSgt. Donald W. Grannan,
USAF (Ret.)
Benbrook, Tex.

John Correll's interesting article "Igloo White" well summarizes this partially successful attempt to detect and target North Vietnamese infiltration of the south. It also gives due credit to many of the units and aircraft involved. The article, however, might also have described the pivotal role played by the Air Force's Electronic Systems Division and Mitre Corp. in developing, installing, and maintaining this complex and expensive system. Presiding over Mitre from 1966 to 1969 was John L. McLucas, who went on to become undersecretary and Secretary of the Air Force. His scientists and engineers provided the technical expertise and continuity that made the entire network viable.

Also not mentioned is the effective leadership from the Pentagon by John S. Foster, the director of defense research and engineering, in getting the program up and running. And although Robert McNamara (Foster's boss) no doubt deserves much of the criticism for overall management of the war, perhaps he should also be given a bit more credit for his vision in promoting the use of sensors, even if the technology of the time was somewhat premature.

Readers interested in learning more about the sometimes bewildering array of equipment and operational arrangements used for Igloo White and

Task Force Alpha can consult a personal Web site (http://home.att.net/~c.jeppeson/igloo_white.html) prepared by the late Chris Jeppeson with the help of other veterans of the program. The photo of the Information Surveillance Center at Nakhon Phanom on p. 58 was taken by a former computer specialist there named Corey Loney.

Col. K.J. Alnwick, USAF (Ret.)
Alexandria, Va.
Lawrence R. Benson
Albuquerque, N.M.

The Father of Pacer Classic

We had just attended NORAD's change of command ceremony in Colorado Springs, Colo., and Gen. Ralph E. Eberhart's retirement reception and were feeling a bit nostalgic. Ed was probably the last active duty military member with whom we still have contact. Upon our return, we were pleasantly surprised to read "The Sharper Talon" [November 2004, p. 40]. My husband, retired Col. William R. Hockensmith, is the so-called "father of Pacer Classic."

Back in 1984, when Bill was in the Systems Operation Division of the Materiel Management Directorate at Kelly AFB, Tex., he worked with his engineers to devise Pacer Classic as a life-extension program for the T-38. He thought up the name, designed the program, and testified to get the necessary funding. Back then, the hope was to extend the life of the aircraft through the year 2010. So it is with great satisfaction, and no little pride, to know that Pacer Classic continues and with a new target of extending the life of the venerable T-38 to the year 2020.

Perhaps we still have contact with an "active duty military member" after all.

Sharon E. Hockensmith
San Dimas, Calif.

The Last Dragonfly?

The A-37 Dragonfly photo was very nice in your November 2004 issue, but one piece of information was incorrect. [See "Pieces of History: Dragonfly," p. 112.] The last USAF A-37 wasn't retired in 1992. A fleet of four A/OA-37s flew supporting test pilot training at Edwards AFB, Calif., into 1994. Unfortunately, the crash of one aircraft and catastrophic failure of structural components on two others brought their use to an unanticipated early close. Otherwise, they would have remained in service for at least several years more.

Lt. Col. Michael Welch
Kalkar, Germany



Air Force Association

1501 Lee Highway • Arlington, VA 22209-1198

Telephone: (703) 247-5800

Toll-free: (800) 727-3337

Press 1 if you know your party's extension.

Press 3 for Member Services.

(For questions about membership, insurance, change of address or other data changes, magazine delivery problems, or member benefit programs, select the "Member Services" option.)

Or stay on the line for an operator to direct your call.

Fax: (703) 247-5853

Internet: <http://www.afa.org/>

E-Mail Addresses

Field Services fldsvcs@afa.org
Government Relations grl@afa.org
Industry Relations irl@afa.org
Information information@afa.org
Member Services service@afa.org
Policy & Communications (news media)
..... polcom@afa.org

Magazine

Advertising adv@afa.org
AFA/AEF Report afa-aef@afa.org
Editorial Offices afmag@afa.org
Letters to Editor Column letters@afa.org

Aerospace Education
Foundation aefstaff@aef.org
Eaker Institute eaker@aef.org
Air Force Memorial Foundation ... afmf@afa.org

For individual staff members
first initial, last name, @afa.org
(example: jdoe@afa.org)

AFA's Mission

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

To advocate aerospace power and a strong national defense.

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

Verbatim

By John T. Correll, Contributing Editor

Weakness Is Provocative

"It seems that that's a lesson that needs to be relearned from generation to generation—the lesson that weakness can be provocative, that it can entice others into adventures they otherwise would have avoided, that a refusal to confront gathering dangers can increase rather than reduce future peril."—*Secretary of Defense Donald H. Rumsfeld, annual meeting of the Association of the US Army, Oct. 27.*

Bin Laden's Boast

"All that we have to do is to send two mujaheddin to the farthest point east to raise a piece of cloth on which is written 'al Qaeda' in order to make the generals race there, to cause America to suffer human, economic, and political losses, without their achieving for it anything of note other than some benefits for their private companies."—*Osama bin Laden on videotape telecast by al Jazeera, Oct. 29, quoted by Washington Post, Nov. 2.*

Lehman Sums Up Mitchell

"Much of what he said came to pass, and, as a result, his reputation grew. The realities of Blitzkrieg, Pearl Harbor, and the destruction of entire cities with bombs dropped from aircraft cemented his reputation as a true visionary. ... Most [of his theories] were validated, including the decisiveness of air superiority over the battlefield on land and sea and the value of close air support to ground forces. Others proved off the mark, like the inability of surface ships to survive air attack. Still others, like the value of strategic bombing of cities, remain controversial to this day."—*Former Secretary of the Navy John F. Lehman Jr., reviewing a new book on Billy Mitchell, Washington Post, Oct. 31.*

Tuskegee Legacy

"The Buffalo Soldiers were with Teddy Roosevelt in the late 1800s, but their organization is still living. We're trying to bring new people

in, so as we die there will be someone to keep the Tuskegee Airmen going for the future."—*Hiram E. Little Sr., 85, on new members joining the Tuskegee Airmen, Associated Press, Nov. 7.*

Just Asking

"If I knew, why would I tell you?"—*Richard L. Armitage, deputy secretary of state, to reporter, from Saudi newspaper al Hayat, who asked when the offensive on Fallujah would begin, Washington Post, Oct. 27.*

Missing Coverage

"If you are killed, you get the \$250,000 service group life insurance. But if you are just wounded and lose a leg and your wife is spending six months or a year in Washington, traveling back and forth, and not able to work, ... what do you do? ... We need to try to come up with a proposal that would amend our insurance programs to provide some kind of catastrophic disabling injury type coverage."—*Department of Veterans Affairs Secretary Anthony J. Principi, Christian Science Monitor, Nov. 10.*

American Revolution Unnecessary

"The Revolutionary War could have been avoided. It was an unnecessary war. Had the British Parliament been a little more sensitive to the colonials' really legitimate complaints and requests, the war could have been avoided completely, and, of course, now we would have been a free country now, as is Canada and India and Australia, having gotten our independence in a nonviolent way."—*Former President Jimmy Carter, MSNBC's "Hardball," Oct. 18.*

Le Big Difference

"We would never have won the [American Revolution] without the strong alliance with the French that Benjamin Franklin and others negotiated."—*Carter, Newsweek, Nov. 2.*

Lethal Debris

"Europeans could accept the idea

that several hundred Europeans would die from debris from a missile shot down over Europe and that this could save the lives of thousands, maybe tens of thousands, of Americans. But the decision to trigger such an event cannot be made only by people at Cheyenne Mountain. There needs to be a common decision-making policy here. The threat of lethal debris is one reason why acceptance of missile defense in Europe is a political issue, not mainly a technical issue."—*Dominique Klein, French Defense Ministry, Space News, Nov. 1.*

No Surprise Here

"Into the Wild Blue Yesteryear."—*Headline, on yet another New York Times editorial attacking the F/A-22 Raptor and airpower modernization, Oct. 29.*

Go for the Leaders

"In the war on terrorism globally, there's not going to be a surrender on the battleship *Missouri*. You're always going to have some element of terrorism, isolated incidents, attacks against our nation and other free nations. You can't totally eliminate terrorism any more than you can totally eliminate crime. What you can do is dismember the leadership."—*Rep. Duncan Hunter (R-Calif.), chairman of the House Armed Services Committee, Defense News, Oct. 18.*

The Enemy's Culture

"Even today, knowledge of one's enemy and his culture and society may be more important than knowledge of his order of battle."—*Transformation director Arthur K. Cebrowski, Inside the Pentagon, Oct. 28.*

Rumsfeld in Bronze

"I modeled it on [Rumsfeld] when he was a young man. He was a member of my brother's class [1950], and I knew him well."—*Bruce Everly, sculptor of a bronze statue of Rumsfeld at the high school where he graduated in Winnetka, Ill., Chicago Tribune, Nov. 14.*

Washington Watch

By John A. Tirpak, Executive Editor

Resignations, Continued Turmoil; Airpower in Fallujah; Acquisition Reform Goes Too Far?; And More ...

Roche, Sambur Going, but Controversy Lingers

The resignations of Air Force Secretary James G. Roche and Marvin R. Sambur, the service's civilian acquisition chief, were matters of both timing and desire to clear away obstacles preventing USAF from making the uniformed leadership changes it needs.

The resignations, however, don't seem likely to end the controversy over the tanker lease deal that played a major role in both men's tenure at the Air Force.

Roche announced his resignation Nov. 16 and Sambur the day after. Both said they planned to leave by Jan. 20, if not sooner.

In a statement published on the Air Force's Web site, Roche explained that he had always intended to serve one term and wanted to allow enough time for a replacement to be found and confirmed. He also said he wanted the new Secretary to have some overlap of tenure with Chief of Staff Gen. John P. Jumper, who is slated to complete his term in September. This would avoid "the disruption that could occur should a new Secretary and Chief assume office at the same time," Roche wrote.

He added, though, "I hope that my departure at this time will allow Congress and the Air Force to concentrate on vital matters, such as confirmation of senior leaders. I am concerned that many of our major commands and combatant commands have been left in a state of uncertainty. Airmen ... are in combat with our country's enemies—we must have stable leadership in place."

Sambur offered similar explanations for his departure, which came only days after the Pentagon inspector general cleared him of any misbehavior in the Darleen A. Druyun affair. (See "Aerospace World: Sambur Resigns," p. 19.)

Sen. John S. McCain (R-Ariz.) has put on "hold" nominations for promotion or reassignment for several senior Air Force uniformed leaders. McCain has used the blocks to gain documents he wants regarding his investigation of the Air Force's planned—but abandoned—lease of Boeing 767 tankers.

McCain succeeded in holding up for almost a year the nomination of Roche to be Army Secretary, until Roche withdrew his name, which in turn ended the nomination of his replacement, Barbara Barrett of Arizona. In October, McCain stalled the appointment of Gen. Gregory S. Martin, head of Air Force Materiel Command, to lead US Pacific Command. After McCain said he would delay Martin's confirmation indefinitely, Martin, too, withdrew his name from consideration.

In mid-November, there were several key USAF positions going unfilled. Though nominated to be head of Air Combat Command, Lt. Gen. Ronald E. Keys was still waiting to be confirmed for the four-star job, thus blocking his replacement by Lt. Gen. Carrol H. Chandler as the deputy chief of staff for air and space operations. The hold on Martin kept 8th Air Force head Lt. Gen. Bruce Carlson from taking over AFMC, and Carlson's



AP photo

McCain seeks deeper investigations.

replacement, Maj. Gen. Kevin P. Chilton, similarly remained in his old job without a third star.

Defense Secretary Donald H. Rumsfeld, in a Nov. 17 statement, praised Roche's leadership of the Air Force "during an important period in history" and thanked Roche for his service.

McCain, though, in a Senate floor speech later that week, said he wants more investigations into the Air Force leadership's role in the Druyun scandal. Druyun has admitted wrongdoing on several contracts that went to Boeing, receiving a sentence of nine months in prison.

McCain said, "Over the past few weeks, Air Force leadership has tried to delude the American people into believing that all of this happened because of only one person and that, because no one else has been hired for her position, the problem has been solved. I don't buy it."

He added, "I simply cannot believe that one person, acting alone, can rip off taxpayers out of possibly billions of dollars."

McCain also produced quotes from Air Force-provided e-mails, in which Roche appeared to be rooting for Boeing over rival European Aeronautic Defence and Space in supplying the tankers for the Air Force.

Responding to McCain's criticism in a press conference, Rumsfeld praised both Roche and Sambur for taking action on Druyun even before there was any reason to suspect she had done anything illegal.

When Roche and Sambur came in, said Rumsfeld, "they looked at that situation, were uncomfortable with it, and began taking authorities away from her." He added that their efforts to establish a different arrangement and strip Druyun of authorities "apparently" prompted her to begin "negotiating for her departure."

Rumsfeld said that Druyun acquired an unreasonable amount of power because of high turnover among both the uniformed officers in her shop and long vacancies in Sambur's position during her 10-year tenure. Rumsfeld said it was an example of how difficult it is to run the

Pentagon when about 25 percent of appointees are on hold because of background checks and other bureaucratic delays.

Airpower Aids Battle for Fallujah

The US-led coalition's taking of Fallujah in November featured not only superb ground force operations but also a startling array of air and space power successes.

Among them: Seamless joint air operations, extremely close air-ground coordination, use of fighter aircraft for tactical surveillance and ground escort, and employment of unmanned aerial vehicles (UAVs) in lethal and nonlethal roles.

Code-named "Phantom Fury," the push into the rebellious Iraqi city was aimed at routing insurgent and terrorist forces from Fallujah, where they had established headquarters, training facilities, and armories to make bombs and distribute weapons.

Marine and Army units, assisted by Iraqi forces, cleared the city on the ground, assisted by airpower from the Air Force, Navy, and Marine Corps, as well as British air units. Air planners "went to school" on coalition experience in Fallujah in April 2004, according to the commander of US Central Command Air Forces and 9th Air Force, Lt. Gen. Walter E. Buchanan III.

"We knew it was only a matter of time before we'd have to go back in there," he said of the aborted offensive in Fallujah during the spring of last year. In the intervening months, detailed aerial study was made of the city, with particular attention to the few landmarks in otherwise nondescript neighborhoods. The combined air operations center in Qatar precisely measured the coordinates of many known targets so that extreme precision could be applied when conducting the operation, said Buchanan.

That homework "paid off very well," he asserted.

Coalition forces hoped to cause as little damage as possible to the city because, Buchanan said, "we're going to have to rebuild it." He reported that coalition air units used "not a single dumb bomb." The weapons used were either laser guided munitions or satellite guided bombs. However, despite the desire to limit collateral damage, none was dropped with an inert warhead, as had sometimes been done during major combat operations in 2003. Field commanders "wanted to make sure" that if a target was hit from the air, there was no question that it had been destroyed, Buchanan said.

The landscape was challenging. Planners identified many targets as specific windows on a given face of a particular building. To pinpoint targets for the fighters overhead, ground controllers used a combination of colored smoke, lasers, and other target designation methods. In addition, ground controllers conducted "talk-ons" in which they verbally guided a pilot through visual landmarks to the target. Friendly forces sometimes identified themselves with colored tarps. In many cases, controllers called in strikes very close to their own positions.

"To my knowledge, there were no incidents of fratricide," Buchanan reported.

While there was thorough planning for specific targets that needed to be struck, Buchanan said, there was also heavy reliance on the ground air controllers. The Air Force had 28 ground controllers in the fight; the Marines and Army each had some as well. Buchanan said there were no problems with coordination or cross-service communications.

"You couldn't tell [the branch of the controller] ... unless you recognized his particular call sign," he said.



DOD photo

Airmen load a Hellfire missile on a Predator in Iraq.

The operation was "principally a Marine ground show," Buchanan noted. Marine air controllers mostly called for Marine close air support, which was provided by AV-8B Harriers that were used "almost like attack helicopters," he said.

The Air Force expended many munitions and provided CAS for the battle, but its chief mission was to orbit other cities. Central Command wanted a swift and powerful response on call in other locations if insurgents elsewhere "thought we were totally committed in Fallujah ... and tried something," Buchanan explained.

The coalition made heavy use of laser guided Hellfire missiles fired from Predator UAVs. Another favored munition was the 500-pound version of the GPS guided Joint Direct Attack Munition, which had been delivered to Marine and Navy units only shortly before the operation. Aircraft also used their cannons in some places.

The air campaign was "extremely well planned," Buchanan said, and was meant to "complement and support the overall campaign."

Navy F-14s and F/A-18s from the carrier *John F. Kennedy* supported the fight, and there were other air units on call from airstrips both within Iraq and in the region, he said.

Fighters were kept on station over Fallujah for roughly as long as they still had ordnance. Aircraft low on fuel were sent to aerial tankers to gas up. Once their ordnance was expended, they would return to base and be replaced with another aircraft.

The three services all kept aircraft overhead at all times, with similar weapon loads, Buchanan said.

Fighters also assisted in protecting convoys and lines of communication by flying up and down travel routes, using Litening targeting pods and other sensors to search for hiding individuals or suspicious circumstances. They were able to do this using the heat-sensing and magnification equipment in the pods. Aircraft on standby for uprisings in places like Mosul "didn't just bore holes in the sky," but performed this surveillance and reconnaissance function simultaneously, said Buchanan.

Acquisition Gets a Scrub Down

The Darleen Druyun affair has produced a "crisis" that will be addressed with a DOD-wide review of its acquisition system, the Pentagon's top acquisition official said in November.

Michael J. Wynne, acting under secretary of defense for acquisition, technology, and logistics, convened reporters in his Pentagon office to say that the revelations in the Druyun case have "produced a situation that we have to, in acquisition, consider ... a crisis." He wants to

act quickly to restore trust in the system and head off any further breaches of integrity.

Druyun, formerly a top civilian acquisition official in the Air Force, was convicted last fall for showing favoritism to Boeing in contracts worth billions of dollars. (See "Washington Watch: Druyun's Downfall," November 2004, p. 10.) The position Druyun held has been eliminated, and the authority she had accumulated over a decade has been reinvested at various other levels in the procurement bureaucracy, as had been the practice before Druyun's 10-year "reign."

Nevertheless, Wynne said he wants to be certain there are no lingering questions about any aspect of the Druyun episode. The first order of business, he said, is to determine if the revelations so far are "all there is" and to rectify Druyun's wrongdoing. To that end, he has assigned a team led by the Defense Contract Management Agency to look into all the acquisition decisions Druyun made throughout her tenure. The team will review everything from major contract awards to settlements and award fees to make certain Druyun's decisions—other than those for which she already admitted wrongdoing—were appropriate.

Wynne acknowledged that there might be hundreds of actions to investigate, so a final report may take some time. However, he expects to see an initial report early this year.

If any further improper actions are uncovered, Wynne will inform companies on the losing end of those contracts. He said DOD might take the extraordinary step of inviting them to submit a protest.

He has also asked the Defense Science Board, with academic help from several universities, to take an overall look at the integrity of the defense acquisition system. The main objective is to see if too much power has gravitated into the hands of too few individuals, as was the case with Druyun, Wynne said.

He reported that he and Air Force acquisition chief Marvin R. Sambur, soon after they came to the Pentagon, agreed that Druyun exercised more power than her position warranted and took steps to "diminish" it and shift it elsewhere. Though Wynne said he and Sambur tried, at the time, to be "polite" about the changes, Wynne said he was sure the moves prompted Druyun to retire in 2002. Neither he nor Sambur had any idea at the time that Druyun was abusing her power to throw work to Boeing, Wynne said.

Of Druyun's initiatives to streamline acquisition—such as her "lightning bolt" efforts to quicken the process of acquiring new capabilities—Wynne said these are under review, as well. However, he did say that some initiatives such as buying commercial-off-the-shelf (COTS) gear as a means to reduce costs "clearly began to get a little bit overused."

The progression to COTS "with modifications" will be "clamped down on," he said, adding that the term "COTS modified ... means, in my opinion, it may not be COTS."

Wynne added that he believed the whole acquisition reform and the defense re-engineering initiatives had gotten off track and DOD must "drag it back."

Key Capabilities Need Special Investment

The US industrial base needs more investment in several key areas if the nation is to maintain a sufficient lead over potential adversaries in military technology, according to a recent Pentagon study. One area in particular—production of small satellite guided bombs—requires development of a second source, stated the study. Such weapons are expected to be in great demand over the next 30 years.



Boeing photo

SDB singled out for additional investment.

According to the "Defense Industrial Base Capabilities Study: Force Application," six industrial capabilities need "additional" Pentagon investment. Beyond expanding the supplier base for the 250-pound-class satellite guided bomb, the study proposed creating a second industrial source for future hypersonic propulsion and additional sources for chemical oxygen iodine lasers (COILs). It also recommended an industrial capability to make steerable bullets.

Other endeavors that the study said would require more industrial investment include a spacecraft propulsion system called a pulsed plasma thruster and a "self-propagating high-temperature synthesis device." This last weapon creates effects like a miniature nuclear weapon, with intense blast and heat, as well as radio frequency disruption not unlike that of an electromagnetic pulse.

In its review of the 250-pound Small Diameter Bomb (SDB), the study group found that the Pentagon probably stifled ongoing innovation and cost improvement when it selected a single source for SDB production. The SDB is expected to be used on nearly all US combat aircraft of the future.

The recommendation takes on added weight because former USAF acquisition official Darleen Druyun was the source selection authority on the SDB project. All of Druyun's procurement actions are being reviewed. (See "Acquisition Gets a Scrub Down," above.)

Regarding hypersonics, the study group found that the US enjoys no strong lead although it has been working on the technology for decades. The industrial policy shop recommended greater funding and a concerted effort by the Pentagon to create "competitive opportunities for weapon system designs" employing hypersonics.

The COIL technology, which currently is in development for use on the Airborne Laser, may have wider applications, according to the study. It recommended exploring expanded use of the technology that might help bring down its cost. The study noted, too, that other countries are pursuing COIL technology and, in a few years, could pull even with the US.

To spearhead development of promising technologies, the industrial policy group suggested creating an industrial base investment fund and earmarking about \$30 million a year, starting in 2007, for the fund. It would promote industrial investment in promising military technologies that may not have an immediate weapon system application.

According to the study group, the fund could reduce some of the risk involved in setting up an industrial capability when there are no guarantees that the technology would find a market. ■

Presenting
The U.S. AIR FORCE TRIBUTE™
 A Family Heirloom...an Important Firing Collector First!



Limited Edition: 1911
 Plating: 24-Karat Gold

Fires .45 ACP



A RARE AND IMPORTANT SYMBOL OF YOUR PRIDE IN THE U.S. AIR FORCE



To safely display your investment, a custom-built American Walnut Display Case with locking glass lid is available. Easily wall mounted or displayed flat, it features a form-fitted velvet lining and I.D. plaque, 14"x9"x4".

USAF 0001 and USAF 1911 and accompanied by a detailed Certificate of Authenticity.

This is the military-model M1911A1 and it fires .45 ACP ammo. It is even fitted with a rare and desirable lanyard with 24-Karat Gold-plated mounts.

Each pistol is built by the gunsmiths of Thompson/Auto-Ordnance, the company founded by General John T. Thompson, who developed the .45 ACP cartridge, and who invented the Thompson Submachine Gun. NRA test firings of their .45 show accuracy "significantly better than the average military-issued M1911."

Satisfaction Guaranteed

To reserve, or for questions, call our Member Relations Staff, toll free, at 1-800-368-8080, 9am-9pm ET, Monday-Friday, or return the enclosed reservation to "Columbia," our National Historic Landmark Headquarters and Museums, as seen on The History Channel. You may reserve with a small deposit, a



Personalized engraving available on right side of slide.

24-Karat Gold Plating

When you pick up this three-pound slab of steel and gold, you'll hold the finest, firing limited edition .45 ever made.

