

June 2003/\$4

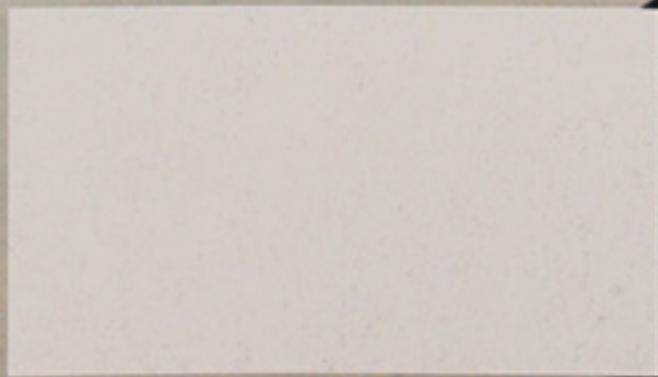
# AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

# MAGAZINE

## Expeditionary Air Warriors

Images of Gulf War II  
Thunderbirds at Fifty



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JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

June 2003, Vol. 86, No. 6

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By Robert S. Dudley, Editor in Chief

## Space Power in the Gulf

**E**IGHT days before Gulf War II, the Air Force director of space operations and integration made a bold statement. Anybody who tangles with USAF's space capabilities would have "a real tough go," declared Maj. Gen. Franklin J. Blaisdell. "We are so dominant in space that I pity a country that would come up against us."

Blaisdell then added, "I don't believe [US foes] really understand how powerful we are."

They understand now. In Operation Iraqi Freedom, space forces displayed awesome power and flexibility. They put the "precision" in precision attack, found tanks in howling sandstorms, relayed commands to unmanned air vehicles, tracked troops on the move, listened in on Iraqi communications, drenched the battlespace with usable decision information, and much, much more.

Space has long been viewed as a key support asset, but the latest war showed space power has advanced beyond that stage.

Its devastating effectiveness was evident April 7, when USAF attacked a Baghdad site in which Saddam Hussein and his sons were thought to be hiding. A B-1B bomber dropped four GBU-31 weapons, all guided to precise spots by the signals of Global Positioning System satellites. The bombs scored direct hits. (Saddam's fate is unknown.)

Coalition bombers and fighters dropped more than 5,500 GPS-guided Joint Direct Attack Munitions, in daylight and night, in all weather, with shattering effectiveness.

Equally dependent on space were Tomahawk missiles, of which the Navy launched hundreds. Secretary of the Air Force James G. Roche noted each Tomahawk precision attack had seven "moving parts"—intelligence prep, target location, command and control, weather assessment, launch, en route navigation, and damage assessment. Only one part—the actual launch—was conventional, said Roche. All others depended on space assets.

US imaging satellites gave commanders an unprecedented view of targets and battlespace. The March

20 attack on Iraqi leadership targets in Baghdad was based in part on information from image-snapping satellites. Commanders of ground forces carried portable devices to receive such target images from orbiting spacecraft.

Powerful imaging radar satellites helped US forces decimate Iraq's Republican Guard. When sandstorms disrupted conventional reconnaissance, overhead radar, which could

**In the war, US space power was focused, flexible, and utterly dominant.**

"see" through sand, clouds, and other obscurants, spotted guard units, said USAF. Thus pinpointed, these units came under deadly air attacks that destroyed them as fighting units.

Thanks to satellites, US forces enjoyed robust communications. Satellites also made it possible to command and control UAVs such as Predator and Global Hawk. Line-of-sight communication extends out only 130 miles. Beyond that, said the Air Force, UAV commands flowed through satellites such as the secure Milstar.

Space communications boosted what the Air Force calls "time-critical targeting"—strikes on moving or fleeting targets. Until recently, such attacks could take hours or days. In Gulf War II, it sometimes took "less than 15 minutes," a senior space officer, Col. Larry James, told the *Los Angeles Times*.

Space was critical to navigation. GPS receivers were affixed to tanks, trucks, and aircraft across the theater. According to the Army, GPS helped keep track of supplies and coordinate logistics operations. An innovation was Grenadier BRAT, a small transmitter carried by individuals. It communicated with satellites to let commanders follow movements of certain forces.

Weather satellites gave warning of sandstorms, rain, winds, or other

forms of turbulent weather. Operational interests varied. Tank commanders wanted to know moisture content of soil in some areas. The Navy was interested in winds and sea states. USAF had its eye on thunderstorms. The Air Force also used weather data to avoid conditions that might produce telltale contrails.

USAF's Defense Support Program satellites, equipped with infrared sensors, spotted missile launches. Air Force space specialists provided warning on 70 percent of Iraq's attacks. When spacecraft detected oil wells ablaze in southern Iraq, commanders decided to advance the start of a Marine attack into Iraq in order to stop the sabotage.

US space power is more than systems. It also includes people who develop, operate, and use them. Most of them—80 percent—wear an Air Force uniform. USAF has 33,600 space specialists at 24 domestic and 12 foreign locations.

In the aftermath of war, the Air Force—DOD's executive agent for space—has a big job on its hands. One is to assure the continued development of space personnel trained for new types of warfare.

Air Force officials say USAF needs to get some major programs on track. USAF finds that its spacecraft, like its aircraft, have grown old. The primary warning satellite—the DSP—dates to the 1970s. Some GPS systems are 14 years old—twice their design life. The Air Force must develop new systems such as the Space Based Radar even as it tries to upgrade its existing ones.

As usual, however, there isn't enough money in the Pentagon budget for the Air Force to buy everything that the space forces want or even to replace or refurbish everything it needs. Like leaders in the flying Air Force, those in the space forces will be searching hard for ways to preserve their effectiveness in a time of inadequate funding.

However, it is some comfort to know that, as the recent war demonstrated, US space power is focused, flexible, and utterly dominant. ■

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## Quesada the Conqueror

[Regarding "Quesada the Conqueror," April, p. 76]: In December 1944, during the Battle of the Bulge, I was a P-38 pilot with the 485th Fighter Squadron, 370th Fighter Group, at an air base designated A-78 near Florennes, Belgium. We were engaged in flying close support missions for the ground troops engaged in countering the Germans' attempt to break through in the Ardennes.

It was a few days before Christmas and the whole area was totally socked in—fog to the ground. We had been unable to fly our missions for several days and were getting pretty antsy.

In the midst of this atmosphere of growing frustration I was informed that I and three others were going to be awarded the Air Medal, marking the completion of our first five missions.

A ceremony of sorts was scheduled, and we all spiffed ourselves up for the occasion.

There we were, assembled at the flight line, when out of the fog appeared an L-5 which landed in front of our formation. Out of the plane stepped Maj. Gen. Elwood R. "Pete" Quesada, who had put himself at quite a risk flying at treetop level in zero-zero weather just to pin the Air Medal on a few fledgling combat pilots. He gave us a little pep talk, got back in the L-5, and left.

Before that incident I had never heard of Pete Quesada, but you can bet I'll never forget him. After reading Rebecca Grant's article, I concluded that what the general had done for us that foggy day in 1944 was completely in character.

Richard R. Booth  
Miami

I have just read the article about Gen. Elwood Quesada and found it to be very interesting.

His military career seems to have been generally outstanding while his sojourn as the administrator of the Federal Aviation Agency was a disaster for the older and most experi-

enced and safest pilots. I mean the infamous Age 60 Rule.

He did not think up this rule himself but it was requested of him by the president of American Airlines, Inc., as a personal favor to a friend, Mr. C.R. Smith.

Mr. Smith was trying to force three pilots who had reached the age of 60 to retire and they had refused to do so. There was some conversation between Mr. Smith and Mr. Clarence Sayen, then president of the Air Line Pilots Association, on this subject. Mr. Sayen suggested, in a letter to Mr. Smith, that one way to get rid of the older pilots would be through the FAA. (This is in spite of the published policy of the ALPA that there be no mandatory retirement because of age.)

Mr. Smith sent this letter to General Quesada at his home address, with a cover letter, and the salutation was, "Dear Pete." This was in 1959. General Quesada made it into a rule in 1960, giving as an excuse that the incidence of heart attacks rose sharply at that age. He actually knew that this was not true, but he persisted in saying it.

This information came to me through my lawyer who had obtained it from the FAA by court order under the Freedom of Information Act. I have copies of the letters.

This is a classic example of the saying, "The evil that men do lives

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

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after them; the good is oft interred with their bones." I was one of the victims of this infamous rule that now has the force of law.

Maj. Eugene W. Garges Jr.,  
USAF (Ret.)  
Manhasset, N.Y.

There was one minor discrepancy in "Quesada the Conqueror." When Pete Quesada became the first head of the FAA in 1958, it was called the Federal Aviation Agency, not the Federal Aviation Administration. This is significant in that the FAA lost its independent status in 1967 when it became part of the Department of Transportation and given its current name.

Lawrence R. Benson  
Albuquerque, N.M.

### Big Again

I read [retired CMSgt. John T.] Lopes's brief summary of the magnificent XC-99 decaying and corroding at Kelly Annex. [See "Letters: Big," April, p. 7.]

I just returned from San Antonio, where I spent 10 years at Lackland Air Force Base. In my journey, I visited Kelly Annex and there stood the XC-99, sunbaked, Texas jack-rabbits under the shade of its wings, bird droppings everywhere, with corrosion and decay abounding. And



Dick Jonas

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yet she still proudly displayed the experimental future that she so gloriously portrayed.

I salute you, Chief Lopes. You deserve accolades for reminding us of that old giant.

CMSgt. Lloyd M. Greenwell,  
 USAF (Ret.)  
 Hot Springs, Ark.

#### Promotion Boards

In regard to [retired Brig. Gen. John] Rollston's reply to Ms. [Ruth D.] Helm's letter on Lt. Col. Martha McSally in the April edition of *Air Force*

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Magazine, "When in Rome" [p. 8]: The purpose of the Officer Effectiveness Report seems to be to identify the "chosen ones" for early promotion and barely does that. It fails miserably to identify qualified people for the bulk of promotions. The system still depends on boards and whatever unpublished criteria they follow [in] that cycle. It has very little to do with the needs of the Air Force and everything to do with loyalty, however misplaced.

With any promotion cycle there are four categories of participants: Those who were promoted who should have been promoted. Those who were promoted who should not have been promoted. Those who were not promoted who should have been promoted. Those who were not promoted who should not have been promoted.

From the subject of Brigadier General Rollston's master's thesis and his reaction to an officer who corrected a leadership error, I can only guess into which category he must fall.

Lt. Col. Joe Sarver,  
 USAF (Ret.)  
 Birmingham, Ala.

There was a coincidental connection between two letters in the April issue. One letter, from [retired Lt. Col. Peter M.] McCarthy ["*Airline Travails*," p. 6], notes that most of his airline right-seat mates left USAF for lack of "consistent, effective leadership at the unit level and above." This observation is bolstered by the letter from [retired] Brig. Gen. John Rollston which indicates that's the way we have always done it, so "when in Rome, do as the Romans" and it has worked well. That's the sort of effective, consistent leadership the chair-borne troops love. In the Navy, it means "don't rock the boat"—oops, ship.

It is precisely this attitude that has caused the scandal at the USAF Acad-

#### Letters

emy. Those "effective, consistent leaders at unit level and above" abrogated their responsibilities toward the cadets, and the worst scandal in Air Force Academy history resulted. Had the female cadets not gone outside the academy, the brutality would continue. A fine way to develop an effective officer.

If Lieutenant Colonel McSally had not blown the whistle as she did, our female Air Force members in Saudi Arabia would still be wearing the [abaya] off base. It still boils down to one precept for leaders at unit level and above—the basic, most fundamental precept of leadership: Accept Your Responsibilities.

Lt. Col. David S. Kahne,  
 USAF (Ret.)  
 Laramie, Wyo.

I was a little disturbed by Brig. Gen. John Rollston's letter.

He first denies emphatically that Lieutenant Colonel McSally's attempts to correct an inadvisable policy cost her a promotion and then proceeds to explain why it probably did.

I, too, had the opportunity to serve on a USAF Central Officer Promotion Board and, while serving at the Air Force Military Personnel Center, had the opportunity to observe others. The board members were carefully briefed on all aspects of the board's operation, and I never heard a board instructed to consider these type of outside activities by the candidates.

The deliberations of the boards were also carefully monitored to ensure they stayed within established policy. Attempts to introduce information not included in the officer's promotion folder were not allowed and occasionally resulted in board members being dismissed from the board for trying to do so.

Obviously, Lieutenant Colonel McSally failed to be selected in an exceptionally competitive but extremely fair promotion system—not for the reason given by General Rollston.

While at the personnel center I also had the responsibility for preparing responses to Congressional and even Presidential inquiries initiated by members who could not get satisfactory answers within the system. These attempts "outside the system" were not questioned and had no unfavorable impact on the career of the officers involved.

Unfortunately, the mind-set expressed by General Rollston does exist and can lead to unfortunate situations like that unfolding at the Air

Force Academy. The price these young female cadets paid for trying to stay within the system was to have their careers terminated and their personal lives severely damaged.

My comments are based on a career that ended in 1980, but I believe the system is not that different today.

Col. Bobby G. Yow,  
USAF (Ret.)  
Fort Worth, Tex.

#### F-35s Needed

After viewing the use of airpower in our last three wars, I believe that it would be smart for the Air Force to reduce the buy of F/A-22 fighters to about 100 and use the money saved to increase the buy of the [Joint] Strike Fighter. [See "The F-35 Steps Out," April, p. 46.] Higher, faster, and farther just doesn't cut it for dealing with the most likely enemies of the future.

Lt. Col. Donald R. Currier,  
USAF (Ret.)  
Smithsburg, Md.

#### The Real World

Professor [Peter N.] Kirstein's letter explaining his "pacifist rejection of violence" is pitiful. I gather from his obtuse attempt to clarify his position that he considers we in the Air Force are "cowards who bomb countries without AAA." [See "Letters: The Professor Weighs In," April, p. 4.]

He proclaims that he knows the difference between offensive and defensive weaponry and then refers to a "just war and the rights of protests in America."

We in the military also abhor war, but we have an understanding of the real world. We have the ability to weigh alternatives and realize that force is the only alternative when all other means fail.

Lt. Col. Jack Ralph,  
USAF (Ret.)  
Enid, Okla.

Professor Peter N. Kirstein writes, "No air force cowards who bomb countries without AAA."

It is easy for a professor to sit in his

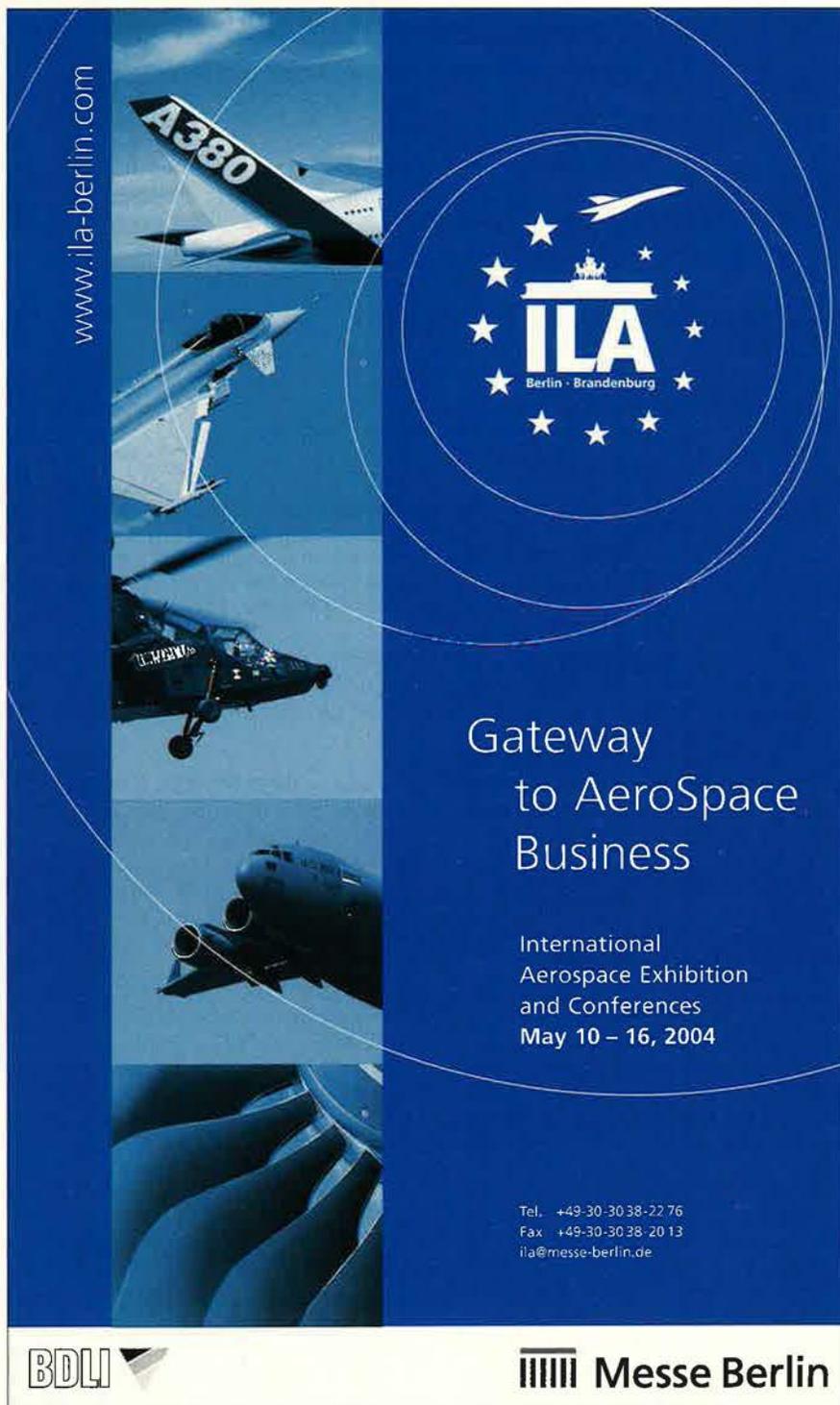
ivory tower and criticize professional people who risk their lives to protect worms like him. How dare he call a fighter/bomber pilot a coward? A pilot never knows (for certain) that there is not going to be hostile fire. He never knows when he is going to catch the "golden BB."

Would the professor prefer that all pilots attack their targets in balloons, to allow the other guy to get in the first shot? Does he really think this is a game? Does he not know or care that

the pilot is bombing the "bad guy," knowing that if he is shot down and captured that he will be tortured and humiliated before being executed?

Sitting in his classroom surrounded by wide-eyed students must give him quite a feeling of superiority, but there is a major difference between "professor" and "professional." A professor who ends a letter with a preposition? Come on!

Harry Welch  
Meredith, N.H.



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#### Corrections

The Air Force Historical Research Agency recently corrected its records to reflect an additional official aerial victory credit award of 0.5 to Col. Eugene W. O'Neill, bringing him to five total World War II victories. He will be added to our roster of aces in the 2004 May Almanac.

By Suzann Chapman, Managing Editor

## Roche Tapped To Head Army

President Bush on May 7 announced that he intended to nominate James G. Roche, the Secretary of the Air Force, to become the Secretary of the Army.

Former Army Secretary Thomas E. White submitted his resignation April 25.

Roche must undergo a new Senate confirmation hearing, but he said he would be willing to make the move. (See "The Pentagon Shuffle," p. 9.)

## Two Airmen Killed

Operations in Iraq and Afghanistan took the lives of two more airmen.

A1C Raymond Losano, 24 of Del Rio, Tex., died of wounds he received April 25 during a firefight in Afghanistan near the Pakistan border. He was a tactical air command and control specialist—known as a tactical air control party, or TACP, member. He was assigned to the 14th Air Support Operations Squadron, Pope AFB, N.C., but attached to the Army's 82nd Airborne Division, Ft. Bragg, N.C. His primary mission was to call in close air support for ground forces.

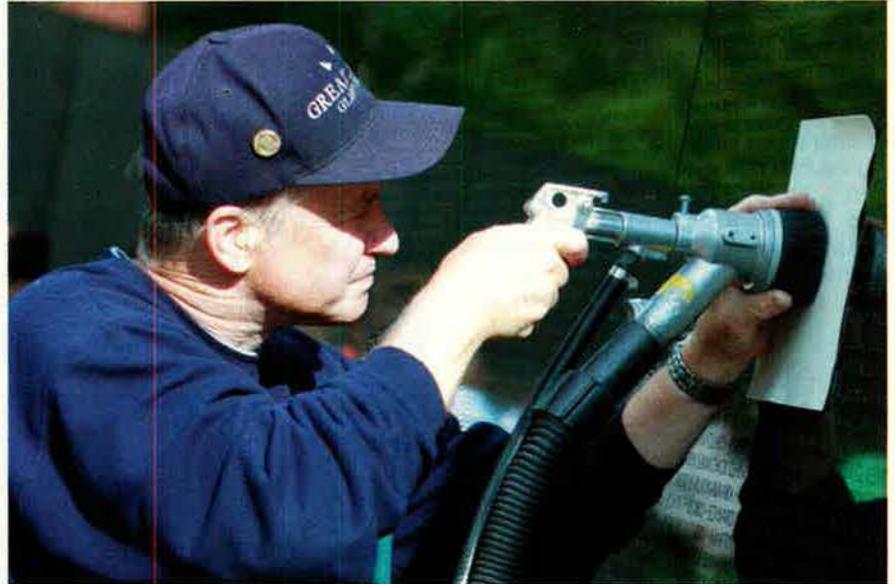
SSgt. Patrick L. Griffin Jr., 31, of Elgin, S.C., was killed in action May 13 near Diwaniyah, Iraq. The convoy in which Griffin, a data systems technician with the 728th Air Control Squadron, Eglin AFB, Fla., was traveling came under fire en route to Baghdad.

## CSAR To Move to AFSOC

The Air Force on April 30 announced plans to transfer Air Combat Command combat search and rescue forces to Air Force Special Operations Command. The action, which is slated for Oct. 1, does not affect active or reserve CSAR units under Pacific Air Forces.

Ownership of the Air Force Rescue Coordination Center, located at Langley AFB, Va., also will shift to AFSOC.

USAF officials said warfighting commanders will see no change in the CSAR resources provided to them. The transfer simply permits the service to benefit from combining com-



USAF photo by TSgt. Jim Varhegyi

*Jim Lee, expert stonecutter, works on the Wall at the Vietnam Veterans Memorial, which will now bear the name of Air Force SSgt. Donald Carson. Lee will also change the symbol for USAF Col. Robert Govan from MIA to KIA. (See "Airman's Name Added to Wall," p. 9.)*

parable aircraft and missions, said Maj. Gen. Richard A. Mentemeyer, USAF director of operations and training.

## Airborne RED HORSE Saddles Up

With little fanfare, the Air Force put a new concept for battlefield engineers into action during Operation Iraqi Freedom. The concept—Airborne RED HORSE teams—had been formally approved late last year.

USAF sent its three ARH teams into Iraq to help quickly get captured airfields back into operation.

Traditional RED HORSE teams—the acronym means Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer—are inherently mobile but pack a lot of gear. The new airborne teams have lighter, less bulky equipment and include other specialties.

ARH teams go by parachute or assault helicopters into remote, high-threat areas where USAF needs to re-establish an airfield. All team members are volunteers from one of USAF's active duty RED HORSE units. All will earn jump wings at

Army Airborne School and learn how to rappel from helicopters.

Each team has 21 traditional RED HORSE members, plus six firefighters, six explosive ordnance disposal technicians, and two chemical/biological readiness experts.

The Army has had airborne engineers for years and provided one of them, Capt. Andy Taylor, to Air Combat Command to help establish the Air Force teams.

"The vocabulary, mentality, and doctrine of the Army and Air Force are different," said Taylor. "But we're smoothing it out."

## USAF Reduces Stop-Loss

The Air Force on May 2 released more than half of the 99 officer and enlisted specialties on the Stop-Loss order it announced just days before the war in Iraq began. It was the Air Force's second use of Stop-Loss since the 9/11 terrorist attacks.

The May 2 release covers 31 officer and 20 enlisted specialties.

The officer list includes some pilots, navigators, engineers, and medical personnel. The enlisted fields in-

clude combat control, tactical air command and control, explosive ordnance disposal, historian, public affairs, and some health specialties.

By mid-May, USAF officials still had not determined when they would be able to release the remainder of the airmen on the list.

#### **Airman's Name Added to Wall**

An Air Force staff sergeant who died during the Vietnam War finally had his name added to the Vietnam Veteran's Memorial on May 13.

SSgt. Donald S. Carson was injured in a military aircraft accident in Thailand on April 12, 1963, and died a few days later.

His name had never been inscribed because of a clerical error, according to the Air Force.

Carson was one of six individual's whose names were added to the Wall this year. The other five were US Army members.

Each year, as DOD confirms new information, the Vietnam Veterans Memorial Fund hires stone workers to inscribe additional names and update the status of those already listed in the black granite monument. This year there were 26 updates.

Included among them was USAF Col. Robert A. Govan, whose status changed from Missing in Action to Killed in Action.

#### **State Guards Move To Joint HQs**

The head of the National Guard Bureau said on May 19 that each state will consolidate its separate Army and Air Force headquarters entities into one joint force headquarters per state. By Oct. 1 there will be 108 fewer HQ units.

Each state, US territory, and the District of Columbia has three Guard headquarters—a statewide headquarters and separate Army and Air Force headquarters. These HQs now total 162.

Any savings from the reduction will go to remedy personnel shortages in operational units, said Army Lt. Gen. Steven Blum, chief of the National Guard Bureau.

#### **NCO Retraining Begins**

The Air Force recently began a noncommissioned officer retraining program to help ease shortages in some career fields.

For Fiscal 2003, the service targeted 1,400 NCOs. In 2004, it plans to retrain up to 2,500.

The first phase of the effort sought volunteers. If that doesn't produce the necessary number, the service will start an involuntary phase June 20.

## **The Pentagon Shuffle**

Service leadership is changing. The top civilian for each service will be new to the job, but the Army faces the largest transition.

The Army's top civilian was fired, and its top two military officers are due to retire. They are Gen. Eric K. Shinseki, Chief of Staff, and Gen. John Keane, Vice Chief. (Keane was offered the top job, turned it down for personal reasons, but was said to be reconsidering his decision.)

Defense Secretary Donald H. Rumsfeld handed Army Secretary Thomas E. White his walking papers in April. White formally submitted his resignation April 25 and left office May 9. The two had tangled repeatedly over policy decisions, namely Rumsfeld's desire to transform the Army by reducing its size and making it a lighter, more mobile force.

The first name to surface as a possible replacement for White was Air Force Secretary James G. Roche. The 23-year Navy veteran and former Northrop Grumman official has served as SECAF since June 2001. During his tenure, he has worked to infuse the Air Force with a strong sense of "jointness" and get it in sync with transformation.

If Roche goes to the Army, which seems likely, that opens the Air Force spot.

A candidate to be the next Air Force Secretary is Barbara M. Barrett, who is an international business and aviation lawyer and corporate official with Raytheon. She served in several high-level government positions during the Reagan Administration. She was also a civilian advisor to then-Defense Secretary Dick Cheney during Desert Storm. On top of that, Barrett is an instrument-rated pilot.

Meanwhile, the Navy has been headed by an acting Secretary—actually two—since the first of the year.

Former Navy Secretary Gordon England left in January to become deputy director of the new Department of Homeland Security. Within weeks, Susan Morrissey Livingstone, then-Navy undersecretary, stepped down as acting Secretary. She was replaced by the Navy's undersecretary for installations and environment, Hansford T. Johnson, a retired Air Force general.

Colin R. McMillan, oil executive and former assistant secretary of defense in the first Bush Administration, has been mentioned as a likely nominee for the Navy job.

## **Most Powerful, Most Precise in History**

"Notwithstanding death squads and dust storms, [coalition forces] reached the gates of Baghdad in less than two weeks. And by the time they were ready to take the city, they had decimated Iraq's command and control, and the Republican Guard divisions ringing Baghdad, with unquestionably the most powerful and precise air campaign in the history of warfare, using capabilities so discreet that coalition air crews could take out a tank hiding under a bridge without damaging the bridge."

*—Defense Secretary Donald H. Rumsfeld speaking with coalition forces at a town hall meeting at Camp Al Saliyah, Doha, Qatar, on April 28.*

"Ultimately, we must balance our enlisted force to better meet today's mission requirements and those in the future," said USAF's top enlisted member, Chief Master Sergeant of the Air Force Gerald R. Murray.

He noted that the retraining program does give people "options and choices."

Airmen at risk for involuntary retraining may check their standing on the Air Force Personnel Center Web site at <https://www.afpc.randolph.af.mil/enlskills/Retraining/retraining.htm>.

#### **USAF Gains, Loses Raptors**

Air Force officials on May 15 said they will be able to buy one extra F/A-

22 Raptor this year, raising the Fiscal 2003 purchase to 21 aircraft.

Unfortunately, some lawmakers are proposing the service buy two fewer F/A-22s than planned for Fiscal 2004.

Under the program's "buy to budget" philosophy, the Air Force can purchase as many fighters as it can get within a budget limit, said Marvin R. Sambur, assistant secretary of the Air Force for acquisition.

He said the program is running much better than it was late last year when the service revealed a possible \$1 billion cost problem in the engineering and manufacturing development phase.

It has also overcome technical challenges, such as overheating of the

USAF photo by TSgt. Michael Ammons



A USAF F-15C (top) piloted by Maj. Greg Thomas of Nellis AFB, Nev., flies alongside a MiG-29 piloted by Luftwaffe Lt. Col. Tom Hahn, with Germany's Fighter Wing 73, over the coast of Florida. On their next training deployment to the US, the Germans expect to fly new Eurofighters instead of MiGs.

## In the Wake of Iraq War, Farewell to PSAB

After 12 years of continuous US force deployments to Saudi Arabia, nearly all American military personnel will depart the kingdom by August. The combined air operations center at Prince Sultan Air Base, which was the nerve center of the successful air war over Iraq, will be mothballed.

The last air tasking order to originate at PSAB came out on April 28. The next day, the CAOC at Al Udeid AB, Qatar, took over responsibilities for air operations in Southwest Asia.

The Defense Department said US forces were leaving PSAB because the defeat of the Iraqi regime of Saddam Hussein had reduced the military danger in the region. The departure coincided with the end of Operation Southern Watch, the armed enforcement of the no-fly zone in southern Iraq. Southern Watch had been mounted principally from PSAB. A secure compound had been built expressly to accommodate US troops and aircraft after the 1996 terrorist attack at Khobar Towers in Dhahran.

The Saudi government paid for construction of the sprawling base, which hosted both combat aircraft and an array of intelligence, surveillance, and reconnaissance airplanes, including the E-3 AWACS, E-8 Joint STARS, and U-2. It was situated deep in the desert so as to keep US forces out of sight of the Saudi population. PSAB held the largest US presence in Saudi Arabia.

"Iraq was a threat to the region," said Defense Secretary Donald H. Rumsfeld. "Because that threat is gone, we ... have the ability to adjust some of our arrangements."

Some US forces will remain in the region to provide an ongoing presence in Iraq and support Operation Enduring Freedom in Afghanistan. Other Gulf nations will play host to US forces. However, only about 500 personnel will remain in Saudi Arabia. They are part of an ongoing training mission. PSAB may be re-opened periodically for large joint training exercises with the Saudis, the Pentagon said.

Over 10,000 US military personnel and 200 coalition aircraft were in Saudi Arabia at the height of Operation Iraqi Freedom.

—John A. Tirpak

brakes, aerodynamic buffeting of the twin-tail stabilizers, and equipment and training problems. "We've put all those to bed," said Sambur. However, he added that the service still hasn't solved the aircraft's problem with stability of software in its avionics suite.

And, that is what has key lawmakers worried. They want to place new restrictions on the Air Force until it resolves the problem.

Sambur said, "We're fairly confident we should have a solution to this problem by mid-fall."

## Senate OKs New NATO Members

The Senate on May 8 voted unanimously to support the admission to NATO of seven central and Eastern European countries that were formerly under Soviet control.

The seven nations—Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, and Slovenia—were invited to join the Alliance last November. NATO member states must ratify the expansion.

## Fewer Terrorist Attacks in 2002

The State Department on April 30 said that there were 44 percent fewer terrorist attacks in 2002 than in the previous year. In raw numbers, there were 199 last year and 355 in 2001.

State's new coordinator for counterterrorism, Cofer Black, said it was the "lowest level of terrorism in more than 30 years." He attributed the decrease to several reasons:

- A significant drop in the number of Columbian oil pipeline bombings, 41 in 2002 vs. 148 in 2001.

- Imposition of harsher security measures around the world following the Sept. 11, 2001, terrorist attacks.

- Arrest of many terrorists. (More than 3,000 al Qaeda members have been arrested in 100 countries.)

- Pooling of intelligence and law enforcement information.

However, Secretary of State Colin Powell emphasized that terrorist attacks occurred in every region of the world last year. "Even as I speak," he said, "terrorists are planning appalling crimes."

## U-2 Takes Part in Rescue

Air Force officials said that a U-2 pilot—airborne over Iraq on an unrelated mission—helped Marines in the April 13 rescue of seven Army personnel captured by enemy forces in northern Iraq.

Because of the altitude at which the U-2 operates, the aircraft has "tremendous radio range," said the pilot, known as "Code." He contacted

the Marines and the combined air operations center to coordinate communications, since they were out of range with one another.

Code also ensured there were no Iraqi air defense or ground troops in the area to threaten the Marine helicopters that recovered the soldiers.

It was not typical U-2 work.

"The gist of the mission is accomplished on the ground by intelligence experts," said Code, who has flown U-2s with the 9th Reconnaissance Wing, Beale AFB, Calif., for two years. "My biggest challenge is to take off, make sure the jet is healthy, navigate, and then land the beast."

### **NPRC Puts Requests Online**

The National Personnel Records Center has instituted a Web-based procedure that lets veterans and their families request official records.

The center says the online request process will speed service by prompting the requestor for all the information NPRC needs to process a request. It will eliminate the need to go through normal mail channels to get more information.

The Web-based application is available at <http://vetrecs.archives.gov>.

### **Aide Now a Special Duty**

After more than 50 years, the Air Force made the enlisted aide function a special duty and replaced its generic air force specialty code with a separate one—8A200.

USAF also has begun to institutionalize the aide training program. In the past, said officials, enlisted aides normally received training through private sector courses.

Currently, there are some 90 enlisted aides assigned to general officers serving around the world. The field is open to all career airmen, but they must pass an extensive screening process, said MSgt. Gary Murdock, USAF enlisted aide manager at the Pentagon.

### **Pyongyang's New Laser Gun?**

In March, North Korea targeted two Army helicopters patrolling the demilitarized zone with what may have been a Chinese laser gun, reported the *Washington Times* on May 13. Such a weapon can cause eye damage up to three miles away, it said.

