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June 1998, Vol. 81, No. 6

AIR FORCE MAGAZINE

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About the cover: Operation Vittles was the greatest humanitarian airlift in history. See "The Berlin Airlift," p. 50.

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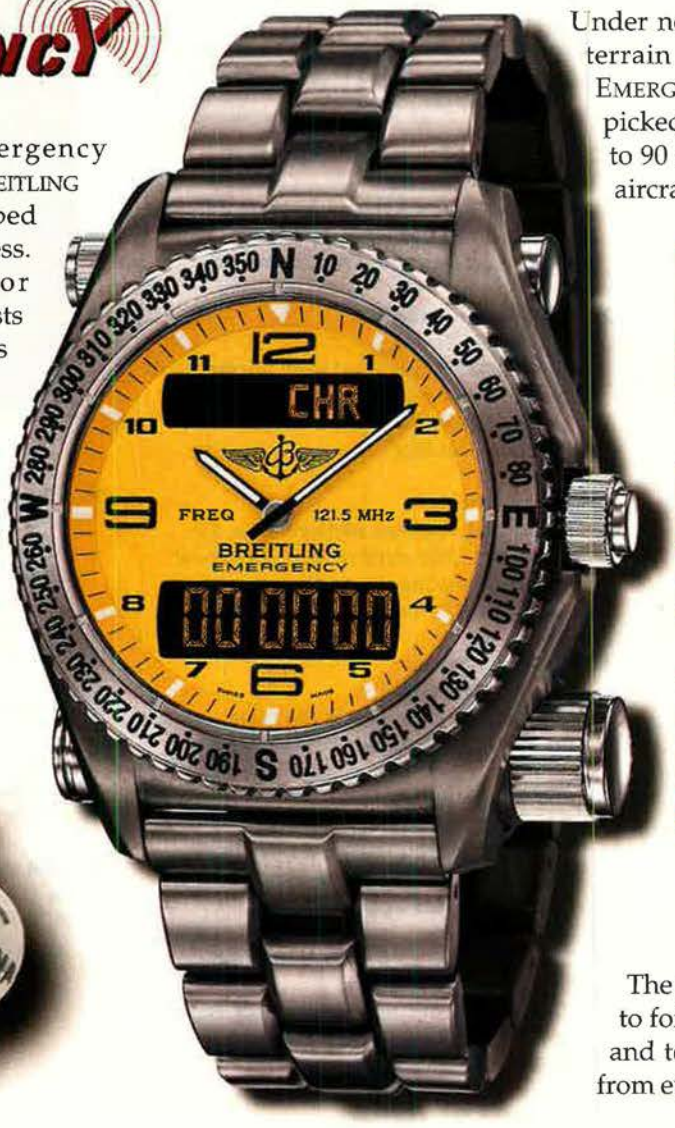

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INSTRUMENTS FOR PROFESSIONALS™

Editorial

By John T. Correll, Editor in Chief

Long Range Blind Spot

It appears that time and circumstances have run out on the idea of producing additional B-2 bombers. The Department of Defense and the Air Force are opposed to buying more of them. In any case, that would mean reopening the production line, which is closed.

In March, the congressionally chartered Panel to Review Long Range Airpower recommended unanimously that the funding available to the B-2 program be spent on upgrades and improvements rather than on trying to increase the number of B-2 aircraft beyond the present 21.

That panel, chaired by retired Gen. Larry D. Welch, former Air Force Chief of Staff, had good news and bad news. The good news is that, with upgrades and advanced munitions, the current fleet of B-2, B-1B, and B-52 bombers will most likely meet the nation's needs for the next 15 years.

The bad news is that beyond that, there has been no consideration of long range airpower. There is no plan.

A study group headed by Brent Scowcroft, former national security advisor, made a similar point in a report to Congress last summer, deploring the absence of any plan "to keep the bomber force viable in the long run. Every other major weapon system—fighter, submarine, destroyer, carrier, tank, etc.—has either a system in continuing production or a planned, programmed replacement."

It is a strange lapse in planning, since the requirement for long range airpower is increasing rather than diminishing. The National Defense Panel report in December said that air forces should "place greater emphasis on operating at extended ranges, relying heavily on long range aircraft and extended range unmanned systems, employing advanced precision and brilliant munitions and based outside the theater of operations."

Surely, a defense program that looks ahead to a new destroyer for battles at sea and to a new howitzer for the field artillery ought to make some provision for future systems that can strike over great distances with large payloads.

Long range airpower is more than a capability. It is also a perspective. Other forces are concentrated on local or intermediate range operations that may extend anywhere from several kilometers to a few hundred miles into the battle area. Long range airpower strikes deep into the enemy's homeland to deny the enemy control of forces and events and to decrease his capacity to make war.

There is no plan for long range airpower beyond upgrades and improvements for the existing bomber fleet.

Furthermore, as the Quadrennial Defense Review said last year, modern bombers, equipped with precision guided munitions, would be highly effective in stopping an invasion force in the opening days of theater conflict.

For many years, the focus on long range airpower in the strategic nuclear role obscured its contribution in conventional conflict. "In Vietnam, for example, the bomber force comprised on average only 7 percent of the force and delivered 44 percent of the bomb tonnage," the Scowcroft report said. "In the Gulf War, the B-52 force only represented 4 percent of the force, but delivered 32 percent of the bomb tonnage (more than twice as much as the entire carrier force combined)."

Impressive as that is, the value of newer bombers in theater conflict will not be measured by tonnage. The B-2, to cite the most obvious example, has already demonstrated that it can attack 16 separate targets with precision weapons on a single sortie.

Why, then, do defense plans have a blind spot about long range airpower? Several explanations are offered. One is that the long range airpower discussion has been preempted, for all practical purposes, by the B-2 production dispute that has gone on since 1990 when the program was reduced from the original goal of 132 aircraft.

"The Air Force has permitted airpower critics to parlay Air Force lack of support for more B-2s into a perceived lack of confidence in airpower as an independent contributor to military success," says retired Maj. Gen. Charles D. Link, who led the Air Force effort in the Quadrennial Defense Review.

Mainly, though, the shortage of planning for long range airpower can be attributed to relative budget priorities, in which other needs were deemed more urgent or important. No matter why the priorities drifted that way, the time has come to adjust them.

Fifteen years—if we have that long—go by quickly in the development and fielding of a bomber. The B-2 originated in the 1970s, and the B-1 dates back even further.

By the 2010s, attrition and technology will take their toll on the force of today. It is not yet clear whether the next step should be a variant of the B-2, a different bomber, unmanned aerial vehicles, or a combination of these.

Some people are no doubt convinced the day of the bomber is over. The thought has arisen before. In the 1950s and 1960s, there was a flurry of opinion that the bomber would be made obsolete by the ICBM. That did not happen, nor did the bomber force lose its utility at the end of the Cold War. Among those who believe it still has a future is the House National Security subcommittee on Military Procurement.

After hearing the Welch panel's report, the subcommittee directed the Air Force to prepare a long-term bomber force structure plan and present it to Congress by March 1, 1999. ■

Letters

Nuclear Abolition

John T. Correll's assessment *["Nuclear Abolition," April, p. 4]* pertaining to the abolition of nuclear weapons is meaningful and factual. The utopian scheme advocated by Gen. [Lee] Butler and others is just that, a utopian scheme.

In my candid opinion, biological and chemical Weapons of Mass Destruction are far more dangerous and feasible to the world population than nuclear weapons. Frankly, responsible leaders must always look to the future with a positive attitude and ensure the best of dialogue prevails with one another, which hopefully will deter the use of nuclear weapons.

However, there are [those] who are determined to develop and possibly use chemical and/or biological weapons, and the end results can surely be just as or perhaps more devastating than nuclear weapons. Limiting the stockpiles of nuclear weapons is a good start, but the UN cannot control each and every country that develops and maintains such weapons.

Correll is correct in stating: "An adversary who doubts that we would use our nuclear weapons is one thing. An adversary who knew for sure that we did not have any nuclear weapons would be an entirely different consideration." We must never allow this great nation to be placed in such a precarious position!

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

Nuclear abolition is indeed a worthy goal, but as with "peace in our time," it is not yet perceivable. The decades long obsession with an ABM system, as the paramount addition to the nation's arsenal for its security, still has to be questioned.

Considering the variety of Weapons [of] Mass Destruction available to "rogue nations," in addition to ballistic missiles with nuclear warheads, is its costly development and acquisition warranted? The initial, single ABM site cost $5 billion and never became operational.

Consider the current status of our armed forces. All are weakened by shortages of personnel, equipment, and logistic support, with their military effectiveness further diminished by deployments that have nothing to do with our national defense. If the nation is not willing to provide the armed services with all that they need to do what is asked of them, then where is the massive amount of money to acquire a defensive weapon system that will admittedly not stop all missiles?

Because there are so many other options on the WMD list for attacking the United States, it would seem prudent, in a sense, to keep our "powder dry" in two "bunkers." Maintain our nuclear deterrent together with a strong, well-equipped and -maintained conventional force.

Col. Peter E. Boyes,
USAF (Ret.)
Rancho Murieta, Calif.

I am sure that I am not the only one [who] has become tired of the utopian sentiment surrounding this issue. Of course nuclear weapons should be eliminated, but unfortunately not everyone feels the same way about their need for a nuclear capability.

I think I would be a lot more supportive of the issue if I thought the leaders of China, Iran, Iraq, Libya, and North Korea felt the same way. What is clear is that they do not.

What is also clear is that these former leaders calling for nuclear abolition have forgotten the role these weapons played in maintaining world peace. We will continue to argue whether the use of the atomic bomb in World War II was just or not. What we cannot argue is that its use in actual conditions demonstrated such destructive horror that had it not been used, the Cold War generation may have witnessed the use of nuclear weapons on a much larger scale. It was this destructive power that gave the concept of Mutually Assured Destruction credibility and guaranteed peace between the US and the former Soviet Union.

Nuclear security is no longer governed by the concepts of MAD and balance of power or by treaties such as SALT and START. As technology has become more accessible, more countries have initiated their own nuclear development programs or have enhanced their existing capability with both land- and sea-based delivery systems. It is these countries that argue that having a nuclear capability is vital to their national security and that restrictions on nuclear weapons would place them at a disadvantage.

Nuclear security today requires more than just calling for the elimination of nuclear weapons by a few former leaders from only established powers. The reality is that there are members of the world community whose political intentions remain questionable and because of this nuclear vulnerability must not be taken for granted.

John F. Stampfli
Mission Viejo, Calif.

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

Complications Overhead

I was disappointed that "Complications Overhead" in April *[p. 22]* did not mention the SR-71. I would have hoped that the Blackbirds' contributions to the intelligence, surveillance, and reconnaissance community would have made it worthy of some credit by Air Force leadership.

It's easy to understand how the Predator UAV took over 3,600 hours of video over Bosnia, but I would seriously question how many hours of video the Predator could obtain

over North Korea or any other Third World nation that has the military might and intention to shoot a UAV down. I think UAVs flying over a foreign country with any level of military sophistication will be rendered useless quickly.

The SR-71s were brought back in 1995 because Congress realized from Desert Storm and other sources that there was a void in the US ability to gather timely intelligence on Third World rogue nations. They knew the SR-71 is the only manned platform that can gather intelligence anywhere in the world, day or night, rain or shine, over a high threat area.

The high cost of operating the SR-71 is the excuse the Air Force always brings up when asked about flying them. Yes, it is expensive to operate, but you have to factor in the cost other intelligence gathering assets require, such as fighter support, MiG-CAP, and AWACS. Those are not cheap. The SR-71 does not require *any* defensive support.

As a former SR-71 pilot, I believe the Blackbirds are needed even more today than they were years ago. The US should never be in a position where it's held hostage to a threat by a foreign country to deny overflight.

Col. Richard H. Graham,
USAF (Ret.)
Plano, Texas

"Complications Overhead" [presents a] picture [that] is troubling [because] we may not have improved our capability to acquire intent.

As we edged toward combat in Iraq, I do not believe that technical means could tell us what [Weapons of Mass Destruction] Iraq was making, where the weapons were being made and stored, or when the manufacturing and storage facilities were being relocated. We could see possible targets, but we had no hard evidence of the enemy's plan or intent for WMD manufacture, storage, or employment. Therefore, these weapons could not be targeted with any degree of certainty.

I fear we may have oversold ourselves on the capabilities and value of technical collection to provide warning and to target objectives that are concealed from us. We need to understand the enemy and their plans and intent.

The case for strategic and tactical reconnaissance by technical means was made at the UN during the Cuban Missile Crisis debate. In October 1962 Ambassador [Adlai] Stevenson presented pictures of Soviet missile deployment. These pictures provided solid evidence as to a Soviet plan and enabled us to envision their course of action. These pictures were proof of an enemy's intent. However, these timely pictures would not have been possible without prior knowledge of Soviet intent [provided by] Oleg Penkovsky. [That information] came from our human intelligence capability. Without this inside information, it is doubtful that our U-2 and RF-101 aircraft would have discovered the missile deployment in a timely manner.

Since the Cuban Missile Crisis, a case could be made that our improved technical means capability to see has left us sighted but blind. As we have gained technical means, we have neglected to attain an equal capability to acquire an enemy's intent. Because of this lack of capability to acquire intent, we may not find or we may misinterpret indications that place us in harm's way.

Technical means as they exist and as they are proposed are needed to provide ISR. However, for our warning system and for decision making at all levels to be effective and efficient, we must know and understand the enemy.

Col. David R. McNabb,
USAF (Ret.)
Tampa, Fla.

Big Stick, Huh?

Robert G. Aldrich [talks about] his "vertical" gun runs on the B-36 at 22,000 feet in an AD Skyraider. *["Letters," April, p. 8]* Isn't that our A-1?

Well, in 1958 I attempted to intercept a B-36, inbound to North Africa, in an F-86D, with afterburner blazing, and staggered out of the sky at 48,000–49,000 feet, while that big dude cruised blissfully overhead, somewhere above 50,000 feet!

I suspect our Navy friend happened upon a B-36 during descent. No prop job was gonna catch a B-36 at high altitude cruise, much less make a vertical gun attack. And I'm a 5,600 hour fighter type, not a bomber guy.

Lt. Col. Jack Doub,
USAF (Ret.)
Valdosta, Ga.

If the B-36 had been at operational altitude (B-36 was designed as a high altitude bomber) the AD Skyraider could not have made an intercept. When I flew B-36s in the mid-1950s, the Ground Control Intercept controller would request us to descend so that the fighters could make an intercept. This filled the requirements for the controller, fighter pilot, and out gunners.

Vincent J. Markalonis
Las Vegas, Nev.

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The Chart Page

By Tamar A. Mehuron, Associate Editor

Bird Strike!

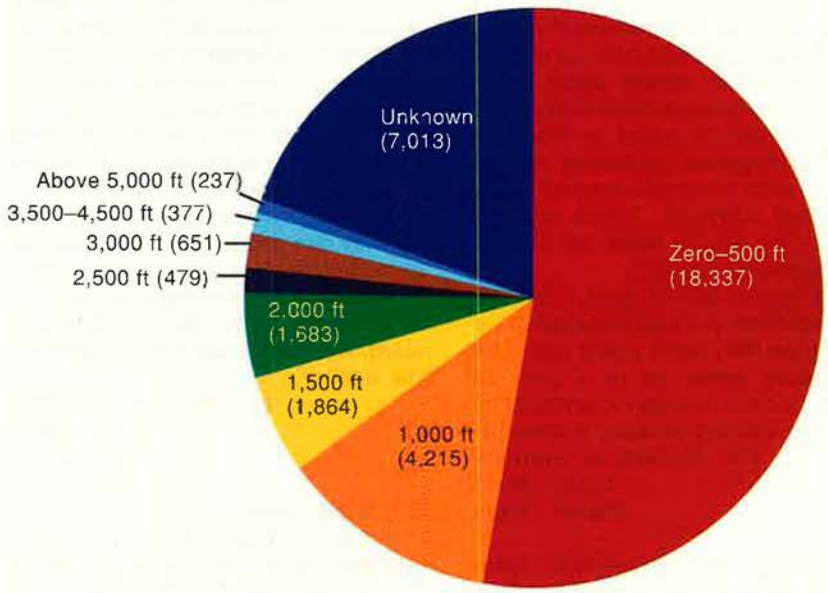
From January 1985 through February 1998, USAF aircraft sustained 34,856 bird strikes, ranging in seriousness from annoying to catastrophic. In the latter category, one would put the September 1995 loss of an E-3 AWACS aircraft and crew as a result of collisions with Canada geese during takeoff in Alaska.

The Air Force reports its aircraft average 2,600 bird strikes per year, at an average annual cost of $38 million. Some warn that the problem is growing. Strikes have increased with the growth of bird populations, an outgrowth of vigorous enforcement of environmental and wildlife laws in recent decades.

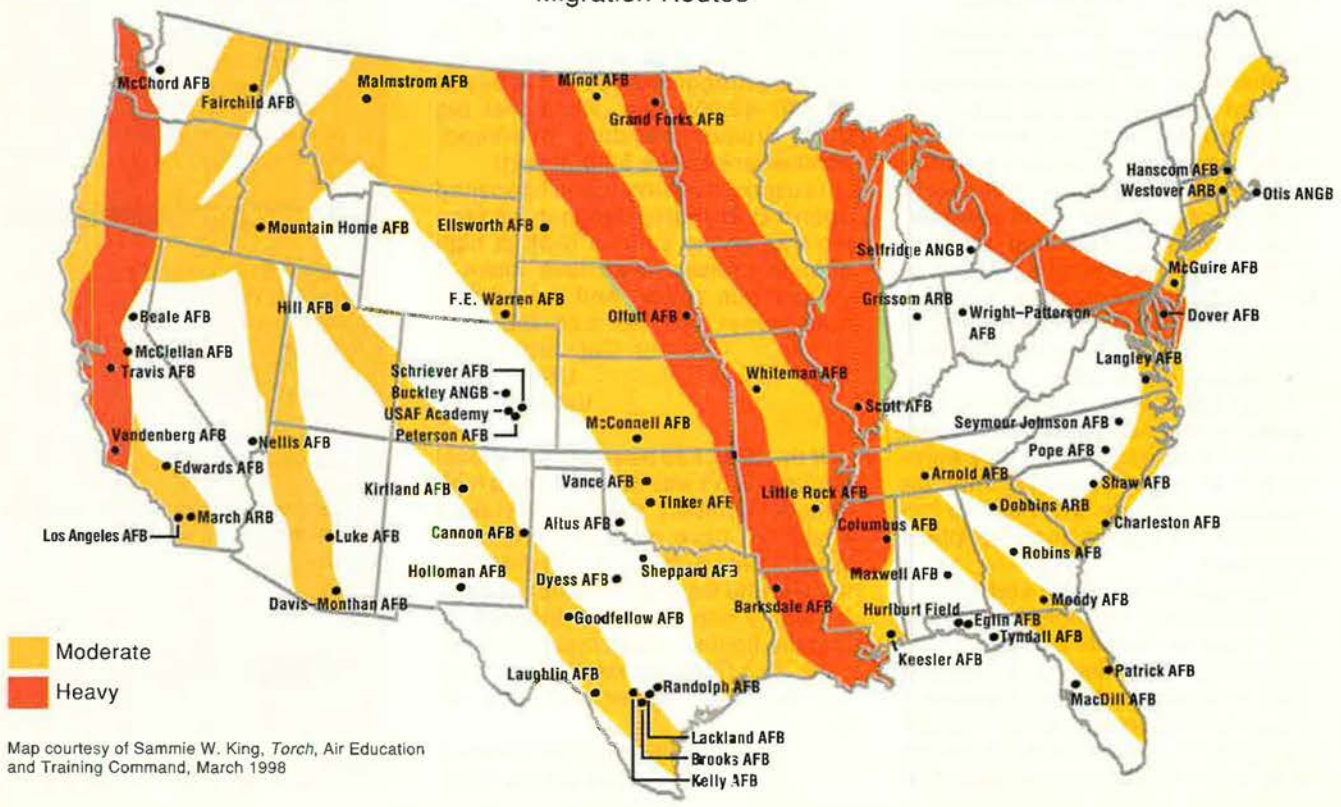
At some bases, Air Force officials release falcons to drive off large flocks. Elsewhere, officials use remote-controlled model aircraft broadcasting bird of prey sounds to help clear the area of big birds.

Source: USAF

Danger at All Altitudes
(USAF Bird Strikes, 1985–February 1998)



Migration Routes



Map courtesy of Sammie W. King, *Torch*, Air Education and Training Command, March 1998

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Aerospace World

By Peter Grier

F-22 Production Decision Delayed

The Pentagon on April 15 announced it expects to delay approval for production of F-22 fighters by one year because of concern that the new air superiority fighter has not yet undergone enough testing.

Two production models due to be built this year will become preproduction vehicles. The go-ahead decision on the full line of 339 F-22s now will likely not come until December 1999.

"We're not delaying the program; we're delaying the [management] decision point" to begin low-level production, said Jacques S. Gansler, the undersecretary of defense for acquisition and technology. "There are no problems with this program."

Earlier this year the General Accounting Office reported that the Pentagon intended to make a production decision on the F-22 with only 4 percent of scheduled tests completed. Such a decision was unwarranted in light of engineering problems that delayed production of test models, said the GAO.

Members of Congress were annoyed, and some, such as Sen. Carl Levin (D–Mich.), considered a legislative delay in the program. Such a delay might have broken the Air Force's tight cost-cap contracts with manufacturer Lockheed Martin and could have added billions to the program's fixed $62 billion cost.

The decision to switch this year's F-22 production to test models, instead of full-up models, could still increase the airplane's nearly $190 million unit cost, said officials.

Ryan Sees "Strong" Support for F-22

Gen. Michael E. Ryan, Air Force Chief of Staff, maintains that Congress will fully fund the F-22 fighter program in this year's defense spending bill, despite appearances that support is softening among lawmakers.

In Washington, Ryan told the Defense Writers Group on April 21, "I think we have very strong support for the F-22 on Capitol Hill with the members. Some are saying that we are going to have a fight. I have not gotten that from the leadership in Congress. I get from the leadership in Congress that they are behind the F-22."

He added: "We [the Air Force] don't see any major problems with the program."

The F-22 program got a show of support a few days later from seven former secretaries of defense, who signed a joint letter urging Congress and the White House to fully fund the Air Force's fighter program.

"Serious threats to American air superiority may arise sooner [than anticipated], and the nation's security cannot tolerate a loss of command of the air," the former officials wrote in an April 27 letter. "Congress and the Administration must focus on this fundamental reality and fully fund the nation's only truly stealthy air superiority fighter."

The seven signatories and the administrations in which they served are: James R. Schlesinger (Nixon and Ford); Donald H. Rumsfeld (Ford); Harold Brown (Carter); Caspar Weinberger (Reagan); Frank Carlucci (Reagan); Dick Cheney (Bush); and William Perry (Clinton).

DoD photo by A1C Greg Davis

A ceremony at Prince Sultan AB, Saudi Arabia, marked the transition of the electronic combat mission from USAF's EF-111A Raven to the Navy's EA-6B Prowler. The Air Force retired the last of its EF-111s May 2 and inactivates the 429th Electronic Combat Squadron, Cannon AFB, N.M., June 19.

DoD Selects Firms to Modernize Military Health Care Systems

To update the aging information technology systems at military health care facilities worldwide, the Defense Department has awarded contracts with a potential total value of $2.5 billion to seven firms.

Contract recipients will perform work at hundreds of military hospitals, clinics, and other treatment facilities around the world.

The modernization is to occur over the five-year life of the contracts and address numerous technical deficiencies—everything from outmoded medical logistical systems to inefficient tools for military doctors to share patient information.

The firms are BDM International, Computer Sciences Corp., Litton/PRC, Science Applications International Corp., Electronic Data Systems Inc., International Business Machines Corp., and American Management Systems Inc.

At Ramstein AB, Germany, in April, USAF Chief of Staff Gen. Michael E. Ryan addressed an audience of more than 450 guests after his induction into USAFE's Order of the Sword. It is the highest honor enlisted members bestow on a leader.

Peters Promotes "Superbases"

The Air Force needs to shutter unnecessary installations and concentrate resources on superbases to help ease its high operations tempo problem, according to acting Secretary of the Air Force F. Whitten Peters.

When a squadron deploys for the Persian Gulf or Bosnia, the people left at home have to pick up the slack in what has suddenly become an inadequate base structure.

"We have people at home working 12-hour days, and it's not only security forces. There are the medical crews, the computer folks, ... a whole range of specialties across the base," Peters told Air Force News Service in mid-April.

A round of closures would put more personnel on bases from which forces deploy, cutting workload for key personnel and easing support for air expeditionary forces.

"That's absolutely critical to us for improved retention and quality of life," Peters said.

The servicewide objective is for airmen to spend no more than 120 days per year away from home on deployments. Peters said that the Air Force had made good progress toward that goal until recent large deployments to Southwest Asia.

Tricare Problems Cited

Tricare health services are important to keeping today's personnel satisfied with their careers, and DoD has been making progress in that area after a slow start, according to the Air Force's top civilian official.

F. Whitter Peters said that implementation of the new managed care program has been uneven to date. His sense is that the program has been most successful on the West Coast, where health maintenance organizations are well-established. It has similarly been working "fairly well" in the Southeast and central Mideast, he said.

In Montana, South Dakota, and swaths of Texas, however, Tricare has had trouble finding enough health care providers in the civilian community. "That service has been slow and difficult," he said.

Slow payment from the government to providers has been another Tricare problem. "That pace has picked up dramatically," Peters said. "About 80 percent of payments are now made within 21 days."

Underfunding and "Ugly Animals"

The chairman and leading members of the House National Security Committee called for reopening negotiations on last year's balanced budget agreement so defense spending can be increased.

In an earlier statement, the committee chairman, Rep. Floyd D. Spence (R–S.C.), said that all the services have "substantial underfunded requirements" totaling more than $58 billion over the next five years.

However, Senate leaders said the idea was not politically realistic.

"I'd like more money for defense," said Senate Majority Leader Trent Lott (R–Miss.), "but I think we should stick with the balanced budget agreement, because if we open that gate all kinds of ugly animals will come through."

Lockheed Martin, Northrop Grumman Defend Merger

Stung by the Department of Justice's move to block their merger on antitrust grounds, Lockheed Martin and Northrop Grumman insist the combination still has merit. They will fight the government in court, firm officials say.

"We stand by our conviction that this merger is in the best interests of taxpayers, customers, suppliers, ... and the armed forces of the United States," said Lockheed Martin CEO and then–Vice Chairman Vance D. Coffman and Northrop Grumman CEO

Photo by Robbin Cresswell

SrA. Steven Lopez and Barry, a Belgian Malinois, negotiate an obstacle course at the first DoD Worldwide All-Services Military Working Dog competition at Lackland AFB, Texas, in April. They won top honors in explosive detection.

Kent Kresa in a joint statement March 23.

Pentagon and DoJ officials worry that the proposed Lockheed/Northrop marriage would discourage competition by producing a firm that would take up 25 percent of the Pentagon's purchasing budget. They are particularly concerned about maintaining price combat in key subareas of military technology, including radar and aircraft defensive electronics.

The government has rejected Lockheed Martin's previous offer to divest up to $1 billion in assets from the new firm, saying the move would be insufficient.

But in an 80-page response to the Justice Department's filed lawsuit, the companies hold that rather than limiting competition the real effect of the merger would be to enable them to compete with the two other defense industry giants, Boeing and Raytheon, on a level playing field.

Boeing, for instance, is currently seven times larger than Lockheed Martin in aircraft and twice as large in military aircraft, pointed out the firms' response. Raytheon is twice as large in defense electronics.

If allowed to carry through its divestiture plan, Lockheed/Northrop would account for less than 25 percent of defense electronics purchased by the government, pointed out the two suitors. And firm officials said that their merger should have little impact on the airframe market, as Northrop Grumman has already dropped behind in that race.

"The last prime military production aircraft contract awarded to Northrop Grumman was for the B-2 bomber in the early 1980s, and the last production aircraft has been delivered," pointed out Kresa. "So, even if new programs were to emerge early in the next century, Northrop Grumman will not be in a position to compete with Lockheed Martin or Boeing as a prime contractor."

Still, testimony from the Secretary of Defense that the merger might harm national security would be a powerful weapon for the government in court, say analysts. The trial is currently set to begin Sept. 8, though that date could be moved up.

B-2 Fares Well in Weather

During the recent 12-day deployment of two Block 30–model B-2 bombers to Andersen AFB, Guam, at least one of the Spirit bombers sat in the open at all times.

Because of weather damage to Guam hangars, the stealth bomber sat outside, baking in the sun and soaking in Pacific rainstorms. Additionally, Air Force officials reported that most aircraft maintenance, including work on low observable coatings, was performed outdoors.

Crews from the 509th Bomb Wing, Whiteman AFB, Mo., tested every aspect of B-2 operation and maintenance during the new bomber's first sustained operation from a forward location. USAF rated the operation a success.

The B-2s accumulated 90 hours' flying time, while keeping up a 100 percent sortie success rate. Missions included the first operational drop of a full load of 80 Mk 82 500-pound bombs. The weapons pounded a tiny 500 foot-by-2,400 foot islet located north of Guam.

Newer Block 30s have proved to have fewer maintenance problems than older Block 20 B-2s, officials said. Block 30s average between 10 and 15 "write-ups" per mission, as opposed to 40 for Block 20s.

Pilot Shortage Looms

If current departure trends continue, the Air Force will be more than 800 pilots short by the Oct. 1 start of Fiscal 1999, USAF Chief of Staff Gen. Michael E. Ryan told Congress in March.

At the beginning of Fiscal 1998 the service had 14,165 pilots. But as the exodus to airline jobs continues, Air Staff projections now put the 1999 number at 13,288.

"In pilots we have a very, very difficult prospect ahead of us," said Ryan.

Air Force planners are already putting together a notional strategy for handling the shortage. Combat units would get top priority. Training slots would remain fully filled.

But the Air Staff and other management desk units might feel the pinch. Nonrated personnel may fill some jobs that previously would have gone to those with flying experience.

Eventually a flow of new pilots should cut the shortage. While the Air Force trained 654 new pilots in Fiscal

Board Partly Clears Airman in F-15 Crash

An Air Force review board has partly cleared the name of an F-15 mechanic who committed suicide in 1996 rather than face a court-martial for a fatal repair error.

Evidence showed that TSgt. Thomas P. Mueller did not perform the botched control rod maintenance at issue, although he did check the work and found nothing wrong.

In addition, several previous incidents in which other mechanics made the same mistakes should have alerted the Air Force to a potential problem, according to the board.

"We did not think Mueller was totally free of all responsibility," said Lee Baseman, chairman of the correction board. "But it was our view that he was unduly carrying the burden for a series of missteps that went back at least 10 years."

In May 1995, Mueller and TSgt. William T. Campbell were carrying out maintenance on an F-15C based at Spangdahlem AB, Germany, when Campbell accidentally crossed flight control rods while reinstalling them. Mueller did not catch the miscue, which made the airplane impossible to control in the air. It subsequently crashed, killing Maj. Donald G. Lowry Jr.

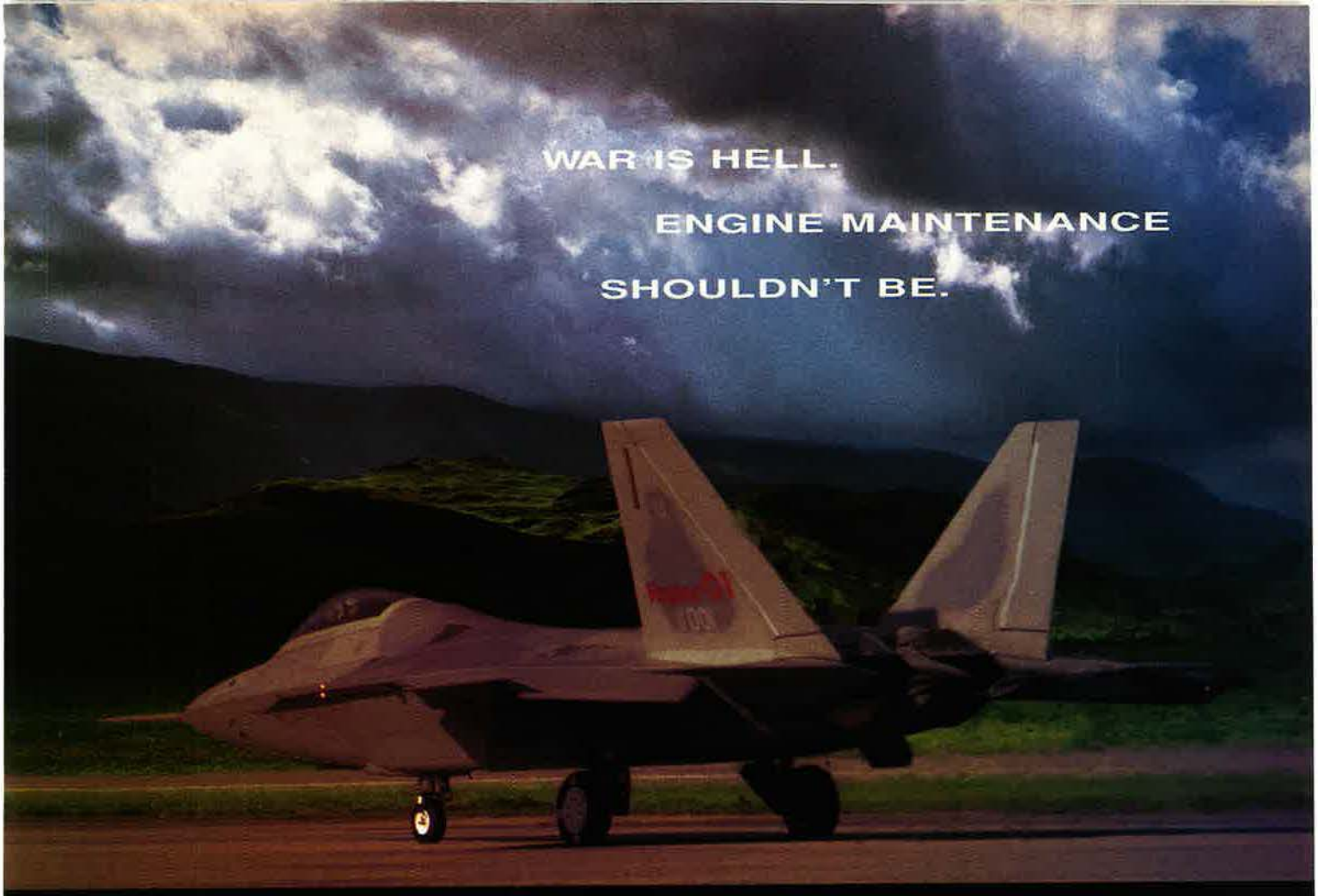
Air Force authorities charged Mueller and Campbell with dereliction of duty and negligent homicide. Mueller shot himself in October 1996 during a break in court proceedings. Commanding officers then accepted Campbell's request for administrative separation, on grounds that the interests of the service would be best served by bringing the tragic case to a swift conclusion.

Similar crossed-rod cases occurred at least twice before the Spangdahlem crash, noted the review board—once in 1986 and again in 1991. But in both instances the problem was caught before takeoff.

In its conclusions, the board stated, "After the Black Hawk shootdown [in 1994], the demand for accountability for this accident may have been pursued with such zeal as to leave fairness and equity behind. The fatal crash was a tragedy waiting to happen, yet the decedent was singled out to pay for an accident that could have been prevented anywhere along the 'chain of events' had any of the numerous individuals involved made different decisions.

"Most disturbing was the way the Air Force leadership allowed this case to be handled. The Air Force's representatives resisted the inclusion of potentially exculpatory evidence from the review and report and managed to have a good deal of it excluded from consideration in the pending trial."

Following the death of Lowry, the Air Force took steps to prevent such a mix-up from happening again. The control rods are now color-coded to ensure proper installation, and the maintenance technical manual warns against the mistake. All flight control systems must now be checked any time the control rods undergo maintenance.



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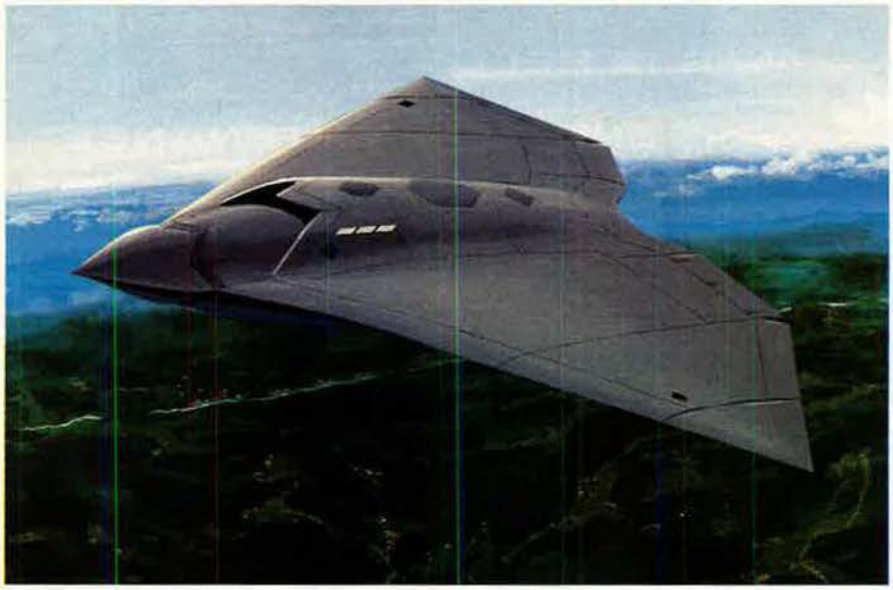

DARPA and the Air Force announced April 16 selection of four contractors to demonstrate the technical feasibility of an Unmanned Combat Aerial Vehicle: Boeing, Lockheed Martin, whose UCAV artist's concept is shown here, Northrop Grumman, and Raytheon.

1997, the projected figure for 1998 is 900, and for 1999 it is 1,025.

AWACS Land in Japan

Completing a journey begun six years ago, two gray Boeing 767s emblazoned with the Japanese rising sun, and topped with the distinctive dome of the AWACS radar system, landed at Hamamatsu AB, Japan, March 24.

The E-767 AWACS are a new air defense platform created solely for the Japan Air Self Defense Force. President George Bush and Japanese Prime Minister Kiichi Miyazawa paved the way for the purchase of the two airplanes, with two more to follow, in a historic 1992 agreement.

The airplanes will give Japan the ability to better monitor the many sea-lanes surrounding the island nation.

"Our existing radars do not give us the ability to monitor low-flying aircraft, either over land or sea, so we had to provide long range coverage that would fill in this gap," said Col. Kunio Orita, JASDF AWACS program manager.

Aircraft testing will continue for several months. The new aircraft are expected to be operational in late 1999.

Lockheed Martin Wins JASSM Battle

The Air Force named Lockheed Martin the winner of the competition to design and eventually produce the Joint Air to Surface Standoff Missile on April 9.

Lockheed will now receive some $36 million to continue program definition and risk reduction on its JASSM design. Engineering and manufacturing development funds will follow.

Current plans call for the Air Force to buy 2,400 of the stealthy, standoff weapons. The recent Long Range Airpower study recommended an increase in that number. If plans for JASSM production do increase, the program could eventually be worth more than $3 billion.

At no more than $400,000, Lockheed Martin's price-per-missile on its bid was well below the government's $700,000 target, said Air Force officials. They also felt the Lockheed design, which uses folding wings and an infrared seeker derived from the Army Javelin missile, was superior to the one offered by competitor Boeing.

While a Boeing protest may slow the program somewhat, the Air Force is eager to field the weapon, as it will fill a gaping hole in the service's smart-weapon arsenal.

The JASSM design is deadly enough that it can destroy 90 percent of its target set in less than 10 days, said Air Force officials. Current missiles would take twice as long to destroy only half the target allocation.

Hamre Says Defense Reform on Track

Five months after its inception the Defense Department's new business reform plan is on track and saving money, said Deputy Defense Secretary John J. Hamre March 17.

