NOVEMBER 1996/$3

AIR FORCE

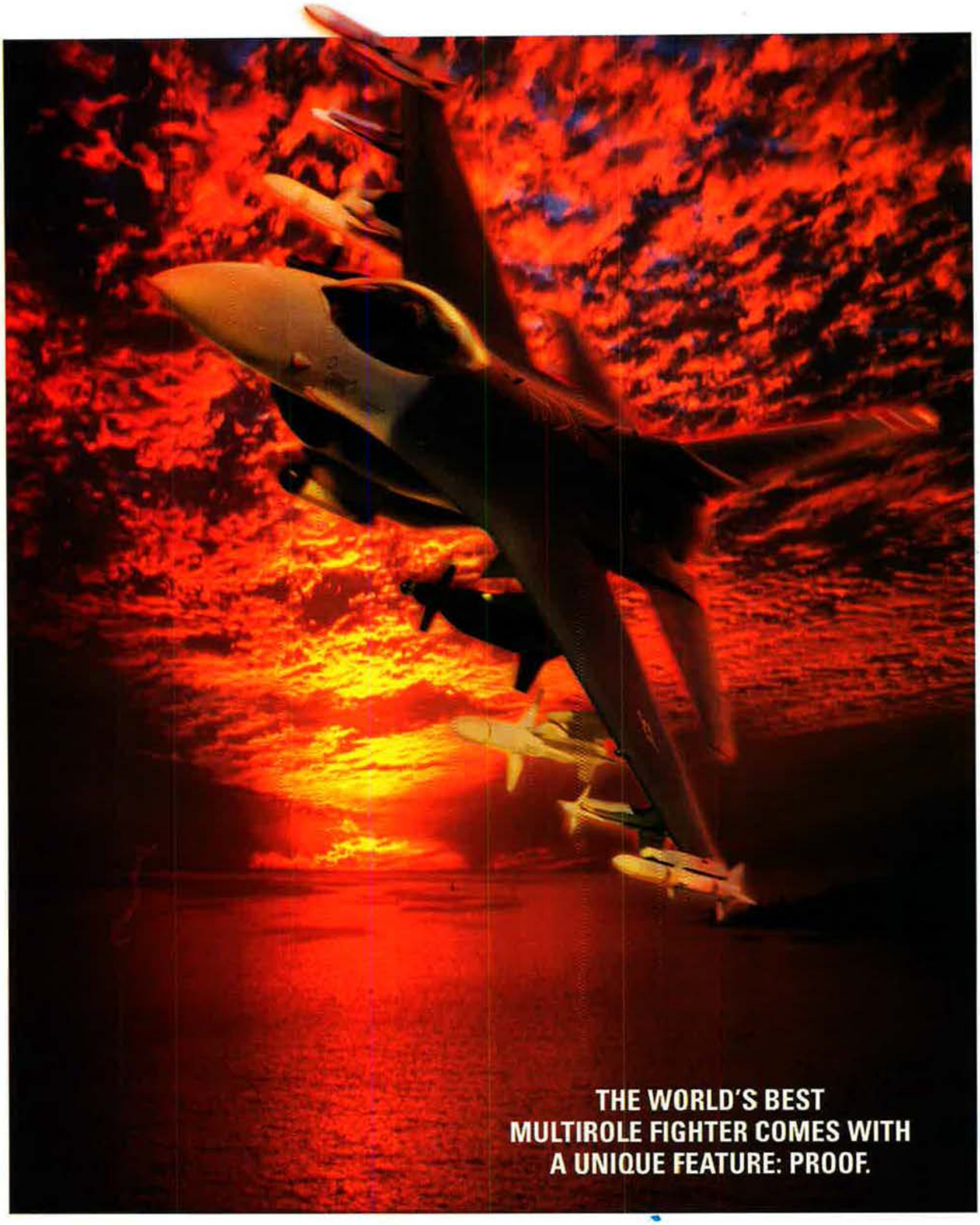
PUBLISHED BY THE AIR FORCE ASSOCIATION MAGAZINE

Rediscovering Strategic Airpower

AFA Convention 1996

History on the Wing

Total Force Never Stops



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LOCKHEED MARTIN

Mission Success

November 1996, Vol. 79, No. 11

AIR FORCE MAGAZINE

PUBLISHED BY THE AIR FORCE ASSOCIATION

About the cover: The stealthy B-2 bomber is the epitome of long-range strategic airpower. See "The Rediscovery of Strategic Airpower," p. 26. Photo by Ted Carlson.

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Editorial

AFA 1996–97 Statement of Policy, adopted by the delegates at the 1996 Air Force Association National Convention September 16, 1996

Aerospace Power Makes the Difference

In 1997, the US Air Force marks its fiftieth anniversary as a separate military service. During that time, it has become the nation's first line of defense. Our capabilities in air and space have been unique sources of strength for the United States as well as incomparable instruments of national power.

Throughout the Cold War, the security and stability of the free world depended on the Strategic Triad, primary elements of which were the Air Force's long-range bombers and land-based intercontinental ballistic missiles. In conventional conflicts from Korea to the Persian Gulf, the Air Force has conducted missions and delivered results that were not within the abilities of any other military force on Earth. The Air Force has demonstrated that it can respond promptly to distant crises and project power from intercontinental distances. From the Berlin Airlift of the 1940s to the Balkan crises of the 1990s, the signature of US power in war and peace has been flexible air operations.

The United States today is an aerospace nation. Our evolution as such has contributed to and sustained our position of leadership in world affairs. Aerospace excellence over the past fifty years has made the difference.

As the Air Force begins its second half-century, its capabilities are still growing. The primacy of air and space in national security will be even more pronounced in the years ahead. Command of air and space will be fundamental to all else.

■ **Leading With Airpower.** Platforms in air and space provide air superiority, reconnaissance, surveillance, mobility, situational awareness, and other capabilities vital to operations on land, at sea, or in the air. Because of its speed and range, the Air Force often will be the first on the scene of crisis or conflict and the first to fight. Early requirements will be establishing air superiority and seizing the initiative for the forces that arrive later.

Whether deployed forward, operating as an expeditionary force, or projecting power globally from bases in the United States, the Air Force can strike with precision and effect. The basic attributes of airpower—speed, range, flexibility, maneuverability, and lethality—make it of enormous value in any joint or combined-arms engagement. All of the services are dependent on the Air Force for mobility, sustainment in early phases of conflict, and other functions. The Air Force can and does support surface operations, but it can also achieve tactical or strategic objectives independent of surface power or with land or sea forces in support.

We are an aerospace nation. The primacy of air and space in national security will be even more pronounced in the years ahead.

■ **Asymmetrical Force, Parallel Operations.** Time and physics have overtaken the traditional force-on-force model of attrition warfare, geared to battle lines on the ground, massed forces, and sequential operations. Strategies of the future will be oriented less toward territory lost or gained and more toward eliminating the enemy's ability to wage war. Future operations will emphasize asymmetrical force, applied intensely and overwhelmingly against the enemy's strategic, operational, and tactical "centers of gravity," including his order of battle and supporting infrastructure. These targets must be attacked "in parallel"—all of them concurrently—rather than by serial attacks that present the adversary with an opportunity to adjust, adapt, or mount a counteroffensive.

Critical "center of gravity" targets will generally lie deep in the enemy's territory and will be protected by lethal defenses and other means. Frequently, they will be located in urban areas. For reasons that include the penetration of hostile airspace, success of the attack, the avoidance of collateral damage, and the limitation of casualties on both sides, the force of choice will be deep-strike aircraft employing stealth and precision guided munitions.

■ **Information Dominance.** Military operations of the future will be predicated on information dominance. Emerging technology enables the rapid collection, processing, and dissemination of an increasing volume of highly accurate strategic, operational, and tactical information. Much of this information comes from reconnaissance, surveillance, and intelligence assets in air and space, but the national and international information infrastructures are of benefit as well. Control of the information spectrum will be pivotal to the outcome of conflict in the twenty-first century. It will involve not only the preservation of our own access to such information but also the denying of access to our adversaries. "Global awareness" will soon take its place alongside "global reach" and "global power" in the Air Force's sense of purpose and direction.

■ **Space.** The armed forces are vitally dependent on space systems for information, communications, and operational support that ranges from targeting assistance to weather reporting. It is clear that space will figure even larger in defense programs and strategies of the future.

The Air Force launches and operates more than ninety percent of all

Department of Defense space assets. The Air Force has also been designated as the Department of Defense executive agent for multiuser space systems. Leadership in the developing arena of space is a heavy responsibility but one that the Air Force is well suited to meet.

The increasing importance of the military space program is such that it must be accorded priority in research, development, and funding by the Department of Defense and by the nation. Leading requirements include routine, affordable, reliable access to space and better systems to detect and track theater ballistic missile launches.

■ **Strategy and Forces.** Present US defense strategy requires that our armed forces be prepared to fight and win two major regional conflicts (MRCs) almost simultaneously. This strategy, initially adopted to facilitate a deep reduction in the defense budget, has long been under attack as excessive and unaffordable. The arguments for diminishing the two-conflict strategy, however, are economic, not military.

The two-MRC concept works reasonably well as a means for sizing the force and for estimating resources required. Response to regional crises is central, but the strategy must also provide for other missions ranging from strategic deterrence and defense of the United States and its allies to peacekeeping and counterproliferation. It must also provide a margin for the unexpected. The proper standard for sizing the force is obviously more than one regional contingency, and the two-conflict standard is a reasonable minimum.

However, the present force does not meet the two-conflict standard, nor is it projected to do so in the future. The reductions have gone too far. The force that won the Gulf War no longer exists. We could not do today what we did then.

We stand on our position that to implement the strategy and meet its obligations in wartime and peacetime, the Air Force component of the force structure should include not less than twenty-four combat-coded fighter and attack wings, at least 184 operational bombers with precision guided munitions, a modernized airlift capability of fifty-two million ton-miles per day, and an infrastructure sufficient to dominate the space theater of operations.