The incident occurred about the same time that four North Korean fighters intercepted a USAF RC-135S Cobra Ball aircraft flying in international airspace. (See "US Beefs Up Bombers for Korean Crisis," April, p. 10.)

A US Forces Korea spokesman said that use of laser designators to track US aircraft occurs occasion-

## **Julian Rosenthal, 1909–2003**



Julian B. Rosenthal, the last of the founding members of the Air Force Association, died April 29 in Durham, N.C. He was 94.

Rosenthal, who had been a private first class during World War II, was the only enlisted man in a group of 12 Army Air Forces veterans who met in New York City on Oct. 12, 1945, to establish the Air Force Association.

In an interview years later, Rosenthal explained that there was "no reason under the sun" for his invitation to attend the meeting. "There were thousands of other former enlisted men who were much more prominent and much more active in the military service than was I," he said.

Nonetheless, he accepted the invitation and began an era of active support to AFA and the Air

Force that lasted more than 50 years.

Among his first tasks was to draft AFA's national constitution and bylaws. He also served as AFA national secretary for 12 years, from 1947 to 1959, and national chairman of the board in 1960. And, in 1953, AFA named Rosenthal its first "Man of the Year" (now Member of the Year).

Rosenthal, a native of New York, graduated from Columbia University and Fordham University Law School. As an attorney in New York City, he encouraged other New Yorkers to become active in AFA, which led to creation of AFA's Iron Gate Chapter.

The Air Force formally recognized his contributions with an exceptional service award, and noted in the citation that Rosenthal "has performed countless deeds of service." The citation recounted his sponsorship of talks between leading Air Force officials and New York State Church and civic groups and his long-time work on behalf of the New York City-area Aerospace Education Council.

The citation went on to say that, even at age 87, he "continues to work in support of the Air Force and its people."

In a foreword to a 1995 AFA history, Rosenthal wrote, "While there are few left of the 'gang that got together in order to keep the gang together' back in those early days, it seems to me the principles ... remain." Rosenthal was one of the reasons those principles exist. For a half century, he helped ensure, in his words, AFA was "independent in thought, yet universally outspoken in its support of American airpower."

## **DOD To Merge Exchange Systems**

The Pentagon on May 16 launched a drive to create a single Armed Services Exchange System. Such a merger must have Congressional approval. If that is forthcoming, officials said, it would take years for DOD to make the consolidation a reality.

"We may be looking at a five-year process here," said Charles Abell, principal deputy undersecretary of defense for personnel and readiness. "It may be less if we're more aggressive." He added, though, that DOD would proceed "very carefully."

Currently only the Army and Air Force share an exchange system. The Navy and Marine Corps each have separate systems.

Officials vow that the action, if approved, will result in "more efficient and effective" business processes, yet still provide service members with the same service-specific ambience they have come to expect. Abell said that the Pentagon has attempted to consolidate the exchanges before, but this time the move has high-level support—from Defense Secretary Donald H. Rumsfeld.

Abell noted the step could arrest the decline in the dividend that the exchanges return to morale, welfare, and recreation funds. That money "has gone down over the last four or five years," said Abell. "This is a way to save costs and thus improve our dividend."

Retired Air Force Maj. Gen. Charles J. Wax, the former commander of the Army and Air Force Exchange Service, is leading development of the consolidation plan. DOD is expected to complete it within the next two years and present it to Congress.

## William Leverette, a Double Ace, Dies

Retired Col. William L. Leverette, celebrated World War II ace, died April 7 in Beaverton, Ore. He was 89.

Leverette was one of only two Americans in World War II to score seven victories in a single encounter with the enemy.

He was born in Palatka, Fla., on Sept. 5, 1913, and received a degree in mechanical engineering from Clemson University and a masters in aeronautical engineering from Princeton. He entered the Army Air Corps in 1939 and earned his pilot wings in 1940.

As commander of the 37th Fighter Squadron, Leverette on Oct. 9, 1943, led seven P-38s on a mission to protect Royal Navy warships in the Mediterranean. When he sighted a formation of 30 German Ju-87 Stuka dive bombers, Leverette sent three of his fighters to fly top cover while he and the other three closed on the Stukas. Each of the German aircraft had a gunner manning a flexible machine gun plus two wing-mounted guns.

Leverette, who had spent two years teaching fighter tactics and had more than 1,000 hours flying fighters, took out seven of the Stukas himself. His unit shot down another nine, plus a Ju-88, and most of the rest either headed for home or ended up in the sea. (See "Valor: Seven Come Eleven," July 1984 online at [www.afa.org/magazine/valor](http://www.afa.org/magazine/valor).)

For his leadership and individual performance in this action, Leverette received the Distinguished Service Cross.

He continued to down enemy aircraft in other actions, finally totaling 11 victory credits to become one of the top 20 aces in the Mediterranean theater.

During his military career, Leverette flew 45 different aircraft, from the BT-2 biplane to the F-104. He retired from the Air Force in 1965.

ally. The North Koreans are known to have both laser range-finding and target guidance equipment.

However, US intelligence officials reviewing the incident told the *Times* that the range involved indicated North Korea may now have a Chinese-made ZM-87 antipersonnel laser. It is possible, according to one intelligence official, that North Korea may have manufactured its own version of the laser gun.

It is designed specifically to attack personnel. At just less than two miles, it can injure human eyes, and, with a magnification device, it can extend that to three miles.

Since the incident, US aircrews patrolling the DMZ have worn eye protection gear.

### The Speicher Mystery Continues

Addressing US forces at Prince Sultan AB, Saudi Arabia, on April 29 Defense Secretary Donald H. Rumsfeld said the Pentagon was pursuing efforts to determine the fate of Navy Capt. Michael Scott Speicher.

Speicher, a Naval aviator, was first listed as killed in action during Gulf War I, then was designated missing in action in 2002 because of newly acquired intelligence.

Tariq Aziz, the former Iraqi deputy prime minister taken into custody by

## V-22 Testing Deemed OK, USAF Gears Up to Fly

The Pentagon's top acquisition panel said in late May that it was satisfied with the testing progress of the V-22 Osprey tilt-rotor aircraft, which the Air Force plans to use as a Special Operations Forces aircraft. The judgment clears the way for further testing and possible production.

The Defense Acquisition Board, chaired by Edward C. Aldridge, the Pentagon's top acquisition official, did not make any programmatic decisions about how many Ospreys should be bought or what particular equipment they should have. Instead, it passed judgment on the quality of the test program, which it had earlier deemed to have been insufficient for evaluating certain problem areas.

Last fall, Aldridge said he was "a skeptic" that the V-22 could come back from its mechanical problems, which had contributed to two crashes in 2000 that killed 23 Marines. Investigations subsequently showed that Marine V-22 personnel had falsified maintenance reports to make it seem the aircraft was performing better than it really was.

However, the DAB said the V-22 test program was addressing all areas of concern and could proceed. Aldridge made the decision only a few days before retiring from his DOD post.

Among the fixes to the aircraft were the rerouting of the hydraulic lines, a change of parts vendors for certain suspect components, and a shift of fuel tanks from the rear sponson to the wing, to correct a center-of-gravity problem.

The Marine Corps wants to buy 360 V-22s to ferry troops inland from ships and to move cargo from ship to shore. The Air Force plans to buy 50 CV-22s for SOF missions and the Navy expects to acquire 48 for a variety of roles.

The V-22 has a unique mechanism that allows the aircraft to take off and land like a helicopter with its rotors horizontal and tilt its rotors forward for high-speed turbo-prop flight. This makes it faster and longer-ranged than helicopters.

Although USAF considered buying the V-22 for the combat search and rescue mission, that requirement will be met with a helicopter, which is yet to be selected.

In early April, the V-22 completed a first-ever test in terrain-following radar mode, a capability deemed essential for its SOF role. The Pentagon will use the aircraft to infiltrate SOF troops deep in enemy territory by flying nap-of-the-earth, under-radar missions at high speed.

The Air Force expects to get its first CV-22s in 2006 and be fully operational with all 50 airplanes in 2010. The 58th Special Operations Wing at Kirtland AFB, N.M., has taken delivery of its first CV-22 full-motion simulator already, and will receive four in total. The simulators will be part of a nationwide network that will allow simultaneous, real-time training with aircrews on other types of simulators.

Besides building proficiency, the simulators will cost only a 10th as much to "fly" per hour as the actual aircraft.

—John A. Tirpak

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USAF photo by SMSgt. David H. Lipp



**Lt. Col. Dana S. Mullenhour on May 14 steers F-16 No. 82-1006 through the traditional firehose shower to celebrate completion of 60,000 accident-free flying hours for the 119th Fighter Wing. Members of the North Dakota Air National Guard unit have flown more than 132,400 hours without a major mishap.**

## Leaders of the Pack No More?

Frustrated in their attempts to block the coalition war against the regime of Saddam Hussein, France, Germany, Belgium, and Luxembourg rolled out a plan April 29 to create a new European army, one that would be outside NATO and the influence of the United States.

The four—dubbed “Old Europe” by US Defense Secretary Donald H. Rumsfeld—met without the other 11 members of the European Union.

The United States and United Kingdom objected to the plan, which they said would further dilute NATO’s military power. The only EU member that announced support is Greece, which is also a NATO member. Russia, a NATO Partnership For Peace member, also praised the initiative.

The four-nation plan called for establishing the core of a rapid reaction force and setting up a new military headquarters to oversee the force and collaborative defense acquisition efforts.

Secretary of State Colin Powell said the move would be counterproductive.

“What we need is not more headquarters,” Powell said of the plan in testimony before Congress. “What we need is more capability and fleshing out of the structure and forces that are already there.”

The United States has long pressed NATO countries to take more responsibility for their own defense by upping their defense budgets, which have slid precipitously since the end of the Cold War. However, the US has argued that such improvement should take place within the context of NATO.

NATO is already working to launch a NATO Response Force this year. (See “The NATO Response Force,” April, p. 64.) The NRF will comprise land, sea, and air forces that enable NATO to quickly project power beyond the borders of its member countries. While the NRF was a US proposal, it was approved last year by NATO members and is part of an overall plan to improve NATO military capabilities.

And, after nearly five years of planning, the European Union finally may debut its 60,000-strong military Rapid Reaction Force, designed to handle peacekeeping duties that NATO itself may not cover. EU officials reportedly have said it is ready to undertake a mission, however they admit there are still hardware issues to address.

It is unclear where the four-nation plan fits within existing efforts, although French President Jacques Chirac insisted it was simply meant to energize EU defense efforts. He flatly denied that it was aimed at setting up a European challenger to the American military, as had been charged by British Prime Minister Tony Blair.

In the communiqué issued after their meeting, the four nations said nothing about raising their defense spending.

the US in April, told interrogators that Speicher is dead. However, his statements by themselves are given little credibility.

US investigators sent to Iraq in April to search for signs of Speicher found what may be his initials carved in the wall of a prison.

Rumsfeld said that the searchers are pursuing “every single lead.”

## DOD To Transform Logistics?

US Transportation Command and the Defense Logistics Agency should merge into a single organization to solve force sustainment problems, according to TRANSCOM.

Transportation Command moves equipment and troops, while DLA purchases and stores supplies.

According to a *National Defense* interview with Rear Adm. Christopher Ames, director of plans and policy at TRANSCOM, commanders in the field do not get adequate support because there’s no synchronization between transportation and supply providers.

Ames said the system is fragmented and should be made joint.

While DLA declined to comment, a DOD logistics official told *National Defense* that there are “lots of ways to improve the process.” Merging DLA and TRANSCOM, according to Alan Estevez, assistant deputy undersecretary of defense for supply chain integration, is one of them. DOD is reviewing the proposal, but such a merger would not create a single point of contact in the supply chain, he said.

## Panel Says No to Small Nukes

The House Armed Services Committee on May 13 rejected a proposal from the Bush Administration to permit development of new types of low-yield nuclear weapons.

Instead, it voted to retain the 10-year-old ban on producing nuclear weapons having a force of less than five kilotons. The House panel did approve a compromise that would permit research into low-yield weapons.

The Administration says that Cold War strategic nuclear weapons have less deterrent value today, so the US needs to have the option to use small nukes to deter terrorists and rogue nations.

The Senate Armed Services Committee voted last week to lift the ban. It passed by a 15–10 vote.

The measure has to pass the full House and Senate.

## CSAF Expands Reading List

Gen. John P. Jumper, Air Force

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## News Notes

By Tamar A. Mehuron, Associate Editor

■ Officials formally ended Operation Northern Watch during a May 1 ceremony at Incirlik AB, Turkey, although its last combat patrol was flown March 17. Northern Watch was a US-Turkey-UK coalition operation to enforce UN resolutions by patrolling the northern no-fly zone in Iraq. It began, under another name Operation Provide Comfort, shortly after the end of Gulf War I in 1991.

■ Polish officials signed a military contract April 18 to buy 48 new F-16 fighters—36 F-16Cs and 12 F-16Ds. Initial delivery is scheduled for 2006.

■ SMSgt. David Popwell, a Security Forces specialist at Eglin AFB, Fla., received the Noncommissioned Officer Association's Vanguard Award for saving the lives of three people injured in a serious car accident on Florida's Highway 20 in late March.

■ On April 8, Air Force Space Command and Lockheed Martin personnel at Cape Canaveral AFS, Fla., launched a Titan IVB rocket carrying a Milstar II communications satellite, the last of the five-satellite constellation.

■ DOD announced April 25 the establishment of the Joint Program Executive Office for Chemical and Biological Defense, combining the chemical and biological defense offices of the Air Force, Army, and Navy. The new office will oversee research, development, acquisition, fielding, and life-cycle support of chem-bio defense equipment and medical countermeasures.

■ The Air Force Research Lab's Information Directorate at Rome, N.Y., on April 28 awarded a \$3.5 million contract to the Palo Alto Research Center in Palo Alto, Calif., to devise software for the Defense Advanced Research Projects Agency project titled "Protecting Privacy of Individuals in Terrorist Tracking Applications." The project will support the Pentagon's new Total Information Awareness program to produce technology required for a database to predict, track, and pre-empt terrorist attacks.

■ US Homeland Security Agency Director Tom Ridge and British Home Secretary David Blunkett recently announced formation of a joint anti-terrorism working group that will go beyond merely sharing intelligence. The group will collaborate on methods to improve border protection and surveillance, as well as ways to pool research and training.

■ Northrop Grumman will team with ARINC to develop a new global tactical combat communications system for the Air Force. The system, called Roll-On Beyond-Line-of-Sight Extension, is the first generation of smart relay terminals and will initially be deployed on KC-135 aircraft. ROBE is a portable communications pallet with the capability to distribute command and control, data link, and situational awareness information to support in-theater reachback, network connectivity, and connections to dispersed units. It also will provide the aircrew with an interactive situational awareness display.

■ Veterans Affairs said it will reduce the premiums military personnel pay for Servicemembers' Group Life Insurance beginning in July. The cost of a \$250,000 SGLI policy, the maximum coverage, will drop from \$20 to \$16.25 monthly. The VA also will reduce premiums for family coverage. It does not plan to cut the rates for Veterans' Group Life Insurance, however.

■ DOD is closing two armed forces recreation centers in Europe a year early because of the drop in the dollar's value overseas and the need for increased force protection, according to Army officials. The Chiemsee Lake and Park hotels will close Sept. 2. Another hotel, the Von Steuben in Garmisch, closed April 15. All three were originally scheduled to close in 2004. Other armed forces facilities in Garmisch will stay open.

■ Northrop Grumman selected Marconi Selenia Communications S.p.A., the first Italian supplier in the F-35 Joint Strike Fighter program, to provide the F-35 back-up radio. Northrop's space technology sector is developing the F-35's advanced communications, navigation, and identification avionics suite under contract to Lockheed Martin.

■ Syracuse Research Corp. of New York will develop software to assist in air operations planning and strategy assessment for effects-based operations under a four-year, \$3 million contract from AFRL's Information Directorate. The goal is to develop an information fusion system that will combine data from various sources for commanders and mission directors at air operations centers.

■ BAE Systems, on May 6, said it was selected to provide a major upgrade to the flight control system for

the Boeing C-17 airlifter. BAE's real-time operating system will enable the flight control suite to meet Global Air Traffic Management safety requirements.

■ NASA awarded separate contracts to Northrop Grumman and Orbital Sciences to refine requirements and operational concepts for the proposed Orbital Space Plane. The 16-month study contracts, totaling \$45 million, call for the companies to address NASA requirements for a crew rescue capability and a two-way crew transport capability.

■ The 846th Test Squadron, Holloman AFB, N.M., set a world land speed record April 29 during a test to validate hypersonic upgrades to the base's high-speed test track. A four-stage, rail-bound rocket sled, carrying a fully instrumented, 192-pound Missile Defense Agency payload, traveled slightly more than three miles in 6.04 seconds, reaching Mach 8.6 or 6,416 mph. The test culminated five years and \$20 million worth of work to enable the Holloman facility to handle DOD's hypersonic (more than five times the speed of sound) test needs. The facility provides the bridge between the lab and full-scale flight test, said Lt. Col. James Joliffe, 846th TS commander. It has been designated to work with MDA on theater missile defense testing.

■ Lockheed Martin and Spectrum Astro announced May 7 that they have formed a partnership to pursue development of the GPS III advanced navigation satellite. Those two companies and Boeing have been performing concept exploration studies for this next generation satellite.

■ Orincon Defense of San Diego received a \$3 million contract from AFRL's Rome Information Directorate to develop an automatic linkage of video images with other sensor data to speed identification of time-critical targets.

■ The Navy plans to retire its 20 remaining F-4 Phantom II fighters within a year, according to the *Los Angeles Times*. The aircraft are 35 years old and have been on the Navy's hit list for some time.

■ Tammie Bocook, wife of MSgt. Ray Bocook, stationed at Robins AFB, Ga., has won the 2003 Joan Orr Air Force Spouse of the Year award. Commenting on her volunteer work, Bocook said, "The Air Force is part of our family; if I did not take part, I would be missing out." She works part-time, in addition to managing a heavy volunteer commitment and helping raise three children.

■ DOD recently approved the construction of two new commissaries.

One will be at the Marine Corps Support Activity at Richards Gebaur, Mo., and the other at NAS JRB Willow Grove, Pa. Construction is slated for spring 2004 for the Richards Gebaur facility and spring 2005 for Willow Grove.

■ One Air Force individual and two facilities on May 5 were named winners in the 2002 Secretary of Defense Annual Environmental Awards Program. They were Karlene B. Leeper, 611th Air Support Group, Elmendorf AFB, Alaska, for Cultural Resources Management; Hill AFB, Utah, for Environmental Restoration; and Tinker AFB, Okla., for Environmental Quality.

■ Kent Cummins, 71st Flying Training Wing Public Affairs, Vance AFB, Okla., earned the 2002 Thomas Jefferson print journalist of the year award from the Defense Information School, Ft. Meade, Md.

■ *USA Today* named the Civil Air Patrol's aerospace education Web site as a "Best Bet" for educators for 2003. It was also tapped as a best bet in 2002. Each week *USA Today* features three sites on its education homepage that offer valuable online resources for educators. The CAP site contains hands-on activities for all grades, an aerospace education newsletter, and information on grants, awards, and conferences. The site is [www.capnhq.gov](http://www.capnhq.gov) and click on "Aerospace Education and Training."

■ Among the 2002 Air Force Mission Support Awards were the Gen. Robert J. Dixon Personnel Award to 1st Lt. Marie Snipes, Randolph AFB, Tex., and the Gen. Horace W. Wade Innovation Award to TSgt. Erik Stewart, 75th Mission Support Squadron, Hill AFB, Utah.

■ The Air Force recognized the enhanced productivity of five Air Force teams and three individuals April 10 at the Pentagon. The team honorees were: 363rd Expeditionary Security Forces Team, Prince Sultan AB, Saudi Arabia; C-5 Pylon Conebolt Corrosion Removal Team, Robins AFB, Ga.; Internet-Based Advanced Distributed Learning Team, Randolph AFB, Tex.; and System Capable of Progressive Expansion Team and the Systems Control Course System Administration Team, both at Keesler AFB, Miss. The individuals were: MSgt. Kevin P. Rowley, Sheppard AFB, Tex.; Robert W. Wyatt, Davis-Monthan AFB, Ariz.; and Joseph C. Poniatoski, Peterson AFB, Colo. The combined efforts generated savings of \$63 million.

■ The Col. Vernon P. Saxon Jr. Aerospace Museum officially opened April 5 in Boron, Calif., near Edwards AFB, Calif. The museum was estab-

lished through the combined efforts of Team Edwards, US Borax, KJC Operating Company, and Boron community volunteers. It is named in honor of a former vice commander of the Air Force Flight Test Center at Edwards. Retired Maj. Gen. Claude Bolton, a classmate of Saxon's at the USAF Test Pilot School, said, "I doubt there is a weapons system in the Air Force not touched by Saxon."

■ The Oklahoma Air Logistics Center, Tinker AFB, Okla., honored Paul Barber, an electrical equipment repairman, in a ceremony May 5 for his 50 years of USAF service. He enlisted in the Air Force in 1953, serving for 20 years, then began a civil service career at Tinker. He will be 68 in July and wants to keep working because "if you work around good people, it's worthwhile," said Barber.

■ On April 9, the USO of Metropolitan Washington awarded TSgt. Mervin Dennis, Bolling AFB, D.C., its 2003 C. Haskell Small Award for volunteerism.

■ Air Force officials tapped six Air Force personnel and two organizations to receive the 2002 Manpower and Organization Awards. They are: Maj. Troy L. Hawk, 18th Wing, Kadena AB, Japan; Capt. Christopher M. Hart, Air Mobility Command, Scott AFB, Ill.; SMSgt. David B. Geer, 4th Fighter Wing, Seymour Johnson AFB, N.C.; TSgt. David G. Wooldridge, 48th FW, RAF Lakenheath, UK; civilians Sarah Beth Morgan and Gary L. Severson, Air Force Special Operations Command, Hurlburt Field, Fla.; 60th Air Mobility Wing, Travis AFB, Calif.; and 7th Bomb Wing, Dyess AFB, Tex.

■ Northrop Grumman will produce and demonstrate at least two full-scale X-47B unmanned combat air vehicles for Navy carrier operations and for Air Force requirements under a contract modification awarded by DARPA. Officials expect the program to run through 2006.

■ According to the Air Force, the primary cause of the crash of an Air Force Reserve Command F-16C on Nov. 13, 2002, on the Utah Test and Training Range was the pilot's loss of situational awareness, caused by "channelized attention" and an optical illusion caused by unusual environmental conditions, said investigators. About three inches of clear, calm water covered the range's white salt flat, creating a mirror effect that led the pilot to think he had unlimited maneuvering space when, in fact, he was close to the ground. As we reported in December, the pilot, Lt. Col. Dillon L. McFarland, who was with the 466th Fighter Squadron, Hill AFB, Utah, was killed in the crash.

Chief of Staff, added three books to his recommended reading list in early May. The new books are:

■ *Frank M. Andrews: Marshall's Airman*, by DeWitt S. Copp and the Air Force History and Museums Program.

■ *The Crisis of Islam: Holy War and Unholy Terror*, by Bernard Lewis.

■ *Supreme Command: Soldiers, Statesmen, and Leadership in Wartime*, by Eliot Cohen.

The entire list is posted on the Air Force Web site at <http://www.af.mil/lib/csafbook/readinglist.shtml>.

### **CAP Demonstrates New Tech**

A Civil Air Patrol flight crew testing a new digital imaging system off the Florida Keys on April 25 spotted a raft carrying three people and transferred digital images to the Coast Guard. The real-world event went beyond the day's test parameters.

The CAP Cessna 206 still had on board previously used test equipment that permitted the crew to transmit, within two minutes, the digital images via a satellite phone e-mail hookup using an onboard laptop computer. The CAP crew talked with the Coast Guard using the same phone.

CAP officials have been working with the Air Force on new technology to aid homeland security efforts. (See "The Citizen Air Fleet," p. 76.)

### **Ability to Buy Local a Boon**

Air Force officials believe early deployment of USAF contracting officers into the Iraqi theater of operations saved USAF a great deal of time and money.

"At first blush, you might ask why we'd deploy a contracting officer to an Iraqi air base early on, because where would we find vendors?" said Col. Duane A. Jones, chief of logistics for the Combined Forces Air Component Command. The word got out, and the vendors came.

Even contracting officers sent to remote areas found suppliers, some traveling great distances to do business with the coalition. One of the first local purchases was gravel. USAF bought lots of gravel. It was used both for runway repair and to keep down the dust.

Jones said the purchases helped not only the local economy, cementing friendly relations, but also the military transportation system. It saved money and time. "That improves efficiency and quality of life," he said.

### **USAF Creates Parent Pin**

Top Air Force leaders on May 7 unveiled a new outreach program to thank parents for their support. Air

Force Secretary James G. Roche and Chief of Staff John P. Jumper presented USAF Parent Pins to parents of an active duty, Air National Guard, and Air Force Reserve Command airman.

Under the new program, Air Force members may register online to request that a letter of thanks signed by the two leaders be sent to parents (or

parental figures). With the letter, USAF will send a lapel pin displaying the letter P cradled in the Air Force symbol.

The Parent Pins reflect the World War II "E" flags that were used to recognize companies for their war support. The pins come with a card explaining their lineage.

"Military service is no longer a rite

of passage," said Roche. "We now have an entire generation of Americans who do not understand the military culture. The Parent Pin can narrow the gulf between those who serve and the community at large."

The pin request forms are available at the service's Your Guardians of Freedom Web site: <http://www.yourguardiansoffreedom.com>.

Last fall, the Air Force started a similar campaign, providing E pins to employers of Guard and Reserve members.

## Senior Staff Changes

**NOMINATIONS:** To be **Major General:** Barbara C. Brannon, Kenneth M. DeCuir, Bob D. Dulaney, Robert J. Elder Jr., Paul J. Fletcher, Douglas M. Fraser, William M. Fraser III, Stanley Gorenc, Elizabeth A. Harrell, William F. Hodgkins, Raymond E. Johns Jr., Timothy C. Jones, Joseph E. Kelley, Frank G. Klotz, Robert H. Latiff, Richard B.H. Lewis, Henry A. Obering III, Michael W. Peterson, Teresa M. Peterson, Gregory H. Power, Robin E. Scott, Robert L. Smolen, Mark A. Volcheff.

**CHANGES:** Brig. Gen. (sel.) Jack B. Egginton, from Exec. to C/S, USAF, Pentagon, to Cmdr., 363rd AEW, ACC, Prince Sultan AB, Saudi Arabia ... Brig. Gen. (sel.) Randal D. Fullhart, from Cmdr., 92nd ARW, AMC, Fairchild AFB, Wash., to Vice Dir., AF Studies & Analyses Agency, Arlington, Va. ... Brig. Gen. David S. Gray, from Vice Cmdr., 12th AF, ACC, Davis-Monthan AFB, Ariz., to Cmdr., 89th AW, AMC, Andrews AFB, Md. ... Brig. Gen. Charles B. Green, from Command Surgeon, AMC, Scott AFB, Ill., to Cmdr., 59th Medical Wg., AETC, Lackland AFB, Tex. ... Brig. Gen. (sel.) Ronnie Davose Hawkins Jr., from Dir., Comm. & Info., PACAF, Hickam AFB, Hawaii, to Dir., Comm. Ops., DCS, Instl. & Log., USAF, Pentagon ... Maj. Gen. Gary W. Heckman, from Asst DCS, P&P, USAF, Pentagon to Asst. for Base Realignment & Closure, DCS, P&P, USAF, Pentagon ... Brig. Gen. (sel.) Stephen L. Hoog, from Cmdr., 388th FW, ACC, Hill AFB, Utah, to Asst. Dir., Aerospace Ops., ACC, Langley AFB, Va. ... Brig. Gen. Gregory J. Ihde, from Dir., Air Component Coordinating Element, Combined JTF-180, ACC, Bagram AB, Afghanistan, to Cmdr., 57th Wg, ACC, Nellis AFB, Nev. ... Brig. Gen. (sel.) Kevin J. Kennedy, from Cmdr., 5th BW, ACC, Minot AFB, N.D., to Dep. Dir., Ops. & Log, STRATCOM, Offutt AFB, Neb. ... Brig. Gen. Allen G. Peck, from Asst. Dir., Aerospace Ops., ACC, Langley AFB, Va., to Vice Cmdr., 9th AF, ACC, Shaw AFB, S.C. ... Brig. Gen. Glenn F. Spears, from Cmdr., 89th AW, AMC, Andrews AFB, Md., to Dir., P&P, PACAF, Hickam AFB, Hawaii ... Brig. Gen. (sel.) Mark E. Stearns, from Cmdr., 374th AW, PACAF, Yokota AB, Japan, to Vice Cmdr., 12th AF, ACC, Davis-Monthan AFB, Ariz. ... Brig. Gen. Dale C. Waters, from Cmdr., 363rd AEW, ACC, Prince Sultan AB, Saudi Arabia, to Executive Dir., Natl. Imagery & Mapping Agency, Bethesda, Md. ... Brig. Gen. (sel.) James A. Whitmore, from Executive Secy., OSD, Pentagon, to Dir., Air Component Coordinating Element, Combined JTF-180, ACC, Bagram AB, Afghanistan. ■

### USAF Studies Nursing Corps

The Air Force is conducting a wholesale review of its nursing corps to determine ways to ensure the service can maintain the right number of nurses in the right grades. Currently, 79 percent of USAF nurses are company grade officers.

The service's top nurse told lawmakers that points to a need to adjust the system and increase the overall skill level.

"Early data shows a significant need to increase field grade authorizations," said Brig. Gen. Barbara Brannon, USAF's assistant surgeon general for nursing services. She added, "A by-product of this increase would be a greater promotion opportunity," bringing it more in line with the promotion opportunity of other Air Force officers.

Like other services and the private sector, the Air Force for several years has faced concerns over recruiting and retaining nurses. However, Brannon told Senators that the service was only 104 nurses short of its authorized strength in 2002. That was better than expected and reflected fewer separations, she said.

### Jammers Get Job Done

During the war in Iraq, members of the 41st Expeditionary Electronic Combat Squadron completed some 200 sorties and 2,000 flying hours in their EC-130H Compass Call aircraft. During that time, they jammed more than 6,000 enemy transmissions.

The unit, whose home base is at Davis-Monthan AFB, Ariz., disrupted enemy communications to support many operations, including the rescue of Army Pvt. Jessica Lynch.

"We were involved with almost every major operation that went on in Iraq," said Lt. Col. Don Bacon, 41st ECCS commander.

The unit's maintainers, said night-shift supervisor MSgt. Daniel Johnson, "found new limits in themselves because they got pushed beyond the exhaustion point." ■

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# Industrial Associates



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# Washington Watch

By John A. Tirpak, Executive Editor

## Time to Reload

Lt. Gen. Ronald Keys, deputy chief of staff for air and space operations, outlines the Air Force plan for coping with the aftermath of Gulf War II.



It will take nearly a year to "reset" the rotational schedule of the Expeditionary Air and Space Force, USAF's network of 10 self-contained, rotating, air combat legions. The EAF schedule had been disrupted by Operation Iraqi Freedom.

However, actual reconstitution of combat forces and weapons can be completed more rapidly, largely because of careful advance planning and the brevity of Gulf War II. That goal should be achieved within months.

Such are the basic conclusions of senior Air Force officers who have been assessing the service's capabilities and requirements.

They say Air Force plans call for establishing, by next month, a temporary, recovery-period EAF system. This force, operating on a 120-day schedule instead of the standard 90-day rotation, will handle overseas contingencies during the period that it takes for Gulf War II combatants to refit and recover.

In normal times, the EAF comprises 10 "Air and Space Expeditionary Forces," or "AEFs." (For more on the state of the EAF, see "Expeditionary Air Warriors," p. 24.) AEF pairs are organized to meet operational needs short of major theater war.

Lt. Gen. Ronald E. Keys, deputy chief of staff for air and space operations, said USAF will set up a brace of new AEFs, beginning roughly in July. The first two, "AEF A" and "AEF B," will replace forces now leaving the Gulf. They will be succeeded in November by another pair, "AEF C" and "AEF D."

These four provisional AEFs will cover the Air Force's responsibili-

ties until March 2004. By then, senior officers say, the EAF will be able to resume a peacetime rhythm of deployments. AEFs 1 through 10 will have been reconstituted and readied for action.

According to Keys, the interim AEFs will be cobbled together from "residual" forces which were not called to fight in Iraq.

Keys also discussed some of the already apparent lessons learned from Operation Iraqi Freedom that confirm the Air Force was headed in the right direction, conceptually and with respect to investments.

Keys spoke with *Air Force Magazine* in April, after the conclusion of the war.

### Re-establishing the Construct

"Sometime around March 2004, we'll be ... all cleared off" of deferred training and maintenance and with resupply of units, Keys said. At that time, he went on, the AEF construct will be "reset."

By the end of April, around 70 percent of Gulf War II's combat aircraft and associated personnel were on their way back to home stations, Keys reported. This reduction was a "direct response" to releases granted by Gen. Tommy R. Franks, the commander of Central Command.

In fact, Air Force units began coming home as soon as air operations ended. Some aircraft remained in theater to deal with pop-up attacks from Iraqi militia and irregulars.

Central Command deemed the swift return of airpower forces acceptable and vitally necessary. The view was that the force had to quickly reconstitute to be ready for any new major contingency. Keys said, "You get the hard stuff done earlier in your cycle, and that gives you a little bit of buffer toward the end, so that if the weather is bad or something happens, you've got it down."

Fully half of the deployable Air Force went "downrange"—Keys's term for the OIF theater of operations. "We've got AEFs 7 and 8 downrange, and then 9 and 10 went downrange, pieces of 1 and 2 [deployed],

... then pieces of 3, 4, 5, and 6," he said.

The new, interim AEFs will comprise personnel either not deployed during the crisis or who went early and rotated out some time ago. "You take the residuals of [AEF] 3, 4, 5, and 6 and blend them, [with] other pieces and parts, into two AEFs and get them ready to go ... and bring back the people who fought the war," Keys explained.

He hastened to add that the term "residual" is not pejorative.

"These folks are trained, qualified people," he said. "Some of them actually started downrange [and] got called back." Some airmen in certain specialties that are in short supply will have to hang on for longer deployments or may get a shorter rest period, Keys noted.

Keys went on to say that it is too early to tell what the long-term airpower requirement will be in Southwest Asia but that "we're hoping it's going to be smaller" than that required for the 11-year aerial occupation of Iraq, enforced through the no-fly zones, Northern and Southern Watch.

That was a major effort. However, the forces needed to enforce the two "watches" did not constitute a full AEF, reported Keys. "They were smaller," he said. "I think it was probably a third of an AEF, in terms of people and equipment."