For instance, about 800 of the 1,000 employees slated to be cut from the Office of the Secretary of Defense

Rumor About Loss of Vet Benefits Is Just That—Rumor

The rumor spread with explosive speed through veterans groups this spring: Any vet who does not register with a Veterans Affairs hospital by Oct. 1 will lose all VA medical benefits for life.

The sign-up was necessitated by a bill signed by President Clinton, so the rumor went. It added that the new law barred the VA from notifying veterans about the change and that vets needed to get the word out fast, via word of mouth, letter, or the Internet.

The rumor was not true. But the press of calls from ex–service members worried about their health care besieged the VA, which has had to add a section to its Web site called "Setting the Record Straight" to help untangle the mess.

Here's the real story. There are big changes under way in how the VA interacts with its beneficiaries, mandated by the 1996 Health Care Eligibility Reform Act. The act sets up a seven-level priority system to help manage veterans' health care resources. There is an Oct. 1 deadline for vets to get in touch with their VA offices and enroll in the new system.

However, a vet who has not registered by the deadline does not lose eligibility. Vets can enroll at any time they need health care. In addition, the VA will automatically enroll anyone who has received care at a VA medical site since October 1996.

VA officials have no idea where the rumor got started. One theory goes that it began with an e-mail from an ex-Marine named John sent to American Legion members around the country. Another traces it to a former Navy man from Minneapolis.

But one thing is clear: The ability of the Internet to quickly disseminate information, even false information, means that the VA will probably be fielding angry questions about the October changes for months to come. Already the VA has received "thousands of calls, to every facility in the country," according to spokesman Gary Caruso.

under the Defense Reform Initiative have been identified, said Hamre. The promised 1,000-person reduction represents a one-third cut in OSD manpower.

Efforts to switch all Defense Department purchases under $2,500 from paper-intense contracts to credit cards are also moving forward. Such micropurchases represent 70 percent of all DoD procurement actions, Hamre noted.

"We set a goal of trying to get 90 percent of all of our micropurchases done with credit cards by the year 2000. We're going to make that by this year—two years ahead of schedule," said Hamre.

The defense initiative calls for increased competition in contracting out jobs. Plans call for opening 120,000 functions to competition over the next four years.

"This year we will hold 30,000 competitions," said Hamre. "That's about 10 times as many as we had last year."

The Pentagon has also made inroads in its effort to get rid of excess infrastructure. The 1999 budget request contains money for knocking down some 8,000 obsolete buildings. If carried out, the demolitions will save big money on maintenance, heating, and cooling costs.

Progress is less evident in the effort to get Congress to agree to further rounds of money-saving base closings. "I'm still hopeful we will get permission, but it's an uphill fight. That's certainly going to be the hardest battle," said Hamre.

Blackbirds Fly Into Sunset

Defense Secretary William S. Cohen approved the permanent retirement of USAF's legendary SR-71 Blackbird reconnaissance aircraft. He took the step March 6.

The service owns six of the extremely fast, high-flying airplanes. Two are operational models returned to service in 1995 at the direction of Congress. Two, including a trainer model, are on loan to NASA for its high-altitude testing program. The other two aircraft remain in storage.

Though the SR-71 was developed in the 1960s, it still holds major aerospace records, including these three:

- Speed over straight course: 2,193 mph, July 28, 1976.
- Speed over closed circuit: 2,092 mph, July 27, 1976.
- Altitude in horizontal flight: 85,069 feet, July 28, 1976.

SR-71 reconnaissance systems that are still usable will be transferred to other Air Force programs or to NASA. All unneeded airframes will be sent to

USAF photo by Margo Wright

Amn. Melissa Mudro, 552d Training Squadron, Tinker AFB, Okla., provides information on the fit of a traditional flight suit to clothing designer Katie Leahy. A Joint-service "fit team" asked female crew members at Tinker to compare prototype women's flight suits with the unisex uniform they wear now. Input from the women at Tinker and other bases will influence the final design.

Air Force bases for display or to the Aerospace Maintenance and Regeneration Center at Davis–Monthan AFB, Ariz.

Ryan Links Modernization, Readiness

Today's modernization spending will pay off in tomorrow's readiness, Gen. Michael E. Ryan, Air Force Chief of Staff, said during an April visit to Ramstein AB, Germany.

"In one more year, the average age of a United States Air Force aircraft is going to be 20 years old," said Ryan. "That's getting up there."

Service planners must not only modernize the force, said Ryan, but also make sure they can upgrade weapons systems so that they will be around for a long time. Outsourcing and privatization should yield some of the dollars needed, said the Chief.

"We looked out into the future and realized we weren't prepared to sacrifice readiness or decrease the effort we were putting into quality of life," he said. "Our alternative was to become more efficient with our resources."

F-16 Pilot Killed in Crash

The pilot of an F-16C was killed April 22 when his fighter crashed at a bombing range 15 miles west of Carrizozo, N.M.

The pilot, 1st Lt. Patrick Potter, 150th Fighter Wing (ANG), Kirtland AFB, N.M., was taking part in a mission qualification bombing training flight at the time.

The cause of the crash was not announced. The Air Force has launched an investigation.

Cohen Decides to Open Tomb of Unknowns

In an unprecedented step, Defense Secretary William S. Cohen on May 7 ordered exhumation of the Vietnam veteran in the Tomb of the Unknowns at Arlington National Cemetery based on circumstantial evidence that the remains are those of a missing USAF pilot.

A Pentagon panel's four-month probe confirmed evidence that indicates the unknown warrior may well be 1st Lt. Michael J. Blassie, an Air Force pilot who was shot down over South Vietnam on May 11, 1972. It is also possible, though less likely, that the remains are those of Army helicopter pilot Capt. Rodney L. Strobridge, who was shot down on the same day.

Blassie's family had appealed to the Pentagon to remove the remains and subject them to mitochondrial DNA tests.

The opening was to begin May 14. A DoD spokesman said, "If we can identify the remains now, we have an obligation to try."

Joint STARS Line May Be Near End

Unless the Pentagon decides to buy more than 13 Joint Surveillance Target Attack Radar System aircraft, the Air Force will soon begin shutting down the airplane's assembly line, according to Air Force Chief Ryan.

No. 13 JSTARS will roll onto the line this year. Like its predecessors, it will be a used Boeing 707 that will be remanufactured and outfitted with powerful ground-scanning search radars.

But unless more money is forthcoming for long-lead purchases, the Air Force will have to begin the process of ending its JSTARS support. Continuing to pay overhead costs, without orders on the books, would be folly in today's budget environment.

The original JSTARS buy of 19 was reduced to 13 last year. At the time, it appeared that NATO might order up to six of the aircraft. But the order was not forthcoming, and now DoD is weighing its options as it plans its future arsenal of battle management

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surveillance aircraft. More JSTARS purchases are an option—as are increased purchases of unmanned aerial vehicles or business-jet sized airframes outfitted with radar equipment.

News Notes

■ TRW and Boeing announced March 17 that they will team up to compete against Lockheed Martin for development of the Space-Based Laser Readiness Demonstrator. TRW will be the prime contractor, with Boeing the sub on "Team SBL." In the past, TRW did subcontract work for the Lockheed Martin effort.

■ While returning from a California airlift mission March 6, a C-130 crew from the 61st Airlift Squadron, Little Rock AFB, Ark., found two men stranded in the snow-covered mountains of northern Nevada. Responding to a radio call from air traffic controllers, the C-130 searched for and located a single-engine Cessna that had crashed about 120 miles north of Las Vegas. The pilot and his passenger were eventually rescued unharmed despite the accident and severe local weather.

■ Wright–Patterson AFB, Ohio, will host the second annual US Air Force Marathon on Sept. 19. The 26.2-mile race will feature four types of competition: wheelchair, relay, team, and individual.

■ The winners of the 42d annual Hennessy Trophy awards for excellence in Air Force food service programs are Hurlburt Field, Fla., in the multiple dining facility category, and Andersen AFB, Guam, in the single dining facility category. The awards, sponsored by the National Restaurant Association, Society for Foodservice Management, and the International Food Service Executives Association, recognize the whole scope of food preparation programs, from excellence in kitchen work and service to sanitation and facility repair.

■ Sheppard AFB, Texas, celebrated the completion of the Air Force's first and only AC-130 gunship trainer March 24. Previously, a much-needed AC-130 had to be taken out of operation for 282 days per year to serve as a training tool for students on the ground. The new semitrailer-mounted ground trainer—designed and built by 82d Logistics Group technicians at a cost of $1.2 million—will free up actual aircraft for missions around the world.

■ A New York Air National Guard ski-equipped LC-130 unit inherited a historic mission March 26 when it assumed program responsibility from the Navy for US airlift support for science in Antarctica. The 109th AW has operated in polar environments since 1975. Its new role calls for it to move people and cargo to research sites throughout the Antarctic continent, including the US Amundsen–Scott South Pole Station.

■ The nation's newest airborne nuclear command post, the Navy's E-6B TACAMO, or "Take Charge and Move Out," aircraft, made its first operation flight April 3. By October, a fleet of 16 Navy E-6Bs will assume the workhorse nuclear command-and-control mission from Air Force Looking Glass EC-135 aircraft, which fulfilled the purpose for nearly 40 years.

■ The Air Force Association has named seven communications–electronics systems noncommissioned officers and airmen as the 1998 Team of the Year. The team members are TSgt. Keith A. Wright, 218th Engineering Installation Squadron, Missouri Air National Guard; TSgt. Scott D. Senick, 38th Engineering Installation Group, Tinker AFB, Okla.; SSgt. Michael D. Fleming, 938th EIS, McClellan AFB, Calif.; SSgt. Dean H. Aspinwall, 838th

EIS, Kelly AFB, Texas; SSgt. Scott J. Oatley, 668th Logistics Squadron, Kelly AFB; SrA. Michelle D. Romak, 738th EIS, Keesler, AFB, Miss.; and SrA. Corey M. Eckrich, 211th EIS, Pennsylvania ANG.

■ As of April 1, the Tricare National Mail Order Pharmacy program was fully operational in all areas where the Tricare managed care program is itself up and running. When the final Tricare regions stand up in the Northeast and Middle Atlantic states, the mail order program will extend to those regions, too, said Tricare officials April 7.

■ Streets on Wiesbaden AB, Germany, were recently marked with new signs bearing the names of 30 US service members and one American civilian who died during the Berlin Airlift. The signs were relocated from nearby Lindsey AS, which closed in 1993.

■ Secretary of Defense William S. Cohen announced the winners of the 1998 Commander in Chief's Award for Installation Excellence on April 14. They are Ft. Carson, Colo., Marine Corps Base Camp Lejeune, N.C., Fleet Activities Yokosuka, Japan, Spangdahlem AB, Germany, and Defense Contract Management Command Long Island, N.Y.

■ Air Force officials named the Alaska Rescue Coordination Center, a partnership between 11th Air Force and the Alaska Air National Guard, as the top blue-suit rescue coordination center in the nation on April 15. Among its actions last year, the center directed the first rescue mission into Russia, to save the life of a Russian villager in Inchoun, and it coordinated the medical evacuation of 14 people following a mountaineering accident on Ptarmigan Peak near Anchorage.

■ Logisticians from the 437th and 315th Logistics groups, based at Charleston AFB, S.C., have won the Air Force's Daedalian Award for the service's top maintenance units of the year. The achievement marks the first time an Air Mobility Command unit has earned the honor.

■ Lockheed Martin has established a new line of its venerable Atlas launch vehicles powered by Russian RD-180 rocket engines. The new Atlas III models will be available by the end of the year, pending the outcome of static tests, said the company.

■ The nation's newest B-2 bomber is set to be named *Spirit of Mississippi* in a ceremony at the Air National

Senate Says Yes to NATO Expansion

The Senate on April 30 voted 80–19 to let the United States go along with a plan to add Poland, Hungary, and the Czech Republic to the rolls of the North Atlantic Treaty Organization.

The 80 yea votes were 14 more than the two-thirds majority needed for ratification of NATO's first expansion into former Warsaw Pact territory. Moreover, the door has been left open for other former Soviet satellites to join.

President Clinton, in a statement from the White House, said, "The message this vote sends is clear: American support for NATO is firm, our leadership for security on both sides of the Atlantic is strong, and there is a solid, bipartisan foundation for an active US role in the world."

Critics warn the expansion will bring huge costs to US taxpayers, aggravate tensions with Russia, and increase risks of US involvement in a major confrontation. By voting to expand NATO, the Senate has made a solemn pledge that the US will treat an attack on any of those countries as an attack against the United States.

Guard base at Jackson IAP, Miss., on May 23. The bomber, which will be based at Whiteman AFB, Mo., is the 19th B-2 to be named.

■ Gen. Walter Kross, commander in chief of US Transportation Command and commander of Air Mobility Command, will retire Sept. 1. He assumed his present posts in July 1996. DoD announced May 12 that Lt. Gen. Charles T. "Tony" Robertson Jr., AMC's 15th Air Force commander, had been nominated to replace Kross.

■ The Pentagon on April 24 announced that President Clinton has nominated Vice Adm. Richard W. Mies to become commander in chief, US Strategic Command, succeeding USAF Gen. Eugene E. Habiger, who has said he will retire Aug. 1. Mies is currently serving as commander, Submarine Force, US Atlantic Fleet, and commander, Submarine Allied Command, Atlantic.

Obituary

Alfred U. McKenzie, a former bomber pilot with the all-black Tuskegee Airmen who took part in a pathbreaking protest against racial segregation in the military during World War II, died in Clinton, Md., on March 30. He was 80.

In April 1945, McKenzie and fellow members of the 477th Bombardment Group were at Freeman Field, near Seymour, Ind., preparing for deployment to the Pacific. A controversy arose over denial of the use of the Freeman Field officers' club to black officers—so the base commander ordered all personnel to sign a directive which in essence would have guaranteed the club remained segregated.

McKenzie and 103 other black officers refused to sign. They were considered to have conspired to revolt and were shipped to Godman Field, Ky., for courts-martial.

The Army Air Forces eventually dropped the case, as military regulations of the time called for such clubs to be open to all races. Reprimands were placed in the officers' files, however.

The Air Force began removing the reprimands from the files in 1995. McKenzie, who later in life fought against discrimination in Government Printing Office employment, was interred in Arlington National Cemetery. ■

Senior Staff Changes

RETIREMENTS: Lt. Gen. Kenneth E. **Eickmann,** Brig. Gen. Stephen E. **Kelley,** Brig. Gen. Leon A. **Wilson** Jr.

NOMINATIONS: To be **Lieutenant General:** Donald L. **Peterson,** Robert F. **Raggio,** Michael C. **Short.**

To be **Brigadier General:** Lee P. **Rodgers.**

CHANGES: Brig. Gen. (sel.) Russell J. **Anarde,** from Cmdr., 91st SW, AFSPC, Minot AFB, N.D., to Dep. Dir. for Ops., Natl. Mil. Cmd. Center, Jt. Staff, Pentagon ... Brig. Gen. Thomas L. **Baptiste,** from Dep. Cmdr., Canadian NORAD Region, Winnipeg, Canada, to Cmdr., Cheyenne Mountain Ops. Center, NORAD/USSPACECOM, Cheyenne Mountain AS, Colo. ... Brig. Gen. Leroy **Barnidge** Jr., from Vice Cmdr., San Antonio ALC, AFMC, Kelly AFB, Texas, to Cmdr., 509th BW, ACC, Whiteman AFB, Mo.

Brig. Gen. (sel.) Robert Damon **Bishop** Jr., from Dep. Dir. for Ops., USTRANSCOM, Scott AFB, Ill., to Cmdr., 437th AW, AMC, Charleston AFB, S.C. ... Maj. Gen. Richard E. **Brown** III, from Dir., Log., PACAF, Hickam AFB, Hawaii, to Dir., Jt. Matters, DCS, Air & Space Ops., USAF, Pentagon ... Brig. Gen. Richard B. **Bundy,** from Dep. Dir., Prgms., DCS, P&P, USAF, Pentagon, to Dir., Manpower, Orgn., & Quality, DCS, P&P, USAF, Pentagon ... Brig. Gen. Hugh C. **Cameron,** from Cmdr., AF Center for Quality & Management Innovation, Randolph AFB, Texas, to Vice Cmdr., 9th AF, Shaw AFB, S.C. ... Brig. Gen. (sel.) Richard L. **Comer,** from Cmdr., 16th SOW, AFSOC, Hurlburt Field, Fla., to DASD for Policy & Missions, Spec. Ops./Low Intensity Conflict, OSD, Pentagon ... Maj. Gen. (sel.) Daniel M. **Dick,** from Dir., P&P, ACC, Langley AFB, Va., to Vice Cmdr., 12th AF, ACC, Davis–Monthan AFB, Ariz.

Brig. Gen. Randall C. **Gelwix,** from Dep. Dir., LL, OSAF, Pentagon, to Dep. Cmdr., 16th AF, USAFE, and Dir., Combined Air Ops. Center, 5th Allied TAF, NATO, Vicenza, Italy ... Brig. Gen. Thomas B. **Goslin** Jr., from Cmdr., 509th BW, ACC, Whiteman AFB, Mo., to Dep. Dir., Prgms., DCS, P&P, USAF, Pentagon ... Brig. Gen. (sel.) Jonathan S. **Gration,** from Cmdr., 39th Wg., USAFE, Incirlik AB, Turkey, to Cmdr., 3d Wg., PACAF, Elmendorf AFB, Alaska ... Maj. Gen. Jeffrey R. **Grime,** from Cmdr., Cheyenne Mountain Ops. Center, NORAD/USSPACECOM, Cheyenne Mountain AS, Colo., to C/S, Allied Forces North Europe, NATO, Stavanger, Norway ... Brig. Gen. David A. **Herrelko,** from Cmdr., Jt. Log. Systems Center, AFMC, Wright–Patterson AFB, Ohio, to Vice Cmdr., ASC, AFMC, Wright–Patterson AFB, Ohio ... Maj. Gen. William T. **Hobbins,** from Dir., Plans & Policy, USACOM, Norfolk, Va., to Dir., Ops., USAFE, Ramstein AB, Germany.

Brig. Gen. (sel.) William F. **Hodgkins,** from Dir., Ops., US Forces Japan, Yokota AB, Japan, to Dep. Cmdr., Canadian NORAD Region, Winnipeg, Canada ... Lt. Gen. (sel.) Hal M. **Hornburg,** from Cmdr., Jt. Warfighting Center, Ft. Monroe, Va., to Cmdr., 9th AF, ACC, Shaw AFB, S.C. ... Brig. Gen. Lawrence D. **Johnston,** from Cmdr., 347th Wg., ACC, Moody AFB, Ga., to Dir., P&P, ACC, Langley AFB, Va. ... Brig. Gen. (sel.) Walter I. **Jones,** from Dir. of Communications & Information, AMC, Scott AFB, Ill., to Dir., C^4, USTRANSCOM, Scott AFB, Ill. ... Brig. Gen. William J. **Lake,** from Cmdr., 3d Wg., PACAF, Elmendorf AFB, Alaska, to Cmdr., 49th FW, ACC, Holloman AFB, N.M. ... Brig. Gen. Dennis R. **Larsen,** from Cmdr., 49th FW, ACC, Holloman AFB, N.M., to Cmdr., 4404th Composite Wg. (Provisional), ACC, Al Kharj, Saudi Arabia ... Brig. Gen. (sel.) Paul J. **Lebras,** from Associate Dir., Ops. for C^2ISR, ACC, Langley AFB, Va., to Vice Cmdr., AIA, Kelly AFB, Texas.

Maj. Gen. John F. **Miller** Jr., from C/S, Allied Forces North Europe, NATO, Stavanger, Norway, to Dir., Plans & Policy, USACOM, Norfolk, Va. ... Brig. Gen. Larry W. **Northington,** from Dir., Manpower, Orgn., & Quality, DCS, P&P, USAF, Pentagon, to Dep. Dir., LL, OSAF, Pentagon ... Lt. Gen. (sel.) Robert F. **Raggio,** from PEO, Fighter and Bomber Prgms., AF Prgm. Exec. Office, Pentagon, to Cmdr., ASC, AFMC, Wright–Patterson AFB, Ohio ... Brig. Gen. Bentley B. **Rayburn,** from Cmdr., 4404th Composite Wg. (Provisional), ACC, Al Kharj, Saudi Arabia, to IG, ACC, Langley AFB, Va. ... Brig. Gen. John F. **Regni,** from Dir. Military Personnel Policy, DCS, Personnel, USAF, Pentagon, to Dir. Personnel Prgms., Educ. & Tng., DCS, Personnel, USAF, Pentagon ... Brig. Gen. Victor E. **Renuart** Jr., from Cmdr., 52d FW, USAFE, Spangdahlem AB, Germany, to Cmdr., 347th Wg., ACC, Moody AFB, Ga. ... Brig. Gen. Regner C. **Rider,** from Vice Cmdr., AIA, Kelly AFB, Texas, to Vice Cmdr., 8th AF, ACC, Barksdale AFB, La. ... Brig. Gen. Steven A. **Roser,** from Cmdr., 437th AW, AMC, Charleston AFB, S.C., to Cmdr., 60th AMW, AMC, Travis AFB, Calif.

Lt. Gen. (sel.) Michael C. **Short,** from Dir., Ops., USAFE, Ramstein AB, Germany, to Cmdr., 16th AF, USAFE, Aviano AB, Italy ... Maj. Gen. Charles J. **Wax,** from Dir., Jt. Matters, DCS, Air & Space Ops., USAF, Pentagon, to Dir., Plans & Policy, USEUCOM, Stuttgart–Vaihingen, Germany ... Brig. Gen. (sel.) Donald J. **Wetekam,** from Dir. of Aircraft, Oklahoma City ALC, AFMC, Tinker AFB, Okla., to Dir., Log., PACAF, Hickam AFB, Hawaii ... Brig. Gen. George N. **Williams,** from Cmdr., 60th AMW, AMC, Travis AFB, Calif., to Dir., P&P, AMC, Scott AFB, Ill. ... Brig. Gen. Rodney W. **Wood,** from Comptroller, AETC, Randolph AFB, Texas, to Dep. Cmdr., AAFES, Dallas, Texas. ■

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At an Air Force Association symposium, USAF leaders consider the future and talk about requirements.

To Provide for a Powerful Force

By John A. Tirpak, Senior Editor

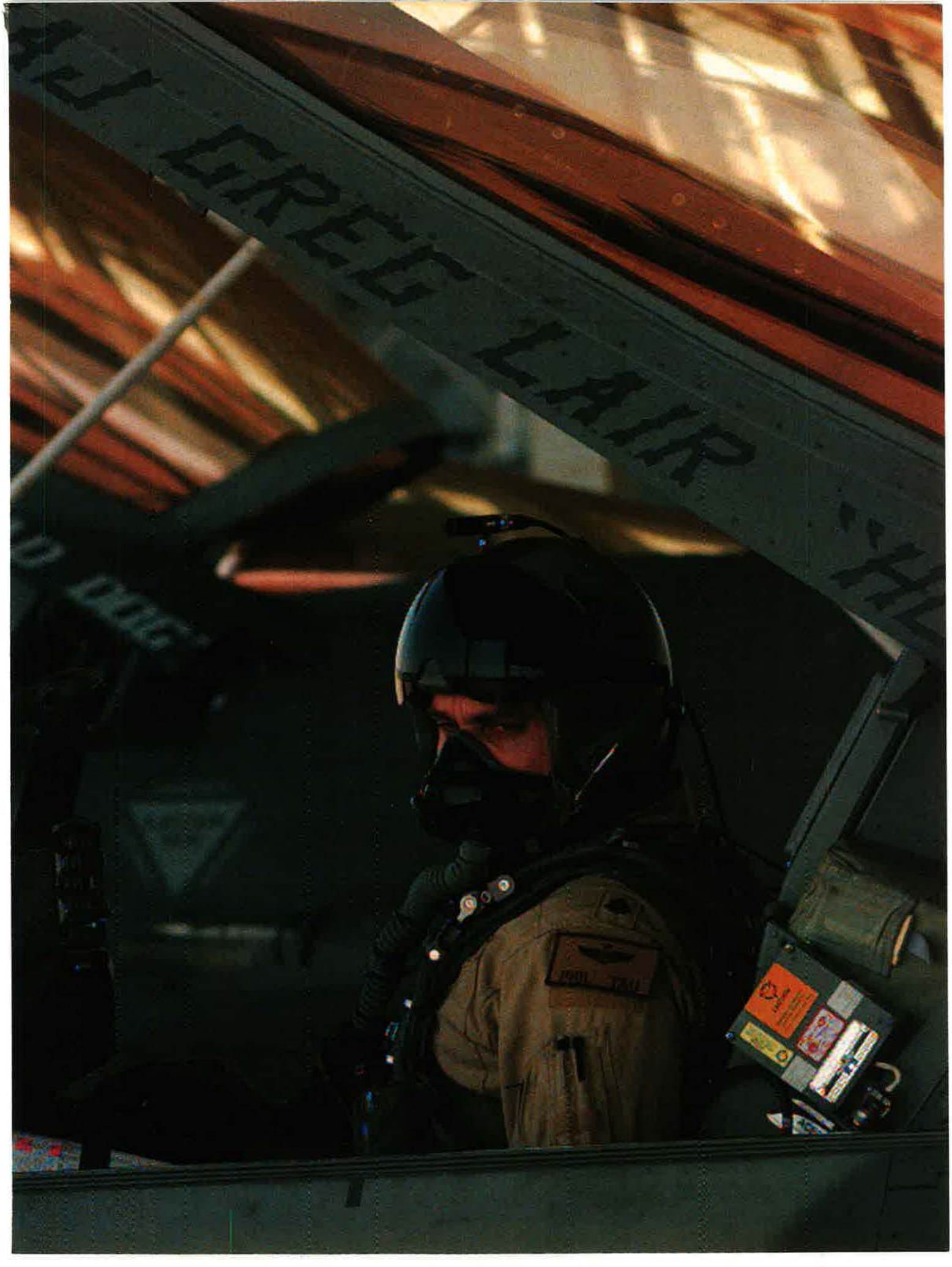
AIR Force leaders came together in February at the AFA's annual Air Warfare Symposium in Orlando, Fla., to forecast a powerful future for the service but only if USAF is permitted now to make the investments—and divestitures—necessary to remain effective. As Air Combat Command chief Gen. Richard E. Hawley said, the Air Force must be "allowed to be efficient."

Acting Secretary Peters

The Air Force must close bases to free up money for badly needed modernization and could do so even if Congress rejects the Pentagon request to permit two more rounds of the Base Realignment and Closure process, acting Secretary of the Air Force F. Whitten Peters said.

"Because we are paying for excess infrastructure, we are skimping on things our troops need today," Peters said. "We are skimping on readiness and ... modernization, and this has got to be reversed."

Using existing administrative measures, "I can close bases today," Peters said at a symposium press conference. Some in Congress undoubtedly would fight back; he noted that the F-22 program had been taken "hostage" several


EJ EREC LAIR

times in the last year by congressional interests angry about recent depot decisions—but he asserted that "you cannot ask people to work the hours they work, fixing airplanes without the parts they need, for the pay they receive, indefinitely. Eventually, the political pain is worth it."

The situation is not yet a crisis, he said, and the Air Force can afford to wait a couple years yet before resorting to acting alone on the base issue. USAF leadership is reluctant to close bases unilaterally because the BRAC process tends to cushion the blow to local communities with economic and transitional assistance.

Peters pressed for the closures, however, because they represent the only way to fund the programs the Air Force needs to remain technologically superior to any potential enemy. The savings from closures "continue year after year," Peters noted, adding that they are "an incredibly important part of the modernization funding" in USAF's future spending plan.

He pointed out that the $5.6 billion the Air Force reaps from having shuttered many facilities in the early 1990s "equates to a three-squadron wing of F-22s. It also equates to the entire effort to develop, build, buy, test, and field seven [Airborne Laser] aircraft. This is not a small amount of money."

The current USAF budget request is "adequate but barely so," Peters said. While "investment" accounts would grow by 15 percent, it comes at the price of "a 22-year low" in military construction, which covers new housing, runway renewal, and building maintenance, among other things.

"We are also ... on the cusp of a serious readiness problem," he asserted. Readiness indicators "are dropping," and he noted a 6.8 percent fall in aircraft mission capable rates since the 1991 Gulf War. Engine maintenance problems are mounting as the power plants age and parts are getting pricier. The average age of USAF aircraft "is approaching 20 years, and in four years, 75 percent of our fleet will be over 20 years old," he said. Meanwhile, despite boosting bonuses, pilot retention continues to slide.

"Disruption," and not just money, is the culprit behind some of the problems, he noted. While base closures save money, they also create turmoil as units and equipment move, hurting productivity.

The numbers are not all bleak, though, and Peters observed that the budget request includes a 3.1 percent pay raise, plans to build or renovate 3,500 housing units, 22 new or upgraded child care centers, and the abolition of gang latrines for airmen. USAF leadership has recognized that quality of life "must be a priority" in funding.

Readiness accounts also got a shot in the arm, with engine upgrades and maintainability improvements targeted. As the engine workforce gets settled, productivity should improve, Peters said.

He and Gen. Michael E. Ryan, USAF Chief of Staff, have launched an effort called "Do-Able Space," a program to identify the key technologies that will be the foundations of a 21st century space force.

In partnership with NASA, the National Reconnaissance Office, and the Defense Advanced Research Projects Agency, USAF will focus on near-term items that will fit in a tight budget. One such item is a space-based global target tracking system—roughly comparable to the JSTARS capability—to be in place by 2004.

Canadian Synergy

The Canadian Air Command's post–Cold War experience has mirrored that of USAF, and it has hammered out an approach to its mission very similar to that of the US Air Force, Canadian Air Command Commander Lt. Gen. A.M. DeQuetteville said.

Canadian air forces have concluded that they, too, should be a "much more global-oriented and less forward-based force." The CAC has taken a 45 percent reduction in people and hardware—largely due to withdrawal from Germany—and is putting greater emphasis on rapid response. Along with other Western air forces, it has "tried to become more deployable" and pushed for a 24-hour response, DeQuetteville explained.

He said a new motto is "If you ain't deployable, you ain't employable."

Moreover, the CAC has attempted to streamline headquarters, put more of its focus on "frontline capability," and gone through the base closure process. Canadian air force operating tempo has likewise increased with a bevy of peacekeeping jobs.

To keep up, the CAC has concentrated on getting a precision guided munition capability onto their CF-18s, which has expanded their capability into the realm of night operations.

DeQuetteville acknowledged that Canadian forces are too small to match all the capabilities of USAF.

"At the end of the day, we in the Canadian air force, like other Western air forces, are going to be even more dependent on US leadership and global security," he said. Canada and other allies "simply will not be engaged in unilateral operations. Interoperability will be the key."

He added that Canada is hoping to work with the US to make an even better fit, not only operationally but because "there is considerable synergy" between "our own strategic plans" and those of the US.

He thanked the leaders of NORAD and US Space Command for having worked "to drag us into the space millennia." Canada will be "users, and not operators," of space assets for some time to come, and he said the CAC is having to "drag the other [Canadian] services kicking and screaming" into the age of space operations. DeQuetteville also said that Canada will attempt to expand its mobility capability by possibly emulating the Civil Reserve Air Fleet program and is developing an information warfare program.

"We've used your policy as a starting point for crafting our own, not surprisingly," he said.

Chief: General Ryan

The Air Force is not properly distributed for the new era of expeditionary missions, which are increasingly its main role in national defense, and must "regroup" to be more effective, Gen. Michael E. Ryan observed.

"Our Cold War concept, as we transition to the two regional war scenario, has ill prepared us" for USAF's new "expeditionary role, which is demanded in these lesser contingencies," Ryan said. Most of the problem, he said, is in being spread too thin at home.

The regular Air Force is down to 12 tactical fighter wings, yet "we are spread over twice that number of bases," Ryan noted. "That leaves us with operational units that lack the depth and breadth for the kind of deployments" that the Total Force is now undertaking, he said.

Since the Cold War ended, USAF has had to beddown at three European sites and seven other countries to maintain commitments to Southwest Asia operations, not to mention additional forces sent to Korea and Latin America.

"All of these come from a support base we have never sized for these expeditionary contingencies," Ryan said.

"We have been taking it quite literally out of hide. Our people have had to manage continued operations shorthanded at home bases while supporting deployed operations. Home bases must still be guarded, remaining aircraft maintained and flown. The families still need medical attention and the remaining forces must still train. In short, we've been sucking it up for about eight years, and that must change."

Seconding Peters' call for more rounds of BRAC, Ryan said the Air Force must "regroup" into fewer home bases. Base closure, he said, is not just about saving money for modernization; rather, "it is an operational necessity."

Ryan said the entire Air Force must develop the "mind-set to be expeditionary," with greater-than-ever attention paid to being "light, lean, lethal, ... so we can move rapidly and efficiently to where we are required, ... not where we live but where we are needed."

The Air Force already has made changes in doctrine and organization in order to better match the needs of US regional commanders in chief, Ryan said, and this will make USAF more responsive to expeditionary demands. "Being an expeditionary aerospace force is what our nation needs our Air Force to do, and over the last eight years, we've adjusted to meeting that need within the margins that we can control."

ACC: General Hawley

The situation in the Air Force regarding morale, pilot and ground crew retention, spare parts, and operating tempo is "very serious," Air Combat Command chief Gen. Richard E. Hawley warned. While he allowed that USAF of 1998 is "not a hollow force," he did assert that the service is "back on a declining slope in readiness" and that, like the crew of the *Titanic* trying to steer clear of the iceberg, it may be hard to turn away from trouble in time, even applying "full rudder."

Giving a rundown of leading readiness indicators, Hawley used phrases like "alarming trends," "not very healthy," and "not a pretty picture."

The Air Force will lose more pilots in the first quarter of 1998, for example, than it will produce through pilot training during the whole year. Only one in five aircraft armament personnel is re-upping at the end of their initial enlistment period. Mission capable rates are going down as aircraft age, and spare parts are running low.

"When you start a trend like some of those we are looking at today, when you see that slippery slope developing, you can't turn it around quickly," Hawley asserted.

He estimates that "we need another $4 [billion] or $5 billion a year to fix the major shortfalls that plague our Air Force." If the other services are similarly strapped—and Hawley bemoaned the fact that the services have been reduced to taking "potshots at one another's core programs" to gain a larger share for their own—the total bill comes to between $10 billion and $20 billion for all of DoD.

Either the Pentagon budget will have to be increased, or "we can be allowed to be efficient," Hawley said. Congress should permit the base closures so badly needed, as well as put an end to what he termed "industrial and civic welfare programs funded through the defense budget."

As a taxpayer, Hawley said, "I would prefer that we be allowed to be efficient."

Even if an immediate infusion of money were applied to the problems, the negative trends would still require "a year or two" to be reversed, he added.

Hawley railed against the slew of studies and analyses suggesting that the US military must be virtually rebuilt to face emerging, but not very clearly defined, threats. He criticized the "well-meaning" people who produce reports suggesting there will never be anymore of the conventional conflicts "that have been so common in this century."

These analysts—he alluded particularly to the National Defense Panel, which produced its analysis of defense requirements late last year—all seem "prepared to trade in the programs that are intended to preserve this nation's ability to wage large-scale conventional conflict" on the assumption that future enemies will not bother to challenge the US in traditional military ways. Abandoning that awesome power, he argued, could "easily tempt a future tyrant to challenge us at a level where the costs are high, indeed."

America's conventional power deters conventional war in the same way that nuclear weapons have deterred nuclear war, Hawley argued, and neither should be given up "for some yet-to-be-defined capability" to counter the anticipated lesser threat, from terrorism to cyberwar.

Instead, he urged "a course that honors the advice given to wing walkers of old: Never let go of that last wire before you have a firm grip on the new."

Hawley advocated a "balanced set of capabilities on land, sea, and in aerospace"—a balance that preserves US conventional dominance.

Arguing that the US military is not neglecting investment in technologies and weapons that will counter the cyber, ballistic missile, and terror attacks of the future, Hawley asserted that a prudent course of spending is already under way. The investment in countermeasures against asymmetrical threats is "healthy" and shouldn't be increased at the expense of readiness and modernization accounts.

A balanced military will have the ability to "evolve gracefully to deal

with those asymmetric but lesser threats ... that are sure to arrive."

USAFE: General Jumper

Making the Air Force truly an expeditionary force will require more than just a "light and lethal" doctrine; it will mean breeding "a new generation of air and space warriors," according to Gen. John P. Jumper, USAFE commander.

He wants a "back to basics" mindset where airmen deploy and "live under the wing, ... where you fly in, you set up the tent city, you live off [Meals Ready to Eat] for a week or so before sustainment airlift starts," Jumper said.

"In this culture you have to get back to some basic institutional values: Every airman a warrior, every airman a sensor," Jumper explained. In his vision, every blue-suiter "will be qualified with a weapon. We will be able to keep and maintain mobility bags, ... understand force protection right down to the task level, where we have in our wallets the card that has the specific things that are expected of each of us in peace and in a crisis."

The unrelenting pace of operations means that the expeditionary force members must be deeply motivated, and the mission—and its importance—"must be kept ... squarely in front of the people we need to do the job."

Jumper said USAF leaders must explain that "just by being there," deployed Air Force personnel are "probably saving a thousand lives a week" in Bosnia or preventing Iraq from developing weapons of mass destruction through operations in Southwest Asia.

Airmen must also be given a sense of tradition and teamwork, Jumper said, so that each knows "the basics of air and space planning and employment" and understands his place in accomplishing the mission.

Jumper asserted that "our young people are yearning for this leadership. They want this leadership. ... It takes their minds off how many body piercings they have and body tattoos and makes them want to be part of my team and not the 'hole-in-the-lip' team." Having the fortitude to put up with hardship deployments will be essential to making the expeditionary Air Force a reality, Jumper insisted.

"It is an important mission," he said. "If we keep it in front of their faces, it will be important to them. And if it is important to them, there is no alternative in the world that can offer them the sense of mission, sense of accomplishment, sense of fulfillment that they will achieve by serving their nation in that capacity."

PACAF: General Myers

Economic turmoil in the Asia–Pacific region has complicated American military relations with affected countries, PACAF Commander Gen. Richard B. Myers said.

Myers argued that US forward presence has been a major factor in ensuring stability and laying the groundwork for prosperity in the Pacific Rim, such that even China has admitted that "they rely on our presence for security and stability and for economies to flourish."

Now that the region is in financial crisis, "our stabilizing presence allows Asia–Pacific countries to focus on the business of political and social restructuring and to support economic development," Myers said. "Our presence has probably never been needed more than right now."

The economic downturn has translated into drastic cuts in Pacific nation military budgets, leading to cancellation of orders for US weapons and withdrawal from planned bilateral and multilateral exercises, Myers noted.

Coupled with operating budget cuts, the arms sales cancellation hurt "the interoperability of our forces," Myers asserted. It also raises questions about the ability of countries like Japan and Korea to pay host nation support bills.

Nevertheless, "now is not the time to abandon our partners over there," Myers said. "We are looking for innovative ways to stay engaged in the region without causing undo hardships on our partners." Some of these involve teleconferencing and computer simulations. Myers will take any useful suggestions that will allow the US to keep its military-to-military relationships with Asia–Pacific countries warm and functional until the economic crisis passes.

Disengagement from the region "could lead to an escalation of the crisis beyond the current economic turmoil," he cautioned. "Our goal is to prevent any military crisis."

Myers also noted that while the notion of the halt phase "and particularly airpower's contribution to it are debated inside the Washington beltway, there is no debate in Korea. Warning times there are very short, so a quick and effective response is absolutely vital.

"Fast-responding airpower is the force immediately available to halt the invading forces," Myers said.

USSTRATCOM: General Habiger

Despite the deterioration of its conventional forces, Russia continues to upgrade and enhance its strategic nuclear weapons, Gen. Eugene E. Habiger, US Strategic Command commander in chief, reported.

"The Russians ... are continuing to put lots of resources into the modernization of their strategic forces," Habiger said. He noted that the new Russian SS-27 ICBM was declared operational late last year. In addition, a new class of Russian ballistic missile submarine and a new sea-launched ballistic missile for it are expected to be in service in 2005, and the Russians are "investing quite a bit of money in a new air launched cruise missile" for their bomber force.