■ **Resources.** Contrary to any assumption that the defense reduction is over, the Administration's budget proposal for 1997 would fund defense at six percent less than the 1996 level. Yet another reduction is planned for 1998.

Defense has already been cut to the danger line, and the nation has already collected a large "peace dividend" from the savings. The latest proposal, adjusted for inflation, would put the defense budget forty percent below its peak during the 1980s. Defense outlays, already down to 3.2 percent of Gross Domestic Product in the plan for 1997, will drop to 2.7 percent by 2002, compared with 11.9 percent of GDP in the 1950s. Arguments that the defense burden is becoming unbearable are patently absurd.

Within the limits of reason—and those limits lie somewhere above 3.2 percent of GDP—the defense budget should be driven by validated requirements and not reduced to meet external budget constraints.

■ **Technology and Force Modernization.** Technological superiority is the basis of the advantage that US military forces have over their potential adversaries. It is not an advantage we can take for granted, especially in view of the proliferation of weapons of high technology, including ballistic missiles, modern combat aircraft, state-of-the-art air defenses, and the growing access of many nations to space.

The US military advantage of tomorrow depends on force modernization investment today, particularly in stealthy aircraft, precision-strike weapons, space systems, surveillance and reconnaissance, information warfare capabilities, and modern air mobility. During interludes of peace, the nation must not allow itself to be lulled into believing it can neglect the making of provisions for the future.

The fielding of the revolutionary aerospace systems of the future will be a challenge as great as any that American defense industry has ever faced. In this anniversary year, it must be remembered that the achievements thus far would not have been possible without the contributions and the excellence of industry. Given the shrinkage and decline of the industrial base in the 1990s, the job ahead calls for trust, cooperation, and mutual respect between the armed forces and the industrial base that remains.

■ **People.** We congratulate the Department of Defense and the Air Force on the strong initiatives they have undertaken to improve the quality of military life. These initiatives are timely, because Congress and the armed forces have fallen behind in providing for service members and their families. That situation, brought on mainly by inadequate funding, will lead ultimately to problems of morale, recruiting, readiness, and retention if not corrected.

Military compensation already lags pay in the private sector by a significant margin, and the gap is getting wider. Military housing is inadequate, and current quarters allowances fall far short of the actual cost of housing off base. Family support programs need improvement and expansion. These and other quality-of-life issues require serious attention without delay.

We must, however, raise a special alarm about health care. Access to medical care, which military people regard as their single most important noncash benefit, continues to diminish. It is time to restore credibility to the entitlement of health care for service members, military retirees, veterans, and families. The final analysis of the health-care system—and the criterion for judging the competing proposals for reform—is the quality and delivery of care as experienced from the perspective of those who receive the care.

■ **Total Force.** The USAF Total Force partnership of today is the result of many years of trust, mutual support, and cooperation among the active-duty, Guard, and Reserve components. The Air National Guard and the Air Force Reserve can ably handle the fullest share of the total mission that is consistent with sound force balance and force management. The Air Force continues to demonstrate how Total Force can and should work.

AFA believes that the official auxiliary of the Air Force, the Civil Air Patrol, should be recognized as associated with the Total Force and that CAP's unique resources, capabilities, and training activities should be used to augment Air Force missions when feasible.

■ **AFA and the Full-Service Air Force.** The Air Force Association, on this its fiftieth anniversary, has consistently over these many years focused on the US Air Force and its application of airpower, from science and technology to research and development, test and evaluation, production, fielding, and sustaining of forces. Its concentration is on the extraction of every possible ounce of advantage from operating in the mediums of air and space. For the US Air Force, aerospace power is a profession, not a sideline.

The other service departments have, and should have, aviation capabilities that are integral to their primary land and sea missions, but the responsibility to provide and prepare forces for sustained aerial warfare remains with the US Air Force. In any conflict of significant scope or duration, and in many applications of limited force as well, the preponderance of the air effort will be and should be performed by the US Air Force. ■

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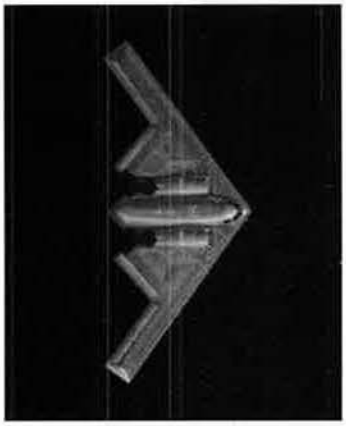

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AND MILITARY THINKING.

*20-foot circular error probable (CEP) level of precision.

Letters

Two Looks at Leadership

Imagine my excitement when I received the September issue of *Air Force* Magazine and saw from the cover that you were doing an article on the Senior NCO Academy, the world's finest enlisted professional military education (PME) school *["Lessons in Leadership," p. 56].* Then, imagine my utter disappointment to find that the article consisted only of eleven captioned photographs (two of which were devoted to the College for Enlisted PME).

"Lessons in Leadership" had no interviews with Commandant CMSgt. Charles T. Dickerson or his staff, no discussion about what the goals of the academy are, no interviews with students about what the school is doing for them, and no interviews with CMSAF David J. Campanale or any other distinguished graduates about what the school meant to them, their careers, and the Air Force. Wouldn't some discussion with Chief Campanale and the three former Chief Master Sergeants of the Air Force mentioned in the article have added a lot? It's very disappointing to see such a premier organization get so little "airtime."

I don't believe that commanders, supervisors, or former and future students got a true picture of the Senior NCO Academy from *Air Force* Magazine.

CMSgt. Kenneth C. Maynard,
USAF (Ret.)
San Antonio, Tex.

What a pleasant surprise to see Senior NCO Academy students on the cover of the September *Air Force* Magazine.

The pictorial tour of the facilities, classrooms, and equipment revealed a quantum leap forward from the days when I was a student in Class 74-A. The academy now even has joint-service students and instructors! What a great opportunity to increase and hone one's leadership skills.

It pleases me greatly to know that, even in the face of force drawdowns, Air Force policymakers and keepers of the purse strings understand the key role our senior NCOs play in warfighting readiness and execution and are willing to provide ongoing support to this outstanding academy of higher learning.

CMSgt. John A. McBrien,
USAF (Ret.)
Chandler, Ariz.

Other Air Forces

In "First Force" *[September 1996, p. 34],* author John A. Tirpak quotes and paraphrases Air Force Chief of Staff Gen. Ronald R. Fogleman regarding the future role of the Air Force. The essence seems to be that naval and Army air services efforts are only "part-time" jobs, providing less than optimal performance. The proposition is offered that only a single service that focuses on "air- and spacepower" can fill the air role for our military.

The article describes the Navy as being optimized for "fleet defense and combat in littoral regions." Not recognized is the fact that naval aircraft operate from attack carriers (CVAs). The primary mission of Navy fighters *is* fleet defense. However, this extends to air superiority over the area into which the CVA is deployed and to escort of attack missions beyond coastal regions.

The primary mission of the CVA is to project airpower. Foremost is close air support to ground troops, be they Marines or Army, in amphibious operations until air support can be established ashore. This support can extend considerably beyond the coastal areas, as happened in Korea, Vietnam, and many lesser conflicts. . . .

During those conflicts, the Navy's "part-time" air service developed Sidewinder, Sparrow, and Phoenix air-to-air missiles; the Mk. 80 series of low-drag bombs; Shrike antiradiation missiles; Zuni five-inch ultrahigh-velocity rockets; nuclear depth bombs; and Harpoon cruise missiles (forerunner of all cruise missiles).

The Army's "part-time" air service has likewise developed systems beyond the "movement, fire support, and scout functions" the article identifies. These were to create capabilities not being supported by the existing Air Force. Notably, these capabilities were in the areas of close air support responsive to regional ground command requirements and battlefield resupply and evacuation. This was accomplished with whole families of helicopters and relatively lightweight fixed-wing air assets.

These "part-time" services found recognition, support, and funding from their respective command leaders.

Finally, the naval CVAs do not require foreign clearance to operate where they choose. They also do not have to negotiate costly rental agreements for operational bases. The "arsenal ship concept" alluded to in the article is not new. CVA replenishment has always been provided by Navy ammunition ships, designated AEs. . . .