Keys believes that the long-term Air Force commitment will be diminished because the Iraqi threat now has been removed. "We are not there to colonize Iraq," he said. "Our job was to go in, win the war, stabilize the country, get the proper people back in control of the country, shake their hands, and leave."

### "Proof" of the Wars

To Keys's mind, the wars in Afghanistan and Iraq provided "the proof of the AEF." They worked exactly as planned, he said, with units trained and ready for their assignments when their rotation came up and the service able to reach forward into future AEFs as the need arose without problems.

The system also established plans for dealing with units that return from deployment, Keys went on.

"You don't immediately drop off the books," he said. "You still have some residual capability, and, fairly rapidly, we can bring you back up."

That concept was put to the test and worked, he said.

Reconstitution of the force will not require substantial downtimes or significant drops in mission capability rates, as was the case following the Kosovo conflict, Keys reported.

This stems, in part, from the war's short duration. Keys noted that USAF fighters did not burn up a lot of their remaining service hours to fight the war; combat operations lasted less than a month and involved the kinds of flying the fighters would have done in peacetime training, anyway.

"They only went for 27 days," he said, adding that the situation would have been different "if they had gone for 78 days [the duration of the 1999 air war over Serbia] or a hundred days." That would have produced questions about the life expectancy of the fighters. He went on, "Of the 300 or 400 fighters we had down there, how many sorties would they have normally flown? Did they add a

few hours? Yeah, probably. Significantly more? I don't think so."

In the war, USAF only lost two fighter aircraft—an F-15E strike fighter and an A-10 attack aircraft. In short, said Keys, the war produced no urgent need for fighter replacements. The fighter fleet is aging and "we'd like to turn them over" for new airplanes, but should remain viable until the planned replacement time, Keys said.

Thanks to update programs for both the F-15 and F-16 in the last decade, USAF expects the fighters to be in good shape until the arrival of the F/A-22 to replace the F-15 and the F-35 to replace the F-16, Keys said. The fighter fleet was "extended" in useful life because the Air Force has "precisionized" them, he said. By that, he means USAF has given all of the airplanes the capability, in some form, to drop precision munitions.

#### Munitions in "Good Shape"

The Air Force dropped thousands of precision munitions on Iraq, but production had already been accelerated. That means the bins will be refilled in a few months' time, said Keys. "We're actually in pretty good shape," he as-

serted. "The [Joint Direct Attack Munition] we had ramped up to maximum [production rate] anyway."

The service expended about 4,000 JDAMs in Operation Iraqi Freedom and is now procuring about 2,500 a month.

About 66 percent of all weapons dropped were of the precision guided type, a somewhat smaller fraction than had been predicted in prewar assessments. Keys said the smaller PGM fraction stemmed from the B-52 fleet's ability to attack Iraq's field forces with huge quantities of unguided "dumb" weapons. "Mass has a quality all its own," Keys noted.

He said there is an effort to speed up the lessons learned effort. The "big issues" are how to replace equipment lost in the war, which and how many munitions to buy, and where to focus the effort.

"Where are you going to reconstitute something?" Keys asked. "If you had [war reserve materiel] stocks, are you going to put them in the same places around the world as you had them, preconflict?"

Keys said experiences in Iraq could be applied directly to a developmental program.

"The things we are looking at buy-



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ing now, ... with just a little bit of a tweak, could reflect a lesson that we learned," he explained. "Was there something that was not as inter-operable as it should have been? Is there something coming on the market right now which, had we had it a month ago, we could have used?"

For the most part, the Air Force did not have to defer depot maintenance during the war. Maintenance on some aircraft was accelerated, so they would be ready in time, Keys said.

He said that, because of prewar maintenance and care given to the aircraft that saw combat, "I don't think there will be a tremendous impact" on mission capable rates.

"There's some analysis going on right now about what kind of spares we need to fill up the bins," he added.

### Key Innovation

Keys said an important innovation was creation in Kuwait of the Air Component Coordination Element, headed by Maj. Gen. Daniel P. Leaf. He served as personal representative of the Combined Force Air and Space Component Commander (CFACC)—USAF Lt. Gen. T. Michael Moseley—to the Coalition Force Land Component Commander (CFLCC), Army Lt. Gen. David D. McKiernan.

Leaf's job, Keys said, was to "straighten out the special kinks that happen during a fast-moving war." In addition, he went on, "every major land force had an ACCE with them, and their job was, if their priorities weren't being looked at properly, or there was going to be a change to the ground scheme maneuver, or there was something happening on the air side that the land force needed to know, they got that."

The position was crucial in the opening hours of the war, when the decision was made to launch the ground forces without a preceding air war. Air operations were supposed to start March 22. When timetables were advanced, communication between the CFACC and the CFLCC was critical. The new position "paid us big benefits because of the fluid nature of this war," said Keys.

### Jointness Was Paramount

Overall, a major lesson was that "interconnectedness"—not just within the Air Force but between the services—pays huge dividends. Communication between the services and

the collection and dissemination of human and mechanical intelligence was "unprecedented."

As an example, Keys described a situation where a human agent overheard a discussion about an SA-3 surface-to-air missile system hidden in an orchard. The tip was passed to the air operations center in Saudi Arabia, which contacted the National Imagery and Mapping Agency. The AOC asked NIMA to look at its optical database, then send coordinates back, said Keys. "Meanwhile, we've got a Predator headed that way; the Predator finds it, [the forward air controller] sends in an F-16, the F-16 drops a [Wind-Corrected Munitions Dispenser] on it, so we kill that."

Total time from tip-off to destruction of the SAM: under 30 minutes, said Keys.

A similar process was used when US intelligence observed Saddam Hussein entering a Baghdad compound and a B-1 destroyed it within 12 minutes of being ordered to attack it.

"There were about a hundred time-sensitive targets," reported Keys. "They were regime, they were Feyadeen, they were SA-3s, they were [rocket launchers], they were surface-to-surface missiles, they were [satellite communication] antennas—things that popped up that we had to get."

Many "clever ideas" were put into action, Keys said. A Predator unmanned aerial vehicle armed with Hellfire missiles escorted Black Hawk helicopters carrying a captured Iraqi officer. Some Predators, he said, actually were flown remotely by operators at their Nevada home base. Predators also fed live video to AC-130 gunships and performed other escort duties.

The B-52s, which could loiter over the battlefield, were equipped for the first time with laser guided bombs, in addition to their Joint Direct Attack Munitions. The wiring was routed through a targeting pod for the Have Nap missile. These B-52s could, by virtue of their GPS antennas, get excellent coordinates for ground targets and pass these on to other aircraft. They also fulfilled a reconnaissance role, Keys said.

A newly organized special Air Force team, called a Contingency Response Group, jumped into Iraq with Army paratroopers and quickly evaluated an airfield in northern Iraq for use by USAF airlifters. They called for the things needed to get an airfield up and running quickly.

"The world doesn't wait for you, you've got to keep pushing [these ideas] so you have them ready," he noted.

### Two Out of Three

Keys said that, before the start of the war, he worried about three things—chemical attack, extremely bad weather, and access problems. Two of the three—bad weather and access limitations—came to pass, but "branches and sequels" of the war plan allowed for effective "work-arounds," he said.

When Turkey declined to host about 100 strike aircraft, it presented a major problem.

"That ... requires you to rethink your plan," Keys said, adding, "That's [the loss of] 100 sorties or more a day that you're counting on." While some aircraft could be repositioned, others could not, given the shortage of ramp space in other locations.

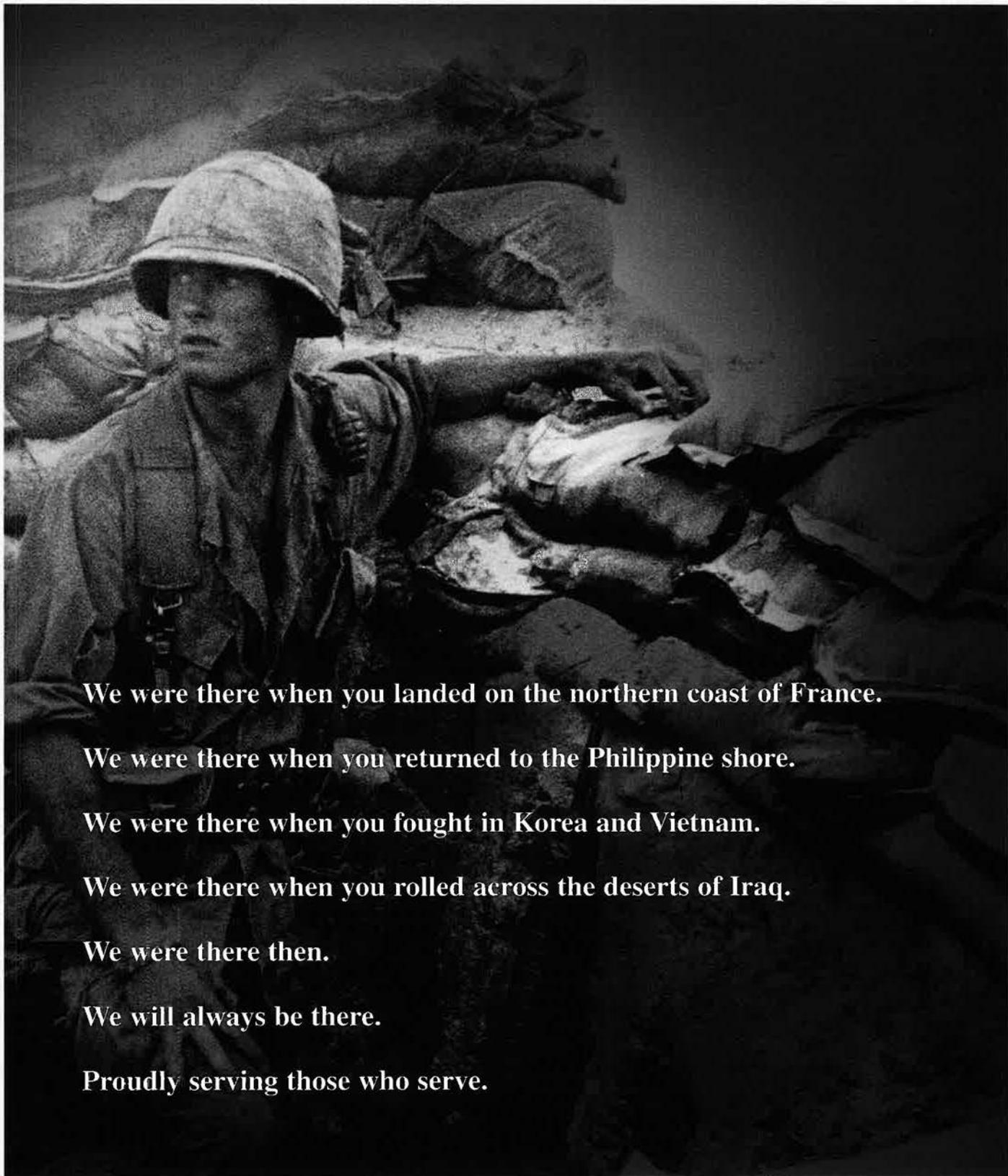
Aerial refueling was the answer, but it meant the tankers had to fly longer distances. "They use more gas, so they had less gas to give," said Keys, and this posed "a big problem" for Navy fighters coming toward Iraq from carriers steaming in the Mediterranean.

The weather did turn bad, as fierce sandstorms enveloped much of Iraq. Fortunately, the Air Force had overhead a number of synthetic aperture radar systems that could "see" through the dense and obscuring sand.

The biggest lesson was one that confirmed the long-standing approach of the Air Force and US military as a whole. "The joint, integrated force is a more effective, more leveraged force than any individual force," Keys said. The presence of a powerful air armada over the battlefield and a powerful ground force moving toward Baghdad confronted Iraq with a no-win situation.

"If you spread out and try to hide and camouflage yourself, ... you're going to get destroyed in detail by the world's premier land force," said Keys. "And if you do the [opposite] ... and try to move to meet this land force that's rolling up the highway, then you make yourselves extremely vulnerable to us," meaning modern air and space power.

"It was probably the best-integrated war we've ever fought," Keys asserted. "We were better trained, better organized, better equipped. Seventy percent of our shooters were combat experienced. It was a force to be reckoned with." ■



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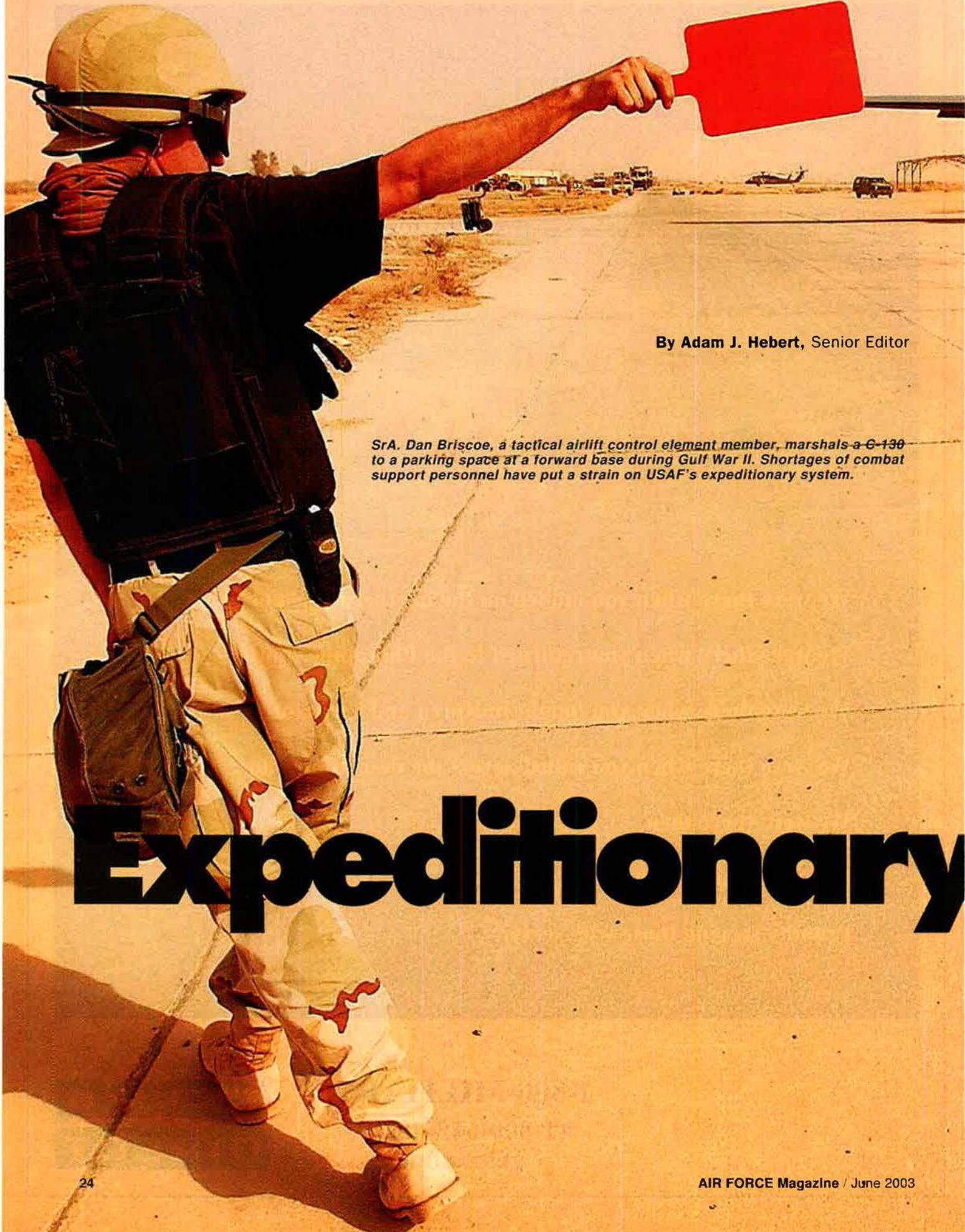
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By Adam J. Hebert, Senior Editor

*SrA. Dan Briscoe, a tactical airlift control element member, marshals a C-130 to a parking space at a forward base during Gulf War II. Shortages of combat support personnel have put a strain on USAF's expeditionary system.*

# Expeditionary



**Gulf War II reconfirmed the value of the Air Force's new deployment concept.**

**A**FTER the terrorist attacks of Sept. 11, 2001, the United States Air Force beefed up its system of 10 rotating Air and Space Expeditionary Forces (AEFs) to meet its new requirements.

In late 2002, the network of AEFs helped to simplify the early stages of the buildup for war in Iraq. The system provided an orderly path through which forces bound for Operation Iraqi Freedom could flow to the Persian Gulf region.

Eventually, though, ever-increasing demands swamped the rotational system, and regularly scheduled pairs of AEFs couldn't maintain the pace. In the run-up to Iraqi Freedom, forces were deployed before the time dic-

tated by the schedule. In addition, troops already in the region were told they would stay in Southwest Asia as long as necessary.

These actions put notional 90-day deployments of AEF pairs on indefinite hold.

Officials said that, although the schedule broke down, the existence of the system—the “Expeditionary Air and Space Force,” or “EAF”—paid handsome dividends. AEF rotations made it easy for the Air Force

# Air Warriors

USAF photo by SSGT. Quinlan T. Burns

to identify and task units for missions overseas; all USAF had to do was reach forward and deploy units from AEFs later in the calendar.

Air Force officials also say the AEF system will ease the force through its planned postwar reconstitution period.

### Busting the Schedule

When hostilities became imminent, the Air Force began using assets from virtually all of its individual AEFs.

First, USAF froze in place the forces and weapons of AEFs 7 and 8, whose period of duty was supposed to end Feb. 28. The Air Force deployed forces from AEFs 9 and 10 in their regular period. Then, it began early deployment of some forces in AEF pairs from the next rotational cycle.

Gen. John P. Jumper, the Air Force Chief of Staff, said in February that more than 23,000 airmen from future AEFs had been deployed to meet immediate taskings.

Although the deployment schedule had gone out the window, the expeditionary system made it possible for the Air Force to easily identify the units that would be able to cover deployments during a reconstitution period after Iraqi Freedom.

"We've always said that if we had a crisis, we'd go to the pair [of AEFs] that's vulnerable first, then the next ready pair, then the next ready pair," said the USAF's chief expeditionary force planner, Maj. Gen. Timothy A. Peppe. That is exactly what happened in the buildup for Gulf War II.



USAF photo by MSGt. Terry L. Blevins

**SSgt. Brett Duncan stands watch in Southwest Asia. Security forces are among those personnel who have been most in demand since the 9/11 terrorist attacks. USAF plans to boost their numbers, starting in 2004.**

The AEF structure has served the Air Force well, Peppe said in an interview, even when it had to deal with "an extremely high number of requirements."

During preparations for the war in Iraq, Air Force planners "saw the requirements coming, and there was literally no way to meet that level of requirements without literally freezing people in place" and instituting indefinite deployments, he said.

The AEF system also called attention to shortages facing a force that had been originally designed to operate in a Cold War structure of large,

permanent bases. The Air Force has too few support personnel in key areas. Though questions remain about what the steady state demands on the Air Force will be in the future, the Air Force is working to synchronize forces and expeditionary requirements.

Each of the 10 AEFs in the EAF setup is designed to offer the theater commander roughly equal "buckets of capability." The AEF pairs are organized to meet almost all operational needs short of major theater war. Units assigned to an AEF are on call for a 90-day period, followed by a 12-month rest and reconstitution period in which other units take the lead on deployments.

The system was established to provide stability and predictability for the force. Some missions, such as no-fly zone enforcement over Iraq, had been going on for years and had undermined retention, morale, and readiness because of frequent and haphazard deployments.

Under ideal circumstances, the AEF schedule would let every airman know when he or she would be vulnerable to deployment—and for how long.

However, the real world often intrudes. Iraqi Freedom, in fact, was not the first time a contingency had overpowered AEF plans. When the system was designed, EAF forces were aligned in such a way that each on-call AEF pair could provide enough equipment and personnel to maintain continuing operations such as Northern and South-



USAF photo by SSgt. Bennie J. Davis III

**ANG F-16s from Alabama, Colorado, and Illinois arrive at an airfield in Southwest Asia. USAF uses its Guard and Reserve forces "big time," said Maj. Gen. Timothy Peppe, the service's chief expeditionary force planner.**

ern Watch—with extra assets available for “pop up” contingencies.

However, the conduct of Operation Allied Force over Serbia in 1999 immediately called for force levels that surpassed the plan. This was a minor concern at the time because AEF rotations were not scheduled to begin until after the campaign. Yet then—Secretary of the Air Force F. Whitten Peters said at the time that Allied Force was consuming about four AEFs’ worth of assets. Only two AEFs are supposed to be on call at any given time.

### Sudden New Demands

More recently, the 9/11 terrorist attacks created a host of new demands on the Air Force, many of which now appear permanent. The most glaring example is the requirement for heightened force protection in the US and overseas. The global war on terror also highlighted shortages in the AEF system.

Overall, however, the concept has held up well under the strain. The success of the system stems in large part from the Air Force’s determined expansion of “the library”—the total number of active duty personnel who are eligible for deployment.

Before 9/11, the typical Air Force overseas operation required around 3,700 airmen. The AEFs originally were designed with that number in mind as the likely steady-state need.

At the time the service came up with this system, USAF was engaged in enforcements of no-fly-zones over Iraq and peacekeeping in the Balkans, Peppe noted, without much else in sight.

After 9/11, but before the buildup for war in Iraq, steady-state deployments rose from about 7,500 (for the two no-fly zone operations) to roughly 19,000 people, covering Operation Enduring Freedom in Afghanistan as well. Even at that level of demand, the Air Force was in “pretty good shape” because of the enlarged AEF rosters, Peppe said.

Planners already had been readying the AEF system for significant changes when hostilities neared in Iraq. The changes will still take place, but they may not be implemented as planned at the beginning of AEF Cycle 4, which begins June 1.

Now, no one knows the steady-state level of the future, especially the number that will be needed around

Iraq. “The biggest thing we have to work in the next couple of years is the manpower equation,” said Peppe. “We have to size the force properly.” He added, “It’s the base support aspect [that is most in question]. ... We’ve got to take a hard look at what we can and cannot support with an AEF.”

Building on the experiences of the

past two years, when the Air Force began to operate from a large number of new locations, the service is now developing a playbook for opening and operating out of new bases.

### “Force Modules”

USAF is creating “force modules,” so that if, in the future, the service needs to open a new base, it will

## Expeditionary Support Units Surge For Iraq

When new air bases were needed for access to Afghanistan during Operation Enduring Freedom, USAF base support and medical units went into high gear. When the buildup began for the war in Iraq, those same expeditionary support forces had to ramp up their efforts even further. Demands on these units increased again as Operation Iraqi Freedom got under way.

Between February and April, USAF’s Expeditionary Combat Support teams established 12 new bases in the Persian Gulf region—five of them in Iraqi territory. This proved to be critical, as the new airfields ensured that commanders had access to airpower near the combat zone—around the clock. In one instance, the pilot of an A-10 that was shot up over Baghdad was able to land at an operating base in Iraq, possibly saving the aircraft.

Lt. Gen. T. Michael Moseley, who ran the Gulf War II air campaign, said in April that “from opening bases and launching sorties, to providing fuel, munitions, food, and billeting, our ECS team has done a truly amazing and essential job.”

Primarily, the ECS teams were responsible for ensuring that the expeditionary bases—often austere, bare-base locations—were capable of hosting and launching the aircraft that warfighting commanders needed for Iraqi Freedom. Officials noted that three of the new bases in the region pumped more than one million gallons of JP-8 jet fuel per day, five times the normal rate. They also said ECS units launched more than 46,000 sorties, with a reported aircraft mission effectiveness rate of 98 percent. Meanwhile, other ECS members served at least 111,000 hot meals daily.

Moseley called the ECS teams “a vital element of our success.”

Sometimes they had to improvise when immediate action was needed to support the changing operation. For example, officials noted that ECS teams leased Kuwaiti trucks to move equipment into Iraq when the demand for transportation became greater than what coalition trucks could provide. ECS teams also made purchases within Iraq—while combat operations were still in progress—to support the forward forces.

The Air Force Medical Service deployed expeditionary medical support (EMEDS) personnel that Moseley described as “absolutely phenomenal.” These are small, modular units that enabled the service to set up health care services ranging from small clinics to theater hospitals in 12 nations during the war. In all, USAF deployed 1,822 medics to the theater and 1,370 tons of medical equipment.

Aeromedical evacuations took place on an unprecedented scale. Officials noted that more than 2,000 patients were evacuated from the war zone during Iraqi Freedom, with no deaths in transit. It was the largest such effort since Vietnam and was accomplished without the use of any dedicated aeromedical evacuation aircraft.

Moseley praised the EMEDS concept, saying, “They pack so much capability in such a tiny footprint, I didn’t have to choose between bombs and bandages.”



**Members of an Air Force expeditionary services unit construct tents at Tallil AB, Iraq. USAF is developing a force module approach to organize the personnel needed to set up new bases for operations.**

have a prepackaged plan to do so, complete with personnel needs stated. "We're trying to modularize it, so we can present our forces [to the warfighting commanders] in a logical fashion," Peppe said.

Brig. Gen. William P. Ard, USAF director of manpower and organization, said that in recent reviews, the Air Force has identified more than 26,000 positions—a mix of military and civilian—that it can realign. The service expects to use more than two-thirds of those positions to help ease shortages in its stressed career fields.

About half of the 26,000 positions—9,300 military and 3,900 civilian—will come from USAF's major commands. The service will be realigning those positions through the end of the decade, with some 3,700 realignments within the next two years. Some current military positions will become USAF civilian positions, while the service expects to contract out others.

Many of the positions are termed non-core, that is they do not relate directly to Air Force core mission areas, known as core competencies. For example, officials say too many USAF personnel are performing information technology work, when there is a large and capable base of contractors available to perform that mission.

Ard noted that it is difficult to make final determinations on how many people need to be assigned to

stressed fields because the steady-state requirements are still unknown. Predicting security forces concerns five years from now would be difficult under the best of circumstances.

However, even before the realignment candidates were announced, some areas with personnel shortages were well-known.

### The Known Shortages

Ongoing operations have exposed shortages of personnel who support an expeditionary force, including some behind the scenes. For example, so many airmen were deployed or otherwise assisting with ongoing operations that the Air Force developed a shortage of qualified instructors, which produced training backlogs.

Peppe said that trainees at some bases "are basically stacking up like cordwood" because the bases lack the personnel to train new arrivals.

The planned realignments will benefit career fields where the shortages are most critical, often areas where there have been deficits since the 2001 terrorist attacks. These include security forces, intelligence, and civil engineer readiness and enlisted aircrew functions.

Further, the Air Force instituted a Stop-Loss order shortly before the war with Iraq began that kept 43 officer and 56 enlisted specialties in uniform. It was the second use of Stop-Loss since 9/11. About 21,000

airmen were initially affected by the latest order, but on May 14 the service released airmen from more than half the specialties.

Most severe shortages have been in security forces. Force protection requirements unexpectedly skyrocketed after 9/11, and the Air Force had to enlist the help of nearly 9,000 Army National Guardsmen to help protect USAF installations.

Security demands increased at home and overseas. In Fiscal 2004, officials say, 2,600 positions will be realigned, with 1,400 of these going to the security forces.

The Air Force also hopes that new technologies can be used to assist with security missions such as perimeter defense, which would reduce the demand for security forces in future years.

### Making Trade-offs

The USAF plan to retire early some aging aircraft such as early model F-16 fighters and C-130 tactical airlifters will not reduce AEF capability, said Peppe. These retirements will be limited to the older systems, and he said there is no large-scale force structure reduction in the works. The total number of aircraft available to each AEF "may decline a bit, but the capability will remain the same," Peppe added.

Service officials determined that these older systems didn't offer enough benefit to justify their rising operating costs.

Trade-offs of capabilities and quantities may become even more prominent in the future. For example, procurement plans for the F/A-22 will not allow the Raptor to replace aging F-15s on a one-for-one basis. Despite that, the Raptor will take on a ground attack mission that far exceeds that of the F-15C.

The Air Force has stuck with its stated requirement for 1,763 F-35 Joint Strike Fighters. However, it has made other decisions that will affect its AEF forces. One prominent example is the decision in the Fiscal 2004 budget to discontinue the purchase of F-16CJs used for suppression of enemy air defenses missions.

In 1999 the service announced a requirement for 50 new CJs to round out the AEFs with SEAD capability, but funding has languished because of other budget concerns. Only 14 of

the airplanes were funded, and now additional purchases have been moved completely off the books.

Ultimately, AEF rotations influence force structure decisions by defining what quantities are needed. The Air Force's desired capabilities will continue to drive requirements. The current requirement for 381 F/A-22s, for example, is derived from the goal of equipping each AEF with a full squadron of Raptors, along with a sufficient number of attrition, test, and depot aircraft. The Air Force views this as the minimum number that will provide the warfighting commanders with the needed capabilities, while preventing the F/A-22 from becoming yet another low-density, high-demand asset.

Currently, each AEF has a total of about 26,500 positions assigned to it, drawn from a library of standard unit type codes. Of the Air Force's 359,000 total personnel, about 269,000 are now eligible for deployment in each 15-month AEF cycle. This number represents a marked increase from the 173,000 positions that were postured for deployment in April 2002.

Almost every airman who could reasonably be expected to deploy with an AEF is now part of the force, in the view of Air Force officials. "I don't see the number going much higher than that," Peppe noted, because the remaining positions are in areas that make them difficult—if not impossible—to deploy.



Staff photo by Guy Acato

**USAF forces in Korea, such as this A-10 and F-16CG from the 51st Fighter Wing, at Osan AB, South Korea, are not included in USAF's AEF deployment pool, which now includes nearly 75 percent of the service's personnel.**

Normally Air Force members in recruiting and in training pipelines cannot be deployed, nor can many space officers or missileers. Units based on the Korean Peninsula are exempt as well, even though other overseas locations regularly contributed forces for missions such as patrolling the no-fly zones in Iraq. The ongoing tensions with North Korea make a permanent, fixed force on the Korean Peninsula a fact of life.

Peppe added that, on an average day, about 25,000 Air Force members are moving to a new duty sta-

tion or undergoing training and thus "aren't really available."

### Tapped Out

"We've reached the bottom of the barrel. ... I don't see the number changing," Peppe said.

The AEFs therefore generate a finite amount of capability, particularly in the base support realm. Each AEF has a certain number of bases it can support at any given time, driven to a large degree by the limited number of expeditionary support personnel on hand.

The Air Force is also still defining exactly what an AEF can be expected to do. Planners are working to create metrics for this purpose so senior leaders can understand what the EAF offers. If new bases must be opened up, a commander needs to know how many airfields an AEF can create and sustain.

Also important to understand, said Peppe, is "if you go above that number, we've got a problem." The Air Force has far exceeded its true capability in this area. "I've lost track" of the number of bases the service is supporting overseas, the general added.

For the EAF system to work in the long run, the Air Force has to rein in its requirements so they do not overwhelm the capabilities provided by a pair of AEFs. Making the AEFs more robust will enable them to do more, but the Air Force is now reaching the limit of how many assets can be added to the expeditionary force.



USAF photo by SSgt. Cherie A. Thuriby

**An F-16CJ from the 52nd Fighter Wing, Spangdahlem AB, Germany, flies over Iraq. USAF fighter aircraft flew more than 40 percent of the coalition fighter sorties, which numbered more than 20,000.**

The Air Force has plans to smooth out the assets assigned to each AEF and correct lingering personnel imbalances.

First, USAF will eliminate the air expeditionary wings based at Seymour Johnson AFB, S.C., and Mountain Home AFB, Idaho, and add their forces to the main AEF structure.

The AEWs were envisioned as forces that would play backup roles, pitching in if an unexpected contingency overtaxed the on-call AEFs. But the two expeditionary wings had been chipping in all across the AEF calendar, so aligning them with the rotating forces was viewed as the equitable and inevitable solution.

Second, the Air Force is trying to spread expeditionary combat support assets more equally across the AEFs, the better to make operations more sustainable. Existing allocations had some “peaks and valleys” Peppe said, and these combat support personnel have been in constant demand since 9/11.

Combat support “runs the gamut” from air traffic controllers, to supply, to fuels, to medical and finance personnel, the general said, adding that support capabilities have “strained us the most,” since the war on terror began.

Finally, USAF realized that Air National Guard and Air Force Reserve Command forces were not properly postured in the AEFs because their forces were clustered primarily in AEFs 7, 8, 9, and 10. This re-



USAF photo by SSgt. Charlie A. Turby

**A loadmaster from the Kentucky Air National Guard deployed for operations in Iraq pulls the chocks from in front of a C-130. USAF is working to spread reserve forces more evenly across its 10 AEFs.**

stricted the Air Force’s ability to support a high level of requirements without mobilizing large numbers of reserve forces.

These assets will also be spread across the AEF calendar, Peppe said, because active duty units continually rely on Guard and Reserve support. The Guard and Reserve are “being used big-time,” he said, to provide the active duty force with critical enablers such as airlift and tanker aircraft. The Guard and Reserve also play the lead role in Operation Noble Eagle, defending US airspace.

The need to balance forces is indicative of the fact that USAF has not reached its goal of equal capabilities in each AEF. The realignment planned for the next EAF cycle, which starts this month, will get the Air Force closer to that goal, but the AEFs will never be exactly the same.

What is needed is combat equivalence, said Peppe, and not identical airframes. He said the Air Force has many options for equalizing its 10 buckets of capability.

“It doesn’t make a difference to me if it’s a Block 30 F-16 or a Block 40—if it can shoot a [precision guided munition] or a [Joint Direct Attack Munition], we’re meeting combatant commander requirements,” Peppe noted. “The issue then is making sure each AEF has a full range of the capabilities we offer.”

PGMs for strike, close air support systems, combat search and rescue forces, and intelligence, surveillance, and reconnaissance assets remain in short supply. They must be spread across the AEFs to ensure each pair has access to enough. High-demand airlift and refueling capabilities are also aligned with the AEFs, and all of this has to be postured in a way that does not require units to be forward deployed for half a year.