As a proper memorial to the U.S. Air Force, patriotic symbols and inscriptions are deeply etched and 24-Karat Gold plated across the slide. Custom-made grips complement the mirror-polished slide, receiver and ten 24-Karat Gold plated parts. All the 24-Karat Gold plating is to Jewelers Grade-Heavy thickness, for lasting beauty and value.

Your name or that of a family member can be engraved on the reverse side of the slide, along with other data to make this pistol a lasting, personal memorial.

Limited Edition; Fires .45 ACP

The world-wide edition limit is only 1,911, in honor of the year it was adopted for military use. This highly-restricted limit is your immediate guarantee of rarity and collector value. Each is engraved with its own Registry Number between

Continue the mission...lest we forget.

RESERVATION REQUEST

Satisfaction guaranteed or return within 30 days for a full refund. Yes, please enter my reservation for the U.S. Air Force .45. I will also receive a Certificate of Authenticity attesting to the edition limit, special registry number and the purity of the 24-Karat Gold plating.

My deposit for credit card authorization of \$195 per pistol is enclosed. Please charge or invoice the balance due prior to delivery...

In ten monthly payments of \$180, or in full.

My payment in full of \$1,995 per pistol is enclosed.

Please send the wall mounting American Walnut Display Case, with locking glass lid, adding a final payment of \$149.

If I cancel my reservation prior to delivery I will receive a full refund, less a commissioning fee of \$195.

Please personalize my pistol, at \$20; send the Engraving Form.

Check or money order enclosed.

Please charge Visa MC AmEx Discover

Card No. _____ Exp. _____

Signature _____
(Virginia residents please add 7% tax.)

Name _____

Address _____

Daytime Telephone: _____

THE AMERICAN HISTORICAL FOUNDATION
 1142 WEST GRACE STREET, RICHMOND, VA 23220
 PHONE: (804)353-1812 FAX: (804)359-4895

E-MAIL: AHFrichmond@aol.com WEB SITE: AHFrichmond.com

TOLL FREE 9AM-9PM ET, M-F: 1-800-368-8080

B460

© AHF MMIV

Aerospace World

By Adam J. Hebert, Senior Editor

Airman Dies in Iraq

MSgt. Steven E. Auchman, of Waterloo, N.Y., was killed in Iraq on Nov. 9. He died from injuries he received when multiple rocket-propelled grenades were fired on his unit's location in Mosul.

Auchman, 37, was a radio maintainer providing tactical support for an Army Stryker brigade at the time of the attack, according to an Air Force announcement.

He had arrived in Iraq in October from his home station of Ft. Lewis, Wash., where he was the support superintendent for the 5th Air Support Operations Squadron.

MC Rates Decline

The Air Force in Fiscal 2004 posted a Total Force mission capable (MC) rate of 75.4 percent, down slightly from the previous year's 75.9 percent rate. The drop comes after three years of readiness improvements.

After a decade of decline, MC rates bottomed out in 2000 at 72.8 percent—meaning less than 73 percent of the Air Force's aircraft were ready to perform their primary missions in that year. (See "Aircraft Readiness Shows Slight Drop," below.)



USAF photo by David Blumberg

Space systems now are integral to almost every aspect of military operations. Above, A1C Shannon Davis (left) observes the Global Positioning System survey measurements being run by SrA. Erin Farris on a handheld GPS unit as the pair map a portion of Kunsan AB, South Korea, for the 8th Civil Engineer Squadron.

The drop largely was attributed to problems related to the aging aircraft fleet created by the "procurement holiday" of the 1990s, as well as the

adjustments USAF had to make when it closed two of its five depots and a spare parts shortage due to chronic underfunding.

USAF was able to reverse the decline by making the remaining depots more efficient and improving spare parts availability. Beginning in 2001, aggregate MC rates began inching upward.

Aircraft Readiness Shows Slight Drop



The Air Force's overall aircraft mission capable rate declined slightly, breaking three years of readiness gains. (See "MC Rates Decline," above.)

IG Faults Academy Leaders

A Defense Department inspector general report released in December said that the "root cause" of the Air Force Academy's sexual assault problem was the failure of "successive chains of command over the last 10 years to acknowledge the severity of the problems." The IG faulted but did not name eight former academy officers as being responsible for the problem.

Those individuals, stated the DOD IG report, "contributed to cultural problems, kept the magnitude of the problems from being visible to USAF leadership, and prevented effective criminal investigations."

DOD and Air Force officials at a

Dec. 7 news conference announced the results both of the DOD investigation and a separate investigation by the Air Force IG, which focused on how cases of alleged sexual assault were handled.

David S.C. Chu, the Pentagon's top personnel official, said that the Air Force had taken action "months ago" to correct problems at the academy. The new reports, he said, will "inform our policy decisions" for the entire department, not just the Air Force.

When questioned, Chu said it was not time to "name the specific individuals," adding that "there's a separate set of processes that will deal with that." He did say that retirement of individuals would not preclude DOD from taking action.

BRAC Colors Actions

Recent Congressional demands that the Air Force keep in active service aircraft it had planned to retire are probably related to the upcoming base realignment and closure (BRAC) round, according to Air Combat Command's operations director, Maj. Gen. Bruce Hoffman. He recently told *Air Force Magazine* that "everybody is very BRAC-sensitive."

Lawmakers are taking every action in their power to protect and bolster military bases within their constituencies, in the hope that their facilities will be spared.

Over the past two years, Congress has barred the Air Force's moves to divest itself of various aircraft to help finance upkeep of the remainder. Lawmakers instructed USAF to bring back into active service some of the B-1B bombers that the Air Force had retired. They also prohibited USAF from retiring aged KC-135E tankers and a portion of the F-117 stealth fighter fleet.

These types of actions, however, are "probably a temporary thing," Hoffman said at Langley AFB, Va. He believes that once the impending BRAC round is complete, lawmakers likely will be less sensitive about force structure changes.

UAVs in Iraq Have Quadrupled

Unmanned systems are becoming more and more numerous in US combat operations, according to military officials. In just the past year, the number of unmanned aerial vehicles (UAVs) deployed to Iraq has more than quadrupled from less than 100 to more than 400, stated an Air Force news release.

UAVs are providing the "most-requested capability among combatant commanders in Southwest Asia," the

Bombers Prove Their Maritime Capability

In an exercise reminiscent of Gen. Billy Mitchell's sinking of a captured German battleship in 1921, US bombers recently sank a variety of targets in the Pacific Ocean near Hawaii.

There were two major differences, however. First, the Navy this time was eager to cooperate with the Air Force. Second, the targets were moving. Exercise Resultant Fury, held in mid-November, proved that long-range strike aircraft equipped with the right equipment can destroy moving maritime targets in any weather condition.

The large-scale exercise involved numerous Air Force and Navy systems and personnel. Air Force systems included B-1B, B-2, and B-52H bombers, F-15E fighters, E-3 AWACS command and control aircraft, E-8C surveillance aircraft, and KC-135 tankers. Navy F/A-18 fighters also participated. The exercise was run from the air operations center at Hickam AFB, Hawaii.

B-52s flying from Guam and Louisiana successfully targeted and destroyed a variety of ships. Most dramatic was the destruction of the decommissioned USS *Schenectady*, a 522-foot-long former Navy tank landing ship, which was set adrift in the Pacific for this exercise.

Perhaps more significant, however, was the destruction of several targets being pulled behind remotely controlled tugboats. Even small surface ships can be a threat if used by hostile nations, modern-day pirates, or terrorists. For example, in 2000 al Qaeda forces using a small boat carrying explosives struck the Navy destroyer *Cole*, killing 17 sailors.

For the exercise, the towed targets represented enemy ships, while the tugboats themselves were considered friendly. The close proximity of the vessels forced the strike aircraft to accurately track the moving targets to avoid collateral damage, officials said.

Maj. Gen. David A. Deptula, operations director for Pacific Air Forces, said that Resultant Fury proved long-range airpower can help control the sea in all conditions.

Deptula told *Air Force Magazine* that maritime control is important to the commander of US Pacific Command, but that the capability had "atrophied" during the 1990s. PACAF therefore decided to match up bombers stationed in the Pacific with satellite guided Joint Direct Attack Munitions and Northrop Grumman's developmental Affordable Moving Surface Target Engagement (AMSTE) system.

This was the first time AMSTE was used at sea, and the system allowed specially modified JDAMs to be rapidly retargeted in flight with new data from orbiting E-8 Joint STARS aircraft. This can be done "at such a rate of speed that it doesn't matter how fast the ship is moving," Deptula said.

The integration of command and control systems with long-range aircraft and precision weapons provides "a new capability," Deptula said, "the capability to rapidly conduct maritime interdiction in a matter of hours, in all weather, day or night, anywhere in the Pacific theater."

The JDAMs are guided by the Global Positioning System, providing an all-weather capability. Currently, precision maritime interdiction by air requires skies clear enough to use laser guided weapons.

More than 300 airmen, sailors, and marines participated in the \$10 million exercise.



USS *Schenectady*, a decommissioned 522-foot US Navy warship is listing after being bombed by USAF aircraft during maritime exercise Resultant Fury.

USAF photo by TSgt. Richard Freeland

USAF Plans Improvements for Kyrgyzstan Base

The Air Force plans to pump up to \$108 million in improvements into Manas Air Base, in the Central Asian nation of Kyrgyzstan. The changes will help reduce the austerity of the facility, making it more like a permanent operating location.

An Air Force news release stated that the effort would include building 20 dormitories with 1,000 rooms to replace the temporary tents that have been used to house airmen since Operation Enduring Freedom began in Afghanistan.

Kyrgyzstan has been a valuable ally in the war on terror, and the location north of Afghanistan made Manas a prime operating location, even though the landlocked former Soviet republic is still very remote.

The two biggest challenges in the construction program have been "local contractors' capabilities and the availability of materials," said Capt. Ken Herndon, engineering flight chief for the 778th Civil Engineer Squadron, Robins AFB, Ga. "It's taking up to six months to get materials for projects that could have been done by now," he said. Civil engineering groups from Robins are handling much of the work.

Herndon also told reporters that a dining hall, gym, medical clinic, passenger terminal, recreation center, and other facilities would be built on a 25-acre site. Roughly half of the first \$40 million, to be spent through next year, will go into the local economy, Herndon noted.

production checkouts and flights in preparation for its delivery to USAF this spring. Raptor #4041 on Oct. 27 rolled out of Lockheed Martin's assembly facility in Marietta, Ga., ready for its final predelivery work-out.

This first operational Raptor is bound for Langley AFB, Va., where it will join the 1st Fighter Wing's 27th Fighter Squadron.

Test and training F/A-22s are already being flown at Edwards AFB, Calif., Nellis AFB, Nev., and Tyndall AFB, Fla.

Officials at Langley plan to borrow a pair of Raptors from the training unit at Tyndall, according to *Inside the Air Force*. These "loaners" will be used to ease the transition of 27th FS pilots and maintainers from the F-15C to the F/A-22, which is expected to reach initial operational capability by the end of 2005.

The first Tyndall F/A-22 should ar-

release said. The demand for the persistent surveillance and reconnaissance capabilities offered by unmanned systems continues to rise, and a new generation of small UAVs is helping to meet that need.

"We've seen a huge growth in the total numbers of UAVs in the theater," said Dyke Weatherington, deputy director of the Pentagon's UAV planning task force. "Most of that growth [is] in the area of small UAVs."

Larger systems also remain valuable. Weatherington noted that a UAV with strike capabilities such as USAF's MQ-1 Predator "can take action very early ... and, in many cases, eliminate the threat entirely."

Coalition partners are also joining in UAV operations. According to the London *Sunday Times*, Royal Air Force officers are working with their USAF counterparts at Balad AB, Iraq, and Nellis AFB, Nev., in controlling Predators. The *Times* said that the RAF confirmed participation but would not reveal how many pilots are involved.

The Pentagon now has more than a dozen UAV systems in its inventory, and more are in development. Beyond reconnaissance and strike, several UAVs can identify targets and feed that data in real time to attack platforms such as AC-130 gunships operating in the area.

Langley-Bound F/A-22 Rolls Out

The first F/A-22 destined for an operational squadron has been undergoing a standard regime of post-

ACC Creates Air-Ground Operations Office

Air Combat Command recently created an office to coordinate its air-to-ground operations with the Army. The Joint Air-Ground Operations (JAGO) office, at Langley AFB, Va., will serve as the Air Force's focal point.

"The office will address immediate air-ground issues, develop long-term strategies, integrate all command activities on the subject, and act as the service's single point of contact for all operational issues in support of ground forces," officials said in a news release.

Creation of the office is one of many steps being taken to facilitate coordination between the Air Force and Army. USAF is working to improve the training and efficiency of its battlefield airmen—combat controllers, joint terminal attack controllers, and the like—who work closely with ground units. ACC also plans to improve its close air support capabilities.

The new JAGO office has two branches. The Battlefield Airmen Division "focuses on the Air Force career fields which work on the front lines of ground operations, oftentimes embedded with Army units," according to the ACC release. The Close Air Support Division will focus on air operations to support ground forces.

Col. Michael Longoria, director of the JAGO office, said recent operations have shown the Air Force that there are "serious deficiencies in this air-ground domain that we can and must fix."

The Army is also addressing the problems, and it plans to establish a Battlefield Coordination Detachment at Shaw AFB, S.C., later this year.

"This has to be a situation where all of the forces work together," said former ACC commander Gen. Hal M. Hornburg at an October meeting with reporters. He said command officials created the office "to put our money where our mouth was, and say that we are going to not only get serious about the modernization and the recapitalization of our airplanes, but also [about] the people on the ground who make all this happen."

Hornburg described Operation Anaconda, the 2002 battle in Afghanistan, as "probably the most recent and awful example" of lack of coordination between ground and air planners while the operation was being laid out. According to Hornburg, Anaconda demonstrated "a failure of planning bailed out by a tremendous ... operational synergy."

He said that ACC is "deadly serious about CAS," but added that the Air Force doesn't need to buy any specific platform to "prove a point" about that mission. The Air Force may have to educate the Army, however, because some soldiers still believe the A-10 is the only aircraft that can provide close air support, Hornburg said.

An ACC spokesman said the JAGO office will work closely with counterpart Army offices but will not have soldiers permanently assigned to its staff.

Wargame Spotlights WMD Hazards

When Air Force leaders last fall got the results of a recently concluded major wargame, they were told that, in a scenario involving weapons of mass destruction (WMD), global strike capability is vital and Blue Forces must have immediate freedom to act.

These and other lessons were drawn from the Unified Engagement 04 wargame hosted by the Air Force and US Joint Forces Command. The game featured 385 participants, 42 percent from the Air Force. The setting was South Asia in the year 2015. The Blue and Red Force capabilities and systems were those expected to be in use in 2015.

The scenario involved an unstable, nuclear-armed nation being taken over by extremists with ties to international terrorism. Coalition forces had a limited objective—to gain and maintain access to the nation and to seize and disable the nuclear weapons before they could be dispersed.

The scenario proved “very stressing,” said Brig. Gen. R. Mike Worden, director of operational plans and joint matters on the Air Staff, in an interview with *Air Force Magazine*. The distances involved, the need to make quick decisions with uncertain intelligence, and the requirement to maintain a persistent presence over the battlespace brought a lot of “insight into what brings value” into this type of scenario, he said.

The game was “absolutely not” fixed for the Blue Team, said Lt. Col. Stuart Haire, wargame coordinator, and the Red Team was given free reign and the ability to “win.”

Many details of the wargame are classified, but the insights gained included:

- Intelligence collection operations can, unintentionally, tip off the enemy. In the wargame, the Red Team noted such operations and quickly dispersed its nuclear weapons. Worden said potential adversaries have been able to watch how the US prepares for military action from Operation Desert Shield in 1990 to

the kickoff of Operation Iraqi Freedom in 2003. By 2015, there may be even more tip-offs, he added.

- The appetite for more data must be moderated by the need to make quick decisions with less than perfect intelligence. An enemy has the option of moving quickly, and coalition forces must be able to do the same.

- Forward basing of Blue Forces proved critical in preventing the complete dispersal of the Red Team’s WMD. Worden said distance and operational access were critical issues, and the scenario presented a complex search environment.

- A “limited war” can quickly escalate if the enemy believes it is in a war for national survival. The Blue Team had difficulty controlling the nature and scope of the war: Haire said keeping the adversary in check and “reading” his intentions were “very tricky.”

- You can never have too much global strike capability, and it needs to be at hand. Even after “kicking the door down” in the early hours of the campaign, Blue Forces could not assume the door would stay open. Blue Forces need to be prepared to counter air defenses throughout the campaign and keep the combat zone safe for a persistence force.

- Once nuclear weapons are “on the loose,” the Blue Team needs predelegated authority to act quickly and decisively. The stakes would be too high to wait, one official said.

- Response options were limited by supply problems and deployment timelines. Worden said this facet of the wargame contributed greatly to its realism: Coalition forces had to fight within the constraints of a real, unexpected deployment and could not play as if they had unlimited assets at their disposal.

- Effectively seizing and disabling Red’s nuclear weapons will require new joint and interagency concepts. In the future, with stakes that could include WMD, it is “absolutely critical [that] our interagency process be more efficient,” Worden said.

rive at Langley in January, Lt. Col. Jim Hecker, 27th FS commander, told ITAF. A second should follow by March, while the first Raptor actually belonging to Langley is due in May, he told the newsletter.

X-43 Scramjet Nears Mach 10

NASA’s experimental X-43A “Hyper X” research vehicle shattered the speed record for an air-breathing vehicle in November when it flew to nearly 10 times the speed of sound during a test flight.

The X-43’s supersonic combustion ramjet (scramjet) engine may be the predecessor for a wide range of military and space propulsion systems. Hypersonic weapons and reusable space launch vehicles are two prominent areas that could benefit from the technology.

“Because scramjet engines have significantly fewer moving parts than traditional turbojet engines and do



NASA’s B-52B mothership takes off Nov. 16 from Edwards AFB, Calif., on a mission to launch the X-43A research vehicle. The experimental craft reached Mach 9.8 during a test flight of hypersonic technologies.

NASA photo by Tom Ichniada

not, like conventional rocket engines, require oxidizer ... for combustion, they will allow for the design of smaller, simpler, more reliable, and affordable reusable [launch] vehicles," stated a news release from contractor Boeing, which is teamed with ATK to develop the X-43A for NASA.

The scramjet fires hydrogen fuel through a stream of supercompressed air that is pushed through the engine using the vehicle's speed. The previous record for an air-breathing en-

gine was also held by the X-43A, when in March it reached Mach 6.83.

For the Nov. 16 flight, NASA's long-serving B-52B mothership took off from Edwards AFB, Calif., and carried the X-43A to a launch location off the Pacific coast.

Fewer Vets Sit in Congress

The newly elected Congress will have fewer members who are military veterans.

Of the 50 Senators and Represen-

tatives who are departing Congress in January, 22 were veterans. Among their replacements, only nine have previous military experience, according to Copley News Service.

Much of the decline is attributable to larger demographic trends. The huge population of World War II veterans has continued to age and shrink, and the creation of the all-volunteer force in 1973 has greatly reduced the number of US citizens who gain military experience.

News Notes

By Tamar A. Mehuron, Associate Editor

USAF photo by A1C Trina Flammagan



Illinois Air National Guard tactical air control party team members (from left) SSgt. Jeb Corley and SSgt. Jason Melnders, 2nd Lt. Scott Grotbo, and MSgt. Chance Barlow check the view from the Losano-Frazier Tower at the Joint Readiness Training Center, Ft. Polk, La. (See news note below.)

■ USAF will reactivate the Air Force District of Washington at Bolling AFB, D.C., to provide a "single voice" in directing Air Force support to the new Joint Force Headquarters-National Capital Region, created by US Northern Command last fall, stated a Dec. 1 news release. A general officer will command the AFDW, which will include the 11th Wing at Bolling and other units tasked to support the new joint force headquarters.

■ A new aircraft control tower used by USAF tactical controllers at the Joint Readiness Training Center, Ft. Polk, La., was dedicated Nov. 30 to SSgt. Jacob Frazier and A1C Raymond Losano, tactical air control

party airmen who were killed in combat in Afghanistan. Frazier, an Illinois Air National Guardsman, was killed March 29, 2003, in a convoy ambush. Losano died during an April 25, 2003, firefight.

■ Adm. Timothy J. Keating took command of North American Aerospace Defense Command and US Northern Command in ceremonies at Peterson AFB, Colo., on Nov. 5. He succeeds Air Force Gen. Ralph E. Eberhart and is the first Navy officer to hold the NORAD position, which traditionally went to the Air Force.

■ Army Gen. B. John Craddock on Nov. 9 became the new commander of US Southern Command, headquar-

tered in Miami. He succeeds Army Gen. James T. Hill.

■ An Air Force MQ-1 Predator UAV crashed Nov. 24 in Southwest Asia. It was not brought down by enemy fire, according to a USAF news release. The accident is under investigation.

■ DOD started a new program late last fall to highlight America's support for troops. "America Supports You" is designed to gather information about activities that support the armed forces. DOD will share that information with troops and their families to ensure they know "the American people have stood solidly behind our military," said Charles S. Abell, principal deputy undersecretary of defense for personnel and readiness. Supporters can visit the Web site (www.americasupportsyou.mil) to share details of their activities.

■ USAF space operators launched a GPS satellite aboard a Delta II rocket Nov. 6 from Cape Canaveral AFS, Fla. It replaces one of 24 satellites in the constellation.

■ The Vietnam Veterans Memorial reopened in late October after completion of extensive lighting renovations, according to an announcement from the Vietnam Veterans Memorial Fund.

■ The 12th Reconnaissance Squadron, Beale AFB, Calif., on Oct. 28 received the first production Global Hawk UAV, marking the UAV's transition from developmental to operational status. The unit has been operating developmental Global Hawks during combat operations in Southwest Asia.

■ USAF chose 566 senior master sergeants to become chief master sergeants, out of 2,688 considered. That is a selection rate of 21.06 percent, up from last year's rate of 19.86 percent.

In the new Congress, roughly a fourth of the 535 members will be veterans.

AC-47 Crew Buried at Arlington

The remains of a six-man crew of an AC-47 gunship shot down during the Vietnam War were buried in November, as a group, at Arlington National Cemetery. The remains from their crash site in Laos had only recently been positively identified.

The airmen buried on Nov. 5 were Cols. Theodore E. Kryszak and Har-

ding E. Smith, Lt. Col. Russell D. Martin, and CMSgts. Harold Mullins, Luther L. Rose, and Ervin Warren.

The crew was flying a nighttime armed reconnaissance mission over southern Laos on June 23, 1966, when its AC-47 "Spooky" gunship went down in flames. A DOD news release said no parachutes were observed, no emergency beepers were heard, and an aerial search of the site found no evidence of survivors.

In 1994, a US search team that had been led to a crash site found aircraft wreckage, personal effects,

and a crew member identification tag. The next year, an excavation team recovered human remains and other IDs. The remains subsequently were identified through DNA, dental, and X-ray testing.

US Removes DMZ Troops

The United States recently removed most of its troops from the Demilitarized Zone that separates North Korea and South Korea, leaving a skeleton force. About 40 US troops will remain in the Panmunjom Joint Security Area, wire services reported.

■ Michael L. Dominguez and Michael Montelongo were selected by *Hispanic Engineer and Information Technology* magazine for its Top 50 Hispanics in Business and Technology list. Dominguez is the assistant secretary of the Air Force for manpower and reserve affairs. Montelongo is assistant secretary of the Air Force for financial management and the comptroller.

■ Of the 183 applicants a USAF board selected last year to attend Officer Training School, it picked 25 enlisted members to trade stripes for gold bars. The board considered 205 applications overall.

■ Pratt & Whitney received a \$51.9 million contract to remanufacture engine combustion chambers for F-15 and F-16 aircraft. Work is to be completed by October 2008.