Meanwhile, the US has no plans for any significant investments in new strategic weapons, though Habiger said there should be a "funding wedge" beginning in 2008–10 to replace the Minuteman III. In the interim, the Minuteman force will get new motors and an upgraded guidance package which will keep them "good until about 2020 or so," Habiger noted. The Navy has doubled the service life of its Trident ballistic missile subs to 40 years, and Habiger said the B-52 force will last well into the 2030s with vigilant maintenance. Because of the shift to the cruise missile mission, the B-52 is not badly stressed and has a lot of structural life remaining, he said.

The B-52's "age" of about 14,500 flight hours compares very favorably with the Boeing 757 and 767, which, though considered "pretty new airplanes," average 26,000 and 20,000 hours, respectively, he pointed out.

Still, Habiger asserted that the lack of any new developments in strategic forces means "we have put our industrial base at risk, and we must ensure that the expertise and the capacity to sustain these systems and to develop follow-on systems at the appropriate time is not lost."

aero space force

"You will notice the growing use of the word 'aerospace' among the general officers here. We all prefer aerospace to air and space force because it captures the seamless nature of the vertical dimension and highlights that it is one environment. Because of our commitment to integrate all the elements of aerospace force, I am not satisfied that the only thing that holds air and space together is a conjunction."

—Gen. Michael E. Ryan, USAF Chief of Staff

He also cautioned against the emergence of China as a nuclear threat, for though China is "not an enemy ... not a foe," it does have the fourth largest economy in the world and a quarter of the world's population.

"They are modernizing their strategic forces, and they have the potential to become a global peer competitor in the next 10 to 15 years," Habiger said.

He said he sees no imminent threat from Russia and is heartened by the openness of Russia to allow US scrutiny of some of its most sensitive nuclear facilities. He also expects that the Russian Duma will ratify the START II treaty and will "immediately want to go to START III," which would reduce the two sides to 2,000--2,500 warheads. Such would probably require "some decrement in at least two legs" of the Nuclear Triad, particularly "our ICBM force," he said.

Habiger also predicted Russia would seek a further reduction—a START IV—but that it would take a long time to negotiate, since it would reduce the US and Russia to the nuclear levels maintained by France, China, and the UK, and they would likely be included.

Habiger observed that those now seeking the abolition of nuclear weapons forget that US national policy calls for just that. Under the Nuclear Nonproliferation Treaty, the US agrees to the goal of "total elimination" of nuclear weapons but only "given the proper preconditions." Habiger said he personally feels it will be "difficult, if not impossible, to get that genie back in the box." But the "glide path" of reductions the US is now following with Russia is "appropriate" and "makes the world safer," he asserted.

USTRANSCOM and AMC: General Kross

The shift to an expeditionary nature will put new pressures on the Air Force's mobility fleet, and Gen. Walter Kross, USTRANSCOM CINC and Air Mobility Command commander, argued for the "nuts and bolts" resources to make airlift work in the coming decades.

Kross made his case for "at least another squadron" of C-17s to flesh out the strategic airlift fleet. These would be "over and above the currently planned 120 in order to handle our special operations requirements, which are simultaneous with our major theater war requirements." The additional aircraft would have to be "factored in sometime in the future."

He also pitched for his plan to reengine and upgrade the C-5 fleet in order to obtain the kind of reliability experienced with the KC-10 fleet. USAF should not "walk away from" an aircraft with 80 percent of its structural life left, Kross said.

Either way, Kross insisted that AMC needs 260 big airlifters to do the job. "Our analysis and our experience show us that if we have fewer than 260 wide-body T-tails, we lose the flexibility to do our jobs as well as the capacity to do [them] on time."

Kross also introduced a plan that would standardize the C-130 fleet—now at five types and, with introduction of the J model, six—into two versions: the C-130J and a yet-to-be-defined C-130X. The X model would be a standard configuration of upgraded E and H versions with new systems to make them more efficient.

"Upgrades would target the electrical system, avionics, engines, and in some cases structural repairs," carried out over a period of 12 years. The program would pay for itself when measured against the need to stay current with international avionics standards and the reduced maintenance time and costs that would follow.

"The trick is how and when," Kross said.

He also said a program is in the works to help retain pilots coming up on retirement in a "career transition program, linking our mobility flying career with a follow-on commercial aviation career." Definitive plans are "very close on this one," Kross promised.

AMC is also pushing for more generous enlisted flight crew compensation, with the idea to shift it onto a career enlisted flight incentive pay system "that would look very much like the officer system." The command has "pushed to double [enlisted] hazardous duty incentive pay."

Kross also hailed quick action and top-level support for the Global Air Traffic Management upgrade, which will make the airlift and tanker fleet compliant with new international avionics regulations. Without GATM, airlift would be restricted to certain altitudes and corridors, greatly complicating the flow of cargo. ■

The "Bone" has shifted from nuclear to conventional missions and would be heavily tasked in event of Major Regional Conflict.

By John A. Tirpak, Senior Editor

B-1s for Theater War

A USAF B-1 Lancer flies past USS Nimitz, on deployment in the Persian Gulf last December for Operation Southern Watch.

THE B-1B bomber was the only type of operational Air Force warplane that didn't participate in the 1991 Persian Gulf War, a fact its critics held up as proof that USAF had bought a lemon it was afraid to send into combat. What the critics never mentioned at the time was that, by staying home, the B-1 was doing its job—standing nuclear alert for deterrence against a still very-much-alive Soviet Union. They also neglected to point out that in 1991 the bomber was neither intended for, nor equipped to conduct, conventional warfare.

As the possibility of large-scale conflict with Iraq looms again in 1998, the story is different: If the US gets involved in another conventional war, the B-1B not only will participate, it will play a pivotal role.

The B-1B has been shifted from the nuclear to the conventional mission, thanks to arms treaties, dissolution of the Soviet Union, and re-

DoD photo by PH2 Christopher G Ware USN

Photo by Randy Jolly

This view of the B-1 shows the shaping that helps reduce the bomber's radar cross section. With continued upgrading of avionics and the addition of precision weapons, the B-1 has become a potent force in USAF's arsenal.

structuring of the combat air forces. In addition, the "Bone" (from B-One), as it is known to its crews, is emerging from a five-year program of avionics and weapons upgrades that now makes it one of the most potent systems in the Air Force's conventional arsenal.

In fact, when the recent crisis over Iraq's potential to make weapons of mass destruction began to boil over, two B-1Bs were already forward deployed in the Gulf as part of the 347th Air Expeditionary Wing, ready to deliver a heavy strike if the order came. As a new generation of precision weapons becomes available in large quantities, the B-1B will become even more formidable.

In a halt phase scenario, a situation in which enemy armored columns are on the move, two B-1Bs, armed with Sensor Fuzed Weapons, theoretically could destroy hundreds of tanks in a single pass. Though it is not a "stealth" platform in the same sense as the B-2 bomber, the B-1B's radar cross section is sharply reduced from that of even most fighter aircraft, allowing it to play a role early in the air campaign, say officials.

Ten Times Better

Gen. Richard E. Hawley, head of Air Combat Command, noted, "When the B-1B force is fully matured, with all these modifications incorporated, and fully equipped with all these families of precision and near-precision weapons, it will be 10 times more capable—as measured by the number of targets that we can destroy—than the bomber force that we started with."

The upgrade effort has proven to be "a pretty amazing leverage on our investment dollars," he observed.

During the past few years, B-1Bs have deployed to Korea, Guam, and the Persian Gulf region and played in numerous Red Flag, Maple Flag, Cope North, and similar exercises. Its aircrews have largely rewritten the book on how the B-1B is employed in combat, emphasizing the conventional role and the synergy between the fast bomber with reduced radar signature and smaller strike airplanes.

The decision to shift the B-1's role came shortly after the Gulf War. That conflict proved, among other things, that the lines between strategic and tactical targets had become permanently blurred. The formation of Air Combat Command—unifying the forces and personnel of Strategic Air Command and Tactical Air Command—put this into organizational practice. A logical next step was to equip the B-1 with the weapons and systems it needed to play a role in regional conflicts.

Money was short, however. The end of the Cold War had brought stiff reductions in the funds available for upgrades and research and development. The solution, formalized in 1993, became known as the "flyable reserve."

Maj. J.C. Valle, a B-1 pilot and ACC's chief of tactics development for the airplane, explained that the flyable reserve or "attrition reserve" concept became possible when the US embraced the assumption that the early to mid-1990s would be a period of fairly low risk for a large-scale conventional or nuclear war. That risk assessment allowed USAF "to remove from the books" a portion of the bomber force, which, though it would still exist, would not be counted as part of the combat inventory. No pilots or crew chiefs were assigned to these airplanes, and spare parts were not purchased for them.

"They were put in caretaker status," Valle said. "We'd fly them. ... You couldn't tell a regular 'Bone' from an 'attrition reserve' one, but we didn't budget" for the operation and maintenance costs of operating them. Spare parts were available for a certain number of the aircraft, said Valle, which were "cycled in and out of the flying inventory by tail number," so that the fleet aged at the same rate in terms of hours flown, hours between overhauls, etc.

The CMUP

At the time, the Air Force had on hand 96 B-1Bs, of which 74 were "operational" and 22 were allocated to training, test, and depot maintenance. The number of operational bombers was reduced to 53. (A similar reduction effort covered the B-52 program.) In time, 18 B-1Bs were assigned to the Air National Guard. Savings on personnel, spare parts, fuel, and other operating costs flowed into the Conventional Munitions Upgrade Program.

The CMUP is an ambitious effort that has already equipped most of the B-1B force with significant new near-precision weapons. With the arrival of the Joint Direct Attack Munition and others in the new family of standoff weapons, the B-1B will have the capacity to deliver massive numbers of munitions with almost the accuracy of Laser-Guided Bombs. All B-1Bs will be equipped with the new family of precision munitions by around 2004.

Converting the B-1B to the conventional role has been a gradual process, beginning in 1993 and culminating last October, when the 7th Bomb Wing at Dyess AFB,

Texas, flew the last nuclear mission with the Bone. During the last five years, the employment concept for the B-1B and its training syllabus have changed radically, according to Col. Glenn Spears, 28th Operations Group commander at Ellsworth AFB, S.D.

The training emphasis has changed to emphasize operations "within a composite force," Spears said. "We're more fluid, ... more flexible."

In the days of the nuclear role, B-1B crews trained on very long, fairly static missions, "single ship, practicing threat reactions," Spears noted. Today, the B-1B sortie is typically a two-ship formation, "working a bombing range and dealing with all sorts of surprises."

"If we simulate that a threat has come up ... we practice evading the threat and altering the route," with the prime objective of getting to and away from the target safely. Because the B-1B is so valuable an asset, the mission commander is charged with ensuring that it returns, even if it means passing up the target until conditions are more favorable. If there's no way to "safely get my package out," the B-1B will forgo its target and "I'll survive to fight another day," Spears said.

In the plan for the nuclear mission, the bombers would have only enough fuel for a one-way trip along a carefully prescribed course. In the conventional role, with mission length shorter and tankers available, there's a good deal more flexibility to try things a different way, Spears added.

Photo by Randy Jolly

In a tight turn over the South Dakota countryside, this B-1 from the 28th Bomb Wing, Ellsworth AFB, pulls a bit of contrail. Swing wings and powerful engines provide the B-1 with fighter-like maneuverability.

Like a Fighter

He explained that crew training emphasizes "defensive maneuvers and advanced handling of the aircraft," which does not necessarily mean low-level flight. The B-1B, with its swing wings and powerful engines, can perform the type of violent maneuvers one would not expect of such a large aircraft. Gen. Michael E. Ryan, USAF Chief of Staff, recently described it as being "like a very large fighter."

"The B-1B wings train our crews to use the full safe envelope of the aircraft's capabilities," Spears noted. "There's no doubt that it's a bomber, but it's a very maneuverable bomber."

Part of the training involves maneuvering to avoid surface-to-air and air-to-air missiles. Pilots are also now equipped with Night Vision Goggles; the cockpit has been changed to accommodate the NVG devices. Some have argued in favor of equipping the B-1 with a forward-looking infrared system like LANTIRN or Pathfinder, but so far there are no plans to install such a capability.

Nowadays, B-1 training sorties last about 4.5 hours. Bones from Ellsworth typically work the Hayes or Powder River Military Operating Areas in Montana or the Utah Test and Training Range. The sorties start out with 45 minutes of aerial refueling, followed by ingress to the range and about an hour's worth of work on the range as a two-ship formation.

On the UTTR, the B-1s can get immediate feedback on the accuracy of their bombing by using special instrumentation and a special scoring system there. The range also offers the capability for the B-1Bs to go against a variety of simulated electronic threats.

The results have been impressive. "Our precision with the Mk 82 [500-pound bomb] is just as good as the F-15's," Spears boasted.

Photo by Ted Carlson

A Total Force aircraft, the long-range, multirole B-1 is also operated by the 184th Bomb Wing (ANG) at McConnell AFB, Kan., home to this Bone, and the 116th Bomb Wing (ANG) at Robins AFB, Ga.

Photo by Randy Jolly

The Defensive Systems Operator suite is the focus of many upgrades. Block B improvements included the Synthetic Aperture Radar and Defensive Countermeasures System. Block F will be a Defensive Systems Upgrade.

Every month, crews typically get four sorties of four to five hours apiece. When deploying to exercises such as Red Flag, there are typically more sorties but of shorter duration. Crews also get from two to four sorties a month in the Weapon System Trainer at Ellsworth, for a grand total of about seven to nine missions a month—a figure Spears said is about right for maintaining proficiency. Weapon System Officers can train in the WST independently of the pilots or in conjunction with them.

While the B-1s do work in packages of all sorts, they have not as yet flown with B-2s, which also work in those ranges, Spears noted.

Spears said crews with the B-1B have an operating tempo now which is "like any other combat unit; we're very busy." The deployment tempo is not yet the same as one might find in an F-16 squadron, but Spears expected that it could "tick up" as regional commanders in chief become aware of what the B-1B can really do and start asking for it.

Spears noted that the B-1B training syllabus has changed substantially from what it was in the days when B-1s were lashed to the Single Integrated Operation Plan for nuclear war. Crews train for high-, medium-, and low-altitude missions, depending on the anticipated threats, such as surface-to-air missiles, anti-aircraft artillery, and enemy fighters.

Package Deal

The two-ship formation is not the preferred means of attacking a conventional target, Spears observed. "I want to strike as a package," bringing along F-15s for fighter cap, F-16CJs with HARM missiles for Suppression of Enemy Air Defenses, some F-16s as bomb droppers, and some F-15Es for precision weapons drop, he said. "I can fly by myself," but he added, "I'm better in a package." Two B-1Bs could deliver 168 500-pound bombs or 60 cluster bomb dispensers with high speed and excellent accuracy, he noted.

For a deployment to a forward location like Korea, three B-1Bs typically will be dispatched, with two being operational and one a spare.

Last year, 10 B-1Bs deployed to RAF Fairford, UK, to train with RAF Tornados and US strike airplanes in an exercise called Central Enterprise. The exercise allowed the B-1B crews to become familiar with an area they don't normally fly in, as well as to try their hand at a theater missile defense counterforce mission in the Netherlands. In conjunction with F-15Es, the B-1Bs struck at simulated Scud missile launchers.

The B-1B has participated in Red Flag exercises, but ACC is trying to get the airplane involved in more theater exercises to demonstrate to regional commanders in chief what the capabilities of the airplane are and the contributions they can make to US–alone or coalition efforts.

All B-1Bs were designated as "Block A" models before the CMUP began. The first stage of the upgrade—Block B—gave the Bone an improved Synthetic Aperture Radar, as well as some tweakings to the Defensive Countermeasures System, which improved its maintainability and "reduced the false alarm rate," Valle reported. The Block B upgrade reached the field in 1995.

The next stage, Block C, gave the B-1B its first weapons upgrade, equipping it to drop the CBU-87 Combined Effects Munition, the

DoD photo by SSgt. Troy J. Selby

A1C Corey Futch from the 28th Bomb Squadron, Dyess AFB, Texas, moves a bomb into position for loading, during a Red Flag exercise at Nellis AFB, Nev., last August. Block D upgrades now under way equip the B-1 with JDAM.

CBU-89 Gator, or the CBU-97 Sensor Fuzed Weapon.

The latter weapon is a hybrid smart munition; dropped like a bomb, it dispenses submunitions which seek out armored vehicles and destroy them with a shaped charge. *[See "The Devastating Impact of Sensor Fuzed Weapons," March, p. 28.]*

Block C also provided a modified 10-station module, or bomb rack, which allows the airplane to carry larger munitions in its three bomb bays: 10 of the CBU–series weapons in each bay. It also provided an improvement to the AN/ALQ-161A Defensive Avionics System.

DoD photo by SSgt. Troy J. Selby

"Complete Confidence"

Valle acknowledged that the B-1B took some deserved criticism for the performance of the defensive avionics early in its deployment but that the Block C upgrade removed any doubt as to the Bone's ability to penetrate and survive in hostile airspace. "Honestly, now, I have complete confidence" that the defensive avionics will "detect and put on the screen" all threats to the airplane, he said. All B-1Bs are at least up to the Block C configuration.

Photo by Randy Jolly

Formidable on its own or in a group, the B-1 is part of USAF's Air Expeditionary Wing, the 366th Wing at Mountain Home AFB, Idaho (above), and works in concert with F-16Cs, F-15C/Ds, F-15Es, and KC-135s.

The next big upgrade—under way now—is the Block D stage, which equips the B-1B fleet with the 2,000-pound JDAM. The JDAM can be a standard bomb kit or a BLU-109 penetrator, which can go through multiple layers of reinforced concrete and explode at a preset level. The Block D also gives the B-1B the capability for Global Positioning System navigation and weapons cuing; a faster and more powerful computing and ground moving target indicator gives the B-1B a mini–Joint STARS capability to watch vehicles on the move.

The Block D is "pretty advanced stuff," Valle said, noting that a B-1B can observe the direction of enemy movement, then zip ahead to take out a bridge, choke point, or mine a pass to stop its progress.

Tests of the Block D configuration are under way at Edwards AFB, Calif., and the first operational versions are expected to reach Ellsworth AFB in October. The entire fleet should be up to the Block D configuration by the end of 2000. Congress, acting on comments by former Chief of Staff Gen. Ronald R. Fogleman, added funds to the USAF budget two years ago to accelerate the fielding of the Block D upgrade by two years.

Now being defined is the Block E, which will upgrade what Valle admits are "the pretty miserable 128K computers" in the Bone. The B-1B's seven computers will be replaced with four, and the airplane will be equipped to carry 24 of the Joint Air to Surface Standoff Missile, or JASSM, and 30 of the Wind-Corrected Munitions Dispenser. The WCMD—called Wick-Mid—allows the B-1B to drop bombs from higher altitude. The WCMD uses inertial navigation to steer the bomb back toward its target if winds blow it off course. Higher altitude will give the B-1B protection from many types of ground defenses, such as anti-aircraft artillery and small surface-to-air missiles. The Block E may be fielded as soon as 2001.

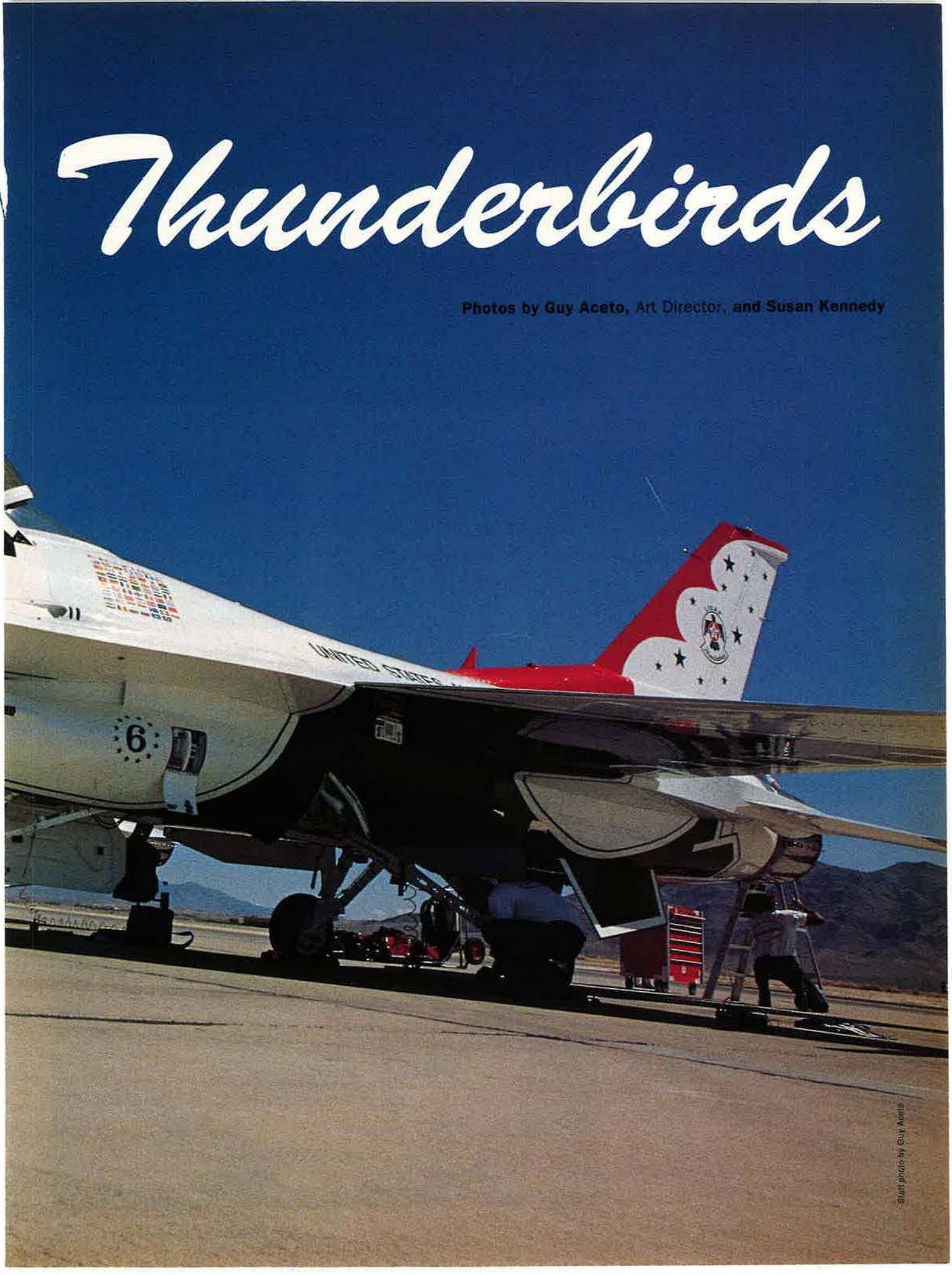
A possible Block F would give the B-1B a Defensive Systems Upgrade, including an improved ALE-50 towed decoy, and a Block G is in preliminary discussion. Because the upgrade program is ongoing—and because funding for the upgrade continues to rely on savings—USAF will continue the flyable reserve concept for the foreseeable future, maintaining about 10 B-1Bs in unfunded status in the out-years, Valle said. ■

Rapid and frequent deployments, 20-hour days, 200 days of TDY a year—it sounds like almost any other squadron in the US Air Force.

The sparkling red, white, and blue Thunderbirds, fresh from a desert practice session, get immediate and comprehensive attention from their tireless crew chiefs and maintainers.

Thunderbirds

Photos by Guy Aceto, Art Director, **and Susan Kennedy**

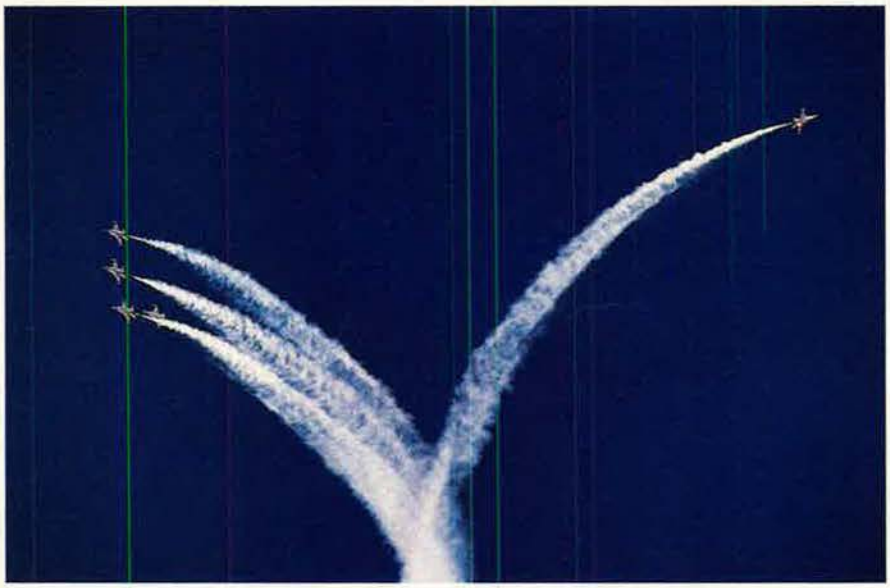


Staff photo by Guy Aceto

This year marks the 45th season of the US Air Force Air Demonstration Squadron, better known as the Thunderbirds. Masters of precision flying, the T-Birds have wowed millions of air show–goers in almost every country with their unsurpassed aerobatics and rock-steady formations. At right, T-Birds fly their trademark "diamond" in front of Sunrise Mountain at their home base, Nellis AFB, Nev. More than just six airplanes and pilots, the Thunderbirds are an organization of 142 aviators, maintainers, and other specialists who handle everything from transportation to air show posters.

Staff photo by Guy Aceto

Photo by Susan Kennedy



Staff photo by Guy Aceto

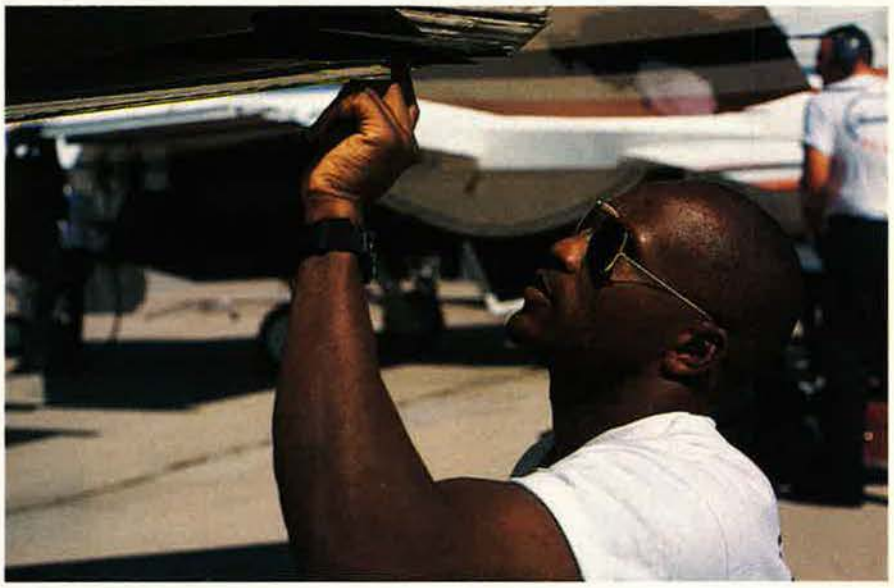
The Thunderbirds take the basic skills taught to every USAF fighter pilot and hone them to perfection, flying far tighter formations than used in frontline service as well as aerial maneuvers like the "Calypso Pass," above.

Founded in 1953 as the 3600th Air Demonstration Unit at Luke AFB, Ariz., the first team comprised seven officers and 22 enlisted members and flew the F-84G Thunderjet. Since then, the T-Birds have flown the F-100, F-105B, F-4E, T-38, and now the F-16. Combat coded airplanes all, the Thunderbird F-16s retain their fighting capability and can be put into operational service with 72 hours' notice—and a coat of dull gray paint.

Staff photo by Guy Aceto

Staff photos by Guy Aceto

As one performance season winds down in November, the team is already gearing up for the next. Winter sees a tough regimen of training and integration of newcomers, comprising nearly half of the pilots and support crew. As in any combat squadron, the crew goes to work when the sortie is over; above, SSgt. Jeffrey York, crew chief on No. 6, and SSgt. Lee Cline, assistant crew chief, tweak "their" jet after practice. They travel with the airplane and keep it working flawlessly on its grueling nine-month air show and open house tour. TSgt. Rick Hines (right), an engine specialist, inspects hinges on the afterburner as part of his postflight ritual.



Thunderbirds employ "smoke" to make it easier for crowds to watch their intricate maneuvers. Actually, the "smoke" is a light oil, contained in a gun-bay drum and fed to a small tube along the afterburner. When released into the jet stream, it vaporizes into a contrail.

Training starts in November. The Thunderbirds start out practicing two aircraft at a time and gradually add more until the team is able to perform the definitive "Thunderbird Close," illustrated by the diamond formation at right. Most practicing is done north of Nellis at Indian Springs Air Force Auxiliary Field, where the actual polishing of the routine takes place. The toughest critics are the pilots themselves, though. Thunderbird No. 7 is flown by Operations Officer Maj. Randel A. Lane, who flies chase and "grades" each maneuver. In his adjunct role as safety observer, Lane travels with the team and grades each performance of the season, pointing out areas needing brushup between shows.

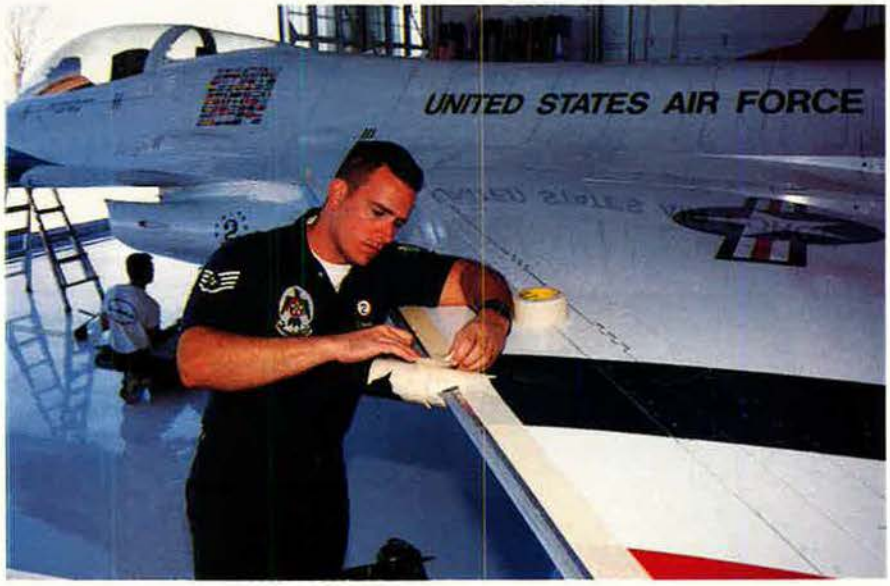
Staff photo by Guy Aceto

Photo by Susan Kennedy

Never has a Thunderbirds show been canceled as a result of mechanical problems, a record of which T-Bird maintainers are justifiably proud. At left, Nondestructive Inspection specialist SrA. April Seymour makes a landing gear bay check. Along with experts in fuel systems, egress, and structural maintenance, she ensures that the airplane is perfect from pitot tube to afterburner. The team has its own Aerospace Ground Equipment, all decked out in shiny red, white, and blue.

Photo by Susan Kennedy

Excruciating attention to detail is one of the hallmarks of T-Bird support personnel, as shown by the touch-up above. At right, SSgt. Gene Viele masks off the leading edge of No. 2's wing so he can buff it to a chrome-like finish. Contrary to popular belief, no special parts are used on the Thunderbirds' aircraft; the distinctive shine is the result of plain old hard work.



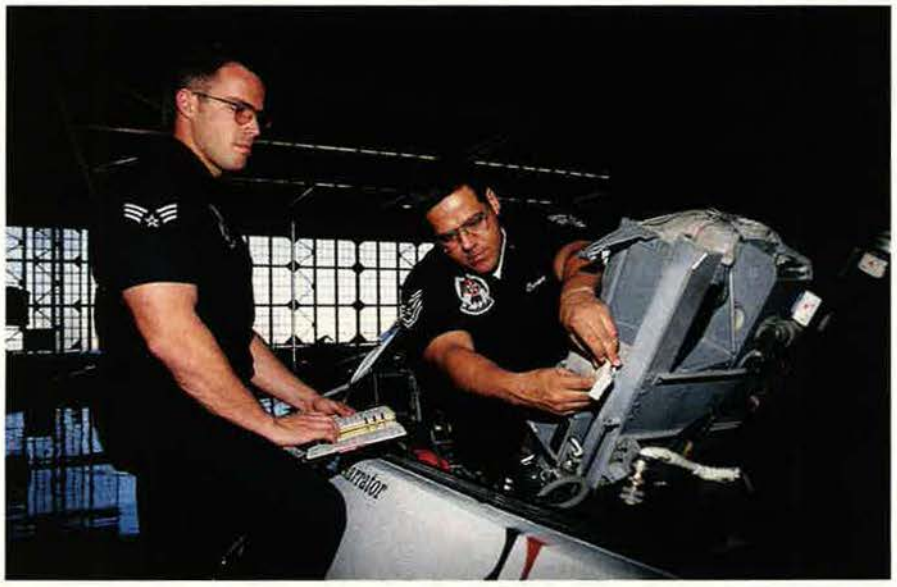
Staff photo by Guy Aceto

Photos by Susan Kennedy

Planning and preparation are the keys to a stellar performance. Here, pilots "fly" the entire show in a miniature dress rehearsal, saying their "lines" and tracing their aerial movements just as they will in the airplane. Suggestions are made and the routine's safety—the No. 1 consideration—is verified.

Conditions at each field usually require the Thunderbirds to make slight variations in the routine. These are painstakingly briefed before each performance. In the picture at left (l–r), Maj. Mark R. Arlinghaus and Maj. Robert P. Givens make a point with the commander of the Thunderbirds, Lt. Col. Brian T. Bishop.

Following along with the brief are (l–r) Capt. Bradley D. Bartels, Maj. Paul E. Krause, and Maj. Dennis J. Malfer. Bartels, Bishop, and Malfer are in their first year with the team. However, after 100 winter training sorties per pilot, everyone—even newcomers—are in top form and ready for the season opener.



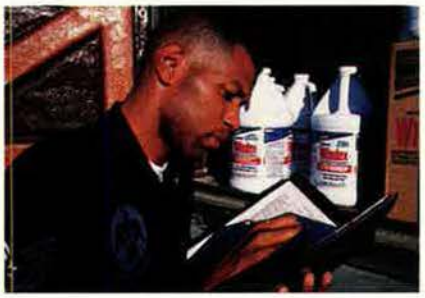
The T-Bird team has its own quality control, inspection, life support, and administrative personnel. Here, SrA. Rick Butz follows the checklist as TSgt. Michael Cortez inspects one of the ejection seats on No. 8. An assignment to the Thunderbirds requires not only high technical expertise but extensive study of squadron history and protocol. Once out on the flight line at a show, everyone is a Thunderbird and must be able to answer questions from the crowd.

A Thunderbirds show generates a considerable requirement for literature and graphics, ranging from brochures and programs to posters and press releases. Having an in-house design and photography shop allows the T-Birds to maintain tight control over their image. Graphic Illustrator SSgt. Gina Vorce, right, checks out the color on a Thunderbirds brochure.

Everything must be double-checked before the team moves on to its next show. Maj. Loren J. Johnson, Thunderbird No. 8, is the advance man and narrator who flies ahead to the site of the next T-Bird performance, making sure all arrangements have been seen to. Below, SrA. Bill Kurek, assistant crew chief on No. 8, packs a travel pod in preparation for the next hop.

Photo by Susan Kennedy

Staff photo by Guy Aceto



Staff photo by Guy Aceto

The Thunderbirds consume vast quantities of glass cleaner, used to polish everything from canopies to pitot tubes. Here, TSgt. Jeffrey Jones, assistant flight chief of the Combat Oriented Supply Organization, checks on stocks of consumables. The COSO makes sure team members have what they need—no matter how mundane—to do their jobs.

What it's all about: inspiring the next generation of USAF volunteers. The autograph being signed here by Arlinghaus and the dazzling flight display may be the sparks that launch the career of a future Air Force crew chief or pilot. Team leader Bishop notes that he wanted to be a Thunderbird "since the third grade," when he first saw them perform.

Photo by Susan Kennedy

Staff photo by Guy Aceto

The Thunderbirds treat their schedule as a series of deployments—shorter ones than average to be sure, but with 200 TDY days a year, no less stressful. Thunderbirds members are volunteers, extremely motivated and justly proud of the work they do. Many enlisted members ask to extend an extra year.

It's not easy becoming a Thunderbird. Bishop noted that the process is highly competitive, requiring recommendations and extensive interviews with team members and commanders. Aspiring Thunderbird pilots must undergo rigorous aerial evaluations, including loops, rolls, and other aerobatics. "I feel very lucky" to have been selected, Bishop said. "This is a great opportunity for me to represent the Air Force and command at the same time."

Photo by Susan Kennedy

Staff photo by Guy Aceto

The Thunderbirds—whether officer or enlisted—are professional, dedicated, hard-working, and highly skilled. These "Ambassadors in Blue" give prospective blue-suiters something to aim for. ■

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Nineteen airmen died in the blast—and the repercussions went on from there.

Khobar Towers

By Rebecca Grant

No one in the 58th Fighter Squadron could go home from Dhahran, Saudi Arabia, until all rooms were clean. The contract airliner was to arrive on June 27, 1996, to fly most of the main body of 100 people home to Eglin AFB, Fla. Six of the squadron's F-15Cs would make the hop across the Atlantic, while the others were to join an Air Expeditionary Force exercise in progress.

It was Tuesday evening, June 25. For two days, personnel from the 58th had been swapping desks and packing their personal belongings, preparing to hand over duties to the incoming 27th FS. Lt. Col. Doug Cochran, the 58th FS commander, was scrubbing the bathroom in his quarters in Building 127, where most squadron members lived. Others lived in Building 131, at the north corner of the Khobar Towers complex, sharing it with a rescue squadron from Patrick AFB, Fla., and people from other units.

Brig. Gen. Terryl J. Schwalier, commander of the 4404th Wing (Provisional), was already packed, ready to leave after the change of command ceremony planned for the next day. Then came the blast. At approximately 9:50 p.m., a truck bomb exploded, throwing the force of more than 20,000 pounds of TNT against the concrete structure of Khobar. By the next day, the Air Force knew the worst. Nineteen Americans had died in the line of duty.

Intelligence Failure?

Initial reports from the scene strongly suggested an intelligence failure was to blame for the terrorist attack. Secretary of Defense William J. Perry declared, "Our commanders were trying to do right but, given the inconclusive nature of the intelligence, had a difficult task to know what to plan for." "We will pursue this," President Clinton pledged. "Those who did this must not go unpunished."

In Washington, officials launched investigations of the Khobar Towers incident specifically and military force

Khobar Towers

protection policy in general. Within three days, Perry had chartered a retired Army officer, Gen. Wayne A. Downing, to do a fast, unvarnished review of the facts. In Congress, the House National Security Committee organized a fact-finding team and had it on the ground in Saudi Arabia within two weeks. Rep. Floyd D. Spence, the South Carolina Republican who heads the House National Security Committee, soon claimed that his staff study found "intelligence failures" at Khobar Towers.

Then, in late August, came Downing with his report, which singled out Schwalier for not protecting the wing. Downing's report took DoD and the entire chain of command to task for failings in its force protection policy. Then the report went on to charge that "it appears that the 'fly and fight' mission and 'quality of life' took precedence over force protection" at Khobar Towers and that Schwalier "did not adequately protect his forces."