This is a situation that has existed in the past, and has reappeared in recent months, and could well defeat the purpose of the rotational force that USAF has labored so hard to assemble. ■



USAF photo by SSgt. Louis Rivers

**Members of the 35th Fighter Wing, Misawa AB, Japan, return from a deployment supporting operations in Southwest Asia. USAF expanded its “library” of personnel engaged in the expeditionary rotation schedule over the past year.**



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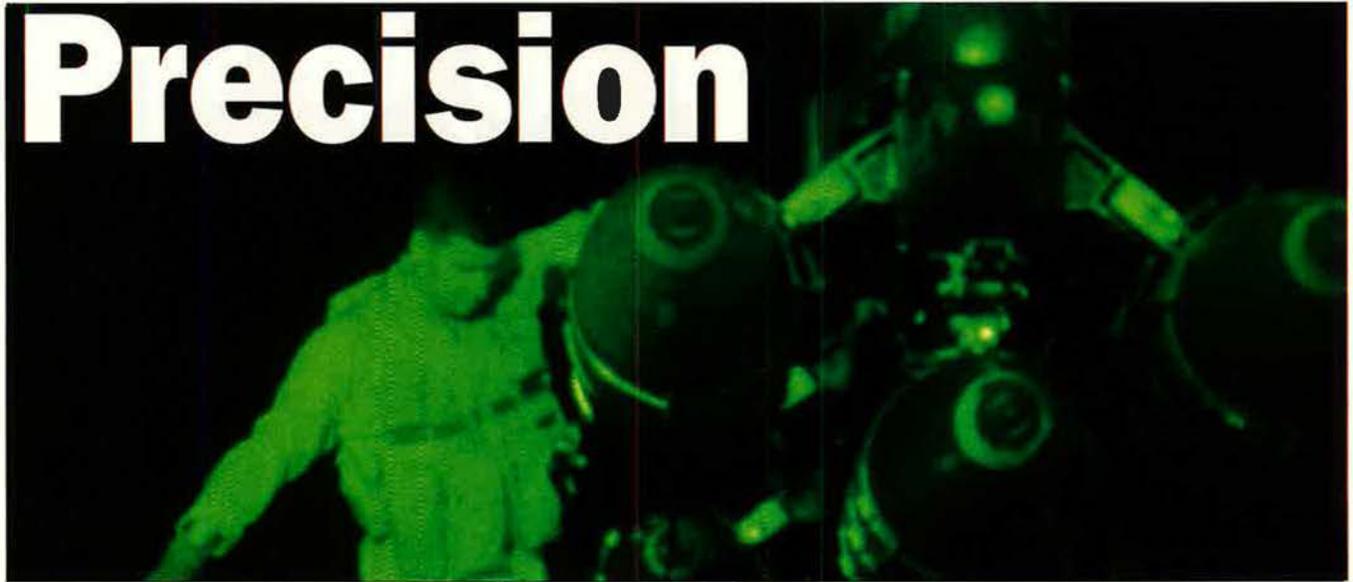


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Operation Iraqi Freedom was an awesome demonstration of integrated air and space power.

# Power and Precision

By Guy Aceto, Art Director



USAF photos by TSgt. Richard Friesland

USAF photos by 1Lt. Daniel Triplett



At top, a B-52 radar navigator pulls pins from Joint Direct Attack Munitions before the bomber takes off for a close air support mission during Operation Iraqi Freedom. Above, B-52 pilots review maintenance forms for another E-52 prior to a CAS sortie.

At left, SrA. Andrew Marshall, an aircraft maintenance crew chief, checks anti-collision lights on a B-52 loaded with laser guided bombs. The venerable B-52 made history when, during the war in Iraq, it dropped LGBs for the first time.

USAF photo by TSgt. Jason Tudor



A1C Efrén Molina: removes the cowling from an engine on a B-52 in Southwest Asia. He was one of three crew chiefs readying the B-52 for a wash, completion of which requires 12 airmen working six hours.



A USAF C-130 theater transport delivers an airfield assessment team from McGuire AFB, N.J., to Baghdad International Airport, shortly after coalition forces took control of the facility. The team determines whether the airfield can handle larger aircraft such as the USAF C-5 and C-17.

At right, TSgt. Wayne Hall, the team's chief airfield manager, checks the damage to a taxiway at Baghdad International.

Below, engineers from the 823rd RED HORSE unit, Hurlburt Field, Fla., repair a hole in the runway.



Above, Army Sgt. Stephan Tetreault (left) and Air Force TSgt. Gerald Davis inspect a remote firing device used by explosive ordnance disposal units. Davis is a member of USAF's new Airborne RED HORSE team.

USAF photo by SSGt. Jerry Morrison Jr.



At left, A1C Brandon Midthun, 21st Special Operations Squadron at RAF Mildenhall, UK, mans a machine gun on an MH-53M Pave Low helicopter. Below, SSGt. Ryan Renuart, a gunner with Air Force Reserve Command's 301st Rescue Squadron, Patrick AFB, Fla., waits for his HH-60 helicopter to take off.



USAF photo by SSGt. Cherie A. Thurby

An MH-53M from the 21st SOS breaks left during a mission over Iraq. Special Operations Forces and rescue forces were in high demand during Operation Iraqi Freedom.



USAF photo by SSGt. Jerry Morrison Jr.

USAF photo by SSGt. Cherie A. Thurby



Coalition forces found several large weapons storage sites in Iraq. A USAF special operations Combat Control Team, staging out of Baghdad International, were sent to investigate this one, found near a presidential palace in Baghdad. It contained a large amount of ammunition and various weapons, including rocket propelled grenades.



USAF photos by MSGJ. Ronny Przyraucha

Air Force KC-135 tankers were airborne during all OIF missions. Above, aircraft in line to refuel include several USAF fighters—two F-15Es, two F-16s, and an F-117—and a Royal Australian Air Force F/A-18.

At right, a Royal Air Force Canberra PR9 photographic reconnaissance aircraft returns from a mission over Iraq.

Below, a Navy crewman directs a Marine Corps AV-8B Harrier armed with laser guided bombs.



USAF photo by SSgt. Bennie J. Davis III

US Navy photo by PH3 John Taucher



USAF photo by SSgt. Matthew Hannon

Above, Maj. Robert Comwell and Lt. Col. Keith Turner, pilots of this USAF E-8C Joint STARS radar aircraft, clean the windshield before takeoff. Joint STARS aircraft were airborne 24 hours a day to help coalition forces maintain battlefield awareness.



Members of the 491st Expeditionary Aeromedical Evacuation Squadron unload wounded from their C-141 after airlifting them from Southwest Asia to Ramstein AB, Germany. Helping the 491st are members of Ramstein's 86th Aeromedical Staging Facility.

Ramstein-based medical personnel treat the immediate needs of wounded personnel at the staging facility, then, as shown: at right, load them on ground vehicles for transport to nearby Landstuhl Regional Medical Center for any additional treatment.



Coalition aircraft, led by USAF F-15Cs, quickly established air dominance over Iraq. Here, maintenance crew chief SrA. Adam Kruse prepares an F-15C for a sortie.

*Abandoned and destroyed Iraqi weapons litter the landscape. Pictured at right is what appears to have been an Iraqi MiG-21 fighter.*



USMC photo by SSgt. Bryan Reed

US Marine Corps photo by Lt. Andreas A. Plaza



USAF photo by SSgt. Jerry Morrison

*At left is one of many armored vehicles destroyed from the air as coalition air forces cleared the way for ground forces advancing toward Baghdad. Above, US Army and Marines forces disabled this tank, which they found in searching the city of Mosul for weapons caches and abandoned equipment.*

AP photo/APTN



*Australian special forces discovered MiG fighters, above and right, under camouflage netting at a captured Iraqi air base near Baghdad. Officials reported finding 51 fighters near the base.*



AP photo/Richard Lewis



A C-17 airlifter lands at a base in Bulgaria, where, below, airmen prepare to load humanitarian supplies bound for Iraq.



At Baghdad airport, Tanker Airlift Control Element members unload equipment and supplies from a Tennessee Air National Guard C-130.



TSgt. Mark Harris of the 22nd Special Tactics Squadron, McChord AFB, Wash., shows an Iraqi boy how to blow bubbles. Harris and other members of a USAF Combat Control Team at Baghdad airport handed out such toys to Iraqi children.



South Carolina Air National Guard pilots "Paps" (left) and "Robo" prepare to fly combat sorties in F-16CJs.

At right, a B-1B returns to its home base at Ellsworth AFB, S.D., after a deployment supporting operations in Southwest Asia.

President Bush, on May 1, declared combat operations in Iraq to be at an end.



USAF photo by A1C Michael B. Keller



Maj. Doug Bodine, of the 28th Bomb Wing at Ellsworth, receives hugs from his wife and daughter upon his return. ■

# Verbatim Special: Gulf War II

By John T. Correll, Contributing Editor

"I can't tell you if all 10 fingers are off the throat, but finger by finger [Saddam's grip is] coming off."—**President Bush, press conference in Belfast, Northern Ireland, April 8.**

"We're dealing with a country in which everybody has a weapon, and when they fire them all into the air at the same time, it's tough."—**Lt. Gen. William S. Wallace, commander of US Army V Corps, March 27, reported in Washington Post, April 12.**

"The Republican Guard is in full control. We have defeated them; in fact, we have crushed them. We have pushed them outside the whole area of the airport."—**Muhammad Said al-Sahhaf, Iraq's information minister, April 5, reported in New York Times, April 6.**

"Don't believe these invaders and these liars. There are none of their troops in Baghdad."—**Said al-Sahhaf on Iraqi television, reported in New York Times, April 8.**

"Iraq will not be defeated. ... Iraq has now already achieved victory—apart from some technicalities."—

**Mohsen Khalil, Iraq's ambassador to the Arab League, reported by Associated Press in Ha'aretz Daily, Israel, April 7.**

"The United States is going to leave Iraq with its tail between its legs, defeated. It is a war we cannot win. We do not have the military means to take over Baghdad, and for this reason I believe the defeat of the United States in this war is inevitable. Every time we confront Iraqi troops we may win some tactical battles, as we did for 10 years in Vietnam, but we will not be able to win this war, which in my opinion is already lost."—**Scott Ritter, former UN arms inspector, TSF Radio Lisbon, Portugal, March 25, cited by Internet commentator Andrew Sullivan.**

"I believe the Americans have so far been unable to capture a single large locality because the Iraqis organized their defense using the combat experience of the Soviet Army, obtained during World War II."—**Retired Col. Gen. Vladislav Achalov, former Soviet deputy minister of defense (and recent military advisor to Saddam), Interfax-Military News Agency, reported by Associated Press in Moscow Times, April 7.**

## Sanctions, Then and Now

"Now that Iraq is liberated, the United Nations should lift economic sanctions on that country."—**President Bush, speech in St. Louis, April 16.**

"This decision cannot be automatic. For the Security Council to take this decision, we need to be certain whether Iraq has weapons of mass destruction or not."—**Russian Foreign Minister Igor Ivanov, April 17, on lifting sanctions, reported in Washington Post, April 18.**

"During the 1990s, when Hussein was concealing his weapons of mass destruction, the Russians did everything they could to lift sanctions. Indeed, in 1999, Russia refused to support the resolution renewing weapons inspections. ... But now that Iraq is run not by a local mass murderer but by an American President, Russia has acquired a sudden concern about Iraq's WMDs."—**Charles Krauthammer, Washington Post, April 21.**

"The question of lifting of sanctions has been raised, and I think sanctions have to be lifted some day."—**UN Secretary-General Kofi Annan, press encounter in Vienna, April 22.**

"I have proposed that the decision should be taken to immediately suspend the civilian sanctions."—**Jean-Marc de La Sabliere, French ambassador to the United Nations, quoted by UPI, April 22.**

"But in proposing merely to suspend, rather than lift, sanctions, the French also suggested leaving the UN in control of Iraqi oil revenues. ... At least the French are smoother spin-artists than the Russians, who don't even bother to conceal their Iraq agenda. ... The two countries that did the most to erode sanctions against Saddam Hussein's dictatorship are now joined at the pocketbook in attempting to maintain them in some form on a newly free Iraq."—**Editorial, Wall Street Journal, April 23.**

"After the fall of Baghdad, it stretches credulity that the sanctions and the UN-administered oil-for-food program are even being debated. Ending the sanctions should be undertaken as a simple acceptance of the war's outcome, in preparation for Iraq's reconstruction. ... What Russia and France are trying to do is help the UN maintain legitimacy in Iraqi affairs, so that they might gain a toehold on how the country is run and perhaps a small say in how contracts are awarded and debts paid."—**Editorial, Long Island's Newsday, April 29.**

"There is no doubt that the sanctions will have to be lifted and the oil-for-food will have to be phased out. The question is, when and how it is done, and this is an issue that the member states are discussing. ... I don't think one can pick an arbitrary date. ... [I]t is linked with other issues."—**Annan, press encounter, April 30.**

"Opinions Vary on Worth of Hussein Dead or Alive"—**Headline, Dallas Morning News, April 9.**

"I picked up a newspaper today and I couldn't believe it. I read eight headlines that talked about chaos, violence, unrest. ... And here is a country that's being liberated, here are people who are going from being repressed and held under the thumb of a vicious dictator, and they're free. And all this newspaper could do, with eight or 10 headlines, they showed a man bleeding, a civilian, who they claimed we had shot—one thing after another. It's just unbelievable how people can take that away from what is happening in that country!"—**Secretary of Defense Donald H. Rumsfeld, Pentagon news briefing, April 11.**

"I appreciate their efforts, but I'm afraid it's not working. This feed-and-kill policy—throwing bombs in Baghdad and throwing food at the people—is not winning hearts and minds."—**Khaled Abdelkariem, Middle East News Agency correspondent, reported in New York Times, April 5.**

"Peter Arnett is a professional correspondent and is known for his coverage of the 1991 Gulf War. His presence is a good thing."—**Salah Nejm, news editor of Al Arabiya television in Dubai, after signing up Arnett, who had been fired by NBC, reported by Reuters, New York Times, April 5.**

"This war is going to prove that, despite precision bombing and technology, there comes a time when you need heavy tank divisions. ... The view that heavy tank divisions are antiquated is about as correct as the predictions that machine guns would make foot soldiers irrelevant in World War I."—**Rep. Chet Edwards (D-Tex.), whose district includes the Ft. Hood Army post, reported by Congressional Quarterly Weekly, April 5.**

"I figured the less classified sessions I go to, the better."—**Rep. Raúl M. Grijalva (D-Ariz.), opponent of the war, saying he preferred to get his information from CNN, reported by New York Times, April 5.**

"Had it been possible to know on March 20 that in just 17 days, US forces would have captured Baghdad's international airport, destroyed most of the Republican Guard, and secured Iraq's vital oil infrastructure, all at a cost of fewer than 75 American lives, most people in this country would have been elated at the prospect of seemingly overwhelming military success."—**Editorial, Washington Post, April 6.**

"In particular, my thought goes to Iraq and to all those involved in the war that rages there. I think in a special way about the defenseless civilian population that in various cities is undergoing a hard test. May God want this conflict to finish soon and to make space for a new era of forgiveness, love, and peace."—**Pope John Paul II, reported by Associated Press, Washington Post, April 7.**

"The UK media has lost the plot. You stand for nothing, you support nothing, you criticize, you drip. ... If you look at what fills newspapers now, it's the equivalent of reality TV—it's superficial, there's very little news reporting, there's very little analysis, but there's a lot of conjecture. The media thought they were going to get a one-hour-45-minute Hollywood blockbuster, and it's not like that. War is a dirty, disgusting, ugly thing, and I worry about it

## CNN and Saddam

"Over the last dozen years, I made 13 trips to Baghdad to lobby the government to keep CNN's Baghdad bureau open and to arrange interviews with Iraqi leaders. Each time I visited, I became more distressed by what I saw and heard—awful things that could not be reported because doing so would have jeopardized the lives of Iraqis, particularly those on our Baghdad staff. ... I felt awful having these stories bottled up inside me. Now that Saddam Hussein's regime is gone, I suspect we will hear many, many more gut-wrenching tales from Iraqis about the decades of torment. At last, these stories can be told freely."—**Eason Jordan, chief news executive at CNN, New York Times, April 11.**

"Doesn't CNN have a journalistic obligation to report these kinds of details or to make their reporters aware of them? You can bet if CNN made discoveries about, say, a conservative Administration, they would share them."—**Sean Hannity, Fox News channel and ABC radio host, quoted by Washington Times, April 12.**

"For nearly a decade, the network [CNN] gave credulous treatment to orchestrated anti-US protests. When Saddam won his most recent 'election,' CNN's Baghdad reporter Jane Arraf treated the event as meaningful: 'The point is that this really is a huge show of support' and 'a vote of defiance against the United States.' After Saddam granted amnesty to prisoners in October, she reported this 'really does diffuse one of the strongest criticisms over the past decades of Iraq's human rights records.'"—**Franklin Foer, Wall Street Journal, April 14.**

"The idea that a camera crew could go to Baghdad University, for example, and gather candid opinions from the students is ludicrous. By now, it should be clear that no Iraqi facing a TV camera would speak his mind while Saddam was in power. Yet, just weeks ago, such reports were shown on television and passed off as a genuine reflection of the students' views."—**Peter Collins, former reporter for CNN, Washington Times, April 16.**

being dignified as infotainment."—**British Air Marshal Brian Burridge, reported in London's Daily Telegraph, April 7.**

"Wars are human endeavors. While a person, a political party, or a nation may decide that war is necessary, the animals never do. Like civilians, they often become the victims of war, but now the US military is deliberately putting animals in harm's way. ... There is no need to put innocent animals at risk."—**People for the Ethical Treatment of Animals, saying, "The US military is using chickens, dogs, dolphins, pigeons, and sea lions to fight the war against Iraq," peta.org.**

"I do expect the UN to play an important role [in rebuilding Iraq], and the UN has good experience in this area. ... Above all, the UN involvement does bring legitimacy, which

is necessary—necessary for the country, for the region, and for the people around the world.”—**UN Secretary-General Kofi Annan, press encounter, April 7.**

“America’s New Vietnam”—**Cover of French newspaper Le Figaro’s weekly magazine, reported by London Times, April 8.**

“We’ve gotten rid of him—I suppose that’s a good thing.”—**Howard Dean about Saddam Hussein, at April 9 Children’s Defense Fund forum for Democratic Presidential candidates, reported by New York Times, April 10.**

“US forces must prove that the incident was not a deliberate attack to dissuade or prevent journalists from continuing to report on what is happening in Baghdad.”—**Robert Menard, secretary-general of Paris-based Reporters Without Borders, on journalists killed at Palestine Hotel in Baghdad, reported by New York Times, April 9.**

“There’s nothing sacrosanct about a hotel with a bunch of journalists in it.”—**Retired Marine Corps Lt. Gen. Bernard E. Trainor, reported by Washington Post, April 9.**

“I’m a skeptic about the ability to transform Iraq into a democracy in any realistic period of time. What’s going to happen the first time we hold an election in Iraq and it turns out the radicals win? What do you do? We’re surely not going to let them take over. ... What’s likely to happen is that the meanest, toughest ones will rise to the top, at least for a couple of generations.”—**Brent Scowcroft, national security advisor to the first President Bush, speech in Oslo, Norway, April 8, reported by New York Times, April 9.**

“We are no longer in an era where one or two countries can control the fate of another country.”—**French President Jacques Chirac, press briefing, after a meeting with UN commission on refugees, April 8.**

“I would say the war in Iraq is illegitimate. Self-defense is how the US rationalizes the war on terror, but there is no connection between that and the Iraq war. ... Kosovo was illegitimate as well. It was legitimized in arrears with UN resolutions, but there was no UN authority to commence that campaign.”—**Douglas Fraser, UN weapons inspector and retired Canadian colonel, reported in London’s Financial Times, April 9.**

“None of the Old Testament prophets had a majority.”—**Rev. Robert Edgar, former Democratic Congressman, now general secretary of the National Council of Churches (which opposed the Iraq war) on polls showing that most churchgoers support the war, reported by Newhouse.com, April 9.**

“Credit Military Success to Clinton’s Policies, Not Bush’s Defense Spending Spree”—**Headline, Philadelphia Inquirer, April 10.**

“I agree the French have behaved in ways ... that have been very damaging to NATO. I think France is going to pay some consequences, not just with us but with other countries who view it that way, but I don’t think we want to make the Iraqi people the victims of that particular

quarrel.”—**Deputy Secretary of Defense Paul D. Wolfowitz to Senate Armed Services Committee, April 10.**

“Predicting that the next war in Iraq would be a ‘cw’—for my sake, now think ‘crushing win’—my early 2002 article established the baseline: ‘It was a cakewalk last time,’ during the Gulf War. Granted, I’m an incurable optimist, but even I could never have envisioned the coalition controlling the enemy capital within three weeks—less than half the time, with less than half the US casualties, of the first Gulf War. ... Now is not an occasion for gloating.”—**Ken Adelman, who had predicted “a cakewalk in Iraq,” Washington Post, April 10.**

“Everyone’s definition of ‘cakewalk’ is different, and if Adelman’s is stretched to include a campaign in which we so far have deployed 300,000 troops, spent \$70 billion, lost more than 130 servicemen and -women, suffered hundreds of wounded, and killed many thousands of Iraqis, that is his right.”—**Philip H. Gordon and Michael E. O’Hanlon, Washington Post, April 12. (O’Hanlon had predicted as many as 5,000 US military dead and 20,000 wounded, 50,000 Iraqi military killed, 50,000 Iraqi civilian casualties.)**

“I have always disliked that term, and no one in the senior leadership in this Administration, either civilian or military, and certainly not the President, has ever thought that war is anything other than a very dangerous thing.”—**Wolfowitz, on “cakewalk” prediction, NBC’s “Meet the Press,” April 6.**

“I have no relationship with Saddam. The game is over, and I hope peace will prevail. I hope the Iraqi people will have a happy life.”—**Iraq’s ambassador to the UN, Mohammed Douri, CNN, reported in Washington Post, April 10.**

“France, like all democracies, rejoices in the fall of the dictatorship of Saddam Hussein.”—**Chirac, in an official communiqué issued by his office, April 10.**

“Al-Jazeera’s extended, uncensored, on-the-ground coverage of the invasion has demonstrated, contrary to US and British claims, that this has not been a bloodless, costless, and clean war. ... Viewers in the United States would benefit from an English-language television station that followed the al-Jazeera commitment to democracy, debate, and accountability.”—**Frances S. Hasso, assistant professor, Gender and Women’s Studies Program, Oberlin College, Long Island Newsday, April 17.**

“I don’t want to speak about the past now. Now we should think about how the military victory can be turned to help the entire region.”—**German Chancellor Gerhard Schroeder, April 11, reported by New York Times, April 12.**

“A searching and independent assessment will be needed to determine whether the defeat of the Iraqi military was a landmark in warfare or simply a lopsided fight.”—**Editorial, New York Times, April 12.**

“For France and Germany to announce that they would vote against the United States in the Security Council was unprecedented in itself. But this was dwarfed by their intense diplomatic lobbying against American policy in far-flung capitals, ignoring a half-century of alliance

tradition—even going so far as to create the impression among East European leaders that cooperation with the United States in the war might further complicate their entry into the European Union. With an attitude of almost gleeful defiance, the French and German foreign ministers invited their Russian counterpart, the erstwhile NATO adversary, to stand beside them in Paris while they publicly repudiated a top-priority policy of their ally of half a century.”—**Henry Kissinger, San Diego Union-Tribune, April 13.**

“Today, France and Germany are like pigeons who want to snatch a bit of the prey killed by hawks. They want contracts in the post-Hussein Iraq and are ready to work hard to get them.”—**Andrei A. Piontkovsky, Moscow think tank director, reported by Los Angeles Times, April 13.**

“In no other profession are there so many smug, arrogant people with so little justification for being arrogant as there are in journalism.”—**Jack Kelly, former Marine and Green Beret and former deputy assistant secretary of the Air Force, Washington Times, April 13.**

“I would anticipate that the major combat engagements are over because the major Iraqi units on the ground cease to show coherence.”—**Army Maj. Gen. A. Stanley McChrystal, Joint Staff vice director for operations, Pentagon news briefing, April 14.**

“All the military lessons of Operation Iraqi Freedom hinge on the answer to a single question: How representative is Saddam’s regime of future adversaries?”—**Loren B. Thompson, Lexington Institute, reported by Christian Science Monitor, April 16.**

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## Jointness, Yo

“I don’t want to say that it would be a mistake for the services to engage in service-centric lessons learned. But to some extent I will say it. This was not a war fought by the Army or the Navy or the Air Force ... or the Marines. It was a war that’s been fought by joint forces under excellent leadership.”—**Defense Secretary Donald H. Rumsfeld, Pentagon news briefing, April 15.**

“At long last, I think the American military has really got its act together in the air-ground battle. No longer is the air battle separate from the ground battle. These two phases of operations are now interdependent and interlocked. And the next time we do this, it is going to be a combined air-ground campaign so that ground forces will have to rely on airpower and airpower will have to rely on ground power.”—**Retired Army Gen. Robert Scales, Fox News, April 15.**

“You can’t even take a surrender from 25,000 feet. Yet no soldier or Marine would be foolish—or cynical—enough to insist that their service had won the war by itself. The Air Force, though, delivers such tremendous profits to the defense industry that its partisans will insist, despite all evidence to the contrary, that this war really did prove that ground forces are outdated and that airpower trumps all. The defense industry wants to sell \$200 million aircraft, not inexpensive rifles, canteens, and boots.”—**Ralph Peters, retired Army officer turned columnist, New York Post, April 16.**

“Carefully targeted air strikes left entire army divisions without arms and without organization. Precision guided weapons fatally disrupted the regime’s system of command and control. ... Yet more than ever before, the precision of our technology is protecting the lives of our soldiers and the lives of innocent civilians. The overwhelming majority of the munitions dropped in the Iraqi campaign were precision guided. In this era of warfare, we can target a regime, not a nation.”—**President Bush, speech in St. Louis, April 16.**

“The military is not yet sure how many Iraqi armored vehicles it destroyed, but the number is likely to reach well into the hundreds, possibly thousands. The carnage happened off screen. While TV viewers were watching

American soldiers bogged down by sandstorms and suicide attacks, the Air Force and Navy were obliterating whole Republican Guard divisions.”—**Evan Thomas and Martha Brant, Newsweek, April 21.**

“Although air and space power were profound contributors to ousting the Saddam Hussein regime from Iraq, they could be big losers in Washington’s budget wars. Senior Air Force and space leaders appear to be concerned that lawmakers and citizens will not appreciate the important—but relatively low profile—contributions made by airmen and space professionals during Gulf War II, because they were not as visible as ground forces.”—**William B. Scott, Aviation Week & Space Technology, April 21.**

“The good news is that our bombing was more accurate than it has ever been before. The bad news is that, dramatically increased bombing accuracy notwithstanding, strategic bombing once again failed to bring Saddam Hussein’s regime to its knees. As was the case 12 years ago, victory required significant fighting on the ground.”—**Thomas Houlahan, former Army officer, director of Military Assessment Program, William R. Nelson Institute, James Madison University, UPI.com, April 23.**

“At the end of the day, war must be won on the ground. Those few airmen or sailors who view this assertion as an insult rather than the professional challenge it represents do their services no benefit. As Operation Iraqi Freedom reconfirmed, recognizing the need to win on the ground in no way devalues the contribution of every arm and service to victory.”—**Richard Hart Sinnreich, retired Army colonel and columnist, Washington Post, April 24.**

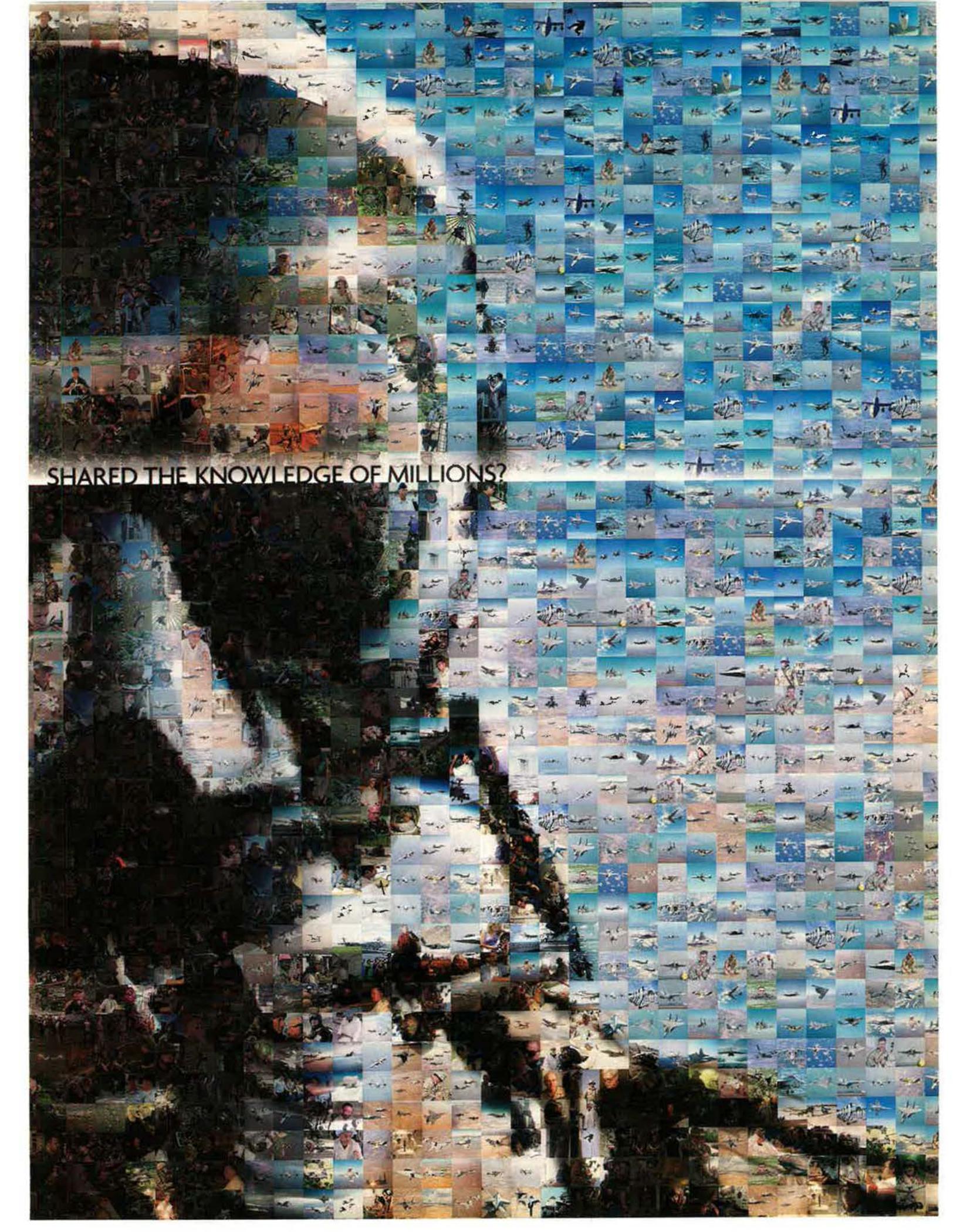
“From this experience, our experience in Afghanistan as well, we’re learning lessons that will affect how the United States of America, how the Department of Defense and the services, will organize, will train and will equip—lessons that will impact budgets and procedures, training and doctrine, and affect the future success of our country for many years to come.”—**Rumsfeld, “Town Hall” meeting with troops in Qatar, April 28.**

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## WHAT IF A SINGLE WARFIGHTER

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SHARED THE KNOWLEDGE OF MILLIONS?