■ A team of USAF firemen from Travis AFB, Calif., won top honors during the World Firefighter Combat Challenge last November in Las Vegas, becoming the first DOD team to win the title. The team included active duty, reservists, and civilians. They were: TSgt. Mike Melton; SSGts. Frank Abreu, Jelani Brooks, and Harry Myers; SrA. Adam Groom and Brendan O'Neil; and David Chiodo and Shenah Flores.

■ Air Force bands now deploy as part of the service's 10 Air and Space Expeditionary Forces (AEFs), following a request from Gen. John P. Jumper, Chief of Staff. Previously, USAF bands would operate on temporary duty when they traveled to overseas theaters. Now they will be on the AEF schedule, deploying to a theater where they'll perform at various locations during the rotation cycle. The Band of Liberty, Hanscom AFB, Mass., which was the first to deploy for an AEF rotation, found itself at Balad AB, Iraq, when the base came under attack. According to a USAF news release, the band donned protective gear and kept on playing.

■ A new, automated tracking system ensures that avionics technicians at Robins AFB, Ga., have the correct parts when they need them for repairs. The Lean Depot Management System keeps data on parts, orders new items when needed, and prints tickets when repair tasks are completed.

■ Air Force Lt. Col. Scott Neumann, a former B-2 test pilot who was traveling on a Boeing 737 commercial flight Nov. 9, found himself in the cockpit assisting the pilot after the airliner's co-pilot suffered a seizure. Neumann, who is deputy commander of the 412th Operations Group, Edwards AFB, Calif., helped move the co-pilot from the cockpit. When the airliner pilot learned of Neumann's flight experience, he tapped him to join him in the cockpit and help in landing the aircraft at the nearest alternate site, the airport at Colorado Springs, Colo.

■ DOD officials in November said the conversion to the new three-region Tricare arrangement with only three contractors had been completed with the shift of the last beneficiaries to the new South Region. The transition to the new region was handled in two stages, the first ending Aug. 1 and the last on Nov. 2.

■ TSgt. Robert Jeeves received a Grateful Nation Award presented by the Jewish Institute for National Security Affairs during a Nov. 15 ceremony in Arlington, Va. Jeeves, one of six servicemen so honored in 2004, is a USAF combat controller attached to US Army Special Forces. The awardees were selected by their services for demonstrating heroism during operations in Southwest Asia.

■ Veterans who participate in the VA's health care system now have a new, more secure identity card that will help protect against identity theft. The Veterans Identity Card features the individual's photo on front, and on the back, magnetic tape contains the veteran's encrypted Social Se-

curity number, birth date, and a control number. The tape also notes any service-connected disability. Veterans enrolled in the VA health care system should ask for the new card at their local VA medical center. Once the VA verifies a veteran's eligibility, officials said processing the new card would take five to seven days.

■ Airmen of the 435th Materiel Maintenance Squadron, at Sanem, Luxembourg, on Nov. 9 debuted a new "tent city" kit. The "550 I" Basic Expeditionary Airfield Resources base kit, the first of its kind for the Air Force, requires fewer people to set up, offers improved ventilation and lighting, and is easier to ship. The 550 I can be built in three days and includes units for housing, dining, and shower and latrine functions for 550 troops. Four of the new kits are slated for deployment by 2007. The 550 I eventually will replace all Harvest Eagle kits.

■ Secretary of Defense Maintenance Awards went to two Air Force units Oct. 27 in Houston during the 2004 DOD Maintenance Symposium and Exhibition. The units cited for their excellent accomplishments in field-level military equipment and weapon system maintenance were the 509th Munitions Squadron, White-man AFB, Mo., in the small unit category, and the 27th Maintenance Group, Cannon AFB, N.M., in the large unit category.

■ Air Force success in contracts with small disadvantaged businesses and an Air Force civilian contracting officer, Carol Singleton, 311th Human Systems Wing, Brooks City-Base, Tex., earned Defense Department plaudits and two small business awards. USAF surpassed its contract target, awarding more than \$2.7 billion in contracts to small disadvantaged businesses. Singleton was recognized for her efforts in securing construction contracts with qualified small businesses. The contracts totaled \$2.5 billion.

The move was part of a new cooperative defense agreement between the US and South Korea that shifts American forces farther south. Most will eventually inhabit a facility near Osan Air Base.

US officials expect the new locations to be easier to defend and operate from than the old locations closer to North Korea.

Five Firms Net \$2B for MPE

The Air Force recently awarded a group of contracts worth up to \$2 billion to develop the Mission Planning Enterprise.

BAE Systems, Boeing, Lockheed Martin, Northrop Grumman, and TYBRIN Corp. were awarded indefinite delivery/indefinite quantity contracts. The companies will work to "deliver mission planning capability to joint service warfighters," according to the Nov. 4 contract announcement. The work is to be completed by November 2009.

The award will streamline the service's mission planning work and eliminate stovepipes and duplicative efforts that had been spread over 23 contracts, reported *Federal Computer Week*. The new arrangement with only five contracts is designed to ensure that contractors "design interoperable systems using an enterprise approach to field capability quickly," Pat Dagle, program lead, said in a statement to FCW.

F-16 Shells Hit School

Rounds from an Air National Guard F-16 on an evening training mission accidentally struck a New Jersey middle school in November. The F-16 was using New Jersey's Warren

Hornburg: ACC Must Pursue Basic Missions, Even in Wartime

Even in wartime, Air Combat Command needs to keep a focus on its Title X "organize, train, and equip" mission, said Gen. Hal M. Hornburg, the ACC chief who retired on Nov. 17.

When he assumed command of ACC in November 2001, Operation Enduring Freedom dominated ACC's attention. Hornburg quickly determined that the command "needed to have mission areas to focus on, rather than programs," he told *Air Force Magazine* on Oct. 29, shortly before his retirement.

Without that change in focus, said Hornburg, "we'd have just been doing current operations 24 hours a day." There would have been no way for ACC to continue "to focus on the corporate requirements we had to support the Air Force," he added.

Speaking at the Air Force Association's Air and Space Conference in September, Hornburg said: "We were all over the map. ... It was interesting to me that the priority of the day was in direct proportion to the last phone call. In other words, if [Gen. John P. Jumper, Chief of Staff] called, ... we knew what our priority was until he called again. Then the priorities were likely to change. It was hard to keep our eye on the ball."

Hornburg explained in October that the constantly evolving wartime concerns had pushed ACC into a program-for-the-day management style. He found himself saying, "I'm going to work today on F-22 and tomorrow on F-35." Instead, he said, he "wanted to focus on mission areas rather than the programatics."

Hornburg said the relatively short tenures of recent ACC commanders "may have contributed" to the lack of focus. However, he added, he did not view that as a significant concern. Hornburg served as ACC vice commander under both Gen. Ralph E. Eberhart and Jumper.

A three-year tenure is the "sweet spot" for a commander's tenure, he said. "I saw some commanders [at ACC] stay so long that they made fundamental, positive changes," at first, but later, "some things actually changed in a more negative than positive way."

After making major changes, those longer serving commanders were "just tinkering with all the little stuff," said Hornburg, who served seven tours at Langley AFB, Va., home to ACC. He added, "The big stuff started to get away."

Senior Staff Changes

RETIREMENTS: Brig. Gen. Arthur F. **Diehl III**, Gen. Ralph E. **Eberhart**, Gen. Hal M. **Hornburg**, Brig. Gen. Maria C. **Owens**, Brig. Gen. John G. **Pavlovich**, Maj. Gen. Wilbert D. **Pearson Jr.**, Maj. Gen. John M. **Speigel**, Brig. Gen. Henry L. **Taylor**.

CHANGES: Brig. Gen. Danny K. **Gardner**, from Dep., US Mil. Representative to NATO, Brussels, Belgium, to Dir., Mission Spt., USAF, Ramstein AB, Germany ... Brig. Gen. (sel.) Frank J. **Kisner**, from Cmdr., 43rd AW, AMC, Pope AFB, N.C., to Dir., P&P, PACAF, Hickam AFB, Hawaii ... Brig. Gen. Glenn F. **Spears**, from Dir., P&P, PACAF, Hickam AFB, Hawaii, to Dir., Personnel Policy, DCS, Personnel, USAF, Pentagon.

SENIOR EXECUTIVE SERVICE RETIREMENT: Ronald L. **Orr**.

SES CHANGES: Timothy A. **Beyland**, to Dir., Strat. Plans & Future Systems, DCS, Personnel, USAF, Pentagon ... David H. **Eskins**, to Senior Intel. Engineer, Space & Missiles, Natl. Air & Space Intel. Center, AIA, ACC, Wright-Patterson AFB, Ohio ... Barry **Hennessey**, to Dir., Counterintelligence & Spec. Programs Oversight, OSAF, Washington, D.C. ... John H. **Pletcher**, to Assoc. Dir. for Weapons, AFRL, AFMC, Eglin AFB, Fla. ... Cathlynn B. **Sparks**, to Dep. Auditor General, OSAF, Pentagon. ■

Grove training range on Nov. 3 at about 10 p.m. when several 20 mm shells rained down on the school.

The F-16 belongs to the District of Columbia ANG, which flies out of Andrews AFB, Md. The pilot, who had not been identified, immediately notified ground controllers that his gun had discharged.

There were no students in the school at the time. Custodial staff, though present, were uninjured.

Officials could not immediately determine why the school, more than three miles from the military weapons range, was hit. At a hearing Nov. 17, Maj. Gen. David F. Wherley Jr., commanding general of the D.C. National Guard, told lawmakers that preliminary evidence indicated the

school was well beyond the gun's effective range when the shots went off.

Investigators are "trying to determine whether it was a system failure or whether it was an actual pull of the trigger for another purpose," said Wherley.

By mid-December, the investigation into whether pilot error or an equipment malfunction was responsible was still ongoing.

Sears Pleads Guilty

Boeing's former chief financial officer, Michael M. Sears, in November admitted he began job negotiations with Air Force civilian acquisition officer Darleen A. Druyun before she retired from the Air Force. At the time, she was still in a position to favor Boeing in contract actions.

Sears pleaded guilty to aiding and abetting illegal employment negotiations, for which he likely would serve six months.

Sears also admitted that in 2000 he helped Druyun's daughter obtain a job with Boeing at Druyun's request. At the time, Boeing was working to obtain an aerial refueling tanker contract from the Air Force. Druyun previously pleaded guilty to favoring Boeing in several other Air Force acquisition competitions. She was sentenced to a nine-month prison term and probation time.

Sambur Resigns

Air Force acquisition chief Marvin R. Sambur on Nov. 17 announced his resignation. He will depart office on Jan. 20 or sooner if a successor is named.

Sambur came to the Air Force from private industry in 2001. One of the first steps he took was to attempt to eliminate some of the authority and responsibility that had been captured by Darleen Druyun during her 10 years as one of the Air Force's top civilian acquisition officials. (See "Washington Watch: Acquisition Gets a Scrub Down," p. 9.)

Shortly before he announced his resignation, Sambur said he had been cleared of wrongdoing in the ongoing tanker controversy, at the core of the Druyun scandal. He said that Defense Department Inspector General Joseph E. Schmitz notified him in mid-November that "there was no evidence of wrongdoing," Reuters reported.

"They cleared me in that there was nothing improper or illegal with respect to my e-mail communications with Boeing on the tanker negotiations," Sambur said. ■

The Iraq Story Continues

Casualties

By Nov. 29, a total of 1,251 Americans had died in Operation Iraqi Freedom. The fatalities included 1,248 troops and three Defense Department civilian employees.

Of those casualties, 981 Americans were killed in action by enemy attack, including the three DOD civilians. The other 270 troops died in nonhostile incidents, such as accidents.

OSI Nets 148 Iraqi MANPADS

Air Force Office of Special Investigations (AFOSI) agents operating out of Kirkuk Air Base in northern Iraq have collected 148 man-portable air defense system surface-to-air missiles from the area around the base, officials announced in November. That is the most MANPADS of any unit operating in Iraq.

The benefit is clear. The shoulder-fired missiles threaten low-flying and slow aircraft, especially upon takeoff and landing. AFOSI has been collecting the weapons through a "buy-back" program for 18 months.

An SA-7 missile hit a DHL air freighter taking off from Iraq in November 2003, but the aircraft was able to safely return for a landing. Thousands of the weapons are thought to be in circulation worldwide. The buy-back program allows AFOSI agents to "purchase certain MANPADS parts for set prices," according to an Air Force news release.

Convoy Drivers Log a Million Miles

Air Force truck drivers aiding Army convoys in Iraq recently passed a milestone—one million miles driven. "We assumed this mission in March," noted CMSgt. Kory Tytus of the 732nd Expeditionary Mission Support Group. "So you're looking at just seven or eight months' worth of driving."

Three detachments of drivers contributed to the million-mile milestone, an Air Force news release stated. The detachments are based in Mosul, Tikrit, and at Balad AB. The driving was done at a time when military convoys were frequent targets for attack by insurgents.

"We sent out at least five convoys a day, and I would say that at least one out of the five got hit every single time they went out the gate," said SSgt. Amelia Solomon, one of the Air Force's convoy escorts working out of Balad. "One night, all five of our convoys got hit."

The convoy personnel have earned more than 70 Bronze Stars and more than 20 Purple Hearts.

ABL Achieves "First Light"

The Airborne Laser program achieved a major milestone in November when the ABL's laser achieved "first light."

First light represented the first time the laser's six chemical oxygen iodine laser (COIL) modules were connected and successfully fired together. "This proves the laser hardware is ready to go," said Air Force Brig. Gen. (sel.) Ellen M. Pawlikowski, ABL program director for the Missile Defense Agency.

The COIL, which will later be mounted aboard a specially modified 747, will be used to shoot down enemy ballistic missiles. The ABL system is expected to be a key component in MDA's missile defense plans, as it has the ability to destroy missiles while they are still over enemy territory.

A second ABL milestone, first flight of the 747 with the beam and fire-control systems installed, was expected by year's end.

Officials said in a news release that the ABL is "the most advanced boost-phase segment of MDA's layered system designed to protect the United States, its allies, and its deployed troops from a hostile missile attack."

Index to Advertisers

American Historical Foundation	11
Boeing	Cover IV
General Dynamics	Cover II
Lockheed Martin	3
Northrop Grumman	Cover III
Air Force Ball	56
AFA Membership	78
AFA Air Warfare Symposium-Orlando	67

Action in Congress

By Tom Philpott, Contributing Editor

Lawmakers Expand Reserve Tricare; Employer Tax Credit Down; Gains for Veterans; 2005 Priorities

Reserve Tricare Boost

The Department of Defense says it will meet a Congressionally mandated April 26 deadline to develop and launch a Tricare Standard enrollment plan for reservists who return to drill status after active duty deployments.

The first-ever offer of Tricare benefits to drilling National Guard and Reserve members is one of several health care enhancements approved as part of the 2005 National Defense Authorization Act.

Deactivated reservists will be able to buy Tricare Standard, the military's traditional fee-for-service health insurance which has co-payments and deductibles, if they agree to pay monthly premiums set at 28 percent of program costs and if they sign an agreement to remain in the selected Guard or Reserve.

They will be able to take a year's worth of coverage, for themselves or their families, for every 90 consecutive days they were mobilized. The plan is available to any member who served on active duty in support of a contingency operation for 90 days or more after Sept. 10, 2001, and who was released from active duty before Oct. 28, 2004, or within 180 days of that date. Members must enter into the agreement to serve in the selected reserve within a year of Oct. 28, 2004.

The Tricare Standard coverage will not take effect until after other "transition" medical benefits expire. In 2003, Congress gave mobilized reservists and their families up to 180 days of Tricare to ease return to civilian life. That was approved under temporary authority. The 2005 defense bill makes the six-month transition benefit permanent.

Also made permanent is up to 90 days of premobilization Tricare for reservists and their families, when the reservist received delayed activation orders.

The new law additionally directs the services to give mobilized reservists complete physicals before they leave active duty to identify and treat service-related injuries or ailments.

Among other recent medical im-



USAF photo by MSgt. Dave Nolan

Above is a Reservist in Afghanistan. The Guard and Reserve get expanded Tricare.

provements for reservists, deductibles charged under both Tricare Standard and Tricare Extra, DOD's preferred provider network, are waived for family members when sponsors are ordered to active duty for more than 30 days.

No Employer Tax Credits

The political pressure applied by Sen. Mary Landrieu (D-La.) failed to move the 108th Congress in its final days to approve new tax credits for civilian employers of mobilized Guard and Reserve members. (See "Action in Congress: Employer Tax Credits, Almost," December 2004, p. 23.)

Indeed, her late-hour attempt to add the provision to a House bill that would allow deployed reservists to make penalty-free withdrawals from their individual retirement accounts to help address deployment-related financial hardships stopped passage of that bill last year.

As introduced originally by Rep. Bob Beauprez (R-Colo.), H.R. 1779 would allow reservists to make penalty-free withdrawals from IRAs if mobilized for six months or longer. His bill would have cost \$4 million, in reduced tax revenue, over 10 years. With Landrieu's amendment, the cost jumped to \$328 million over 10 years.

"That sunk it," said a spokesman for Beauprez. Both Landrieu and Beauprez are expected to reintroduce their bills in the new Congress.

Favorable Pay Link

Despite complaints from the Bush Administration that Congress harms readiness when it ties the size of raises for federal civilian employees to the pay hikes for military members, lawmakers have done it again. Effective Jan. 1, federal civilian employees received a 3.5 percent raise, matching the military's increase.

The civilian raise was a percentage point higher than proposed by the White House.

In a Nov. 17 letter to the chairmen of the House and Senate Appropriations Committees, Joshua B. Bolten, director of the Office of Management and Budget, argued that 3.5 percent exceeds both inflation and the average increase in private sector pay as measured by the government's Employment Cost Index. He said the higher raise also isn't warranted by recruitment or retention problems.

Bolten warned of "reductions in force or shifts of resources away from critical programmatic priorities" if the higher raise were approved.

Days later, Congress passed the 3.5 percent increase anyway. Lawmakers pointed to a tradition of pay parity between the military and federal civilian workforce.

Vet Benefits Rise

Congress passed three bills in November to help veterans. One raises the value of some benefits, another strengthens their legal rights, and a third raises pay for VA doc-

tors and broadens work schedule options for nurses.

The most significant of the three is the Veterans Benefits Improvement Act (S. 2486). Its highlights include:

- Raising Montgomery GI Bill (MGIB) benefits for apprenticeship or on-the-job training to \$853 a month for the first six months of training, \$653 a month for the second six, and \$452 for additional months. Coverage takes effect in October.

- Offering active duty MGIB to drilling reservists who complete two consecutive years of active service. Those who elect to enroll will have a year after returning to drill status to pay the \$1,200 "buy-in" contribution.

- Increasing the maximum home loan covered under the VA loan guaranty program to \$333,700. The VA guarantees 25 percent of the home loan up to the maximum. The new ceiling will be adjusted for inflation.

- Raising by \$250 a month Dependency and Indemnity Compensation to surviving spouses who have children under age 18. The new increase is set to expire in two years.

- Requiring the VA to exclude life insurance payments when calculating "income" to determine veterans' eligibility for death pension benefits.

- Restoring VA guarantees for adjustable-rate mortgages through 2008.

- Extending VA's hybrid adjustable-rate mortgage loan program through 2008.

- Increasing to 24 months the period that an employer must make company health benefits available to mobilized reservists.

- Clarifying legal protections under both the Uniformed Services Employment and Re-employment Rights Act and the Service Members' Civil Relief Act. For example, the law now makes clear that not only deployed reservists but also their spouses can terminate leases on apartments or automobiles, without financial penalty.

Another bill, the Veterans Health Programs Improvement Act (H.R. 3936), ends patient co-payments for VA-provided hospice care and requires VA to establish its first multi-trauma centers to study new treatments for the most severe type of war wounds. It also increases assistance to homeless veterans.

Consistency Lacking

Veterans often fall victim to inconsistent treatment in review of disability compensation claims because the regulations used by VA regional offices are open to interpretation, according to Congressional auditors.

Furthermore, the VA has no way to track and correct such differences.

In a briefing to a pair of House subcommittees last fall, the Government Accountability Office said the VA "cannot provide reasonable assurance that similarly situated veterans who submit claims for the same impairment to different regional offices receive reasonably consistent decisions."

A 2002 GAO report recommended that VA assess the consistency of claims adjudication through various means, including development of hypothetical claims for specific medical conditions to reduce "impairment-specific variations" found when adjudicators must use their own judgment.

GAO said the department has not done this.

VA officials said they are developing a new data collection system that could allow detection of claim inconsistencies between regions. But it won't be operational until 2006. GAO said several years of data collection will be needed after that to assess consistency of decision-making among VA's 57 regional offices.

The 2005 Priorities

The 108th Congress adjourned without addressing several high-profile issues, particularly for retirees and their survivors. Here's a rundown of legislation likely to resurface as service association priorities for the 109th Congress:

Expanded Concurrent Receipt. While Congress has ended or begun phasing out the ban on concurrent receipt of both military retirement and disability benefits for the most severely disabled retirees, it also left a lot of meat on that legislative bone.

Expect pressure this year, for example, to phase out the CR ban on disabled retirees forced to leave service short of 20 years and also to ease the ban for 20-year retirees who still see retired pay reduced by VA payments tied to disabilities rated below 50 percent.

At a minimum, Congress will be pressured to accelerate phaseout of the CR ban for 15,000 retirees with 20 or more years of service who are rated "unemployable" but have disability ratings below 100 percent.

Widows' Concurrent Receipt. Survivors of service members who die while on active duty or of retirees who die from service-related disabilities can receive tax-free Dependency and Indemnity Compensation from VA. But in a situation similar to the ban on CR for disabled military retir-

ees, survivors who draw DIC see a dollar-for-dollar offset in military Survivor Benefit Plan payments. Expect associations to press for a redress.

Keep the Promise. The Florida-based Class Act Group will continue to urge Congress to pass the Keep Our Promise to America's Military Retirees Act, which has as its major feature waiver of Medicare Part B premiums to retirees who first entered service on or after Dec. 7, 1956. Such relief becomes more significant and costly with the 17 percent increase in Part B premiums that went into effect this year.

Paid-up SBP. Congress several years ago passed a bill to end Survivor Benefit Plan premiums when members reach age 70 or when they have paid premiums for 30 years, whichever occurs later. However, lawmakers delayed the effective date until Oct. 1, 2008. Retirees will continue to urge lawmakers to pass legislation granting immediate relief.

More Reserve Tricare. Reserve personnel advocates say all drilling Guard and Reserve members should be able to enroll in Tricare if they agree to pay premiums. So expect pressure on Congress to cut the mobilization strings now attached to the new Tricare Standard option.

Reserve Retirement. Numerous bills in the 108th Congress would have improved reserve retirement by lowering the retirement age threshold (currently 60) at which benefits are paid. New bills will be introduced, but the Bush Administration is expected to resist any move toward earlier retirement.

Pay Raise Comparability. The 3.5 percent military pay raise on Jan. 1 was the last of a Congressionally mandated series of extra increases to close the pay gap between the military and private sector workers of comparable age and education, particularly for midgrade and senior enlisted members. Look for Congress to weigh whether the pay gap has been closed or whether larger or more targeted pay raises are needed for 2006 and beyond.

Tricare Standard. Congress could decide in 2005 to strengthen Tricare Standard, a benefit largely neglected in recent years as the focus stayed on improving Tricare Prime, the military managed care option. Expect more bills such as H.R. 5152, introduced by Rep. Charlie Norwood (R-Ga.) late in the last Congress, that called for lower patient co-payments and inpatient costs and more competitive reimbursement rates for doctors. ■

Space Command seeks to instill a “warfighter ethos” and acquire the means to guard the high ground.

Toward Suprem

By Adam J. Hebert, Senior Editor

DURING the Army’s dash toward Baghdad in March 2003, lead elements of the 3rd Infantry Division ran into a sudden and serious problem. Soldiers lost contact with the overhead Milstar communications satellite network, which wiped out their secure link to trailing support elements.

No longer able to send targeting data to their fire support units, the 3rd ID was momentarily stalled and isolated.