Downing's decision to point the finger at Schwalier made light of the idea that there had been an intelligence failure or shortcomings in military-wide policy. "Intelligence did provide warning of the terrorist threat to US forces in Saudi Arabia," Downing said. "As a result, those responsible for force protection had both time and motivation to reduce vulnerabilities."

Ultimately, Downing's accusation led Secretary of Defense William S. Cohen to override two separate Air Force legal investigations which had found that the chain of command did all that could reasonably be expected to protect the airmen at Khobar Towers.

As punishment, Cohen said he was going along with recommendations of the nation's top military officer, Army Gen. John M. Shalikashvili, to stop Schwalier's promotion to major general, announced over a year earlier. "I have concluded that it would not be appropriate to promote Brigadier General Schwalier to the rank of major general," Cohen stated in July 1997. "He's not being made a scapegoat," Cohen said of Schwalier. "He's being held accountable." The action by Cohen played a part in Gen. Ronald R. Fogleman's immediate decision to resign as Air Force Chief of Staff.

In announcing his decisions, Cohen said several security deficiencies stood out: One, he said, was the lack of an effective alarm system to warn of impending terrorist attack. Another was inadequate evacuation planning.

The idea that Schwalier and his wing staff were not motivated or had somehow failed to make Khobar Towers as secure as possible became the dividing line in Washington's reaction to the tragedy and the source of conflict between the Air Force and Cohen. What really happened at Khobar Towers prior to June 25, 1996, however, told a story very different from the quick conclusions of the Downing report. It was the story of a commander whose motivation helped the wing save lives, even in the face of the biggest terrorist bomb ever directed against Americans.

Life at Khobar Towers

The 4404th Wing grew out of the forces that stayed behind in 1991, after Desert Storm, to enforce UN resolutions and the terms of the cease-fire with Iraq. Its combat aircraft patrolled the no-fly zone over southern Iraq as part of Operation Southern Watch. Spread among several operating locations in four countries, the wing was manned by more than 5,000 troops on 90-day rotations. The USAF wing bedded down its tankers in Riyadh, fighters in Dhahran, and other aircraft in Kuwait. When air expeditionary forces deployed to the region they swelled the 4404th to 12 operating sites in five countries.

The 4404th had a reputation as a unit that was almost guaranteed to see action. Wing aircraft participated in strikes against Iraq and on several occasions tallied aerial victories. Air expeditionary forces chopped to the operational control of the 4404th when they deployed to the theater. By 1996, the wing had flown more than 100,000 sorties over Iraq.

Starting in July 1995, the man in charge of the wing was Terry Schwalier, the 12th individual to command the 4404th but the first to be assigned for a full year. With time to concentrate on details, he set out to give the wing more structure in flying operations and in quality of life. Khobar Towers was home to the bulk of the 4404th and served as its headquarters. Over the years, personnel had built a snack bar, tennis and volleyball courts, even a driving range, but the conditions still reminded Schwalier of something out of "M*A*S*H."

Every Friday morning Schwalier gave a "Right Start" briefing to new arrivals. He explained standards and rules and urged them to look at the TDY as a time to improve the place and improve themselves. In the Right Start briefings, "one of my mission bullets was protecting forces in the AOR," Schwalier said. He convened weekly senior staff meetings and made force protection a regular item.

Khobar Towers housed about 3,000 Air Force personnel and several hundred US Army troops. British and French forces also lived in the com-

plex, in their own buildings. Even so, the coalition's buildings took up only a fraction of the high-rises in Khobar Towers. To the south, divided by a fence, many more apartment buildings housed Saudi civilians.

At the northern end of the complex, where US forces lodged, two buildings looked out over a fence and trim parking lot toward a city park with play areas. Private homes stood across the street from the parking lot. A few hundred yards away, a large new mosque was under construction. The fence continued along the complex's eastern side, where a dusty median separated Khobar Towers from another set of high-rises. A tall but slender concrete tower rose out of the median.

Inside Khobar Towers, work was the main preoccupation. Members of the rotating units, strongly encouraged by senior wing personnel, pursued self-improvement in off-duty hours. War college courses were offered and enlisted members studied for promotion tests. Physical workouts filled time, too. The troops frequently played street hockey and joined softball games with American oil workers at the Arabian American Oil Co. compound.

Host Nation Support

Much about life at Khobar Towers depended on the relationship between the coalition forces and their Saudi hosts. The Saudis supplied housing, ramp space, and facilities at King Abdul Aziz International Airport and elsewhere and paid for food, water, and jet fuel for the 4404th's operations and living areas in the country. In return, the Western forces were expected to keep a low profile.

In meetings at 9th Air Force, before his departure, Schwalier learned that getting along with the Saudis was a concern. The Saudis welcomed American forces, but the two sides had never signed a formal Status of Forces Agreement defining the terms of the deal. Managing the differences in culture and perceptions and trying to be good guests were part of maintaining the important regional alliance. In fact, USAF decided to assign the 4404th wing commander and key deputies to one-year positions in part to deepen the bonds with their Saudi counterparts. But the 4404th sometimes had problems with their hosts. "When I arrived," Schwalier recalled, "they had basically brought everything to a stop with respect to letting us do things on our site. Any time we would fix a building or put up a sign, we'd have to get approval from the Saudis." At Schwalier's first meeting with his hosts, Saudi officials lectured him about a long-running dispute over the location of a weapons storage area at the airport.

Later, in February 1996, the Saudis mysteriously denied landing clearances to US aircraft. The aircraft that routinely rotated personnel in and out of Dhahran was denied diplomatic clearance. It landed in Bahrain, where the 4404th had to shuttle personnel from there to Dhahran by C-130. The 58th FS, en route from Eglin, waited with their jets in Europe for a week before receiving permission to land.

Saudi officials sometimes queried changes in fuel requirements when the 4404th went from single-engine F-16s to twin-engine F-15s. Sorting out fuel rations took weeks. Complaints about food peaked when paper clips, hair, and bits of glass were found in food at the Desert Rose mess hall. Contract workers prepared the food, but the Saudis had fallen behind on payments to the contractors. The eruption of three cases of salmonella poisoning in one week convinced the wing commander to call for help. Extra commissary items from 9th Air Force soon improved the situation.

For all that, Saudi Arabia offered the great advantage of being almost wholly free of terrorism. Saudi laws were strict and dissent was rare. The Gulf states, which generously funded religious causes, were seldom targets for terrorists. The kingdom was considered one of the world's safest places for US forces.

The First Bomb Explodes

Then, Saudi peace was shattered by the first terrorist bombing. On Nov. 13, 1995, a car bomb with the equivalent of 200 pounds of TNT exploded in the courtyard of the Office of the Program Manager, Saudi Arabia National Guard, known as OPM–SANG. The explosion killed five Americans and injured more than 30. The perpetrators were arrested by Saudi authorities, who viewed the incident as an aberration, a one-of-a-kind event that was unlikely to recur.

For the US military, though, the Riyadh bomb was a major event. Gen. Joseph W. Ralston, then head of Air Combat Command, and Lt. Gen. John P. Jumper, the head of 9th Air Force, visited the theater in late November and reviewed force protection measures.

US diplomats felt the shock, too. The State Department launched a review of facilities in Riyadh. The embassy requested Mylar for windows of some buildings. The request was denied on the basis that the threat level was not high enough. The OPM–SANG headquarters did win approval to have Mylar installed on windows in its new facility, but the project was not completed until October 1996, almost a year after the Riyadh bombing.

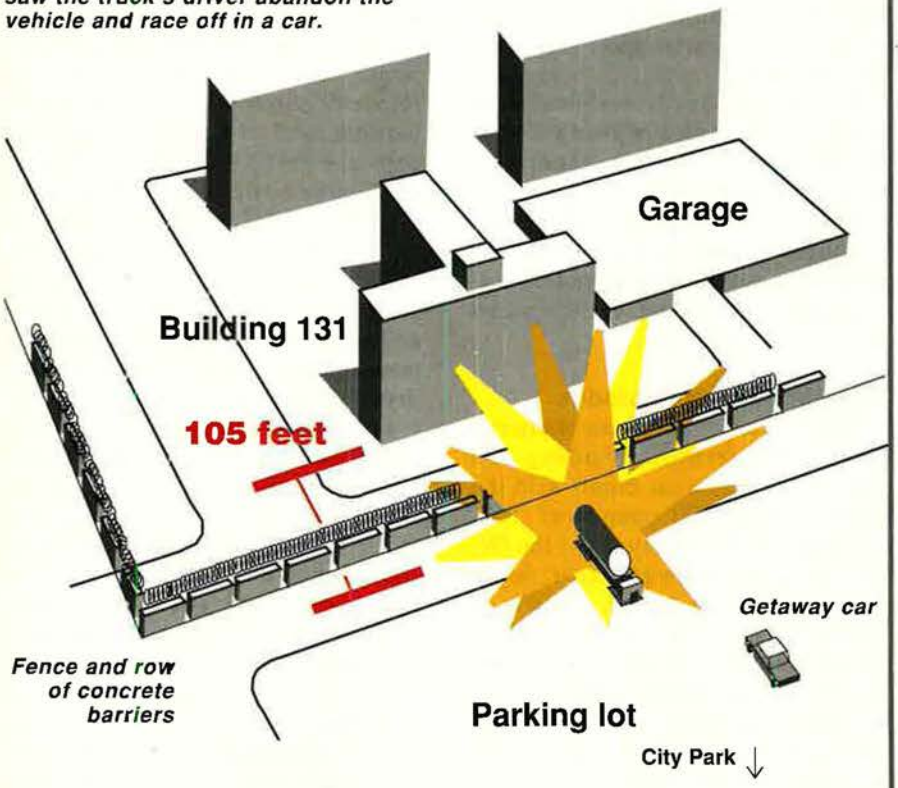
In Dhahran, a little over 200 miles away, the 4404th Wing took action to increase its level of force protection. "We immediately started to check and reinforce our barrier," Schwalier said. "We worked straight for three or four days bringing in barriers that were strewn along the highway. We got very serious about completely surrounding our area with these Jersey barriers."

The initial steps included raising the alert status and restricting personnel to the compound. "Indications remain such that we need to be on our toes," Schwalier wrote to his wife three days after the OPM–SANG bomb. "We've turned our living area into a bit of a fortress—with cement barriers and concertina wire. Our cops are on 12-hour shifts—having doubled up on the gates and increased their patrols." Schwalier was glad to see that the increased security activity around Khobar Towers got the attention of the wing's young men and women. These people were his responsibility, and he hoped to keep them focused on security.

For the 4404th, the initial actions at Khobar Towers and other facilities were only a start toward improving force protection. The wing now faced a heightened but amorphous challenge. "We realized there were people out there who were serious about hurting Western interests," Schwalier said. Every Wednesday, Schwalier convened a meeting of the wing leadership for a security review of battle staff directives tracking progress on security measures. "We were aware of security before,

This photo of the Khobar Towers complex in Dhahran, Saudi Arabia, clearly shows the devastation of Building 131 by the bomb that exploded June 25, 1996, killing 19 Americans. The building did not collapse because it was built with prefabricated cubicles bolted together.

This graphic depicts the location of the truck carrying the equivalent of more than 20,000 pounds of TNT. At the time the truck pulled into the parking lot outside the perimeter fence, three USAF security policemen were on Building 131's roof. They immediately started a "waterfall" evacuation notice when they saw the truck's driver abandon the vehicle and race off in a car.



but we got hyper about it as a result of the Riyadh bombing," Schwalier explained.

Assessing Vulnerabilities

The Air Force Office of Special Investigations on Jan. 8 turned in its semiannual report assessing the Khobar Towers facility and potential vulnerabilities. Investigators said that they had found 39 action items covering matters ranging from radio security and parking arrangements to fence line vegetation. Several action items focused on security for senior personnel. Another item dealt with third country nationals employed on base who might carry in a bomb.

The OSI team listed many potential vulnerabilities. The tower that loomed over Khobar Towers would be a sniper's dream. Nearby apartment buildings could be platforms for attack. To the south, only a fence separated the coalition area from Saudi buildings.

No one could say with any certainty which, if any, of the potential vulnerabilities might be a true threat. The vulnerability assessment helped the wing leadership focus on five scenarios: a suicide car bombing; a bomb in a parked, abandoned car; a man-portable bomb carried into the compound and left there; a man-pack body charge worn by a suicide intruder; and finally, a package or letter bomb.

Under Schwalier, the 4404th set out to work the action items. Given what had happened at OPM–SANG, preventing a car bomb from penetrating the compound at Khobar Towers emerged as a top priority. Khobar Towers had just one entrance for vehicles. To prevent penetration, the defense there had to block and slow any vehicle that might attempt to ram through. Traffic patterns were reset and lengthened. Road stars and tire shredders were put in place. Barriers and bunkers sealed the entryway.

The gate obstacle course presented a formidable challenge to an intruder, but it also might delay military traffic entering the base. Idling cars with military passengers might make easy targets. To compensate, the 4404th set up two guard checkpoints, allowing vehicles to enter a more protected area while waiting to complete the identification check.

Tightening Up

The wing also tightened controls on who entered the compound. "I wouldn't let vendors come on base" right after the Riyadh bombing, Schwalier noted. "We tried to make sure we really got a grip on everything that was going on within the compound." Personnel arriving at Khobar Towers in early 1996 remarked on the tight security.

Take the case of David Winn, the US consul general in Dhahran, who had worked in the Middle East for 25 years. Winn was accustomed to flashing a pass to enter the ARAMCO compound that was home to some of the 19,000 American civilians living in the Eastern Province. One day that spring, he drove to Khobar Towers for a quick stop at the commissary. Winn was frisked by the armed security police, and teams inspected his car before they let him drive on through the serpentine road blocks. Winn was pleased to find a parking spot a few feet from the commissary. He went in to buy razor blades and came out to find the security police ready to tow his car because he parked within 25 feet of a building, too close for the minimum safe distance in case the consul general's car had turned out to be an abandoned car bomb.

"My God, Terry, you know they really gave me a shakedown," Winn later told Schwalier, noting that he was starting to wonder about the adequacy of security at the consulate. Schwalier laughed a bit at Winn's reaction. However, he told Winn, "Nothing's going to happen on my watch, and it may be overreacting, but I'm going to make sure nothing happens to this compound."

The Bahrain Bombs

USAF residents of Khobar Towers could determine the threat level on a given day by whether or not Schwalier let them travel off base. For example, the nation of Bahrain was a popular destination for a few hours' leave. Getting there required only a 40-minute drive through checkpoints and across a causeway that led to the Navy Central Command Component, Forward, facility with its post exchange and a beach club. The Navy facility was a place to go to get something to eat and have a beer.

However, when threat indications rose, Schwalier shut the gates. December, January, February, and March were bad months. Two small bombs exploded in post offices in Bahrain. The Diplomat Hotel and Royal Le Meridien Hotel in Manama, Bahrain, were bombed. More small bombs detonated in a tailor shop, a supermarket, and the Yateem Shopping Center. Bombs hit a bank, two restaurants, and another hotel. Worse yet, the terrorists started to use petrol bombs. Seven persons died in one restaurant attack. The terror in Bahrain was local, not directed at Americans. Still, Schwalier was determined that the 4404th would not be caught in the middle. "My concern was that they were starting to choose places Americans might frequent," Schwalier said.

When Khobar Towers residents were allowed to go downtown in Dhahran, they did so under strict rules. No one could go alone, but groups had to be less than four. Occasionally, Schwalier changed the rules to takeout only. Groups of two to four could buy food at shopping mall restaurants, but they were not allowed to sit down and eat.

Concern over the safety of Americans off base grew high during hajj that spring. "Remember that being locked down is not a punishment," SSgt. Richard Roberts tried to explain in a base newspaper article. "It is just another safety measure commanders use to ensure your well-being."

The North Perimeter Fence

After the June 25 bombing, the location of the northern perimeter fence would become a major issue. Buildings 131 and 133 sat about 80 feet back from the northern perimeter fence. Across the road and over the fence lay a paved parking lot with neatly tended tamarind trees marking the rows. Schwalier had arrived in 1995 to find the fence pocked with holes in several places. Crews repaired them. Extra Jersey wall barriers went up as a direct result of the OPM–SANG bomb. The OSI in January reviewed the perimeter and recommended continuing action to trim vegetation and provide better lines of sight but said nothing about moving the northern perimeter fence out. Beyond the fence was Saudi territory and Saudi police patrolled outside the fence.

Securing the compound against penetration continued to be the wing's main goal. In late March, Schwalier asked the new head of the Security Police, Lt. Col. James J. Traister, to think hard about how to protect Khobar Towers from a car bomb. Traister and a small group walked the perimeter with a Saudi police officer, and afterward Traister asked that the barriers on the Saudi side of the fence be moved five feet further out, the better to prevent people from climbing up the barriers and onto the fence. The Saudis also gave permission to place rows of concertina wire at the top and bottom of the fence.

Traister asked if the plants and vines could be removed to improve the line of sight for his cops. The Saudis said no. They preferred to let the vegetation grow in order to prevent curious civilians from peering at the Americans, especially American female troops with their Western clothes and jogging shorts. Wing personnel cut it back on the American side, anyway. Then, in May, Col. Gary S. Boyle, the wing's support group commander, asked his Saudi counterpart about moving the fence out to extend the perimeter. The Saudis stated it was not a request that could be approved at that time. They increased their Red Hat police patrols outside the fence. As the wing knew, the fence was not merely an arbitrary marker in the middle of an undeveloped field. The public parking lot into which it would have to be moved was used often by Saudis visiting the city park.

In April, as an additional measure to protect the perimeter, Schwalier posted security police sentries on the roofs of buildings along the perimeter. Rooftop sentries were unique to the 4404th. Neither the Army nor the forces of Britain and France posted sentries on their buildings in the complex. The job of the sentries was to monitor the perimeter.

Completing the Protection Measures

The 4404th completed 36 of the 39 recommended actions listed in the January vulnerability assessment, but three remaining items would generate controversy after the bombing.

Like the embassy in Riyadh, Khobar Towers did not get protective Mylar coating for its windows. Schwalier

put a request for the $4 million project in his five-year budget plan.

The lack of a central fire alarm system fueled accusations of negligence. Khobar Towers buildings did not have fire alarms. Many rooms had smoke detectors, and a fire inspection visit in February, plus revamped evacuation plans in April, satisfied the wing that fire safety standards were being met. In the aftermath of the bombing, Cohen would fault the wing commander for tolerating a siren system that he called "plainly inadequate." The fact is that Schwalier inherited the standard "Giant Voice" speaker and siren system that could alert the entire compound. The siren had not been tested since 1994, but there was a reason. Commanders were reluctant to set it off, lest the Dhahran community mistake it as the signal for a Scud missile attack, the purpose for which the siren had historically been used. In an emergency, the security police desk would notify the wing operations center to set off Giant Voice.

Khobar Towers

Cohen also criticized Schwalier for not conducting evacuation drills. But Khobar Towers residents were experienced in *real* evacuations. Evacuation plans posted in the rooms gave instructions for where to meet. In the year leading up to the bombing, residents of Khobar Towers carried out several actual evacuations, triggered by suspicious package alerts.

For example, in May a suspicious package was spotted in an elevator shaft in Building 129. The wing used the "waterfall" method, first alerting top-floor occupants who then helped alert lower floors on their way out.

The package turned out to be a workman's toolbox, but it had been good practice. "Our timing was about five minutes" in the May evacuation, Schwalier noted. "Based on the inputs that I received from the fire chiefs, that's about as good as you can do."

The last item in the January vulnerability assessment was a suggestion to disperse mission essential personnel, but Schwalier and his deputies reckoned that maintaining unit cohesion and keeping housing units together as much as possible was most important to the mission.

In the months since the OPM–SANG bombing, intelligence traffic regarding possible threats had increased. Central Command leaders in March convened a working group of Army, Navy, Air Force, and coalition commanders to discuss force protection. However, no clear threat had emerged. The US Embassy's regional security officer in Riyadh noted, there "appears to be a lot more 'junk' reporting ... than previously." "There weren't many specifics," remarked another US intelligence official in Riyadh. Conditions were safe enough for JCS Chairman Shalikashvili, accompanied by his wife, to visit the wing in May.

Senior US officials had concluded that the upper limit of a terrorist bomb that could make it into Saudi Arabia was no higher than the 220-pound OPM–SANG device. The Saudis concurred.

One particularly serious incident did occur in May. A car proceeding on the street along the eastern side of the compound did something unusual. The driver crossed the dusty median and banged the car against the solid concrete of the Jersey wall barrier. Then the driver backed up the car, nudged it against the barriers again, and drove away. Residents of Building 127 in Khobar Towers spotted the activity and reported it to wing security police. In response, the wing staked down the barriers along the perimeter.

Traister, the head of Security Police, was finishing his 90-day tour. On June 21, he summed up the efforts that the 4404th had made to protect Khobar Towers. The main point, he said, "is to stop and eliminate any threat (human bomber or car bomber) from getting past 12th Street into the compound"—that is, to prevent anyone from breaching the walls of the perimeter.

Traister was realistic about the limitations to the plan of defense, noting it "is not designed to stop standoff type weapons like rocket-propelled grenades, mortar fire, or sniper fire. Our intent is to make the base as hard a target as possible to force the enemy to go elsewhere."

That's a Bomb

June 25 was scheduled to be Schwalier's last day of command. Months earlier, he learned of his selection for promotion to major general and he was on his way to a Pentagon job. He looked back on his year as commander of the 4404th with a sense of accomplishment. On his watch, there had been no flying accidents, notable improvements in and around Khobar Towers and other wing facilities, and better relations with his Saudi hosts. The Joint Task Force–Southwest Asia commander, Maj. Gen. Kurt B. Anderson, arrived for the change of command ceremony set for the next day, June 26, 1996. Schwalier took Anderson out for a quick trip into Dhahran for a Mexican food dinner.

As 9 p.m. approached on the evening of June 25, 1996, many of the residents of Khobar Towers were

in their rooms. The commander of the 79th FS was writing promotion recommendations in Building 133. Members of the 58th FS were packing in Building 127 and Building 131. Schwalier sat at the desk in his room, writing a note to Brig. Gen. Daniel M. Dick, who was to replace him. Beyond Khobar Towers, the final Muslim prayer call of the day was just ending.

SSgt. Alfredo R. Guerrero, a security policeman and shift supervisor, went up to the top of Building 131 to check in with two sentries posted there. Once on the roof, Guerrero and the other policemen observed a sewage tanker truck and a white car enter the parking lot. They watched the truck drive to the second to the last row, turn left as if leaving the lot, slow down, stop, and then back up toward the fence line. It stopped directly in front of the center of the north facade of Building 131. The truck's driver and a passenger jumped out and hurried to the waiting car, which sped out of the parking lot.

The three security policemen were already in motion. They radioed in the alert and started the evacuation plan to notify each floor of Building 131 in waterfall fashion. A roving security police vehicle heard the alert from the rooftop sentries and rushed to wave people away from the building. They had managed to notify only those residents on the top three floors before they were shaken by an enormous blast. Before the wing operations center could activate Giant Voice, the bomb went off.

The bomb that did the damage was not like the package bombs in Bahrain or the Riyadh car bomb, containing only a few hundred pounds of explosives. It exploded with the force of 20,000 to 30,000 pounds of TNT. The sewage truck shaped the charge, and the high clearance between the ground and the truck gave it the more lethal characteristics of an air burst.

As the blast waves hit Building 131, they propelled pieces of the Jersey wall barriers into the first four floors. The outer walls of the bottom floors were blown into rooms. With no structural support below, the facades of the top three floors sheered off and fell into a pile of rubble. Walls on the east and west ends were blasted four feet from original positions, causing floors in several bedrooms to collapse. Building 131 did not collapse because it was made of prefabricated cubicles that were bolted together. Had it been built in a more traditional manner, it might have caved in from the blast.

Taking Casualties

At one moment, the 4404th personnel had been talking or working with squadron mates. An instant later, survivors nearest the blast found themselves in the dark, thrown across their rooms or out into hallways. Now, as they struggled to understand where they were and what had happened, they shouted and called to each other. The first casualties arrived at the clinic a few minutes after 10 p.m. Ten minutes later the clinic was overwhelmed. Commanders and first sergeants quickly began to try to account for their people. Wing rosters were inaccessible, and so the units began to conduct head counts. By 3 a.m., medical emergency logs had recorded 16 fatalities. Two more bodies were found in the rubble by morning. The 19th was found a few hours later.

The 4404th still had to perform its mission. Mess facilities were all up and running by noon on June 27. The C-130 squadron resumed operations that same day. On the afternoon of June 28, F-16 fighters from the 79th were back on station for the continuation of Southern Watch.

"Here we were, one of the most lethal air components in the world, an F-15 squadron, and someone sneaks up in the middle of the night and cuts our underbelly," as one squadron commander put it later. He wished the dead had at least been given the opportunity to look the tiger in the eye, to confront the enemy face to face, and take them on. For some weeks afterward, Schwalier stayed at Khobar Towers as the wing got back on its feet. The change of command ceremony took place on July 15. "Three weeks ago, I had prepared a speech that expressed pride and appreciation," Schwalier told the crowd at the ceremony. But in the aftermath of the June 25 bombing, those comments were no longer enough, he felt. "What I've seen in the last three weeks from 4404th men and women has been a wellspring of pride for me in the dedication, training, and heart of USAF," he told them.

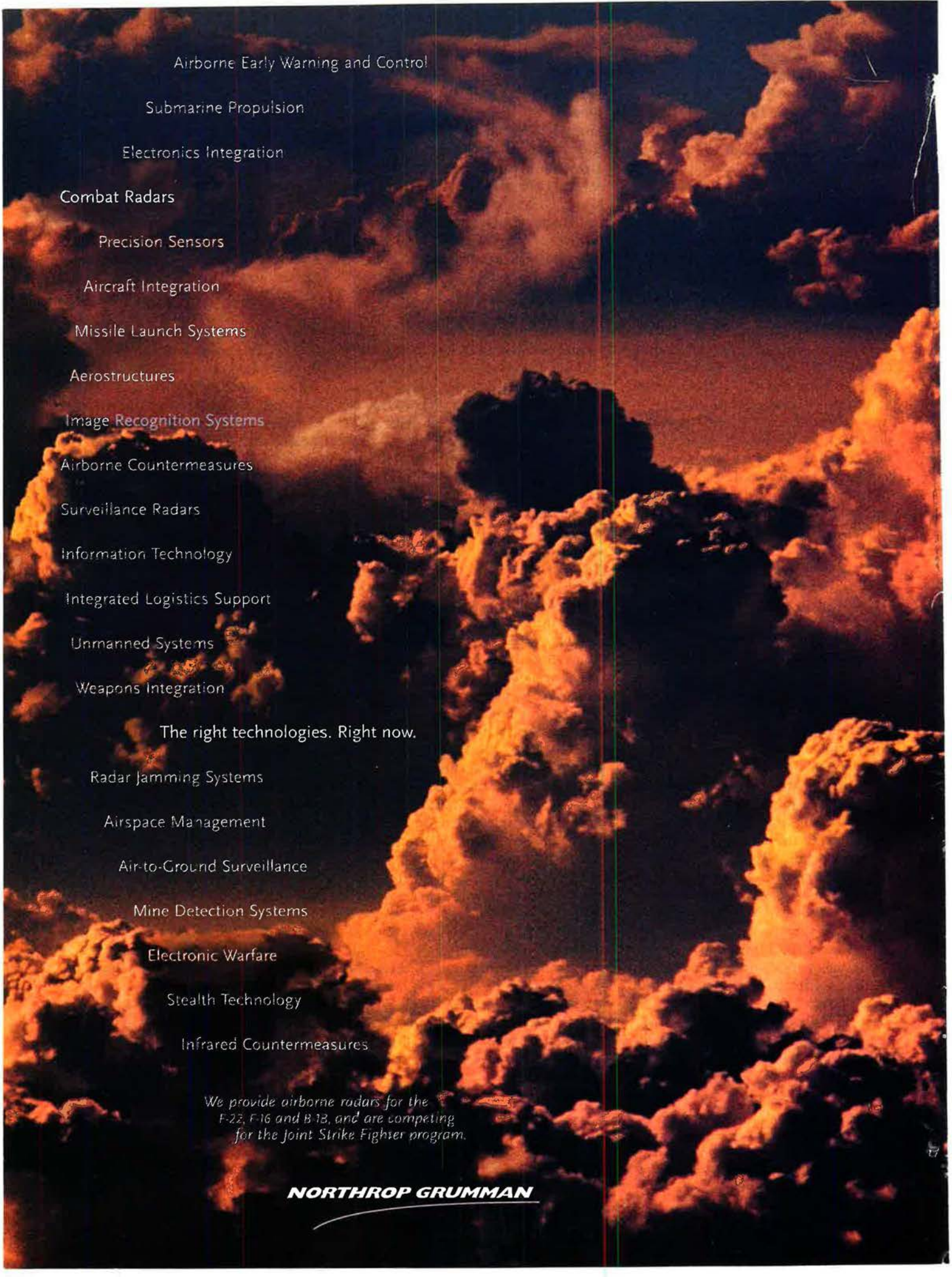
The Aftermath

The Defense Special Weapons Agency analyzed the crater and soon determined that the June 25 bomb was the largest terrorist device ever directed at Americans. The Lebanon bomb that destroyed the Marine Corps compound in Beirut on Oct. 23, 1983, packed the explosive force of 12,000 pounds of TNT–equivalent. The Oklahoma City bomb was far smaller. In the new and changed environment caused by the truck bomb with 20,000 pounds or more of force, Khobar Towers could not be protected. Thus, in the summer of 1996, the 4404th relocated to Al Kharj, a base that offered miles of desert perimeter, with personnel housed in tents.

Back in Washington, the investigations were under way. The Secretary of the Air Force, Sheila E. Widnall, commissioned Lt. Gen. James F. Record to conduct an investigation of the Downing charges. On Dec. 4, 1996, Record's three-volume report found that Schwalier and his deputies and superiors had taken "reasonable and prudent" action to protect the force. However, the staff of the new Secretary of Defense, William Cohen, asked the Air Force to do a second evaluation. That report also found no grounds for taking action against Schwalier.

Despite these results, Cohen in July 1997 announced that he had decided to block Schwalier's promotion to major general. The second star was withdrawn, and Schwalier resigned from the Air Force the same day. Fogleman, then Air Force Chief of Staff, announced his resignation the same week. That fall, in Dhahran, Saudi authorities demolished what remained of Khobar Towers Building 131. ■

Rebecca Grant is president of IRIS, a research organization in Arlington, Va. She has worked for RAND Corp., in the Office of the Secretary of the Air Force, and for the Chief of Staff of the Air Force. Her most recent article for Air Force *Magazine was "The Epic Little Battle of Khafji," which appeared in the February 1998 issue.*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Radar Jamming Systems
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Mine Detection Systems
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Stealth Technology
Infrared Countermeasures
We provide airborne radars for the F-22, F-16 and B-1B, and are competing for the Joint Strike Fighter program.
NORTHROP GRUMMAN

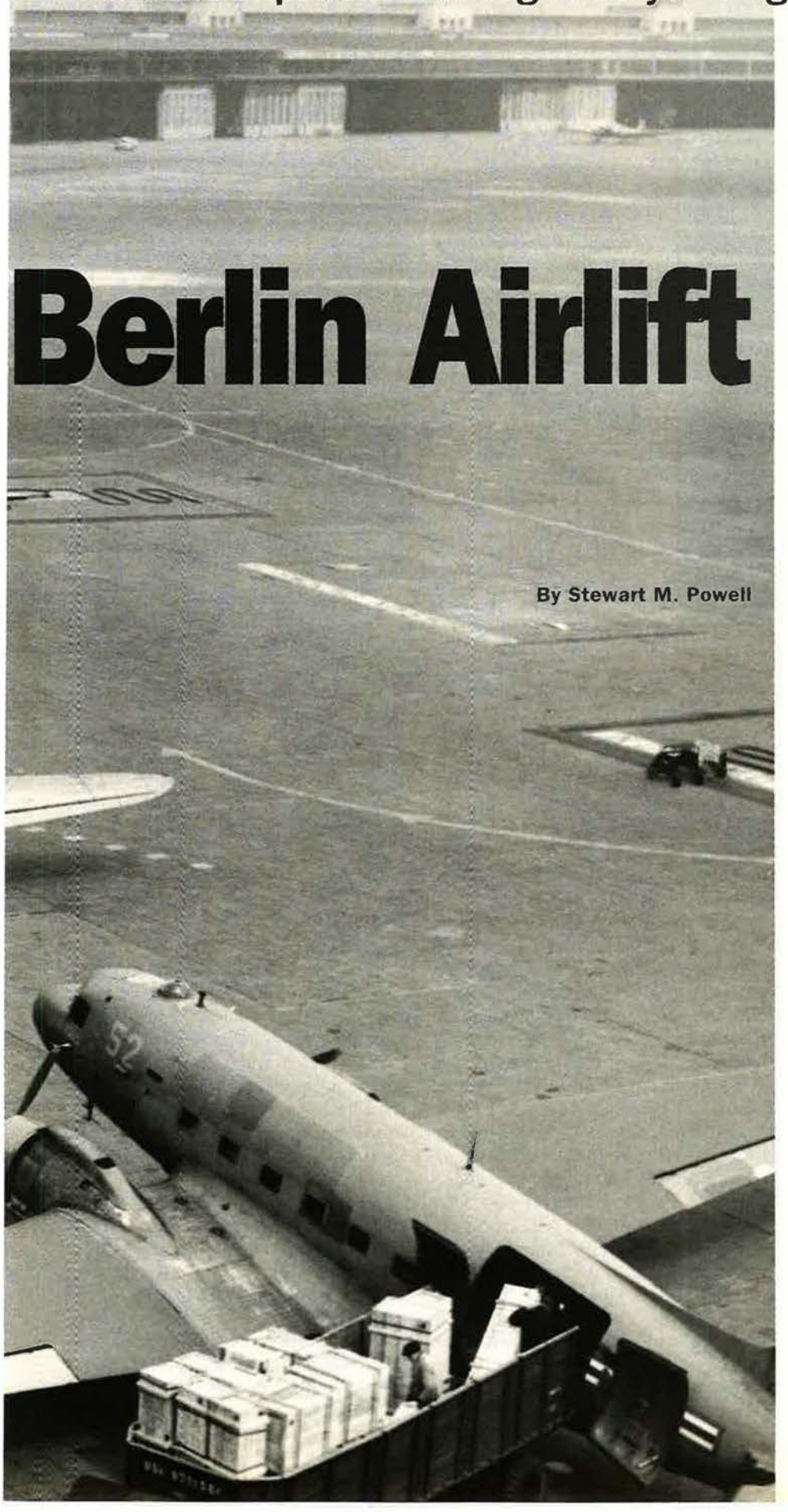

You have only seconds to find
the approaching enemy fighters.
Time's up.


The

Veterans of the greatest humanitarian airlift in history recall the experience. It began 50 years ago this month.

Berlin Airlift

By Stewart M. Powell



BILL Lafferty flew one of the first missions of the Berlin Airlift and didn't even know it. Joe Bracewell served up more "S.O.S." as a line mess cook than he cares to remember. George Hoyt bombed Nazi Germany from his B-17, but it's the humanitarian relief of Operation Vittles that he cherishes most. And Ed Dvorak, who saw plenty of combat during 76 bomber escort missions in his P-38 during World War II, can't shake the memory of seeing the body of his poker buddy carried out of the smoldering wreckage of a C-47 hours after their last hand.

For many Americans, the Berlin Airlift is a faded memory, a distant skirmish in a conflict known as "The Cold War." The quiet resolve of the World War II generation that crushed Nazism and turned around to rescue ordinary Berliners three years later has been eclipsed by the more recent image of jubilant East Germans streaming through the Berlin Wall to spell the end of Soviet power in 1989.

But for the veterans who took part in the greatest humanitarian airlift in history, the operation is as fresh as yesterday. The airlift stretched 15 months, from June 26, 1948, to Sept. 30, 1949. By the end of the operation, American and British pilots had flown 92 million miles on 277,000 flights from four primary airfields in the western sectors of Germany into Berlin to deliver nearly 2.3 million tons of supplies to three airfields conducting round-the-clock operations within 10 miles of each other.

Three-quarters of the flights were piloted by Americans. At its peak, 32,900 American military personnel were involved, backed by another 23,000 civilians from the United States, Allied nations, and Germany. Killed in the operation were 77 men—31 of them Americans.

Among the first to fly a mission in the Berlin Airlift, 1st Lt. William Lafferty (left) and 1st Lt. Robert Barlow await refueling of their C-47 at Tempelhof before returning to Wiesbaden for another load of supplies.

"Go ... Now!"

For Lafferty, the affair began on June 26, 1948, when he was ordered to make a second C-47 trip into Berlin from Rhein–Main AB in western Germany. At the time, regulations barred night transport operations in the air corridor. "They were not getting the airplane loaded quickly enough, so I announced to the base operations officer that we'd go at first light," recalls Lafferty, a retired Air Force colonel living in Green Valley, Ariz.

The operations officer insisted, "You've got to go now."

Lafferty balked.

"Lieutenant," thundered Col. Walter Lee, commander of Rhein–Main. "You get your butt out to that airplane and take it to Berlin as soon as it is loaded!"

Lafferty flew to Berlin and returned to Wiesbaden AB instead of Rhein–Main.

"Congratulations," is the first thing the young pilot heard from Air Force Col. Bertram C. Harrison, commander of the 60th Troop Carrier Group.

"What for?" asked Lafferty.

Harrison replied, "You've flown the first mission on the Berlin Airlift for our group."

Nascent Cold War hostilities provoked the standoff.

The Russians, prostrate after a Nazi invasion and years of fighting that killed more than 25 million Russians, pressed the Allies for continued occupation and division of Germany without the economic revival sought by the West. The United States, Britain, and France were unable to win Russian agreement for modest steps to stabilize the reeling German economy. The Western Allies began secretly mapping steps to create an independent, democratic West German republic tied to the West.

On March 20, 1948, the Russian representative on the Allied Control Council in Berlin bluntly demanded Allied plans. The Allies refused. The Soviet representative stormed out. Kremlin forces immediately began intermittent interference with Allied railroad traffic into Berlin, stopping and searching trains ferrying supplies and coal into the former Nazi capital.

Moscow had hit the most sensitive nerve. The Western Allies had no guarantee of land access to Berlin in postwar agreements, other than a verbal promise from Soviet Marshal Georgi K. Zhukov to US Army Gen. Lucius D. Clay, military governor of the American zone in Germany and the American commander in Europe, according to a history produced for Military Airlift Command entitled, "MAC and the Legacy of the Berlin Airlift" by historians Roger D. Launius and Coy F. Cross II.

The Air Corridor

The Western Allies did have an ironclad guarantee of air access to Berlin, however, stemming from the 1945 Allied Control Council agreement. The air safety accord set aside a "Berlin Control Zone" extending 20 miles from the city center. It laid out three 20-mile-wide air corridors linking Berlin with the occupied western sectors of Germany. The Allies could fly into Berlin at any altitude below 10,000 feet without advance notice.

The Russians' sudden interference with Allied rail shipments prompted Clay to launch an ad hoc air resupply operation to Berlin that relied upon C-47s drawn into Rhein–Main from across Europe.

"During one period of 11 days in April, when the Soviets demanded the right to search and investigate all military shipments by rail, we flew small quantities of food and other critical supplies to Berlin—something like 300 tons," Lt. Gen. Curtis E. LeMay, commander of US Air Forces in Europe, later recalled.

William F. Shimonkevitz, of Denver, was a base photo officer at Rhein–Main when he was summoned for the emergency relief operation. "We carried fresh foodstuffs in—milk, eggs, cheese, meat, vegetables, et cetera—and empty milk bottles, household goods, furniture, personal belongings out," recalls Shimonkevitz, a retired Air Force colonel who flew on more than 200 round-trips into Berlin.

The "max effort" operations during Russian interference served as a crucial building block for the subsequent airlift. "It was during those periods under the guidance of the then–USAFE leadership that procedures, routing, and timing first proved successful and operationally fea-

sible," recalls William J. Hooten, a retired Air Force lieutenant colonel who lives in San Diego.