"The key conclusion we must draw from the latest Gulf War is that the obsolete structure of the Russian armed forces has to be urgently changed. The gap between our capabilities and those of the Americans has been revealed, and it is vast. We are very lucky that Russia has no major enemies at the moment, but the future is impossible to predict, and we must be ready."—**Vladimir Dvorkin, head of the Russian Defense Ministry's official think tank, reported in Christian Science Monitor, April 16.**

"The Republican Guard no longer serves in this country. The Special Republican Guard no longer serves in this country. The regular army in this country no longer functions. In that respect, certainly, the decisive combat portion of the campaign is finished."—**Army Gen. Tommy R. Franks, commander, Central Command, April 16, reported in New York Times, April 17.**

"Saddam is gone and good riddance. ... "There are German and French soldiers in Afghanistan today. Does the President want them to come home?"—**Former President Bill Clinton, reported in New York Daily News, April 16.**

"We're not dogs on a leash."—**Chief UN weapons inspector Hans Blix, whose inspectors want to go back to Iraq but say they will not work under the Americans, reported by Associated Press, April 17.**

"We see no immediate role for Dr. Blix and his inspection teams."—**Richard Grenell, spokesman for the US ambassador to the UN, reported by Associated Press, April 22.**

"A soldier would say to me, 'Sir, excuse me, but I cannot stay here because of the bombing. I fear for my family. I'm sorry, sir.' I would say, 'Don't worry. God go with you. I will be joining you soon.'"—**Col. A.T. Said, Republican Guard, London's Daily Telegraph, April 17.**

"I still maintain that the campaign carried some very big risks. I just know that in the 3rd Division commander's shoes, I would have felt very lonely on occasion, not having a reserve force available to bail me out of trouble."—**Retired Army Gen. Frederick J. Kroesen, reported in Washington Post, April 18.**

"If he is alive, I would suggest he not pop his head up."—**Bush, replying to question about Saddam dead or alive, press conference at Ft. Hood, April 20.**

"The forces of internal security are considered among the important apparatuses in Iraq. They are responsible for protecting the security of the revolution internally; for preserving stability; for protecting citizens and preserving their lives and property from those breaching the law. ... They make certain justice and righteousness for all is maintained."—**Textbook for sixth-grade students in Iraq, reported by New York Times, April 20.**

"I think we were thoroughly inside the decision loop and capability of the [Saddam] regime. We started the ground war first, before the air war. So if you're waiting for the big air war to start, 38 days of air war ... didn't happen that way."—**Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, reported by Army Times, April 21.**

## The Museum Looters

"The first thing you have to deal with is loss of life, and that's what we dealt with. And if you remember, when some of that looting was going on, people were being killed, people were being wounded. ... So I think it's, as much as anything else, a matter of priorities."—**Gen. Richard B. Myers, about looting and destruction at Iraq's National Museum, Pentagon news briefing, April 15.**

"While our military forces have displayed extraordinary precision and restraint in deploying arms—and apparently in securing the Oil Ministry and oil fields—they have been nothing short of impotent in failing to attend to the protection of [Iraq's] cultural heritage. ... The tragedy was foreseeable and preventable."—**Martin E. Sullivan, chairman (since 1995) of the President's Advisory Committee on Cultural Property, April 14 resignation letter, reported by Washington Post, April 17.**

"But the rush to condemn Americans for looting and destruction committed by Iraqis obscures fundamental questions about social responsibility and accountability in Iraq and throughout the Arab world. ... An important question going unasked in the rush to condemn: If looting was so predictable, what did the Iraqis—and particularly the staff of the museum—do to protect the museum's valuable antiquities? ... Can one of history's greatest art thefts have been an inside heist by top

officials in the organized kleptocracy known as the Saddam Hussein government?"—**Jim Hoagland, Washington Post, April 17.**

"Most of the things were removed. We knew a war was coming, so it was our duty to protect everything. We thought there would be some sort of bombing at the museum. We never thought it could be looted."—**Donny George, director-general of restoration, Iraqi Antiquities Department, quoted in Wall Street Journal, April 17.**

"The vaults where the best pieces are kept were opened with keys. Looters coming in off the streets don't usually have keys, do they? It appears to have been a deliberate, planned action. My feeling is that it was organized abroad."—**McGuire Gibson, president of the American Association for Research in Baghdad, reported by The Telegraph, www.indybay.org, April 22.**

"We know that the break-in at the museum was done by professionals. They came in with tools and glass cutters, and they walked right by a replica of the Code of Hammurabi, which they knew was not real. They started with the best pieces and worked their way down."—**Elizabeth Stone, archaeologist at Stony Brook University, quoted by Long Island's Newsday, April 27.**

"The Defense Secretary should resign—now. Although George W. Bush is ultimately responsible for the catastrophe unfolding in Iraq, it is Donald Rumsfeld who is the Cabinet member directly charged with planning and carrying out the nation's wars. ... [Rumsfeld and his colleagues] have deceived the American people, misled US soldiers whose lives are at risk, scorned the United Nations, and defied international law."—**Editorial, The Nation, April 21.**

"The impression that's left around the world is that we plan to occupy the country, we plan to use their bases over the long period of time, and it's flat false. ... The people peddling that stuff are wrong, and the people writing it should check things out better."—**Rumsfeld, on press report that US wants permanent bases in Iraq, Pentagon news briefing April 21.**

"The last seven months have involved six months of diplomatic failure and one month of military success. The first days after military victory indicate the pattern of diplomatic failure is beginning once again and threatens to undo the effects of military victory. ... Now the State Department is back at work pursuing policies that will clearly throw away all the fruits of hard won victory."—**Former Speaker of the House Newt Gingrich, American Enterprise Institute speech, April 22.**

"It is clear that Mr. Gingrich is off his meds and out of therapy."—**Deputy Secretary of State Richard L. Armitage, reported in Washington Post, April 26.**

"[All Secretaries of State] have been criticized at one time or another for being—what—like diplomats, for trying to find peaceful solutions, ... to creating alliances. That's what we do. We do it damn well, and I'm not going to apologize to anybody."—**Secretary of State Colin Powell, Senate testimony, April 30.**

"I don't know if we are going to understand how significant this effort was until we do more analysis. But when you can destroy over three divisions' worth of heavy armor in a period of about a week and reduce each of these Iraqi divisions down to even 15, 20 percent of their strength, it's going to have an effect."—**Col. Michael Longoria, commander of 484th Air Expeditionary Wing, reported by Chicago Tribune, April 22.**

"A lot of people expected an incompetent defense. And we didn't get that. We got a stunningly incompetent defense."—**Retired Vice Adm. Arthur K. Cebrowski, director of Pentagon transformation office, on quality of Iraqi opposition, Defense Writers Group, April 22.**

"It's a fact that Mexico thought it [the danger from Iraq] could be solved in a different way. But things happened the way they happened, and today we are looking at the future. ... We think that we can keep on building the bilateral relationship [with the US] and narrowing these differences of opinion on positions that we had."—**Mexican President Vicente Fox, reported by Washington Post, April 23.**

"The attitude projected by the United States has been a unilateral one—that we know better, that we know best, and the rest of the world should follow us. ... We cannot go it alone. We need our allies."—**Sen. Dianne Feinstein (D-Calif.), reported by San Francisco Chronicle, April 23.**

"There are 600-plus Americans who are dead or wounded in the course of this conflict, and it wasn't easy for them."—**Army Lt. Gen. David D. McKiernan, coalition ground force commander, on whether the war was easy, Pentagon video conference from Baghdad, April 2.**

"I hope the coalition will set an example by making clear that they intend to act strictly within the rules set down by the Geneva Conventions and the Hague Regulations regarding the treatment of prisoners of war, and by demonstrating through their actions that they accept the responsibilities of the occupying power for public order and safety, and the well-being of the civilian population."—**Annan, speech to Commission on Human Rights in Geneva, April 24.**

"Quite frankly, we find it odd at best that the secretary-general would feel that he had to bring this to our attention."—**Kevin E. Moley, US ambassador to UN in Geneva, reported by United Press International, April 24.**

"Why can't reporters report on what's happening instead of what might happen if all these variables happen to occur?"—**Rumsfeld, responding to "what if" questions at Pentagon news briefing, April 25.**

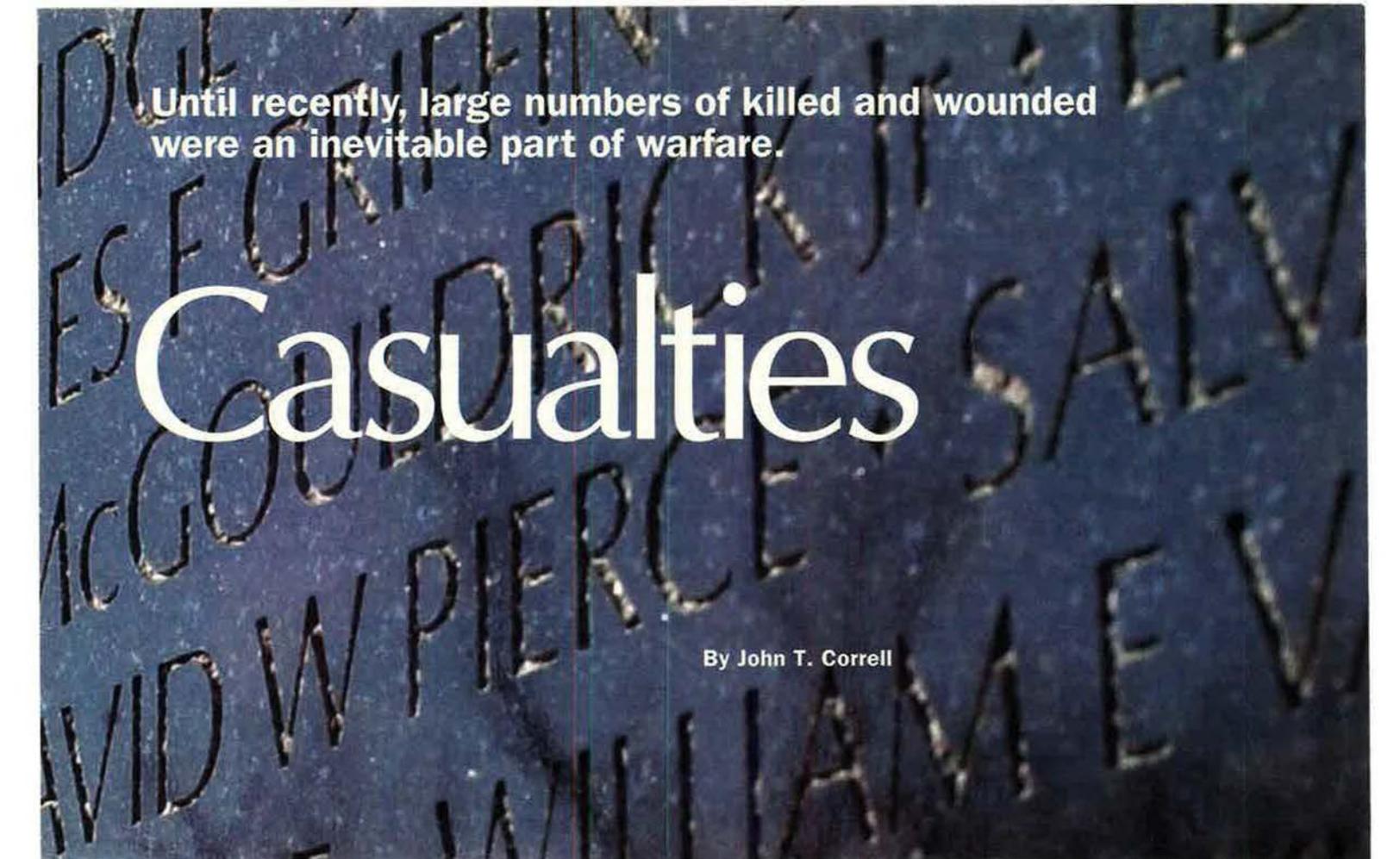
"This affected the morale of the troops. The Iraqi will to fight was broken outside Baghdad."—**Iraqi Colonel Ghassan (first name not given), on air strikes that essentially destroyed three Republican Guard divisions south of Baghdad, reported in Washington Post, April 27.**

"People on TV kept asking, 'Where is the Republican Guard?' I can tell you where they are: They're blown up. And we blew them up."—**Lieutenant Colonel "Snort," F-16 pilot at a forward operating base, quoted by Air Force Times, April 28.**

"US military officials had the authority but did nothing to stop these war crimes from occurring."—**Jan Fermon, lawyer for Iraqis preparing to accuse Gen. Tommy R. Franks and other US officials of atrocities and war crimes under Belgium's "universal jurisdiction" law, reported by Washington Times, April 28.**

"The infrastructure of Iraq is largely intact, and an environmental disaster was averted. The dams were not broken. The villages were not flooded. There were no large masses of refugees fleeing across borders into neighboring countries as the result of a sustained air campaign that affected civilian lives. And there have not been large numbers of civilian casualties because the coalition took such great care to protect the lives of innocent civilians as well as holy sites."—**Rumsfeld, "Town Hall" meeting with troops in Qatar, April 28.**

"In the battle of Iraq, the United States and our allies have prevailed."—**Bush, aboard the aircraft carrier Abraham Lincoln, May 1.**



Until recently, large numbers of killed and wounded were an inevitable part of warfare.

# Casualties

By John T. Correll

**R**EMEMBRANCE of the people who didn't come home is a standard element of war memorials, but, for the Vietnam Veterans Memorial in Washington, it is the central theme. There, inscribed on the black granite wall, are the names of more than 58,000 Americans who died in Vietnam.

The casualties are still starkly remembered today. Part of the reason was their unprecedented visibility. Vietnam was the first war we watched on television. It was a forerunner of what would later be called "the CNN effect."

Casualties in Vietnam were low compared with previous wars. The

worst was the Civil War, with nearly 620,000 military dead—360,000 Union, 258,000 Confederate—the total of battle deaths and deaths from other causes, such as disease. More than 15 percent of those who served died in the war. Never again, not even in World War II, did our casualty rate rise to such a level.

Carnage in the two World Wars was devastating. In *The Face of Battle*, historian John Keegan recounts how the British took 419,654 casualties at the Somme in 1916. There were 60,000 casualties the first day, "of whom 21,000 had been killed, most in the first hour of the attack, perhaps the first minutes."

Until recently, heavy casualties were presumed to be an inevitable consequence of warfare. It was not until the Gulf War of 1991 that another possibility began to emerge.

Prior to the Gulf War, the Center for Strategic and International Studies estimated that the casualties would reach 15,000. Gen. H. Norman Schwarzkopf, commander of coalition forces, estimated 5,000.

That didn't happen. Operation Desert Storm consisted of an extraordinarily effective 38-day air campaign that left the enemy reeling, followed by a four-day air-land finale.

Iraq's command and control was eliminated the first night. By the



time the ground offensive began, about half of Iraq's armor had been destroyed, and between 50 and 75 percent of the troops in the first two echelons were killed or captured, or had deserted.

Total casualties for the coalition were 247 battle deaths (148 for the US, 99 for the allies) and 901 wounded (467 for the US, 434 for the allies).

Was the Gulf War a turning point in the history of warfare, or was it a fluke? Gen. John Michael Loh, commander of Tactical Air Command, said in 1992 that the American public had a new standard of expectations, that the US armed forces would "win quickly, decisively, with overwhelming advantage, and with few casualties."

### A New Way of War

In 1996, Air Force Chief of Staff Gen. Ronald R. Fogleman said the nation was on the verge of "a new American way of war."

"America has not only the opportunity but the obligation to transition from a concept of annihilation and attrition warfare that places thousands of young Americans at risk in brute, force-on-force conflicts to a concept that leverages our sophisticated military capabilities to achieve US objectives by applying what I like to refer to as an 'asymmetric force' strategy," he said.

Instead of engaging the enemy in what Fogleman called "a bloody slugfest on the ground," US forces could put greater reliance on their advantages in information superiority and precision strike.

The improvement in airpower was especially significant.

In World War II, the circular error probable—the standard Air Force measure of bombing effectiveness—for a B-17 dropping gravity bombs was 3,300 feet. It took a lot of bombs to be sure of hitting the target.

In the Vietnam War, the CEP was 400 feet. By the Gulf War, it was down to 10 feet. A single stealthy aircraft could penetrate the defenses and achieve, with two laser guided bombs, what would have taken 1,000 sorties in World War II or 30 sorties in Vietnam.

That made it possible to focus the attack, striking with great accuracy and economy. Fewer of our forces would be exposed to enemy fire, and

the increased precision meant less collateral damage.

The air war over Serbia in 1999, operations in Afghanistan since 2001, and the opening rounds of Gulf War II supplied further evidence of a new way of war. The operations were highly successful, and the casualties were low.

US forces had zero combat losses in Kosovo and Serbia. After a year and a half, the total dead in Operation Enduring Freedom in Afghanistan, Middle East, the Philippines, and elsewhere was 76.

Before Operation Iraqi Freedom began in March 2003, there were predictions of as many as 5,000 US troops killed and up to 30,000 total US casualties. (At the other end of the forecasting spectrum was the expectation that it would be a "cakewalk.")

Apprehension grew as the operation got under way. On March 24, after just five days of war, an editorial in *USA Today* proclaimed that "Mounting US Casualties Dispel Modern War Myths." It said that the losses "can't help but test the public's resolve," but might: "knock down a dangerous conceit of the antiseptic war." At that point in the fighting, known US losses, both those killed in action and in accidents, were 20.

When Baghdad fell on April 9—the 21st day of the conflict—the total of US dead was just over 100.

In April, Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, used the same phrase as Fogleman—"a new American way of war"—to describe Operation Iraqi Freedom. Myers said that precision and focus had allowed US, British, and Australian forces to "strike directly at the heart of the regime" in Iraq while minimizing collateral damage and harm to the Iraqi people.

### The Napoleonic Model

The evolution of casualty rates in warfare is a function of changes in both military technology and in strategic concepts of operation.

After 1800, war had generally followed the Napoleonic model. The objective was destruction of the enemy's army in the field and occupation of his country. "I see only one thing, namely the enemy's main body. I try to crush it, confident that secondary matters will then settle themselves," Napoleon said.

Carl von Clausewitz, Prussian officer and famed military theorist, based his views largely on his analysis of the Napoleonic Wars. "Of all the possible aims in war, the destruction of the enemy's armed forces always appears as the highest," Clausewitz said in *On War* (1832), adding that "destruction of the enemy forces is the overriding principle of war."

The German military historian Hans Delbrück described this approach as the "strategy of annihilation." It assumed and accepted high casualties on both sides. Historian Russell F. Weigley says, "The strategy of annihilation became characteristically the American way in war."

That was Gen. Ulysses S. Grant's strategy in the final phase of the Civil War. Departing from the more cautious approaches of his predecessors, Grant threw the mass of his Army of the Potomac, again and again, against Robert E. Lee's retreating Army of Northern Virginia.

Grant's campaign was marked by the large numbers of killed and wounded. To get the job done, he was willing to accept higher casualties than he inflicted.

In the first month, according to Weigley, the Army of the Potomac "suffered 55,000 casualties, not far from the total strength with which the rival Army of Northern Virginia began the month." Lee's army took 32,000 casualties that month, but Lee had more difficulty than Grant did in replenishing his ranks.

Grant eventually won but afterward was unable to shed his reputation as a butcher.

### The World Wars and Vietnam

The strategy of annihilation prevailed through the World Wars. All of the nations engaged in those wars accepted casualties as a grim necessity, but Hitler was one of the few who expended the lives of his troops recklessly.

Hitler ordered the beleaguered German Army not to surrender at Stalingrad in 1943, declaring that "the duty of the men at Stalingrad is to be dead." Sixty thousand Germans were killed at Stalingrad. Another 110,000 were captured by the Soviets and few of them ever came home.

The military death toll for World War II was a staggering 19.4 million

killed in battle. Of those, 292,000 were Americans. The total of US military deaths in World War II, counting nonbattle deaths, was 405,000. Total US dead in the Korean War were 37,000 and in the Vietnam War, 58,000.

In Vietnam, the number of battle deaths was reduced by effective search and rescue operations which quickly pulled the seriously wounded out of firefights in the jungle and flew them to medical treatment by helicopter. American losses in Vietnam were a fraction of those the Viet Minh and the North Vietnamese were willing to accept in order to defeat first the French and then

## Casualties and Collateral Damage

"Casualties" include not only the killed and wounded but also losses from disease, desertion, accidents, and troops taken prisoner or missing in action. Attention centers on the numbers killed in action, but according to the *Oxford Companion to Military History*, the Allied campaign in Italy in World War II was the first in which combat casualties outnumbered those caused by disease.

"Collateral damage" has two components: nonmilitary structural damage and human casualties that occur in the course of striking valid, approved military targets. Example: Damage to a civilian structure located next to a military structure.

"Unintended damage" is the result of a targeting mistake, a weapon system malfunction, unforeseen secondary effects, or other error. Examples: fin failure on a guided munition, hidden bunker beneath a structure, intelligence error.

## From the Revolution to the Gulf

### US Military Casualties

	Battle Deaths	Other Deaths	Wounds Not Mortal
Revolutionary War	4,435	—	6,188
War of 1812	2,260	—	4,505
Mexican War	1,733	11,550	4,152
Civil War (Union forces only)	140,414	24,097	281,881
Spanish–American War	385	2,061	1,662
World War I	53,402	63,114	204,002
World War II	291,557	113,842	671,846
Korean War	33,652	3,262	103,284
Vietnam War	47,378	10,799	153,303
Desert Shield/Storm	148	145	467

Source: Department of Defense

the United States.

From 1959 to 1975, "more than four million Vietnamese soldiers and civilians on both sides—roughly 10 percent of the entire population—were to be killed and wounded," said Stanley Karnow in his comprehensive history of the war.

"Every minute, hundreds of thousands of people die on this Earth," said Gen. Vo Nguyen Giap, North Vietnam's military leader. "The life or death of a hundred, a thousand, tens of thousands of human beings, even our compatriots, means little."

The US was far less tolerant of casualties, more so as the war bogged down and the prospect of victory diminished. Unflinching television

coverage had a strong influence on public opinion.

But rising and visible casualties were only part of what soured the nation on Vietnam. The war was tightly controlled by politicians in Washington. The US commitment was halfhearted and vacillating. Military force was dribbled out in limited actions and gradual escalation.

Field forces were required to report "body counts" of the enemy dead. These were notoriously inaccurate and fooled nobody. Body counts gained such notoriety that to this day, US forces do not attempt to count or estimate enemy casualties.

Two products of the Vietnam experience—the "Vietnam syndrome,"

which described the supposed avoidance of US military action abroad, and the "Weinberger Doctrine"—would figure in the casualty debates 30 years later.

In 1984, Secretary of Defense Caspar Weinberger announced a series of tests that should be met before US forces were committed to combat. Was a vital national interest at stake? Had other options been exhausted? Would we commit sufficient force to win, and did we have the determination to stay the course?

These guidelines—sometimes called the Weinberger–Powell Doctrine because Gen. Colin Powell, Chairman of the Joint Chiefs of Staff during the Gulf War, strongly agreed—were a reminder to avoid the mistakes of Vietnam.

The Weinberger Doctrine did not suggest avoiding combat to prevent casualties, although that accusation would be made years later.

### Effects-Based Operations

US capabilities demonstrated in Gulf War I—mainly information superiority, stealth, and precision strike—were the leading indicators of what was called the "Revolution in Military Affairs."

The capabilities got better as the decade went along.

American forces could see into enemy territory and track targets moving on the ground and in the air with deep-looking radar on E-3 AWACS and E-8 Joint STARS aircraft. Electronic emissions were monitored. Circling drones fed live video transmissions to gunships.

Over Kosovo, B-2 bombers struck nightly from their home bases in the

United States. Each aircraft attacked 16 different targets on a single sortie.

Under Napoleonic strategy, the objective had been destruction of the enemy's army. Now a new approach was possible. It was called Effects-Based Operations.

The objective was not to destroy the enemy but to gain a strategic result. Destruction of the enemy was never more than a means to a strategic end, not an end in itself.

In some cases, the strategic objective might still be to destroy the enemy's army and occupy his capital, but more often, the desired result is something else. Keep enemy armor from massing. Halt an invasion. Take away the enemy's ability to command and control his forces. Inhibit his aggression.

"With precision targeting and longer-range systems, commanders can achieve the necessary destruction or suppression of enemy forces with fewer systems, thereby reducing the need for time-consuming and risky massing of people and equipment," the Joint Chiefs of Staff said in "Joint Vision 2010" in 1996.

More effectiveness. More flexibility. Fewer casualties.

However, it was controversial for a number of reasons, one of them being that it put more emphasis on airpower and moved away from the clash of forces on the ground.

### Friendly Fire

"Friendly fire" casualties are those inflicted by forces on one's own side. In Desert Storm, 35 Americans were killed and 72 were wounded by friendly fire.

The 35 dead accounted for about a fourth of the US military members who died in action in that conflict. That was a higher percentage than the historical norm, around two percent, but that is partly because losses to enemy fire were historically low.

Friendly fire is often thought of as something that aircraft do to ground troops, but many of these casualties are the result of fire from tanks, artillery, and other weapons.

In World War II, Korea, and Vietnam, 58 percent of the friendly fire casualties were ground to ground, 37 percent were air to ground, and five percent were ground to air. In Desert Storm, 61 percent were ground to ground, 36 percent were air to ground,

and three percent were ground to air.

"The problem is our weapons can kill at a greater range than we can identify a target as friend or foe," Army Maj. Bill McKean told American Forces Press Service in 1999. "Yet if you wait until you're close enough to be sure you are firing at an enemy, you've lost your advantage."

### Civilian Casualties

Wars have always caused civilian casualties, both directly and indirectly. In World War I, for example, the 13 million civilian deaths outnumbered the 8.5 million military deaths. Displaced persons were hard hit by an influenza epidemic that swept the world and took millions of lives. Other civilian deaths were caused by starvation, exposure, and disease.

One of the most famous instances of civilian casualties may have led, in the long run, to fewer civilian casualties than if the strike had not taken place.

About 80,000 Japanese were killed by the atomic bomb dropped on Hiroshima Aug. 6, 1945. Japan adamantly refused to surrender. If the atomic bomb had not been used, an invasion of the Japanese home islands was the only alternative for bringing the war to an end. The United States had just taken 48,000 casualties in the battle for Okinawa, where it was opposed by a Japanese force a fraction the size of the one waiting in the home islands.

The bomb ended the war and almost certainly saved tens of thousands of American lives. It is highly probable—although fiercely debated—that more Japanese would have died in an invasion than were killed by the bomb.

Sometimes civilian deaths are deliberate.

The Nazis killed six million Jews in the Holocaust. Millions of Chinese died in the brutal Japanese conquest of the 1930s and 1940s. Between 1975 and 1979, the Khmer Rouge killed two million people in Cambodia. About 800,000 civilians died in the systematic slaughter of men, women, and children in the Rwanda Civil War in 1994.

Civilian casualties continue to occur in wars. In fact, the rate may be rising in conflicts in the developing world.

"The percentage of civilians killed and wounded as a result of hostili-

## World War I Military Dead

### Battle and Nonbattle Deaths

Germany	1,773,700
Russia	1,700,000
France	1,357,800
Austria-Hungary	1,200,000
British Empire	908,371
Italy	650,000
Romania	335,706
Turkey	325,000
United States	116,516
Bulgaria	87,500
Serbia	45,000
<b>Others:</b> Belgium, Greece, Japan, Montenegro, Portugal	29,238
<b>Total</b>	<b>8,528,831</b>

The United States did not enter World War I at the beginning, and its losses were lower than those of other major combatants.

Source: *Encyclopedia Britannica*

ties has risen from five percent of all casualties at the turn of the last century to 65 percent during World War II to 90 percent in more recent conflicts," a relief group, Save the Children, said in a report in 2002. "In the last decade alone, more than two million children haven been killed during wars."

The report did not give a breakout, but among the places mentioned were Rwanda, Chechnya, Afghanistan, Angola, Congo, Liberia, Mozambique, Sierra Leone, and Somalia.

### Limiting Civilian Casualties

The trend has been exactly opposite in US military actions of recent years. The policy is to avoid civilian casualties and collateral damage, and the accuracy of the weapons is good enough to make it possible.

Some targeting mistakes are bound to occur, and the precision guided munitions are not perfect. It is not possible to prevent all unintended casualties, but every target is screened for potential civilian casualties. Probable blast and fragmentation patterns are considered. The size of the weapon, the direction and angle of the attack, and even the time of day of the strike are chosen to minimize civilian casualties.

In some cases, facilities serve both military and civilian functions, so decision-makers must weigh the importance of the target against the predicted noncombatant casualties. In Operation Iraqi Freedom, some targets of military value were not

struck because of the danger to civilians.

Despite this, it is the United States that attracts the most vehement criticism for civilian casualties. Furthermore, the critics nearly always exaggerate the numbers.

That was the case with the Gulf War of 1991. "The radical group Greenpeace claimed as many as 15,000 Iraqi civilians died," John Leo wrote in *US News & World Report*. "Saddam Hussein's government said 20,000 to 50,000, and the American Friends Service Committee/Red Crescent went way overboard and claimed 300,000 civilians died. Accepted estimates are far lower. Human Rights Watch estimated 2,500 to 3,000. A long analysis in *Foreign Policy* magazine put the number of Iraqi civilian dead at 1,000."

Civilian casualties were low in Kosovo and Serbia, and everybody knew it. Investigators for Human Rights Watch put the total at 500.

Operation Enduring Freedom in Afghanistan went to new levels in trying to avoid civilian casualties. Central Command was accused in news media leaks of being too cautious and letting some al Qaeda leaders get away.

At the same time, Marc W. Herold, associate professor of economics and women's studies at the University of New Hampshire, was making his own count of civilians killed by bombing in Afghanistan.

Herold spent 12 to 14 hours a day on the Internet, reading the interna-

tional press and gathering "data." He calculated that, as of January 2002, US bombs had killed 4,050 noncombatants. To arrive at that figure, he relied on such sources as the Afghan Islamic Press Agency, the al Jazeera news network, and newspapers in Pakistan.

A different estimate for the same period, by the Project on Defense Alternatives, was that between 1,000 and 1,300 civilians had been killed. The actual number of noncombatant casualties is not known.

### Who's a Combatant?

Afghanistan raised again an old but critical question: Who is a combatant?

Yaser Esam Hamdi, born in Louisiana, raised in Saudi Arabia, was captured on a battlefield in Afghanistan carrying an AK-47. He admitted that he had trained and deployed with the Taliban. His lawyers have been trying to free him from detention on the grounds that he is not an enemy combatant. His case has been working its way through the federal appeals courts for months.

Saddam Hussein and his Iraqi cohorts took the question to new levels.

Before the war began, Iraq said that it had trained a million civilians in the basics of armed combat and had given many of them firearms.

Advancing US forces encountered Iraqi troops in civilian clothing, operating out of homes, religious shrines, schools, and hospitals. Iraq sent civilians, including women, barreling into checkpoints in suicide attacks. Iraqi troops fired on American forces while carrying white flags and pretending to surrender.

In the first Gulf War, the Iraqis seized 2,000 foreigners in Kuwait, oil workers, bankers, and others, and held them as human shields at military bases and industrial plants.

This time, the human shields were volunteers, coming from the United States, Britain, and elsewhere with the idealistic notion of protecting hospitals and schools—which were in no danger, of course—but the Iraqis wanted them at locations of military significance instead. Volunteer shields assigned to the South Baghdad Electricity Plant, for example, were chagrined to discover an army base adjacent to it.

Central Command said it could

### "The CNN Effect"

For the first two years of World War II, censors at the Office of War Information banned the publication of photos of dead American soldiers or sailors.

The policy was eased in 1943 to help prepare the public for the losses that lay ahead. The first US casualties seen at home were pictures of the dead on a beach in New Guinea in *Life Magazine* September 1943. "Graphic" images were still forbidden.

By the Vietnam era, television had replaced newsreels. The coverage was not yet live from the battlefield, but videotapes were flown back to the United States and telecast upon arrival.

When Gulf War I began on Jan. 17, 1991, CNN and ABC were broadcasting live from Baghdad. The coalition air component staff in Riyadh, Saudi Arabia, was watching CNN. When it went off the air abruptly, they knew the Iraqi International Telecommunications Center had been taken out.

Live television coverage of war became the norm. Casualties were no longer distant and abstract. The impact on public opinion was called "the CNN effect."

## The Terrible Toll of World War II

not guarantee the safety of the human shields, but probably took their presence into account.

It was fairly safe for the human shields to defy the United States, but they don't show up when the Saddam Husseins of the world are on the march.

### "Casualty Aversion"

In the opinions of some, the US armed forces have gone too far in avoiding casualties. That view was heard periodically during the 1990s, but it gained steam after the conflict in Kosovo and Serbia in 1999.

Airpower was the only force used against the Serbs. Ground forces were not engaged and were months away from being ready to engage.

"Despite the accuracy of the air attacks, too many civilians were killed while allied combatants avoided risk," retired Marine Corps Lt. Gen. Bernard E. Trainor wrote in *The Boston Globe*. "This turns a principle of a just war on its head—specifically, the obligation to protect the innocent at the expense of the warrior. Another troubling and similar aspect of the so-called 'immaculate' air campaign is the ability to drive an enemy to his knees without shedding a drop of the bomber's blood. Normally, the litmus test of going to war was the willingness to suffer casualties in pursuit of its objective."

Secretary of Defense William S. Cohen and Gen. Henry H. Shelton, Chairman of the Joint Chiefs of Staff, added fuel to the fire when they told the Senate Armed Services Committee that "the paramount lesson learned from Operation Allied Force is that the well-being of our people must remain our first priority."

Jeffrey Record, professor of strategy, doctrine, and airpower at the Air War College, agreed with Trainor.

"Force protection fetishism was on full display during the Kosovo crisis," Record wrote. He said, "Ground-combat options were self-denied. Airpower was kept at safe altitudes. Clausewitz was stood on his head."

In Record's assessment, "The long-term effect was to broadcast to friend and foe alike America's Achilles's

	Military Deaths	Civilian Deaths due to war
<b>Allied Powers</b>		
USSR	11,000,000	7,000,000
China	1,310,224	10,000,000
UK/British Commonwealth	373,372	92,673
Yugoslavia	305,000	1,200,000
United States	292,131	6,000
France	213,324	350,000
Poland	123,178	5,675,000
Greece	88,300	325,000
<b>Others:</b> Belgium, Brazil, Czechoslovakia, Denmark, Netherlands, Norway, Philippines	62,643	591,000
<b>Allied Totals</b>	<b>13,768,172</b>	<b>25,239,673</b>
<b>Axis Powers</b>		
Germany	3,500,000	780,000
Japan	1,300,000	672,000
Romania	300,000	200,000
Italy	242,232	152,941
Hungary	200,000	290,000
<b>Others:</b> Bulgaria, Finland	92,000	12,000
<b>Axis Totals</b>	<b>5,634,232</b>	<b>2,106,941</b>

Source: *Encyclopedia Britannica*

heel as we enter the 21st century." He said the force protection fetishism was "rooted in Vietnam—specifically in the resultant Weinberger-Powell Doctrine."

US combat operations in Afghanistan were "conducted in a manner consistent with those of casualty phobic Operations Deliberate Force (Bosnia) and Allied Force (Kosovo)," Record said.

Peter D. Feaver and Christopher Gelpi of Duke University called the phenomenon "casualty aversion" and said it is most prevalent among military leaders.

"A majority of the American people will accept combat deaths—so long as the mission has the potential to be successful," they maintained. "The public can distinguish between suffering defeat and suffering casualties."

Feaver and Gelpi said, "Troops

are supposed to be willing to die, so that civilians do not have to."

The merit of these accusations depends on the eye of the beholder. Do US forces shy away from casualties in general, or do they avoid unnecessary casualties?

The operations in Bosnia, Kosovo, and Afghanistan were concluded successfully and swiftly with low casualties. Would more risk have been better?

Gulf War II followed a similar pattern.

After more than three weeks of fighting, US forces were in control of Baghdad. Their losses included 116 dead, including deaths attributable to accidents as well as those killed by direct military fire.

There was no feeling of "casualty aversion" to it, but, on the other hand, it wasn't the Battle of the Somme, either. ■

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

The future force will derive power mainly from networking and imaginative new operating concepts.

# Paths to Transformation

By John A. Tirpak, Executive Editor

**T**HE Pentagon unveiled its 2004 budget on Feb. 3. In the months leading up to that event, the Bush Administration said frequently that it would reveal a vision of a distinctly different military, one optimized for 21st century battle. Senior officials promised new thinking and hinted strongly at sweeping change, including possible elimination of weapons and doctrine.

A detailed assessment of the spending blueprint and official statements boils down to this conclusion:

The United States military has indeed embraced potent new war-fighting concepts, as the recent war with Iraq demonstrated to a certainty. However, all signs indicate that radical near-term "transformation" isn't in the cards. The budget blueprint offers no dramatic shifts on either spending levels or major programs. Change will unfold over many years.

The gist of the transformation philosophy is that the emergence of information technologies and long-range precision strike capabilities have changed the nature of war. Massive, force-on-force engagements between armies are no longer even necessary—and certainly not desirable.

Rapid mobility, stealth, speed, in-

creased range, precision strike, and dramatically slimmed-down logistics all are expected to rise in importance over the next two decades, in the Pentagon view. The question is how to acquire these capabilities.

DOD seeks \$379.9 billion for Fiscal 2004, which starts Oct. 1. This budget, if approved by Congress, will mark the sixth straight annual increase since post-Cold War budgets hit bottom in 1998, after 13 years of decline.

Spending, in nominal terms, would go up by \$15.3 billion. However, more than half—\$8.5 billion—is needed to cover the effects of pay raises and inflation in other areas. Moreover, the armed forces since the Sept. 11 attacks have been saddled with more costly force protection needs, pegged at \$5 billion per year.

Simply put, the increment that is left over for new investment is a mere \$1.8 billion. (The cost of the Iraq war is covered separately.)

## Reaching a Milestone

The 2004 defense budget always loomed as a milestone for President Bush. This, it was often noted, was the first budget to be completely shaped by his Administration.

"It is really this year's budget ...



that is the first to fully reflect the new defense strategies and policies,” Secretary of Defense Donald H. Rumsfeld told Congress.

The new budget, though, neither introduces nor cancels any big weapons program, as some expected. Nor does it reveal dramatic new technology efforts or investments. It pays lip service to the goal of devoting three percent of DOD spending to science and technology.