A call for help went out to Schriever AFB, Colo. Soon, airmen of the 4th Space Operations Squadron went to work finding and fixing the problem.

According to Capt. Ryan Stalnaker, the 4th SOPS chief of plans, tactics, and requirements, someone had shifted the Milstar “spot” (one of six spot-beam user antennas) away from the 3rd ID’s lead elements toward another area. Technicians began asking questions. Where was that spot?

The squadron consulted a system showing exactly where Milstar spots are on Earth. They confirmed that the 3rd ID’s spot was in the wrong place. Specialists also quickly determined that it had not been diverted to a higher-priority mission. In this case, another Army unit had inadvertently snatched the Milstar spot that was supposed to be over the 3rd ID.

With the problem identified, the Milstar spot was moved back, and the problem was solved. The 3rd ID was able to resume its coordinated attack against the Iraqi forces.

Elapsed time: some 15 minutes from the time 4th SOPS got the call.

“The victorious outcome of this engagement, along with numerous

other battles in Operation Iraqi Freedom, would not have been certain without dominant US military space power,” said Col. James C. Hutto Jr., head of force development and readiness for Air Force Space Command.

The Goal: Space Superiority

Examples such as this one show that, in combat, space capabilities can be a matter of life and death, say Space Command officials. US control of space is “not a birthright or a destiny,” warned Gen. Lance W. Lord, AFSPC commander. For that reason, the command is moving to secure US space capabilities for the future.

The concept of space superiority “needs to roll off the tongue,” like “air superiority,” Lord said. The war for control of space has “already started,” he said, and the United States can no longer assume that space will be a benign operating environment.

Space power came to the aid of the 3rd ID on many other occasions. Lt. Gen. Daniel P. Leaf, AFSPC vice commander, cited a second example. Charlie Troop, part of the 3rd Squadron of the Army’s 7th Cavalry, was a lead element in the advance toward Baghdad, from south of Najaf, in March 2003.

“When the weather turned bad, [Charlie Troop] was, in essence, surrounded, at night, in a dust storm,” Leaf said. At the time, the 3/7 Cavalry had “a real big problem on the west.” It was battling 20 Iraqi T-72 tanks, other enemy armor and vehicles, and a couple of hundred or so Iraqi soldiers.

The US and Iraqi forces were so

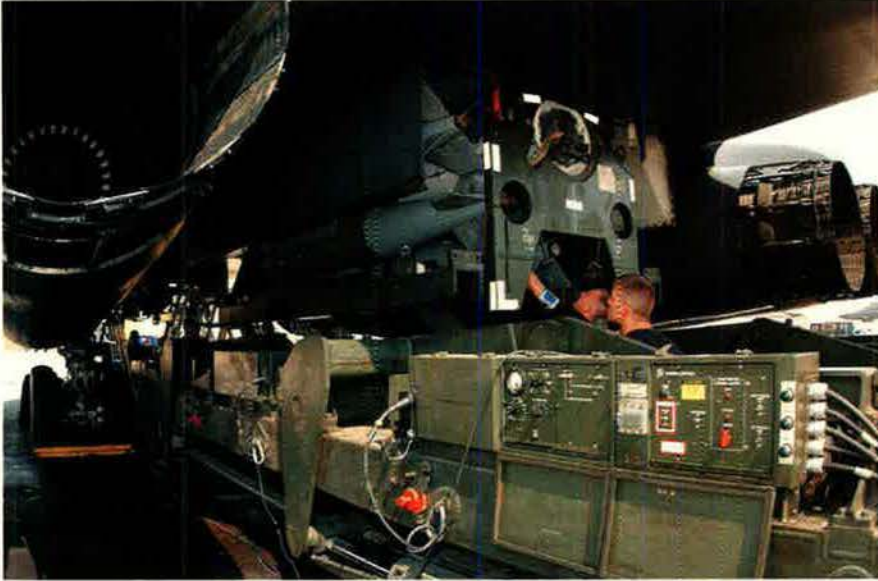


acy in Space

USAF photo by SrA. Mike Mears

Space operators such as these at Schriever AFB, Colo., make sure critical communications, intelligence, and targeting systems are ready to aid combat forces. Space Command wants its operators to think like warfighters.





A B-1B bomber crew handles a Joint Direct Attack Munition. Provision of satellite guidance to munitions such as JDAM has pushed the Air Force into a new age of precision attack.

close that SSgt. Mike Shropshire, an Air Force tactical air controller deployed with the unit, later told Leaf, "Iraqis were being killed by [rocket propelled grenades] ricocheting off US armor, and American troops were dismounting and grabbing Iraqi AK-47s" to fire back.

At the time, Leaf was listening to the battle unfold, by radio, at the forward command center. The general was serving as US Central Command's air component coordinator at Camp Doha, Kuwait.

Shropshire was able to reach a B-1B bomber crew and call in Joint Direct Attack Munitions, Leaf said. The B-1 dropped seven 2,000-pound satellite guided JDAMs on the enemy forces.

"Remember how close this combat is," Leaf said. "I've been a forward air controller, ... and the idea that you would drop a 2,000-pound bomb, through the weather, at night, in a dust storm, in contact that close, is mind-boggling."

Charlie Troop was fighting off Iraqis on three sides, but the attack on the enemy forces to the west "in essence destroyed them in detail." The impact of the JDAMs defeated an enemy "that had us in a really terrible situation," Leaf said. "What would ordinarily be a tactical defeat" turned into a rout of the attacking enemy.

In that engagement, Charlie Troop lost a Bradley fighting vehicle and an Abrams tank, but suffered zero

deaths and zero wounded, Leaf said.

In his view, said Leaf, "that was the beginning of the end of the Iraqi Army." He added, "They had as much advantage as they were going to get," during the US drive to Baghdad, but lost it "due to close coordination between land- and air-force elements and the availability of space capabilities."

Space is just as integrated into modern combat as bullets are, said Leaf, adding that he looks forward to the day when space is not thought of as something distinct or divorced from "regular" combat power.

To that end, AFSPC is working hard to change the mind-set of both warfighters and the space community. For starters, even though the Defense Department has made enormous strides in integrating space capabilities since the 1991 Persian Gulf War, there is still much room for improvement.

Right From the Start

According to Lord, combat planners must "think about space from the beginning" and not bring it on as an afterthought.

The end state, said Brig. Gen. Richard E. Webber, commander of 21st Space Wing at Peterson AFB, Colo., must be for planners to *bring* space to the fight, rather than *integrate* it into the fight.

"If you come up with a plan and wrap space onto it, [that is] not the way to go," he said. The change

requires a "huge evolution in thinking."

Webber said he has "seen it both ways." Successful planning during OIF included the massive C-17 air-drop into northern Iraq, used to open up the second front during the war. For that mission, Webber (the senior space officer in the combined air operations center) helped ensure that GPS requirements, satellite communications needs, and other space support efforts were all brought into the war plan at the outset.

Placing an official "senior space officer" in the CAOC is a recent phenomenon. Webber was the first, serving as space and information warfare coordinator for Gen. Tommy R. Franks, then head of US Central Command, during the first six months of Operation Enduring Freedom in Afghanistan.

Since that time, the position has evolved but has become a permanent fixture, typically staffed by a senior colonel.

Brig. Gen. Larry D. James, now vice commander of Space and Missile Systems Center at Los Angeles AFB, Calif., held the job during the major combat phase of OIF, when several issues required quick resolution. During his time at the CAOC, James told *Air Force Magazine*, space officers planned GPS accuracy improvements and worked to mitigate Iraq's attempts to jam the GPS signal.

Space officers also had to improve Defense Support Program satellite surveillance. Initially, coalition forces lacked the desired level of missile-launch awareness because there were DSP "connectivity" problems to resolve, he said.

Today, the established presence of a senior space officer in the theater eases the mission planning process, said Col. Teresa A.H. Djuric, commander of the 21st Operations Group at Peterson (and recently CENTCOM's senior space officer at the CAOC).

Discussions now center on tactical issues such as how best to provide convoy security and the eternal need to optimize GPS coverage, she said.

The traditional means of temporarily improving GPS is to boost power and defer maintenance, to ensure the maximum number of satellites are online at once. But these efforts must

be balanced. Deferring maintenance comes at a price, and, when GPS signal power is increased, Djuric noted, it improves the signal for all users, not just the US military.

All Phases

Space Command officials note that the systems they develop and operate now play a role in every phase of combat. Space provides communications, battlespace awareness, missile warning, positioning and tracking capabilities, and precision-weapon guidance. The prospect of taking these capabilities away is undoubtedly enticing to adversaries. Potential enemies know that the US is reliant, perhaps even dependent, upon space-based capabilities.

Space is often referred to as the "ultimate high ground," just as the tallest hills and aircraft represented the high ground in the past. Hills and aircraft became valid military targets, and space-based capabilities are now thought to be targets as well.

In a speech last year, Lord said Space Command predicts that adversaries "will increasingly try to deny us the asymmetric advantage that space provides. ... Vulnerable space systems invite attack—inviting a move to level the 'technological playing field.' "

Iraq tried this during OIF, through the use of GPS jammers. The jamming attempts were unsuccessful, but brought attention to the fact that some types of crude counterspace capa-

bilities are available on the open market.

Enemies can also use space-based capabilities to their advantage by buying access to commercial communications systems or by purchasing satellite imagery that can show bases and staging locations. The Pentagon arranged to purchase all the high-quality commercial satellite imagery of Afghanistan at the beginning of Enduring Freedom to keep valuable details out of enemy hands.

Officials say that space control efforts are increasingly important to protect US capabilities and—if necessary—to deny enemy access to space.

The Air Force's space control efforts include three mission areas: space situational awareness (SSA), defensive counterspace (DCS), and offensive counterspace (OCS).

The Foundation

Space situational awareness serves as the foundation for everything else.

USAF's 1st Space Control Squadron, Cheyenne Mountain AFS, Colo., has long maintained a catalog of the man-made objects in orbit. This database provides SSA and helps protect US assets from accidental damage. If a newly launched system or piece of debris threatens to collide with the objects already in orbit, satellites are moved.

Squadron commander Lt. Col. Mark Vidmar noted that, in 2004, the In-

ternational Space Station and two classified DOD systems were moved for just such reasons. This was done when other objects were projected to get too close for comfort.

Of more immediate interest to warfighting commanders is the knowledge of "what's above them," Vidmar added.

The Air Force in October took possession of a system that used to be called the "Navy Fence," a series of radars spread across the southern part of the lower 48 states. The Fence tracks all the space objects passing overhead and "had always been integrated with the Air Force mission," said 1st Lt. Jenn Berger of the 21st Operations Support Squadron at Schriever.

The transfer of authority, giving the Air Force control of the Fence and 195 new military and civilian positions, was smooth.

Over the years, space essentially has been a militarily benign environment. For that reason, operators had come to assume that failures were the result of equipment malfunctions—not the deliberate and malicious acts of enemies.

Space Command is trying to break the operators of that thinking. The first response when something goes wrong, said Maj. Gen. (sel.) Daniel J. Darnell, commander of AFSPC's Space Warfare Center, should be "think possible attack."

The Air Force lacks a flawless means for determining if a functional breakdown is the result of an attack, but it does have procedures to try to make that determination. Databases detailing how systems operate and what the previous failures were can tell operators if a malfunction is "normal" or if it is likely malicious, Darnell said.

Space situational awareness feeds directly into defensive counterspace—the mission of protecting what's up there.

Officials note that systems located in space tend to get the lion's share of attention, but space-based capabilities are actually vulnerable three ways: at the satellites, through their relay links, and at the ground stations. Disrupting any of these parts of the system will have a negative effect.

A key focus today is training operators to identify and respond to possible threats to their systems. Red Teaming plays a crucial role in de-

USAF photo by SSgt. Verifin Levi Collins



At Baghdad airport, SrA. Trent Lundell of the 447th Expeditionary Communications Squadron checks a satellite signal. Space Command wants to develop space control systems to defend US orbital assets.



SSgt. Michael Huffman, left, and SrA. Ricky Williams query GPS for coordinates needed to guide JDAMs to a target. Space Command officials want to thoroughly integrate space capabilities into combat operations.

veloping DCS tactics, and Space Command has teams in place to help educate the units.

For example, GPS jammers are available on the open market for \$38,000, and satellite communications “noise-makers” can be bought for \$7,500, explained Lt. Col. Todd Freece, commander of a space aggressor squadron at Schriever. GPS jamming is a “verified adversary tactic,” he said, so Red Teams use these techniques as a training tool. In that way, he said, US forces don’t see the effects of jamming for the first time in combat.

The goal is not simply to get space operators to recognize how it feels to be jammed, added Lt. Col. Guy Morley Jr., who commands a second space aggressor squadron. According to Morley, these Red Teams make the warfighter experience what it’s like to have to fight without such advanced technology.

Sometimes problems can be fixed immediately by switching frequencies or by increasing power to users, but units must also learn to fight through the interference.

Offensive Counterspace

Finally, there is the sensitive issue of offensive counterspace operations—that is, disrupting an adversary’s space capabilities to keep him from using space to his advantage. The Air Force needs to “walk a very deliberate path,” with regard to OCS, said Darnell, but officials are unequivocal about the need to follow that path.

Offensive counterspace effects can be accomplished in many ways. Darnell cited the case of a Hellfire missile, fired from a Predator UAV, which destroyed an Iraqi satellite antenna in Baghdad. That was the “first offensive counterspace mission of OIF,” he said.

The Air Force in September fielded its first dedicated OCS capability, the Counter Communications System. CounterComm uses a ground-based antenna to temporarily jam enemy satellite communications. It is a mobile, “no-kidding” tool that will be deployed—if needed—to assist theater commanders, said TSgt. James Logan of the 76th SCS at Peterson. The 76th is Space Command’s first counterspace squadron.

Many lawmakers and arms control advocates are less than excited

The Bandwidth Burden

As a force supplier to US Strategic Command and regional combatant commanders worldwide, Air Force Space Command must be responsive to warfighting needs. The driving force behind many AFSPC acquisitions, said Maj. Gen. Roosevelt Mercer Jr., is the need to provide greater persistence over the battlefield.

Mercer, Space Command’s director of plans and programs, said persistence will come from a variety of future assets, such as Space Based Radar, for unblinking battlespace awareness, and the Transformational Satellite (TSAT) communications system, for sustainable connectivity.

There is a glaring need for more space-supplied bandwidth. Unmanned systems are a tremendous combat asset, officials say, but they are also bandwidth hogs.

Predator and Global Hawk UAVs, for starters, are controlled and monitored through already taxed communications systems. Beyond command and control, “even more bandwidth is required” to send the radar data and digital streaming video from these systems to the final users, noted Lt. Col. Scott Gilson, director of the AFSPC Commander’s Action Group.

“We have got to have an on-orbit communications infrastructure to handle this growing demand,” he said, because the UAVs continue to proliferate.

Systems such as TSAT and the Wideband Gap-filler System will meet the burgeoning communications demands and enable larger numbers of armed UAVs to complete their missions more efficiently, officials say.

There is also a security concern. Gilson noted that military communications satellites only provide about 40 percent of DOD’s communications needs, “with commercial carriers providing the balance.” During recent operations, 78 percent of the communications capability came via leased systems. The Defense Department does not want to depend on private sources for combat communications.

about the prospect of weapons in space. Leaf argues that US counterspace operations have a moral component. If the US were to allow enemies the ability to disrupt space assets, this lapse would come at a cost. Battles would still be fought, he said, but they would likely last longer, be more destructive, and result in more deaths of US and enemy troops alike.

"Somebody is betting [American lives] on space capabilities right now," Leaf said.

He went on to say that counterspace operations should be temporary, reversible, and conducted to avoid collateral damage. Once those factors have been put into the equation, he said, then "shame on us if we don't do it."

In the past, space operators had an unhealthy tendency to get tunnel vision with regard to their particular machine. Space Command is pushing hard to get its space professionals to think like warfighters.

"Our guys have got to get their heads up" out of their space operations centers, said Col. Kevin McLaughlin, commander of the 50th Operations Group at Schriever. Even in an era of reachback and distributed operations, it is hard for space professionals to see and appreciate the combat effects they provide.

Getting job satisfaction can be difficult, said MSgt. George P. Davlis, superintendent of the 22nd Space Operations Squadron. Opera-

tors "don't see the results" of what they do, Pavlis said. Airmen in the space field often get more information about combat effects from CNN than they do from official sources.

Here Are the Results

Consequently, Schriever began hosting "warfighter talks" for its space operators. The base brings in the end users to speak about what they've done in combat and what role space capabilities have played in the mission. McLaughlin said speakers who came to Colorado to "tie it to reality" have included an Apache helicopter pilot and an Army Special Forces soldier who fought the Taliban in Afghanistan.

Operators have also become more tactical in their approach to their jobs.

McLaughlin said that, throughout OIF, GPS accuracy was routinely better than 10 feet because of the actions taken by space operators. Typically, the GPS constellation is uploaded with fresh navigation data once a day, he explained. But for OIF, the data were uploaded each time a satellite was about to go over the combat theater.

Officials also laud the space community's creativity in devising new ways to meet warfighter requirements. The infrared DSP satellites, for example, were originally designed to detect the hot plumes of launched Soviet ICBMs, but DSP has also been used to monitor tacti-

cal missile launches since the 1991 Gulf War.

Creative thinking has "transformed the systems on board [the DSP satellites] for tactical coverage," said Lt. Col. Scott Gilson, director of the AFSPC Commander's Action Group. A fact sheet notes that upgrades enable the 1970s-vintage DSP spacecraft to "provide accurate, reliable data in the face of tougher requirements such as greater numbers of targets, smaller targets, and advanced countermeasures."

Space Command is now trying to institutionalize the warrior mentality through professional development. The Space Commission, led by Defense Secretary Donald H. Rumsfeld before he returned to the Pentagon, was critical of DOD's space community in its 2001 final report.

The commission found the US military had a weak space culture that lacked focus, and that not enough personnel had experience with both space operations and acquisition.

Space Command is addressing these concerns by building a new community of space developers and operators with focused experience.

The community has intermittently been called the "space cadre," a term that officials say will probably not stick. "Cadre" implies a temporary or initial group, and officials are adamant that a space corps or space service, separate from the Air Force, is not necessary at this time.

This community will consist primarily of space scientists, acquisition officials, and operators who will follow a tailored career path to include courses on how space fits into warfare.

Hutto, AFSPC's force development chief, said improvements over traditional space career paths include an operational exchange program that will move officials between operational and acquisition assignments, giving them a broad understanding of the entire command's mission.

The increasing space presence in operations centers and at unified commands also pays dividends, officials say, as it teaches space operators valuable tactical lessons that are useful when brought back to traditional space assignments. The payoff, already large, is sure to grow in the years just ahead. ■



For Operation Iraqi Freedom, the 379th Expeditionary Communications Squadron set up these satellite dishes. Gen. Lance Lord, commander of Air Force Space Command, says the war to control space has already begun.

USAF photo by SSgt. Suzanne M. Jenkins

The FB-22 is a leading candidate to fulfill USAF's need for an "interim bomber."

The Raptor as Bomber

By John A. Tirpak, Executive Editor

FOR more than two years, the Air Force has been contemplating the development and fielding of a regional bomber variant of its soon-to-be-operational F/A-22 stealth fighter. This "FB-22" is now considered a leading contender to fill a 15-year technological gap between today's fleet of long-range strike aircraft and a still-undefined next generation system, which might incorporate hypersonics or other futuristic technologies.

Since it was unveiled in 2002, the FB-22 concept has evolved to where it would likely have most—though not all—of the Air Force's desired attributes for a regional bomber and do so at an acceptable cost.

Skeptics question whether the system could be delivered within the de-

sired time frame. Even Lockheed Martin, which would adapt its F/A-22 design, cautions that the timing is tight, and a go-ahead would have to be received by the end of this year to achieve the target in-service date of 2015. However, the company believes that, given a quick green light, it can get the airplane—which it sees as the lowest-risk, best value near-term option—on the ramp on time.

The Air Force's now-defunct Bomber Roadmap envisioned waiting until the late 2030s for a next generation capability (see "Long Arm of the Air Force," October 2002, p. 28). For years, USAF forecast a long hiatus in bomber acquisition, arguing that its existing fleet of B-1B, B-2, and B-52 aircraft, with appropriate modifications and new ordnance, could do the long-range strike job

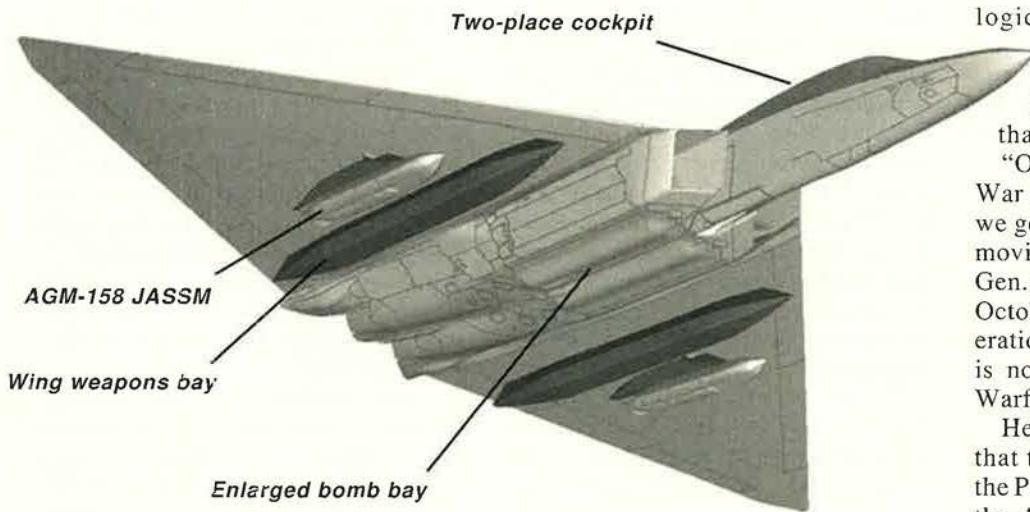


until a new system—possibly orbital, possibly hypersonic—could be acquired.

Congress Takes a Hand

Congress balked, however, at the notion that the US would go some 30 years without producing a new bomber, especially when the value of long-range and long loiter time capabilities seemed to be proved daily during operations in Afghanistan and Iraq. Money was inserted in the Fiscal 2004 defense bill to explore nearer-term possibilities for long-range strike.

The Air Force took a fresh look at the mission, in light of both the technological state of the art and the emerging types of missions needed for the Global War on Terror. It affirmed that the "techno-



logical leap” it wanted in a new long-range system was not coming any sooner than had been previously forecast. In that sense, nothing had changed. “On the other hand, as the Global War on Terror continues to evolve, we get a better sense of where we are moving ... in the future,” said Maj. Gen. Stephen M. Goldfein, who until October was USAF’s director of operational capability requirements and is now commander of USAF’s Air Warfare Center at Nellis AFB, Nev.

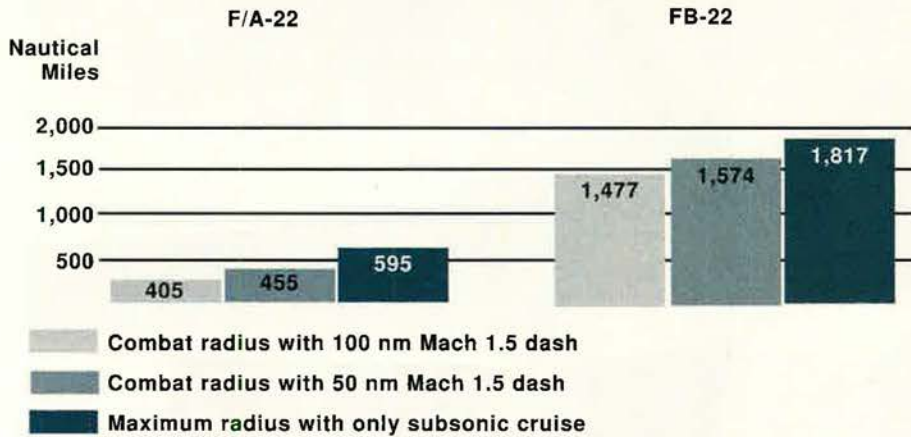
He said it has become “obvious” that to hold targets at risk and meet the Pentagon’s capability objectives, the Air Force cannot wait until the major transformational leap expected in the 2020s.