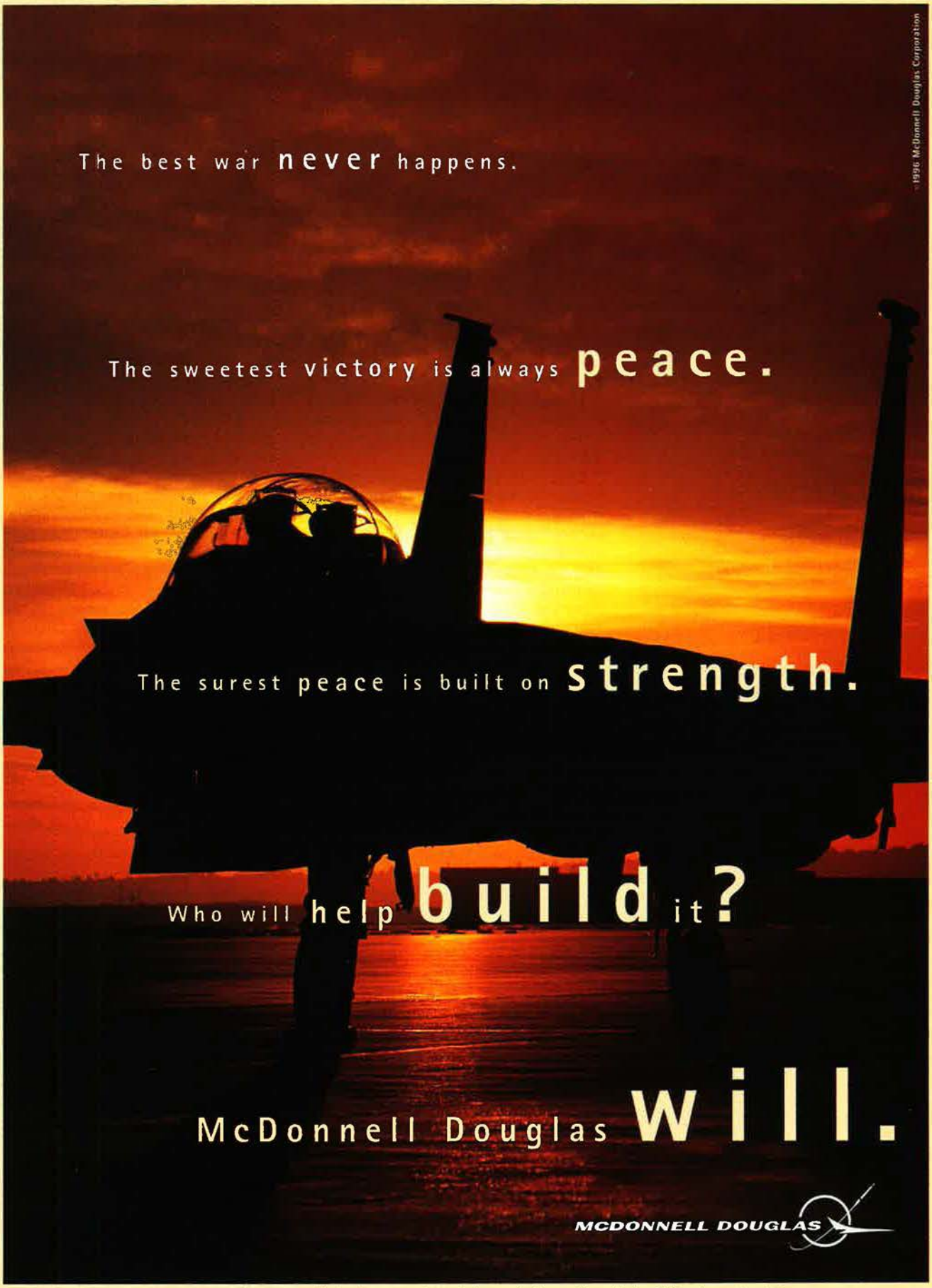
It would seem quite ambitious and unrealistic to suggest that these diverse functions could be better served and assumed by a single service focused on "air- and spacepower."

Lt. Cmdr. R. N. McDowell,
USN (Ret.)
Los Alamitos, Calif.

As much as I admire General Fogleman, the US Air Force, and the F-86, I object to one of his statements about the Korean War. Although it is not and was not their mission, he seems to fault Marine air wings for lacking the equipment to "prevail in the air."

Marine Corps policy during the Korean War was to provide close air support for combat troops on the ground and to develop vertical envel-

Do you have a comment about a current issue? Write to "Letters," *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Letters should be concise, timely, and preferably typed. We cannot acknowledge receipt of letters. We reserve the right to condense letters as necessary. Unsigned letters are not acceptable. Photographs cannot be used or returned.—THE EDITORS



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Letters

opment through the use of rotary-wing aircraft.

History shows that during the war, "Task Force Smith," a regular Army force, did not have close air support when needed, resulting in a retrograde movement to the end of the Korean peninsula.

The pressure was removed when the 1st Marine Division landed at Inchon and the 187th Airborne Regimental Combat Team dropped at Sunchon and Sukchon, behind enemy lines. All this took place while the Air Force practiced duels in the firmament.

Robert D. Swartz, Sr.
Palm Bay, Fla.

Photochart Voids

I noted two voids in the "Photochart of USAF Leadership" *[September 1996, p. 100]* that you may wish to address.

On p. 105, the Air Force Acquisition System is featured. It omits four mission area directors (Global Reach, Global Power, Information Dominance, and Space and Nuclear Deterrence) as well as its three deputy assistant secretaries (Contracting, Policy and Program Integration, and Science, Technology, and Engineering).

The Air Force prides itself on high technology, but nowhere is the science and technology leadership highlighted in the photochart (this would be Technology Executive Officer Maj. Gen. Richard Paul and myself), although you correctly listed all of our four laboratories and the Air Force Office of Scientific Research under Air Force Materiel Command.

My experience indicates that many of your readers use this display of Air Force leadership to find proper access points in the Air Force for their interests. My comments are made solely to improve the "referral list" value of the photochart.

Helmut Hellwig
Deputy Assistant Secretary
(Science, Technology, and Engineering)
Hq. USAF
Washington, D. C.

■ *The offices to which Secretary Hellwig refers are held by the following: Mission Area Director, Global Reach, Brig. Gen. Tome H. Walters, Jr.; Mission Area Director, Global Power, Maj. Gen. John W. Hawley; Mission Area Director, Information Dominance, Brig. Gen. David A. Nagy; Mission Area Director, Space and Nuclear Deterrence, Brig. Gen. Robert E. Larned; Deputy Assistant Secretary, Contracting, Brig. Gen. Timothy P. Malishenko; DAS, Policy and Program Integration, Blaise J. Durante; DAS, Science, Technology, and Engineering, Helmut Hellwig.*

The Danger of Consolidation

In World War II, Hitler's forces were incapacitated when a factory that produced forty percent of the ball bearings used in their aircraft engines was destroyed by Allied forces. With that factory destroyed, sixty percent of Germany's capability to produce those bearings still existed. Today in the Air Force, there is an alarming trend to combine all aircraft repair capabilities at one location *["The Push to Privatize," August 1996, p. 66].*

These depots are not currently susceptible to an enemy bombing, but, considering the alarming increase in domestic terrorism, what would happen if the entire repair capability for electronics units in the F-16 were destroyed by a rented truck loaded with gasoline and fertilizer? What if the entire repair capability for F-15 and F-16 engines were at one depot, such as Homestead AFB, Fla., before Hurricane Andrew? By removing the skills and equipment to repair aircraft components from field units and combining them at one location, we run a severe risk to combat readiness.

Consolidated repair facilities are a cost-cutting measure. Has the Air Force taken into account the cost of losing combat readiness should an isolated incident incapacitate our repair facilities? USAF should allow the field to maintain the ability and authorization to perform home-station repair of aircraft assets or, at a minimum, regionalize the capability. Current domestic activities make this the viable alternative.

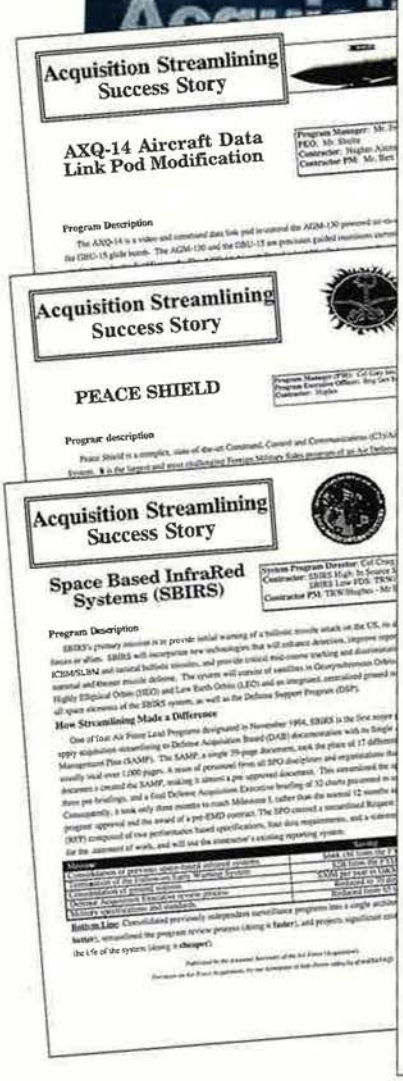
Thomas S. Fanslau
Atlantic City, N. J.

Jointness in the 1970s

I read with deep interest the "News Note" in the September 1996 issue concerning the first naval flight officer to command an Air Force squadron *["Aerospace World," p. 25].* The item brought back fond memories of when I commanded the 452d Flying Training Squadron at Mather AFB, Calif., from 1975 to 1977.

At that time, the Air Force was training naval flight officers and Marine Corps observers. It was a distinct honor to work with outstanding instructors and administrators from the US Navy and Marine Corps. Of further note, my squadron was se-

LEADERS IN ACQUISITION REFORM AND TEAMWORK.



Acquisition Streamlining Success Story

Advanced Medium Range Air-to-Air Missile (AMRAAM)

Program Manager: Col Rick Dickson
PEO: Mr. Harry Schulte
Contractor: Hughes Aircraft Co., Raytheon Co
Contractor PM: Mr. Chuck Anderson, Hughes
Mr. Jim Wilson, Raytheon

Program Description

The AIM-120 AMRAAM is a new generation air-to-air missile. It has an all-weather, beyond-visual-range capability and is scheduled to be operational beyond the year 2000. AMRAAM is the premier air-to-air weapon of choice by America's aviators against low-altitude targets. It incorporates an active radar with an inertial reference unit and micro-computer system, which makes the missile less dependent upon the fire-control system of the aircraft. Once the missile closes on a target, its active radar guides it to intercept. This enables the pilot to aim and fire several missiles simultaneously at multiple targets. The pilot may then perform evasive maneuvers while the missiles guide themselves to their targets.

How Streamlining Made a Difference

By replacing oversight with insight, the AMRAAM program office teamed with industry to create an environment where the primes are now equal partners in striving for AMRAAM success. Planning and executing a strategic block concept for hardware/software changes, improved integration with aircraft platforms was acheived. As a result, **reliability exceeds the warfighter's requirement by 400 percent** and a 10 year bumper-to-bumper warranty--the first for munitions--was obtained. However, the real success story is the Buy To Budget philosophy which bought the warfighters 407 more AMRAAMs.