For all that, Administration officials maintain the Pentagon budget was indeed transformational, when measured in certain ways.

They note that DOD’s new budget allocates \$24 billion—a third of its \$73 billion procurement fund—to concepts, systems, and technologies designed to help underpin future war-fighting concepts. That is just the start, officials emphasize. Over the 2004–09 future years defense program, such transformational procurement would total \$219 billion. The rest would go to so-called legacy systems conceived in the Cold War era.

A second measure of transformation centers on use of “discretionary” funds. According to the Pentagon, only a fifth of the budget—\$75 billion—is discretionary, meaning it is not tied to old contractual obliga-

tions, permanent personnel expenses, or other fixed costs. DOD said it rearranged and reordered about \$25 billion of that amount to reflect new thinking and promising new technologies and concepts.

In the hierarchy of officially declared goals, force transformation wasn’t at the top. DOD documents said the highest goal was “winning the global war on terrorism and meeting near-term demands.” Number two in order of importance was sustaining a military of “high-quality people and forces.” Transforming the fighting military and “defense establishment”—the acquisition system and so forth—was the third priority.

A defense budget official told reporters the Pentagon was seeking to balance near- and long-term risk. Thus, less money was available for long-term investments because current operations demand substantial outlays for consumables such as spare parts, munitions, fuel, and maintenance.

It further appears that Rumsfeld has decided to forgo additional improvements to most of today’s generation of weapons and instead shift funds to promising new systems and emerging capabilities.

To cite three prominent cases in

## Funding Transformation Goals

(Budget authority, billions of current dollars)

	FY04	04-09
Protect bases of operation	7.9	55
Protect and sustain forces	8.0	96
Deny sanctuary to adversaries	5.2	49
Leverage information technology	2.7	28
Conduct effective information operations	0.2	6
Enhance space operations	0.3	5
<b>Total</b>	<b>24.3</b>	<b>239</b>

point, the Army will discontinue programs to upgrade the M1A1 Abrams main battle tank, the M2 Bradley Fighting Vehicle, and the Multiple Launch Rocket System. Money once earmarked for those programs will go instead to items such as a lighter and cheaper Army vehicle, the Stryker. Being airmobile, it presumably will be able to get into combat faster. The Army has been given a green light to buy the RAH-66 Comanche scout helicopter but at a slower pace and in fewer numbers.

### Fewer Fighters

Under current plans, the Air Force will procure no additional F-15 or F-16 fighters, despite the fact that both are getting long in the tooth and soon will start aging out of the force in large numbers. They will not be replaced on the line until the Air Force starts to field large numbers of new, transformational F/A-22 and F-35 fighters.

Though the service currently worries about a looming shortage of fighters, the Pentagon has decided to withdraw from active service a total of 114 F-15s and F-16s right now, a move openly described as an economy measure. Money that would have been spent to upgrade these aircraft now will be diverted to fund new data links and weapons capabilities for the remainder of the fleet.

Elsewhere, USAF will remove from service 115 of its most geriatric aerial tankers and transport aircraft. Again, Rumsfeld proposes no orders for replacements. To the surprise of many, the budget made no mention of an Air Force idea to lease up to 100 Boeing 767s to serve as aerial refuelers.

Likewise, the Navy is accelerat-

ing the retirement of 19 destroyers and seven other warships, which will leave the Navy with a battle fleet of 291 ships in 2006. Not since the 1930s has the Navy deployed fewer than 300 warships. Some 259 Navy and Marine aircraft will be retired early. That combat power won't be replaced immediately, either.

"The basic point of this year's budget is that we have accepted near-term risk in order to transform for the longer term," said a top Pentagon official. "These aren't useless systems. They just, marginally, don't add enough to justify keeping them, relative to the priority we wish to set for transformational systems."

Despite speculation that Rumsfeld might cancel a fighter modernization program, the new budget anoints both the Air Force F/A-22 Raptor and multiservice F-35 Joint Strike Fighter as "transformational" systems. This designation stems from their speed, stealth, and powerful air-to-ground punch.

Even the V-22 Osprey, whose development history has forced several make-or-break reviews, will go forward if testing shows no further difficulties. So great is the promise of the V-22 to transform certain kinds of missions—particularly the high-speed, long-range insertion/extraction of Special Operations Forces—that the Pentagon asked for more than had been planned.

### Orthodoxy, Audacity

When it comes to force size and structure, the story is a mixture of stasis and remarkably audacious change.

There are no plans to expand the end strength or combat formations

of the armed forces, despite the pressures created by ongoing operations in Afghanistan and Iraq. End strength will stay at about 1.39 million troops.

Instead of adding uniformed troops, the Pentagon hopes to make far better use of those it has. It proposes to take certain support functions currently performed by servicemen and -women and hand them over to DOD civilians or private contractors. The suddenly available troop billets would be converted to specialties in which chronic shortages exist or for which new missions are being created.

"We estimate we have some 320,000 uniformed people doing nonmilitary jobs," said Rumsfeld. He believes the services could add nearly that many "trigger-pullers" to combat units, if his reform plans are accepted.

New capabilities getting attention include unmanned vehicles—of which no fewer than a dozen varieties are being bought, with many more on the drawing board.

Another priority is the lighter, faster-to-develop, faster-to-deploy Army Stryker armored fighting vehicle. The Stryker was designed to be deployed one at a time on a C-130 tactical transport—the Air Force's most numerous airlifter. The Abrams main battle tank, by contrast, is so heavy that giant C-5 and C-17 airlifters must haul it one at a time. They can carry four and three Strykers, respectively.

Special Operations Forces gained new emphasis in the 2004 budget, the result of their excellent performances in Afghanistan and Iraq. The SOF establishment will be funded to the tune of \$4.5 billion, an increase of \$1.5 billion over this year. Much of the hardware money for special ops will upgrade aging helicopters and provide for future SOF mobility through the V-22.

The combination of SOF teams and the heavy firepower of combat aircraft, which SOF could call down on targets with high precision, is seen as one of the top transformational concepts enhanced in the latest Pentagon budget.

Special Operations Forces, missile defense, command and control systems, unmanned vehicles, future combat systems, and the Joint Strike Fighter all would see between \$1 billion and \$1.5 billion in increased annual spending. All these accounts are considered transformational.

In general, the US military is now focusing its buying efforts on faster, lighter, stealthier, more powerful systems that can strike at greater range and put fewer people at risk.

In advance of the budget release, some speculated that Rumsfeld, said to be a proponent of air and space power, would seek to shrink the manpower-intensive Army and boost the air arms of the other services. However, a senior DOD budget official said he saw “no great trade-offs among the services.” So-called shares of the budget varied only slightly from fiscal 2003.

### Applying “The Thing”

Retired Vice Adm. Arthur K. Cebrowski, director of the Pentagon’s Office of Force Transformation, downplayed the notion that transformation equals exotic new hardware. Rather, he said, it is the introduction of new concepts, plus a reapportionment of forces, that will be the key to reshaping the military.

As Cebrowski put it, “It’s the application of the ‘thing’ and not just how new the ‘thing’ is.”

The services have also offered up their own, in-house transformation

strategies. For the Air Force, this is the Expeditionary Air and Space Force concept of operations; for the Navy, the Navy Expeditionary Strike Force, and for the Army, the Army Objective Force. All emphasize rapid deployment, quick application of power, flexibility, maneuverability, interservice interoperability, and an expeditionary mind-set.

Information operations gets increased emphasis in this budget. Having a comprehensive knowledge of the battlefield leads to smarter application of forces where and when they’ll be most effective. Information technologies such as data modems on aircraft and data-sharing networks, connecting various air-, ground-, and space-borne sensors, would get \$41 billion through 2009 under the new budget plan.

One significant new initiative is the funding of research on a space based radar, which is slated for \$299 million in Fiscal 2004. The SBR would be able to provide real-time intelligence of ground moving targets anywhere in the world, complementing and eventually replacing airborne platforms like the Joint STARS radar airplane. An in-ser-

vice date of 2012 is forecast for the SBR.

Plans call for the Navy to refit four of its Trident submarines, removing its ballistic missile tubes and replacing them with magazines full of Tomahawk Land Attack Missiles, to provide stealthy conventional striking power from any coast. One Navy official likened the conventional Tomahawk Trident sub as a “submersible aircraft carrier.”

The Pentagon also said it has expanded experimentation and joint training exercises, to better mine the force-enhancing possibilities generated by more cooperation and less redundancy between the services.

The services are still encouraged to compete with one another “to see who can do the job most effectively,” a Pentagon official said, but “adult supervision will ensure that we don’t create meaningless competition when what we want is synergy and interoperability.”

Because of the necessity to meet short-term needs even at the expense of long-term transformation, Rumsfeld said, there are a few gaping holes in the new budget.

For one thing, he explained, the Defense Department has not “fully resolved” the problem of the so-called low-density, high-demand systems. These include aircraft such as the E-8 Joint STARS, E-3 AWACS, RC-135E Rivet Joint, and U-2—combat systems that have been chronically underfunded in the past and will be in short supply for years to come.

Also, said Rumsfeld, the services have been unable to modernize their tactical air forces fast enough to even begin to reduce the average age of their fighter fleets.

The Pentagon’s leadership believes that the new budget is the tangible result of the first top-to-bottom review of the military purpose since World War II.

In an appearance before the House Armed Services Committee, Rumsfeld noted that certain programs or activities were either stopped, or not bought, or deferred because they “simply did not fit with our new defense strategy.”

He went on, “In a world of unlimited resources, they would have been nice to have. But in a world where needs outstrip available funds, we cannot do everything. And something has to give.” ■

## Comprehensive Transformation

*When Pentagon officials released details of the Fiscal 2004 defense budget request, they also provided this list of programs and initiatives to highlight the evolution of current transformation efforts.*

Where We Started	Where We Are Headed
No missile defense	Limited land/sea deployment
Conventional satellite communications	Laser satellite communications
No space based radar	Space Based Radar circa 2012
Broken Space Based Infrared System-High	Properly funded SBIRS-High
No SSGNs; 18 SSBNs	Four SSGNs; 14 SSBNs
CVNX-1, CVNX-2	CVN-21
Aging surface fleet	New ship classes: DDX, LCS, CGX
Separate Navy and Marine air	Integrated Navy and Marine air
Three Tacair programs	Projected end dates for F/A-18, F/A-22
One UCAV program	UCAV family of programs
Crusader	New family of precision artillery
Objective Force IOC, FY2015	Object Force IOC, FY2010
Facilities replacement rate 150+ Years	Reach 67 years goal by 2008
Across-the-board pay raises	Targeted pay raises

**Russian decline could yet bring new challenges for the United States.**

# Four Russian Scenarios

By Olga Oliker and Tanya Charlick-Paley

**W**hat military challenges does today's Russia pose for the United States? Certainly Russia cannot present even a fraction of the threat the Soviet monolith posed and for which the United States prepared for decades. Yet, if certain negative trends continue, they may create a new set of dangers that can in some ways prove even more real, and therefore more frightening, than the far-off specter of Soviet attack ever was.

As a weak state, Russia shares some attributes with "failed" or "failing" states. Tracing through the specifics in Russia reveals a great many additional dangers, both humanitarian and strategic.

While some might argue that Russia's weakness, or even the potential for its eventual collapse, has little to do with the United States, the truth is that a range of US interests is directly affected by Russia's deterioration and the threats that it embodies.

The dangers of proliferation or use of nuclear or other weapons of mass destruction quite directly threaten the United States and its vital interests. Organized crime in Russia is linked to a large and growing multinational network of criminal groups that threaten the United States and its economy

both directly and through links with (and support of) global and local terrorist organizations. Russia is also a major energy producer and a transit state for oil and gas from the Caspian at a time when the US government has identified that region, and energy interests in general, as key to its national security. Washington's allies, closer to Russia physically, are not only the customers for much of this energy but are also the likely victims of any refugee flows, environmental crises, or potential flare-ups of violence that Russian decline may spur. Finally, recent history suggests a strong possibility that the United States would play a role in seeking to alleviate a humanitarian crisis on or near Russian soil, whether it was caused by epidemic, war, or a nuclear/industrial catastrophe.

This article outlines several notional scenarios for crises in and near Russian territory. While the likelihood of any of these specific scenarios occurring is remote, they illustrate the possibility that events in or near Russia can threaten vital US interests.

This is relevant to the US Air Force because the sheer size of Russia and its geography would almost certainly necessitate the use of Air Force assets in any US action in the region.

# War in Asia

Substantial state decline or the appearance thereof can invite foreign adventurism. To date, Russia's military weakness has not been seen as an invitation for ambitious rival states to wrest away a chunk of Russian territory. Russia's large arsenal of strategic and nonstrategic nuclear weapons is no doubt a factor. This may change over the next decade or so, particularly if Russia continues to weaken and demographic trends stay on their present downward paths.

## The Scenario

This scenario takes place around the year 2015 and assumes that Russia has continued to deteriorate militarily throughout the intervening period. This decline has been especially severely felt in the Far East, where troops are unfed, unpaid, and untrained and equipment is obsolete. Chinese migration into the Far East and Russian emigration from it have continued, and significant numbers of Chinese have settled permanently in the area.

Beijing, whose military might has increased as Russia's has declined, has begun to make noises about its historic right to southeastern Russia, territory that was annexed between 1858 and 1860 from a China weakened by the Opium Wars. In 2015, with a rapidly growing Chinese population in that area (where families are unhindered by population control regulations), Beijing is able to create considerable domestic support for "reclaiming" the territory.

Domestic pressure in China to take back the "lost territories" is bolstered by an increasingly hostile Russian policy and attitude toward Chinese immigrants. Driven by ethnic tensions that have increased along with the Chinese population, laws now limit the duration and location of Chinese residency. Discrimination in employment and housing against people of East Asian ancestry is rampant. Despite this, economic opportunities attract more and more Chinese to the area. Whatever "strategic partnership" might once have been evolving between Beijing and Moscow has long disappeared. Relations between the two countries are poisoned by Russian anti-Chinese sen-

timent and by Beijing's insistence on pursuing the rights of co-ethnics living in Russia, even if this means regaining long-lost land.

In addition to historical claims and the desire to protect the rights of ethnic Chinese, China has a strategic interest in the land southeast of the Amur River. This territory provides an outlet to the Sea of Japan, an outlet China now lacks. China's strategy for acquiring the territory is based on a plan to provoke Russia into attacking Chinese forces in the region. China, pleading self-defense, could then counterattack into Russia. Beijing, possessing by now a large strategic nuclear force, is confident that Moscow will not risk nuclear war and the destruction of European Russia to defend the poor and underpopulated Far East. The People's Liberation Army (PLA) therefore begins to shift more forces toward the border with Russia. The plan goes awry, however, when Chinese forces get into a firefight with Russian border guards near the border at the Ussuri River. Chinese commanders on the scene seize territory in Primorsky Krai; the weak and disorganized Russian forces in the region are able to put up little resis-

tance. With this fait accompli, Beijing orders its navy to gear up for an amphibious landing at Vladivostok and elsewhere on the coast. (Fig. 1).

Japan is alarmed by this turn of events. It sees the landgrab in Russia as an example of aggressive Chinese military adventurism and feels particularly threatened by the prospect of a Chinese outlet to the Sea of Japan. After consultations, Japan and Russia decide that, given both states' relative military weakness, it is time to call on the United States for help.

Washington initially offers to mediate, but while China responds that it is willing to enter into talks, the PLA continues to shift more forces to the Russian border and ships are heading for Vladivostok. Russia therefore invokes its status as a Partnership for Peace (PFP) state to request NATO consultations. Japan, in turn, asks the United States to assist in rolling back the Chinese landgrab in Russia.

## Implications

This scenario may at first read more like fiction than a plausible future. Projecting 15 years forward is difficult under the best of circumstances, and doing it with re-



Fig. 1

gard to two states in as much flux as Russia and China is particularly challenging. Furthermore, even if events were to evolve as outlined, the United States would retain freedom of choice: It would be under no obligation to intervene to defend Russia against the Chinese. On the other hand, especially if US–Chinese relations continue to deteriorate, the United States may find it difficult to refuse the request of its

close ally, Tokyo, and a Russia in need.

Furthermore, a conflict between Russia and China would be a clash between two nuclear weapon states. Although China has a “no first use” policy, Russia does not. This scenario posits that Beijing is betting that the nuclear taboo will hold, but one can easily imagine that a Russia that is weakened conventionally and facing a foreign incursion onto its

soil may feel that it has no choice but to escalate to nuclear use.

Thus, while this scenario is not likely, it is included because it has serious implications for US interests. While the probability of such a course of events is low, it is far from negligible, for China does have interests in the Russian Far East, and Japan (like other states in the region) is highly attuned to the possibility of Chinese adventurism.

## Nuclear Accident

The possibility of a major mishap (whether arising from accident or deliberate sabotage) occurring at one of the many civilian and military nuclear and nuclear-related facilities in Russia is very real. The risk ranges from a Chernobyl-type power reactor accident to terrorist use of nuclear waste to contaminate a large area of Russia (or, potentially, elsewhere).

Such a catastrophe could happen almost anywhere in Russia. In European Russia, it would have serious implications for many US friends and allies. On the other hand, there would be numerous Western countries nearby, ready and willing to help, and fairly well-developed infrastructure to support their doing so. Further into Russia, depending on wind direction, the dangers may be limited to Russia itself or they may reach other states in Asia. In that case, deteriorated road and rail networks as well as simple distance could make the provision of aid and evacuation of the local population a very challenging task.

Regardless, it is plausible that Moscow would have difficulty coordinating a response on its own. Moreover, it would clearly be in the interest of the world community to assist in mitigating the damage, if only to ensure that it does not spread.

### The Scenario

Tomorrow, or the next day, or next year, the world awakes to re-

ports of a large-scale nuclear accident at a power plant in central or eastern Russia. It appears likely that wind-borne radioactive dust will reach areas in Asia outside of Russia. After initially denying that an accident has occurred, Russia admits to a minor leak of radioactive material. In the meantime, it is clear that Russian firefighters are at the site and military aircraft are evacuating people from the area. After an aircraft carrying refugees crashes in the Urals, Russia asks the world for assistance in mitigating the effects of the disaster.

### Implications

The US Federal Emergency Management Agency (FEMA) has had extensive discussions with its counterpart in Russia, the Ministry of the Russian Federation for Civil Defense, Emergencies, and Elimination of Consequences of Natural Disasters (EMERCOM), precisely about such disasters and how best to respond to them. The two have conducted joint exercises and carried out planning for cooperative activity. This bodes well for their ability to work together in an actual crisis.

At the same time, in domestic emergencies FEMA relies on US military—and particularly US Air Force and Air National Guard—assets to carry out tasks. These same assets would be the most likely sources of support for a crisis abroad, especially if it involved a nuclear

accident deep inside Russia. There would simply be no other way to traverse the huge distances quickly and effectively while evacuating people and airlifting in supplies and equipment. The large, heavy aircraft would strain existing runways and information about the condition of facilities would be imperative. Getting fuel to the area for the aircraft would be an additional challenge.

As long as Russia had issued a request for help, however, many of these problems could be mitigated—first by Moscow’s cooperation and second by the ability to base out of nearby countries, where facilities might be in better condition and/or better known. On the other hand, if regional separatism has continued to evolve, operations outside the danger zone might be hampered by uncooperative local officials who equate US help with Moscow’s interference. The prevalence of crime and corruption raise the risk of theft of fuel, supplies, or parts, as it has for Russian forces throughout the country. Furthermore, if the accident turns out to be the result of sabotage, outside intervention might be targeted by the groups responsible.

This scenario is both plausible and a near-term danger. While core US interests may not be affected by an accident, the United States has a history of assisting with humanitarian missions, and it is unlikely that it would refuse to assist with one of this sort.

## Terrorist Use of Nuclear Materials

While most experts agree that Russian nuclear weapons, strategic and tactical, are generally under

sound and reliable control, the theft or diversion of a tactical nuclear weapon is possible, if not very plau-

sible. Insofar as it is not known where these weapons are stored or how many of them there are, it is even possible

(if not very likely) that such a diversion has already occurred. Moreover, terrorists would not need a ready-made nuclear weapon to create a real threat: If they are able to gain sufficient high-quality nuclear material and have the know-how, they can create their own weapon. Or, instead of a detonation, they can acquire some amount of nuclear waste and threaten to render a large area uninhabitable through its release.

### The Scenario

Sometime in the 2003–06 time frame, a splinter group of the Islamic Movement of Uzbekistan (IMU) releases announcements through the world press, claiming that it possesses one or more nuclear devices. Attacks in Russia, Europe, and the United States are threatened unless the United States and others release 2,000 accused and convicted terrorists and all those captured during the Afghanistan conflict.

As the global community attempts to assess the credibility of the threat, pinpoint the location of the group and its claimed arsenal, and determine appropriate actions, the terrorists' deadline approaches. Two days before it arrives, Russian Special Forces, believing they have located the group's headquarters within Central Asia, launch an attack on the suspected site in Tajikistan. They find nothing.

The failure of the Tajikistan attack creates a government crisis,

and Russian political figures and the press call for a full accounting of this unwarranted attack on foreign soil that needlessly endangered Russian military men. Moscow is paralyzed as military and political officials exchange recriminations. The next day, a nuclear explosion, believed to be caused by the detonation of a nuclear landmine, takes place on the outskirts of Nizhny Novgorod. Thousands of people are killed instantly and the effects are still being tallied when the terrorist group takes responsibility for the attack and announces that the United States and the European Union are next.

The US intelligence community reports that it has pinpointed the group's location, and its arsenal, and that they are both within Russia.

### Implications

If a terrorist group were to acquire the ability to threaten Russia and the world with nuclear use, Russia would almost certainly cooperate with the United States in efforts to stop it. If the terrorist group was located on Russian territory, however, Russia might have qualms about allowing US forces in to assist and prefer to handle the matter on its own. Its ability to do so, on the other hand, may not be certain enough for Washington's comfort. Similarly, a lengthy period of Russian indecision could create an imperative for the United States to act, as could a split within Russia. Regional lead-

ers, might for instance, ask for US assistance even if Moscow did not. If the United States felt confident that it could prevent nuclear use and Russia could not, it might well ignore Russia's sensitivities or confusion.

The prospect of carrying out a small-scale armed operation on Russia's soil, with or without Moscow's consent, raises many issues. The use and condition of existing facilities is only one challenge that would face US forces. Local attitudes toward Russia, the United States, and the terrorist group; the breakdown of loyalties in the area; and the capabilities of Russian military and police forces and their potential to assist or hinder operations are just a few of the critical unknowns. There is then the question of how Russia and/or the United States should retaliate.

If the United States chose to act, the sheer size of the Russian landmass, combined with the need for operational speed, would place much of the burden on the US Air Force. There would simply be no other way to reach most potential targets. The US Air Force might also be engaged in other operations to ameliorate the consequences of any nuclear explosion. Regardless of what action is taken, there seems little question that the United States would be involved in such a scenario. It engages core US interests and would create a real imperative for the United States to act.

## War in the Caucasus

The prospect of something going terribly wrong in the Caucasus is often raised—and for good reason. The United States and Russia support competing plans for the exploitation of Caspian energy resources and their export through the Caucasus region. The United States supports natural gas and oil pipeline routes transiting Azerbaijan, Georgia, and Turkey. Russia has opposed these plans and would simply expand existing routes through its territory. (Fig. 2)

Russia has seen efforts by NATO and Turkey in the region as unabashed poaching in its area of interest and

influence and has repeatedly warned Georgia and Azerbaijan against aligning themselves too closely with the West. It has also been reluctant to agree to the final withdrawal of all of its military forces from Georgia, where several units remain based and where Russian peacekeepers continue to serve in the more unstable secessionist regions of that republic. Russia has repeatedly accused Georgia and Azerbaijan of assisting rebels in Chechnya.

### The Scenario

The situation in the region remains unstable following the completion of the Baku–Tbilisi–Ceyhan and Transcaspian pipelines for export of Caspian

natural gas and oil to Europe through the Caucasus and Turkey. Russian troops remain in Georgia, ostensibly in a peacekeeping capacity, and both Abkhazia and South Ossetia retain hopes of separating from Georgia. US military trainers are no longer in Georgia, but contingents of Turkish forces remain in Georgia and Azerbaijan.

In Russia, too, the situation remains unsettled, as Russian occupation of the separatist Chechen province is marked by sporadic firefights and terrorist attacks throughout Russia. The most recent accusations by Russia that Azerbaijan and Georgia are providing aid and comfort to Chechen rebels is met by a counter-

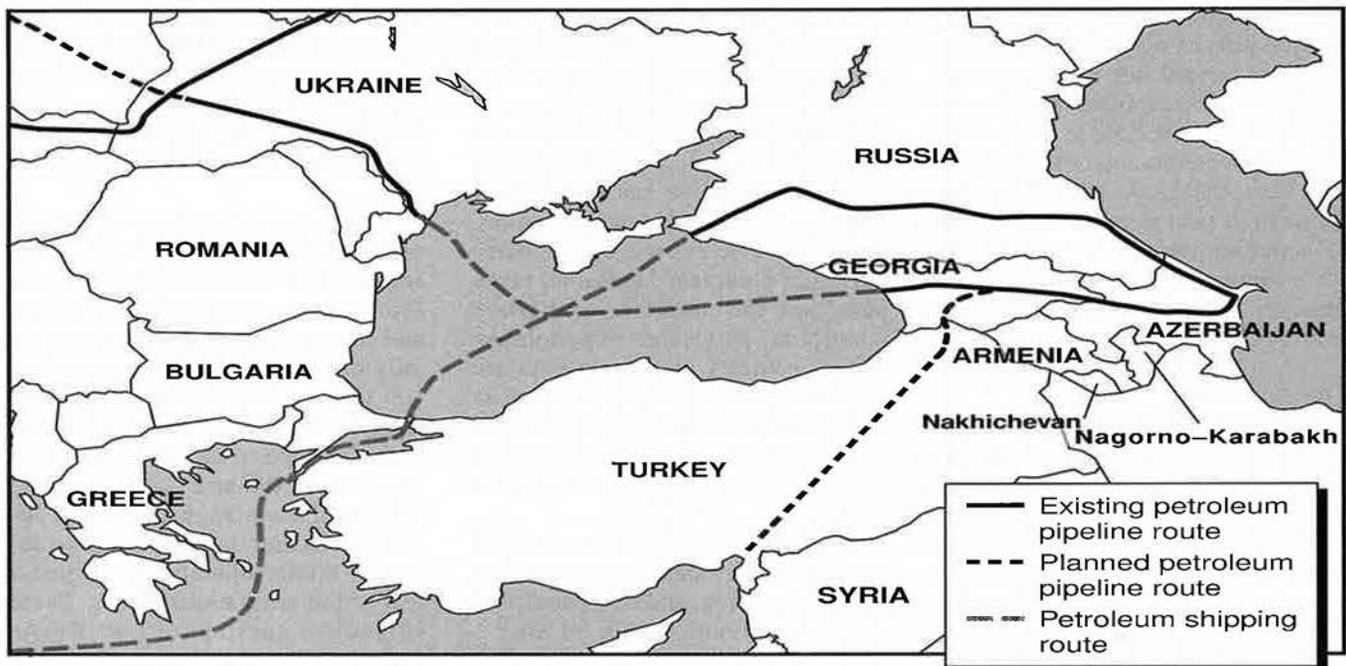


Fig. 2

claim that Russian troops are supplying arms to separatist groups within Georgia. As the war of words escalates, Russia shifts more troops to the Georgian border, as well as some toward Azerbaijan.

Ukraine announces its intent to fully support Georgia and Azerbaijan even as reports surface of terrorist attacks on the pipelines that traverse Georgia in the south, carrying oil and natural gas to Turkey. Ukraine reinforces its contribution to the joint peacekeeping battalion it has formed with Georgia and Azerbaijan to protect the pipelines. Armenian troops move north toward the border with Azerbaijan and there are renewed clashes in Nagorno-Karabakh. Nakhichevan, a region of Azerbaijan that shares no common border with it, asks the central government to dispatch forces to protect it from a possible Armenian invasion.

After clashes between Russian troops in Georgia and units of the Georgia-Ukraine-Azerbaijan peacekeeping force, Russia claims that its units were acting independently of central command. However, the clashes continue, and a terrorist attack on the pipelines significantly slows the flow of oil into Turkey and spills enough oil to create an environmental hazard.

Ukraine, Azerbaijan, and Georgia at this point appeal to NATO for consultations, a right they have as PFP states. During the NATO consultations, Turkey argues that a NATO peacekeeping force should be dispatched to the region.

#### Implications

Energy interests, allied involvement, and a history of commitment to the region would create real incentives for the United States to take action in this situation. Unfavorable Russian response to US activities in its backyard and the long-term effects on US-Russian relations would constitute serious disincentives.

Military operations in the Caucasus, with or without Russian cooperation, would be extremely challenging. Moreover, guarding and protecting the pipelines would be exceedingly difficult. In highly forested and mountainous terrain, pipeline routes follow roads and waterways, which make it nearly impossible to distinguish between ordinary traffic and the movement of enemy forces.

Facilities in this region, particularly in Georgia, are on the whole in poorer condition than those in Russia, although there are numerous military bases in the area. There are many separatist enclaves in the

Caucasus, and the support of local populations cannot be counted on. Nuclear waste depositories and a nuclear power plant in Armenia are other things to be concerned about. If these should get into the line of fire or be captured by hostile forces, environmental catastrophe could result.

Leaving aside the possibility of having to engage Russian forces, there are ways to limit US involvement in this scenario. Because Turkey is already part of the mix and is agitating for NATO participation, there is no reason that Ankara cannot provide the bulk of whatever NATO force is dispatched. Still, the United States and other allies might find themselves forced to send in some troops of their own, if only to demonstrate commitment. If this is the case, it is almost certain that US Air Force assets would be part of the force mix.

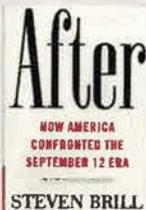
This scenario is plausible and it involves key US interests, including its NATO allies and Caspian energy resources. Furthermore, it is reasonable that events in the Caucasus will evolve in such a way that US military assistance will be requested by one or another of the parties. As always, it will remain Washington's decision whether to act. ■

*Olga Oliker is an analyst with RAND, a nonprofit research institution based in Santa Monica, Calif. Tanya Charlick-Paley is a visiting assistant professor at Kenyon College and a nonresident consultant with RAND. They are the authors of a new RAND study, Assessing Russia's Decline: Trends and Implications for the United States and the US Air Force, from which this article has been adapted. This is the first Air Force Magazine article for either author.*

# Books

Compiled by Chequita Wood, Editorial Associate

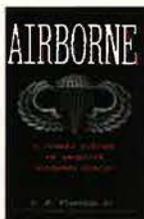
**After: How America Confronted the September 12 Era.** Steven Brill. Simon & Schuster, New York (800-233-2348). 723 pages. \$29.95.



**C-46 Commando in Action: Aircraft No. 188.** Terry Love. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 49 pages. \$9.95.



**Heritage Flight: America's Air Force Celebrates 100 Years of Aviation.** Erik Hildebrandt. Specialty Press Publishers and Wholesalers, North Branch, MN (800-895-4585). 145 pages. \$49.95.



**Airborne: A Combat History of American Airborne Forces.** E.M. Flanagan Jr. Ballantine Books, New York (800-726-0600). 452 pages. \$27.95.



**Combat Legend: B-24 Liberator.** Martin Bowman. Stackpole Books, Mechanicsburg, PA (800-732-3669). 96 pages. \$14.95.

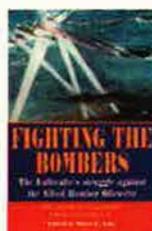


**Misty: First Person Stories of the F-100 Misty Fast FACs in the Vietnam War.** Maj. Gen. Don Shepperd, USAF (Ret.), ed. 1stBooks Library, Bloomington, IN (800-839-8640). 602 pages. \$17.00.

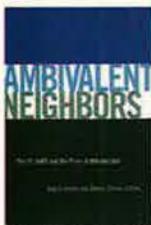
**The Airplane: A History of Its Technology.** John D. Anderson Jr. American Institute of Aeronautics and Astronautics, Reston, VA (800-682-2422). 369 pages. \$75.00.



**Fighting the Bombers: The Luftwaffe's Struggle Against the Allied Bomber Offensive.** David C. Isby, ed. Stackpole Books, Mechanicsburg, PA (800-732-3669). 256 pages. \$34.95.



**On Target: Organizing and Executing the Strategic Air Campaign Against Iraq.** Richard G. Davis. GPO, Supt. of Documents, Washington, DC (866-512-1800). 385 pages. \$45.00.



**Ambivalent Neighbors: The EU, NATO and the Price of Membership.** Anatol Lieven and Dmitri Trenin, eds. Brookings Institution, Washington, DC (800-275-1447). 331 pages. \$24.95.

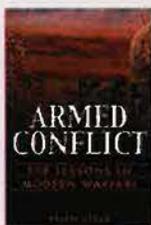


**Future Wars: Coalition Operations in Global Strategy.** Dennis E. Showalter, ed. Imprint Publications, Chicago (312-337-9268). 184 pages. \$22.95.

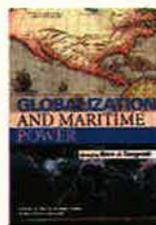


**Slingshot Warbirds: World War II US Navy Scout-Observation Airmen.** William Neufeld. McFarland & Co., Jefferson, NC (800-253-2187). 233 pages. \$45.00.

**Armed Conflict: The Lessons of Modern Warfare.** Brian Steed. Ballantine Books, New York (800-726-0600). 286 pages. \$17.95.



**Globalization and Maritime Power.** Sam J. Tangredi, ed. GPO, Supt. of Documents, Washington, D.C. (866-512-1800). 613 pages. \$49.00.



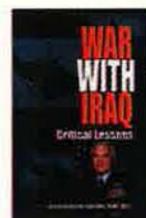
**Stand Well Clear: More Adventures in Military Aviation.** D.K. Tooker. Naval Institute Press, Annapolis, MD (800-233-8764). 208 pages. \$26.95.



**Assessing Russia's Decline: Trends and Implications for the United States and the US Air Force.** Olga Olikier and Tanya Charlick-Paley. RAND, Santa Monica, CA (877-584-8642). 136 pages. \$20.00 (also available at [www.rand.org/publications](http://www.rand.org/publications)).



**Gloster Gladiator in Action: Aircraft No. 187.** W.A. Harrison. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 49 pages. \$9.95.



**War With Iraq: Critical Lessons.** Gen. Buster Glosston, USAF (Ret.). Glosston Family Foundation, Charlotte, NC (704-442-9100). 306 pages. \$28.95.

# Thunderbirds

The Thunderbirds began performing 50 years ago this month. They still thrill the crowds.