The Air Force now envisions delivering powerful close support to

The FB-22 is shown above in an artist's conception. Built around a standard F/A-22, its bigger wings and adapted engines triple the Raptor's range, while stealthy weapons-carrying wing pods and a modified bomb bay boost loadout. The variant is shown launching a Joint Air-to-Surface Standoff Missile.



The Difference in Mission Radius



ground forces that may often be deep behind enemy lines, enveloped in the heart of an enemy's air defense system. To deliver that promised punch, the Air Force will need a system with long range, a high degree of stealth, precision strike capability, and the ability to defend itself against enemy fighters, as well as the capacity to serve as a forward node in a network of intelligence-surveillance-reconnaissance systems.

In the future, that capability will likely be provided by a "system of systems," Goldfein said. The portfolio could include hypersonic cruise missiles, unmanned combat aircraft, and orbital strike systems, as well as the emerging F/A-22 and F-35 fighters and today's aircraft.

However, "we're going to have a bridge between where we are and where we might end up," Goldfein said.

Now in agreement with Congress on the need, the Air Force in April released a request for information to industry, seeking ideas for systems that could provide a rapid-action, long-range strike capability by 2015.

The responses ranged from conventionally tipped intercontinental ballistic missiles to all-new big bombers (see "Long-Range Strike in a Hurry," November 2004, p. 26). The FB-22 was among the ideas Lockheed Martin offered to the Air Force.

The service accepted the concepts and discussed them with the various companies, but has not yet specified how it will proceed. However, after receiving the pitch from Lockheed, it asked for follow-up briefings on how the company would meet performance and cost targets quoted in its response to the RFI. Lockheed briefed the Air Force F/A-22 Integrated Product Team on those details in early November.

The new FB-22 differs markedly from the one originally conceived, according to John E. Perrigo, senior manager of combat air systems for Lockheed Martin's business development branch. One major change is that it will be stealthier than the F/A-22.

"This thing will have improved stealth capabilities over any other airplane ever built," Perrigo said. The FB-22 will incorporate all the advances in low observable or stealth technology that have come since the F/A-22 design was set, roughly 12 years ago. Perrigo claimed that the FB-22 will be even stealthier than the B-2 bomber.

"It can go places other airplanes can't go. Even the B-2 can't go back there [far behind enemy lines] and survive and ... do global persistent attack."

"More Stealthy"

Compared to the F/A-22, the FB-22 will be "more stealthy, and it

needs to be, because it's going to operate in an environment where the F/A-22 may not. ... It could be down in very direct support of forces on the ground—we see that as one of its prime missions."

The FB-22 would also take advantage of a very significant breakthrough: the ability to carry stores external to the airplane but still do so in a stealthy way. On the FB-22, this takes the form of what Lockheed calls a "wing weapons bay" but which resembles a faceted pod.

The exact shape of the container is classified, and published artist's concepts will likely be intentionally inaccurate "for years," Perrigo said, but the under-wing bay can substantially add to the payload of the FB-22.

Until recently, it was believed that an aircraft could only be stealthy if it carried its weapons internally in its fuselage. The development of the stealthy pod—as well as a "stealth pylon" on which stealthy missiles can be carried—has changed that equation.

"We used to say that had to be internal, but we don't anymore," Perrigo said. He called it "low observable carriage."

Lockheed offered the Air Force six different versions of the FB-22, each one tuned to a particular set of requirements and targets. This was necessary because targets, payload, and range have yet to be defined and are still subject to trade-offs with other platforms and munitions.

However, the most likely version will feature the fuselage of the "basic" F/A-22 with few modifications. Lockheed discovered that lengthening the fuselage immediately added a 25 to 30 percent cost penalty in weight, materials, and development, Perrigo said. Instead of making the airplane longer, a very wide, fuel-carrying "wet" wing will be added, with capability for two to four of the under-wing weapons bays. The wing would be three times the size of that on the F/A-22.

With the additional internal fuel, the FB-22 could have a combat radius of about 1,800 nautical miles—more than triple that of the F/A-22.

While the F/A-22 can carry eight 250-pound Small Diameter Bombs for precision attack, the FB-22 would be able to carry at least 35. It could reach that number by using not only

the under-wing weapons bays but also the side weapons bays used for AIM-9 short-range air-to-air missiles on the basic Raptor, as well as a modified main weapons bay.

Bigger Bombs

Moreover, the FB-22 would be able to carry larger weapons. The basic Raptor is limited to bombs of no more than 1,000 pounds, but the FB-22 could carry any ordnance up to and including a 5,000-pound bunker buster, Perrigo claimed. Two 2,000-pound bombs could be carried internally in the fuselage, thanks to a bumped-out weapons bay door, he said, and two 2,000-pound bombs could be carried in each wing bay, in tandem.

Electro-optical systems will be added that could permit man-in-the-loop terminal guidance of weapons.

To save cost, the aircraft would likely not use thrust-vectoring, two-dimensional nozzles, as on the basic Raptor. However, Lockheed is working with Pratt & Whitney to offer an improved F119 engine that will deliver more power and longer range. The new engine would not be tuned to “supercruise”—flying at supersonic speed without afterburner—but would be able to dash at supersonic speed.

All told, the FB-22 would be able to carry 15,000 pounds of weapons stealthily and up to 30,000 pounds of ordnance when stealth is not necessary.

One area still in question is the Raptor’s vertical tails. Lockheed is



Artist's concept by Erik Simonson

Lockheed Martin has done preliminary work on a tailless version of the F/A-22. Although this X-44 concept has not flown, USAF will consider such a configuration for the FB-22, if costs stay within bounds.

exploring whether they are even necessary. While removing them might save money on materials and maintenance, there would be additional cost in flight-control computer code. Lockheed is continuing with trade studies to find the optimum configuration, from the perspective of cost. Lockheed has done some work on a tailless F/A-22 concept called the X-44.

“Should the customer decide that they want to take this ... as far as they can ... aerodynamically, that body of work is certainly available to us,” Perrigo noted.

James G. Roche, outgoing Secretary of the Air Force, and Gen. John P. Jumper, the Chief of Staff, both have said that they envision the “bridge” strike aircraft as not only being very long-legged and stealthy but able to defend itself against enemy fighters. The FB-22 would retain capability to carry at least two AIM-120 AMRAAM radar-guided missiles on every mission and will be able to maneuver at six Gs.

What would not have to be developed for the FB-22 as now configured would be a dramatically new set of flight-control laws and avionics, frequently the most expensive aspect of a new weapons system. It was the avionics that proved to be the pacing factor on the F/A-22.

Roche told *Air Force Magazine* that, while no decision has been made to proceed with an FB-22, the idea has great appeal versus going to a new-start program costing as much as \$40 billion.

The concept is “a heck of a lot better than designing from scratch,” Roche said.

The avionics—especially the radar, the sensor fusion, the network-centric features, and the electronic warfare equipment—is “all done. That’s all done,” Roche said.

He also believes that the FB-22—or, as he described it, “an FB-22-like thing” to avoid implying that it is already the Air Force’s preferred



Lockheed Martin artist's concept

The FB-22 (in an artist’s conception) was not stretched to increase commonality with the standard Raptor. Life cycle savings alone, compared to producing an entirely new aircraft, could amount to \$10 billion over the program’s life.



Operating behind enemy lines, the FB-22 would deliver air support to dispersed ground forces and special operations forces. It could carry more than 35 Small Diameter Bombs, shown here in a B-2 weapons bay.

option—could indeed be developed and fielded “in less than a decade.”

Wing Changes

The key physical changes, he said, will have to do with the wing. More expense would accrue if the “outer mold line changes,” but Lockheed is planning to retain the F/A-22 fuselage, so much of that cost could be avoided.

Other industry experts are not so sure. George K. Muellner, head of Boeing’s Air Force projects division and a former top uniformed USAF acquisition official, said the scope of work may not be as easy as a re-wing job.

It is “not a simple task” to convert the F/A-22 to an FB-22, he said.

Boeing is a partner with Lockheed on the F/A-22 and builds the aircraft’s wings and much of its aft fuselage. It has been suggested by some in Congress and industry that Boeing, with long experience in bombers, might take the lead on an FB-22 program, both to take advantage of its corporate knowledge and to spread some of the combat aircraft work around the industry. (After the F-15 ends production, Lockheed alone will be building strike aircraft for the Air Force.)

“Could we build it? Sure,” said Muellner. “Could Boeing take the lead? Sure,” he added.

He insisted, however, that the FB-22 is “not a quick solution” to the interim strike problem, and “we shouldn’t kid ourselves” that such a

variant project would be anything other than “difficult.”

In obtaining stealth, shaping of the aircraft is the key, Muellner said. To be stealthy, an airplane’s angles have to match up in such a way as to present minimal radar reflection in certain directions. The much larger wing of the FB-22, he said, would have a different angle of sweep, “optimized for long range.”

“It would not be like starting from scratch,” but the technical challenges would be formidable, Muellner asserted. He estimated that it might take until “2025, maybe a little ear-

lier” to field such a capability, by which time the longer-term solution might be at hand. He based his estimate on the time it took to develop the B-2 and the F/A-22, taking into account both the technical difficulties as well as the funding ups and downs suffered by each of those programs.

“The question becomes, What do you really want?” Muellner said. He noted that the Defense Science Board last year determined that the Air Force “probably has adequate platforms ... for the next 10 to 15 years,” given new munitions to keep up with requirements.

Perrigo, however, said that Lockheed is convinced that the re-winging will not disrupt the stealthy aspects of the aircraft and that the company has done considerable wind-tunnel work to satisfy itself that the larger wing will be stable and strong enough, given a few reinforcements at certain stress “hot spots.” He also noted that Boeing, while a partner on the F/A-22, is also the prime contractor for the B-1B and B-52 and stands most to benefit from the Air Force’s reliance on those airplanes for long-range strike.

Two in the Cockpit

Lockheed believes the Air Force will want a two-seat FB-22. The second seat would accommodate a second pilot, who could relieve the front seater on long missions—the aircraft could be flying 15 hours or



The FB-22 could use the avionics and upgrades developed for the F/A-22—an enormous savings of time and money. Above, an F/A-22 finishes up operational testing with an F-16C chase airplane over Nellis AFB, Nev.

more—or take up additional duties with targeting. Lockheed did basic work on a two-seat F/A-22 early in the program, before the second-seat option was canceled to save money, so elaborate stealth refinement of an extended forward fuselage will not be necessary.

Indeed, except for the “60-inch plug” needed for the second crew station, the forward fuselage will not change, Perrigo said. The plug will also provide new room for expanded avionics or fuel. However, the aircraft will not carry a gun.

While Lockheed declined to be specific about the cost of an FB-22 program—the figures are proprietary—Perrigo asserted that the FB-22 could be had for less than twice the cost of an F/A-22.

He also said, “We’re one-fourth or less of any new-start program” and estimated that a new bomber program could cost \$30 billion to \$40 billion.

Because of commonality with the basic Raptor and its engines, Lockheed believes that the FB-22 would represent a savings of “over \$10 billion, over a 20-year period, in logistics costs alone,” Perrigo maintained. That savings would be over and above the cost avoidance of a new-start aircraft.

The Air Force has asked for cost information given a 150-aircraft fleet, or about two wings’ worth of aircraft.

Given a go-ahead in 2005, Perrigo said that Lockheed could get a prototype flying in short order, especially if the Air Force would let the company use an engineering and manufacturing development F/A-22 aircraft as a test airplane. Several test Raptors will not be converted for operational use and could be the basis for a concept demonstrator, should the service wish further risk reduction.

The Computer Version

At the Air Force Association’s national conference in September, Roche told reporters that the service has performed computer modeling and simulation of a notional medium-range bomber.

The aircraft, he said, had “the following characteristics. ... One is, it goes equal to or farther than the B-2, so, say 2,500 miles; it has the capability to fight so as to put stealth in



Lockheed Martin artist's concept

With missions of more than 15 hours, the FB-22 likely would have a two-pilot cockpit. The second pilot could spell the front seater and handle weapons management, as well as other missions.

the daytime; ... it probably goes fast when you want it to go fast and can fight back when it has to fight back.” The notional aircraft would also have “highly accurate” munitions, able to attack deeply buried or hardened targets, and be able to “sense and to attack moving targets.” It would be able to support the Air Force’s intention to support US ground forces deep behind enemy lines and loiter in the battle area.

“Some number of those—to augment the existing long-range strike fleet and as a transition to something [further out]—seemed to make sense,” Roche said. Monies appropriated by Congress to pursue a long-range strike aircraft “are to flesh that out and start to get concepts that fit along those lines.”

The FB-22 would fulfill all of those attributes except the range. The FB-22, at 1,800 miles combat radius, would be 700 miles short of the desired operating range. The only stealthy aircraft today to meet the 2,500-mile target is the B-2, which is very large, with capacious fuel tanks and extremely benign aerodynamics.

Perrigo said the 2,500-mile target is not out of the question, but would require substantially more work than the best value option Lockheed feels meets the broadest part of the Air Force requirement. “We don’t want to challenge ourselves too much because cost and value is clearly on the customer’s mind,” he added. Still,

“we haven’t eliminated anything. ... If money’s no problem, we can do it.” However, achieving it by 2015 would be less certain, he said.

Given the notional FB-22 described, “we think you can reach out and touch 98 to 99 percent of all required target sets for all the government scenarios with this airplane,” Perrigo asserted.

To get to the 2015 initial operational capability, Lockheed envisions starting production around 2011. There would be about an 18-month overlap with production of the F/A-22.

The “baseline” avionics of the FB-22 would be the “Spiral 5” set of improvements for the basic Raptor, which would include “the latest generation radar, the side arrays, all the new things that the F/A-22 will have,” Perrigo said.

“We feel it’s very achievable by 2015,” he said. “We feel very comfortable saying that.”

Jumper cautioned that the Air Force really doesn’t know yet whether an “FB-22-like thing,” as Roche described it, is the right way to go.

“Until we know what the material solutions are” that will be the long-term answer to long-range strike, “then we don’t know how much of a midterm solution we really need.”

He added, however, “I personally believe we’re going to need a midterm solution. ... But how many of these, and when, we still have to be able to work into our [budget planning] process.” ■

Unity of command—a long-held principle of war—was an early casualty in Vietnam.

DISUNITY OF COMMAND

By John T. Correll

In the Vietnam War, the lines of control went in all sorts of directions.

When US fighters from bases in Thailand were in the air, they belonged to 7th Air Force in Saigon. When they were on the ground, they belonged to 13th Air Force in the Philippines.

Day to day, they were part of 7th/13th Air Force at Udorn, whose commander was actually a deputy commander of both 7th and 13th Air Forces.

And that was just one organizational oddity in a war that was full of them. Unity of command—a basic principle of war since Napoleon's time—was an early casualty in Southeast Asia.

The impact was greatest on the air war.

- Seventh Air Force, which controlled all of the USAF fighters in Vietnam and Thailand, itself had two bosses. When operating in South Vietnam, it reported to Military Assistance Command Vietnam (MACV). But for operations in North Vietnam, it reported to US Pacific Command, via Pacific Air Forces in Honolulu—except in the case of Route Pack 1, the southernmost part of North Vietnam, which was regarded as the extended domain of MACV.

- Seventh Air Force did not fully control the war in North Vietnam. Navy aircraft from Task Force 77 in the Tonkin Gulf flying against North Vietnam operated separately and reported to Pacific Fleet.

- Until 1968, the land-based Marine Corps fighters in South Vietnam were controlled by the Marine commander on the ground, not by the 7th Air Force commander, who was MACV's deputy for air operations.

- Strategic Air Command kept control throughout the war of B-52 bombers operating in both North and South Vietnam.

- Air operations in Laos were controlled by US Pacific Command, except in southern Laos, which was considered an extension of the battle in South Vietnam and thus controlled by MACV. However, air strikes and targets in Laos had to be approved by the US ambassador to Laos.

- In addition, Air America flew combat missions in Southeast Asia under the separate auspices of the Central Intelligence Agency.

What Kind of War?

The obvious alternative to this convoluted arrangement would have been a theater unified command with land, air, and sea components.

In fact, just such an organization was proposed. It would have been called the US Southeast Asia Command, with headquarters at Korat, Thailand, and reporting directly to the Joint Chiefs of Staff.

However, US Pacific Command in Hawaii, in whose area of responsibility Southeast Asia lay, was firmly opposed. It wanted to keep control, with the air war in North Vietnam being fought by two PACOM com-

ponent commands, Pacific Air Forces and Pacific Fleet, and with another subordinate command, MACV, running the war in the south. As for MACV's air arm, 7th Air Force, sometimes it would report to MACV and sometimes it wouldn't.

In part, this fragmentation was the result of roles and missions maneuvering by the various commands and services, but there were other reasons for it as well.

In the early 1960s, the Cold War was at its peak. The conflict in Vietnam was secondary to the confrontation with the Soviet Union. The biggest concern in the Far East was China. Military leaders were reluctant to drop their existing command arrangements to focus on the lesser threat in Vietnam.

In any case, Vietnam was not expected to amount to that much. In 1961, the Joint Chiefs of Staff estimated that it would take no more than 40,000 US troops to "clean up" the Viet Cong threat.

The prevailing wisdom, expressed in advice to President John F. Kennedy from Gen. Douglas MacArthur, was that the United States should not become involved in a ground war in Southeast Asia.

What actually happened was mission creep. American forces went to Vietnam to provide advice and training. That escalated gradually into a combat role and then into war. US ground forces were initially introduced to protect the air base at Da Nang. Before long, the relationship

2.8 million tons and over 11 million passengers. It's remarkable that, when we did the swap-out of the Army between phases of the current operation, we swapped out more than 250,000 soldiers in a very short period of time, and, quite frankly, nobody knows [about it]. It was a seamless operation, and I'm very proud of that."

Future Total Force Missions

"Our Future Total Force [initiative] will look at our Air National Guard and our Air Force Reserve and get them into the modern missions that define contingency operations today. ... We'll do this with a plan to inaugurate associate units that associate National Guard and Air Force Reserve units with active units, in there working with them every day to take advantage of the manpower in more efficient ways."

No ANG Reductions

"There's nothing in any of our plans that reduces the manpower of the Air National Guard. That's point No. 1. We will be asking the Air National Guard to transition into the more modern missions, along with the active duty. These more modern missions will include different things, like space operations, information operations, command and control, unmanned air vehicles."

Recruiting, Retention Success

"We are enjoying ... excellent results in our recruiting and our retention. As a matter of fact, one of the problems is that our end strength is more than it should be. And we'll be spending the next year working down to our authorized end strength of 360,000 active duty in our Air Force. In order to keep from breaking faith with anybody who wants to stay in the Air Force, we're going to take this mostly out of our initial recruiting. We have a plan to do that, and I think it's going to work. I do not want to kick any airman out of the Air Force who wants to stay."

F/A-22 for the World Environment

"We've seen around the world the continued manufacture of highly technical surface-to-air missile systems and highly technical aircraft—still being produced, still being delivered around the world. We have taken pride in the fact that our F/A-22 program is now emerging from the test phase and into production phase with magnificent results. And we will look forward to getting that deployed [for use when USAF must] go into contested airspace in the future."

Raptor Program on Track

"With regard to the F/A-22, we [are] in the final phases of the operational test and evaluation. It is unbelievable the results that we have gotten. ... The [program] is on track for the deployment to Langley [in 2005]. And, as you know, the facilities are being built, and we look forward to activating that first operational squadron."

Ubiquitous UAVs

"There are some 450 unmanned air vehicles over there [in the Gulf theater] right now. ... We have seen great progress in integrating those with our bomber forces and our kinetic forces and even weapons that are carried on the UAVs themselves."



Old Aircraft, Ridden Hard

"When I came into the Air Force, the average age of our fleet in the Air Force was about eight years. Today that is 23 years, and if we do everything that's in our program, that will grow to 26 years—the average age of our aircraft. It's not unknown to this committee what those problems are. ... Just taking our tanker fleet alone, we've increased the flying time of our tanker fleet by some 33 percent, just since 9/11. And we are working ways to try and work that average age down."

Cost of Operations

"Our current monthly burn rate in the ongoing operation [in Iraq] is about \$800 million. ... As we look out to the future, it's hard to get the exact estimates, and we're still working on the categories of modifications, vehicles, equipment, and bare base equipment that are being used up at a great rate. We have some 14,000 tents out there, set up throughout the AOR, right now, and those will last for about one season before they have to be replaced."

Blurring Lines

"The line between all strategic, operational, and tactical levels of warfare is beginning to get fuzzy. ... Assets that might be taking the picture or gathering the intelligence in one part of the world on one operation ... are the same platforms that have to be able to shift seamlessly over to help the engaged maneuver unit of soldiers or marines on the ground with their current fight. You may be gathering signals intelligence or photographic intelligence with this asset, ... and then the next minute it's called over to participate in ... a firefight, with streaming video to put weapons on targets for maneuver units on the ground. It's our ability to be able to shift seamlessly back and forth between those two things that we have to pay the closest attention to, in my estimation."

The Modern Airman

"What's remarkable to me is how well these youngsters in this contemporary culture respond to leadership, to sense of mission, and take pride in being a part of something that's bigger than they are. And when you go over there and talk to them, it's all about those higher-order values that they cherish—and thus this sense of mission and their dedication to complete this mission." ■

Harold Watson's "Whizzers" went hunting for German jets—and came back with several jewels.

Operation Lusty

THE Me-262 fighter's Mk 108 cannon roared, and a single 30 mm "Mine-Shell" high-explosive round struck the waist of a B-24 bomber. The thin-walled projectile detonated on impact, spraying stainless steel shards in a circular pattern through the Liberator's fuselage. This single deadly hit nearly sliced off the bomber's tail and effectively destroyed the aircraft.

The B-24 did not die under the guns of an Me-262 in the skies over Europe, however. It happened at the weapons test range at Wright Field, Ohio, thanks to the efforts of "Watson's Whizzers," an Army Air Forces intelligence team that went to Europe to seize enemy systems and technology.

The Messerschmitt fighter was in the United States because scientific and technical intelligence personnel put their lives on the line to obtain it and others in the field, make it flyable, and bring it home for testing.

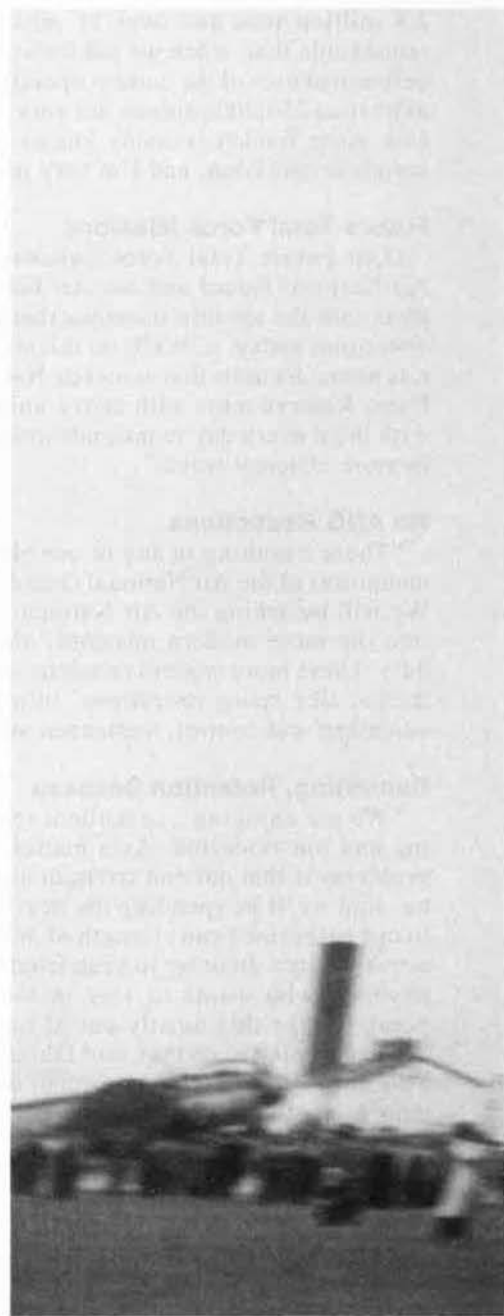
Led by AAF Col. Harold E. Watson, the Air Technical Intelligence (ATI) group brought the dreaded Me-262 jet fighter with its swept wings, axial-flow compressor turbojet engines, and 30 mm cannons—along with other technological secrets—to the United States when World War II ended in the European theater.