Measure	Lot 10
Source selection team	**Reduced by 50%**
Paper	**Cut by 55%**
Required data	**Decreased by 30%**
Certified cost and pricing data	**Eliminated**

Bottom Line: Empowered government's contractor plant inspectors with equipment certification and engineering change approval authority (doing it **better**), **spearheaded transition to IPTs** by both government and contractor (doing it **faster**), **prices slashed by 33%** over last four years(doing it **cheaper**).

Published by the Assistant Secretary of the Air Force (Acquisition).

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Panama City, Fla.

In Wagner's Honor

It was a pleasure to read "AAF's First Ace" *[September 1996 "Valor," p. 43].* As Contributing Editor John L. Frisbee wrote, we lost a superb pilot and fine leader who would have gone far in the "new" US Air Force.

As president of the Lt. Col. B. D. "Buzz" Wagner Chapter in Johnstown, Pa., I want to point out that we strive to keep Buzz Wagner and all his accomplishments from being forgotten.

He is remembered in various museums, including the US Air Force Museum at Wright-Patterson AFB, Ohio. We hold a Memorial Day service every year at his memorial in the Grandview Cemetery in Johnstown, his hometown. We are trying to have a new joint military helicopter base at the Johnstown Cambria County Airport named for Buzz. . . .

I was unaware that Buzz Wagner's name is missing from several histories of the Air Force, as stated in the article, but if it is, we should do what is necessary to correct that. I thank Mr. Frisbee for remembering one of our great heroes.

Robert C. Rutledge
Johnstown, Pa.

Liberators Over the Bismarck

I enjoyed "Victory in the Bismarck Sea" in the August 1996 issue *[p. 88]* but point out that in addition to the twenty-nine B-17s that attacked the Japanese convoy on March 2, three B-24s flew in formation with the B-17s. The B-24s were from the 90th Bomb Group "Jolly Rogers" and were based at Port Moresby, about seven miles from the B-17 base. The 90th Bomb Group was supposed to have forty-five aircraft but was only able to get three airborne on March 2. My father, Capt. Robert W. Riley, flew one of the B-24s.

Bob Riley
Melbourne Beach, Fla.

Bring Back Medium Bombers

With reference to the retirement of the F-111 Aardvark *["The Capable F-111," August 1996 "Letters," p. 7],* let's not lose sight of the need for the medium bomber. As bombs get smarter and standoff distances increase, the need for stealth decreases while the importance and benefit of platform tactics, payload, and range and loiter time increase. . . .

Could the best mix be a few expensive F-117s performing the Suppression of Enemy Air Defenses mission and a bunch of cheap Aardvark-type bombers moving to long-distance launchpoints, or safely penetrating, to deliver the message? We can do it with B-52 BUFFs and F-117 Nighthawks, but strategic bombers often raise the political ante more than desired. The Aardvarks might be worn out, but it seems that technology has given the medium bomber a new lease on life.

Maj. James T. Strong,
USAF (Ret.)
San Diego, Calif.

Delegating Authority

We can all applaud swift action and forthright publicity in the wake of unacceptable conduct, especially when such misconduct might reflect badly on the entire Air Force *["AFRES*

Crew Misused Aircraft, Van," April 1996 "Aerospace World," p. 13]. However, I am concerned about the corrective actions aimed at preventing recurrence. It looks like these actions (requiring higher headquarters' approval for missions of the type during which the misconduct occurred) might run counter to the policy of delegating authority downward to the lowest appropriate level.

Individually, the actions probably do not add too heavy a bureaucratic load to any unit or to higher headquarters. Unless senior leaders adopt a different philosophy, other incidents of poor judgment will inevitably lead to other requirements to centralize decision-making at levels above the wing. After some years of this, a thicket of regulations and a top-heavy bureaucracy to administer them will arise—exactly what everyone set out to eliminate a few years ago.

A better solution is to clarify standards of conduct where needed and hold people responsible for meeting them. (It was not clear from the article whether the individuals in this incident were, or can be, required to reimburse the government for unwarranted expenditures incurred for their convenience. The consequences for misconduct need to be clearly set forth—and enforced when appropriate.)

Local commanders should be responsible for ensuring that their people know the standards and for having processes to minimize the potential for even questionable actions.

Leave the decision-making at the lowest practical level, and hold people accountable for how well they use their authority. Tomorrow's Air Force can't afford to be top-heavy.

Lt. Col. William J. Gorman, Jr., USAF (Ret.)
Dayton, Ohio

Neglected Students

I enjoyed "Weapons School" *[June 1996, p. 42]* but would like to amplify two areas whose coverage was thin to nonexistent: intelligence officers and students from the Air Reserve Components.

As depicted in the article, intelligence officers completed a grueling load of academics and worked up the intelligence scenarios to brief flight crews for each training mission. Not mentioned at all, however, was that intelligence officers fly every mission they prepare, as long as their weapon system has an extra seat.

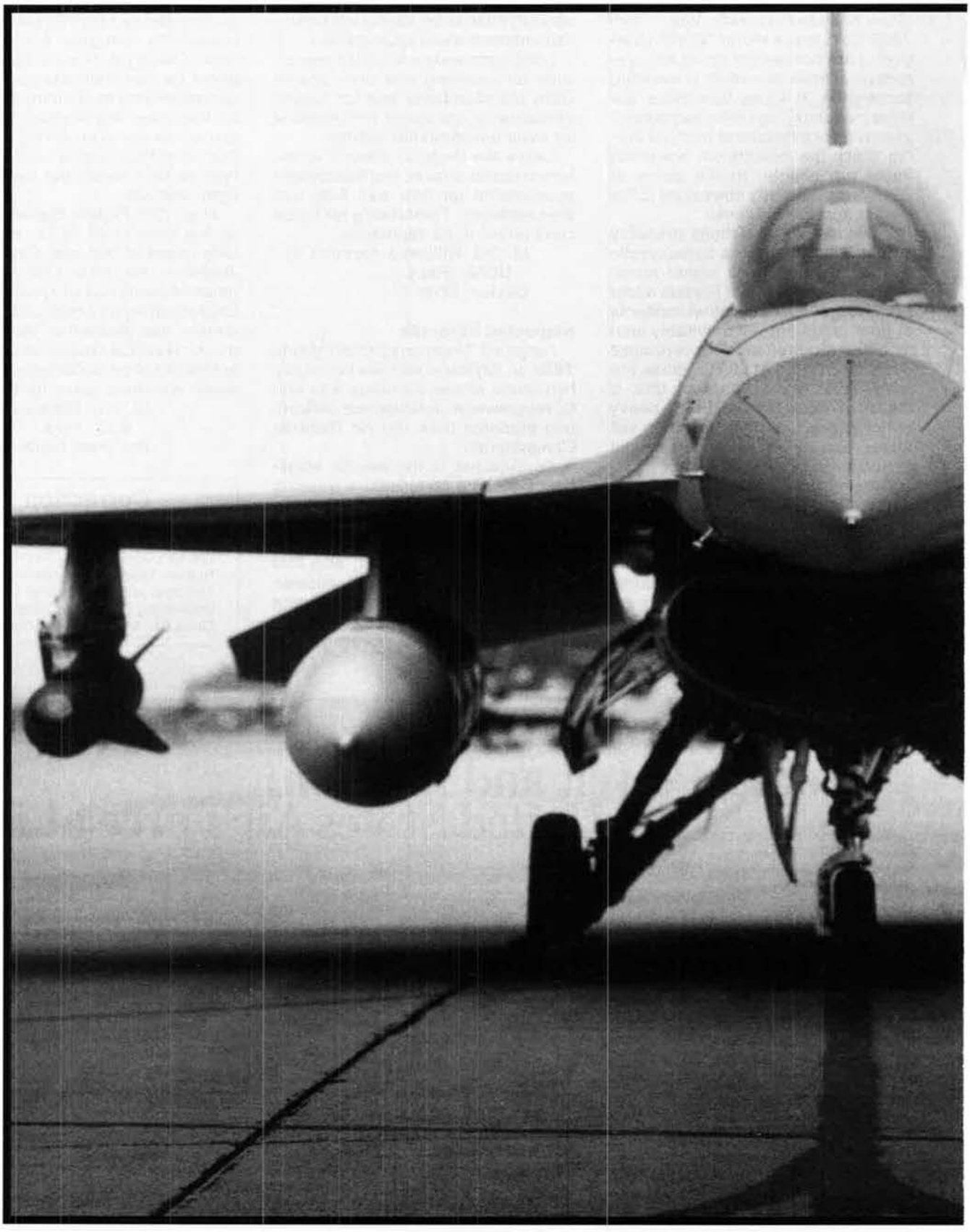
Additionally, your coverage neglected the fact that Guardsmen and Reservists compete for Weapons School slots just like active-duty students do and train alongside them, integrated into the gaining command (in this case, the Weapons School), just as we would be during a call-up. Our combined goal is simple: Learn how to best teach the skills to fly, fight, and win.

The 175th Fighter Squadron, here at Joe Foss Field, S. D., is particularly proud of our own Capt. Sheila Jimenez, the Intel Officer Distinguished Graduate of Class 95-A11. Captain Jimenez continually demonstrates the dedication that typifies the Air National Guard, whether it be in training or on contingency deployment. We stand ready for the call.

Lt. Col. Stephen W. Dee, S. D. ANG
Joe Foss Field, S. D.

Correction

The publisher of *The Freeman Field Mutiny,* by Lt. Col. James C. Warren, USAF (Ret.) *["Books," September 1996, p. 70],* has changed. The new publisher is The Conyers Publishing Company, 1242 Hidden Oaks Ct., Vacaville, CA 95687.