The Russians' interference with rail shipments became a blessing in disguise. "The Soviets made a major mistake," says retired Lt. Gen. Howard M. Fish, a veteran of the airlift who retired from the Air Force in 1979 as vice chief of staff and now resides in Shreveport, La. "They gave us the opportunity to learn, and we learned the things that we used later."

Later in April, the Kremlin allowed surface transportation to resume, ending what became known as "the Little Airlift." But the foundation of the looming showdown was in place. The Western Allies moved ahead with their five-part plan to revive the failing German economy. Soviet forces retaliated anew on June 15, 1948, closing the autobahn into Berlin "for repairs." On June 24, 1948, the Soviets cited "technical difficulties" and cut off electricity and halted all cargo and passenger traffic into Berlin from Allied sectors in western Germany.

Clay assured Berlin Mayor Ernst Reuter that the Allies would stand by the 2.5 million Berliners who had survived World War II.

Clay called LeMay. Could cargo aircraft ferry coal into Berlin to heat and power the city, Clay asked in a historic telephone call to the gruff USAFE commander.

"General," LeMay replied, "We can haul anything. How much coal do you want us to haul?"

"All you can haul," Clay replied.

The independent Air Force, not even a year old, launched the full-scale airlift on June 26, 1948, using C-47 Skytrains to ferry 80 tons of supplies from Wiesbaden to Tempelhof Airport in Berlin, requiring a total of 32 missions. USAFE headquarters hurriedly rounded up 110 of the "Gooney Birds."

Pilot B.J. Anderson peers through the rip in his C-54's fuselage. He was taking off from Celle, Germany, when the hydraulic line to the C-54's No. 2 engine ruptured. Despite attempts to shut it down, the engine continued to accelerate and the propeller then sheared off and cut into the side of the fuselage. Anderson and his crew made a safe landing back at Celle.

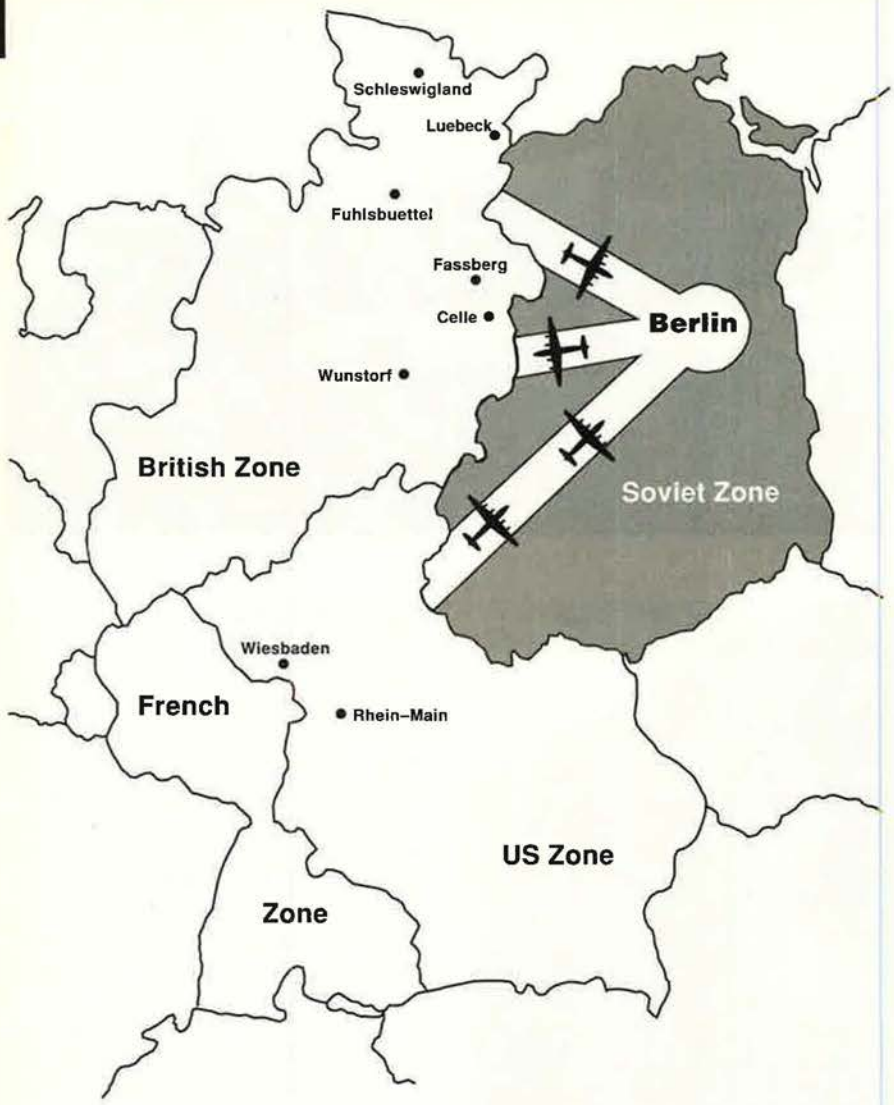
Fast and Furious

The lumbering two-engine airplane carried three tons of cargo at a cruising speed of 175 miles per hour over a range of 1,500 miles. Many of the aircraft were war-weary, still emblazoned with the three horizontal stripes used to designate friendly aircraft during the D-Day landings at Normandy four years earlier, but they did the job. Deliveries on Day 2 jumped up to 295 tons. By Day 3, deliveries had soared to 384 tons.

The airplanes "were coming in so fast and furious," recalls Paul Harris of Winter Park, Fla., who was on duty at the Berlin Air Safety Center alongside British, French, and Russian counterparts on the first day of the airlift. The Russian air controllers "knew what we were doing," he said. "They could count all ours on the control board."

Harris and his American colleagues turned control of inbound American cargo airplanes over to Tempelhof tower for the final 12 miles of the inbound flight. Russian controllers remained amiable despite the tensions that had provoked the crisis. They were as friendly as always, recalls Harris, a retired Air Force lieutenant colonel. He says the Americans would always offer them cigarettes; otherwise, the Russians would smoke their own. "Theirs smelled like horsehair," adds Harris.

The Germans dubbed what was going on as "Luftbruecke," or "air bridge." The British labeled their



Under the 1945 Allied Control Council agreement, which set aside three 20-mile-wide air corridors within the "Berlin Control Zone," the Western Allies could fly into Berlin at any altitude below 10,000 feet without advance notice.

phase of the lift Operation Plainfare. Weary pilots of all nationalities called it "The LeMay Coal and Feed Delivery Service." Then–Brig. Gen. Joseph Smith, first US commander of the operation, grabbed the first code name that came to mind.

"Hell's fire—we're hauling grub," Smith told aides. "Call it Operation Vittles if you have to have a name."

The US–led airlift was expected to last two weeks.

Young Air Force personnel across Europe saw their plans, orders, and schedules scrapped overnight.

Charlie T. McGugan was dispatched from his assignment at USAFE headquarters to fly C-47s. "We had no idea how long this was going to last," recalls McGugan of Aberdeen, N.C., who retired from the Air Force as a colonel. "They pulled in everyone who could be spared to supplement the pilots who were already flying."

William A. Cobb was heading through Wiesbaden en route to Fuerstenfeldbruck AB near Munich to pilot an F-80 fighter, but his orders were abruptly changed when a desperate personnel officer spied Cobb's college engineering degree. The fighter pilot became a maintenance control officer at airlift headquarters, scheduling upkeep and tracking the burgeoning fleet of airlift aircraft.

"This was a 24-hour-a-day operation," recalls Cobb, now a resident of Melbourne, Fla. "We ... kept track of all aircraft in commission and made a report each morning."

You're In. Get Moving

J.B. McLaughlin was summoned from his assignment as air attache at the US Embassy in Athens. "I had about 3,000 hours, most of it in fighters, with about 300 hours in the 'Gooney,' " recalls McLaughlin, a retired Air Force colonel living in East Tawas, Mich. "Upon arrival in Wiesbaden, I discovered that this qualified me as first pilot."

Paul A. Jarrett, of Warner Robins, Ga., remembers the early C-47 missions with the 60th Troop Carrier Group between Wiesbaden and Tempelhof. "The first several weeks of the lift were the worst—rain, fog, and no relief," recalls Jarrett, who retired from the Air Force as a lieutenant colonel. "Until the C-54s showed up, it was tough."

Smith, the commander of the post at Wiesbaden, made one crucial decision after another, shaping an operation that would frustrate Moscow for 15 months. Drawing upon his experience as a mail pilot for the Army Air Corps in 1934, Smith established a duty and maintenance schedule designed to keep 65 percent of his aircraft airborne each day.

The elaborate schedule enabled each C-47 in the expanding aircraft fleet to complete three flights a day into Berlin. Smith had airlift pilots fly under the most rigid system of air traffic control to be instituted up to that point. He established the pattern of one-way operations through the three corridors—two corridors devoted to Berlin-bound aircraft and the central East–West corridor reserved for outbound traffic. Aircraft flew at five different altitudes, later cut to three. Aircraft at the same altitude were separated by 15-minute intervals.

Smith ordered aircraft to fly in "blocks" to overcome differences in speed between the twin-engine C-47s with their three-ton payloads and the four-engine C-54s with their 10-ton payloads. Pilots flew their routes at predetermined speeds, checking in

one after the other at successive beacons, then landing in Berlin in close succession.

As the operation got under way, some members of President Harry S. Truman's National Security Council in Washington expressed concern that the hard-pressed effort might be little more than a holding action until the Allies were forced to capitulate. One who disagreed with the view was Gen. Hoyt S. Vandenberg, USAF Chief of Staff. Vandenberg forcefully challenged any "piecemeal approach," insisting that the Air Force "go in wholeheartedly" to supply the beleaguered city. "If we do," Vandenberg declared, "Berlin can be supplied."

Charles S. Allen, now a retired colonel, takes a breather from airlift duties to pose for this shot in the midst of downtown Wiesbaden. The devastation reinforced the importance of the airlift for Berliners trying to survive similar conditions.

Get the Circus Moving

Preparing for the long haul, American commanders turned to the Army Air Corps legend who had masterminded the illustrious cargo flights "over the Hump" of the Himalayas from India to China during World War II. He was Maj. Gen. William H. Tunner, deputy commander of the Atlantic Division, Military Air Transport Service, based at Westover AFB, Mass. LeMay wanted "the transportation expert to end transportation experts," and that was Tunner. LeMay summoned Tunner to orchestrate the Berlin operation, a move LeMay said was "rather like appointing John Ringling to get the circus on the road." Airlift would never be the same. Tunner, who became provisional commander on July 29, 1948, saw the Berlin crisis as a golden opportunity to demonstrate the concept of airlift as a strategic force.

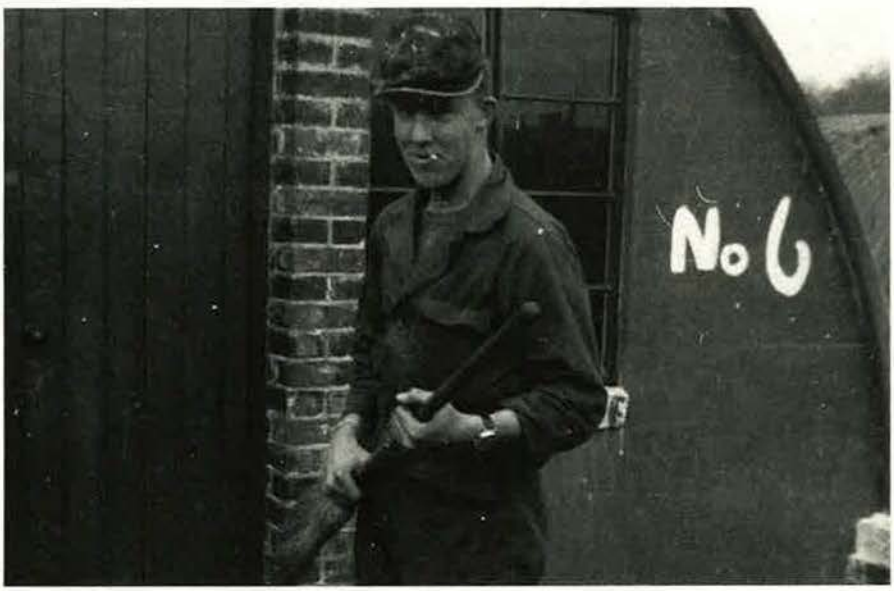
Airlift crew members quickly dubbed Tunner "Willie the Whip" because of his unrelenting demand for precision. He ordered pilots to rely on instrument procedures at all times to avoid variations due to weather or darkness. He had ground operations reassessed repeatedly to shave turnaround times. His motion study experts developed a procedure for a 12-member ground crew to load 10 tons of coal packed into 100-pound burlap bags into the cargo bay of a C-54 in six minutes. Aircraft unloading times in Berlin were cut from 17 minutes to five; turnaround times in Berlin were cut from 60 minutes to 30; refueling times at bases in West Germany were slashed from 33 to eight minutes.

Marcus C. West remembers coal-bearing trucks rolling toward his returning airplane at Fassberg even before he cut the engines.

"By the time the flight engineer had the giant rear hatch open ... the German [coal] truck would be stopping within inches of the loading hatch," recalls West, a retired Air Force colonel living in Yankeetown, Fla. Ten workers ran an oval racetrack pattern from the truck to the front of the cargo bay with bags of coal. The average turnaround time at Fassberg was 21 minutes, West says, adding, "The record for [a] turnaround was an unbelievable seven minutes."

Victor R. Kregel of Colorado Springs, Colo., a 23-year Air Force veteran who retired as a lieutenant colonel, remembers the "energetic attitude of the people who met the airplanes," adding: "It was just incredible. Berlin was starving. Whatever you had on board was whisked off. There was never any foot dragging."

When Tunner learned that arriv-



Pfc. W.R. "Bill" Baley, here with a broom in front of his Quonset hut at Burtonwood Air Depot, UK, was one of the airmen who supported the depot's massive maintenance overhauls of aircraft that had flown 200 hours.

Maj. Gen. William H. Tunner kept the operation humming, even arranging to have snack wagons, like this one at Tempelhof, and weather briefers meet arriving aircraft so the crews did not have to waste time leaving their aircraft.

ing aircrews were leaving their aircraft on the apron at Tempelhof to head inside to the terminal for snacks and weather briefings, he ordered meals, snack trucks, and weather briefers to move out to the flight line. The same flight-line services became the pattern elsewhere.

"We operated out where the crews would come in before and after their flights," recalls Bracewell of Jacksonville, Fla., who served as a line mess cook for the 61st Troop Carrier Group in Rhein–Main. "We served a lot of breakfast, a lot of S.O.S."

No Beans

Bracewell, who participated in the airlift for 15 months and retired from the Air Force as a major, proudly recalls that, unlike the RAF, "we never served beans for breakfast. Eggs and hash browns—that's what we served."

Tunner assessed and refined his operation relentlessly.

"The actual operation of a successful airlift is about as glamorous as drops of water on stone," Tunner wrote in his memoir. "There's no frenzy, no flap, just the inexorable process of getting the job done."

However, the operation needed more than just speedy ground operations. Germany's notorious fall and winter weather loomed on the horizon. Within weeks of Tunner's takeover, his task force launched a determined search for airfields closer to Berlin to cut down the two-hour flight times between Berlin and the two main bases in the west, Rhein–Main and Wiesbaden. Tunner's team first settled on the RAF base at Fassberg, from which Berlin could be reached in 55 minutes' flying time. The first American C-54s flew out of Fassberg on Aug. 21, 1948.

At Celle, a former Luftwaffe fighter base in the UK sector, the British began building a 5,400-foot runway to enable American C-54s to use the base, as well. Tunner moved the 317th Troop Carrier Group from Wiesbaden to Celle by Christmas.

Hugh C. Kirkwood of Greenville, Maine, a former gunner on a B-25, worked as an approach coordinator in the Celle tower. "It was the usual thing—getting blocks of aircraft off and getting aircraft rolling into final approach," recalls Kirkwood, a 21-year USAF veteran who retired as a master sergeant. "Timing was the most essential thing. You'd be landing and launching aircraft on the same runway. Every pilot knew they had to do it right."

In Berlin, the US airfield at Tempelhof and British airfield at Gatow were overwhelmed by stepped-up airlift operations. Tunner moved ahead with plans to build a third airfield in Berlin, to be located in the French sector to disperse the flow of aircraft.

Under the supervision of only 15 American officers and 50 enlisted men, some 17,000 German men and women transformed Hermann Goering's former anti-aircraft training area at Tegel Forest into a working airfield in a record 92 days. Tegel AB was dedicated in November 1948. The construction team's determination, however, failed to persuade the Russians to take down a tall radio tower that imperiled incoming aircraft on final approach.

Bill L. Cooley, who kept ground control radar up and running as chief of maintenance at Tegel, remembers that the problem was handled by a group of no-nonsense French troops.

"They were very tough people

2d Lt. Charles E. Bartels, standing here at Rhein–Main, flew the airlift from July 1948 until the end. Bartels, now a retired colonel, believes he was the first aviation cadet to get his wings in the newly formed Air Force.

when it came to dealing with the Russians," Cooley remembers. "No amount of negotiating would get the Russians to take down that tower. I drove to work one day and saw the tower lying across a field like a broken snake. A French patrol had just gone out there with their munitions, forced the Russians to back off, and blown up the tower."

In the fall of 1948, the Allies took other steps to prepare for the demands of onrushing winter. Five C-82 Packets joined the airlift to deliver wide-bodied cargo from Wiesbaden. The Joint Chiefs of Staff ordered Navy R-5Ds to lend a hand. On Oct. 15, American and British efforts were combined under a single joint command. Tunner commanded the operation backed by RAF Air Commodore John W.F. Merer as his deputy.

With little margin for error and only one shot at landing, aircrews had to be on the mark. Here, a C-54 carrying coal overshoots the runway at Tempelhof and crashes into a fence, then bursts into flames. Its crew managed to escape.

The often poor visibility at Tempelhof led the Air Force to install a high-intensity lighting system. Two parallel rows of 20 lights each mark the 3,000-foot approach as yet another C-54 makes its landing.

From Montana to Berlin

Preparations for a lengthy operation greatly increased the demand for C-54 pilots. The US air base at Great Falls, Mont., was opened. Many World War II pilots transitioned to the four-engine workhorse using mock air corridors, which were laid out across Montana's landscape to simulate the approach to Berlin.

West, like so many others, swept through the fast-paced ground school and flew 21 hours aboard C-54s to transition into the aircraft as a copilot before shipping out to Germany.

With enough C-54 pilots coming into the pipeline, the last of the USAFE C-47s were replaced with C-54s, clearing the way for a steadily expanding US effort in the face of fast deteriorating weather. The last C-47s were withdrawn from the operation in late September 1948. By Jan. 15, 1949, 249 US aircraft were in operation—225 Air Force C-54s and 24 Navy R-5Ds. The British flew 147 airplanes.

Tunner's attention to detail left nothing to chance. He boosted from 308 to 570 the number of weathermen assigned to the operation, a move that enabled the airlifters to continue operating in some of the most unpredictable, fast-changing weather found anywhere on Earth. Crewmen on every seventh C-54 reported weather conditions at four points along the way.

"Weather was extremely tough," says Paul W. Eckley Jr., a retired Air Force lieutenant colonel living in Clearwater, Fla. "But when you're flying two missions a day in the same aircraft, you got yourself to a degree of professionalism where the weather didn't really bother you. You gave your full attention to ground control and you just flew the airplane. You didn't even have to look out the window."

Harris, working in the air traffic control center in Berlin, remembers traffic controllers' nagging concern. "When we had bad weather, ... we always had to worry about the planes' fuel situation," Harris recalls. They had all sacrificed fuel for payload and they couldn't hold long. "If it got too tight, you'd have to send them back."

Hey, Macaroni

Winter icing nearly cost the life of Howard S. "Sam" Myers Jr., of Riverside, Calif. On a flight from Rhein–Main to Tempelhof on a "miserable, cold, snowy night" in early winter, Myers was flying at 7,000 feet in a closely packed block of Berlin-bound C-47s. Ice had accumulated on his

Poor weather was no deterrent to the airlift, only slowing the furious pace somewhat. Workhorse C-54s receive a load at Wiesbaden despite the snow.

wings and was choking his engines' carburetors. Myers was forced to feather his right engine propeller in hopes of maintaining speed and altitude to avoid colliding with nearby C-47s in his block. But he started to lag. The quick-thinking pilot directed his copilot to crawl back through the loosely wrapped containers to jettison cargo. Myers regained airspeed and altitude.

Said Myers: "I often wondered what people on the ground over Soviet-controlled East Germany must have thought as over 4,000 pounds of macaroni came raining out of the sky on that cold winter night."

Flying "through the soup" to Berlin became so routine by late 1948 that many flight crews began to relax. Lafferty and his crew were confident enough to tune into the Army–Navy football game on the radio, relayed from Wiesbaden. He checked in at each way point as required. As he neared Berlin, he radioed Gatow tower. The control tower operator calmly told Lafferty to fly his C-54 almost due west on a course of 280 degrees.

Lafferty flew for about 20 minutes before coming over the glow of city lights. He figured the lights were Berlin until he crossed an airfield bristling with "umpteen Yak fighters."

"I had no idea where we were," Lafferty says now. "It took us another 40 minutes to get to Berlin. We were 100 miles off course and I still don't know if it was a magnetic anomaly, wind, or just plain stupidity."

McLaughlin, who flew 196 roundtrips to Berlin, was flying a C-47 designated "Willie One" in a westbound block from Tempelhof to Wiesbaden when he heard a Wiesbaden controller clear another C-47 to hold at the same altitude over the same beacon.

"I chopped all power, slammed the nose down, and caught a glimpse of 'Willie Six' as he passed about 20 feet overhead," McLaughlin recalls.

"My God," gasped the Wiesbaden controller. "I forgot Willie One."

McLaughlin landed safely. "The controller in question was a good friend of mine," McLaughlin says. "But we had a few words that evening—over a martini."

Tunner's emphasis on all-weather operations put a premium on Ground Control Approach operators like Joseph G. Haluska, a 20-year-old GCA final approach controller at Wiesbaden.

"On an eight-hour shift, I would talk down three blocks of 28 C-54s, roughly one a minute," Haluska recalls. "The weather was zero–zero and after landing, a cleat tractor would have to tow the aircraft to the loading zone because the pilot couldn't see the lights on the taxi strips."

Young GCA operators became unsung heroes. McLaughlin, the veteran pilot, fondly recalls the teams he worked with. "If there were any published minimums, I've forgotten what they may have been," says McLaughlin. "GCA brought us all the way in until we either broke out [of the weather]—or ran out of guts."

Dvorak, the wing technical inspection officer for his C-54 troop carrier group based at Fassberg, still voices gratitude for their work. "We'd be flying through soup all the way, under ground control," Dvorak recalls. "We'd drop down and break out at just a couple of hundred feet, and we'd be looking

The British dubbed their portion of the airlift Operation Plainfare. Here, an Avro York airlifter, which with the Dakotas was the primary transport used by UK aircrews, drops off a load at Gatow, the British airfield in Berlin.

right into apartments on both sides of the runway at Tempelhof. The GCA operator would bring you in. You'd be maybe a foot and a half off the centerline of the runway, and the GCA operator would come up to you and say, 'Sorry, we'll do a better job next time.' They were incredible."

High Incentive

Pilots knew they got only one shot at landing, no matter what the weather. "You'd come down out of the weather between the buildings, with blocks of airplanes coming in right behind you, staggered in altitude or distance," recalls Kregel. "If you missed the approach, you couldn't get back into the landing pattern. You'd have to go back loaded. That made every pilot really keen to land, even in really severe weather conditions."

Within eight months, American aircraft had completed 36,797 Ground Control Approach landings on the Berlin Airlift.

Weather was hardly the only challenge. Aircrews remained ever alert to Soviet dirty tricks and harassment—everything from tampering with radio beams and firing flak to blinding aircrews with powerful searchlights. Cooley, of Miami, Fla., recalls seeing four Russian MiG-15s trying to force a C-54 to land in Soviet-controlled territory.

"They caught him on the fly and tried to make him land, but the pilot refused," Cooley recalls. "The C-54 flew over Tempelhof so everyone could see it. The MiGs were just feet from the aircraft, but he landed it anyway. The MiGs made a very low pass—maybe 10 feet above the transport as it rolled down the runway."

Eckley said he may have been drawn off course by Russians bending the beams of navigation beacons. He was heading down the corridor to Gatow when Berlin control told him to pick up a compass heading that was 45 degrees off his normal course. "We had drifted far out of the corridor," says Eckley, who served 24 years in the Air Force. "Controllers quickly put us back into the middle of the corridor. But we never got a clear understanding of whether the Russians had screwed up the compass headings in the plane to force us out of the corridor."

Charles E. Minihan of Ingram, Texas, who retired from the Air Force as a colonel with 28 years' service, remembers constant problems. "They'd play music, polkas, that sort of thing—anything to make it hard to navigate," recalls Minihan.

The US took countermeasures. Authorities believed they limited the extent of Soviet harassment with an early decision to move 90 B-29 bombers in to send a none-too-subtle signal for Moscow to restrain itself.

Kregel, who served with the Airways and Air Communications Service based in Wiesbaden, handled the specially equipped C-47s that flew up and down the corridor to

At the start, duty and maintenance schedules kept 65 percent of USAF aircraft airborne each day. Pilots, like now-retired Lt. Col. Ivan Glasscock, shown here in his C-54 cockpit, flew in blocks to overcome the differences in speed between the twin-engine C-47s and the four-engine C-54s. The pilots flew at predetermined speeds, checking beacons en route, then landed in close succession.

Two Texans, Howard Fish and Jamie Tom, met and married in Berlin in May 1948. Fish, now a retired lieutenant general, was a statistical control officer in Berlin when he flew in the airlift. His wife was a civilian working in Berlin.

The greatest humanitarian airlift in history delivered 2.3 million tons of supplies to three Berlin airfields conducting 24-hour operations within 10 miles of each other. Here, a USAF aircraft makes its final approach to Tempelhof during Operation Vittles.

make sure that each radio range leg was where it was supposed to be.

Kregel, who later served as president and chairman of the board of the Air Force Association, remembers that there was constant concern that the Russians might "put up a transmitter to bend the radio beams that we were using for navigation to lure the flock out of the corridor and subject the planes to interception or destruction."

The Best Place To Be

Pilots could often see MiGs patrolling outside the corridor, Kregel says, adding: "We always tried to be sure that we were in the center of the corridor."

Minihan, working in MATS headquarters, was assigned to get state-of-the-art navigation aids over to Germany to combat Russian efforts to jam the airlift's low frequency radio beacons.

"I brought over some VHF nav systems that were just beginning to see the light of day," recalls Minihan. He tracked down some radar surveillance pods that had been used by the Marine Corps as part of a night fighter attack system and got them installed on a few C-54s. The radar return enabled flight crews to pinpoint their location. "We sort of played the Russian game with them and beat them at it," recalls Minihan.

USAF officials counted 733 incidents of harassment along the air corridors and in Berlin. These included 103 cases where searchlights were directed at pilots in an effort to confuse them, 173 incidents in which Russian airplanes either buzzed transports or flew too close, and 123 cases in which transports were subjected to flak, air-to-air fire, or ground artillery fire.

Maintenance remained a top priority—and a constant worry.

Gerald A. Leen of Silverdale, Wash., who handled supply and maintenance duties at Tempelhof when the airlift began, specialized in quick repairs. "Any airplane that needed something fixed to continue its mission, we handled that in Berlin," recalls Leen, who retired from the Air Force as a colonel after 27 years of duty. "My team took care of all the turnaround maintenance."

Mechanics worked at the squadron level to handle the 50-hour and 150-hour checks, putting in three shifts of 12 hours on and 24 hours off. The rotation sped maintenance, cutting in half the time it took to get the aircraft back into the operation.

L.W. "Corky" Colgrove, of Fort Lupton, Colo., was fresh out of mechanic's school when he arrived at Rhein–Main two weeks into the airlift. The young mechanic plunged into duty, maintaining hard-pressed aircraft, before shifting to maintenance chores on the airlift's lone long-haul C-74, with its 25-ton payload. Colgrove quickly moved up to

1948

March 20:	Soviets walk out of Allied Control Council.
April 1:	Soviets impose rail and road restrictions on Allied traffic from western zones to Berlin.
June 11:	Soviets halt rail traffic between Berlin and West Germany for two days.
June 12:	Highway bridge on road to Berlin closed "for repairs."
June 16:	Soviets walk out of Allied Commandatura.
June 24:	Soviets, at Stalin's order, halt all surface traffic into Berlin and cut electricity to the city.
June 26:	Allies launch Operation Vittles as C-47 aircraft bring 80 tons of supplies into city on first day.
July 16:	US and Britain announce that 60 USAF B-29 bombers will temporarily becdown at UK bases. The first group of 30 B-29s lands on July 17.
Oct. 15:	Maj. Gen. William H. Tunner assumes command of newly created Combined Airlift Task Force for airlift.
Dec. 31:	Allies notch Berlin Airlift's 100,000th flight.

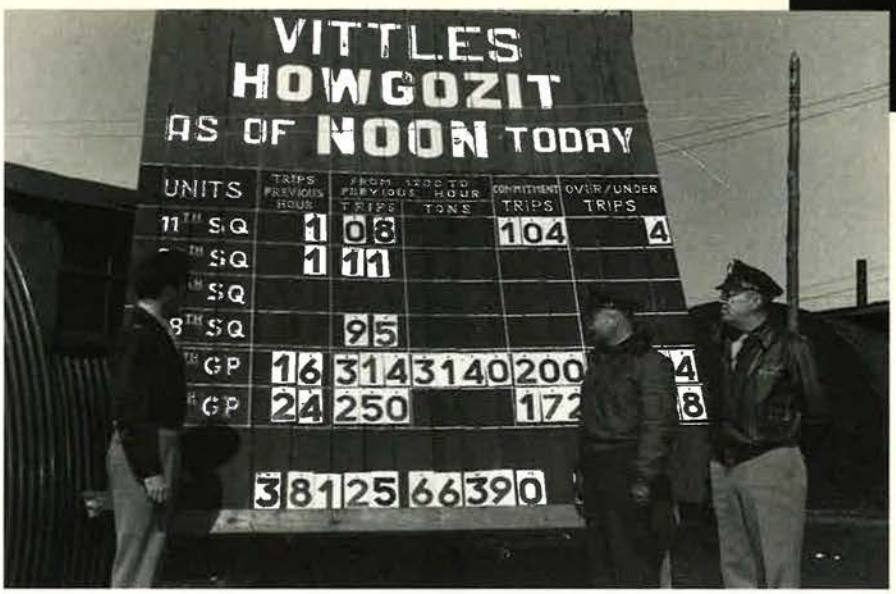
1949

March 4:	Amount of cargo hauled during Berlin Airlift hits one million tons.
April 16:	Airlift "Easter Parade" breaks all tonnage records by lifting 12,940 tons of food and coal to Berlin in 24 hours.
May 12:	Moscow lifts blockade after 328 days. Airlift continues but undergoes gradual reduction.
July 30:	US and Britain announce plans to phase out Berlin Airlift.
Sept. 30:	Berlin Airlift officially ends after 277,000 flights and 2.3 million tons of cargo, of which 1.7 million tons were hauled by US aircraft.

become the crew chief for the C-74 that completed 24 deliveries into Berlin with a total cargo of almost 429 tons.

For more comprehensive maintenance, airlift aircraft were dispatched to Burtonwood Air Depot in England after 200 hours of flight operations. The maintenance facility opened on Nov. 2, 1948, but it got off to a rocky start.

Retired Air Force SMSgt. Paul J. Gurchick of Tampa, Fla., who began work at Burtonwood two months before full-scale maintenance operations began, says it took maintenance crews three days to complete a 200-hour inspection on the first C-54. By the end of the airlift, five hangars were in full operation, completing nose-to-tail maintenance on five airplanes a day.



The number of flights and tons just kept climbing higher—to keep track airlift participants updated this "howgozit" board hourly at Fassberg, the RAF base used by US airmen during the airlift.

Gooey Mix

Gurchick, a veteran of 28 years of Air Force service, repaired all the communications and navigation gear. The four-channel, push-button VHF radio sets proved to be the toughest to maintain due to the ever present damp and dust from coal and flour. Gurchick still remembers the gooey mix of coal dust and hydraulic fluid that complicated his repairs.

Aircrews were so busy, flying two or three missions a day, that few ever saw the Berliners they were feeding. Ford M. Garvin, who worked at Celle setting up the briefing system for aircrews, says the Berlin assignment was demanding on everyone. "Thirteen hours on, 11 hours off, seven days a week," recalls Garvin of Melbourne, Fla. "It was six months before I got a day off. But still it was the best military operation that I've ever been a part of. It had precision. It worked."

West, who flew out of Fassberg, remembers flying two weeks straight in one 12-hour time slot, taking three days off, and then changing shifts to fly two weeks straight in a shift that began eight hours later.

Aircrews grabbed shut-eye whenever they could. At Fassberg, many personnel bunked in three story, red-brick buildings that unfortunately had the acoustics of an echo chamber. Practical jokers awakened many comrades with stunts such as tossing the large cylindrical fire extinguishers from the head of each stairwell down the steel steps, sending a shotgun-like clatter through the buildings.

"It seemed as if I were tired all the time," West recalls, "and I tried to spend most of my free hours trying to get some rest."

That was not the case for Gail S. Halvorsen, then an inquisitive first lieutenant. "I wanted to *see* where we were landing," recalls Halvorsen of Provo, Utah. "I wanted to *see* Berlin."

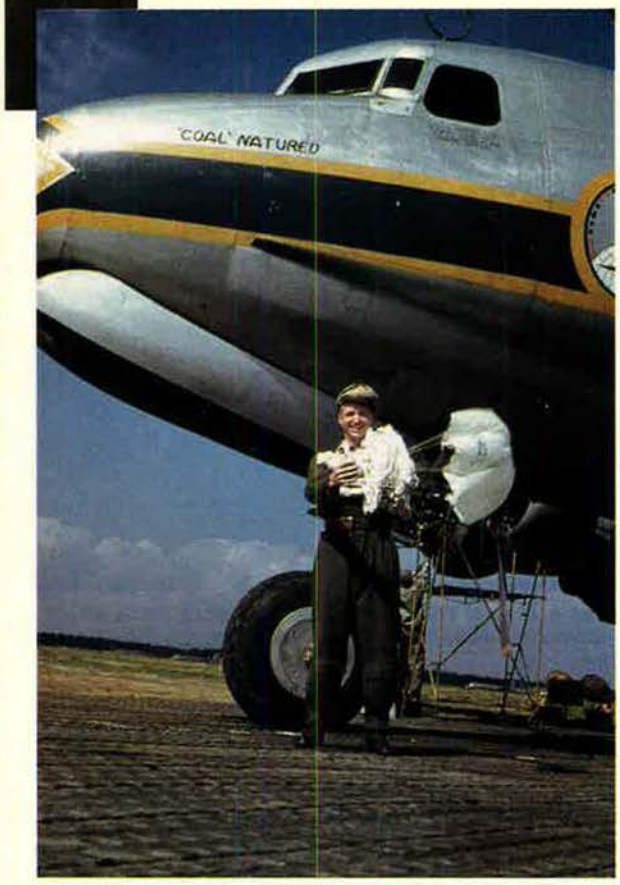
After finishing his share of round-trips from Rhein–Main to Berlin one day in mid-July 1948, Halvorsen grabbed his camera and hitched an aircraft ride back to Berlin. Once at Tempelhof, the Utah State ROTC graduate made his way to the base perimeter, where he encountered about 30 children aged 8 to 14. Not one pestered or begged Halvorsen for candy or gum, the tokens of affection that so many German children had come to expect from GIs in World War II.

"Don't worry about us," the kids told Halvorsen in broken English. "Just give us a little to eat for now and someday we'll have enough."

A vital part of the operation were air traffic controllers like Cletus W. Whitaker, now a retired senior master sergeant. Here, Whitaker stands in the doorway of his low frequency beacon on wheels, parked at Braunschweig, Germany.

The Candy Bomber

Halvorsen was so touched by their



What began as a simple gesture by 1st Lt. Gail S. Halvorsen to a few Berlin children blossomed into a widespread effort known as Operation Little Vittles. Ultimately, the airlift's candy bombers dropped 23 tons of candy over Berlin.

sentiment that he dug into his pocket for his last two pieces of Wrigley's Doublemint gum. He promised to surprise them on his next run the next day.

"How will we know it's you?" the boisterous kids asked Halvorsen.

"When I come over the beacon, I'll wiggle my wings. Watch that plane and get ready," Halvorsen replied.

On his next flight, Halvorsen pushed three tiny packs of candy and gum attached to handkerchief "parachutes" out the flare chute behind the pilot's seat on his C-54.

The simple gesture sparked the spirits of Berliners on the ground and the imaginations of Americans back home. Halvorsen's one-man airlift won the endorsement of Air Force superiors. Candy collection points were set up in Europe and the United States. Special flights were arranged for Halvorsen to circle the city to drop candy.

Americans donated thousands of pounds of candy and handkerchiefs and other pieces of scrap cloth to sustain what became known as "Operation Little Vittles." By the spring of 1949, the "candy bombers" rained candy-bearing parachutes down upon a picnic for thousands of Berlin children that had been arranged at Peacock Island in Lake Hegel by the airlift detachment at Tempelhof. All told, the pilots eventually dropped 23 tons of candy.

By the midpoint of the winter of 1948–49, USAF had proved that the Allies could sustain Berlin indefinitely. On Jan. 17, 1949, the airlift set a weekly delivery record of 41,540 tons of cargo. Two days later, Allied authorities boosted the daily food ration in West Berlin from 1,600 calories to 1,880 calories. On Feb. 18, airlifters landed the one millionth ton in Berlin—potatoes aboard a British York aircraft.

Day after day, week after week, cargo volume soared and delivery records tumbled as airlift operations reached a crescendo. On April 6, GCA crews at Tempelhof landed one airplane every four minutes over six hours, setting a record for sustained high tempo operations.

A Fassberg-based C-54 completed the round trip to Berlin in one hour, 57 minutes, with ground turnaround time of 15 minutes, 30 seconds.

Tunner, ever the master of milestones and competition, mustered airlifters for an "Easter Parade" into Berlin.

Aircrews met the challenge to set a record, ferrying 12,940 tons of cargo into Berlin aboard 1,398 inbound flights over a 24-hour period on April 16, 1949. The pace of operations—2,796 takeoffs and landings in the 1,440 minutes over a 24-hour period—meant that an aircraft was landing or taking off every 30 seconds, day and night. The Allies had delivered enough coal over the 24-hour period to fill 1,100 rail cars.

It's All Over

"It was that day, that Easter Sunday, that broke the back of the Berlin Blockade," Tunner recalled. "From then on we never fell below 9,000 tons a day. The land blockade was pointless."

Nine days later, the Soviets' official news agency, Tass, signaled that the Kremlin was willing to lift the blockade. Allied negotiators concluded an agreement with the Russians on May 4 to lift the blockade on May 12.

The Allies kept up deliveries, waiting until July 30, 1949, to announce a target date for ending airlift deliveries. Phase out operations began in earnest.

The Celle-based 317th Troop Carrier Group flew its final mission into Berlin on July 31, 1949. C-54s began leaving Rhein–Main for the United States in early August. By August's end, the Fassberg-based 313th Troop Carrier Group had completed its last mission into Berlin.

The Allies commemorated their losses in late September with a memorial service at Camp Lindsey for the 77 men killed during the airlift—including 31 Americans. Authorities counted 126 aircraft accidents, including one midair collision.

One of the casualties was Dvorak's poker pal.

"Berlin seemed easy after World War II," recalls Dvorak of Lake-

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Stewart M. Powell, White House correspondent for Hearst Newspapers, has covered national and international affairs for 28 years, based in the US and abroad. His most recent article for Air Force *Magazine, "Nuclear Arms Reductions Roll On," appeared in the December 1996 issue.*

wood, Colo. He had fought Japanese attackers at Hickam Field on Dec. 7, 1941. He had flown 76 bomber escort missions out of England in a P-38 as well as having flown air cover over the beaches of Normandy on D-Day in 1944.