With the jet age in its infancy and the Germans enjoying a head start in fielding the technology, obtaining working Me-262s was a coup.

Black Lists

After the D-Day invasion of June 1944, ATI teams scoured the European countryside, searching for en-

By Robert L. Young



This 1946 photo shows one of the Me-262 jet fighters, brought back by Watson's Whizzers, in a low pass over Freeman Field, Ind.



emy aircraft and related equipment. They worked from master intelligence manifests known as “Black Lists.”

When the fighting in Europe stopped in May 1945, the ATI effort intensified. The Americans were only too aware that advanced German technology, including documentation, had to be obtained quickly, before it was destroyed or seized by other countries—especially the Soviet Union.

The project went by the code name Lusty (for Luftwaffe secret technology). The effort required small teams of highly skilled maintenance troops and pilots. It was up to them to find

and acquire the revolutionary German aircraft, make them flyable, and deliver them to seaports for the trip to the United States. One of Watson’s teams went after propeller-driven aircraft. The Whizzers went after jets.

The job of commanding teams headed across Europe spread him thin, so Watson relied heavily on 1st Lt. Robert C. Strobell to carry out the acquisition of the Me-262 fighter.

Watson worked closely with Strobell, who was based at 1st Tactical Air Force (Provisional) headquarters at Vital, France. A P-47 pilot with the 353rd Fighter Group, Strobell was an experienced airman with

79 missions and a Bf-109 kill to his credit.

The Me-262 acquisition started simply enough. Watson walked into Strobell’s office, gave him a small amount of technical data, and ordered him to proceed to Lechfeld, Germany, to obtain as many Me-262s as possible.

Of course, Strobell would also have to train US pilots and maintenance troops to handle the jet, but the good news was there were some German pilots and technicians left at the field to help him out (the Messerschmitt factory was nearby). Given the fact that the war in Europe had just ended, the thought of working with Ger-

mans was hardly comforting. The American troops called upon to trust them with their lives still thought of Germans as the enemy.

Watson selected a team of volunteer US P-47 fighter pilots to learn how to fly the Me-262. None of the pilots had any jet time whatsoever. Most had never even seen a jet.

Pilots selected to fly the Me-262s were Capt. Kenneth E. Dahlstrom, Capt. Fred L. Hillis, 1st Lt. Robert J. Anspach, 1st Lt. William V. Haynes, 1st Lt. Roy W. Brown Jr., 1st Lt. James K. Holt, and Strobell.

Meanwhile, TSgts. Noel D. Moon and Ernest C. Parker and SSgts. John G. Gilson, Donald J. Wilcoxon, Archie E. Bloomer, Everet T. Box, Charles L. Taylor, Robert H. Moore, and Charles A. Barr made the project possible. The crew chiefs made the enemy aircraft flyable despite having to work on a foreign field with no technical information. It had been destroyed by German forces.

The 54th Air Disarmament Squadron was the first to arrive at Lechfeld, home of the Me-262s. Squadron members had their work cut out for them. Normally responsible for getting rid of German weaponry, they were put in charge of collecting and resurrecting some of the very items they were charged with eliminating. Unit personnel were billeted in Augsburg at the Messerschmitt Aircraft Co. From there, they would travel to Lechfeld each day to sift

Watson's Free Reign

Col. Harold E. Watson was the classic pilot-leader who wholeheartedly took on the challenge of bringing Nazi Germany's finest aircraft home for study.

After serving as a test pilot and earning a master's degree in aeronautical engineering from the University of Michigan, he was then assigned to US Strategic Air Forces in Europe as 1st Tactical Air Force director of maintenance. He received a Bronze Star there after increasing the number of operational aircraft by 18 percent in three months.

He was needed elsewhere. Because of his technical education, flight test experience, and sheer guts, Watson was sent to Wright Field, Ohio, to work for Air Technical Intelligence near the end of the war.

He was given free reign to ensure that Operation Lusty, the search for advanced German aviation technology, was successful. Watson carried a card issued by the Supreme Allied Commander, Gen. Dwight D. Eisenhower. It stated, "The bearer of this card will not be interfered with in the performance of his duty by the military police or any other military organization."

That was all Watson could have hoped for. His teams took advantage of this leverage and trolled the European countryside for intelligence treasures.

Watson took on the dangerous job of flight-testing unfamiliar and sometimes poorly built and maintained aircraft, and by the end of the war, he was constantly flying potentially deadly aircraft.

His flight records included time in the Bf-109, FW-190, He-177, Ju-388, and Ju-290 and jets such as the Me-262 and Ar-234.

through wrecked and damaged aircraft.

Booby Traps

There were 15 Me-262s, more or less, to turn over to Watson's pilots and crew chiefs. The process had to be conducted carefully, for booby traps were found, and several Me-262s had explosive devices in the cockpits.

The 54th personnel did not have to start totally from scratch: One flying Me-262 arrived at Lechfeld just be-

fore the war ended in Europe. The pilot surrendered to the 54th ADS personnel, already on scene, who enjoyed the sight of a heavily armed German pilot giving up without a fight.

Two English-speaking German test pilots also proved invaluable to the Whizzers. Ludwig Hofmann (dubbed "Willie") and Karl Baur (called "Pete"), both from Messerschmitt, taught the young Americans to fly the exotic jet.

Hofmann knew Charles A. Lindbergh from prewar encounters and had earned a reputation in Germany for fearlessly flying anything required of him.

Baur was equally competent, serving as the chief Messerschmitt test pilot. The Whizzers did not spend much time with Baur, as Watson took Baur with him on other flight test missions for captured aircraft.

The handful of German pilots and maintenance technicians had various reasons for cooperating. One was that it was a paying job. In postwar Germany, working 48 hours a week for the Americans was better than most Germans could hope for. And in one case, a Luftwaffe pilot was given the choice of flying with the Whizzers or going to prison camp.

The jet surrendered by the German pilot at Lechfeld is now on display at the Smithsonian's National Air and Space Museum. Marked with 49 kills (42 Soviet, five B-17s,



The Me-262s used a nose-mounted Mk 108 cannon, firing 30 mm high-explosive shells that proved deadly to Allied bombers. Shown above is an Me-262 with a 50 mm nose-mounted cannon, under development before war's end.

a P-47, and P-51), this fighter became known as *Dennis* when MSgt. Eugene Freiburger of the 54th named the jet after his son.

Thus began a tradition with the 54th personnel, who inspired the pilots that followed them into the Me-262s to again rename the jets to suit their own desires. The Whizzer pilot of *Dennis*, Holt, renamed it *Ginny H.* after his fiancée.

Another intact aircraft arrived on May 16, courtesy of Baur, who ferried it from Rhein-Main Air Base, where ATI personnel had located it in operational condition. The *Beverly Ann* was subsequently renamed *Screamin' Meemie* (for its noise) and today can be seen at the National Museum of the US Air Force in Dayton, Ohio.

The 54th also found an original factory trainer aircraft at Lechfeld still in a flyable state. After serving



German aircraft line the deck of HMS Reaper on their way to the US. Once in America, they were ferried to Wright Field, Ohio, and Freeman Field, Ind., where they underwent extensive testing.



Members of the 54th Air Disarmament Squadron named the Me-262s while the jets were under their care. In turn, Watson's Whizzers would change the names. Above, airmen inspect some 262s with their American names visible.

the American pilots faithfully, this Messerschmitt, nicknamed *Vera*, ultimately ended up at NAS Willow Grove, Pa., where it can be seen today. Thus, the first three aircraft acquired by the Whizzers remain on display to this day.

Out With the Old

The majority of the team's aircraft, however, came from the efforts of the 54th, which built most of the jets from an odd collection of parts obtained from the wrecks at Lechfeld. Another task for the 54th

was insignia. The Nazi swastikas and crosses had to go. These were US jets now and needed to wear AAF insignia.

Watson trusted Strobell to lead the way in getting the pilots and ground crew trained and into the air. A nonflyable Me-262 came in handy as a training tool; the Messerschmitt people used it to teach maintenance and flight procedures. They tied the jet down and ran up its one good engine to provide a feel for this unfamiliar form of propulsion.

This ground tester also helped the

recovery team learn German instrumentation and starting procedures. To make their complicated challenge more manageable, each of the enlisted maintenance troops tried to specialize in a different aspect of the aircraft's components.

The 54th always had to scrounge for aviation fuel and ended up collecting all the diesel fuel it could get its hands on. When JP-1 could not be found, diesel worked as an alternate. (Army drivers had to watch their trucks or lose fuel in the name of intelligence.)

The team proceeded to overhaul all nine Lechfeld aircraft that ultimately made the cut for recovery to the United States. The first one completed became the Air Force museum's bird.

The Whizzers for the most part learned to fly the aircraft by getting checked out in the two-seat *Vera* on June 9. (See "Who Was First To Fly This Jet?" p. 66.) This checkout was extremely brief, yet seven minutes of in-flight instruction would be sufficient for these pilots to get the feel for the Messerschmitt. The next day, they took an Me-262 up solo for the ferry leg to Melun, France.

The morning of the 10th saw nine Me-262s lined up ready for the flight to Melun. Hofmann took *Vera* to Stuttgart, then to St. Dizier, France, before proceeding to Melun.

Led by Watson, the six American pilots and Baur ferried the remaining Me-262s on the short flight to Melun. For five of the American pilots, it



Airmen tow a two-seat Me-262 out of a hangar. One two-seat trainer used by the Whizzers to learn to fly the jet fighter was dubbed Vera. That fighter today is on display at NAS Willow Grove, Pa.

was their first time to solo in a jet, and their performance was flawless.

Before the aircraft could continue to the coast, the Whizzers had to wait for a special event to take place. Gen. Carl A. "Tooney" Spaatz wanted to see the Whizzers demonstrate their newfound jet-age skills.

More than two weeks passed, and the Whizzers busied themselves collecting other German aircraft, checking out a new pilot, renaming their aircraft, and even coming up with the name and the emblem that history remembers them by. They finally got their chance to show off before Spaatz on June 27, 1945.

Wicked

Three jets took off to perform, but one had a landing gear problem and had to land. The other two executed high-speed passes for the general, while Strobell took this opportunity to do something none of them had done: aerobatics. His barrel roll impressed Spaatz so much he remarked to Watson, "Hal, that's a wicked aeroplane."

The next leg of the journey required the pilots to fly the jets to Cherbourg, France, so the treasures could be loaded on the British aircraft carrier HMS *Reaper*. The trips from Melun to Cherbourg began June 30 and continued through July 6. *Reaper* would deliver the ATI prizes to Newark, N.J.

On the first day, tragedy nearly claimed one of the Whizzers. One

Me-262 shed some turbine blades and crashed. German pilot Hofmann barely escaped, parachuting to safety. The other aircraft made the leg of the trip without loss, although one ended up in the wrong place when the pilot overshot Cherbourg in cloud cover and found himself too low on gas to make it to his primary destination. He landed his Me-262 safely on the Isle of Jersey.

The Whizzers got the operational Me-262s from Germany to the Cherbourg dock, where the jets were loaded onto *Reaper*, along with a number of more-traditional German propeller-driven aircraft bound for the US.

They departed France for Newark on July 19, 1945. The aircraft were then ferried to Wright Field and Freeman Field in Indiana, where much of the exploitation and testing of the foreign aircraft took place. ■

Who Was First To Fly This Jet?

After learning the basics of the aircraft, 1st Lt. Robert C. Strobell, the Me-262 recovery team coordinator in Germany, decided he ought to be the Whizzer to take the first flight. In June 1945, Strobell suggested that former Messerschmitt test pilot Karl Baur fly a local checkout mission in an Me-262 known as *Beverly Ann*.

By Jeep, he interrupted the German's return taxi and switched places with him, taking control of the aircraft himself. He let the US maintenance troops refuel the jet and proceeded to take an impromptu first jet ride.

Strobell had trouble taking off because he did not have enough ground speed and used all of the runway to get aloft. Once airborne, the leading edge slats scared him because they kept popping in and out at lower speeds, a phenomenon Americans had not yet experienced.

Strobell also learned the hard way that a jet does not slow down quickly with a decrease in throttle, and he overshot the field by 10 miles during his approach for landing. He also lowered the landing gear at excessive airspeed, and the nose wheel door popped his nose up another 20 degrees.

Other than that, his flight went well. Strobell was impressed by how smoothly the aircraft flew and how fast it was. Two of the other pilots walked up to Strobell after the flight and snapped the propellers off his Army Air Forces collar pins. He was a jet pilot now.

Col. Harold E. Watson technically preceded Strobell into the air on May 30 while on a checkout ride with Baur. Watson's records also indicate that he flew a single-seat Me-262A-1a on June 3. Strobell's flight records were destroyed later in a P-47 crash that almost killed him, so it will never be known for sure which American first soloed in the Me-262.

One thing is certain: The 54th's operations officer, Captain Ward, beat them both for the honor of the first American to fly aboard an Me-262. Ludwig Hofmann, a former Messerschmitt test pilot, took him up in the two-seat *Vera* in mid-May 1945.

Robert L. Young is the historian at the Air Force's National Air and Space Intelligence Center, Wright-Patterson AFB, Ohio. He has authored and coauthored two Air Force award-winning historical studies and published articles on foreign aircraft. This is his first article for Air Force Magazine.



Air Force Association's 21st Annual Air Warfare Symposium

**“Expeditionary Air and Space Power—
Forging the Interdependent Joint Force”**

Feb. 17-18, 2005

Wyndham Palace Hotel,
Lake Buena Vista, Fla.

The AFA Symposium

The imperative of modern airpower is now apparent as power projection forces in air and space play a pivotal role in the success of joint operations. In the ongoing war on terrorism, speed, range, flexibility, lethality, and precision—all fundamental attributes of modern airpower—will be in increasing demand by joint and combined forces. The 21st century Air and Space Expeditionary Force is here to stay. The 2005 Air Warfare Symposium will focus on integrated air war and the future of the Air Force.

Registration Fees

The symposium registration fee is \$775. There is a reduced rate of \$675 for individual AFA members and representatives from AFA Industrial Associate companies. All registrations after Feb. 11, as well as on-site, will be \$775.

Golf Tournament

AFA's Central Florida Chapter will sponsor a golf outing on Walt Disney World's Magnolia and Palm Courses on Wednesday, Feb. 16. For information, contact Jim DeRose at (407) 356-0461 or fax (407) 356-4831 or email: james.l.derosa@lmco.co.

Gala

The chapter will sponsor its 21st annual black-tie Gala on Friday, Feb. 18. The contact for this event is Tommy Harrison at tgharrison@aol.com or (407) 886-1922 or fax (407) 886-1331.

Hotel Reservations

For hotel reservations, call the Wyndham Palace Hotel at (407) 827-3333 or (877) 999-3223 or the nearby Grosvenor Hotel at (407) 828-4444 or (800) 624-4109. Mention the AFA symposium for a special rate. The deadline for reservations at both hotels is Tuesday, Jan. 10. You may inquire after that date for room availability.

Invited Speakers:

Gen. John P. Jumper
Chief of Staff, USAF

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

Gen. Lance W. Lord
Commander, Air Force Space Command

Gen. Paul V. Hester
Commander, Pacific Air Forces

Gen. James E. Cartwright, USMC
Commander, US Strategic Command

Lt. Gen. Ronald E. Keys
Deputy Chief of Staff for Air and Space Operations,
HQ/USAF

For Military/DOD/Industry inquiries, please contact Barbara Coffey at (703) 247-5805, email: bcoffey@aia.org.

Standards of Conduct

"The Department of Defense finds that the business portions of this event meet the minimum regulatory standard for official attendance by DOD employees. This finding does not constitute a blanket approval or endorsement for attendance. Individual DOD component commands or organizations are responsible for approving or disapproving official attendance of their DOD employees based on mission requirements and DOD regulations. The propriety of attendance by DOD employees in their personal capacities and incidental social portions of this event shall be determined by the individual DOD employee's ethics counselor based on standards of conduct and community relations requirements."

He built Bomber Command into a mighty force, but his reputation has suffered.

Bomber Harris

By Rebecca Grant

IN THE gallery of controversial Western military airmen, a few names truly stand out. At the top of this list is Bomber Harris.

Sir Arthur Travers Harris, Marshal of the Royal Air Force, was the head of RAF Bomber Command in the period 1942 through 1945. During that time, the RAF dropped almost a million tons of bombs. Half fell on German cities.

Harris is forever linked with images of the destruction of German cultural landmarks. His outspoken advocacy of razing German cities and winning the war with bomber offensives made him a polarizing public figure even during that all-out, no-holds-barred fight to the finish.

Those World War II exploits have echoed far beyond 1945. When admirers erected a statue of Harris in London in 1992, mobs of protesters took to the streets in both Britain and Germany.

The fact that Harris was a stern wartime commander only added to his reputation.

"Harris was incapable of deploying guile, diplomacy, or charm as weapons in his armory, and his approach was always direct to the point of rudeness," said Sebastian Cox, who edited Harris' long-classified post-war *Despatch* for publication in 1995.

No one doubts that Harris was hard to take, but one cannot give a fair assessment without putting his actions in the proper context. His night-



RAF Air Marshal Harris and Royal Navy officials go over plans to use RAF bombers to drop mines. Bomber Harris is at the top of the list of controversial World War II airmen.

fighting fleets overcame poor equipment and training and pioneered such essentials of modern warfare as electronic countermeasures (ECM).

On the other hand, Harris also opposed the diversion of airpower to support the Normandy invasion, downplayed the need to bomb the German V-2 missile sites, and supported wide-area bombing of German cities with high explosives and incendiaries right through to the end of the war.

In a New Light

Harris' record is worth a reconsideration, however. For one thing, he faced major challenges building up the kind of Bomber Command that could produce such impressive opera-

tional results—including surprisingly effective support for land force operations in the last year of the war. Perhaps no airman had ever been given a more difficult job: to create from scarce resources a bomber force that would be the one sure means of taking the war directly to Nazi Germany. That was Harris' task from 1942 to 1945.

Harris was born in Cheltenham in 1892. His father was a civil servant in India. His mother was the daughter of an Army physician in Madras. Harris lived five years with his parents in India and then was sent to school in England. At age 18, he left school to make his career in Rhodesia. When Harris arrived in 1910, the British colony was rapidly expanding. Harris spent four

years working on farms until, in 1914, general war broke out in Europe.

Harris shipped out for the World War with a Rhodesian regiment, but, through an uncle, found his way into the Royal Flying Corps. Two weeks in the cockpit won him a pilot's license and an officer's appointment. Ten more hours of flying time at Upavon, over a two-month period, earned him full qualification in January 1916 and an assignment to the air base at Northolt to learn night flying against German Zeppelins.

The young Harris thrived in the dangerous night-flying environment. By September 1916, he was in command of a fighter squadron headed for France. However, 1916 was a difficult time for British aviators facing superior German Fokker monoplanes and pilots. By October 1916, Harris was on his way back home with a broken arm, an injury suffered during a crash landing.

He returned to the front in the summer of 1917 in time for the muddy stalemates at Passchendaele and Ypres. Harris became an ace that summer. Dogfighting over the trench lines left him with the impression that "if another war did occur, there must surely be a better way to fight it," according to recent Harris biographer Henry Probert.

Assignments in India, Iraq, Egypt, and on the Air Ministry staff followed. In the late 1930s, Harris made several trips to America in a liaison capacity and met Henry H. "Hap" Arnold, Ira C. Eaker, and other senior air leaders. He took charge of RAF 5 Group in September 1939, at the outset of World War II, and spent the war's first year improving the operational status of his bomber squadrons.

Harris set up formal training units, harped on maintenance, and chided RAF Fighter Command for its tendency to inadvertently shoot at friendly bombers.

In November 1940, he became deputy chief of the air staff, but he soon was off to Washington again, this time as head of the RAF delegation buying aircraft and arranging pilot training. He arrived in June 1941 and 10 days later found himself conferring with President Franklin D. Roosevelt at the White House after Nazi Germany, on June 22, invaded the Soviet Union.



Photo By Central Press/Getty Images

Harris visits with airmen at one of his units in 1943. He overcame major challenges to build Bomber Command into a force that could take the war to Nazi Germany.

In Washington, Harris befriended not only national leaders such as Roosevelt and Gen. George C. Marshall but also airmen such as Adm. John H. Towers, who offered a training facility in Florida for British pilots, and Jacqueline Cochrane, who volunteered her services as a ferry pilot.

"Where We Start"

Harris and his wife were in Washington when a shocked America received word of imperial Japan's sneak attack on Pearl Harbor. Harris resisted the pleas of Secretary of War Henry L. Stimson to cancel some RAF contracts and divert the materiel to US armed forces. When Assistant Secretary for Air Robert A. Lovett pointed out that the US Pacific Fleet was in dire straits, Harris had a calm reply: "So what?" A few days later, after hearing more grim news, he would simply say to Lovett, "This is where we start."

In February 1942, Harris returned to England as head of RAF Bomber Command. It was not a formidable force. Far from it. "During the early months of the war," Harris wrote in *Despatch*, "Bomber Command activities were limited to spasmodic attacks on enemy shipping on certain naval installations, and no strategic bombing of German targets took place."

An August 1941 report to Prime Minister Winston Churchill's War Cabinet used starker terms to criti-

cize Bomber Command's performance to that point. Only one in every three bomber sorties produced attacks coming within five miles of the target, and many bombers were simply dropping their strings in the open countryside. Bomber Command in 1942 had on its books only 51 squadrons of about 20 bombers each. Moreover, 27 percent of the fleet was nonoperational due to re-equipping. (By spring 1945, Harris would have 108 squadrons with a nonoperational rate of less than one percent.)

Most of Bomber Command's aircraft were ill-suited for carrying heavy ordnance loads on deep raids. Harris counted 378 serviceable aircraft with crews, of which 69 were heavy bombers. Not a single Lancaster—the four-engine mainstay of the later war years—was yet on operational status.

Bomber Command competed for resources with Fighter Command, always far ahead in procurement priorities, and Coastal Command, which had bomber squadrons dedicated to English Channel activity and to the guarding of sea-lanes. Even so, Bomber Command was obligated to carrying out the sea mining mission. Harris backed it, but the mission ate into the forces he could assemble to attack Germany.

It took a while for his new command to make its mark.

Harris' own postwar report put Bomber Command's 1942 accuracy against German cities (Berlin ex-

cluded) at an average of just 33 percent. Only fair-weather raids counted—and “accuracy” was defined as bomb release within three miles of the aim point.

Bomber Command, despite shortcomings, was essential to Britain’s war. In early 1942, the only thing grimmer than the feeble status of RAF Bomber Command was Britain’s strategic position. It was still waging a war of national survival. The triumphs in North Africa were months away, and the Normandy invasion was more than two years in the future. Britain had no means of taking the war to Germany itself except for long-range bombing. With the Russians losing ground in the east, mounting stronger bomber offensives was also the only thing Britain could do to aid its new Soviet ally. The strategic, political, and moral climate called for action.