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Burt Keirstead,
Sanders CMWS Team Leader

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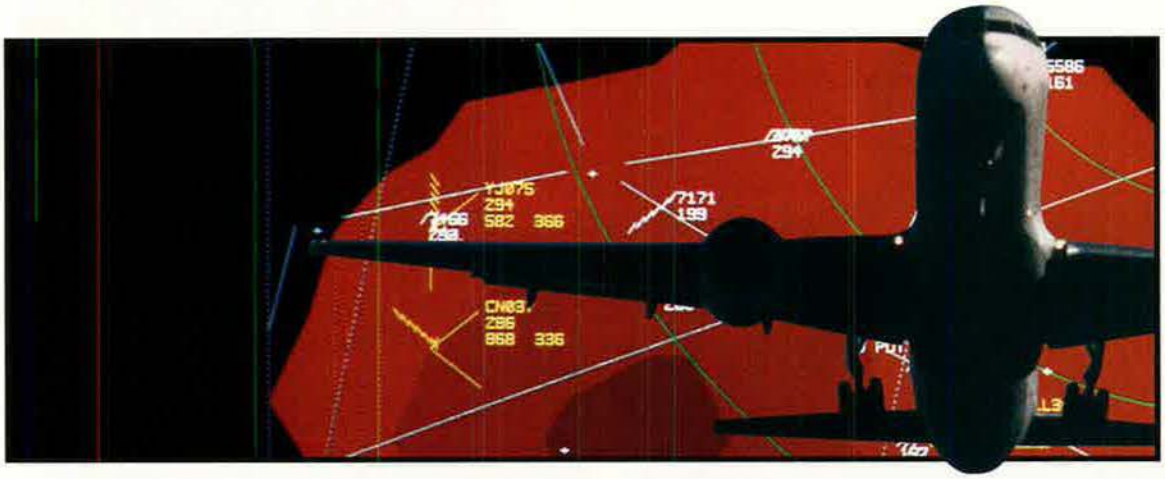

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Raytheon Electronic Systems

Aerospace World

By Suzann Chapman, Associate Editor

Review Blasts Chain of Command

The entire chain of command from the Persian Gulf region to the Pentagon took heat from a DoD-commissioned panel that reviewed the events surrounding the June 25 bombing attack on the Khobar Towers housing complex in Saudi Arabia.

The panel's report, released September 16, emphasized the lack of sufficient force-protection measures and singled out for special criticism a long-known deficiency in human intelligence and counterintelligence assets.

The head of the panel, retired Army Gen. Wayne A. Downing, claimed that although intelligence did warn of the terrorist threat to US forces in Saudi Arabia, providing "both time and motivation to reduce vulnerabilities," it was not enough. "Tactical details were needed, and they could only have been provided by human intelligence."

He told reporters that the Long Commission investigating the 1983 Beirut bombing—which killed 241 US service members—also found that US human intelligence and counterintelligence capabilities had eroded and recommended "immediate action to address these significant shortfalls."

Force-Protection Concerns

General Downing, former commander in chief of US Special Operations Command, said that a new DoD force-protection report, also released September 16, "adequately addresses the main findings and recommendations" his team had made. The General added, however, that "the devil is in the details," and he said he is concerned about the follow-through.

As part of the new measures, the Chairman of the Joint Chiefs of Staff is now the focal point for force protection. JCS Chairman Army Gen. John M. Shalikashvili said his office would look into force-protection doctrine, standards, training, requirements, programs, new technology, and levels of funding.

On intelligence gathering, he said, "Despite our best efforts, some important improvements in tactical intelligence are warranted. . . . We are reviewing how we can increase the funding and the number of people needed to satisfy our human-intelligence requirements."

As the Pentagon released the Downing Assessment, it also released a new force-protection report designed to enhance security for the Gulf region and around the world.

Lt. Col. Ronald Rivard (left), pilot, and Capts. David Shintaku and Richard Armstrong, electronic warfare officers, became the first all-USAF EA-6B crew to qualify for carrier landings when they landed aboard USS* Constellation *on July 1 in the Southern California Operating Area. They are part of five joint Navy-USAF expeditionary squadrons being formed to provide airborne threat radar jamming, as USAF retires the EF-111.

Clinton Signs Defense Bill

President Clinton on September 23 signed the Fiscal 1997 national defense authorization bill. The legislation provides new budget authority of $265.6 billion, or $11.2 billion more than the Clinton Administration had sought.

Then, on September 30, the President signed into law the Fiscal 1997 defense appropriations measure, which actually funded the programs approved in the authorization bill. Total defense appropriations (counting earlier military construction and other defense bills) come to $265.2 billion in budget authority.

The Administration didn't like the large Congressional increase in defense spending, and it had hoped to force a cut in the defense appropriations bill. However, the President gave up after meeting resistance from powerful defense-minded Democrats, such as Rep. John P. Murtha (D-Pa.), a member of the House Appropriations Committee's National Security Subcommittee.

The authorization bill includes a three percent pay hike for military members, plus a 4.6 percent increase in the allowance for off-base housing (Basic Allowance for Quarters). The three percent pay raise is almost one percentage point higher than current law permits.

The bill provides $256.5 million for six F-15Es, $154.9 million for six F-16C/Ds, $2 billion to continue F-22 development, and $602 million for the Joint Strike Fighter.

Space Policy: No Big Surprises

After eighteen months of work, the Clinton Administration unveiled the

The Bell Boeing Tiltrotor Team mated the wing structure and fuselage on aircraft number nine on July 29, making it the third engineering and manufacturing development V-22 Osprey to become an aircraft. The first EMD V-22, aircraft number seven, is scheduled to fly next month.

first revision of the national space policy since the Cold War. The general intent of the policy, unveiled on September 19, is to foster more government agency cooperation and greater efficiency through privatization.

A twelve-page fact sheet, distilled from the full eighty-five-page classified document, states that the Secretary of Defense and the director of Central Intelligence will coordinate their space activities with maximum integration of space architectures. The policy instructs the DCI to work with the Pentagon to improve support for worldwide military operations.

The new policy also declassifies several facts once covered by the term "national technical means." One of them is that the US conducts satellite photoreconnaissance for various purposes, including intelligence collection. Another is that US photoreconnaissance "includes a near–real time capability" for "the planning and conduct of military operations."

It reaffirms the Administration position on ballistic missile defense providing for a theater missile defense capability later this decade and a national missile defense deployment readiness program.

The policy states that DoD will continue to lead "improvement and evolution of the current expendable launch vehicle fleet." It also directs NASA to push on with development of flight demonstrators for a decision by the end of the decade on a reusable launch system.

However, in contrast to the Bush Administration plan to send astronauts to Mars, the new space policy opts instead for a lower-cost "robotic presence on the surface of Mars by year 2000" for scientific research. For the Mars venture and other celestial exploration, the policy directs NASA to use commercial spacecraft, "unless . . . development requires the unique technical capabilities of a NASA center."

The policy specifically calls for government agencies to "purchase commercially available space goods and services to the fullest extent feasible." It supports "free and fair trade in commercial space-launch services." It directs NASA to privatize its space communications operation by 2005.

The new policy also backs continued development of the international space station. It expects the station to "establish a permanent human presence in Earth orbit" and to "support future decisions on the feasibility and desirability of conducting further human exploration activities."

Depot Strategy Revised

The Air Force revised its strategy to select sources to take on the work loads at its air logistics centers slated for closure under 1995 Base Realignment and Closure actions. Other public depots as well as private industry now will have an opportunity to compete.

The change opens the door for some of the work to move from the vote-rich areas of California and Texas. Previously, the Clinton Administration had maintained that the work performed at the Kelly AFB, Tex., and McClellan AFB, Calif., depots would be "privatized-in-place" in San Antonio and Sacramento. The Air Force had supported that position as the best way to avoid a break in production. *[See "The Push to Privatize," August 1996, p. 66.]*

The service's new strategy, based

Lockheed Martin's F-16 test pilot Joe Sweeney, right, discusses F-16 cockpit display data with a pilot of the Czech Republic Air Force at the F-16 plant in Fort Worth, Tex. Two Czech pilots flew eight evaluation flights with a company pilot in an F-16D during August.

on input from industry and the communities surrounding the ALCs, focuses on consolidating and opening up for competition larger portions of the work loads than originally envisioned. According to Air Force officials, the changes offer more attractive packages for potential bidders.

Under the new strategy, selected portions of the maintenance work load at the Sacramento ALC have been combined into a single, phased competition. The center expects to award study contracts in January 1997 that will allow competitors to review current repair operations for A-10 and KC-135 aircraft and consider possible improvements. They would then submit their contract proposals in time for a projected January 1998 award.

The San Antonio ALC will conduct a competition for the C-5 programmed depot maintenance work load beginning in January. The ALC expects to issue an award by mid-1997. Additionally, the depot will hold a competition "for selected portions of the centers' available propulsion work load" and could award a contract in early 1998.

MTF Access Remains an Issue

The latest DoD health-care survey, released September 9, shows that military health-care beneficiaries generally rate their care in a military treatment facility (MTF) fairly high. However, access still appears to be a problem.

In the survey, about fifty-eight percent of the polled beneficiaries indicated that they normally use an MTF for their health care. Not surprisingly, it's the active-duty members (ninety-two percent) and their dependents (seventy-nine percent) who use MTFs the most and report the best access.

Nonetheless, a significant percentage of retirees under age sixty-five (forty-eight percent) and those sixty-five and older (thirty-five percent) also use military health care. The retiree groups indicated that MTFs are less accessible to them than to active-duty members.

All beneficiaries surveyed reported slightly higher levels of satisfaction with health care received from civilian providers than from military providers, except on questions relating to finances. On a scale of one to five, with five the highest level of satisfaction, respondents rated civilian providers at slightly higher than four and military at about 3.4.