# birds at 50

Photo by Erik Hildebrandt



Photography by Erik Hildebrandt, TSgt. Kevin Gruenwald, and SSgt. Sean M. White, with additional photos from Marty Winter

*Based at Nellis AFB, Nev., the US Air Force Air Demonstration Squadron—better known as the Thunderbirds—fly F-16C Fighting Falcons. The T-birds have performed spectacular aerial maneuvers for more than 300 million spectators around the world.*



The Thunderbirds began performing in air shows in June 1953, having been activated only two weeks earlier at Luke AFB, Ariz., as the 3600th Air Demonstration Unit. Their purpose: To serve as "ambassadors in blue," supporting the Air Force's recruiting efforts and demonstrating both the professionalism of USAF personnel and the power of the high-performance jets that were at the time new to the American public.



USAF historic photos via Marty Winter



In an August 1953 photo (above), the Thunderbirds fly Republic Aviation F-84G Thunderjets, the first aircraft type used for their demonstrations. In 1955, they transitioned to the swept-wing F-84F Thunderstreak (left). By that time, they had already taken their precision flying beyond the US to South America and Central America. The "smoke" trailing from the F-84s helped spectators follow the path of the aircraft as they performed. Today, the aircraft generate the contrail by pumping a paraffin-based oil into the exhaust nozzle, where it instantly vaporizes.



Above, Thunderbirds in their current aircraft, F-16s, create a mirror-image effect in a "Calypso Pass." At right, SSgt. Jason Owens cleans a wing. Such attention to all aspects of maintenance is one reason the team can safely perform the kind of precise maneuvers shown at far right.



USAF photos by SSgt. Sean M. White

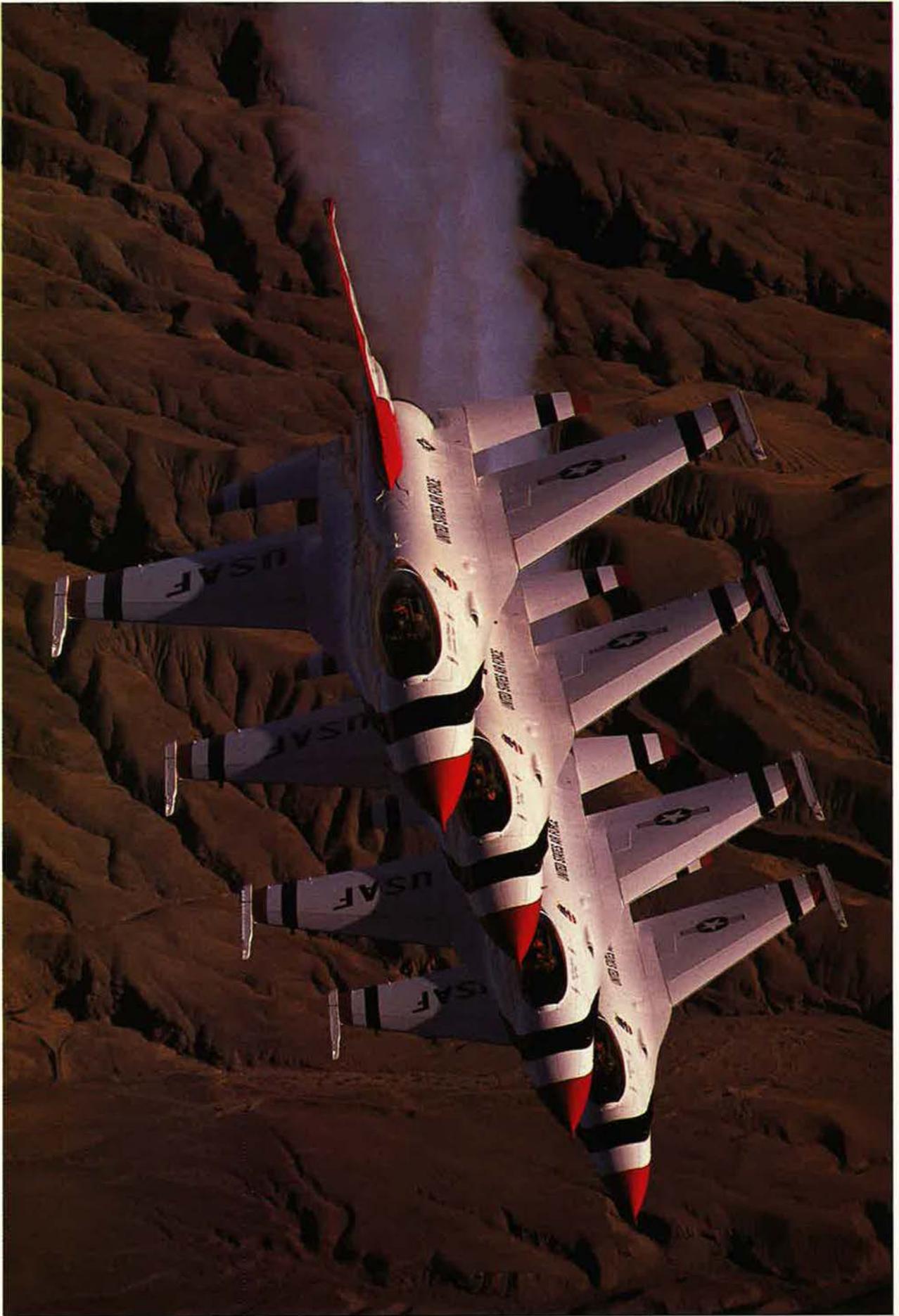


Photo by Erik Hidebrandt

The first supersonic jet fighter, the North American F-100 Super Sabre became the third aerial platform for the Thunderbirds. The T-birds adopted it in 1956. That year, the team also moved to its current home at Nellis, where it is part of the 57th Wing.



At left, a rare color photo of the Thunderbirds flying F-105Bs. The team flew this aircraft for only six shows in 1964 before it made the transition to the F-100D. During the 13 years that they flew F-100 C and D models, the Thunderbirds traveled to Asia, Europe, and Africa.





*Below, F-4Es head into a "Line-abreast Loop." Phantom IIs were front-line fighters in Vietnam when the Thunderbirds began using them in 1969. The Phantom was the first and only aircraft type to be flown concurrently by the Thunderbirds and the Navy's aerial demonstration team, the Blue Angels.*





In the 1974 air show season and for eight years thereafter, the team flew the T-38 Talons shown here. The world's first supersonic trainer was fuel-efficient, less costly to maintain, and sleek. The Thunderbird version had a red-and-blue striped paint scheme, called a winged stinger, on the belly.

The 1974 season was short—35 shows in four months. Today, the Thunderbirds perform in 88 shows from March to November.



USAF historic photos via Marty Winter



The arrival of F-16As (left) in 1983 marked a return to the T-bird role of demonstrating front-line fighters. They were replaced by C models in 1992.

Pilots of the current F-16Cs (on facing page) carry out approximately 30 maneuvers while demonstrating formation flying and solo routines. The Thunderbirds team includes eight pilots, some 130 enlisted people, four support officers, and three civilians. Officers serve two-year tours with the squadron, while enlisted personnel serve three to four years. All airmen are selected through competition. Pilots need a minimum of 1,000 hours of military jet experience to apply for the team and then complete 120 training flights. Ground crews undergo rigorous screening and a 21-day training program.



Above, a crew chief works on a T-bird F-16. At right, crew chief SSgt. Blaine Edinger signals to an air show crowd that the engines will start in one minute.

Named for the half-eagle, half-hawk bird of North American legend, the Thunderbirds have for a half-century demonstrated the precision of USAF pilots and aircraft.



USAF photos by TSgt. Kevin Gruenewald



Photo by Eric Hildebrandt

**USAF's  
KH-7  
spy satellite  
system  
constituted  
a major  
advance in  
overhead  
intelligence  
collection.**

# A "Rifle" in Space

**By Jeffrey T. Richelson**

**O**n July 12, 1963, the *New York Times* reported that a "top Soviet spy" had defected to the West, bringing extremely valuable information with him. He was said to be under heavy guard in Britain. On the next day, the *Times* provided a name for the defector: Anatoli Dolnystin.

The *Times* was close. He was Anatoli Golitsyn—or AE/LADLE, in CIA parlance. He provided information that helped uncover four Soviet "moles" in NATO. Unfortunately, however, he also delivered numerous half-baked theories and false claims, the combination of which snarled US and British intelligence for years.

Such was the hazard of "human intelligence." Yet also on July 12, as Golitsyn was being debriefed, US Air Force personnel at Vandenberg AFB, Calif., embarked on a very different type of intelligence operation. They were preparing to launch into orbit a new type of reconnaissance satellite system.

This intelligence operation, far from producing confusion, a la Golitsyn, provided priceless clarity about vital intelligence subjects—Soviet missile, aircraft, and naval deployments, as well as nuclear testing in the USSR and other nations.

An Atlas/Agna D rocket successfully lifted off from Vandenberg and placed the new spacecraft in orbit, 100 miles above Earth. The satellite, or "orbital control vehicle," weighed about 4,500 pounds. It comprised a camera system to photograph the wide array of targets that would be passing beneath it, a single recovery vehicle in which the camera's film would be returned to Earth for analysis, and command and communications equipment.

The mission of the photoreconnaissance satellite was to boost the powers of the CIA and other agencies, including Air Force Systems Command's Foreign Technology Division, which produced technical intelligence on foreign aerospace systems. They were to receive images of targets around the world, images far sharper than those produced by Corona satellites since 1960.

The capabilities of Corona had evolved and improved over three

years. As it went through a series of camera systems—KH-1 through KH-4—its resolution improved from 40 feet to as low as six feet. However, Corona was best suited to what intelligence officials call “broad area search.” That means the system is used to answer the question, “Is there something of interest there?”

In contrast, the camera carried on the new satellite, designated KH-7, would be employed to provide images with much greater clarity, allowing photo interpreters to extract more intelligence than ever before.

### Code Name Gambit

The KH-7 had been developed under a highly secret program code-named Gambit, authorized by President Dwight D. Eisenhower in the late summer or early fall of 1960 and assigned to the Los Angeles-based Air Force office responsible for development of the Samos reconnaissance satellite.

Following the establishment of the National Reconnaissance Office in September 1961, the project became the responsibility of the NRO’s Air Force component—the Air Force Office of Special Projects, which was the Samos office with a new name.

The precise requirements for the new satellite had been identified by the Satellite Intelligence Requirements Committee, established by Director of Central Intelligence Allen W. Dulles in 1960. The committee specified three major goals for the new satellite. It should permit the United States to:

- Locate suspected ICBM sites in the Soviet Union.
- Yield more descriptive information on the Soviet Union’s ICBMs by providing more detailed photographs.
- Provide resolution such that interpreters could determine the technical characteristics of the highest priority targets.

USAF’s special projects office was responsible for delivering the finished satellite. However, a contractor team was in charge of conducting the actual research, development, and production work.

General Electric, which had developed nosecones allowing missile warheads to pass through the atmosphere without burning up, produced the spacecraft body, while Eastman Kodak



*The satellite capsules floated toward Earth on parachutes. Crew members working from the open end of a specially modified C-119 snagged the capsule and reeled it in.*

was assigned the task of developing the camera system. Lockheed was the integrator, responsible for putting together the whole package.

The camera produced by Eastman Kodak was a “strip camera” capable of photographing areas 14 miles in width and up to 460 miles in length, using nine-inch-wide large format film (which was, with rare exception, black and white). With a strip camera, the film moves past the optic slit at the same rate at which the outside image “moves” in the field of view of the satellite. Thus, the image remains constant.

### Narrow Focus

The camera had its limitations. The Corona system had provided images covering a huge terrestrial “footprint.” The KH-7 images, however, were confined to a relatively small area.

The physical flexibility of the camera system was also limited. It could not be easily moved to cover targets located in different positions relative to the spacecraft. Thus, if one target was directly under the satellite, it could be difficult or impossible to move the camera to a target off to the side in the limited time available to get a picture before the spacecraft moved out of range.

As a result, the KH-7 was “access-limited” and satellites usually finished a mission with unused film. The spacecraft moved on a very low Earth orbit, and it often ran out of fuel to keep it there before it ran out of film.

During its four years of operation, the KH-7 returned some 19,000 frames of varying length, which added up to 43,000 feet of film. In contrast, the Corona satellites over their 12 years of operation would return more than 800,000 frames.

When the film supply or fuel had been exhausted, the film was returned to Earth inside the KH-7’s single recovery vehicle, which was virtually identical to the ones used for Corona. As the re-entry vehicle parachuted toward the Pacific Ocean near Hawaii, it would be plucked out of the air by a specially equipped C-119 airplane from a Hawaii-based recovery squadron.

The July 12 launch was the first of 38 KH-7 launches. In 34 of these, the

satellites returned imagery, though there were four instances in which the imagery was not usable.

It was truly a close-look system. The KH-7's perigee (the point of the orbit on which a spacecraft comes closest to Earth) averaged 92 miles in altitude, although on one mission it came within 75 miles.

A second vital characteristic of the KH-7 was its inclination—usually 90 to 96 degrees. This Sun synchronous orbit ensured that, each time the satellite photographed a target, it was at the same Sun angle, a benefit for those responsible for interpreting the images it produced. The time on orbit was short—on average 5.5 days and never longer than eight days.

As might be expected, the primary targets were the Soviet Union and China. Between the first launch of a KH-7 and its last mission, the Soviet Strategic Rocket Forces deployed three new ICBMs—the SS-9/Mod 2, SS-11/Mod 1, and SS-8.

But ICBM fields were only one of many sets of targets. On mission 4027 (the initial KH-7 mission had been designated 4001), its targets on April 20, 1966, included Dolon Airfield in Siberia, the home of intercontinental Bear bombers, as well as the Semipalitinsk Nuclear Weapons Proving Ground, one of two Soviet nuclear test sites.

During an August 1966 mission, a KH-7 photographed the Tyuratam Test Center, from which the Soviet Union launched space missions as well as liquid-fueled ICBMs in their test phase.

On May 22, 1967, another KH-7 was launched into orbit. It stayed up for eight days, coming at one point within 84 miles of Earth. On Day Four, it photographed the Kapustin Yar Missile Test Center, from which were fired missiles used in antiballistic missile tests. Those missiles were headed for the Sary Shagan antisatellite and space tracking facility.

On May 28, the satellite photographed Sary Shagan, in which one could clearly see a "hen house" radar, with extended antenna array and control building.

The next day, May 29, the same satellite snapped a picture of Ramenskoye Flight Test Center, outside Moscow, where advanced Soviet bombers and fighters were tested,



**Reconnaissance photographs taken by a KH-7 during the May 29, 1965, mission revealed (from top): an overview of the city of Murmansk; an overview of the naval base; and a close-up photograph revealing three Skorry class destroyers, two Riga class frigates, and two other unidentified ships.**

and of the Severodvinsk Shipyard, a major construction site for Soviet submarines.

### Scrutinizing China

For the KH-7, China also contained a wealth of targets. Washington was worried about the Chinese nuclear and ballistic missile programs. Among the sites photographed May 2, 1965, during mission 4017, were the Chin-Chin Hsia Nuclear Energy Complex. Lop Nur, China's nuclear testing facility in Xinjiang province, as well as its missile test center at Shuangchengzi, in north central China were prominent targets.

Between July 12, 1963, and Oct. 16, 1964, a period of intense Chinese nuclear weapons activity, the US launched 11 successful KH-7 missions. Imagery from those missions undoubtedly helped intelligence analysts in the CIA, Defense Intelligence Agency, and State Department monitor developments at Lop Nur, as China prepared for its first nuclear weapon test in fall 1964.

Surveillance targets could also be found outside the Communist world. Faced with loss of its nuclear test site in the Sahara, France decided to conduct atmospheric tests in French Polynesia—specifically on the Mururoa atoll and at Fangataufa—an activity that became a target on some KH-7 missions.

The first of a series of tests at the new location occurred July 2, 1966, followed by two more explosions that month.

In the middle of the series, the United States orbited a KH-7, giving it the opportunity to photograph the aftermath of the first test and the preparations for the second.

Israel is another ally whose territory came under the watchful eye of the KH-7. Nearly 100 of the satellite images were of Israeli targets, undoubtedly including the Dimona nuclear reactor facility in the Negev desert and key air bases. These are the only images that have not been declassified.

On June 4, 1967, the United States orbited the final KH-7 satellite. Israel on the next morning launched a devastating surprise attack that wiped out the Egyptian Air Force, part of a response to Cairo's closure of the Suez Canal and the Gulf of Aqaba to

Israeli shipping and blockade of the straits of Tiran. By noon June 5, Egypt had lost 309 of its 340 serviceable aircraft, including all 30 of its Tu-16 bombers that posed a threat to Israeli cities. Nearly all of its airfields were in ruins.

That day, the White House sent to the NRO an urgent request for photo-reconnaissance coverage of one particular airfield—the Cairo International Airport—during the KH-7's evening pass. This message was conveyed by secure telephone to Brig. Gen. Russell A. Berg, director of the NRO staff, who responded that "I would be most happy to satisfy the request if you could arrange to move Cairo Airport 150 miles to the north and 200 miles to the east." An NRO history observed that the general's "droll sense of humor served to highlight the inherent limitations imposed by the laws of orbital mechanics on a low Earth satellite's ability to access any point on the Earth's surface at will."

### High-Resolution Edge

In late August 1963, about six weeks after the first KH-7 mission, the NRO launched the first of a new model of the Corona satellite, carrying the KH-4A camera. In contrast to the earlier versions of Corona, the new satellite carried two film capsules, allowing for longer missions.

The difference in range of resolution, however, was minimal. KH-4 images varied from 10 to 25 feet in resolution while the resolution of KH-4A images ranged from nine to 25 feet. From the beginning of 1964 through the end of the KH-7 program, the only Corona satellites placed in orbit were KH-4As.

In contrast, the initial resolution of the KH-7 was about four feet and before the end of the program had reached two feet—all of which made a big difference to photointerpreters seeking to provide highly detailed intelligence about weapons systems or facilities. "Measurements were the big thing," recalled former CIA photointerpreter Dino Brugioni, with respect to the KH-7.

The measurements and details available from KH-7 images of missiles and aircraft could be parlayed into estimates of range—allowing intelligence analysts at the CIA, DIA, or the Foreign Technology Division to assess whether an aircraft or missile had a theater or intercontinental mis-

sion. Former CIA photointerpreter David Doyle recalled that the KH-7 allowed him and his colleagues to distinguish between large and small aircraft and between swept- and straight-wing airplanes.

In addition, the high-resolution satellite gave interpreters a much clearer view of how the Soviets were constructing the SS-9 and SS-11 missile silos. The detailed images made it possible to determine if the silos were constructed using prefabricated parts or poured cement—an important consideration in estimating silo hardness, which was a key factor in determining what type of weapons were needed to destroy those silos in time of war.

Precision estimates of the size of buildings could also be important. KH-7 imagery of the nuclear reactor at Tomsk allowed analysts to assess, using the US reactor at Hanford, Wash., for comparison, the reactor's productive capacity. KH-7 images, Brugioni recalled, "allowed architectural type drawings" of missiles and buildings.

Oblique images of nuclear facilities, particularly Chinese facilities, were often taken to provide data on the location, size, and shape of their transformers. The CIA already knew the capabilities of different transformers from Soviet publications, and a high-resolution image of the ones on Chinese facilities would allow better estimates of the power going in and the nuclear material coming out.

### Sorting Things Out

Brugioni also recalled that "one of the big things" was the identification and enumeration of Soviet Army divisions. While Corona satellites allowed photointerpreters to find divisions, the KH-7 was crucial to sorting them out—for separating crack, reserve, and national guard type divisions. Because the US had been able to identify Soviet elite divisions in East Germany, analysts knew exactly what type and how much equipment, including tanks, a top-flight division possessed, when US aircraft flew through the Berlin

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Corridor. High-resolution satellite imagery of divisions in the Soviet Union even allowed interpreters to determine the status of the equipment those divisions possessed.

While the footprint of the KH-7 made it generally inappropriate for the search mission performed by Corona satellites, its higher resolution did make it easier for interpreters to find some things that Corona satellites could not detect. Thus, KH-7 images of Soviet microwave stations allowed interpreters to determine the orientation of the dishes, which facilitated further searches and the determination of Soviet communications networks.

In some cases, the additional clarity of the KH-7 images might be disillusioning. The US had "all kinds of sources, [and] knew what [the French] were doing," with regard to their nuclear weapons program, including their establishment of a southern Pacific testing ground, Brugioni recalled. While the South Pacific location created the anticipation of beautiful Tahiti-like islands, the clear imagery from the KH-7 revealed that the places the French were working were decidedly "not paradise," according to Brugioni.

The KH-7 represented a major advance in US intelligence capabilities. The KH-7 was "the rifle in our arsenal," Brugioni said, because it could be pointed at a target and deliver precise images. To Doyle it was a "pretty good leap forward."

The KH-7 was also the first Air Force success in the space reconnaissance field. Whereas the first Air Force reconnaissance satellite program—Samos—had failed, in all its various forms, to provide a useable satellite intelligence system, the Gambit program succeeded. Other successes would follow—including two radar imagery programs and several signals intelligence satellites. But the KH-7 was the first success.

The KH-7 program lasted for only four years, but it represented the first step toward an even better and long-lasting capability. When the KH-7 last flew in 1967, the Air Force Office of Special Projects had already overseen the development of, and the NRO had already orbited, four satellites carrying an improved high-resolution camera system, the KH-8. Its resolution was often in the area of six inches. ■

Civil Air Patrol has 4,000 aircraft, 64,000 volunteers, and a key role in an expanding mission—homeland security.

# The Citizen Air

CAP photo by CAP Capt. Dave Hurtado



*Lt. Chad Morris, CAP Colorado Wing, photographs a vehicle from 1,000 feet during a practice mission. CAP is now working with USAF's Homeland Security Directorate to incorporate new technologies into its operations.*

# Fleet

By Bruce D. Callander



**M**INUTES after terrorists struck the World Trade Center and the Pentagon on Sept. 11, 2001, the FAA grounded most commercial and private aircraft. Outside the military, the only airplanes allowed to fly were those from the Civil Air Patrol.

"It was us and the F-15s and F-16s," CAP Maj. Gen. Richard L. Bowling, national commander, said in an interview with *Air Force Magazine*, "and that was it."

That night, CAP members made 16 flights from Hanscom AFB, Mass., to New York City, delivering medical supplies. In the following days, CAP's New York Wing flew twice-daily round-robin missions carrying personnel and materiel for the recovery effort. Wings in Louisiana and Texas helped the US Coast Guard provide port security. Units from New Mexico to Oregon and from North Carolina to California airlifted blood supplies, flew reconnaissance, and helped local authorities both in the air and on the ground.

Following 9/11, the Civil Air Patrol began to take a fresh look at what for CAP is an old mission—homeland security. Its leaders recently met with Tom Ridge, Secretary of the newly established Department of Homeland Security, to outline what CAP can bring to the mission, namely a nationwide structure of experienced volunteers with the largest privately owned fleet of single-engine aircraft in the country.

"We can put one of those planes in the air for \$90 an hour, as opposed to several thousand dollars an hour for military aircraft," Bowling told Ridge.

CAP is working with the Air Force's new Directorate for Homeland Security to incorporate new technologies into its operations. Some of those technologies include hyperspectral imaging, satellite digital radio, and thermal imaging and infrared sensors.

"We have a request out right now to procure additional aerial platforms to use with these technologies so that we can disperse them across the country," said Bowling, in the interview, adding that ground units will also be mounted in sport utility vehicles or vans. "That will serve as a great tool for the local communities that can't afford those kinds of services," he said.

Except for the new technology, CAP's role in homeland security will be much like the one for which it was created.

## The Early Days

The genesis for the Civil Air Patrol dates back to the late 1930s, when Europe was at war and the US was just beginning to build up its military strength. As the services concentrated on building warplanes and training aircrews, civilian air enthusiasts conceived plans to mobilize the nation's general aviation resources to fill the gaps on the home front. The US had thousands of light airplanes and a cadre of private and commercial pilots, many of them not eligible for active duty but capable of other roles. It made sense to muster both for the war effort.

A strong advocate for such a program was Gill Robb Wilson, who had flown with the French air service and then the Army Air Service in World War I before becoming a clergyman and aviation writer and, later, director of aviation for New Jersey. Wilson convinced the New Jersey governor to create a statewide organization of volunteer pilots. Similar programs sprang up in other states.

By 1941, Wilson brought these efforts to the attention of the man President Roosevelt had named as America's director of Civil Defense—Fiorello H. La Guardia, also mayor of New York City. The idea of a citizen air fleet appealed to La Guardia, who was a private pilot himself and also had served with the Army Air Service during World War I.

The Civil Air Patrol was established officially on Dec. 1, 1941, seven days before the US formally entered World War II. Operating under Civil Defense, CAP units soon were making courier flights, watching for saboteurs, helping border patrol agencies, and flying fire-watch missions.

In 1942, the organization allowed each adult member to sponsor one youngster to be a cadet. The idea was to hold down the numbers until leaders could develop a program in which young people could play an effective role, not merely become hangers-on. In many communities, units gave aviation cadets and pro-



**Brig. Gen. Dave Clary, Air Force director of homeland security, talks with Virginia Wing CAP cadets March 9, during an orientation visit to CAP.**

spective recruits their first orientation flights.

Within six months, more than 20,000 young people had joined. During the war, thousands of young men who were trained to fly by CAP later joined the Army Air Forces. Others contributed to the defense effort in the air and on the ground. Their record helped to convince Congress to support a peacetime cadet program.

From the beginning, women also have been a vital part of the Civil Air Patrol. During World War II, former barnstormer Jessie Woods not only flew with CAP but ran a private flying school. Nancy Hopkins Tier, veteran of numerous air races, flew patrols and became CAP's first female wing commander. Margaret Bartholomew, commander of the Cincinnati courier station, was one of 64 aviators who lost their lives while conducting a CAP mission during World War II.

On April 29, 1943, the organization was transferred from Civil Defense to the War Department and put under the Army Air Forces. Assigned to coastal patrol, CAP pilots summoned help for 91 stricken Allied ships and spotted 173 enemy submarines. They bombed 57 U-boats and were credited with sinking two. In other roles, CAP towed targets for anti-aircraft trainees, flew search and rescue, hauled priority cargo, and ran courier missions.

At war's end, most of the original civil defense machinery was dismantled, but the Civil Air Patrol had become too valuable to scrap. In 1946, Congress incorporated it as a private, benevolent nonprofit organization. Two years later, it became an official civilian auxiliary of the newly created Air Force.

### The Structure

Though a civil organization, CAP does use Air Force rank and uniforms, regulation USAF clothing but with distinctive CAP insignia.

Top staff officers are appointed by the national commander and confirmed by CAP's National Board, comprised of the six national officers, the senior Air Force advisor, and region and wing commanders. The national commander and vice commander are elected by the National Board.

Until recently, the commander and vice commander held the ranks of CAP brigadier general and colonel, respectively. Last December, however, the Air Force awarded Bowling a second star and made the vice commander, Dwight H. Wheelless, a brigadier general.

The national commander appoints region commanders, all CAP colonels. The region commanders, in turn, name the wing commanders under them.

Membership consists of about 64,000 volunteers, about 60 percent

of them senior members. Senior members may be promoted to grades through first lieutenant by their squadron commanders and to other grades by higher levels of authority. They serve without compensation, pay annual dues, and supply their own uniforms.

Today's CAP cadets complete a more rigorous training program than their World War II counterparts. After initial training, they move through a 16-step program, earning increased rank and awards along the way. Many learn to fly, participate in encampments, and earn scholarships. The scholarship may provide for flight training or for study in such areas as engineering, science, aircraft mechanics, and aerospace medicine.

A CAP cadet who opts later to enlist in the Air Force enters as an Airman 1st Class, skipping two ranks. Hundreds of cadets have gone into either the Air Force, Army, or Navy military academies.

Bowling noted that several cadets have gone on to distinguished careers in the service. Retired Gen. Michael E. Ryan, former Air Force Chief of Staff, "is a CAP cadet," said Bowling. "Notice that I didn't say 'former' because once a cadet, always a cadet." He added that the Air Force currently has four or five general officers "that are CAP cadets."

The Civil Air Patrol, like the Junior Reserve Officer Training Corps and other military-connected youth programs, "serves as resources to help these young people develop and to mold the interaction and community service skills that they need to live," said Bowling. "It is something of a recruiting tool, but they are not compelled to join the service."

CAP's resources include more than 3,700 privately owned aircraft, most of them belonging to members. Another 550, primarily single-engine Cessnas, are owned by the corporation. At one time, the organization received surplus airplanes from the Air Force; however, Bowling said that has dropped off because "what the Air Force has now is all kinds of high-end types."

In February, the Civil Air Patrol announced it would buy airplanes from four companies under streamlined procedures to meet its new homeland security needs. CAP signed indefinite delivery, indefinite quan-

tity contracts with Cessna Aircraft Co., Maule Air, Inc., Luscombe Aircraft Corp., and Gippsland Aeronautics of Australia. CAP officials said the arrangements will allow the corporation to buy airplanes with specific capabilities for geographical locations and missions.

The CAP volunteers who supply their own airplanes get reimbursed only for operating expenses. "That's it," said Bowling. "They get fuel, oil, and maintenance at an Air Force rate determined by the category of aircraft."

When Congress solidified the tie between the Air Force and the Civil Air Patrol through 2001 legislation, it also cleared the way for increased USAF support. (See "Reshaping the Organization," p. 80.) Previously, for example, the Air Force could pay travel and per diem for CAP members only during a national emergency. Now, the service can provide such payment whenever they are performing Air Force missions.

The new law also paved the way for the Air Force to provide CAP with more equipment. Where the World War II CAP airplanes carried little more than radios and basic instruments, the modern fleet is being outfitted with an array of sensors, position finders, and reconnaissance tools comparable to some of the equipment in USAF's own aircraft.

### The Missions

The investment is well spent. CAP members fly approximately 85 per-



**CAP members Mike Baffa and his mother, Carol Whitaker, set up cots in the Dallastown, Pa., fire station, for gas company employees working overtime during an emergency. A large part of the CAP mission focuses on disaster relief.**

cent of the search and rescue mission hours directed by the Air Force Rescue Coordination Center at Langley AFB, Va. The Civil Air Patrol has been credited with saving hundreds of lives.

CAP also works for other federal government agencies, state, and local authorities. CAP's charter for emergency services includes not only search and rescue but disaster relief.

When a hurricane hit Puerto Rico, CAP members worked with Red Cross shelter operations, flew damage assessment missions, and moved equipment. When floods made North

Carolina roads impassable, electrical engineers flying on CAP aircraft surveyed damaged power lines. And when space shuttle Columbia went down, CAP units from Texas, Louisiana, and Florida joined the search effort and, later, helped locate debris scattered across several states.

Beginning in the mid-1980s, CAP also took on a major role in the war on drugs. It works in partnership with federal agencies such as the Drug Enforcement Administration, US Customs Service, and US Forest Service and with state and local law enforcement officials.

Today, the Civil Air Patrol is uniquely positioned to play a major role in the new homeland defense effort. While the organization was little more than a concept in the days before World War II, the modern USAF auxiliary is a going concern with a wealth of assets.

It has not only the largest aircraft fleet in general aviation but some 1,000 ground vehicles, a network of 15,000 radios, and an array of airborne photography and sensor imaging devices. It also created a new National Operations Center. It can provide aerial reconnaissance, photography, radiological monitoring, and damage assessment at local levels that the military services do not have the resources to reach.

That local connection long has been key to CAP's success. It began as a citizen-based group that kept



**CAP cadets tow a Cessna 172 to the flight line. After initial training, cadets go through a more extensive program. Many go on to one of the military academies.**

## Reshaping the Organization

In the years since World War II, CAP has undergone a number of organizational changes. The most recent stemmed from a dispute between the Air Force and its civilian auxiliary that began after a 1996 Air Force audit of the organization.

The service said it found significant problems ranging from financial management issues to flying safety concerns. CAP leadership argued that USAF found only minor discrepancies but wanted to take over the Civil Air Patrol.

The rift grew public by 1999 as each side appealed to lawmakers for assistance.

By the next year, USAF and CAP had reached an agreement, the main element of which was creation of a new governing body—the CAP Board of Governors—including Air Force, CAP, and private sector members. Congress also passed legislation giving the Air Force Secretary more oversight over CAP and allowing the service to make more assets available to the organization.

Civil Air Patrol's new organizational structure is a cross between that of a civilian corporation and a military establishment.

The Board of Governors serves as the top governing body, its chairmanship alternated every two years between USAF and CAP. The 11 members include the national commander and three other CAP officers, four persons appointed by the USAF Secretary, and three citizens chosen jointly by the Secretary and national commander.

While the governors handle major issues such as long-term policy and allocation of funds, more immediate operations are overseen by two subordinate bodies—the CAP National Board and the National Executive Committee.

The National Board is chaired by the national commander and includes the vice commander and the senior Air Force advisor, an active duty officer appointed by the Air Force Secretary. All other members are CAP volunteers, including the eight region commanders, 52 wing commanders, and headquarters staff officers. The National Executive Committee is a smaller body that includes all of the same officers except for the wing commanders.

Although the boards and the executive committee exert overall influence, much of CAP's daily work is carried out by an executive director, the corporation's chief operating officer, and the staff of national headquarters.

The Air Force liaison office is designated Headquarters CAP-USAF and is aligned under Air University at Maxwell AFB, Ala. It is staffed largely by Air Force military and civilian personnel. Additionally, USAF members are assigned as liaisons to CAP field units.

The field units also are set up along military lines. There are eight geographic regions composed of 52 wings (one for each state plus Puerto Rico and the District of Columbia). Wings are subdivided into groups, squadrons, and, sometimes, flights.

watch over the nation's scattered communities. Even after its transfer to the War Department, CAP retained much of that local touch. Today, when a region turns out to hunt for a lost child, cope with a flooded river, or respond to a tornado strike, often as not, CAP members will be part of the effort.

When Congress chartered the Civil Air Patrol in 1946, it directed the organization to help stimulate public interest in aerospace issues. To accomplish that mission, CAP works mainly through the established education system, providing textbooks and visual aids to teachers.

Each year, CAP also supports more than 100 workshops in colleges and universities and holds a national aerospace conference. Teachers are invited to take field trips and orienta-

tion flights and tour aviation facilities. CAP also works with high school Junior ROTC programs and community museums and science centers.

To make its educational materials more widely available, the organization formed partnerships with organizations such as the Challenger Center for Space Science Education, the National Aeronautic Association, and the Experimental Aircraft Association. Working with the Aerospace Education Foundation of the Air Force Association, it offers grants to CAP educators and units. It also has placed many of its education products on the CAP Web site.

The organization's education charter, of course, extends to its own membership. It offers education programs for both adult members and cadets at all organizational levels.