Born in the Blitz

With its prosecution of the Blitz against England, Germany already had set the precedent for all-out war. London was ablaze for 76 nights in a row in the fall of 1940. Churchill called for “an absolutely devastating, exterminating attack by very heavy bombers from this country upon the Nazi homeland.” In 1941, Britain approved Air Staff policy that the RAF would seek to make German towns “physically uninhabitable” and to keep people “conscious of constant personal danger.”

To Harris, Bomber Command was “the only means at the disposal of the Allies for striking at Germany itself and, as such, stood out as the central point in the Allied offensive strategy.”

First, however, he had to conduct what he later called “a complete revolution in the employment no less than in the composition of the bomber force.”

His most powerful ally in the quest to build up Bomber Command was none other than Churchill. By this time, the Prime Minister was warning the Air Staff not to place “unbounded confidence” in any one means of attack, but Churchill believed bombing Germany was “the

most potent method of impairing the enemy’s morale we can use at the present time.”

Churchill was fond of inviting commanders to late-night dinners throughout the war. Harris used the social opportunities to build Churchill’s trust, but he shrewdly condensed important war business and lobbying for bomber procurement into memoranda known as “minutes” so that Churchill could review and act on them.

At Bomber Command’s High Wycombe headquarters, Harris proved quite the host to numerous visitors—up to and including the King. He kept his American contacts close—so close that Eaker, commander of

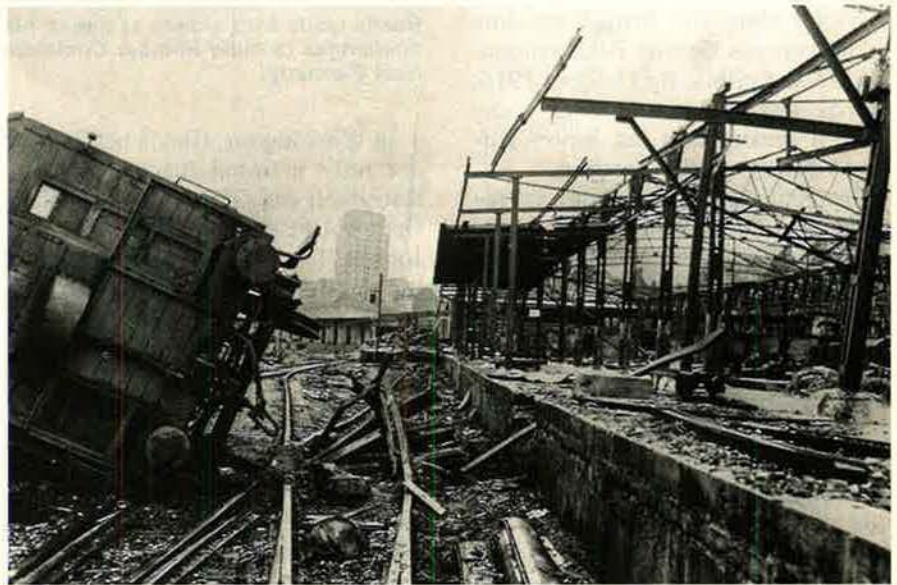


Photo at top shows how successive RAF and US bomber strikes wrecked the vital Nazi rail center in Cologne. Above, Bomber Command aircrews stream across an RAF airfield after a successful raid on Berlin.

Eighth Air Force, was a houseguest of the Harrises for several months.

Harris was at heart an operational commander. He was briefed every morning on results and crew losses from the previous night’s raids, and his main daily task was overall command of the bomber formations. Weather in England varied so much that targets often were not confirmed until late morning for a launch later that night. Harris’ routine was to select targets and then leave remaining operational details to deputies, who would brief him on final plans for the raids.

Harris was a field commander in every sense of the word—responsible for execution decisions as well as all administrative tasks. For most of the war, he reported directly to the US-British Combined Chiefs of Staff, a status reserved for the likes

of Eisenhower, MacArthur, and Nimitz.

No to Precision

He had the power to determine Bomber Command's tactics and strategy. Painful early experiences with precision attacks convinced him that such raids were not feasible. One example was the Augsburg raid of April 17, 1942, in which Harris sent 12 Lancaster bombers to attack a U-boat engine factory in Germany. Penetrating precision in World War II was possible, but it required daylight and extremely low-level ingress. Of the 12 Lancasters sent against the target, only five returned.

Clearly, Bomber Command could not regularly sustain nearly 60 percent attrition in every raid.

For most of 1942, Harris deliberately scaled back operations over Europe to concentrate on giving his crews better training. Moreover, 1942 and 1943 also brought a windfall of sophisticated technology. New radar navigation aids provided beam navigation and, later, electronic mapping of target areas. Among these systems, the biggest star was an item called H2S, which yielded "excellent reproduction of coastlines and inland waterways and far better resolution of towns and built-up areas, thus facilitating accurate identification," wrote Group Capt. Dudley Seward, Harris' chief radar officer at Bomber Command.

These British scientific outpourings gave Bomber Command a higher degree of reliability in target acquisition.

Still, Harris favored night bombing, because German air defenses were thick and strong. He believed in massed raids for the same reason. In his view, raids of at least 300 bombers would improve survivability by saturating radar-controlled anti-aircraft guns and German night fighters, which were equipped with cockpit radar sets. Serial raids of 700 to 800 bombers were preferred.

To Harris, city bombing was a tactical necessity with strategic payoff. He believed it "kept alive the spark of hope, and therefore of resistance, among the workers of occupied Europe." Moreover, according to *Despatch*, city bombing impeded German war production and opera-



The Americans Eaker (left) and Spaatz (center) exchange pleasantries with Harris in Britain. Harris forged close ties with American airmen, who often shared his views on airpower tactics and strategy.

tional maneuver. For example, Harris concluded that attacks on the Reich cities compelled Germany to draw back versatile anti-aircraft guns and fighters from the front and helped the Allies achieve air superiority.

Bomber Command's "main offensive" ran from March 1943 through March 1944. The "Oboe" navigation aid, with its 300-mile range, made possible the Battle of the Ruhr. US Army Air Forces picked up the day bombing missions in strength.

H2S debuted in the summer of 1943, and Bomber Command's sortie rates shot up. Still, Harris considered the H2S to be "incapable of really precise marking," meaning that, in his view, area bombing was still the only option.

At the end of July 1943, the RAF deployed Window—the first chaff ECM—during a series of heavy raids on Hamburg.

Overall, Harris was pleased. "For the first time, the command found itself in a position, under suitable conditions, to inflict severe material damage on almost any industrial center in Germany."

Errors of Judgment

When Harris had finally molded Bomber Command into an efficient organization for massed night bomber raids, he wanted to use his crews for nothing else. This led in 1943 and 1944 to errors of judgment that are hard to explain away.

One problem was his antipathy toward targeting German industry outside of the city industrial areas. To Harris, it was a piecemeal approach unlikely to yield results. "I do not believe in 'panacea' targets, e.g., oil, rubber, ball bearings," Harris wrote in April 1943. "Specializing on one such [industry] means that the enemy concentrates all his defenses, and nothing else in Germany, including morale and housing, is likely to suffer."

At least in the beginning, Harris took little interest in the planned invasion of Normandy. He resisted placing Bomber Command under Eisenhower's operational control. Along with Spaatz, Harris had doubts about whether Ike's plan to use airpower to choke and channel German movement would work. He argued that his night-bombing crews were not trained to go after railway-type targets.

Harris worried that the Allies made an "irremediable error" by "diverting our best weapon from the military function for which it has been equipped and trained to that which it cannot effectively carry out."

Allied politics and concerns over French casualties deepened the dispute. By late March, it had become so bitter that Eisenhower threatened to resign his command unless the strategic air forces came over to his control. Ultimately, they did, with both Eighth Air Force and Bomber Command chopped to Eisen-



Critics questioned the morality of city bombing, but Harris maintained that, if his command had been at full strength earlier, his bombing strategy could have ended the war without a massive land invasion.

hower from mid-April to August 1944.

Having lost the battle, Harris threw himself and his command into helping win the war, and, ultimately, he wrote with pride of Bomber Command's contributions to D-Day success. By D-Day, "all 37 of the railway centers assigned to Bomber Command had been damaged to such an extent that no further attention from heavy bombers was deemed necessary," Harris wrote.

Proud Nonetheless

In October 1945, Harris wrote, "The best indication of the success of the three months' offensive against the railways is the fact that the enemy's major reinforcements reached the battlefield too late to prevent the firm establishment of the invading armies in Normandy. When they did percolate through to the front, they found themselves operating in conditions of extreme disadvantage."

When it was all over, Eisenhower let Harris off with no hard feelings. He later wrote in his memoirs, "Even Harris, who had originally been known as the individual who wanted to win the war with bombing alone, [became] extremely proud of his membership in the Allied team."

Harris also willingly continued close support for the land campaign. Bomber Command sent 1,000 sorties to break a British deadlock with German Panzers at Caen, France, on July 18, 1944. In October, he dedi-

cated 243 of his precious Lancasters to breaching operations off the coast of the Netherlands at the Walcheren Island fortress, another thorn in the side of the Allies.

During the Battle of the Bulge in December 1944, his bombers attacked the St. Vith road junction, rerouting a German division on its way to reinforce Bastogne, Belgium. Late March 1945 found Bomber Command crews attacking railways, bridges, and enemy troop concentrations as 21st Army Group crossed the Rhine. Field Marshal Bernard L. Montgomery's message extended to Harris what he called "my grateful appreciation for the quite magnificent cooperation you have given us in the Battle of the Rhine."

Harris, by this time, had enough bombers and crews at his disposal to both support Eisenhower and wage all-out war on German cities. Released from Ike's control in August, Bomber Command resumed city attacks with full force. In November 1944, RAF crews delivered 347,538 tons of bombs—exceeding the total of 339,179 tons dropped in all of 1942.

Statistically, it was an epic performance. Bomber Command sorties

soared from an average of fewer than 2,000 per month in 1939-41 to 3,161 in 1942, 5,422 in 1943, 13,904 in 1944, and 16,871 in early 1945.

Using vast quantities of incendiary bombs, Bomber Command aircraft targeted cities such as Cologne in "thousand-bomber" raids. The February 1945 attack on Dresden crippled that historic city, making it one of the most controversial episodes of World War II. (See "The Dresden Legend," October 2004, p. 64.)

Questions about the morality of city bombing have remained the sticking point in the reputation of Harris, not that it bothered him. He maintained that, if only Bomber Command had been at full strength a year or so earlier, it undoubtedly would have ended the war in Europe as abruptly as US bombing ended the war in the Pacific—"without need of a land invasion."

Harris' passionate commitment to nighttime area bombing does not fit well in this age of precision airpower. It was almost as unpopular in the 1940s. History began to treat him badly right away. Clement Attlee's Labor government denied him a peerage, even though his two predecessors at Bomber Command got them. Harris had to wait for Churchill's return to power before he could become Sir Arthur.

After the war, he enjoyed almost 40 years of business success and contact with old colleagues until his death in 1984.

Harris' well-known blind spots have tended to bar him in many assessments from membership in the top ranks of airmen. Yet those who would judge him might do well to remember that Harris was an airman who saw London on fire from end to end on the night of Dec. 29, 1940. Only the dome of St. Paul's near the Air Ministry offices stood out untouched against the flames and smoke. To Harris, Bomber Command was the only weapon that could strike back. History has reason to treat Harris with caution, but final judgment is best left to those who saw what he saw. ■

Rebecca Grant is a contributing editor of Air Force Magazine. She is president of IRIS Independent Research in Washington, D.C., and has worked for RAND, the Secretary of the Air Force, and the Chief of Staff of the Air Force. Grant is a fellow of the Eaker Institute for Aerospace Concepts, the public policy and research arm of the Air Force Association's Aerospace Education Foundation. Her most recent article, "Air Warfare in Transition," appeared in the December 2004 issue.

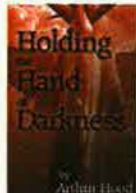
Books

Compiled by Chequita Wood, Editorial Associate

The 479th Fighter Group in World War II: In Action Over Europe With the P-38 and P-51. Terry A. Fairfield. Schiffer Publishing, Ltd., Atglen, PA (610-593-1777). 502 pages. \$69.95.



Holding the Hand of Darkness. Arthur Hood. Order from: Llumina Press, Tamarac, FL (866-229-9244). 256 pages. \$19.95.



The Politics of Air Power: From Confrontation to Cooperation in Army Aviation Civil-Military Relations. Rondall R. Rice. University of Nebraska Press, Lincoln, NE (800-755-1105). 283 pages. \$49.95.



Air-to-Ground Battle for Italy. Brig. Gen. Michael C. McCarthy, USAF (Ret.). Air University Press, Maxwell AFB, AL (334-953-2773). 99 pages. \$10.25.



Howard Hughes: Aviator. George J. Marrett. Naval Institute Press, Annapolis, MD (800-233-8764). 258 pages. \$27.95.



Shades of Gray: National Security and the Evolution of Space Reconnaissance. L. Parker Temple III. American Institute of Aeronautics and Astronautics, Reston, VA (800-639-2422). 612 pages. \$49.95.

Blazing the Trail: The Early History of Spacecraft and Rocketry. Mike Gruntman. American Institute of Aeronautics and Astronautics, Reston, VA (800-639-2422). 503 pages. \$59.95.



Humanitarian Intervention: Assisting the Iraqi Kurds in Operation Provide Comfort, 1991. Gordon W. Rudd. GPO, Supt. of Documents, Pittsburgh (866-512-1800). 280 pages. \$34.00.



Shadow: A Cotton-tail Bomber Crew in World War II. Neil Hunter Raiford. McFarland & Co., Jefferson, NC (800-253-2187). 239 pages. \$39.95.



Countdown to Victory: The Final European Campaigns of World War II. Barry Turner, William Morrow, New York (212-207-7000). 494 pages. \$27.95.

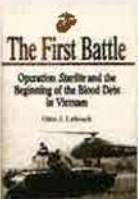


Isalah's Eagles Rising: A Generation of Airmen. Bernard Thomas Nolan. Xiibris, Philadelphia (888-795-4274). 268 pages. \$31.99.



Technology and Military Doctrine: Essays on a Challenging Relationship. Maj. Gen. I.B. Holley Jr., USAF (Ret.). Air University Press, Maxwell AFB, AL (334-953-2773). 160 pages. \$15.00.

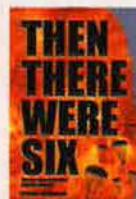
The First Battle: Operation Starlite and the Beginning of the Blood Debt in Vietnam. Otto J. Lehrack. Casemate Publishers, Havertown, PA (610-853-9131). 212 pages. \$32.95.



M2/M3 Half-Track: Walk Around No. 4. Jim Mesko. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 79 pages. \$14.95.



Then There Were Six: The True Story of the 1944 Rangoon Disaster. Karnig Thomasian. Order from: Authorhouse, Bloomington, IN (800-839-8640). 170 pages. \$20.00.



German Fighter Aces of World War One. Terry C. Treadwell and Alan C. Wood. Trafalgar Square Publishing, North Pomfret, VT (800-423-4525). 320 pages. \$29.95.



The Ploesti Raid: Through the Lens. Roger A. Freeman. RZM Imports, Southbury, CT (800-562-7308). 160 pages. \$39.95.



Unmanned Aviation: A Brief History of Unmanned Aerial Vehicles. Laurence R. Newcome. American Institute of Aeronautics and Astronautics, Reston, VA (800-682-2422). 172 pages. \$42.95.

By Frances McKenney, Assistant Managing Editor

Veterans Day With the President

Air Force Association Chairman of the Board Stephen P. "Pat" Condon began Veterans Day observances at a White House breakfast reception honoring military veterans. He later attended a memorial service at Arlington National Cemetery.

In the Blue Room of the White House that morning, Condon and his wife, Judy, had an opportunity to talk informally with President Bush, as the Commander in Chief greeted representatives from the armed forces and military veterans organizations.

At a breakfast held in the East Room, Condon met Cabinet officials, among them Secretary of State Colin L. Powell, Attorney General John Ashcroft, and Secretary of Health and Human Services Tommy G. Thompson.

Also attending this breakfast were Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, Peter B. Teets, undersecretary of the Air Force, and Gen. T. Michael Moseley, USAF vice chief of staff.

The President and his guests traveled from the White House across the Potomac River to Arlington National Cemetery. There the President laid a wreath at the Tomb of the Unknowns.

The Veterans Day ceremony held at the adjacent amphitheater included acknowledgement of AFA and Condon as one of the sponsors of the annual memorial service. The Condons and other dignitaries were seated in VIP boxes next to the main dais. The memorial service was broadcast on C-Span.

High-Decibel Thanks

The **Mile High Chapter** in Colorado received a spirited thank you recently, when Lt. Col. Thomas A. Deall, president, presented the chapter's Teacher of the Year award during a pep rally at Legacy High School in Broomfield, Colo.

"The sound was wall-shaking loud," said Deall.

Chemistry, physics, and aeronautics teacher R. Alan Godman received the award in recognition of his role in



White House photo by Tina Hager

AFA Board Chairman Pat Condon and Judy Condon meet President Bush at a White House reception on Veterans Day, Nov. 11. To honor veterans, Pat Condon later that same day set an AFA wreath at the Tomb of the Unknowns at Arlington National Cemetery.

setting up a computer lab that included 16 flight simulators and an instrument flight rules simulator. Chapter president Deall noted that seven of Godman's students from his aeronautics classes have pursued a pilot's license.

Deall presented Godman—who teaches 10th-graders—with a check for \$250 at the high school's annual Spirit Week pep rally. It was part of the homecoming celebration, so the gym was packed with students, staff, and family members. Godman raised the check above his head like a trophy, and the cheers of the school's nearly 2,000 students were "absolutely deafening," said Deall.

Airmen in Cheyenne

When the **Cheyenne Cowboy Chapter** hosted an Air Force Anniversary banquet in Cheyenne, Wyo., in November, many young airmen got a chance to meet their boss.

Maj. Gen. Frank G. Klotz, commander of 20th Air Force at F.E. Warren AFB, Wyo., was the evening's special guest. He spoke about the ICBM mission and, according to Charles P.

Zimkas Jr., Rocky Mountain region president, even quoted from AFA's Statement of Policy. A section of the policy states the association's position on nuclear deterrence as an essential part of national security.

More than 200 people attended the banquet. The chapter's Community Partners and corporate sponsors bought tables, hosting more than 70 airmen as their guests. Chapter President Irene Johnigan said the chapter bought tickets for several cadets from the University of Wyoming, and Dan Clark, chapter VP for ROTC, served as their host.

Johnigan, assisted by VP Robert L. Thein, Secretary Mary Carroll, Treasurer Richard Ames, and Mary Ann Marek, organized the event and rounded up Air National Guard SMSgt. Robert P. Watkins from the 153rd Airlift Wing, Cheyenne Airport, as a volunteer photographer. "Photo Bob," as they called him, was assigned to take pictures of Klotz with his troops. Among them were honored guests TSgt. Teresa A. Mossoni, an Air Force Outstanding Airman for 2004, and SSgt. Bruce Cunningham, an Aero-

space Education Foundation Pitsenbarger Award recipient. (Pitsenbarger Awards are one-time grants of \$500 to selected active duty or reserve USAF enlisted personnel, graduating from the Community College of the Air Force, who plan to pursue a bachelor's degree.)

Other VIPs at the banquet were Col. Evan Hoapili, 90th Space Wing commander; CMSgt. Michael E. Morey, 20th Air Force's top enlisted man; and CMSgt. James T. Wood, command chief of 90th Space Wing.

Fall on the Chesapeake

For Virginia and Maryland communities along the Chesapeake Bay, fall is a time for the oyster harvest. Churches, firehouses, even sporting events often hold oyster roasts in celebration.

The **Langley Chapter** took part in this Chesapeake tradition by high-lighting the 40th anniversary of its chartering with a Membership Appreciation Golf Tournament and Oyster Roast at Langley AFB, Va.

It rained torrents the day before and again the day after, reported Jeff Platte, chapter president. But on the day of the event, "literally, the skies parted," and 86 golfers took to the links for what Platte described as "a glorious fall day" at the base's Eaglewood Golf Course.

Nearly 20 more guests joined the golfers for raw and steamed oysters, that evening. Explaining the oyster roast tradition, Platte said, "In the truest version, you have to shuck your own, and that's all you eat. If you aren't proficient, you can go hungry." For those guests, the chapter provided steak.

Scott C. Frazier and Col. Fred C. Richardson were among those who organized the anniversary events. The winning golf foursome included chapter member Betsy Ripley.

Anniversary and Heritage

It takes two days to celebrate the **Wright Memorial Chapter's** Air Force Anniversary and Wright Brothers Heritage Benefit, held every year in Dayton, Ohio.

First comes a black-tie formal banquet, awards ceremony, and silent auction, held at the National Museum of the United States Air Force, and the next day comes a golf outing on Wright-Patterson Air Force Base.

A dozen active duty and reserve airmen and Air Force civilians from the base received honors at the banquet. In a reference to USAF's 12 Outstanding Airmen program, the chapter calls these awardees the 12 Outstanding Team Wright-Patt mem-

bers: Col. Louise M. DeWilder, Lt. Col. Walter R. Price, Capt. Christian M. Averett, SMSgt. Ronald E. Bonecutter Jr., MSgt. Michael D. Brimmer, TSgt. Melissa D. Rodriguez, and A1C Angela M. Fowler and civilians Gayle C. Blue-Keyes, Denise L. Brookins, Natasha D. Helton, Thomas P. Sevryn, and Martin Whetsone.

Chapter awards presented that evening went to retired Navy Lt. Cmdr. John Warlick, from an Ohio organization that built and flies a Wright B Flyer replica; retired Lt. Gen. Charles H. Coolidge Jr., a former vice commander of Air Force Materiel Command; and chapter member James R. Heitz, who spearheaded creation of a memorial plaza at the base, featuring a full-scale, stainless steel replica of a Wright aircraft.

More than two dozen corporate sponsors contributed to the evening gala, attended by more than 400 guests, and 130 players turned out for the golf outing the next day.

Funds raised from these events go to USAF-related education and community activities, through the chapter's Aerospace Education Foundation. The anniversary and benefit have

raised nearly \$350,000 over the years, reported Chapter President Mike Winslow. Pitching in to help him organize this year's benefit were Heitz, Chapter VP Dennis Drayer, and Community Partners VP Kent Owsley.

Intro to the F-15

The **Bill Harris Chapter** recently invited more than a dozen business leaders from Klamath Falls, Ore., to the 173rd Fighter Wing at Kingsley Field.

The visitors received a mission briefing on the Air National Guard unit and on AFA, then met two special guests: chapter namesake Bill Harris, a World War II ace from Thirteenth Air Force, who is credited with 16 aerial victories, and Ernest C. Brace, a civilian POW for eight years during the Vietnam War.

Chapter President Curtis A. Waite reported that Brace—who was in Vietnam flying supply missions for the CIA—spent part of his POW imprisonment at the "Hanoi Hilton," where his first neighbor was Lt. Cmdr. John S. McCain.

The chapter gave their potential Community Partner-guests an orien-

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.

USAF and AFA Host Senate Event

AFA joined with the Air Force Senate Liaison Office in mid-November to sponsor a mixer for professional Senate staff members. The goal was to signal appreciation for their support of Air Force and veterans issues in the 108th Congress and to discuss new initiatives for the 109th Congress.

Attending the event from the Senate Armed Services Committee were Charles Alsop, Andrew Florell, Elaine McCusker, Diana Tabler, and Bridget Ward.