The difference between levels of satisfaction with civilian and military providers was smaller for the retiree groups. Active-duty members rate civilian providers at 3.8 and military providers at 3.2. Retirees under age sixty-five returned rates of 4.0 and 3.6, respectively, and retirees aged sixty-five and older, 4.2 and 4.0. Pentagon health-affairs officials said higher retiree satisfaction might be simply a factor of age, indicating that older people are generally more satisfied.

"Access to health care is our number one problem," said Dr. Stephen C. Joseph, DoD's top health official. "This survey solidly reinforces our determination to pursue Tricare [DoD's managed health-care program], which is designed to facilitate access to care at all levels of the medical continuum."

The 1994–95 survey reached 165,952 DoD beneficiaries with an average response rate of fifty-four percent. The returns ranged from seventy-seven percent for retirees aged sixty-five and older to forty-one percent for active-duty members. In all, more than 89,000 beneficiaries out of a total estimated population of 8.3 million responded.

The Pentagon plans to conduct a health survey each year, asking the same kinds of questions, to provide the best comparison. However, they have added questions about Tricare and questions to determine specifically how beneficiaries view health care for their children.

Aerospace World

DoD-DHHS Agree on Medicare Subvention

The Department of Defense and the Department of Health and Human Services have finally reached agreement on a Medicare Subvention demonstration. They had planned to implement the test about January 1, 1997; however, Congress did not approve the necessary legislation before its recess.

According to a September 10 statement from the Pentagon, the Medicare program will pay the military services for military retirees and their dependents aged sixty-five and older enrolled in Tricare Prime, DoD's managed-care program, after the Defense Department meets its current level of effort for that dual-eligible population. Additionally, Medicare will reimburse DoD at a discounted rate—at least two percentage points less than for traditional Medicare health maintenance organizations.

During the past two years, various members of Congress have sponsored bills to allow a demonstration. *[See "Military Hospitals and Medicare," June 1996, p. 63.]* Some critics of the Medicare Subvention measure have cited the potential for such a move to further deplete funds in the beleaguered Medicare program.

Testifying before Congress September 11, Dr. Joseph assured legislators, "This agreement is designed such that it will not increase the total cost of Medicare." The DoD announcement of the demonstration stated that Medicare Subvention would not increase the federal cost for either agency.

Scheduled to last three years, the demonstration, as currently envisioned, will cover San Antonio, Tex., and three other sites in Tricare Region 6 and the Madigan-Bremerton, Wash., area in Tricare Region 11. The Defense Department will also select three more sites in Region 6 as comparison sites. Either DoD or DHHS has the option to pull out of the test with twelve months' written notice.

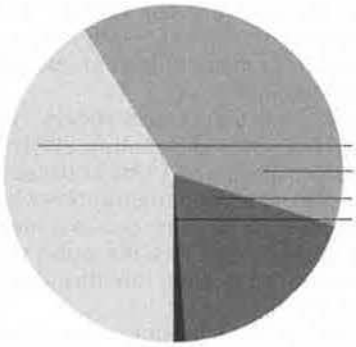
USAF Takes Predator

The 11th Reconnaissance Squadron, Nellis AFB, Nev., officially took over Predator unmanned aerial vehicle (UAV) operations from the Army September 3. The Air Combat Command squadron has been flying Predator missions over Bosnia-Hercegovina since May.

All the pilots for the military's newest operational robot-plane are rated officers. Like pilots of manned aircraft, they operate in international airspace and talk with air traffic con-

Defense in the Polls

The following polling data revealed opinions held by the US voting population in the months before the general election on November 5, 1996.

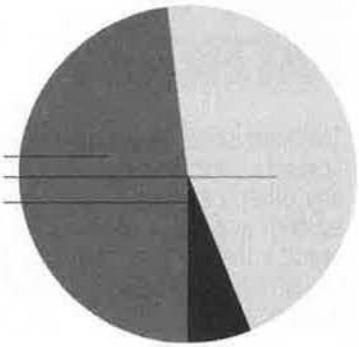


How important will national defense be to you in deciding your vote for President this year?

- One of the most important ..... **41** %
- Important but not as important ... **39** %
- Not too important ..... **19** %
- Don't know ..... **1** %

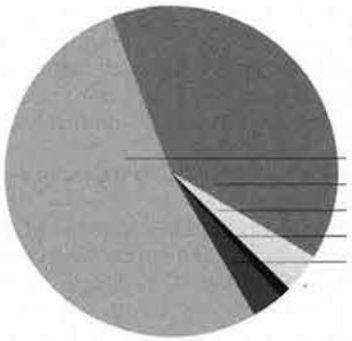
Survey Organization: Princeton Survey Research Associates
Research Sponsor: *Newsweek* Magazine
Population: National registered voters
Survey Size: 933
Beginning date: August 15, 1996. Ending date: August 16, 1996
Source Document: Princeton Survey Research Associates/ *Newsweek* Magazine Poll

If you had to choose, would you prefer cutting taxes or maintaining the current level of government spending on defense?



- Cutting taxes ..... **48** %
- Maintain defense ..... **46** %
- Don't know/No answer ..... **6** %

Survey Organization: CBS News/New York *Times*
Population: National adult
Survey Size: 827
Beginning date: August 3, 1996. Ending date: August 4, 1996
Source Document: CBS News/New York *Times* Poll

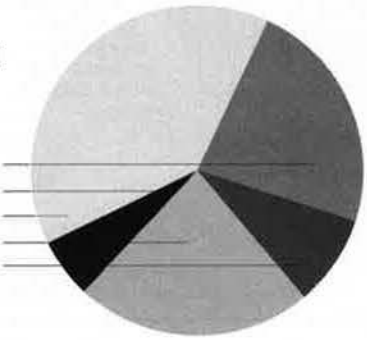


Whom do you trust to do a better job [of maintaining military strength]—Clinton or Dole?

- Dole ..... **52** %
- Clinton ..... **39** %
- Equal (voluntary response) ..... **4** %
- Neither (voluntary response) ..... **1** %
- No opinion ..... **3** %

Survey Organization: ABC News/Washington *Post* Poll
Population: National adult registered voters
Survey Size: 1,020
Beginning date: September 3, 1996. Ending date: September 4, 1996
Source Document: ABC News/Washington *Post* Poll

Do you feel President Clinton has accomplished a lot, only a little, or nothing at all in dealing with . . . national defense?



- A lot ..... **23** %
- Some (voluntary response) ..... **6** %
- Only a little ..... **39** %
- Nothing at all ..... **23** %
- Don't know ..... **9** %

Survey Organization: Princeton Survey Research Associates
Population: National adult registered voters
Survey Size: 1,139
Beginning date: August 28, 1996. Ending date: August 29, 1996
Source Document: Princeton Survey Research Associates/*Newsweek* Magazine Poll

trollers along their flight route just as if they were aboard the UAV.

Squadron pilots said that, while flying the Predator is similar to flying other aircraft, there is a 1.5-second delay between the time they manipulate the controls and when they see the images on the TV screen from a nose camera in the UAV.

The Predators carry three types of sensors: electro-optical for video images, infrared to pick up heat concentrations, and synthetic aperture radar to distinguish figures through clouds. The payload operator, an enlisted photo-imagery specialist, sits near the pilot and can switch among the three sensors.

"We monitor road intersections, cities, concentrations of people—anything the field commander wants," said Lt. Col. Steve Hampton, 11th RS commander. "We can even send images back of a particular building, if that's what they need."

USAF plans to purchase ten Predators at $3 million each. The 11th RS is based at Nellis but will conduct flight operations from Indian Springs Airfield, Nev.

JWID Tests Latest C⁴I

The Pentagon's 1996 Joint Warrior Interoperability Demonstration (JWID) held in August at seven sites on the East Coast tested off-the-shelf technologies to find "golden nuggets" that can be rapidly acquired for the joint services.

Over three weeks, JWID participants examined about forty demonstrations—including five from allied nations—played out against a warfighting scenario involving two fictitious Middle Eastern nations, Korona and Kartuna. The demonstrations covered four mission areas: theater missile defense, crisis action planning, seamless intelligence exchange across the battlefield, and total asset visibility to track personnel, supplies, and war reserves.

Defense vendors not only vied for the opportunity to display their wares but also paid to employ the technology in one of the demonstrations. JWID officials noted that the interface between warfighters and vendors created an opportunity to fix problems on the spot—tailoring systems to perform different or additional tasks.

"JWIDs are not trade shows," said Army Col. Harold Schmidt, JWID '96 director. "They are, to my knowledge, the only known demonstrations where warfighter problems can be identified and brought into the open to be solved in a low-risk, low-threat environment."

One of the nuggets, the Global Broadcast System (GBS), tested in last year's JWID was used again this year to broadcast such data as a video image of a Serb soldier taken by a Predator UAV and piped to Air Force, Army, Navy, and Marine Corps TVs along the East Coast.

Capt. Stephen C. Jaszai, a USAF Space Warfare Center member flying aboard a "Speckled Trout" C-135 avionics test-bed aircraft, told reporters that using the GBS, priority data can travel in just .38 seconds, compared to more than an hour on a dedicated Milstar channel used in 1991 during Operation Desert Storm.

Interim GPS Units On Course

On September 10, the Air Force contracted for 1,685 handheld Global Positioning System receivers from AlliedSignal Avionics, Inc. The GPS receivers will be used aboard Air Force aircraft to comply with an April 26 Pentagon directive to equip all military aircraft with interim GPS capability and speed full integration of GPS into on-board avionics systems.

The directive followed the April 3 crash of a USAF CT-43 in Croatia that killed Commerce Secretary Ronald H. Brown and thirty-four others.

AlliedSignal, based in Olathe, Kan., was required to deliver the interim GPS equipment by October 10. USAF had originally expected to field the GPS receivers by September 30; however, it had to wait while the General Accounting Office reviewed a contract protest.