"An aircraft went in at Fassberg about 3 a.m. one night, and as a member of the crash rescue team, I had to go out to try to find out what went wrong," Dvorak recalls. "As I approached the crash site, it was dark, it smelled from fuel, and here comes the flight surgeon with remains. I saw the cadet ring on my poker buddy's hand. We'd played poker that night. I'd been in a lot of combat and it never bothered me. But that did."

When the airlift finally ended on Sept. 30, 1949, after 15 months, it was almost anticlimactic.

"The dramatic moment came when the Soviets announced that they were raising the blockade," recalls Fish. "That's when we knew we had won."

But the stunning operation had not only saved a city. It had left an indelible mark on the Air Force, on Cold War relations with the Kremlin, and on men and women touched by the operation.

Vandenberg, the Air Force Chief of Staff, said that the Berlin Airlift enabled the fledgling Air Force to demonstrate the "ability to make airpower a true force for peace."

W. Phillips Davison concluded in his assessment *The Berlin Blockade* that the airlift had "changed people's attitudes toward the Western powers, raised their esteem for Western strength, and reassured those who were anxious." The airlift had fostered a "feeling of partnership" that lasted for a generation.

After Moscow lifted the blockade, celebrations, like this one by a US Navy squadron for an R-5D crew on its return from Berlin, were standard. It would be another four months before the Western Allies officially stopped all flights.

For many veterans of the experience, the rewards were far more personal.

Halvorsen, whose "Candy Bomber" had inspired Americans and Berliners alike, cherishes the fact that the operation "cemented Americans' relations with Germans," adding: "By working to save people's lives, we changed world opinion. I feel certain that history would be markedly different if we'd gone to war over Berlin."

West remembers his Berlin days fondly. "Of all the sometimes exciting, other times routine, and a few dangerous events I was to experience throughout my military career, except possibly for the thrill of picking up fliers down behind enemy lines during the Korean War, the Berlin Airlift gave me the greatest sense of accomplishment."

Hoyt of Lilburn, Ga., a B-17 crew member in World War II who returned to active duty to help set up control tower operations at the British base at Celle, found that delivering food to starving Berliners offset any regrets about the wartime necessity of bombing Nazi Germany.

"I had flown 38 bombing missions for a good purpose during the war," Hoyt recalls. "But when this situation cropped up, it was another ball game, a real turnaround from the war. There was a complete feeling of cooperation and rapport. As I think back on it, this was really the highlight of my career."

Hoyt met Elfriede, his wife-to-be, while on duty at Celle. She and her family had fled from eastern Germany to Celle ahead of onrushing Soviet troops at the end of World War II. The couple got married in Frankfurt at the end of the airlift. The mayor of Frankfurt presided.

"We have good memories of those days," Hoyt says. ■

Rhein–Main AB was a picture of organized pandemonium when it served as a transport terminal point during Operation Vittles. The C-47s and C-54s were scattered throughout the field along with field tents and sundry equipment.

The Air Force is essentially returning to the "select and assign" procedure that prevailed until 1991.

The New Way of Officer Assignments

By Bruce D. Callander

In the early 1990s, the advent of the computer and the Internet—along with controversial personnel decisions by senior USAF leaders—gave Air Force officers extraordinary control over their assignments and, ultimately, over their careers. In the process, however, these factors reduced the role of the institutional Air Force in the assignment process. That, in turn, has made it difficult for the service to fill undesirable jobs.

Now, USAF intends to change course. It has given an unmistakable signal that it intends to move back to the center of things by making a series of changes to today's assignment system. The new rules, recently approved by Chief of Staff Gen. Michael E. Ryan, are to take effect in early 1999.

In the new approach, USAF will emphasize two principal goals. One is to give Air Force commanders a significant role in "mentoring" officers about their futures. The other is to get Air Force officers to view career development as a whole and not concentrate so heavily on their next assignments. Without a doubt, however, the result will be that individuals will have less say—and the Air Force more—in where they go and what they do.

This marks a major change from the current situation. In today's Officer Assignment System, the Air Force advertises job openings on an Internet web site. Officers are allowed to "shop" for jobs and apply for them electronically. All too frequently, an immediate commander has little input to the process. Moreover, precious few USAF members volunteer for remote or difficult assignments.

With his recent policy decisions, Ryan essentially will be returning USAF to a "select and assign" procedure that prevailed until 1991. Under that system, an officer completed an AF Form 90 listing his or her preferences, but there was little autonomy in job selection. The personnel system usually matched up individuals with openings.

That changed early in this decade. From 1991 until early 1995, most Air Force officers enjoyed a different, almost totally voluntary, system of obtaining jobs under the so-called Officer Volunteer Assignment System. They were able to shop for assignments on a computerized network. Moreover, Air Force policy shielded them from involuntary moves until they had completed at least 15 years of service.

In 1995, the system changed again. Unhappy with the lack of volunteers for certain jobs, the service made all its officers—not just more senior ones—vulnerable to involuntary transfers of location and assignment. The volunteer policy was not completely scrapped, though. Most of the machinery of the old system was left intact, and officers still had the same opportunity to apply for a specific assignment.

Ryan has now gone forward to the past. Assignments will be made in the best interests of the Air Force. Officers still will be able to express long-range preferences for assignments. They also will be able to log onto the Internet and discover what jobs are open in their specialties. However, when an officer wants to apply for specific openings, he or she now will have to do so with the advice and consent of their commander.

Full-Dress Study

The changes were recommended by an OAS Review Group appointed by Ryan last December to make a full-dress study of the system. The group was headed by Gen. John A. Shaud, USAF (Ret.), a former deputy chief of staff for personnel and commander of Air Training Command. He now serves as executive director of the Air Force Association.

The study group's recommendations called for:

1. Increasing the involvement of commanders in the process of future assignments for the officers serving under them.

2. Creating a new Personnel Requirements Display to replace the Job Advertisement System "electronic bulletin board" maintained by the Air Force Personnel Center.

3. Developing a Preference Worksheet to be filled out by officers, routed through their commanders, and stored electronically at the center as part of the input for determining their future assignments.

4. Requiring Officer Assignment Teams at the center to work more closely with losing and gaining commanders, major commands, and career field functional leaders in matching officers to assignments.

Another group, made up of assignment experts and officers from the field, is to work out the details of the changes in coming months.

The Problem

Speaking for his review group, Shaud said, "In our view, the current system has tilted more toward an officer's individual desires, and not enough consideration is given to the needs of the nation, the service, and the officer's professional development.

"While the personal desires of the officer are a factor, they should only be one of many considerations, not the driving factor. Whatever assignment system is used, the needs of the nation and Air Force must be paramount."

A major problem with the current system, Shaud said, has been that it has offered officers greater participation in the selection of their assignments but often has not been able to deliver what they ask for.

"The assumption was that most assignments in the Air Force would have volunteers," he said. "But what has happened is that a significant number of assignments did not have volunteers, so they had to place nonvolunteers. Then, many officers seemed to be applying more to avoid an assignment than to get one. As one officer in the field said, 'What we have going now is a high-stakes, rules-intensive computer game.'

"What we would like to preserve in the current system is the visibility. However, the officer's input of preferences would be mentored by his or her commander. What's going on now is that the one who plays most heavily is the receiving commander who often doesn't know the individual very well at all."

The History

Historically, the Air Force has allowed officers to express their desire for specific assignments, but until recently the process was fairly informal. The form on which they listed their preferences (AF Form 90) was known as "the dream sheet" and the perception was that the Air Force gave it little weight.

With increased use of computers, personnel managers were able to gather more data earlier and more quickly project worldwide requirements. And with the advent of the Internet, the personnel center was able to give officers a routinely updated picture of their own assignment opportunities. In effect, it could allow them to look over the shoulders of the assignment officials for their fields and see where the job openings were developing. It was a short step from there to letting them bid for the slots that appealed to them. At a time when the service was downsizing and worried about keeping officers in needed skills, giving them a greater say in their assignments was part of the effort to make the service more attractive and improve retention.

The improvements were not without their downside, however. One was that it gave commanders less say in the selection process. Shaud said, "We found cases where officers were volunteering for positions and being selected for them, [yet] their commanders didn't know about it until they were notified of the officer's assignment."

By early 1995, the Air Force introduced a new officer assignment system to exploit all the electronic tools and set up worldwide computer links. The new system, minus the word "volunteer," also enabled USAF to once again take qualified nonvolunteers to fill the less desirable jobs that were going unfilled.

In June 1996, it refined the system further with a program titled "More Voice/More Choice," intended to provide more commander involvement—for both gaining and losing commanders—in the assignment process. However, officers still could shop and volunteer for assignments without notifying their commanders.

Admittedly, this kind of "home shopping" was popular with officers. As Shaud said, "They were spending a great deal of time surfing the Web

OAS Review Group

Retired USAF Gen. John A. Shaud praised his review group members whom he said represent "the best of our officer corps in the significant understanding of military values. They came from the field and were people who've experienced the system firsthand. They had the best interests of our nation, Air Force, and officers at heart and worked tirelessly to make recommendations which would only strengthen the Officer Assignment System."

The group first met in the Pentagon in December 1997 to receive briefings on the history and principles of the current assignment system. Taking a break for the holidays, the members returned to their units to discuss the system with commanders and other officers. They reconvened in January to complete their review, study inputs from the survey, and make their recommendations for changes.

Besides Shaud, the OAS Review Group included:

Col. Dan Mumtaugh, commander, 71st Flying Training Wing, Vance AFB, Okla.

Col. Irv Halter Jr., commander, 1st Operations Group, Langley AFB, Va.

Col. Rich Perraut Jr., commander, 15th Support Group, Hickam AFB, Hawaii.

Col. Chip Utterback, senior US representative, Allied Air Forces Central Europe, Ramstein AB, Germany.

Lt. Col. Cathy Dreher, intelligence staff officer, Defense Intelligence Agency, Washington.

Lt. Col. Lee Glausier, commander, 15th Special Operations Squadron, Hurlburt Field, Fla.

Lt. Col. Tom Hixon, deputy commander, 437th Logistics Group, Charleston AFB, S.C.

Lt. Col. Marc Kieschnick, commander, 12th Communications Squadron, Randolph AFB, Texas.

Lt. Col. Nicholas Sipos, assistant chief, Assignments Division, Air Mobility Command, Scott AFB, Ill.

Maj. Geofrey Frazier, operations officer, 30th Range Squadron, Vandenberg AFB, Calif.

Maj. Jon Huss, fighter assignments chief, Air Force Personnel Center, Randolph AFB, Texas.

Maj. Jeff Kidd, managed care chief, Air Combat Command, Langley AFB, Va.

Capt. Kory Auch, commander, 319th Mission Support Squadron, Grand Forks AFB, N.D.

Capt. Steve Basham, B-2 instructor pilot, 393d Bomb Squadron, Whiteman AFB, Mo.

Capt. Steve Csabai, engineer officer resource, Air Force Materiel Command, Wright–Patterson AFB, Ohio.

Capt. Dan Debree, chief, Air to Ground Division, 48th Operations Support Squadron, RAF Lakenheath, UK.

waiting for specific jobs to be posted so they could volunteer for them."

But recent feedback from officers in the field had suggested that many found the merchandise not as good as advertised. A recurring comment was that many of the jobs on the electronic bulletin board were, in fact, already filled. "If someone keeps volunteering for things and nothing happens," said Shaud, "if the system keeps saying 'No,' the person says, 'I suppose there is a system here but I'm not participating in it.' "

The Fixers

It was against this background that Ryan called for the most recent review of the system. It was an open-ended assignment, Shaud said. "When I got involved, I had zero baggage," he said. "It was something that I knew the Chief wanted looked at, but as far as anyone's saying change or don't change it, that was not part of the guidance."

An important part of the review group's activity was polling officers for their views about the current system. Almost 10,000 officers in a wide range of grades, skills, and locations responded to a survey posted on the Internet.

The survey provided 14 statements and asked the respondents whether they agreed or disagreed with each or were neutral on the subject.

Almost two-thirds of the officers polled agreed, for example, that Air Force needs should take precedent over individual desires. Fewer than nine percent disagreed.

Reactions were less one-sided to the statement that the current system puts the right people in the right assignment. Forty percent agreed and 39 percent disagreed.

Sentiments were divided, too, on whether the current system is clear and understandable. About 46 percent agreed that it is and 36 percent disagreed.

Asked whether they agreed that the current system is fair to all career areas, however, more than half (53 percent) said no and only 16 percent agreed.

There was a similar division of reactions to statements dealing with the Officer Professional Development objectives for members' career Air Force Specialty Code. About 35 percent agreed that the OPD objectives for their fields are clear and understandable but 44 percent disagreed. About 31 percent agreed that the present assignment system encourages career development but 45 percent disagreed.

Some elements of present assignment policy drew only mild reactions while others were applauded. Some 43 percent of the officers agreed, for example, that all jobs should be filled by the best qualified, regardless of move status, and 46 percent disagreed. However an overwhelming 82 percent agreed that the ability to separate or retire in lieu of accepting an assignment ("the seven-day option") should be kept as part of the system. Only 9 percent disagreed.

A whopping 85 percent also agreed that the present Internet assignment home page and electronic bulletin board are important and useful sources of information. Barely 7 percent disagreed. An even larger 93 percent agreed that the ability to provide input (desires and preferences) concerning assignment choices is essential to the system. Only 3 percent disagreed.

A large majority of the officers (92 percent) also agreed that they should have the ability to view all job openings/advertisements regardless of their own eligibility. Again only three percent disagreed.

Statements on commander involvement drew less one-sided reactions. Almost two-thirds (63 percent) agreed that their commander/supervisor discussed career progression and future assignment options with them. About 24 percent disagreed. However 42 percent of the officers agreed that commanders/supervisors have too little influence in determining officer assignments. About 32 percent disagreed. More than half (52 percent) said that AFPC assignment teams have too much influence over assignments. Only 16 percent disagreed.

Details to Follow

The changes so far announced address some of the major assignment areas, but a number of policy questions will not be answered until the implementing instructions are worked out.

One major one, for example, is whether the seven-day option favored by more than 80 percent of those surveyed should be kept.

"We talked about that," said Shaud, "and our conclusion was that this has to be looked at further. The tension is between what is fair to the individual and what is fair to others. There is a lot of anecdotal evidence that when they have someone refuse an assignment and then retire, it creates short-notice assignment notifications and a domino effect of unplanned retirements.

"I think the troops see it as a condition of service. On the other hand, if it is just wreaking havoc by forcing people to retire, that's not right either. But we need to know what we're talking about, and it's measurable. The Air Force can tell when this action was taken and, in fact, what were the consequences. Did a lot of people retire in lieu of taking an assignment? So our recommendation was that this needs to be studied to see if it needs to be changed."

The future of some other current policies also must be worked out. Shaud said he thinks the new system will retain the rule that officers in a "must-move" situation have a priority of action. "I think that is driven by common sense as much as anything," he said.

Another policy the general thought was likely to survive was the one which allows couples, where both spouses are in service, to ask for the same locations. "We did not address that directly," he said, "but I did bring it up, and it turned out that the numbers were not sufficiently large to be viewed as a big problem. My take is that the Air Force would not do major surgery to that."

Similarly, he said, the Air Force will continue to allow for personal considerations. "The way I left it with them was that there is a space on the Preference Worksheet for special needs. In other words, it may be that you are saying, 'I need to go to Fairchild because I have parents who are not well in Spokane, Wash. You ask me what my preference is and that's it and that's why. I am willing to forgo what a rising young lad ought to do, and I really need to go to a place for this reason.' "

Some Carryover

The new approach may not satisfy all officers, particularly those who favor electronic job-shopping. But officials stress that the Internet connection is not being broken entirely.

In approving the recommended changes, Ryan said, "Now officers will be able to see all their career field requirements along with special duty requirements. At the same time, they can use a second part of the display which indicates projected assignments being worked over the next six to nine months. Using some or all of this information, officers can talk to their commanders, and they can jointly communicate to assignment teams at AFPC what type of assignment they believe would be best for them."

At the same time, the Chief said, assignment officers will remain ready to inform, recommend, and educate officers about their assignment options.

Are people still going to have to go to remote locations and "hard-to-fill" assignments? "Yes," said Ryan. "However, all the key players in the assignment process will be educated on the current requirements at the time when an officer's assignment is being made. When officers have to fill these assignments, they will understand why they are the ones being selected to go."

It still will be possible, too, for officers to deal with assignment experts at the personnel center, said Shaud. "With the personnel center paying more attention to career development," he said, "I would hope that they would be able to do that even better. And, of course, the longer-term result, we think, would be that the commander's able to handle most of that. It becomes routine that you work with your commander as to the when and where and what of the next assignment.

"What I am hoping is that commanders are able to explain better what an individual's chances are. Suppose you have somebody who wants to be the CINC's [executive officer] or aide or something. If that is what the individual really wants, I am hoping that there is a lieutenant colonel somewhere who can say, 'Let me tell you how you can become competitive' or say, 'This just isn't going to work for you.' Rather than have officers applying for something that never comes up on the net, informed people will really understand how this works."

The new approach also should help end some practices that have sparked criticism, Shaud said. "The way the system is set up now," he said, "the gaining commander can craft the assignment in the advertisement so it can only fit one person. The individual then clicks and drags that assignment and gets picked up, much to the astonishment of a losing commander somewhere. That's not right either. I think the gaining commander can have something specific in mind but should work it out through the personnel center and in phone calls to the losing commander.

"I think one of the things we will have to work on very hard is teaching the system well to the troops so they trust it. There has to be an element of trust here because it is a shift away from what they have today. I think that when the individual is dealing with the electronic bulletin board with nobody in between, frequently the idea has been that somehow the system betrayed them."

Something Borrowed ...

Describing how his group developed its recommendations, Shaud said, "I told someone that we used something old, something new, something borrowed, and something blue.

"What was old was the idea of this Preference Worksheet, which is like the old Form 90. The junior officers on our team came up with that, and I took a look at it and thought, 'Well, they have managed to reinvent the Form 90.' But this is exactly what they wanted, to array preferences and have that array mentored with someone talking to them about it. And this is what is on that Preference Worksheet that the commander signs off on, and that is what gives it its impact at the personnel center.

"The important thing is sticking with the visibility built into the system with the requirements display. What they won't do is click and drag the way they do today. It will just display the assignments, saying, here is what is available overall and here is what is available specifically for you and your AFSC. Then you translate that into your Preference Worksheet. That is forwarded, all electronically, to the Officer Assignment Teams. But you are guided by someone who understands the process and understands you.

"The thing borrowed is that greater commander involvement. We were briefed by the other services, and we were very much taken with the notion the Army has that this Officer Assignment System is the commander's system. It works because there is commander involvement. And it isn't that the commander spends a lot of time figuring out how to help people bypass the system. But the thrust of it is that it is a commander's system and with a mentored relationship, maybe we can help that.

"The something blue in it is the idea of Air Force values, service—meaning a profession, a calling. It's the idea that the excellence of the individual in USAF is defined by the job that he or she is doing today and that the assignment system is to enhance that excellence both in the individual and in the system. The final thing is that the Officer Assignment System references the Air Force value of integrity, meaning that it does not give false expectations but that it is based on merit.

"I also use the term 'integrity' in the engineering sense," Shaud said, "meaning that the system all fits together, that the officer, the commander, and the personnel center work together with integrity so that all the parts fit, and people don't spend a lot of time trying to figure out how to get around it.

"I found those junior officers on our panel very impressive in the way they like to talk about values, this idea of service, the idea of excellence, the idea of integrity. We talked about Duty, Honor, Country and what all this had to do with the assignment system. When I briefed the Chief, I told him what impressed me most was the way that mission orientation and the idea of military values were very much picked up by the junior officers, and that was heartening." ■

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There is still a long way to go before it will be a smooth-running health care system.

Troubles With Tricare

By Peter Grier

RETIRED Air Force Lt. Col. Eddie O. Huckins signed up for Tricare Prime in 1995. At first, his experience with the United States military's version of a cost-saving health maintenance organization was a positive one. Foundation Health Federal Services, Inc., the Tricare contractor for the region which included his Oregon home, featured courteous customer service representatives and trouble-free billing. Area physicians listed in his provider directory were helpful and willing to take military business.

Then, in 1996, things began to deteriorate, he says. Customer service slowed. He started receiving notices that his coverage was about to lapse due to lack of premium payment. The notices kept coming even after he had contacted Foundation Health three times to verify that they had indeed received his check.

Foundation Health last year notified Huckins that his Primary Care Manager—in essence, his family doctor—was dropping out of Tricare. The stated reason was that Tricare Prime payment schedules were too low. He plucked the names of eight other PCMs out of his Foundation Health provider directory and picked up the phone. Three of the eight were no longer accepting new patients. Two others were no longer participating in Tricare, they said, because the program's allowable charges were unacceptable. Three of the PCMs had never heard of Tricare Prime at all.

"Since I will not compromise [on the] quality of [my] Primary Care Manager, I elected to transfer to another, more customer-oriented, health care system and forfeit my Tricare premium," wrote Huckins in a December 1997 letter to the Air Force Association.

Long Road Ahead

If recent comments received by AFA are any indication, Huckins unfortunately is not alone. Many members wrote in to say that, if their experience is a guide, then Tricare has a long way to go before it becomes a smoothly running system.

Department of Defense health officials admit that implementing the huge changes associated with the Tricare system has proved to be very complicated. Among other things, schedules have slipped, administrative problems have cropped up, and payment schedules have proved controversial.

Even so, they say, fixes for many of the glitches have been put in place and a new management structure will help Tricare head off future problems. "I would like to see all of our beneficiaries cared for in our military facilities, but those days are gone," Brig. Gen. Dan L. Locker, lead agent for DoD Health Services Region 4, told Congress earlier this year. "I believe the Tricare program is good, the concept is sound, the execution is well under way, and the successes are beginning to overtake the challenges."

Tricare is a managed health care program modeled after civilian managed care standards. The manager in Tricare's case is the military, in partnership with civilian contractors. There are now 11 designated health service regions (DoD combined Regions 7 and 8 in July 1997) in the United States, each headed by a lead agent who is a senior military health care officer. For most enrollees, day-to-day health care decision making is handled by a Primary Care Manager, with oversight provided by local Military Treatment Facility commanders.

The Tricare program offers beneficiaries three health care options. Tricare Standard is a fee-for-service program that is the same as standard CHAMPUS. Tricare Extra is a preferred provider system which is

somewhat less expensive than Standard. Tricare Prime is a network of military and civilian hospitals and health care providers which is similar in scope to a civilian Health Maintenance Organization. It is the least expensive Tricare level.

All active duty US military personnel are automatically enrolled in Tricare Prime. Their beneficiaries—as well as military retirees up to age 65—may choose the health care level in which they wish to participate.

Tricare was established in an era when health care costs were escalating rapidly, yet the Department of Defense was moving to downsize its own Military Treatment Facilities. Due to Base Realignment and Closure actions some 35 percent of the MTFs that were open in 1987 were shuttered a decade later.

Yet the number of people eligible for military health care declined only 9 percent during that same period. And the makeup of the beneficiary pool continued a rapid change. Today, retirees account for half the military health care population.

Tricare today has many levels, varied objectives, and a wide array of stakeholders, from military retirees to active duty physicians. A large budget is involved, as well: The Department of Defense spent about $15.5 billion on its health care system in 1997. Given these complexities, it is perhaps not surprising that some critics believe Tricare implementation has proved to be a difficult undertaking.

"Much remains to be done before Tricare becomes the smooth-running and beneficiary-friendly endeavor envisioned by its developers," Stephen P. Backhus, a General Accounting Office military health care expert, told a House panel this year.

Slow Start

Tricare has been slow off the mark, for one thing, according to GAO. More than four years after its founding, it is one year behind its nationwide implementation schedule, said Backhus. Defense Department officials must award large, complex, competitively bid contracts to supplement and support the health care provided by MTFs in the 11 Tricare regions. Virtually all these awards have been protested by losers at substantial cost to both DoD and the offerors.

Heavy enrollment in Tricare Prime—a key cost-saving aspect of the new program—has also lagged, claims GAO. DoD projections have assumed that, within each region, at least 90 percent of nonactive beneficiaries would sign up for Tricare Prime within one year of its implementation. At the beginning of Fiscal 1998 the actual figure was only about 57 percent.

But the largest share of Tricare problems might fall under the general category of "administrative difficulties." GAO, a wide array of service member and retiree associations, and individual users have complained of everything from difficulty in reaching regional Tricare managers on the phone to a lack of physicians and unclear benefit information.

The Military Coalition, a group of organizations (including AFA) representing the views of some 5 million active duty and retired service personnel, plus their families, recently told Congress that its members are committed to making Tricare a better health plan for all participants. "Having said that, ... there are still significant issues that need to be resolved," said Sydney Tally Hickey, associate director of the National Military Family Association.

Among Tricare's administrative problems, lack of access appears to be one recurring theme. Numerous responses to an Air Force Association request for comment on how Tricare implementation is proceeding talked about how hard it was to get representatives on the phone in some regions.

The experience of retired USAF Col. Alan C. Ray of Camas, Wash., is typical. There are "not nearly enough phone lines to provide reasonable service in my area," he wrote AFA in December. "I have tried on occasion to get through with a speed dial for over 10 minutes, only to finally get through and be put on a 19-minute hold by the computer before I ever got to talk with a claims representative.

"Naturally, she assured me she would take care of the [disputed claim]," Ray continued, "but was apparently unable to deliver."

Hard to Get

In some areas, obtaining needed appointments is no easier. Retired Air Force Col. Richard S. Greene of Reno, Nev., wrote AFA in December that, in his region, Tricare Prime enrollees who do have a Primary Care Manager are waiting "anywhere from two weeks to a month to get an appointment. The contract states seven days."

Considering this background, it is not surprising that many beneficiaries have been beset by claims processing problems once they do establish contact with their care managers.

Air Force retiree Norman Courter's claims problems began shortly after his wife was treated for a broken ankle. In early 1997, the hospital in which she received treatment began sending serious dunning notices to Courter for payments that he believed Foundation Health, his Tricare Prime manager, should have paid.

It took "dozens and dozens of telephone calls" to clear up the situation, Courter wrote AFA. The last bill settled involved $864 owed an anesthesiologist.

Or at least Courter thought it was settled. Then last fall, he received a note from Foundation Health demanding that he repay most of that money. The claim had been paid as "surgery," not "anesthesia," said the letter. Courter would have to remit $852, then turn around and resubmit a claim so that Foundation Health could redo their paperwork.

"Frankly, my financial situation is such that the amount was no great burden and I do expect some later recovery," wrote Courter. "At the same time, I'm incensed that such a tactic is promoted against any service member, retired or active. Imagine what a blow this would be to a person or family just able to get by from month to month."

Tricare officials admit that public interface in general and claims processing in particular have been their greatest challenges.

In the Tricare Central Region, for instance, 325,000 beneficiaries signed up in the first 10 months of the program—a larger number than the contract between the Pentagon and provider TriWest Healthcare Alliance projected for the first five years. Initially, average waiting times for phone calls were upwards of 45 minutes. The number of claims ran some 40 percent higher than anticipated, according to TriWest officials.

"The unexpected volume, ... and the complexity of the claims processing requirements themselves, led to our claims processing falling behind,"

said TriWest President and CEO David J. McIntyre Jr. before Congress.

Well-run private health plans typically have a complaint rate of 2 to 3 percent. Two to 3 percent of the number of beneficiaries expected to eventually take part in Tricare is a very large number, pointed out McIntyre.

"Thus the focus in my view has to be on constant improvement and aggressively tackling those problems that do arise," he said.

Humana Military Healthcare Services, the contractor for Tricare Regions 3 and 4, faced similar numbers. Initial claims volume was 35 percent higher than predicted in its contract—which worked out to 8,000 extra claims every day.

Extra Help Needed

Building the extra staff needed to handle this overload took time, said Humana President and CEO Robert E. Shields. Since the height of the problem in January 1997, the claims backlog has been whittled down by 55 percent, according to Shields.

"The percent of claims processed within 21 days is consistently more than 80 percent compared to the contractual requirement of 75 percent," Shields told Congress in February. "Currently, 100 percent of beneficiary calls to our claims representatives are answered within 20 seconds compared to the contract requirement of 90 percent in 120 seconds."

Speaking for its active duty and military retiree members, the Military Coalition remains concerned about slow claims processing and care access in Tricare. If nothing else, the Department of Defense needs to establish a method of tracking access data in all Tricare regions, hold coalition members. Similarly, they urge the Pentagon to establish Tricare ombudsman programs, staffed by independent parties, wherever Tricare is in effect.

Furthermore the coalition holds that Tricare still does not provide uniform health care benefits. Take two Tricare Prime enrollees, one who lives near a big Military Treatment Facility and one who does not. The enrollee near the MTF will likely have a military physician assigned as Primary Care Manager. The enrollee outside the MTF catchment area likely will have a civilian PCM, instead—and have to pay copayments for all visits and services.

According to Hickey of the National Military Family Association, this may effectively create "two distinct Tricare Prime plans—an MTF Prime ... and a civilian Prime."

Then there is potentially the largest Tricare problem of all, one that deals directly with the quality of care: physicians in the system.

The Military Coalition and many Tricare participants are worried about the Pentagon's ability to locate and retain quality health care providers. Directories of Tricare Prime providers are often not accurate, according to the coalition. Some providers are located in unsafe parts of town. "There have been reports of a dearth of Prime providers, especially specialists," said Hickey.

The problem stems from the fact that most Tricare managed care support contractors have negotiated physician reimbursement rates that are even lower than those paid by Medicare. Unhappy with their fees, some major health care provider groups have simply dropped out of the system. Last year, a 250-doctor group in Colorado and the entire provider network of the Medical University of South Carolina walked away from Tricare Prime business, for example.

Disillusioned?

Low reimbursement rates and a high hassle factor may have caused a similar problem for Tricare Standard (CHAMPUS). "Some physicians are becoming disillusioned with Tricare," notes GAO.

Tricare contractors admit that physician recruitment poses a challenge. As of early this year, TriWest was still 27 providers short of a complete network in its covered area, for instance.

The contractors hold that even 100 percent of the CHAMPUS Maximum Allowable Charge set by the government is not enough to attract providers in places where there are a limited number of doctors and a fairly small number of Tricare beneficiaries. In such areas providers argue "that it would take reimbursement at upwards of 140 percent [of current limits] to get them to participate," said TriWest's McIntyre.

Thus the complaint of retired USAF Lt. Col. Richard N. Doolittle of Littleton, Colo., is a too common one. "From the perspective of the intended recipients in Colorado, the system is not working," he wrote AFA. "This is primarily due to the lack of acceptance of the program in the Colorado area. ... My family physician states he was offered an opportunity to participate at 14 percent lower than Medicare rates and he could not afford to do that."

Defense Department health officials say that any institutional change as massive as Tricare implementation will have its problems. They are doing their best to limit them, they say, pointing out that polls show a majority of Tricare participants are pleased with the system and feel it compares favorably to civilian counterparts.

To strengthen Tricare oversight and performance DoD has established one central Tricare Management Authority, acting Assistant Secretary of Defense for Health Affairs Dr. Edward D. Martin told Congress in February. The new TMA has been charged with developing methods to closely monitor system quality, health care outcomes, and cost.

This year Tricare will complete its initial round of contract acquisitions. All 11 regions in the US should have all three Tricare levels available by December, said Martin. In addition, the Pentagon is "energetically" trying to provide full Tricare benefits to US service personnel and their families stationed overseas.

Payment rates for all medical services under Tricare should soon be at least as high as those provided by Medicare, said Martin. And DoD officials are working to simplify contracts with the Pentagon's managed care contractors, in an effort to help speed claims processing improvements.

Despite continued budget pressure, the medical portion of the defense budget is fully funded for 1998 at the Administration request of $15.6 billion. The money "will afford us the resources to ensure that health care continues to be a successful contribution to quality of life in the military," said Martin. ■

Peter Grier, the Washington bureau chief of the Christian Science Monitor, *is a longtime defense correspondent and regular contributor to* Air Force Magazine. *His most recent article, "More Questions About Military Stores," appeared in the April 1998 issue.*

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Valor

By John L. Frisbee, Contributing Editor

One Magic Moment

Battered by high waves and without a life raft, Linebacker II veteran navigator Capt. Myles McTernan refused to give up. At last, fortune smiled on him.

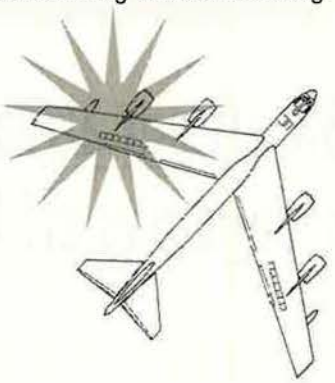
In December 1972 after repeated attempts to negotiate an end to the war in Southeast Asia while following a strategy based largely on counterinsurgency, President Richard M. Nixon ordered strikes on strategic targets north of the 20th parallel. The campaign, known as Linebacker II, which began on Dec. 18, 1972, threw all Air Force and Navy aircraft capable of operating in that environment against those targets.

The centerpiece of the campaign was the B-52 bombers that flew more than 700 sorties during the 11-day bombing campaign that ended on Dec. 29 and led to a cease-fire agreement effective on Jan. 28, 1973. While final negotiations were under way, USAF strikes continued at a reduced rate and against only targets south of the 20th parallel.

Thus ended significant US participation in the longest war in our history. It was second only to World War II in dollar costs and fourth in casualties if our own Civil War is included.

This is the story of the last B-52 lost in the SEA conflict as recalled by Lt. Col. Myles McTernan, then a captain and navigator in the 307th Strategic Wing based at U Tapao, Thailand. Its target that night of Jan. 4 was near Vinh, about 150 miles north of the DMZ. It was expected to be a milk run. This was McTernan's 121st mission, including Linebacker II and two earlier Arc Light tours in B-52s.

While they were releasing their 500-pound bombs at 30,000 feet, a SAM was reported on a collision heading with the B-52, which still had its bomb bay doors open. The missile exploded just to the left of the B-52 as the last bomb dropped. The No. 1 engine was knocked out immediately, followed by No. 2. The pilot's flight controls and the hydraulic and electrical systems were damaged. All of aircraft commander Lt. Col. Gerald Wickline's windows were shattered, adding to the difficulty of controlling the damaged B-52. Following rapid decompression, both McTernan and the bombardier were soaked with leaking JP-4 fuel. Unable to maintain altitude, Wickline descended to 10,000 feet over the South China Sea and ordered the crew to bail out. When he was satisfied that the entire crew had ejected, he followed, first trimming the aircraft nose down on the southerly course, about 10 miles off the coast and heading toward Da Nang.



Unknown to the pilot, there still was one man aboard—navigator McTernan. His seat, which ejected downward, was jammed, probably as a result of the SAM explosion. A partial ejection left him in a position where he could not be seen by other crew members, nor could he reach up to the foot-operated microphone switch on the floor of his compartment.

After what seemed an eternity, McTernan managed to struggle out of the ejection seat, forced to leave his survival kit behind. He was unable to find a soft-pack survival kit that contained a life raft. Only his survival vest remained to keep him afloat if he survived to reach the water. McTernan bailed out through an open escape hatch into the pitch-black night and the turbulence created by the diving aircraft. He suffered deep lacerations of his face, hands, and arms and a fractured bone on the side of his face. Because he was in a semiconscious state, he did not remember pulling his rip cord or landing in waves that were from 8 to 10 feet high. It was some time later, and daylight, before he regained full consciousness.

Meanwhile the other crew members had been rescued. None of them suffered serious injuries, except Wickline, who was painfully injured in ejecting. All members believed that McTernan had bailed out and should be in the general area where they had been rescued. A search for him would continue.

McTernan knew that the chance of his being rescued was slim. He had left the aircraft many miles from the rest of the crew, landing in high seas in which the tiny dot of orange that was his life preserver would be extremely difficult to see from above. He was to be blessed by good fortune, however. After several hours, a search plane scanning the general area where the others had landed reached bingo fuel and was forced to turn back to its base. In one magic moment, a member of the search crew spotted McTernan as he was at the top of a wave and briefly visible.

His rescue was a multiservice affair. The Navy directed the search from USS *Saratoga*. He was spotted by an Air Force search aircraft, picked up by a Marine chopper, and flown to the Da Nang Army hospital, where his injuries were treated.

After his close and terrifying brush with death, Myles McTernan was determined to complete his B-52 tour, which he did at Dyess AFB in Texas. He then served as an instructor in navigator–bombardier training at Mather AFB, Calif., and completed his military career as chief of navigation training for Joint navigator training at Mather.

Lt. Col. Myles McTernan retired from the Air Force in February 1991, ending a valiant military career that he can look back on with pride. He now lives in Folsom, Calif. ■

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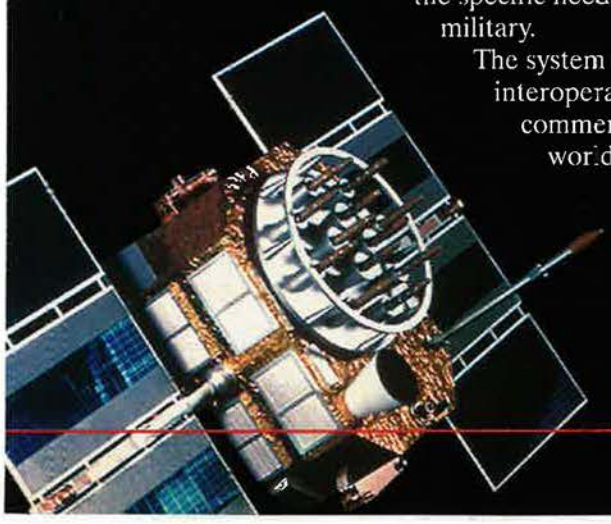

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Sometimes the tanker crews bent the rules to ensure that strike aircraft, critically low on fuel, made it home.

The Young Tigers and Their Friends

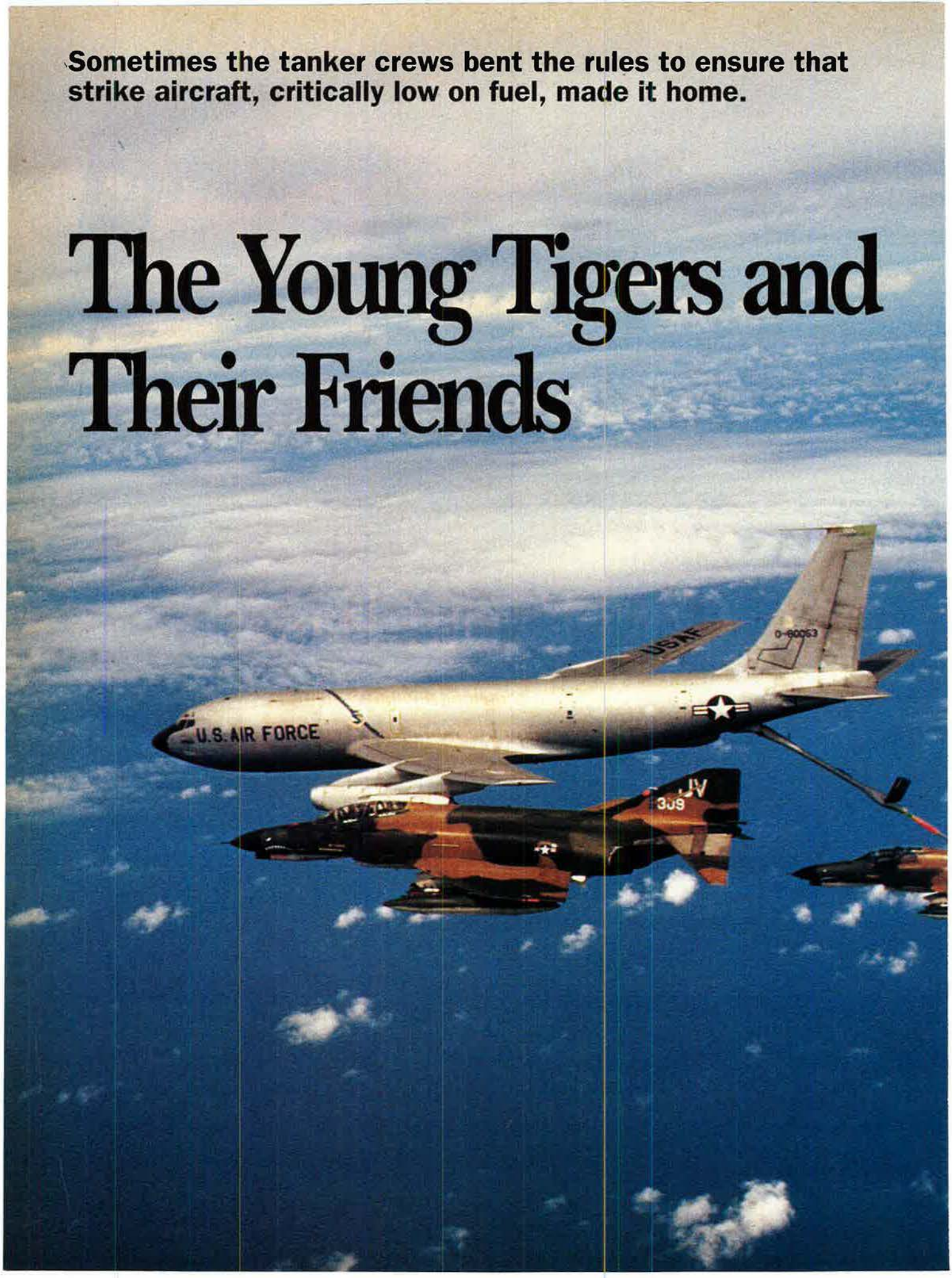

Photo by Ken Hackman

By Walter J. Boyne

THE heartfelt phrase "Thanks, that's a save!" was heard more than 500 times during the Vietnam War as hardworking "Young Tiger" crews of KC-135 tankers moved into harm's way, delivering salvation to strike aircraft perilously low on fuel. Ironically, many of those saves were never officially recorded simply because they occurred when the tankers left their normal orbits to enter enemy airspace, in violation of standing instructions.