Also attending were several Senate professional staff members, including:

- Terri Glaze, military legislative assistant to Sen. Mark **Pryor** (D-Ark.).
- Mark Jones, MLA to Sen. Mark **Dayton** (D-Minn.).
- Abraham Elmazahi, military legislative correspondent for Sen. Joseph **Lieberman** (D-Conn.).
- Wendy Gnehm, MLA to Sen. Michael **Enzi** (R-Wyo.) and Senate staff liaison for the Congressional Air Force Caucus.
- Dafna Hochman, MLA to Sen. Frank **Lautenberg** (D-N.J.).
- Lindsey Neas, MLA to Sen. Jim **Talent** (R-Mo.).
- Archie Galloway, MLA to Sen. Jeff **Sessions** (R-Ala.).
- Elizabeth King, MLA to Sen. Jack **Reed** (D-R.I.).
- William Suty, legislative assistant to Sen. Bill **Nelson** (D-Fla.).

AFA Pushes for VSO Postage Stamp

The Air Force Association has teamed with 27 other veterans service organizations (VSOs) and the Department of Veterans Affairs to petition for a special stamp to recognize VSO work in support of America's veterans.

The group has applied to the Citizen Stamp Advisory Board of the US Postal Service for issuance of a block of 28 commemorative stamps, one for each VSO and the VA. If the board approves the application at its meeting later this month, the stamp could be issued in 2008.

tation tour of the base, beginning with an F-15 display. Col. Tom Schiess, the 173rd FW Aircraft Maintenance Group commander, provided a detailed walk around. "This was the first time many of the visitors had seen an Air Force fighter jet up close," Waite said. They next watched a demonstration at the wing's "Hush House," a facility used to mitigate the noise from aircraft engines.

Waite said the visitors were among the first civilians to try the wing's state-of-the-art F-15 training simulators—and Harris was first in the cockpit. They "flew" an F-15 over Klamath Falls and southern Oregon, an experience that left many "feeling a little woozy," Waite said.

Wings Over Seymour Johnson

With the Air Force Thunderbirds performing aerobatics overhead, **Scott Berkeley Chapter** members manned an AFA membership table at the Wings Over Wayne Air Show at Seymour Johnson AFB, N.C., in November.

Named after Wayne County, where the base is located, the air show featured a sky full of aerial demonstrations by aircraft ranging from contemporary USAF A-10 and F-15 fighter jets to World War II-era open-cockpit Stearman biplanes.

The Berkeley Chapter donated funds to help sponsor the air show. Promoting AFA at the chapter table—set up inside a KC-10 hangar—were Chapter VP David F. Sloan, Treasurer Millie L. Hudgins, members David A. Klinkicht, Stacey Klinkicht, and Walena S. Kornegay and Community Partners Hank Henry and Carl Nowell. They distributed membership brochures, copies of *Air Force Magazine*, and, to children who passed by, pencils and wooden model airplanes. The first 15 people who signed up as new AFA members received gift certificates from a local restaurant.

According to Chapter President William C.B. Jones, lots of veterans, military families, and Air Force ROTC and JROTC cadets stopped at the booth.

The local newspaper reported that 70,000 people attended the air show.

Myers at the Podium

Air Force Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, spoke to members of the **Donald W. Steele Sr. Memorial Chapter** at their October luncheon meeting in Arlington, Va.

Nearly 200 guests turned out to hear Myers discuss military transformation. He gave his listeners "the

AFA's National Committees for 2004-05

Executive Committee. Stephen P. "Pat" Condon (*Chairman*), David T. Buckwalter, Frederick J. Finch, Thomas J. Kemp, Robert E. Largent, Charles A. Nelson, Julie E. Petrina, Michael E. Ryan, Joseph E. Sutter, L. Boyd Anderson, *ex officio*, Mary Anne Thompson, *ex officio*, Donald L. Peterson, *ex officio*.

Finance Committee. Charles A. Nelson (*Chairman*), David R. Cummock, Mark J. Dierlam, Stephen Dillenberg, Steven R. Lundgren, John J. Murphy, Jack G. Powell, Stephen P. "Pat" Condon, *ex officio*.

Membership Committee. Charles P. Zimkas Jr. (*Chairman*), Kevin J. Campbell, Maria Cornelia, Vivian P. Dennis, Edward W. Garland, Delamar T. "Dave" Jones, Sheila K. Jones, Robert E. Largent, *ex officio*.

Constitution Committee. David T. Buckwalter (*Chairman*), Joan Blankenship, Michael J. Bolton, Judy K. Church, Tommy G. Harrison, Rick Hartle, Timothy Kern, Stephen P. "Pat" Condon, *ex officio*.

Strategic Planning Committee. Craig E. Allen (*Chairman*), Tom Cavalli, James T. Hannam, Gary A. Hoff, Steve J. Negron, Sanford Schliitt, Eric P. Taylor, Robert E. Largent, *ex officio*.

Audit Committee. Julie E. Petrina (*Chairman*), Billy M. Boyd, Wayne R. Kauffman, William G. Stratemeier Jr., Brad Sutton, Mark J. Worrick, Stephen P. "Pat" Condon, *ex officio*.

Force Capabilities Committee. Richard E. Hawley (*Chairman*), George T. Babbitt Jr., Michael J. Dugan, Rebecca Grant, Monroe W. Hatch Jr., Lester L. Lyles, Thomas S. Moorman Jr., Lloyd W. Newton, John A. Shaud, Lawrence A. Skantze, Stephen P. "Pat" Condon, *ex officio*.

straight story," commented George DeFilippi, chapter president. Myers also welcomed questions on a wide range of topics, afterward.

The audience included defense and air attaches from 21 countries, and, according to luncheon co-chairman James T. Hannam, several of them became new chapter members. Hannam said the chapter scaled the cost of attending the luncheon and the price of AFA memberships to encourage more blue-suit participation. "Judging by the response," he said, "it worked."

More AFA/AEF News

■ More than 200 members took part in the **Carl Vinson Memorial Chapter's** road race held Nov. 13 in Warner Robins, Ga. The "Thank-a-Vet" 5K run-walk also had a one-mile run-walk option. The event raised \$2,000 in funds for a POW/MIA memorial to be located at the Museum of Aviation, near Warner Robins Air Force Base.

■ The **Gen. Bruce K. Holloway Chapter** honored David Feist of Sacred Heart Cathedral School in Knoxville, Tenn., as Teacher of the Year for 2004. Joseph E. Sutter, an AFA national director; Merlyn S. Tidemann, chapter president; and Bud Bacon, a former chapter president, presented

the award during the "Good News" portion of a November school faculty meeting. Feist was praised for creative teaching methods that include using baseball card statistics to teach math concepts.

■ In Alabama, Lt. Gen. John F. Regni, Air University commander, and Robert E. Largent, AFA National President, were honored guests at the **Montgomery Chapter's** luncheon on Veterans Day. Largent joined Chapter President Mark Dierlam and State President Albert A. Allenback Jr. in presenting national-level awards to several chapter members (as listed in the November issue, p. 104).

■ **Blue Ridge Chapter** members contributed more than \$1,000 to a fund-raising effort to build the Western North Carolina Veterans Memorial in downtown Asheville, N.C. In November, James L. Mulligan, chapter VP for leadership development, and fellow chapter member Jesse Ledbetter, a B-24 pilot in World War II, also visited William W. Estes Elementary School in Asheville to talk to the children about the memorial and their military experiences.

■ At its annual Carlton and Charlotte Loos Civilian Awards Banquet held in San Antonio in October, the **Alamo Chapter** recognized several



This Is the Aerospace Education Foundation

As of Jan. 1, 2005

Chairman of the Board
L. Boyd Anderson

President
Mary Anne Thompson

Secretary-Treasurer
David R. Cummock

Executive Director
Donald L. Peterson

Managing Director
Danny D. Marrs

AEF Trustees
Bonnie B. Callahan
Stephen P. "Pat" Condon
William D. Croom Jr.
Angela Dupont
Terry Hamilton
Victoria W. Hunnicutt
Robert E. Largent
Sanford Schlitt
Paul Schowalter
E. Robert Skloss
Robert G. Stein
Andrew Veronis
Jerry White

Executive Directors Emeritus
Russell E. Dougherty
John O. Gray
Monroe W. Hatch Jr.

Trustees Emeritus
John R. Alison
David L. Blankenship
John G. Brosky
George H. Chabbott
George M. Douglas
Michael J. Dugan
Samuel M. Gardner
Don C. Garrison
Richard B. Goetze Jr.
Emlyn I. Griffith
Jack B. Gross
Martin H. Harris
Gerald V. Hasler
Leonard V. Isabelle
James M. Keck
Hans Mark
Robert T. Marsh
Nathan H. Mazer
William V. McBride
Thomas J. McKee
Jack C. Price
Walter E. Scott
John A. Shaud
Loren J. Spencer
William W. Spruance
Sherman W. Wilkins

state and national AEF award recipients. William D. Croom Jr., an AEF trustee and Alamo Chapter member, presented awards to Beverly Hallmark, Texas State Teacher of the Year; Kaye Biggar, a national AEF Citation recipient; and Diana Larson, second runner-up for AEF's Christa McAuliffe Memorial Award.

■ AFJROTC cadets from Sandalwood High School in Jacksonville, Fla., took home some heavy metal from the ninth annual Pine Ridge Invitational Drill Competition held in Deltona, Fla. John Trombetta, representing the **Brig. Gen. James R. McCarthy Chapter**, presented them with the top overall team trophy, and Richard A. Ortega, from the **Central Florida Chapter**, presented them with the top drill team trophy. Nineteen AFJROTC units competed in the all-day event, judged by active duty personnel from the Air Force, Army, and Marine Corps, assigned to Patrick AFB, Fla.

■ As AFA's representative, **Central Florida Chapter** member and state aerospace education VP Richard A. Ortega addressed the Civil Air Patrol National Board Conference and Awards Ceremony in Tampa, Fla., in August. He spoke about grants, awards, and recognition AFA and AEF provide to CAP and later presented two AFA national awards, the CAP Senior Member of the Year to John W. Lierenz and Cadet of the Year to Hila Levy.

■ A large banner displayed on site thanked the **Thomas W. Anthony Chapter (Md.)** as a major sponsor of the 89th Airlift Wing's Family Fun Day Picnic at Andrews AFB, Md., in July. The base newspaper reported

that more than 3,500 military and civilian families attended the annual event. The chapter donated funds to carry out the picnic and promoted AFA and AEF with a booth manned by volunteers including Charles X. Suraci Jr., chapter president, and Sam O'Dennis, VP. The chapter also recently received a Certificate of Appreciation for its support of an earlier Andrews activity, the 2004 Joint Service Open House held in May.

■ Colorado's **Mile High Chapter** recently presented the Colorado state AEF's first Francisco Garcia Good Citizenship Scholarship. Matthew Alan Smith, a student at Metropolitan State College of Denver, received the award from Barbara Baldivia Flores, the chapter's immediate past president, and Tiffany S. Turcotte, the state's AEF vice president and chapter secretary. Smith is working on a bachelor's degree in aviation technology, having graduated last year from the Denver public school system's Computer Magnet Program at Thomas Jefferson High School. ■

Have AFA/AEF News?

Contributions to "AFA/AEF National Report" should be sent to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: afa-aef@afa.org. Digital images submitted for consideration should have a minimum pixel count of 900 by 1,500 pixels.

Reunions

reunions@afa.org

1st ACCS, April 28-May 2 in Washington, DC. **Contact:** Jim Blackburn (jjm6624@hotmail.com) or Jack Foley (jackfoley@mindspring.com).

388th FBW, Clovis AFB, NM, and Etain, France, including all military, dependents, civilians, and tech reps. April 14-17 in Phoenix. **Contact:** Bill McCollum (480-595-9020) (go388phx05@aol.com).

Albrook AFB, Panama, air police (1951-55). April 26-28 at the Ramada Inn in Branson, MO. **Contact:** Bob Carlson, 29 Rainbow Pond Dr., #A1, Walpole, MA 02081 (508-668-1655) (bobjoancarlson@earthlink.net).

BAD 2 Assn, Eighth AF, Warton, UK (WWII). Sept. 15-18 in Neenah, WI. **Contact:** Dick McClune, 527 Quarterfield Rd., Newport News, VA 23602 (757-877-3826).

OCS Class 60-C, March 20-25 at the New Frontier Hotel and Casino in Las Vegas. **Contact:** Daniel Kilburn, 5006 Useppa Ct., Punta Gorda, FL 33950 (941-639-2432) (danfreddik@comcast.net).

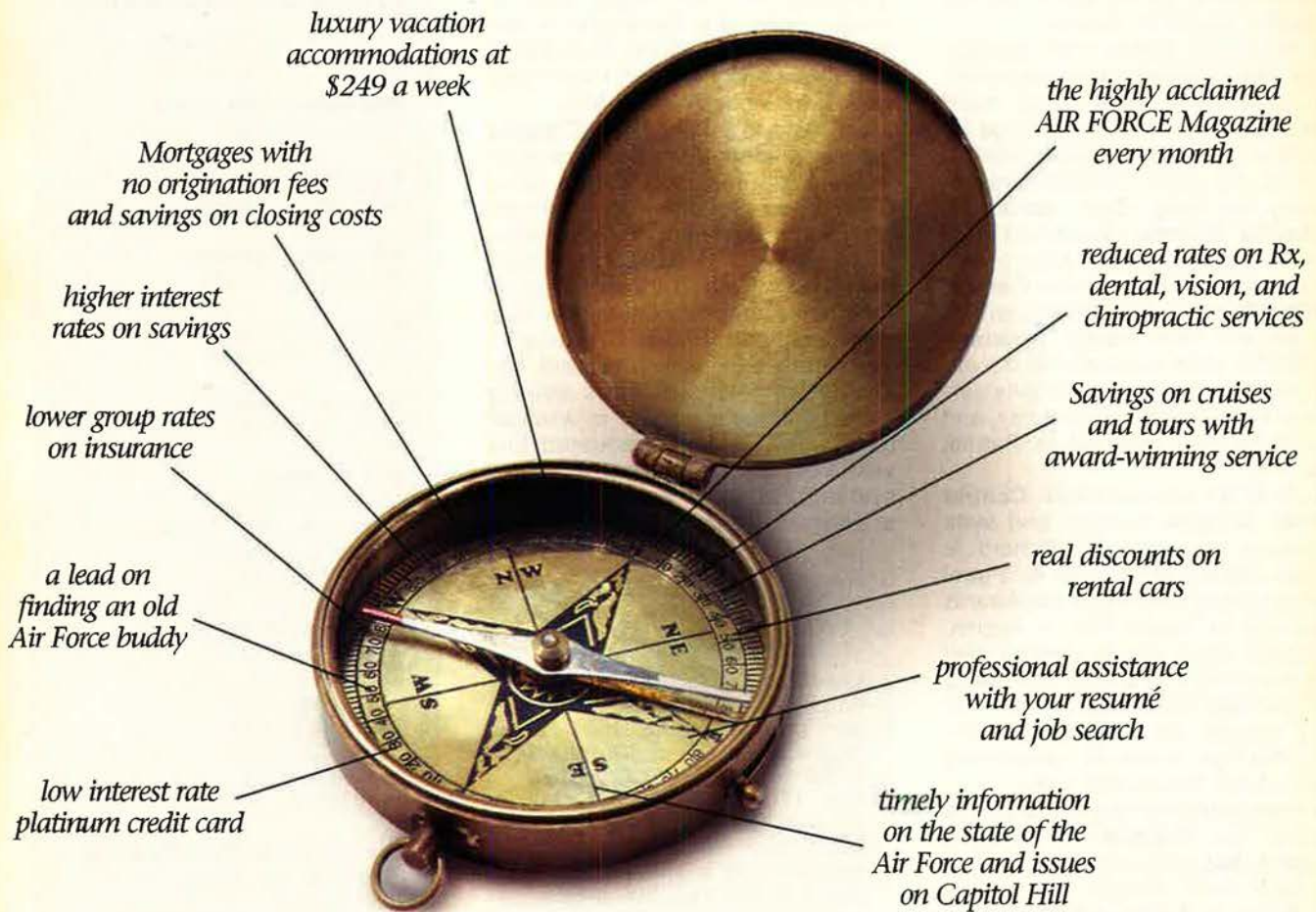
Pilot Class 48-C, Oct. 3-8 in Washington, DC. **Contact:** Mike Loyd (650-994-1646) (mxloyd737@sbcglobal.net).

Pilot Training Class 56-I, April 7-10 in San Antonio. **Contact:** Wes Schierman, 3912 114th St. S.E., Everett, WA 98208 (425-338-5534) (wess@premier1.net).

Pilot Training Class 56-O, including all 56-0 groups. March 2-5, 2006, in Tucson, AZ. **Contact:** John Tucker, 114 Piute Ave., Thousand Oaks, CA 91362 (805-778-1972) (jtjtscott1@aol.com).

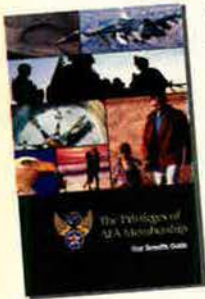
Mail unit reunion notices four months ahead of the event to "Unit Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.

Where Can You Get...



...Closer Than You Think.

All these time and money-saving opportunities are available to you through your Air Force Association Member Benefits. And new products and services are continually added to make membership even more valuable. For an update, visit Member Benefits online, or call toll free and request *The Privileges of AFA Membership... Your Benefits Guide*.



Visit www.afa.org and click Member Benefits

Call toll free
1-800-727-3337

weekdays 8:30 AM to 5:00 PM ET

E-mail
service@afa.org

USE YOUR AFA MEMBER BENEFITS OFTEN!

And please: if it's time, renew now. If you're not a member, join today. If you have a friend/relative who might like the best association benefit package while supporting The Force Behind The Force, pass this information on.



NATIONAL OFFICERS



BOARD CHAIRMAN

Stephen P. "Pat" Condon
Ogden, Utah



PRESIDENT

Robert E. Largent
Perry, Ga.



SECRETARY

Thomas J. Kemp
Fort Worth, Tex.



TREASURER

Charles A. Nelson
Sioux Falls, S.D.

NATIONAL DIRECTORS

Craig E. Allen
Hooper, Utah

L. Boyd Anderson
Ogden, Utah

David T. Buckwalter
Portsmouth, R.I.

Kevin J. Campbell
Laurel, Md.

Kathleen Clemence
Reno, Nev.

Vivian P. Dennis
Woodbridge, Va.

Frederick J. Finch
San Antonio

W. Ron Goerges
Beavercreek, Ohio

M.N. "Dan" Heth
N. Richland Hills, Tex.

Stanley V. Hood
Columbia, S.C.

Timothy Kern
Athens, Ohio

John Lee
Salem, Ore.

Lester L. Lyles
Vienna, Va.

Bruce E. Marshall
Shalimar, Fla.

George K. Muellner
Huntington Beach, Calif.

Robert E. Patterson
Shalimar, Fla.

Michael J. Peters
Auburn, Calif.

Julie E. Petrina
Laurel, Md.

John J. Politi
Sedalia, Mo.

Joseph Price
Newport News, Va.

Robert C. Rutledge
Johnstown, Pa.

Michael E. Ryan
Mount Pleasant, S.C.

Keith N. Sawyer
O'Fallon, Ill.

Richard Schaller
Niceville, Fla.

Victor Seavers
Eagan, Minn.

Thomas G. Shepherd
Capon Bridge, W.Va.

Cliff Stearns
Washington, D.C.

Joseph E. Sutter
Knoxville, Tenn.

Brad Sutton
Mountain Green, Utah

Richard C. Taubinger
Roseville, Calif.

Mary Anne Thompson
Oakton, Va.

Carol J. Wolosz
Duluth, Minn.

DIRECTORS EMERITUS

John R. Alison
Washington, D.C.

Richard D. Anderson
Poquoson, Va.

Joseph E. Assaf
Sandwich, Mass.

David L. Blankenship
Tulsa, Okla.

John G. Brosky
Carnegie, Pa.

Dan Callahan
Centerville, Ga.

Robert L. Carr
Pittsburgh

George H. Chabbott
Dover, Del.

O.R. "Ollie" Crawford
Blanco, Tex.

Jon R. Donnelly
Richmond, Va.

Russell E. Dougherty
Arlington, Va.

George M. Douglas
Colorado Springs, Colo.

Charles G. Durazo
Yuma, Ariz.

Joseph R. Falcone
Ellington, Conn.

E.F. "Sandy" Faust
San Antonio

John O. Gray
Arlington, Va.

Jack B. Gross
Harrisburg, Pa.

Martin H. Harris
Montverde, Fla.

Gerald V. Hasler
Encinitas, Calif.

Monroe W. Hatch Jr.
Clifton, Va.

H.B. Henderson
Santa Ana, Calif.

John P. Henebry
Winnetka, Ill.

Harold F. Henneke
Nashville, Ind.

David C. Jones
Sterling, Va.

Victor R. Kregel
Colorado Springs, Colo.

Jan M. Laitos
Rapid City, S.D.

Doyle E. Larson
Burnsville, Minn.

Nathan H. Mazer
Roy, Utah

William V. McBride
San Antonio

James M. McCoy
Bellevue, Neb.

Thomas J. McKee
Fairfax Station, Va.

Bryan L. Murphy Jr.
Fort Worth, Tex.

Ellis T. Nottingham
Arlington, Va.

Jack C. Price
Pleasant View, Utah

William C. Rapp
Niagara Falls, N.Y.

Walter E. Scott
Dixon, Calif.

Mary Ann Seibel-Porto
St. Louis

John A. Shaud
Springfield, Va.

Joe L. Shosid
Fort Worth, Tex.

James E. "Red" Smith
Princeton, N.C.

R.E. "Gene" Smith
West Point, Miss.

William W. Spruance
Las Vegas

Harold C. Stuart
Jensen Beach, Fla.

Walter G. Vartan
Chicago

A.A. West
Hayes, Va.

Sherman W. Wilkins
Issaquah, Wash.

Joseph A. Zaranka
Bloomfield, Conn.

Donald L. Peterson
Executive Director
Air Force Association
Arlington, Va.

Donald J. Harlin
National Chaplain
Albuquerque, N.M.

Matthew T. Hoyt
National Commander
Arnold Air Society
Urbana, Ill.

EX OFFICIO

Pieces of History

Photography by Paul Kennedy

The Last Tail Gunner



The prototype B-52 bomber first flew in 1952. The first variants retained the gunner position in the rear of the aircraft. In later models, the G and H, the gunner remotely controlled the tail guns from a position up front behind the pilots. The Enlisted Heritage Hall, Maxwell AFB, Gunter Annex, Ala., maintains an entire gunner position from a B-52D bomber as part of its display of

artifacts showcasing the contributions of Air Force enlisted personnel. (See "Stories in Stripes," p. 40.) Today, the Air Force still flies the B-52H model, but USAF eliminated the gunner position from the standard crew in 1991 and began removing the guns from the bomber. The Air Force still has designated enlisted gunners serving on AC-130 gunships, however.

Take your IR missile
and jam it.



Northrop Grumman Electronic Systems, the leader in infrared countermeasures, has been bringing aviators home safely for more than 35 years. Today, we are the only company producing a Directional Infrared Countermeasure (DIRCM) system that uses laser energy to disrupt missile guidance. Even the most advanced heat-seeking missiles are no match for our countermeasures, which provide autonomous, 360° protection for both rotary- and fixed-wing aircraft. Fast, accurate and proven effective, our DIRCM system can defeat IR threats. So if you don't point those missiles somewhere else, we'll do it for you.

www.northropgrumman.com

© 2005 Northrop Grumman Corporation

NORTHROP GRUMMAN

DEFINING THE FUTURE™

FIGHTER PILOT

Operation Red Flag

BEHIND EVERY MISSION IS A TEAM OF HEROES.

Get ready for an amazing flight. *Fighter Pilot: Operation Red Flag*, a new IMAX® experience. This dramatic movie follows the exciting challenges of an actual F-15 pilot as he discovers what it really takes to be the best: an amazing team. Boeing is proud to sponsor this exceptional movie experience as a tribute to our men and women in uniform.



FOR IMAX THEATER LISTINGS VISIT WWW.FIGHTERPILOTFILM.COM