GPS Joint Program Office officials at Los Angeles AFB, Calif., had been developing the idea for a temporary GPS capability for about two years, enabling them to provide a quick turnaround following the Pentagon directive. Program Director Col. James Armor said that several Air Mobility Command, Reserve, and Guard units had already used early examples of the handheld GPS equipment.

The Air Force plans to integrate

full GPS capability into aircraft avionics systems by Fiscal 2000.

Preserving GPS for US and Allies

A Lockheed Martin team will study the means to protect battlefield use of the Global Positioning System by the US and its allies and to prevent hostile forces from exploiting the system's highly accurate signals. A key element of the program also entails minimizing disruption of GPS use by civilian and commercial users.

Congress and defense officials have been increasingly concerned about the vulnerability during conflicts of the enormously successful GPS and its potential exploitation by an enemy.

This past March, the Clinton Administration announced that DoD would stop degrading the GPS signal in about four to ten years so that the public can use it more freely. However, Vice President Al Gore stressed that private-sector access to the signal would be given "on terms that protect our national security."

The Air Force will use the results of this thirteen-month, $3.6 million study under the Pentagon's navigation warfare program to establish requirements for the engineering and manufacturing development phase. Lockheed Martin has helped develop and support GPS technology for nearly two decades, according to a company press release.

Titan Team Overcomes Failure

USAF's Space and Missile Systems Center announced in August that a new quartz/phenolic nozzle skirt for the Titan IV second-stage engine was successfully tested at simulated altitude conditions of more than 100,000 feet at the Arnold Engineering and Development Center's Rocket Test Cell, Arnold AFB, Tenn.

The tests validated the engine nozzle's reliability following a test failure of a "new resin" asbestos/phenolic nozzle skirt in July 1995 at the Aerojet test facility in Sacramento, Calif. With only a limited number of "old resin" skirts remaining, the 1995 testing failure might have grounded the nation's only heavy-lift expendable launch vehicle, including the first Titan IVB flight planned for January 1997.

SMC's Titan Program Office, Los Angeles AFB, Calif., recognized that conducting the test at sea level had contributed to the test failure. Although the AEDC test facility had been mothballed for years and required extensive reactivation and redesign work, it was the only US facility that could provide sustained altitude conditions.

While AEDC accelerated reactivation of the test facility, SMC project officers said that Aerojet completed ongoing development of its new, more environmentally friendly quartz/phenolic skirt.

The second full-duration test of the new skirt ran for 300 seconds, setting a new world record for the longest duration, simulated altitude, hot fire rocket engine test, according to 2d Lt. Ken McAdams, a Titan program official. The engine normally burns for 232 seconds.

Total Force Moves to SOS

The Air Force's Squadron Officer School has developed a new, condensed, four-week course principally for Air Force Reserve and Air National Guard captains who find it difficult to attend the school in residence at Maxwell AFB, Ala., for the normal seven-week course. Offered only once a year, the new course is also open to active-duty captains who could not get slots in the full course.

While it will allow more Reserve and Guard officers to complete this first level of professional military education in residence, school officials point out that it is convenient but not easy.

"We offer seven full weeks of instruction in four weeks," said Col.

Jeff Jakeman, AFRES Individual Mobilization Augmentee to the SOS commandant. "Ten-hour days and extended class weeks are not uncommon." Before arriving at the school, students must also complete a writing assignment, read study material, and take a written test.

More Notice for Deployments?

Air Force personnel officials admit that they are using an outdated system to manage the service's growing deployment requirements, leading to last-minute notifications to units and individuals for contingencies that have been going on for years.

Col. Jeffrey Williams, team leader of the Personnel Contingency Force Management Reengineering Team, Randolph AFB, Tex., said his team hopes to end short-notice deployments for ongoing requirements. "The current system to manage contingencies was developed during the height of the Cold War and hasn't kept pace with today's needs. The system simply wasn't built to effectively send people to multiple locations from wherever we have people stationed throughout the world."

The team, which includes officers and enlisted members from various commands, the Guard and Reserve, and civilian personnel, expects to complete its review this month. Its goals include creating more equity in the number of deployment taskings handed out to each major command and individual career fields and improving notification and response times.

Photo by Nate Leong

Joining the Air Force in celebration of its fiftieth anniversary is the Air National Guard's 185th Fighter Wing, Sioux Gateway Airport, Iowa. To honor both golden anniversaries, the wing painted their commander's F-16 gold. The Sioux City "Bats" still use the fighter for training.

News Notes

■ A Pennsylvania Air National Guard pilot, Lt. Col. Michael Griffin of Sellersville, Pa., was killed when his A-10 crashed August 22 in a marshy area off Maryland's Eastern Shore. A Persian Gulf War veteran and instructor pilot with more than 600 hours in the A-10, he was testing the aircraft after recent maintenance.

■ 1st Lt. Evan Dertien suffered minor bruises after ejecting before his F-15C crashed August 27 about sixty miles southwest of Mountain Home AFB, Idaho. The 366th Wing pilot was on a routine training mission.

■ Ellsworth AFB, S. D., destroyed the 149th of its 150 Minuteman II ICBM silos September 13, leaving one that may become a Cold War historical site. The Air Force nominated the last of its deactivated Minuteman II missile silos for National Historic Landmark status and proposes, along with the National Park Service, to create a visitors center, estimated to cost nearly $5 million. USAF would place a dummy missile in the silo. The project requires Congressional approval.

■ GTE Government Systems and Lockheed Martin announced August 20 that they had completed the Rapid Execution and Combat Targeting modernization program begun in 1989 for the Minuteman III ICBM launch-control centers. It is the first major modification to the Minuteman III force in thirty years.

■ *Popular Science* has selected the world's first all-plastic battery, developed by Johns Hopkins Applied Physics Laboratory under contract to the Air Force's Rome Laboratory, Rome, N. Y., to receive a 1996 Best of What's New award. The lightweight batteries can be recharged hundreds of

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times, are operational under extreme temperatures, and could be used by the military for satellites and small electronic devices or by any devices using nickel cadmium batteries, which present environmental and safety concerns.

■ The assistant secretary of defense for Health Affairs has appointed MCPO Karen L. Sayers, USN, to fill a new position to contribute an enlisted perspective on new health policies and serve as an ombudsman for the enlisted force.

■ Grand Forks AFB, N. D., moved seven of its surplus base houses to the Oglala Sioux Indian Reservation in South Dakota in a project known as Operation Walking Shield and may move more over the next five years if the first transfer works well. The houses are surplus partially as the result of realignment of the 321st Missile Group.

■ Reserve and Guard members who participate on active duty for at least one day during designated contingency operations, such as the Persian Gulf War, Operations Restore Hope (Somalia), Uphold Democracy (Haiti), and Joint Endeavor (Bosnia), may now wear the "M" (for mobilization) device on their Armed Forces Reserve Medal.

USAF Celebrates Fifty Years

Air Force leaders participated in a wreath-laying ceremony September 16 at the Arlington National Cemetery burial site of Gen. Henry H. "Hap" Arnold, USAF's only five-star general. It was the first of numerous events planned to honor the US Air Force's fiftieth anniversary as a separate service on September 18, 1997.

Throughout the year, "Aerospace World" will feature historical highlights and list some of the major events that will commemorate the US Air Force's fiftieth anniversary.

Among many upcoming golden-anniversary activities, December features the naming of one of the Air Force's new B-2 stealth bombers, *Spirit of Kitty Hawk*. The public dedication ceremony will take place December 16 at 10:30 a.m. on the Seymour Johnson AFB, N. C., flight line.

On December 17, *Spirit of Kitty Hawk* will honor the ninety-third year of powered flight by flying over the Wright Brothers Memorial at Kitty Hawk, N. C., at 10:35 a.m., the historic hour of the Wright brothers' flight.

Note:* Air Force *Magazine plans to display photos of 1947 magazine covers along with historical footnotes as part of its golden-anniversary coverage. The editors are looking for copies of the February and June 1947 issues suitable for photographing. If you have preserved copies of those issues, please call (800) 727-3337 (ext. 5822).

■ By August 26, two Air Force Reserve C-130 aircrews from the 302d Airlift Wing, Peterson AFB, Colo., and two Air National Guard C-130 aircrews from the 146th Airlift Wing, Channel Islands ANGB, Calif., had flown more than 154 fire-retardant airdrop sorties in northern California and Oregon to help fight forest fires.

■ Civil Air Patrol members across the southeast US aided emergency-management officials during and after Hurricane Fran by acting as runners, operating shelters, making house-to-house damage surveys, and providing aerial video imagery for disaster assessment.

■ Work began last month to modernize the flight-management systems and install Global Positioning System receivers for USAF's 126 C-5 aircraft. The $34 million contract went to Sechan Electronics, Inc., a small business in Lititz, Pa. The modifications will be made where the C-5s are based and should be completed by 2001, said officials at San Antonio Air Logistics Center, Kelly AFB, Tex.

■ Among several 1996 Antiterrorism Recognition Program awards, Air Mobility Command, Scott AFB, Ill., won the Best Antiterrorism Program award for a major command; the 52d Field Investigations Squadron, Incirlik AB, Turkey, won at the squadron level; and the 72d Security Police Squadron, Tinker AFB, Okla., won the Most Outstanding Antiterrorism Innovation or Action award.

■ Donald Wade, 56th Component Repair Squadron engine repair shop general foreman at Luke AFB, Ariz., is the Air Force Civilian of the Year. He retired from the Air Force as a chief master sergeant with twenty-six years of service and has worked in the Luke engine shop since 1983.