Any one of the saves was spectacular—particularly to the fighter pilot who was being saved—but what was possibly the most incredible save of the war illustrates the bravery, ingenuity, and persistence of the tanker crews in general.

There was some good fortune as well in the May 31, 1967, Young Tiger mission over the Gulf of Tonkin, when a KC-135 tanker commanded by Maj. John H. Casteel saved six Navy aircraft with a complex and totally unscheduled refueling. The KC-135's original mission was to refuel two F-104 Starfighters, using the drogue adapter that the probe-equipped F-104s required. Casteel's tanker refueled the two F-104s and was then told of an emergency involving two Navy KA-3 "Whale" tanker aircraft, which also used probes.

The first Whale hooked up, indicating that it had only three minutes' usable fuel. Its systems had malfunctioned, and it could not use fuel it had in its refueling tanks. After transferring 2,300 pounds, the KC-135 then refueled the second KA-3 just as it was notified that two Navy F-8 Crusaders were on scene and short of fuel.

One of the F-8 fighters had only 300 pounds remaining and immediately hooked up with the second Whale even as it was taking on fuel from the KC-135, initiating history's first tri-level refueling. As this was going on, the first KA-3 shared its slender fuel supply with the second Crusader. It then moved into position to refuel again from the KC-135.

So far Casteel and his crew had had a pretty productive day, refueling the F-104s, and saving two KA-3s and two F-8s.

However, the action was not yet complete. Two Navy F-4 Phantoms now arrived on scene, and neither had sufficient fuel to return to their carrier. Already low on fuel itself, the KC-135 turned south toward Da Nang, refueling the two F-4s en route.

When it landed, the KC-135 had less than 10,000 pounds of fuel remaining for its own use. The boom operator, MSgt. Nathan C. Campbell, had earned his pay, saving no fewer than six Navy aircraft. Casteel's crew, including the copilot, Capt. Richard L. Trail, and the navigator, Capt. Dean L. Hoar, received Distinguished Flying Crosses for the action. The crew subsequently was awarded the Mackay Trophy.

Forgotten Heroes

These awards validate the generally held view that the crew members of the KC-135 tankers are the forgotten heroes of the Vietnam War. From the Operation Pipe Stem RF-101 reconnaissance missions and the trans-Pacific fighter deployments in

A Young Tiger trilevel aerial refueling by Maj. John Casteel, Capt. Richard Trail, Capt. Dean Hoar, and MSgt. Nathan Campbell (l–r) was among the most dramatic saves performed by tankers in the Vietnam War.

1961 through the Operation Bullet Shot buildup of 1972, the men who flew tankers were the tightly coiled mainspring of Air Force combat operations.

The very first aerial refuelings in support of combat in Southeast Asia occurred on June 9, 1964, when four KC-135s gave prestrike refuelings to eight F-100s. Both tankers and receivers were part of the Yankee Team Tanker Task Force operating out of Clark AB, Philippines, against targets in Laos.

The Stratotankers—a name rarely used by the crews—were true force multipliers, equally vital to B-52 and to tactical fighter operations. Without tankers, the bomber operations from Guam would have been impossible, and the fighter force would have been virtually incapacitated.

The fighters needed the tankers at the beginning of a mission to top off tanks so that more ordnance could be carried over longer ranges. They needed them again for poststrike refueling, filling empty tanks so that strike aircraft, sometimes damaged and leaking fuel, could get home.

When the situation demanded, the tankers went inside the combat area to off-load fuel, even though officially forbidden to do so. Without the tankers, aircrew casualties would have been dramatically, perhaps prohibitively, higher. For these and many other reasons, the KC-135 tankers were key to the whole Vietnam conflict.

It is often overlooked that the Herculean work of the Southeast Asia tanker units was conducted while the majority of Strategic Air Command's refueling assets were dedicated to supporting the Single Integrated Operation Plan for nuclear war. The total burden of refueling activity fell on the KC-135s in 1964, when Tactical Air Command KB-50s and SAC KC-97s were retired. SAC was the single manager for its force of approximately 625 KC-135s, and it was hard-pressed to meet alert requirements, conduct training, support TAC, and sustain operations in SEA.

The hard truth was that, while these 625 tankers were adequate for their role in supporting a nuclear war operation, the number was insufficient to maintain that role and conduct a sustained conventional campaign. USAF compensated for the shortfall with the self-sacrifice of the tanker aircrews who took up the slack with long months of TDY in SEA alternated with extended alert duty when they returned home.

Aircraft Well-Suited

The SEA tanker air and ground crews were able to achieve their decade-long success for a variety of reasons. They had the advantage of a designed-to-purpose tanker, one of the Air Force's great procurement decisions, the KC-135. Although underpowered for operations in the heat and humidity of Southeast Asia, and with performance sometimes limited by the length of available runways, the KC-135s were nonetheless well-suited for their task.

Far more reliable and easier to maintain than their piston-engine predecessors, the KC-135s were equipped with adequate navigation and rendezvous equipment, if not adequate electronic countermeasures gear. Fast, they were sometimes pushed beyond their .90 Mach training limit speed. Because they were pleasant to fly they made the long, demanding missions endurable.

The tanker aircrews, dedicated, disciplined, and well-trained, quickly adapted to radical changes in their operational routine imposed by combat conditions. For years they had serviced individual SAC bombers or TAC fighters on carefully planned simulated combat missions, where all refueling points, altitudes, frequencies, and off-loads were planned well in advance and with extreme care. All that changed in SEA, where the tankers had four primary and many secondary missions.

The first primary mission was to service the saturation bombing missions code-named Arc Light, refueling the formations of B-52s on their 12-hour missions from Guam. (No in-flight refueling was required for bombers from U Tapao, Thailand.) While differing from normal stateside practices in operational procedures, the Arc Light missions were relatively predictable and as routine as in-flight refueling can ever be. One tanker was assigned to one bomber for the inbound portion of the mission; some of the tankers then recycled through Clark AB for any required poststrike refueling.

The second primary mission was Young Tiger, which called for meeting the needs of the tactical aircraft in their raids on targets throughout SEA. The demands of Young Tiger were revolutionary: Tankers had to handle, on an ad hoc basis, dozens of fighters that were sometimes in danger of simultaneous flameouts from fuel starvation. The Young Tiger missions fostered entirely new concepts of flexibility and crew coordination, with the boom operator taking on an important mission management role. Mission planning times were severely reduced, and the conduct of the mission was continually adjusted to meet the current situation.

The third primary mission was more specialized, handling the refueling requirements of reconnaissance aircraft, from RB-47s (phased out by 1966) to SR-71s, the latter requiring dedicated KC-135Qs filled with the special JP-7 fuel used by the Blackbird. The fourth primary mission was to serve as electronic reconnaissance and airborne radio relay communications aircraft. These KC-135s remained on station for long periods but could be used for emergency refueling if required.

Awesome Performance

The sheer number of refuelings and quantities of fuel transferred during the Vietnam War was staggering as indicated in the chart above.

By 1973, after nine years and two months of hard flying, these tankers had flown a total of 911,364 hours during 194,687 sorties. In the same period, they conducted 813,878 in-flight refuelings and off-loaded more than 8 billion pounds of fuel.

It was a titanic effort that went far beyond the mere physical transfer of fuel. The KC-135s permitted the Air Force and Navy to carry out operations with far fewer strike aircraft than otherwise would have been required, just as they allowed the US military to operate from bases as far from combat as Andersen AFB, Guam, and Kadena AB, Japan. They set the pattern for the future air combat operations in the Persian Gulf War of 1991.

Gas and Go: Tanker Operations in the Vietnam War

Year	No. of Tankers	Tanker Sorties	Fuel Off-loaded (lbs)
1965	55	9,200	315 million
1966	75	18,200	850 million
1967	75	23,000	1.1 billion
1968	94	32,000	1.6 billion
1969	94	28,000	1.4 billion
1970	91	19,540	888 million
1971	51	14,400	619 million
1972	172	34,700	1.4 billion
Total	88 avg.	179,040	8.2 billion

The sheer number of USAF aerial refuelings and the volume of fuel transferred in flight was truly staggering, as this chart shows.

Curiously, the very success of the tankers in making a difficult task seem ordinary resulted in their receiving less credit from the Air Force and the public than should have been the case. An analysis of even a routine refueling operation shows manifest hazards. A 313,000-pound aircraft, flying at 26,000+ feet, at 300 knots, and carrying 100,000 pounds of fuel is perhaps not of itself impressive, but put that same aircraft within 40 feet of an even bigger aircraft, weighing 400,000 pounds, join them with a refueling boom, and you have a hazardous situation. Then try doing it at night, in foul weather, under radio silence, and in company with a mass formation of 50 other aircraft doing the same thing within a few square miles, and the hazardous situation becomes genuinely explosive.

Alternatively, have the tanker off-loading fuel to a gaggle of fighters already past the critical fuel state, well inside enemy territory, and vulnerable to MiGs, flak, and SAMs.

In-flight refueling is dynamic, with the airflow at times tending to drive the aircraft apart and at times tending to draw them together. A B-52 refueling with a KC-135 will require forward trim to maintain clearance. As fuel is transferred, the flight characteristics of both aircraft change, requiring constant trim and power adjustments.

At U Tapao, Thailand, a KC-135 takes on a load of fuel. USAF's designed-to-purpose tanker, though underpowered for SEA operations, was reliable and easy to maintain, thus helping to ensure the success of Young Tiger missions.

Individual Quirks

Each receiver aircraft had its own demanding characteristics. The F-4 had a very small receiver receptacle that required boom operator accuracy for boom insertion. A fully loaded F-105 required full power—sometimes using afterburner—to maintain its refueling position. If you add the emotional state of the pilots—just out of combat, worried about their fuel state, anxious to refuel and let their wingman on the boom—to the situations mentioned above, in-flight refueling becomes even more challenging.

As experience was gained, procedures were developed to make the system as safe as possible. On paper, in-flight fuel transfer took place in preplanned refueling areas containing specific points (Air Refueling Control Point—ARCP) for tankers

The boomer's view: This KC-135 is equipped with a drogue–the round basket that the fighter aims for with his refueling probe. In this case, the F-105 pilot has one of the few fighters that can refuel using either the probe or drogue system. The small rectangle in front of the F-105's canopy is the refueling receptacle's door.

and receivers to rendezvous. Electronic, radio, and visual means were used to effect rendezvous, but in Southeast Asia the intensity of air operations demanded that the Tactical Air Control System using Ground Control Intercept radar be used to track both tanker and receiver. Line of sight radar limitations were alleviated by higher flying tankers acting as relay stations for receivers until contact was established with GCI. The combination of onboard and ground equipment provided aircraft separation, expeditious rendezvous, and continuous control of the airborne refueling resources.

En route to the rendezvous point, the tanker formations flew with 500-foot altitude separation and 1-nautical mile nose-to-nose separation. The distance was maintained by use of search radar.

In the Young Tiger refueling operations, tactical aircraft were refueled along refueling tracks and at "anchor" refueling points that comprised a left-hand racetrack pattern anchored to the ARCP designated for use. The fighters flew shallow turns, receiving the fuel while flying in an elongated orbit. Vertical separation was based on a 500-foot altitude difference between tankers when flown in cell formation; many Young Tiger missions were flown as individual aircraft.

Prestrike and poststrike operations of tactical aircraft were conducted in refueling areas established over the Gulf of Tonkin, South Vietnam, Thailand, and later, over Laos and Cambodia. When large-scale strike operations were being conducted against North Vietnam, integrated refueling cells consisting of tankers, strike, ECM, MiGCAP, and SAM/AAA suppression aircraft were massed in relatively small geographical areas at the same time. The arming of ordnance precluded launching all of the receivers in the strike force at the same time, making it necessary for them to loiter with their tankers. Each aircraft would recycle onto a tanker boom to "top off" until the entire force was assembled and ready to depart. As many as three refueling cells each with three tankers and 15 receivers—54 aircraft total—could be refueling at different altitudes at the same anchor refueling point.

Poststrike refueling for tactical aircraft was less susceptible to preplanning. Tankers reacted to the situation as they found it, giving fuel to those who needed it most first, including Navy aircraft. (There were no scheduled missions to refuel Navy aircraft, and emergency refueling depended upon having compatible refueling equipment.)

Over the Fence

The salute "Thanks, that's a save" became one of the most honored of the war, and it was earned by many Young Tiger crews. There were in fact so many saves recorded that it became necessary to have the term formally defined to mean instances when, without emergency refueling, the tactical aircraft would certainly have been lost.

Many, perhaps most, of the saves were not officially recorded because they had been executed "over the fence," that is, inside enemy territory where the tankers were forbidden to go. The tanker crews didn't report such saves because they wanted to avoid the disciplinary actions that would have followed, unjust as such action might have been. The fighter crews didn't report them because they didn't want to jeopardize the tanker crews—and perhaps deter them from making another save under similar forbidden conditions.

Disregarding the danger of being the most valuable—and most vulnerable—of targets, the tanker crews ignored the prohibitions and did what they had to do in order to save the hard-pressed strike aircraft.

The stories of Young Tiger saves are legion. Following are two that typify the bravery and the skill of the tanker crews and the persistence of the fighter pilots who would go to almost any lengths to avoid losing their aircraft to fuel exhaustion.

In May 1967, a KC-135 flown by Maj. Alvin L. Lewis battled through violent thunderstorms to locate two F-105s that were critically short on

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Walter J. Boyne, former director of the National Air and Space Museum in Washington, is a retired Air Force colonel and author. He has written more than 400 articles about aviation topics and 28 books, the most recent of which is Beyond the Wild Blue: A History of the United States Air Force, 1947–1997. *His most recent article for* Air Force *Magazine, "LeMay," appeared in the March 1998 issue.*

fuel. Lewis found the F-105s in a clear area, and put his tanker into a 20-degree dive so that he could position himself in front of the first fighter, which had already flamed out. The Thud was gliding earthward, its pilot preparing to eject, when the diving tanker passed in front to a refueling position. All check lists and preliminaries were forgotten as the F-105 hooked up and took on enough fuel to air-start the engine. The tanker transferred a little fuel, then increased its dive angle to 30 degrees to get enough air through the intake of the fighter to spool it up to starting RPM. Lewis then refueled the second F-105, itself now about ready to flame out. Both 105s made it home.

The rules of engagement for the tankers were severe. Tankers were prohibited from flying too far north, from giving more than the allocated fuel to a receiver, or from giving fuel to an unauthorized receiver. The authorities were vigilant, and instances of Article 15s or worse for violation of the rules were not uncommon. Therefore, tanker Aircraft Commander Capt. Herman L. Byrd was stunned on March 8, 1967, when asked by Brigham Control, the GCI station at Udorn, Thailand, if he would go into North Vietnamese territory where four F-105s were reporting a critical fuel state.

Byrd recognized that going would put his aircraft and crew at risk to flak and SAMs—but he was more worried about the possible punitive administrative actions that could follow. He polled his crew and they unanimously decided to go in.

Photo by Ken Hackman

Aerial refueling by KC-135s allowed the Air Force and Navy to operate from locations far removed from combat in Southeast Asia, a precursor to the way air combat operations would be carried out in the Persian Gulf War.

His navigator, Capt. Vernon Byrd (no relation), agreed that he would monitor the vectors from GCI and try to navigate to the F-105s on the safest route, avoiding known antiaircraft sites. The navigator on Young Tiger crews assumed a critical role. He had the charts plotting enemy air defenses and had to determine the fastest way to get to the target aircraft while circumnavigating the danger points. He also had to calculate the escape route and heading after the join-up and determine how to manage the unscheduled off-load.

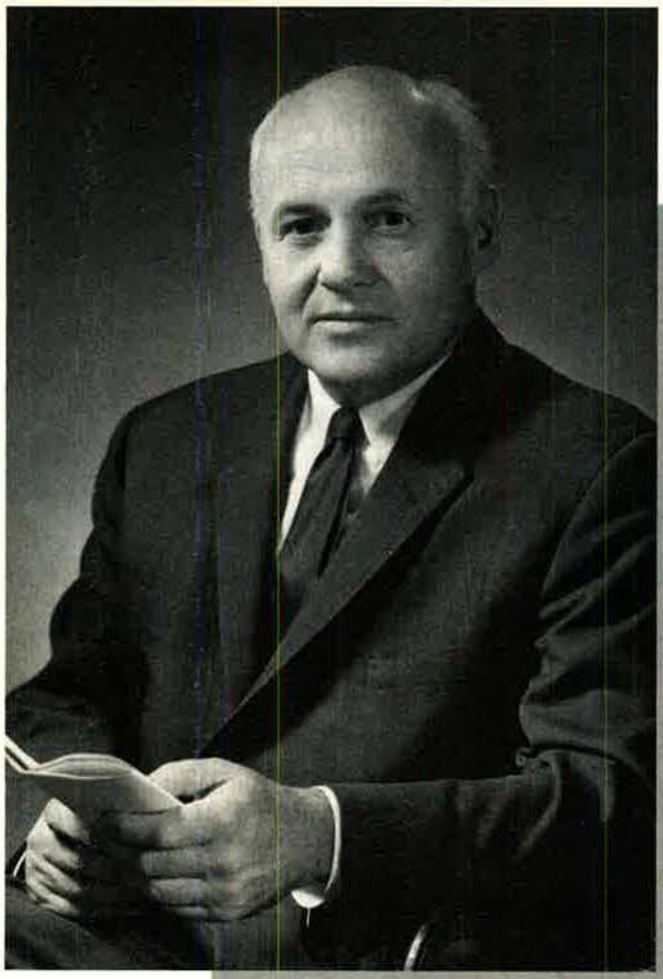
The amount of crew coordination required was extreme, with the navigator guiding, the pilot flying, the copilot monitoring the situation and operating the air refueling pumps, and the boom operator conducting the refueling process.

GCI vectored Byrd's tanker into a left turn, just as the Thuds appeared. The fighters had already determined which one needed fuel first, and they slid in without the usual procedures. The No. 3 Thud latched on to the boom for a quick thousand pounds of fuel before disconnecting. The other three 105s did the same, then all four recycled to top off their tanks.

Byrd and his crew had broken all the rules—but they had saved four F-105s from destruction and four pilots from spending the next six years in the Hanoi Hilton.

Thanks to the skill of the tanker crews, the success of the Tactical Air Control System, and the positive influence of the MiGCAP fighters, no KC-135 was lost to enemy action. Only four tankers crashed during the entire war, despite the massive number of sorties and frequency with which tankers went in harm's way over North Vietnam to assist fighters desperately low on fuel. The tanker war in SEA was truly a splendid effort, one that deserves to be remembered. ■

The decisions made on the flight deck of the KC-135 were sometimes risky ones—exposing tanker crews to flak and SAMs and Article 15s as they broke the ROEs to refuel fighters over enemy territory.



Zuckert Remembers

A former Secretary of the Air Force looks back 50 years to how the force began and grew.

By Bruce D. Callander

"AFTER World War II, we specialized in inexperience," said Eugene M. Zuckert of the period when the United States Air Force was coming into existence, making the transition from being part of the Army to independent status. "We'd never done our own budget. If we had a handful of people who had testified before Congress, I'd be surprised. There was no sophistication, no understanding of what being a coequal [branch] with the Navy and Army would impose upon us."

Zuckert, now a lawyer in Washington, D.C., was one of the new service's first senior civilian leaders. He recalled those days in a wide-ranging interview with *Air Force* Magazine, noting the many struggles USAF faced during his years as an assistant secretary and later when he became Secretary of the Air Force. He commented as well on the men who shaped the force, interservice rivalries faced, and the beginning of what was to become America's most controversial war.

Zuckert's association with the air arm actually began several years before it became independent. After earning degrees from Yale and a certificate from a combined law–business course at Harvard and Yale, he became an instructor in government and business at Harvard Business School. In the early 1940s, the commander of Army Air Forces, Gen. H.H. Arnold, recruited him to develop statistical controls. In that role, Zuckert instructed more than 3,000

AAF officers at Harvard and visited AAF bases throughout the United States.

Enter the Mentor

Still in his early 30s, however, Zuckert was eager to be in the military service himself. However, he joined not the AAF but the Navy with the help of fellow Yale alumnus Stuart Symington, who had rebuilt the sagging St. Louis–based Emerson Electric Manufacturing Co. into a major American arms contractor. In his later years, Symington would become Zuckert's mentor.

"I first met him [Symington] in 1943, when I was teaching in Harvard Business School," Zuckert said. "He offered me a job with Emerson Electric, which I couldn't take because it was war and I was teaching Air Force people. Then, I had wanted to get into service, and he helped me get into the Navy in the last year of the war."

Zuckert worked briefly in the Navy's inventory control program at the Pentagon and, when the war ended, became executive assistant to Symington, whom President Harry S. Truman had appointed head of the Surplus Property Administration. "Surplus property was a hopeless problem," Zuckert said. "So much of it was in terrible shape. As a discerning friend of mine said, it would have been a lot cheaper, a lot easier, and a lot better if they had just taken everything and dumped it in the ocean."

In January 1946, however, Truman named Symington assistant secretary of war for air and Zuckert became his special assistant. The following year, when the Air Force became a separate service, Symington was named its first secretary, and on Sept. 26, 1947, Zuckert became the new service's assistant secretary for management.

"I went from lieutenant (j.g.) in the Navy to assistant secretary in the Air Force in two years," Zuckert noted. "It was the fastest promotion in the history of the government, I think."

At 35, Zuckert found himself present at the creation not only of a new service but at a historic reorganization of the services. Both concepts were repugnant to many in some military quarters. This was particularly true in the case of the Navy's outspoken secretary, James V. Forrestal.

Forrestal also had an Ivy League background. He was president of an investment firm when President Franklin D. Roosevelt brought him into government as a White House administrative assistant, later making him secretary of the wartime Navy. He now feared that his service would suffer with the creation of a separate Air Force and be outnumbered by USAF and the Army under unification.

Forrestal also opposed the creation of the Office of the Secretary of Defense, but surprisingly, he accepted the position himself when Truman offered it. Zuckert agreed that it was an ironic turn, but he added, "You have to remember that Forrestal was a very complicated guy and he could see everybody's point of view. I think that was finally what killed him. [Forrestal committed suicide in 1949.] He had such great pride in the traditional Navy, and it was very hard for him to be for something that would denigrate that in many ways."

Clash of Styles

Forrestal was now the civilian leader of the military establishment, but he did not seize the powers as his successors would. "He saw himself more as a coordinator and mediator than as having the line authority that people like Symington wanted in a defense secretary," said Zuckert. "Symington was a manager and he thought of things in hierarchical management terms. Of course, most of the time he was right. He thought the fellow either ought to have the authority or he shouldn't accept the job."

Nonetheless Forrestal continued to oppose the Air Force on a number of issues, and on the Air Force side, Symington fought to give his service an identity and a standing equal to that of the other services.

"Symington was a man of objectives," Zuckert explained. "He would get an objective and pursue it relentlessly. One of the great things about that time period was that both he and Spaatz [Gen. Carl A. "Tooey" Spaatz, the first Chief of Staff of the Air Force] realized that the Air Force, being a separate department, would have responsibilities and obligations of which they had no comprehension."

Zuckert's main role at the time was to help put the service on a sound financial footing. He represented USAF in formulation of the Fiscal 1950 Joint budget, the first of its kind in history. He also developed new approaches to reporting and control. His new system divided appropriations into 12 major functional elements.

"I helped develop the fiscal control system that later became mandatory for the three services," according to Zuckert. "I partnered with Ed Rawlings [Lt. Gen. Edwin W. Rawlings, air comptroller] on that. I also had things like the base structure and installations where we were closing bases all the time after World War II. And I got involved with the integration program, which came as the result of Truman's order in 1948."

Racial desegregation of the services preceded the Civil Rights Act by more than a decade and was a potentially volatile move politically, but Zuckert said that Symington's approach to integration headed off more serious problems.

Zuckert said, "He went up to the Hill and met with Carl Vinson [the powerful lawmaker from Georgia who served as chairman of the House Armed Services Committee] and said, 'You know, we have this order from the President and we are going to obey it.' Vinson was no great fan of integration, but he said, 'As long as you aren't too noisy about it, that will be fine.' So we got quiet support from him."

Another of Zuckert's duties was to represent the Air Force on the committee that developed the Uniform Code of Military Justice. "That was one of those jobs where you are appointed from the service," he said. "There was a member from the Army and Navy. And they had a wonderful professor from Harvard, who was the outstanding authority on evidence, and he was the spearhead who rewrote the code. There was no great feeling in the Air Force as there was in the Army and Navy about changing the code. So I kind of went along with him and we got the thing through, and it was climaxed by a meeting with Forrestal at which he resolved the differences between the services. It was sad because it was in the closing days of Forrestal's term, and it was almost as though he was flipping coins when he made the decisions."

Zuckert maintains the UCMJ has worked. "I think, considering the fact

that it's been more than 50 years, it's done pretty well," he said. "Most important is the way it's administered. That is what will determine whether it is giving justice."

On the whole, Zuckert said, the unification of the services also went remarkably well. "It was very hard for the people at the working level to adjust to a new relationship," he said, "but on the other hand, it did work surprisingly well. ... Symington cut through the difficulties so well. ... It was a lot of work, but he had it so well thought out in his mind that we had few problems."

In 1949, two major events changed the Pentagon hierarchy. Congress amended the National Security Act to increase the power of the Secretary of Defense and further subordinate the role of civilian heads of the services. That same year, Forrestal suffered a nervous breakdown, resigned his Pentagon post, and committed suicide. He was replaced by Louis A. Johnson.

"An Absolute Disaster"

A lieutenant colonel in the Army Reserve, a former commander of the American Legion, and former assistant secretary of war from 1937–40, Johnson had Presidential ambitions and sought to further them by slashing defense spending, a popular position at the time. Truman also had advocated cuts but changed his position when war broke out in Korea. Johnson did not.

"An absolute disaster," Zuckert said of Johnson's approach. "He had no conception of what the job was. He was still trying to cut the budget ... when we went into the war in June 1950. He didn't know how to use the machinery. He was so bad that people wouldn't believe it if you told them."

To protest Johnson's tactics, Symington resigned his secretaryship. Zuckert was appointed to the Atomic Energy Commission in 1952 and served until 1954 when he returned to private law practice.

Eight years later, John F. Kennedy became President and named Robert S. McNamara to be Secretary of Defense. McNamara was well-acquainted with Zuckert, having met him in the early 1940s when both were young faculty members at Harvard. McNamara recommended Zuckert to become Secretary of the Air Force.

McNamara filled many defense positions with young intellectuals who became known as the "Whiz Kids." Did Zuckert, who was 50 at the time of his appointment, consider himself to have been in that category? "No," he said, "I'm not that bright. I'm more of a utility infielder."

The Pentagon to which Zuckert now returned was different from the one he had left. McNamara used the powers of his position to the fullest. "McNamara recognized if he was going to run the show, he would have to have the authority," said Zuckert, "and he had no trouble with getting the authority. He also was a tremendous person. We could argue about him, but he had a sense of organization and how to get things done, the like of which I have never seen, even in Symington.

"Between then [McNamara's appointment by the President-elect] and Jan. 20 when he took office, he laid out his program of action for the first four years," Zuckert recalled. "And he accomplished most of it."

> "We were very popular with the Congress ... and [McNamara] never missed an opportunity to put us down."

McNamara's "Big Problem"

The fact that McNamara and Zuckert were close friends, however, did not guarantee that they would agree on all matters. In fact, Zuckert says that he always has felt that McNamara viewed the Air Force as "his big problem" during his time at the Pentagon. "We were very popular with the Congress," said the former Air Force Secretary. "We were able to precipitate things like the B-70 fight. So, we were really the opposition, and he never missed an opportunity to put us down."

Early in his term, the services learned how effectively McNamara could get things done. The Air Force was considering a new swing-wing fighter–bomber known as the TFX. The Navy also was looking for a new fleet defense aircraft with a similarly wide range of speeds. When a study group recommended both develop the TFX, McNamara quickly embraced the idea, despite objections from both services.

"It's the kind of idea that would appeal to him," Zuckert said. "He would think it was ridiculous to have two separate planes. He would feel that people of goodwill on both sides could compromise their objectives." McNamara would have thought this could be done, said Zuckert, "without tossing the baby out with the bathwater."

The Air Force's TFX finally emerged as a fine aircraft, the F-111, but the Navy version foundered and died when it was found to be unsuitable for carrier duty. The Navy then concentrated on the F-14 Tomcat. "There were physical limitations [to the Navy TFX]," Zuckert conceded, "but as one of the wisest people I know in Washington once said, 'If the Navy had wanted the F-111 to work, it would have worked.' "

Soon after he became Secretary, Zuckert faced a problem within his own service, that of choosing a new Chief of Staff. "I will tell you what my situation was," he said. "We had had all these great men in World War II, and then we developed what every organization goes through, and that's 'second generationism.' You don't automatically have a Hap Arnold in an organization as it begins to mature.

"LeMay did not think I was a great man, and I probably wasn't a great man, but we worked it out."

"So I was faced with the problem of, Who have I got? Tommy White [Gen. Thomas D. White, the incumbent Chief of Staff] was beloved and that helped him a lot, but I sensed in 1961 that he was a tired man. I didn't even think he was well. It turned out that my intuition was pretty good." [White died not long after leaving office.]

The Big-Leaguers

"So I felt the Air Force had to move on, and I looked over the field and there were two big-leaguers. One was LeMay [Gen. Curtis E. LeMay, a World War II hero and former commander of Strategic Air Command], and one was Schriever [Gen. Bernard A. Schriever, commander of Air Research and Development Command, later Air Force Systems Command]. But Schriever did not have the support of the combat side of the Air Force, and my feeling was that there was only a choice of one, which is not the happiest thing."

Zuckert went on, "On the other hand, I felt LeMay was outstanding, that the Air Force would rally around him, and that was the way to go, even though it might make my life a lot more difficult."

Did the appointment of LeMay make life difficult for him?

"Yes," Zuckert conceded, "but we had a great relationship, considering the number of problems we had. LeMay did not think I was a great man, and I probably wasn't a great man, but we worked it out."

A major point of contention—not just within the Air Force but throughout the Pentagon—was the growing American involvement in Vietnam. In this as in other areas, Zuckert found himself differing with his boss, the Secretary of Defense.

"He [McNamara] was what I would call a gradualist," said Zuckert. "Every time I went up and tried to get some escalation of the kind of force we would use, his instant reaction was to shoot it down. ... It was so ridiculous to try to fight a war with one hand tied behind your back and the kind of equipment you had to use. Nobody's going to win a war when the targets are planned at the White House at noon on Wednesdays."

Zuckert added, "I have always felt that Ho Chi Minh [Hanoi's Communist leader] knew he was going to win when we didn't bring the equivalent of brute force to this thing and try to end it. It may not have worked, but he was assured of victory as long as we weren't going all out. ... It was a case of, 'Hang your clothes on a hickory limb, but don't go near the water.' That's oversimplified, but I'm not a deep thinker."

If he was frustrated by the limited-war policies in Vietnam, Zuckert found satisfaction in the progress the Air Force made in other areas such as its space program.

"I was very close to General Schriever," he said, "and though I had to rein him in when we got into problems with NASA, I was very supportive of him.

"In fact, my greatest accomplishment as Secretary of the Air Force was setting up [Project] Forecast, the study of the technology that was coming up and how it should influence Air Force thinking. ... I put him in charge of it, and he got a big team and they really did a job in trying to see what was coming up technologically that should affect the way the Air Force thought about fighting a war."

Did he agree with the decision to keep the military and civilian space programs separate?

"That was a given as far as I was concerned," Zuckert maintained. "In fact, Jim Webb [director of NASA] talked to me about it, and I assured him he wasn't going to have trouble with Schriever and he had a minimum of trouble."

Asked what he felt he did best as Secretary, Zuckert said, "I hung in there. I blunted the effect of McNamara on the Air Force as much as I could. And I fought for some things ... like the escalation of our airlift capabilities. I was for some good things and worked for them.

"If I had to do it over again, boy, it would be a different ball game. For one thing, I would have my own program. I was mostly dealing with trying to help the Air Force with the Air Force program and opposing McNamara. I should have had a four- or five-point program of my own as to what I wanted to get done.

"For example, I would have waged a much more vigorous battle to change the Air Force procurement of technical items. I would have done more of what they have done since. My assistant secretaries and I really didn't make enough impact on the Air Force procurement program. I don't feel it was as efficient as it should have been—nowhere near as efficient."

What would he like to see the Air Force be 50 years from now? "There may not be an Air Force 50 years from now," he said. "I'm not bright enough or ever have been bright enough to know where the technology is going. I just hope that whatever we have is technologically superior to anything else around." ■

Bruce D. Callander, a regular contributor to Air Force *Magazine, served tours of active duty during World War II and the Korean War. In 1952, he joined* Air Force Times, *serving as editor from 1972 to 1986. His most recent story for* Air Force *Magazine, "Dissecting the Tempo Problem," appeared in the April 1998 issue.*

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By Courtney D. Manuel

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AFA / AEF National Report

By Frances McKenney, Assistant Managing Editor

AFA Untangles VA Enrollment Confusion

An incorrect e-mail message on veterans benefits was widely disseminated over the Internet and generated some alarm among Air Force Association members. It falsely suggested that if veterans had not registered for Veterans Affairs benefits by Oct. 1, they would be unable to do so later and would lose the benefits forever.

AFA's National Defense Issues Department researched the issue and reports that a new VA Healthcare Enrollment system, providing access to VA health care services, will go into effect Oct. 1. To receive VA services after that date, veterans must enroll at a local VA benefits office or VA health care facility. But they may enroll in the new system at any time; there is no cutoff date, as the e-mail incorrectly stated.

Some veterans may already be registered in the new system: For example, those who received VA health care after Oct. 1, 1996, are already enrolled.

Also not needing to enroll in the new system (although they are encouraged by the VA to do so) are veterans rated by VA as having a service connected disability of 50 percent or more; those discharged from military service within the past year for a compensable disability that the military determined was incurred or aggravated in the line of duty and which has not yet been rated by the VA; or veterans seeking VA care only for a service connected disability.

Information on the new enrollment system, which was signed into law in 1996, is available through the VA's Internet web site at www.va.gov/health/elig or from the nearest VA health care facility.

Thad A. Wolfe, AFA's Veterans/Retiree Council chairman, assures association members that "while this rumor was clearly blown out of proportion, the statement issued by the VA was confusing in some respects. The association will continue to monitor this situation closely and will keep our members informed."

Gen. Richard Hawley (second from right), commander of Air Combat Command, was guest speaker at a Tucson Chapter meeting held in conjunction with the dedication of a B-2 at Davis–Monthan AFB. On hand to greet him were Raymond Chuvala, Arizona state president; Doyle Larson, AFA National President; and James Wheeler, chapter president (l–r).

Dedication in Tucson

Air Combat Command Commander Gen. Richard E. Hawley served as guest speaker at a **Tucson (Ariz.) Chapter** Air Force Appreciation luncheon, held in conjunction with the March 20 dedication of the B-2 *Spirit of Arizona* at Davis–Monthan AFB, Ariz.

Hawley spoke about the challenges facing USAF, including the operations tempo and budget constraints. His remarks were videotaped so that they could be used, with his consent, as part of the Tucson Chapter's speaker's bureau program.

During the luncheon, the chapter presented a $1,000 donation to the Wright Flight educational program and recognized Barbara Henderson for her work as its director. Henderson is the wife of the late Thomas W. Henderson, who was AFA's national secretary in 1990.

Wright Flight is a program that helps students meet educational goals through contracts and incentives. It was the initiative of Tucson Chapter member Bruce R. Stoddard and began more than 10 years ago.

Chapter President James I. Wheeler said that Northrop Grumman supplied B-2 lapel pins for all the luncheon guests and also provided a model of the bomber for each table. The models were later given away as door prizes. Raytheon set up a display spotlighting missiles that they manufacture in Tucson.

Wheeler reported that Community Partners, industry leaders, and chapter members donated tickets to enable enlisted personnel to attend the Air Force Appreciation luncheon. Among the enlisted guests were students and faculty from the base's Airman Leadership School.

AFA National President Doyle E. Larson was an honored guest at the luncheon, this year, and in planning for his visit had specifically requested an opportunity to see the

Leadership School. He received a tour of its campus-like facilities, guided by MSgt. Daniel J. Fischer, ALS commandant.

While in Tucson, Larson also visited the Pima Air and Space Museum. Edward D. Harrow, the museum's executive director and a chapter member, briefed him on new construction at the facility, which opened in 1976 and now has more than 200 aircraft.

The day after the B-2 dedication at Davis–Monthan, the base held a two-day air show that attracted a crowd of about 600,000. Tucson Chapter member Stewart R. Gable was among the organizers of the air show and arranged for the chapter to have high-profile exhibit space next to the VIP tent. With posters, issues of *Air Force* Magazine, and other giveaways, the AFA booth attracted hundreds of visitors. Wheeler said the chapter gained 22 new members for the effort.

Black Tie in Fort Worth

The Air Force Reserve's 50th anniversary served as a theme for the **Fort Worth (Texas) Chapter's** annual black-tie event, where retired Gen. Ronald R. Fogleman was guest speaker.

The former USAF Chief of Staff paid tribute to the Reserve and also expressed satisfaction with his "transfer to the mountains," as he termed his retirement in Colorado. In one of the evening's highlights Fogleman received a book about the Air Force Reserve from Maj. Gen. David R. Smith, former commander of 10th Air Force in Fort Worth and now vice commander, Air Force Reserve Command.

Among the nearly 400 guests who turned out for the banquet and ball were Rep. Martin Frost (D–Texas), AFA National President Larson, and AEF President Walter E. Scott.

C. Wayne Calhoun, the chapter's vice president for communications, said that "An Evening in Fort Worth," as the banquet has been called, is transitioning to a new format and name. As an international military ball, it will be able to emphasize the Joint-service nature of the area's military facility, NAS Fort Worth JRB Carswell Field. This year the chapter for the first time got civic groups and other military organizations such as the Navy League and The Retired Officers Association involved in the event.