Classes cover aviation, weather, and space-related subjects, supplemented with hands-on activities.

Cadets attend encampments, take field trips, hear guest speakers, build model airplanes, rockets, and spacecraft, and make orientation flights. A recent update in the program introduced new textbooks for cadets and adopted a program of modular training units covering subjects such as principles of flight, aerospace history, rockets, and spaceflight. Senior members follow a self-paced aerospace program and take leadership courses.

All members now can take much of their training on the Internet. Bowling said the Web-based program provides individuals with "immediate feedback as to what they have done right, what they have done wrong, and where they need additional training."

USAF's Air University helps to develop many of the materials used in distance learning or on-site by CAP instructors. It also provides in-residence training in CAP's Commanders' Familiarization Course and National Staff College.

The resurgence of an intense homeland defense mission has called for CAP to reinvigorate some old training, as well. "We are beginning to knock the dust off of some of our old radiological training," said Bowling. "We need to update our skills there. Our members have been given some cursory training in that, but it is one of those things that as new missions develop, training has to be there so that we can do it safely and professionally."

Since 9/11, the Civil Air Patrol has had about an 18 percent increase in membership, noted Bowling. This boost has helped fill the gaps created when some members who are active duty or reserve military personnel have been deployed or mobilized.

CAP also has been stepping up its recruiting efforts. Like the Air Force, it now sponsors a race car and advertises in various markets.

"We're getting a lot more national exposure," Bowling said. "We're trying to come out of the shell as the Air Force's best-kept secret." ■

*Bruce D. Callander is a contributing editor of Air Force Magazine. He served tours of active duty during World War II and the Korean War and was editor of Air Force Times from 1972 to 1986. His most recent article for Air Force Magazine, "Curtain Up on Force Development," appeared in the February issue.*

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For information on the Air Force Association, see [www.afa.org](http://www.afa.org)

By Frances McKenney, Assistant Managing Editor

## Meeting a Legend

The **Newport Blue & Gold (R.I.) Chapter's** meeting in March featured a presentation by retired Brig. Gen. Paul W. Tibbets Jr. More than 100 chapter members and World War II veterans turned out to meet him.

Tibbets was pilot of *Enola Gay*, the B-29 that dropped an atomic bomb on Hiroshima in World War II. Several veterans—some who had been awaiting orders for a land invasion of Japan—attended the chapter meeting to thank Tibbets for helping to hasten the war's end through the bombing mission, said Col. Kevin S.C. Darnell, chapter president.

The evening with Tibbets began with a social mixer, followed by a video on the events leading to the bombing mission and including interviews with the bomber's other crew members. After his remarks, Tibbets signed copies of his 1998 book, *Return of the Enola Gay*.

AFA leaders at the chapter meeting were Eugene M. D'Andrea, an AFA national director; David T. Buckwalter, region president, New England Region; Wayne R. Mrozinski, state president; and Joseph N. Waller, **Metro Rhode Island Chapter** president.

Tibbets, who is a member of the **Capt. Eddie Rickenbacker Memorial (Ohio) Chapter**, also was in Newport to deliver a lecture at the Naval War College. It was attended by some 700 people. Darnell said it was the largest crowd he'd seen in his four years as an instructor at the NWC. Tibbets's appearances in Newport were arranged by a group that included several chapter members, among them Col. (sel.) John D. Silvia; Maj. Richard L. Folks II, secretary; and Tibbets's grandson, Maj. Paul Tibbets IV, a B-2 pilot and NWC student.

## World War II Photos

The March dinner meeting of the **Southern Indiana Chapter** also remembered the World War II atom bomb missions, through guest speaker William E. Jones.

He was an aerial gunner—photographer assigned to Fifth Fighter Command, Fifth Air Force, stationed at



**Florida Region President Bruce Marshall (left) prepares to receive a Doolittle Fellow plaque from AFA Chairman of the Board John Politi (center). At right is Eglin Chapter President Douglas Hardin. See "Summit at Sandestin," p. 83.**

Itazuke AB, Japan, soon after the war ended. In January 1946, he began taking aerial photos, first of Nagasaki, the second city where an atom bomb was dropped, and then of Hiroshima.

For his presentation to the chapter, Jones displayed three of his low-altitude photos of each city, as well as newspaper and magazine articles about his work. Then he gave a slide presentation covering his Air Force career, the photography equipment he used and how it was set up, and more photos of occupied Japan.

Jones, who is vice president of the **Fort Wayne (Ind.) Chapter**, said this was the 196th time he had delivered this talk, having appeared before school and veterans groups and at Air Force bases in several states.

He said the historic photos he took are on display at many museums, and the USAF Museum at Wright-Patterson AFB, Ohio, is making some of them into wall murals.

## World War II Rescue

At an earlier Southern Indiana chapter meeting, President Marcus R. Oliphant presented chapter member

O. Earl Toole with a framed photo. It shows Toole at the October 2002 flight debut at Middlesboro, Ky., of a World War II P-38 recovered from a Greenland glacier.

*Glacier Girl*, as the airplane is now known, five other P-38s, and two B-17s had been en route to England in July 1942 when they went off course. The aircraft ran out of fuel and set down in Greenland. The 25 crew members—who were uninjured and later nicknamed the "Lost Squadron"—were rescued by five volunteers, including Toole.

Then a 20-year-old in the Army Air Corps, Toole was part of an 11-man Task Force Blue East 2, located at a weather station on Greenland's east coast. At the time the aircraft landed, Toole was the only radio operator and experienced in signaling, so he volunteered for the rescue.

Toole received a Soldier's Medal for his part in the safe return of the Lost Squadron. Fifty years afterward, the Greenland Expedition Society invited him to revisit the rescue site when *Glacier Girl's* wings and other pieces were pulled out of the ice. A 10-year restoration effort culminated

in that first flight in Kentucky last fall.

### Recruiting for AFA

The **Carl Vinson Memorial (Ga.) Chapter** signed up 194 new members during its recent membership drive.

SSgt. Anthony L. Guzzardo, a 25-year-old electronic warfare technician at Robins AFB, Ga., personally recruited 35 new members. The interesting twist is he was not at that time a member. The chapter later gave him an AFA membership.

Guzzardo got involved in the membership drive in the first place because he saw a notice asking for help on the project. The dental plan offered through AFA impressed him, so he began spreading the word about the association to civilians at Warner Robins Air Logistics Center, where he works.

His recruiting was a "phenomenal service" to AFA, according to an AFA Citation he received from Jack H. Steed, chairman of the association's Membership Committee.

Maj. Timothy Nesley, an engineering branch chief at the logistics center, headed the chapter's membership drive and did his share of personal recruiting, speaking at commanders' calls, directorate meetings, the Company Grade Officers' meeting, and gatherings of other groups on base.

Nesley received an AFA Citation at a chapter recognition luncheon held for membership drive volunteers.

### Summit at Sandestin

Gen. John P. Jumper, USAF Chief of Staff, and Gen. Gregory S. Martin, commander of US Air Forces in Europe, headed the list of guest speakers for the Air Armament Summit co-hosted by the **Eglin (Fla.) Chapter** and the Air Armament Center at Eglin AFB, Fla. The four-day meeting—built on the theme "Transforming the Sword"—took place in March at the Hilton Sandestin Resort in Destin, Fla. Its purpose was to chart a roadmap for the future of air armament, said Douglas Hardin, chapter president and chairman of the event. He described it as a hands-on conference, rather than a series of briefings. "The right people are there to get things done," he said.

More than 400 people attended this fifth annual summit, including Maj. Gen. Robert W. Chedister, commander of the Air Armament Center, which develops, deploys, and sustains air-delivered weapons.

The chapter hosted all summit social events, including a luncheon where Martin was the main speaker.



*I. Fred Rosenfelder (right), Greater Seattle Chapter president, and chapter member Col. Robert Coe (left), flank University of Washington AFROTC cadets of the quarter at a chapter luncheon. The cadets are (l-r): Michael Perez, Pamela Davis, Charles Day, and Dylan Pham. See "Memorial in Seattle," p. 84.*

More than 500 guests turned out for the opening icebreaker, the golf tournament attracted about 100 players, and even deep-sea fishing had 60 enthusiasts casting lines into the Gulf of Mexico.

Jumper addressed an evening gala, with Rep. Jeff Miller (R-Fla.) delivering the welcoming remarks to the 600 guests. The second-term congressman is a member of the House Armed Services and Veterans' Affairs Committees.

Among the AFA leaders attending the summit were Chairman of the Board John J. Politi, National President Stephen P. "Pat" Condon, National Director Robert E. Patterson, and Region President Bruce E. Marshall (Florida Region).

Politi and Condon took time in between summit activities to attend an informal dinner for the Eglin Chapter's Executive Council, where aloha shirts were the standard attire. Politi spoke to the group about the importance of their work to the Air Force as well as AFA. He presented several awards, naming Marshall an Aerospace Education Foundation Doolittle Fellow and presenting Robert H. Byrd, chapter treasurer, with an Exceptional Service Citation.

### Absentee Winner

When it comes to door prizes, usually the winner must be present to collect it. Not so at Enlisted Appreciation Night at Vance AFB, Okla.

That's because the Greater Enid Chamber of Commerce, sponsor of the event, understood that many enlisted members were on duty that

Saturday night and couldn't make the annual party at the Vance Club. So when the ticket for an absent Sgt. Jason Flugge came up in a random drawing, he was still declared the winner of the evening's biggest cash prize.

The next day, George C. Pankonin, Oklahoma state president and past president of the **Enid (Okla.) Chapter**, went to the guard mount formation for D Flight, 71st Security Forces Squadron, to present Flugge with his winnings. Pankonin first asked the sergeant to hold out his hand. He then began counting out loud as he handed over the money. Soon the whole room joined him in counting out \$1,000.

Flugge is assigned to the Army National Guard's 1120th Maintenance Co. in Ada, Okla., and was activated for a year to augment USAF security forces at Vance.

Enlisted Appreciation Night has been a tradition for more than 25 years, Pankonin said. This year, 235 guests enjoyed a cookout and blackjack games for play money. They used the play money to bid for items donated by area businesses. The 200 items at this auction included TVs, DVD players, and other electronic equipment.

Pankonin said the Enid Chapter was the largest single donor to Enlisted Appreciation Night, and chapter board member Richard Johndrow served as event co-chairman.

### An Evening in Fort Worth

An address by USAF Vice Chief of Staff Gen. Robert H. Foglesong and presentations of awards highlighted

the annual dinner called "An Evening in Fort Worth," sponsored by the **Fort Worth (Tex.) Chapter** in March.

Nearly 300 guests—including defense industry representatives and AFROTC cadets from Texas Christian University and Baylor University—enjoyed the black-tie event. Among them were AFA National President Stephen P. "Pat" Condon; Bryan L. Murphy Jr., an AFA national director emeritus; Thomas J. Kemp, an AFA national director; Dennis Mathis, state president; and M.N. "Dan" Heth, former region president, Texoma Region.

During awards presentations, Harold E. Humfeld received the chapter's Lifetime Achievement Award, in recognition for many decades of service to the Air Force and AFA. A retired major general, Humfeld began his military career in 1938 at flying schools at Randolph and Kelly Fields, Tex. He retired in 1967 as director of maintenance engineering in the Office of the Deputy Chief of Staff, Systems and Logistics. He's been an AFA member for 47 years.

Condon presented AFA national-level awards, as listed in the November 2002 issue, and the chapter presented awards to several AFROTC cadets.

SSgt. Thomas Blair received the 301st Fighter Wing (AFRC) Airman of the Year award for 2003, while TSgt. Eric Wiley—who had been deployed during last year's Evening in Fort Worth—was on hand this time to accept the wing's Airman of the Year award for 2002. SrA. Joseph Wilson received the 136th Airlift Wing's ANG Airman of the Year award. Both the 301st and 136th are located at NAS JRB Fort Worth.

**Comforts of Home**

AFA chapters in Illinois donated \$350 to the state's western chapter of the American Red Cross in March.

The funds came from the **Chicagoland—O'Hare, Heart of Illinois, Land of Lincoln, and Scott Memorial Chapters** and was earmarked to pay for shipping "comforts of home" items to the troops deployed to the Middle East.

Frank Gustine, state president, presented the donation to Lynne Tyler, executive director of the Red Cross' Western Illinois Chapter.

The comfort items came from community donations and included everything from toothpaste to popcorn. According to Tyler, shipping costs average \$1 per pound, and the local chapter had collected more than 1,000 pounds to transport. Tyler said the

cost of shipping would have exceeded the chapter's entire postage budget for the year.

"We are very grateful to the Illinois Air Force Association for its help," Tyler said.

**Memorial in Seattle**

The **Greater Seattle and McChord (Wash.) Chapters** dedicated a memorial in late March to members of the Army Air Corps, Army Air Forces, and the US Air Force.

Seattle Chapter President I. Fred Rosenfelder conducted the dedication at Tahoma National Cemetery in Kent, Wash., with an honor guard from the University of Washington's AFROTC Det. 910 serving as flag detail.

The memorial—a rectangular granite block topped with a bronze plaque—was bought through donations from members of both chapters. It is located at the memorial walk of the 160-acre facility, which is a Department of Veterans Affairs national cemetery.

At a joint luncheon meeting before the ceremony, Mary Ann Gillispie, cemetery director, spoke to the group about the cemetery. It was dedicated in 1997 and serves more than 410,000 veterans and their families in the Seattle area.

Those at the luncheon and cer-

emony included State President Tom Hansen and, from the Greater Seattle Chapter, Walter Sherrell, Naomi Wilkins, and Sherman W. Wilkins, a national director emeritus. Rosenfelder credited the trio with getting the memorial project off the ground.

Also that month, the Greater Seattle Chapter held a luncheon at the University of Washington's Faculty Club to honor AFROTC Cadets of the Quarter from Det. 910: Michael A. Perez, Dylan H. Pham, Charles J. Day, and Pamela R. Davis. The cadets' names will become part of a permanent wall display donated by the chapter to the detachment. It lists all previous award recipients and displays photos of current ones. The detachment commander is chapter member Col. Robert A. Coe.

**Focus on Aerospace Education**

When the **Leigh Wade (Va.) Chapter** hosted the state quarterly meeting at Ft. Lee, Va., aerospace education was the focus.

Five of the chapter's teachers of the year were on hand: Sheila Padlo Burroughs, Charles A. Davis, Cindy Duncan, Paul G. Riding, and Melinda D. Kelley—recipient of AEF's Christa McAuliffe Memorial Award in 2000. Along with Roger M. Green, principal

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of the Colonial Heights Middle School where they all teach, they received Certificates of Appreciation. The teachers assist the school's Space Club, whose members simulate space shuttle missions. The students demonstrated such a mission during a Friday overnight club activity.

Others recognized during the awards banquet included several chapter members and Community Partners. The partners provide much of the financial support for the chapter's aerospace education activities, Chapter Treasurer George Aguirre told the local newspaper covering the event.

Glen E. Thompson, chapter VP, was master of ceremonies for the awards banquet, with Mason S. Botts, state president, and Julie L. Bowles, chapter president, presenting the awards. Representatives of the state's 10 chapters attended the quarterly meeting.

Earlier in the year, the Virginia General Assembly recognized the founder of the Leigh Wade Chapter with a special resolution. Chapter Treasurer Aguirre was commended in January for his military service and community spirit, including his leadership of the AFA chapter, located in Petersburg, Va.

#### Scotty Wetzel, 1931–2003

Emery S. "Scotty" Wetzel Jr., an AFA national director and member of AEF's board of trustees, died April 26 in Las Vegas. He was 71 years old.

Born in Coronado, Calif., Wetzel graduated from the US Military Academy at West Point in 1954. He later earned a master's degree in business administration.

Wetzel served on active duty for 30 years, including 122 combat missions over North Vietnam, and retired as deputy chief of staff, programs and resources, at the Tactical Fighter Weapons Center, Nellis AFB, Nev.

He held many AFA offices within the **Thunderbird (Nev.) Chapter** and at the state level. He was region president of the Southwest Region from 1999 to 2001 and at the time of his death was serving on AFA's Long-Range Planning Committee.

Wetzel was most recently president of Silver Eagle Enterprises in Las Vegas.

#### More AFA/AEF News

■ At the March meeting of the **Brig. Gen. Harrison R. Thyng (N.H.) Chapter**, teacher Susan Zoller from Trinity Christian School in Concord, N.H., received an AEF Educator Grant. Eric P. Taylor, state president, and Jim Thyng, son of the chapter's namesake, presented the check. Zoller will

use it for a model rocketry program for her high school students. AEF Educator Grants provide up to \$250 per academic year for use in elementary or secondary school aerospace education programs, opportunities, and activities. Taylor pointed out that five New Hampshire teachers received Educator Grants this school year.

■ The **Gainesville (Fla.) Chapter** raffled off a ride in a B-17 at an air show sponsored by the Yankee Air Force's Florida Division at Dunnellon, Fla., in January. Doug Mills was the

winner, chosen from among nearly 30 people. He received a 30-minute ride in the vintage bomber and a packet of information about the Flying Fortress from the Collings Foundation of Stow, Mass. The more than 1,600 visitors to the four-day air show were able to walk through the B-17 and view a P-51 and Black Hawk helicopter on static display. John M. Holley, chapter president, was a volunteer at the air show, which was attended by Kerry A. Crooks, treasurer, and chapter members Leilanie Brown and Robert B. Walker. ■



CAP photo by Marc Huettner

**AFA's President's Trophy for the outstanding Civil Air Patrol unit in Alabama went to the Maxwell Composite Squadron. Here, Albert Allenback, Montgomery Chapter president, presents the trophy to CAP Capt. Tommy Lee.**

### AFA Conventions

June 6–8	Arizona–New Mexico–Nevada State Convention, Albuquerque, N.M.
June 7	Alabama State Convention, Montgomery, Ala.
June 13–14	Arkansas State Convention, Hot Springs, Ark.
June 13–14	North Carolina State Convention, Asheville, N.C.
June 13–15	New York State Convention, Fredonia, N.Y.
June 20–21	Oklahoma State Convention, Oklahoma City
June 25–28	Alaska State Convention, Fairbanks and Anchorage, Alaska
June 25–29	California State Convention, March ARB, Calif.
July 12	Washington State Convention, McChord AFB, Wash.
July 18–20	Florida State Convention, Tyndall AFB, Fla.
July 18–20	Pennsylvania State Convention, Washington, Pa.
July 18–20	Texas State Convention, Austin, Tex.
July 25–27	Virginia State Convention, Hampton, Va.
July 26	Iowa State Convention, Sioux City, Iowa
Aug. 15–16	Illinois State Convention, Des Plaines, Ill.
Aug. 15–16	Utah State Convention, Ogden, Utah
Aug. 16	Georgia State Convention, Robins AFB, Ga.
Aug. 22	Missouri State Convention, Lake of the Ozarks, Mo.
Aug. 22–23	Colorado State Convention, Colorado Springs, Colo.
Sept. 15–17	AFA National Convention, Washington, D.C.
Sept. 28	New Hampshire State Convention, Manchester, N.H.
Oct. 24–25	Michigan State Convention, Alpena, Mich.

**1st Air Commando Assn, CBI (WWII).** Aug. 29–Sept. 2 at the Grand Hyatt Tampa Bay Hotel in Tampa, FL. **Contact:** Morris Zalmanovich, 26900 Forest Hills St., Leesburg, FL 34748 (352-365-9564).

**9th AF Assn (WWII–present).** Sept. 20–23 at the Salt Lake City Plaza Hotel in Salt Lake City. **Contact:** Fern Mann, 135 Riverwalk Pl., Memphis, TN 38103 (phone: 901-578-5333 or fax: 901-578-9999) (cmann1525@aol.com).

**13th AF, all units.** Sept. 9–13 at the Marriott Hotel in Des Moines, IA. **Contacts:** Phil Dyer Jr., 7049 W. Illinois, Ludington, MI 49431 (phone: 231-843-9597 or fax: 231-843-8637) or Al Wright, 1005 S. Russell, Skiatook, OK 74070-2123.

**36th AMS and 525th FIS,** Bitburg AB, Germany (1965–75). Sept. 12–14 at the Plantation Inn in Branson, MO. **Contact:** Menko Christoph, 134 Park Valley Ct., St. Peters, MO 63376-7137 (636-447-8539) (mchrist1@mail.win.org).

**47th BG, 12th AF (WWII).** Sept. 25–28 in Phoenix. **Contact:** Tony Tykema (480-831-1354) (tykema@aol.com).

**48th FS, FIS, FTS Assn.** Oct. 22–27 in Branson, MO. **Contact:** Joe Onesty, 455 Galleon Way, Seal Beach, CA 90740-5937 (562-431-2901) (jonesty2@juno.com).

**57th FG and tenant units at Paine Field, WA.** Sept. 26–29 in Branson, MO. **Contact:** G.W. Thompson (210-653-2577) (snake@satx.rr.com).

**74th Troop Carrier Sq (WWII),** including the 434th Troop Carrier Gp. Sept. 2–4 at Thayer Hotel in West Point, NY. **Contact:** 74th TCSA, PO Box 9147, Waco, TX 76714.

**86th Fighter–Bomber Gp Assn.** Oct. 31–Nov. 3 in Dayton, OH. **Contact:** Sid Howard, 211 Brownstone Dr., LaHabra, CA 90631 (714-992-2504).

**99th BG (WWII).** Sept. 17–21 in Colorado Springs, CO. **Contact:** Robert Bacher, 692 N. Abbe Rd., Elyria, OH 44035-3044 (440-365-3023).

**306th BW.** Oct. 21–27 in Melbourne Beach, FL. **Contact:** Joe Demes (321-452-4417) (joedimps@aol.com).

**307th ARS.** Sept. 15–18 in Branson, MO. **Contact:** Richard Amenell (757-877-0316) (rjamen@widowmaker.com).

**315th BW Assn,** Northwest Field, Guam. Sept. 3–7 in Dayton, Ohio. **Contact:** Bev Green (217-893-3197).

**359th FG and support units,** East Wretham, UK (WWII). Aug. 21–24 in Boston. **Contact:** C.W. Staley, 2546 Austin Pl., Beloit, WI 53511 (608-362-5513).

**362nd FG Assn,** Ninth AF, Europe (1943–45). Sept. 25–28 at the Salt Lake City Plaza Hotel in Salt Lake City. **Contact:** Fern Mann, 135 Riverwalk Pl., Memphis, TN 38103 (phone: 901-578-5333 or fax: 901-578-999) (cmann1525@aol.com).

**368th FG,** Ninth AF (WWII). Oct. 30–Nov. 2 at the Wyndham Vinings Hotel in Atlanta. **Contact:** Randolph Goulding, 3412 Paces Ferry Cir., Smyrna, GA 30080 (phone: 678-333-0241 or fax: 770-455-7391).

**376th Air Refueling Assn** (September 1953–June 1965). Oct. 17–19 at the Sandcastle Condo in Port Aransas, TX. **Contact:** John Yancy, 1051

S. Dobson Rd., Burleson, TX 76028 (817-295-1754).

**390th BG (H) Veterans Assn,** Eighth AF, Framlingham, UK (WWII). Sept. 9–14 at the Cincinnati airport Erlanger in Covington, KY. **Contact:** Ken Rowland, PO Box 28363, Spokane, WA 99228-8363 (phone: 509-467-2565 or fax: 509-467-0759) (rkenrow@aol.com).

**435th TCG,** including Hq and 75th, 76th, 77th, and 78th TCSs (WWII). Sept. 10–13 at the Hilton Airport Hotel in San Antonio. **Contact:** Al Forbes, 1614-B Berwick Ct., Palm Harbor, FL 34684 (727-785-6075) (for76tcs@aol.com).

**440th TCG,** including Hq and 95th, 96th, 97th, and 98th TCSs (WWII). Oct. 16–19 at the Clarion Charleston Airport Hotel in Charleston, SC. **Contact:** William Walsh, 492 Halifax Dr., N. Fort Myers, FL 33917 (239-731-0402) (patandbillwalsh1@cs.com).

**454th BG, Italy (WWII).** Oct. 14–19 in Memphis, TN. **Contact:** Ralph Branstetter, 454th BG, PO Box 678, Wheat Ridge, CO 80034-0678 (303-422-6740).

**461st BW and 4128th Strategic Wg (SAC),** Amarillo AFB, TX. Oct. 22–25 in Shreveport, LA. **Contact:** Bill Davies, 23 Queenspark Rd., Little Rock, AR 72227-4815 (501-225-2400) (widavies3@comcast.net).

**582nd Air Resupply Gp.** Sept. 17–21 in Branson, MO. **Contact:** Donna Watson, 1970 N. Leslie St. #1870, Pahrump, NV 89060-3678 (559-287-1849).

**733rd TCS,** 945th Military Airlift Gp. and 313th FS. Aug. 23 at the Hill Aerospace Museum at Hill AFB, Utah. **Contact:** Rex Hadley, 1127 E. 1675 N., Ogden, UT 84404 (801-782-5495).

**780th BS,** 465th BG. Sept. 15–19 at the El Dorado Hotel in Reno, NV. **Contact:** Maj. Robert Bleier, 1288 Rio Hondo Dr., San Jose, CA 95120 (408-268-2310) (bobbbleier@aol.com).

**815th TCS,** Ashiya, Japan (1952–58). Oct. 9–12 at the Holiday Inn in Webster, TX. **Contact:** Harry Roberts, 16431 Brambling Dr., Houston, TX 77059-6035 (281-488-5985) (hmroberts@ev1.net).

**905th ARS,** Grand Forks AFB, ND. Sept. 22–23 at the Monte Carlo Casino & Resort in Las Vegas. **Contact:** Roger Craig, 56 Kiva Loop, Sandia Park, NM 87047 (505-286-9408) (rccraig9408@yahoo.com).

**1381st/1st Geodetic Survey Sq.** Aug. 15–17 at the Holiday Inn in Cheyenne, WY. **Contact:** Mike Daronca, 9868 Manor, Allen Park, MI 48101 (313-382-2468) (ldjuly@aol.com).

**4485th TESTS/85th TES Sq,** including US Air Warfare Center and 53rd Wg personnel. June 27–28 at Eglin AFB, FL. **Contact:** Lt. Col. Tony Murphy (850-882-2413) (anthony.murphy2@eglin.af.mil).

**6927th RSM,** Okinawa. Oct. 15–19 in Albuquerque, NM. **Contacts:** Ray Thibodaux (raytib@aol.com) or 6927th RSM, PO Box 24683, New Orleans, LA 70184-4683 (504-488-8214).

**Air Rescue Assn.** Oct. 7–10 in Dayton, OH. **Contacts:** ARA, PO Box 300945, Fern Park, FL 32730-0945 or John Holm (316-722-9484) (jholm4@cox.net).

**China–Burma–India Hump Pilots Assn.** Sept.

3–7 at the Adams Mark Hotel in St. Louis. **Contact:** J.V. Vinyard, 3509 Huntington Dr., Amarillo, TX 79109-4043 (phone: 806-352-4449 or fax: 806-352-7024) (jv28800@aol.com).

**Pennsylvania AACS Alumni Assn.** July 15–17 at the Hampton Inn in Du Bois, PA. **Contact:** Ed Rutkowski, 301 Blakley Ave., Du Bois, PA 15801 (814-371-7167).

**Pilot Class 43-K,** all training commands and schools. Oct. 23–26 at The Governor's House Hotel in Montgomery, AL. **Contact:** H.A. Jacobs, 17545 Drayton Hall Way, San Diego, CA 92128 (858-485-9422) (jakes43k@aol.com).

**Pilot Class 55-K.** Sept. 19–21 at the Crown Plaza Hotel in Dayton, OH. **Contact:** Tom Roe, 3128 Lake Washington Rd., PMB 231, Melbourne, FL 32934 (321-777-0219) (rtr2169@aol.com).

**Pilot Class 55-P.** Sept. 24–27 at the Hope Hotel in Dayton, OH. **Contact:** Dick Higgins, 300 E. Auburn Ave., Ste. 29, Springfield, OH 45505 (phone or fax: 937-325-7858) (dickhiggins@juno.com).

**Second Schweinfurt Memorial Assn,** Eighth AF (WWII). Oct. 11–15 in Seattle. **Contact:** Arvid Dahl (253-853-5409) (arv246@aol.com).

**SHAEF/ETOUSA Veterans Assn.** Oct. 6–8 at the Doubletree Guest Suites Hotel in Charleston, SC. **Contacts:** Don Thriffiley, 7340 Dundee St., New Orleans, LA 70126 (phone or fax: 504-241-3605) (donshaef@netzero.net) or Allan Reeves, 2301 Broadway, San Francisco, CA 94115 (phone or fax: 415-921-8322) (afreeves@webtv.net) or William Lanham, 2230 S. Overlook Rd., Cleveland Heights, OH 44106 (phone: 216-721-0921) (wclshaef@aol.com).

**Strategic Air Command.** Oct. 7–12 at the Doubletree Modesto in Modesto, CA. **Contact:** Chuck Barber, 9506 Emerald Grove Ave., Lakeside, CA 92040 (619-561-5505) (www.jacobsensb-36hangar.bigstep.com).

**Suffolk County AFB, NY,** 52nd FG. Sept. 4–7 at the Sheraton Old Town in Albuquerque, N.M. **Contact:** Dan Dugan, 501 Wyoming Blvd. SE, Albuquerque, NM 87123 (phone: 505-268-7367 or 505-884-3732 or fax: 505-265-4325) (dan@albuchem.com).

**UM/FIU ROTC Alumni Assn** and all cadets. Nov. 13–16 in Miami. **Contact:** Bill Jennewine, 614 Sandy Creek Dr., Brandon, FL 33511 (813-681-7844) (bgtd96@aol.com).

**Wild Weasels.** Nov. 5–9 at Walt Disney World in Orlando, FL. **Contacts:** Allen Lamb (910-739-3181) (alamb@lambgroupllc.com) or George Acree (410-647-9511) (acree5@comcast.net).

Seeking members of the **309th FS,** 31st GP (WWII), for a reunion in October in Phoenix. **Contact:** Dalton Smith (201-385-4950).

Seeking members of **Pilot Tng Class 68-D,** Vance AFB, Okla., for a reunion. **Contacts:** Rod Morrow (813-854-2740) (rodmorrow@usa.net) or Mike Beck (850-939-0455) (mikbek@bellsouth.net). ■

Mail unit reunion notices four months ahead of the event to "Unit Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.



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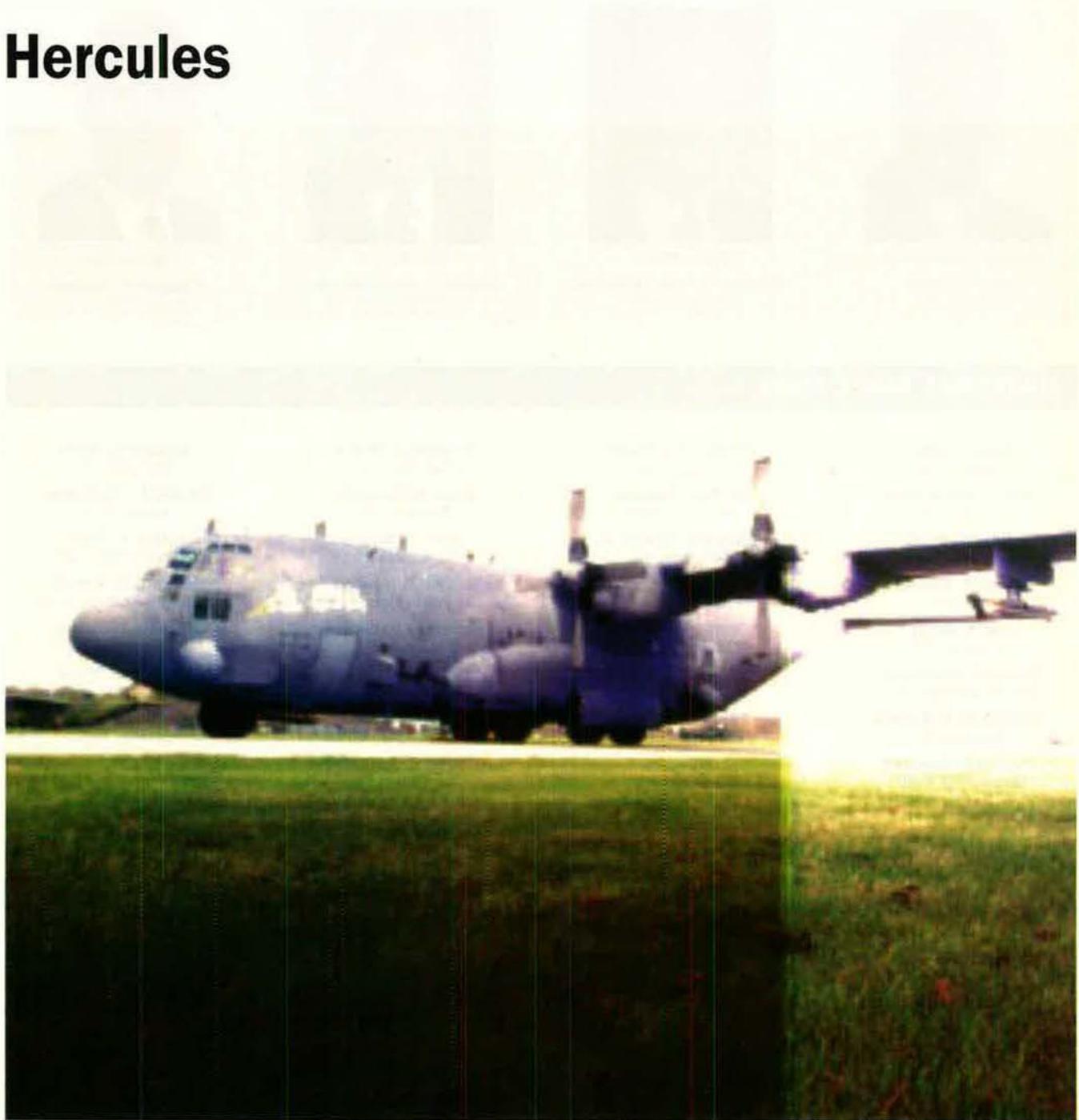
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# Pieces of History

Photography by Paul Kennedy

## Hercules



*The versatile C-130 Hercules was designed during the 1950s as a basic theater transport but was adapted for a variety of missions, including assault, reconnaissance, search and rescue, and helicopter aerial refueling. This C-130A (S/N 54-1630), on display at the USAF Museum in Dayton, Ohio, was converted in the late 1960s into a side-firing gunship and redesignated AC-130. It*

*first saw action in the Vietnam War but also served in Operation Desert Storm in 1991. During one mission, this gunship aided coalition ground troops driving Iraqi forces out of Kuwait by attacking and destroying much of the equipment in a military convoy. Its crew faced numerous enemy SA-6 and SA-8 missile attacks.*

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