The chapter uses funds raised from the banquet and ball to provide aerospace education scholarships for students at several Fort Worth area high schools and to support the more than 50 classrooms participating locally in the *USA Today*–Aerospace Education Foundation Visions of Exploration program.

Global Outlook

Topics ranging from NATO expansion to terrorism in the US were the focus of a global affairs seminar entitled "Security Issues in the Coming Decade." The Reserve Officers Association and the **Portland (Ore.) Chapter** cosponsored the day-long seminar at the University of Portland in April.

Among the featured speakers was Jeremy Rosner, special advisor to the President and Secretary of State for NATO enlargement ratification. Michael Austin, a planning and coordination chief for the Federal Emergency Management Agency, spoke about initiatives to manage a terrorist attack in the US. Professor Walter Sanchez, University of Chile, discussed Latin American relations. Professor Marina A. Tolmacheva, Washington State University, talked about the Middle East. Retired Army Gen. Jacques Paul Klein, US ambassador to the Office of the High Representative in Bosnia, spoke to the audience by phone about conditions and future expectations in Bosnia.

Chapter President John C. Moore said several chapter members took an active role in organizing the seminar, now in its 10th year. He specifically praised Lavern A. Willie, state vice president, and Robert W. Menestrina, chapter secretary, who helped

AFA Chairman of the Board Gene Smith speaks to 800 former Vietnam War POWs and military members who gathered at Randolph AFB, Texas, in March for a 25th anniversary reunion of the Freedom Flyers. The Freedom Flyers are a group of 180 Southeast Asia POWs who received a cockpit reorientation and a welcome-home "champagne flight" at Randolph after their repatriation in 1973.

arrange facilities, parking, and catering, as well as Arnold Air Society cadet Robert Davis, from Det. 695, University of Portland. The chapter donated the cost of registration for students who needed help in paying the fee.

The AFA banner was on display at the seminar, attended by more than 100 people, and Moore, who served on the committee that selected the guest speakers, said he hopes to increase his chapter's level of participation in this event.

Vietnam Ace Relives Exploits

Vietnam War ace Brig. Gen. Richard "Steve" Ritchie (AFRES) spoke at a March meeting of the **Paul Revere (Mass.) Chapter** about his experiences as one of three USAF aces from that war.

More than 100 people gathered at Hanscom AFB's enlisted club to hear him describe his war experiences, including a July 8, 1972, encounter with two MiG-21 fighters that gave him two of his five Vietnam War victories.

He also spoke about his participation in the June 1972 rescue of Capt. Roger C. Locher, a 432d Tactical Reconnaissance Wing weapon system officer who was missing for 23 days after his F-4 was shot down northwest of Hanoi. Ritchie led four tactical fighters that protected search and rescue forces attempting to reach Locher. Low on fuel, three of the flight members left the area, but Ritchie stayed to chase off a hostile aircraft threatening the rescue effort. Locher was successfully picked up the next day.

"All this risk was taken to rescue one crew member," Ritchie told the audience. "This shows the value we place on life and freedom."

A native of North Carolina, Ritchie began his USAF career at the Air Force Academy, class of 1964. He left active duty 10 years later but continues to serve with the Reserve. He is mobilization assistant to the commander of Air Force Recruiting Service and travels the country, inspiring people with stories from his more than 300 combat missions. He is a member of the **Gen. Robert E. Huyser (Colo.) Chapter.**

Two-War Ace Drops In

Robin Olds, a retired brigadier general credited with 12 World War II victories and four in Vietnam, dropped by the March meeting of the **Salt Lake City (Utah) Chapter** at the invitation of Jack C. Price, national director emeritus.

Olds, who was in the area as guest speaker for an event at the Hill Aerospace Museum at Hill AFB, Utah, led a discussion about incentive pay for pilots and spoke about some of his wartime experiences. He is a member of the **Mile High (Colo.) Chapter.**

Kenneth Goss, AFA's director of national defense issues, was guest speaker at the chapter's dinner meeting. According to Ted Helsten, chapter president, Goss spoke about AFA's efforts in the area of health care, described inequities in health care systems and benefits, and gave the chapter members ideas on how to ensure their congressional representatives understand their viewpoint on these issues. For example, Goss suggested inviting candidates from opposing parties to a chapter meeting.

Among the audience members were Price; Daniel C. Hendrickson, national director; Boyd Anderson, Utah state president; Gary Hale, state vice president; Richard E. Schankel, state chairman of the board; and Craig E. Allen, **Northern Utah Chapter** president.

On a Literary Note

A book signing by retired RAF Air Vice-Marshall Ron Dick and photographer Dan Patterson was the highlight of the **William A. Jones III (Va.) Chapter** reception and dinner in March.

Dick and Patterson's book, *American Eagles: A History of the United States Air Force—Featuring the Collection of the US Air Force Museum,* was published in 1997 by chapter Community Partner Ross A. Howell Jr., of Howell Press in Charlottesville, Va.

In addition to autographing the 17 books sold at the meeting, held at the local Senior Center, the authors also gave a presentation on their three-year collaboration on the book.

Chapter President Allan M. Van Wickler said publicity generated by Howell Press brought out many non-chapter members, among the more than 60 guests at the gathering.

He added that aviation artist Gil Cohen is on tap for the chapter's June meeting and explained that in his area of the state—home to such historic sites as the University of Virginia and Thomas Jefferson's Monticello—events with a historical, literary, or artistic angle are a surefire way to attract people to a chapter meeting.

Hosting the Host Country

The **Misawa (Japan) Chapter** hosted a two-day tour by the Japanese–American Air Forces Goodwill Association.

Maj. Ronald G. Bransford, chapter president, reported that the visitors received briefings about the air base, its 35th Fighter Wing, and joint and bilateral operations in northern Japan.

Bransford wrote that the discussions included serious topics such as live-fire exercises and improving information flow and air traffic safety.

The visitors also toured the Japan Air Self Defense Forces facilities, dined with senior Japanese and American installation leaders and local AFA representatives, and attended a breakfast cosponsored by the chapter.

The Japanese association is made up of current and former members of the Japan Air Self Defense Forces

AFA Conventions

June 5–7, **Iowa State Convention,** Waterloo, Iowa; June 5–7, **New York State Convention,** Ronkonkoma, N.Y.; June 6–7, **Arizona/Nevada State Convention,** Laughlin, Nev.; June 12–14, **Missouri State Convention,** St. Louis; June 13, **Michigan State Convention,** Kalamazoo, Mich.; June 19–20, **Arkansas State Convention,** Jacksonville, Ark.; June 19–20, **Mississippi State Convention,** Columbus, Miss.; June 19–20, **Ohio State Convention,** Columbus, Ohio; June 19–21, **Oregon/Washington State Convention,** Salem, Ore.; July 11, **Kansas State Convention,** Garden City, Kan.; July 17–19, **Texas State Convention,** San Angelo, Texas; July 17–19, **Virginia State Convention,** Hampton, Va.; July 24–25, **Oklahoma State Convention,** Oklahoma City; July 24–26, **Pennsylvania State Convention,** Carlisle, Pa.; July 25, **Florida State Convention,** Melbourne, Fla.; July 25, **Massachusetts State Convention,** Hanscom AFB, Mass.; Aug. 1, **Montana State Convention,** Three Forks, Mont.; Aug. 1–2, **Illinois State Convention,** Galesburg, Ill.; Aug. 7–8, **Colorado State Convention,** Aurora, Colo.; Aug. 14–16, **California State Convention,** Vandenberg AFB, Calif.; Aug. 15, **Georgia State Convention,** Savannah, Ga.; Aug. 15, **North Carolina State Convention,** Goldsboro, N.C.; Aug. 22, **Indiana State Convention,** Indianapolis; Aug. 22, **New Mexico State Convention,** Clovis, N.M.; Sept. 12, **Delaware State Convention,** Dover, Del.; Sept. 14–16, **AFA National Convention and Aerospace Technology Exposition,** Washington; Oct. 3, **Utah State Convention,** Ogden, Utah.

and the Japanese aerospace industry and promotes both airpower and a close relationship between the two countries.

CMSgt. Jonathan E. Hake, Misawa Chapter's vice president of membership, said the event "was an excellent opportunity to exchange information with our Japanese counterparts."

Lunch With Rohrabacher

Rep. Dana Rohrabacher (R–Calif.) spoke at the March luncheon meeting of the **Orange County/Gen. Curtis E. LeMay (Calif.) Chapter.**

A five-term congressman, Rohrabacher is a member of the House Science Committee and is chairman of its Space and Aeronautics Subcommittee. He spoke to the chapter meeting about the importance of a strong national defense and on the issue of illegal immigrants.

Also at the meeting, ANG SMSgt. James Hollingshead, chapter past president, and ANG SSgt. Kenneth Hagihara, chapter vice president for communications, received Outstanding Military Member awards, in recognition of their service as chapter officers. Both are full-time ANG members of the 222d Combat Communications Squadron at Costa Mesa, Calif.

Rep. Dana Rohrabacher (second from right) presents awards to ANG SMSgt. James Hollingshead (left) and ANG SSgt. Kenneth Hagihara (right) at an Orange County/Gen. Curtis E. LeMay Chapter meeting. Jim Silva, chairman of the county board of supervisors (second from left) and Carl Bureman (center) assisted.

Assisting Rohrabacher in presenting these awards was Orange County Board of Supervisors Chairman Jim Silva, who joined the chapter after having appeared as a guest speaker and because his son, an Air Force Academy graduate, is in USAF pilot training and his daughter is attending USAFA.

Honoring Airmen

The **Donald W. Steele Sr. Memo-**

rial (Va.) Chapter and the 11th Wing, Bolling AFB, D.C., cosponsored the ninth annual Outstanding Airmen's Breakfast in April, honoring top-notch USAF enlisted members from the nation's capital region.

More than 200 military and defense industry representatives turned out to listen to remarks by guest speaker Lt. Gen. David L. Vesely, assistant vice chief of staff and a member of the **Thomas W. Anthony (Md.) Chapter.** Vesely later joined Sean P. Ryan, Steele Chapter president, and CMSgt. Wayne Petro, 11th wing senior enlisted advisor, in presenting awards to the winners, who were selected from 45 nominees.

SrA. Eric P. Hanson received the National Capital Region Airman of the Year award. He is the armory NCOIC assigned to the USAF Honor Guard.

National Capital Region NCO of the Year is SSgt. Stacy G. Stover, NCOIC for education and training at 11th Medical Group.

MSgt. Keith A. Wisell received the National Capital Region Senior NCO of the Year award. He is the superintendent of logistics and training with the USAF Honor Guard.

The breakfast, which the chapter says has become its "most significant recognition event," was held at the Ritz–Carlton hotel in Arlington, Va.

Chapter President Dale Green, Thunderbirds leader Lt. Col. Brian Bishop, and Lt. Gen. Brett Dula (l–r) load up on the first course at the annual Steak Fry hosted by the Langley Chapter to celebrate the Thunderbirds' approval show.

Let 'em Eat Steak

After the Thunderbirds performed in the skies over Langley AFB, Va., for Gen. Richard E. Hawley, commander of Air Combat Command, and received his official approval to begin their touring season, the **Langley Chapter** helped them celebrate with a Steak Fry.

Held at the Bayside Enlisted Club, the event marked the 22d time the chapter has hosted a dinner at the conclusion of the USAF Demonstration Squadron's "acceptance show" for the ACC commander.

Brig. Gen. Theodore W. Lay II, commander of the team's parent unit, 57th Wing at Nellis AFB, Nev., accompanied the Thunderbirds to Langley and told the chapter that the group looks forward to the steak dinner as a kickoff event for their season.

Thunderbirds lead Lt. Col. Brian Bishop presented an autographed photo of the demonstration team to Dale A. Green, Langley Chapter president, at the dinner. Honored guests at the Steak Fry included Lt. Gen. Brett M. Dula, ACC vice commander, and Maj. Gen. Marvin R. Esmond, commander of Air Warfare Center, Nellis AFB. George D. Golden, Virginia state president, Maj. Gen. (sel.) Daniel M. Dick, Maj. Gen. (sel.) David F. MacGhee Jr., and CMSgt. Frederick J. Finch, all from the Langley Chapter, were also among the 165 guests.

The chapter traditionally invites parents of the Thunderbirds to the steak dinner, and this year Dennis and Barbara Malfer of Richmond, Va., attended the event and watched the acceptance show. It was the first time they had seen Maj. Dennis Malfer, a new member of the team, performing as a Thunderbird.

The chapter's coordinator for the event, Richard F. Phillips, commented, "What a great opportunity for chapter members to get to know and associate with the best the Air Force has to offer."

Aerospace Education in Alabama

The **Birmingham (Ala.) Chapter** hosted a reception at the Southern Museum of Flight for 300 Alabama Education Association members who were in town for their annual Aerospace Education Week.

The museum, located two blocks from Birmingham IAP, contains the Alabama Aviation Hall of Fame and memorabilia from aviation notables such as Germany's World War I ace Manfred Freiherr von Richthofen—the "Red Baron"—and the Tuskegee Airmen. Its aircraft include the T-6, an F-4, and the first Delta Air Lines airplane.

Chapter President Kendall A. Coupland said the teachers were "enthralled" by the museum's displays because they were reminded of relatives who served in the military and had actually used some of the items and equipment.

Coupland coordinated the fund-raising for the reception, soliciting help from local aviation-oriented organizations. He also arranged for his cousin, Nancy Batson Crews, who was an original member of the Women's Auxiliary Ferrying Squadron, to attend the reception as a special invited guest.

Spouse Award

The **Charleston (S.C.) Chapter** and Brig. Gen. Steven A. Roser, 437th Airlift Wing commander, formally presented an AEF Air Force Spouse Scholarship to a recipient from their area, Mona L. Elson, at a February meeting held at the Charleston AFB Officers Club.

The wife of SSgt. Michael D. Elson, a 14th Airlift Squadron loadmaster, Elson will be using the $1,000 scholarship for her education toward a career in natural resources and wildlife conservation. Elson was one of 31 selected from 575 applicants for the scholarship.

Have AFA/AEF News?

Contributions to "AFA/AEF National Report" should be sent to *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: fmckenney@afa.org. ■

Books

Compiled by Chanel Sartor, Editorial Associate

Adams, Col. Gerald M., USAF (Ret.). *The Bells of Balangiga.* Lagumo Corp., 1914 Thomes Ave., Cheyenne, WY 82001. 1998. Including photos, bibliography, and appendices, 86 pages. $9.95.

Antal, John F. *Combat Team: The Captains' War: An Interactive Exercise in Company Level Command in Battle.* Presidio Press, 505 B San Marin Dr., Ste. 300, Novato, CA 94945-1340 (415-898-1081). 1998. Including illustrations, appendices, and glossary, 370 pages. $17.95.

Baron, Scott. *They Also Served: Military Biographies of Uncommon Americans.* MIE Publishing, PO Box 17118, Spartanburg, SC 29301 (800-937-2133). 1998. Including photos, appendix, bibliography, and index, 333 pages. $18.95.

Gabreski, Francis, as told to Carl Molesworth. *Gabby: A Fighter Pilot's Life.* Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310 (610-593-1777). 1998. Including photos, appendix, bibliography, and index, 174 pages. $45.00.

Hillen, John. *Blue Helmets: The Strategy of UN Military Operations.* Brassey's, Inc., 22883 Quicksilver Dr., Ste. 100, Dulles, VA 20166 (703-260-0602). 1998. Including maps, charts, notes, bibliography, and index, 312 pages. $26.95.

Jackson, Robert. *Air War Korea 1950–1953.* Zenith Books, PO Box 1, Osceola, WI 54020-0001 (800-826-6600). 1998. Including photos, appendices, and index, 160 pages. $29.95.

Keskinen, Kalevi, and Kari Stenman. *Finnish Air Force 1939–1945.* Squadron/Signal Publications, Inc., 1115 Crowley Dr., Carrollton, TX 75011-5010 (972-242-8663). 1998. Including photos and appendices, 64 pages. $9.95.

Khalilzad, Zalmay, and Ian O. Lesser, eds. *Sources of Conflict in the 21st Century: Regional Futures and US Strategy.* RAND, 1700 Main St., PO Box 2138, Santa Monica, CA 90407-2138 (310-451-7002). 1998. Including tables and appendix, 336 pages. $20.00.

Lenahan, Col. Rod, USAF (Ret.). *Crippled Eagle: A Historical Perspective of U.S. Special Operations 1976–1996.* Narwhal ton, SC 29405 (843-853-0510). 1998. Including photos, appendices, glossary, bibliography, and index, 272 pages. $29.95.

McCormick, David. *The Downsized Warrior: America's Army in Transition.* New York University Press, 70 Washington Square S., New York, NY 10012-1091 (212-998-2575). 1998. Including notes, tables, graphs, bibliography, and index, 267 pages. $24.95.

Meese, Lt. Col. Michael J., and Lt. Col. Bart Keiser. *Armed Forces Guide to Personal Financial Planning: Strategies for Managing Your Budget, Savings, Insurance, Taxes, and Investments.* 4th ed. Stackpole Books, 5067 Ritter Rd., Mechanicsburg, PA 17055-6921 (800-732-3669). 1997. Including tables, graphs, appendices, and index, 381 pages. $22.95.■

Unit Reunions

1st and 3d Photorecon Sqs (CBI and Western Pacific, WWII). Oct. 15–18, 1998, at the Holiday Inn on the Bay in San Diego. **Contact:** Bill Walker, 208 Windy Ln., Rockwall, TX 75087 (972-771-7067).

5th FS, 52d FG. Aug. 27–30, 1998, in Grand Rapids, MI. **Contact:** John D. Hughes, 508 W. Petoskey St., Gaylord, MI 49735 (517-732-5641).

Ninth Air Force Assn. Oct. 1–4, 1998, at the Best Western Hanalei Hotel in San Diego. **Contact:** Evan Hull, 17025 Hierba Dr., San Diego, CA 92128 (619-451-2633).

15th/20th Air Weather Sqs Assn. June 24–28, 1998, at the Henry VIII Hotel in St. Louis. **Contact:** Bill Becker, 7714 Signal Hill Rd., Manassas, VA 20111-2516 (phone or fax 703-369-3919).

20th Air Depot Gp, Italy, North Africa (WWII). Aug. 21–23, 1998, at the Sumner Suites Columbus in Dublin, OH. **Contact:** Scott Ide, 195 Patrice Terr., Williamsville, NY 14221-3924 (716-634-2197).

20th FG Assn. Oct. 8–10, 1998, at the Hilton Nassau Bay Hotel and Marina in Houston. **Contact:** Leo H. Kerns, 9908 Hammocks Blvd., Miami, FL 33196 (305-380-1418).

28th BW. Aug. 27–31, 1998, at the Howard Johnson in Rapid City, SD. **Contact:** Jim Savage, PO Box 3092, Rapid City, SD 57709-3092 (605-342-3996 or fax 605-343-4036) (Ells28BW@aol.com).

39th BG, Guam (1945). Aug. 13–16, 1998, in Burlington, VT. **Contact:** James W. Wyckoff, 2714 Hayts Corners East Rd., Ovid, NY 14521-9768 (607-869-2574) or Bob Weiler, 2045 Hyde Park, Apt. 3, Sarasota, FL 34239-3941 (914-365-8287).

48th FS, 14th FG (WWII). Sept. 17–20, 1998, at the Holiday Inn in Columbus, MS. **Contact:** Joseph Onesty, 455 Galleon Way, Seal Beach, CA 90740-5937 (562-431-2901).

Mail unit reunion notices well in advance 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.

49th FS, 14th FG. Oct. 21–25, 1998, in Wichita, KS. **Contact:** Sheril D. Huff, 3200 Chetwood Dr., Del City, OK 73115-1933 (405-677-2683).

51st Fighter–Interceptor Wg Assn. Sept. 23–27, 1998, at the Regency Plaza Hotel in San Diego. **Contact:** Clio Moralez, 24474 Del Amo Rd., Ramona, CA 92065 (760-788-0709).

51st FS, Sixth AF (WWII). Oct. 8–11, 1998, at the Holiday Inn West in Knoxville, TN. **Contact:** Ed Ellenberg, 140 Meadowview Dr., Fairfield Glade, TN 38558-9012 (615-484-5692) (emellenberg@u-c.net).

57th BW Assn, assigned groups and squadrons and 308th Signal Wg (WWII). Sept. 7–13, 1998, at the Hope Hotel, Wright–Patterson AFB, OH. **Contact:** Bob Evans, 1950 Cunningham Rd., Indianapolis, IN 46224-5341 (317-247-7507).

62d/37th Troop Carrier Assn. Oct. 15–17, 1998, at the Homewood Suites Dayton hotel in Fairborn, OH. **Contact:** Howard R. Hardt, RD 2, Box 213, Cherry Tree, PA 15724 (814-743-5109).

75th BS, 42d BG. Oct. 1–3, 1998, in Dallas. **Contact:** Bill Thomas, 1822 Fountain Ct., Eugene, OR 97402-6472 (541-688-3100).

246th Signal Ops Co (WWII). Aug. 6–8, 1998, in Columbia, TN. **Contact:** Marie Huggins, 30031 S.W. 169th Ave., Homestead, FL 33030 (305-247-0150).

303d Air Refueling Sq. Sept. 2–6, 1998, at the Hilton Seattle in Seattle. **Contact:** Harry Gronewald, 60 Warbler Ln., Port Ludlow, WA 98365 (360-437-2781) (Gronewald@Juno.com).

307th Air Refueling Sq. Sept. 17–20, 1998, in St. Louis. **Contact:** Jim Thornton, 111 E. Gooding St., Millstadt, IL 62260 (618-476-3365).

307th BW (SAC), Lincoln AFB, NE, 1954–65. Sept. 23–27, 1998, at the Sheraton Colorado Springs Hotel in Colorado Springs, CO. **Contact:** Bob Schultz, 2706 Northcrest Dr., Colorado Springs, CO 80918-4316 (719-599-9029).

310th BW Historical Assn. Oct. 1–4, 1998, in Odessa, TX. **Contact:** Don "Tiny" Malm (915-692-9392 or fax 915-698-2673) (Tiny BT@aol.com).

312th BG. Sept. 10–13, 1998, at the Clarion Hotel and Conference Center in Oklahoma City. **Contact:** Paul Stickel, 1136 Gray Ave., Greenville, OH 45331-1127 (937-548-5767) or Mickey Sherman, 2108 NW 115th St., Oklahoma City, OK 73120 (405-943-0060 or fax 405-943-0061) (havoc5af@aol.com).

386th BG and associated units, Eighth and Ninth AFs (WWII). Sept. 13–16, 1998, at the Radisson Hotel Asheville in Asheville, NC. **Contact:** Harry Guinther, 262 Manor Brook Dr., Chagrin Falls, OH 44022 (phone or fax 216-338-8372) (harry555@aol.com).

390th BG (H) Veterans Assn, Eighth AF,

Framlingham, UK (WWII). Sept. 2–6, 1998, in San Diego. **Contact:** Ken Rowland, PO Box 28363, Spokane, WA 99228-8363 (phone or fax 509-467-2565).

450th BG (H) "Cottontails" Assn. Oct. 8–11, 1998, at the Fallside Resort in Niagara Falls, NY. **Contact:** Doid K. Raab, 5695 Ireland Rd. NE, Lancaster, OH 43130 (740-536-7635).

451st BG, 60th Air Service Sq, Fifteenth AF, Italy (WWII). Sept. 9–12, 1998, in Atlanta. **Contact:** Bob Karstensen, 1032 S. State St., Marengo, IL 60152 (815-568-7766) (bobk451@aol.com).

452d BG Assn, Deopham Green, UK (WWII). Sept. 3–6, 1998, at the Marriott Portland Downtown hotel in Portland, OR. **Contact:** Hank North, 901 Poling Dr., Columbus, OH 43224-1936 (800-452-9099).

452d BW, Korea (1950–52). Aug. 8, 1998, at the Petroleum Club of Long Beach in Long Beach, CA. **Contact:** Gene Hoffman, PO Box 3785, Long Beach, CA 90803 (562-438-7138).

454th BS, 323d BG, Ninth AF (WWII). Aug. 26–30, 1998, at the Radisson Hotel in New Orleans. **Contact:** Byrle Ladd, 10100 St. Paul St., River Ridge, LA 70123 (504-737-8415).

493d BG, Eighth AF (WWII). Oct. 13–18, 1998, at the Hilton Hotel in Cherry Hill, NJ. **Contact:** Jack D. Rude, 2609 S. Bowie St., Amarillo, TX 79109-2109 (806-353-2486).

6912th RSM, Berlin Island Assn. Oct. 15–17, 1998, in San Antonio. **Contact:** Joe Kinel, 227 Oak Ct., New Braunfels, TX 78132-3819 (830-606-0122) (texasjoe@sprintmail.com).

Airlift/Tanker Assn. Oct. 22–25, 1998, at the Hyatt Orlando in Kissimmee, FL. **Contact:** T.P. Williams, PO Box 15538, Little Rock, AR 72231-5538 (501-758-6885).

Army Air Corps Enlisted Pilots Assn. Sept. 16–19, 1998, at the Doubletree Hotel Seattle Airport in Seattle. **Contact:** Herman C. Wood, 11320 Clover Park Dr. SW, Tacoma, WA 98499 (253-582-9345).

Bainbridge AB/Southern Airways School alumni, personnel, students, and permanent party military personnel; also Class 55-H reunion. Sept. 4–6, 1998, in Bainbridge, GA. **Contact:** Max E. Horn, 2114 High Rd., Tallahassee, FL 32303-4314 (850-385-4419) (75242.436@compuserv.com).

Pacific Air Weather Sqs. Oct. 22–25, 1998, in New Orleans. **Contact:** Frank Whitmire, 2300 Oak Knoll Ct., Colleyville, TX 76034-4488 (817-283-8038).

Pecos AAF, TX, personnel. Oct. 1–3, 1998, at the Best Western Swiss Clock Inn in Pecos, TX. **Contact:** Bill Pitts, 1121 Elm St., Fort Smith, AR 72903 (501-484-7512).

Ploesti, Romania, raid veterans. July 30–Aug. 1, 1998, at the Convention Center in Sioux City, IA. **Contact:** Bill Feder Sr., Mid America Air Museum, PO Box 3525, Sioux City, IA 51102-3525 (712-252-5300 or 712-943-5325).

RAF Woodbridge, UK, 1950s–60s, 20th TFW and 81st TFW. Sept. 24–26, 1998, in Traverse City, MI. **Contact:** Robert A. Buehrer, PO Box 154, Northport, MI 49670 (616-386-5359).

Supreme Headquarters, Allied Expeditionary Force (SHAEF), and European Theater of Operations, US Army (ETOUSA). Oct. 9–11, 1998, at the Tara Ferncroft Conference Resort in Danvers, MA. **Contact:** Alan F. Reeves, 2301 Broadway St., San Francisco, CA 94115 (phone or fax 415-921-8322); Don Thriffiley, 7340 Dundee St., New Orleans, LA 70126 (phone or fax 504-241-3065); William C. Lahman, 2230 S. Overlook Rd., Cleveland Heights, OH 44106 (216-721-0921 or fax 216-229-0921) (wclshaef@aol.com).

WWII Air Commando Assn, 2d Gp (CBI) and 3d Gp (SW Pacific). Oct. 1–4, 1998, at The Camberley Plaza Hotel Sabal Park in Tampa, FL. **Contact:** W. Robert Eason, 10031 Barnetts Ford Rd., Orange, VA 22960-2307 (540-672-4074).

Seeking **Aviation Cadet Class 60-E** for a reunion. **Contact:** Charlie Jennings, 3088 Wild Horse Ln., Foristell, MO 63348 (314-463-1211) (charliejennings@compuserve.com).

Seeking **Pilot Class 45-B,** Altus AFB, OK, and Mission, TX, to compile a reunion roster. **Contact:** Paul R. Wildes, 1054 Glen Grattan Dr., Montgomery, AL 36111 (334-263-7590) (PRDVWildes@aol.com).

Seeking **Pilot Class 55-F,** Bainbridge, GA, or Reese AFB, TX, to plan a reunion. **Contact:** Gus A. Becker Jr., 509 W. Century Dr., Laredo, TX 78046-6010.

Seeking **Pilot Training Class 55-I** to plan reunion. **Contact:** Ron Weinert, 1310 Riverside Dr., Buhl, ID 83316 (208-543-8925 or 602-596-8344) (rweinert@magiclink.com).

Seeking **Pilot Training Class 56-V,** Bryan AFB, TX, and Spence Field, GA, to plan reunion. **Contact:** George R. Partridge Jr., 106 Quail Run, Prattville, AL 36067-3810 or George T.E. Hicks (gtehicks@aol.com). ■

Bulletin Board

Seeking **unit patches and photos** from Nakhon Phanom RTAB, Thailand. **Contact:** John A. Shellhorn Jr., 6147 51st Ave. N., Kenneth City, FL 33709-3527.

Seeking members of the **57th FIS,** Keflavik, Iceland, 1955–56. **Contact:** Del Oxford, 5859 Andreas Way, Charleston, SC 29418-5201 (843-767-3884).

Seeking information on and contact with **Capt. Robert F. Davis,** air commando A/B-26 pilot in 1965, who served in Bien Hoa, Vietnam, in 1962. **Contact:** Charles Harper, 5313 16th Ave., Moline, IL 61265 (309-797-6882) (bluebird@Mcleodusa.net).

Seeking **John "Jack" Keller,** possibly from Texas, stationed in UK, 1950–51. **Contact:** Lynn Sharpless, 44 St. Faith's Rd., Winchester, Hampshire SO23 9QD, UK (011-44-962-851802) (eardley@interalpha.co.uk).

Seeking information on **Capt. Joseph P. McLaughlin** of the 20th Pursuit Gp, 4th Air Depot Gp, at Laverton, Australia, whose P-40 crashed March 10, 1942, and was recovered in the mountains near Melbourne in 1949. **Contact:** Bob Piper, 7 Brazel St., Higgins A.C.T. 2615 Australia.

Seeking **Sgt. William Schmitt,** of the 1259th AAFBU NAFD ATC, who served in Algiers in 1945. **Contact:** J.W. Dodson, 55 Old Country Ln., Columbus, MS 39702 (601-328-7655).

If you need information on an individual, unit, or aircraft, or want to collect, donate, or trade USAF–related items, write to "Bulletin Board," *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Items submitted by AFA members have first priority; others will run on a space-available basis. If an item has not run within six months, the sender should resubmit an updated version. Letters must be signed. Items or services for sale, or otherwise intended to bring in money, and photographs will not be used or returned.

Seeking information on a crash June 11, 1946, in Guam that killed **1st Lt. George Donald Jones,** the son of Army Col. George A.A. Jones and Leah Jones. **Contact:** Janie Carlson, 722 SE 38th Dr., Gresham, OR 97080.

Seeking a copy of the **11th BG (H) Veterans Assn** roster, any year. **Contact:** Bill Emery, 5061 40th St. SW, Montevideo, MN 56265.

Seeking information on B-17 *Lady Be Good* pilot **1st Lt. John "Jack" R. Money,** who was killed Dec. 31, 1944, on a mission out of the UK. **Contact:** Jose Taboas, Villa Nevarez, 1040 Calle 3, San Juan, PR 00927-5127 (jtaboas@tld.net).

Seeking contact with anyone who knew **Capt. Joe McConnell Jr.,** triple jet ace of the Korean War, for personal accounts and photos. Also seeking the **crew chief** who painted "Betty" on the right side of *Beautious Butch.* **Contact:** Terry Freedman, 3114 199th Ave. SE, Issaquah, WA 98029-9652 (70354.551@compuserve.com).

Seeking information on **Capt. Hugh Fletcher** of the 452d BS, 322d BG, who flew *Mild and Bitter* and *Jezabelle.* **Contact:** Bruce W. Cameron Jr., 24 Plantation Hills Dr., Evans, GA 30809-5614 (706-863-5039).

Seeking information on **Lt. Col. Robert F. Hood,** who was in the 309th FS, 31st FG, in late 1944–May 1945. **Contact:** Henry J. Barrows Jr., 10960 Miller Ave., Canal Winchester, OH 43110 (614-837-6294).

Seeking a pair of authentic or replica **WWII Aircraft Observer wings. Contact:** Bernard R. Marsh, 8112 Texas Plume Rd., Austin, TX 78759-6036.

Seeking members of **Aviation Cadet Class 53-F,** Hondo AB, TX, who have not been contacted about a class reunion in September 1998. **Contact:** R.C. "Jim" Mayton, 12814 Brockwell Rd., Prince George, VA 23875 (804-452-1423) (jjmayton@bellatlantic.net).

Seeking original **autographs** of Lt. Gen. Frank Andrews, Lt. Gen. Millard Fillmore Harmon, Nancy Love (WASP), Maj. Thomas B. McGuire Jr. (ace), Maj. Gen. Clarence Tinker, and any pilots and crew members of the Ploesti missions. **Contact:** Steve Keyser, PO Box 1464, El Cajon, CA 92022-1464.

Seeking photos and personal anecdotes of those involved in the development of airlift and tanker missions in the **Air National Guard** since the 1950s. **Contact:** Charles J. Gross, National Guard Bureau, Office of History, Park Center IV, Rm. 450, 4501 Ford Ave., Alexandria, VA 22302-1454 (703-681-0719) (cgross@ngb-emh2.army.mil).

Seeking **WWII memorabilia and experiences** for Florida State University WWII history preservation efforts. **Contact:** Institute on World War II and the Human Experience, Department of History, Florida State University, Tallahassee, FL 32306-2200 (850-644-9541).

Seeking **Frank and Jackie Johnson,** who were stationed at Goodfellow AFB, TX, in 1977 and have two children, Angie and David. **Contact:** Karen Atchinson McNally, Valley View Apts., Bldg. 9, Apt. 24, Maybury Dr., Watervliet, NY 12189.

Seeking **Glenn Martin,** of Glendale, CA, who served in Morocco during WWII with the Army Air Communications Service. **Contact:** James E. Temple, 4700 Monument Ave., Richmond, VA 23230-3727.

For a book, seeking personnel who served in the **Congo,** 1960–67. **Contact:** Leif Hellström, Norrskensbacken 13, Tullinge SE-146 46, Sweden (leif.hellstrom@etx.ericsson.se).

Seeking WWII **WAAF and RAF officers** and 78th FG members, who flew out of Duxford Airfield, UK, and members of the **357th FG,** who flew out of Leiston Airfield, UK. **Contact:** Gordon Leonard, 19 Boswell St., Bootle, Merseyside L20 4RP, UK.

Seeking former **F-16 pilots and ground crews** for the F-16 Alumni Assn. **Contact:** Rick Mitchell, 730 White Oaks Ave., Baltimore, MD 21228.

For a book, seeking the stories of peacetime or wartime **bomber unit members. Contact:** Bruce E. Slasienski, rue des Pâquis 51, Geneva 1201 Switzerland (slas@email.msn.com).

Seeking information on or contact with survivors from aircraft shot down near the **High Tatra Mountains** of Slovakia, June 1943–October 1944, possibly near Kezmarok and possibly involved in **Operation Frantic. Contact:** Anthony J. Rowley, 323 Derwyn Rd., Lansdowne, PA 19050-1027 (rowely@netaxs.com).

Seeking information on B-17 and crew assigned to the **715th BS,** 448th BG, downed June 16, 1944, with **Capt. Lewis Selljes, Francis J. Berard, Richard H. Grant, Eddie J. Guidry, and William Massey,** who parachuted from plane and were protected by the Beau family until rescued Sept. 21, 1944, at Charente, France. **Contact:** Wayne Guidry, 13615 W. Bolero Dr., Sun City West, AZ 85375-4738.

Seeking contact with former B-25 graduates of **Class 45-H,** Turner Field, GA. **Contact:** Clarence C. "Ben" Benedict, 8507 E. Via De Los Libros, Scottsdale, AZ 85258 (602-948-6512).

Seeking **Edward M. Coy, Robert S. Groetzinger, Robert W. Hamilton, and Robert A. Hedges** of the 580th Holding and Briefing, Wheelus AFB, Libya. **Contact:** Angelo Hillas, 1373 N. Scenic Heights Rd., Oak Harbor, WA 98277 (360-675-8802).

Seeking members of the **Pilot–Weather Officer Class** at Chanute AFB, IL, in 1946. **Contact:** Jim McLaughlin, 4456 AuSable Dunes, East Tawas, MI 48730 (517-362-5740).

Seeking photos of **F-105 Thunderchiefs,** 1963–66, in the markings of the 4th, 8th, and 23d TFWs or photos of 105s involved in TDYs to Thailand or Vietnam in the early stages of the war. **Contact:** Jerry Geer, 1605 NW 65th St., Topeka, KS 66618.

Seeking **Capt. E.E. Pannell Jr. and airmen Allen Z. Cooper, Harold W. Frazier, Harold S. Henson, James E. Holbrooks, and James L. Seaman,** assigned to the 4123d Strategic Wg/70th BW, Clinton–Sherman AFB, OK, 1958–69, especially POL personnel, and any information on Clinton–Sherman AFB. **Contact:** Horace M. Carner Jr., PO Box 385, Montezuma, NY 13117-0385.

Seeking information on **Capt. Taylor "Tex" L. Lamkin,** a WWII P-38 recce pilot and graduate of the first jet class. **Contact:** Sheri Heath, 100 N. Main St., Ste. 110, PO Box 409, Breckenridge, CO 80424.

Seeking information on or contact with **A2C Noel Norbert Ricciardo,** of Staten Island, NY, who was stationed at Burtonwood AB, UK, 1957. **Contact:** Michael Jerome Urey, 1 Mear Close, Sutton Heath Estate, Woodbridge, Suffolk IP12 3TZ, UK.

Seeking contact with anyone who knew **SSgt. John H. Hatting,** 9th Sq, 7th BG, Tenth AF, who was a tail gunner on a B-17 at the time of his death Nov. 25, 1943. **Contact:** Della A. Hatting Wesselink, 625 Waterford Ln., Decatur, IL 62526.

Seeking **Mary Murphy Gill,** who married former USAF member Lawrence T. Gill III in 1965. **Contact:** Linda Swanson Blue, 7660 Captains Harbor Dr., #306, Bokeelia, FL 33922. ■

Pieces of History

Photography by Paul Kennedy

USO: Wherever They Go

Memorabilia courtesy USO

From Hollywood legends like Marilyn Monroe to the volunteers who run canteens across the world, thousands have helped make the United Service Organizations America's link with her men and women in uniform. In 1941, President Franklin D. Roosevelt challenged six private agencies—the YMCA, YWCA, National Catholic Community Service, National Jewish Welfare Board, Traveler's Aid Association, and Salvation Army—to handle on-leave recreational needs of US armed forces' members. These six organizations quickly combined resources and became known as the USO. Even the most famous stars waived compensation to bring first-class entertainment to US–based troops. These "Camp Shows" then expanded to Europe and the Pacific. Bob Hope's legendary USO affiliation began that first year and continued for more than five decades. He and countless other "soldiers in greasepaint" have performed a vital service to the nation's military personnel.

90 Minutes After Launch, You Hope NASA Doesn't Call.

After 90 Days, You Start to Wish They Would.

It's been over ninety days since the launch of the Lunar Prospector spacecraft and we *still* haven't heard from NASA. Which is our way of saying no news is good news. It means that Spectrum Astro's Command and Data Handling Subsystem continues to perform flawlessly in orbit around the moon, gathering and transmitting the data that will help scientists to determine the amount of water on the moon and map the composition of the lunar surface. And, like all Spectrum products, our C&DH is designed to operate with maximum efficiency. **This 80C86 based system, developed under contract to Lockheed Martin, integrates CCSDS, telemetry, payload interfaces, attitude interfaces and battery charge control into one lightweight unit.** Of course, perfect flight performance is not new to Spectrum Astro, but it does present our engineers with the added risk of the unknown: free time.

From all of us here at Spectrum Astro, congratulations Lunar Prospector Team!

Above and Beyond

Gates West
Electronics Engineer
5 Years Space Experience
Native of Arizona

Don Doerres
Software, REA
20 Years Space Experience
Native of Iowa

Steve Westing
Electronics Engineer
10 Years Space Experience
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