■ The 89th Airlift Wing, Andrews AFB, Md., will receive four new Boeing 757-200 aircraft, designated C-32As, in 1998 to replace its five aging C-137s (Boeing 707s). The new aircraft will transport Cabinet-level and Congressional delegations. ■

Senior Staff Changes

PROMOTIONS: To be **Lieutenant General:** William J. **Donahue.**

To be **ANG Brigadier General:** Archie J. **Berberian** II, William J. **Boardley,** Walter R. **Ernst** II, Dennis A. **Higdon,** Enrique J. **Lanz,** Thomas P. **Lauppe,** James A. **McDevitt,** Joseph I. **Mensching,** Fisk **Outwater,** Lawrance L. **Paulson,** Maxey J. **Phillips,** Wallace F. **Pickard,** Jr., Richard A. **Platt,** John C. **Schnell,** Allen J. **Smith,** Paul J. **Sullivan,** Michael H. **Tice.**

CHANGES: B/G James R. Beale, from Dep. Dir., Ops., DISA, Arlington, Va., to Dir., Space and Nuclear Deterrence, Hq. USAF, Washington, D. C., replacing B/G Robert E. Larned . . . **B/G Hugh C. Cameron,** from Cmdr., 3d Wing, PACAF, Elmendorf AFB, Alaska, to Cmdr., AF Center for Quality and Mgmt. Innovation (Provisional), San Antonio, Tex. . . . **M/G (L/G selectee) William J. Donahue,** from Dir., Command Control Sys., J-6, Hq. NORAD/USSPACECOM, and Dir., Communications-Computer Sys., Hq. AFSPC, Peterson AFB, Colo., to DCS/Communications and Information, Hq. USAF, Washington, D. C., replacing retiring L/G John S. Fairfield . . . **B/G Robert E. Larned,** from Dir., Space and Nuclear Deterrence, Hq. USAF, Washington, D. C., to Dir., Space and Technology, OSAF, and Dir., Sigint Sys. Acquisition and Ops., NRO, Washington, D. C., replacing B/G Thomas J. Scanlan, Jr.

SENIOR EXECUTIVE SERVICE (SES) RETIREMENTS: John **Halpin,** Beverly **Hooper,** Jay **Schindler.**

SES CHANGES: Gary R. Adams, to Chief Systems Engineer, ASC, Hq. AFMC, Wright-Patterson AFB, Ohio, replacing retired John Halpin . . . **Christine Anderson,** to Dir., Space and Missile Technology, Phillips Lab, AFMC, Kirtland AFB, N. M. . . . **Allen H. Beckett,** to Chief, Combat Support Division, DCS/Log., Hq. USAF, Washington, D. C., replacing retired Beverly Hooper . . . **Lawrence B. Henry,** to Associate Dir., Prgms. and Eval., Hq. USAF, Washington, D. C. . . . **Joseph F. Janni,** to Dir., Air Force Office of Scientific Research, Bolling AFB, D. C., replacing Helmut Hellwig . . . **Horst R. Wittman,** to Dir., Electromagnetics and Reliability, Rome Lab, AFMC, Hanscom AFB, Mass., replacing retired Jay Schindler. ■

The Rediscovery of Strategic Airpower

By **John T. Correll,** Editor in Chief

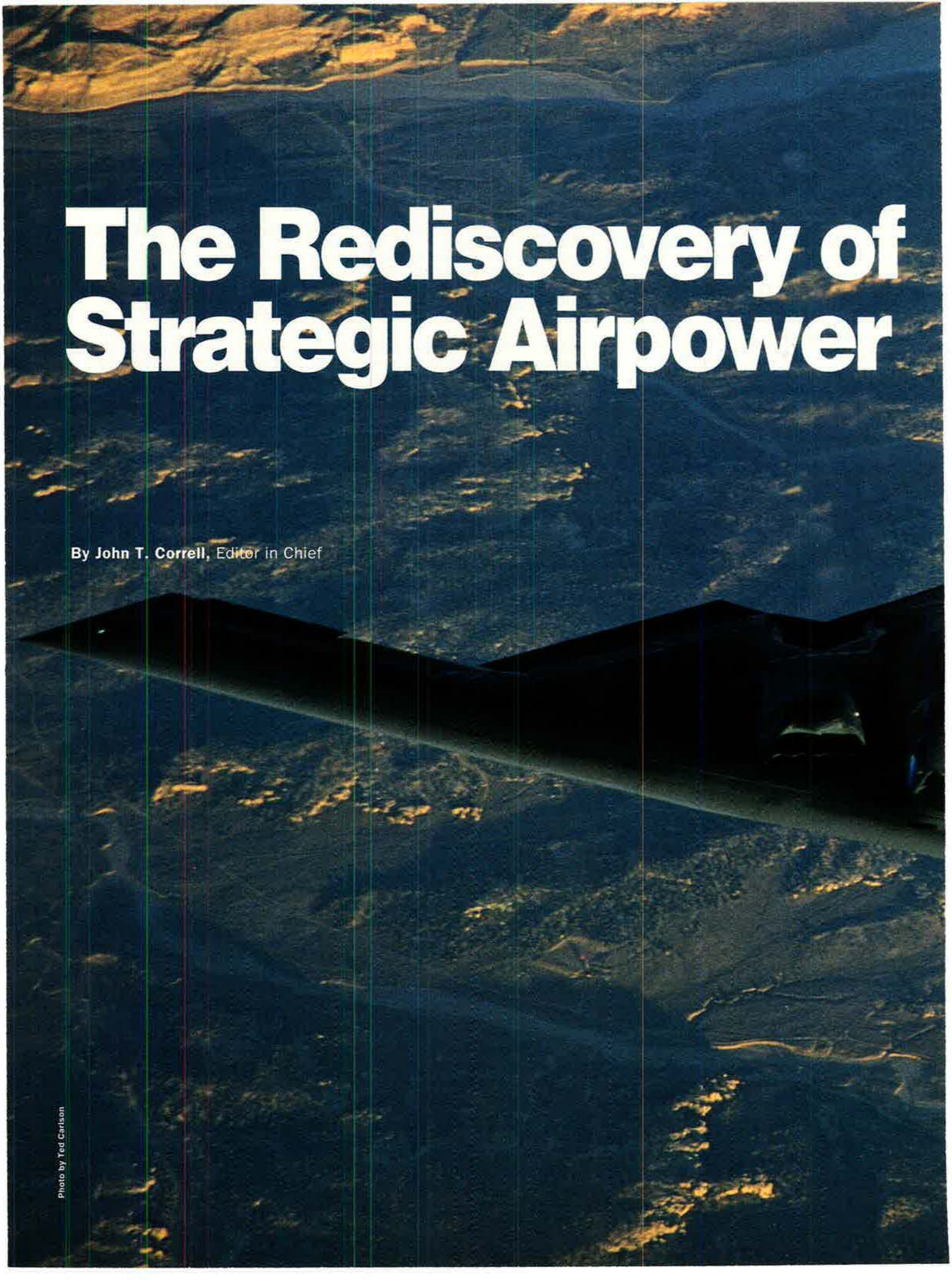


Photo by Ted Carlson

As the deep-attack issue unfolds, the Air Force finds new truth in classic doctrine.

In 1995, the Commission on Roles and Missions of the Armed Forces struggled mightily with the issue of deep attack but did not resolve it. In the end, the commission tossed the problem back to the Pentagon, observing that long-range bombers, land-based and seabased tactical aircraft, and precision guided missiles all have value.

"However," the commissioners said, "it is not clear that the Department of Defense has the correct balance of these various weapons" and "may have greater quantities of strike aircraft and other deep-attack weapons than it needs." DoD, therefore, should "conduct an assessment of all services' deep-attack systems to determine appropriate force size and mix."

That assessment, called the Deep Attack/Weapons Mix Study (DAWMS), was expanded last February when the White House got itself into a tight spot on B-2 bomber production and souped up the ongoing Pentagon study in order to relieve some of the pressure.

The DAWMS working group was supposed to wrap up the first part of its study, comparing the effective-

The B-2, one of only two stealthy aircraft types in the US inventory, can carry a large payload a long way, making it an ideal platform for the deep-strike mission.

Photos by Randy Jolly

The strategy prescribed by the Tacwar model, for example, requires force-on-force engagement. Victory is measured by the capture of territory. The Air Force is held back from attacking with its full strength until land forces have time to arrive. The objectives are slanted toward defeat of the enemy's armor. Eighty-one percent of all the targets are tanks or trucks. "Deep strike" is defined as forty kilometers behind enemy lines. Attacks against truly deep targets have no effect on the enemy's ability to wage war.

The contribution of airpower is shaved in sundry ways by Tacwar game rules. For example, the model reduces sorties by more than fifty percent on bad weather days, whereas in the Gulf War, the sortie-rate reduction on bad weather days was fifteen percent.

ness of selected weapons and systems, in September. The second phase, which is to identify potential redundancies and recommend trade-offs among bombers, long-range fighters, and various kinds of missiles, will be finished in February.

Among the systems included in the DAWMS assessment are the B-1 and B-2 bombers, landbased tactical aircraft, aircraft carriers and air wings, the Army Tactical Missile System (ATACMS), the RAH-66 Comanche helicopter, cruise missiles, and various precision guided weapons.

Deep-strike deliberations will lead directly into the Pentagon's quadrennial strategy review, coming up in 1997. Then Congress takes its turn. An amendment tacked onto the 1997 defense authorization bill by Sen. Joseph I. Lieberman (D-Conn.) establishes a "nonpartisan national defense panel" to follow the quadrennial review and conduct a "far-reaching" examination of forces and strategy.

The outcome of all this activity promises to have a profound effect, not only on service roles but also on budgets, weapon systems, and force structure.

The F-117 (top), the B-2's partner in stealth, showed its value during the Persian Gulf War, when it accomplished missions without the strike packages of support aircraft needed by nonstealthy fighters and bombers. Above, crewmen load precision guided munitions, another weapon that increases the number of targets that can be attacked in the opening hours of a conflict.

Assumptions and Models

The Air Force, flying bombers and other aircraft that combine long range with a large payload, is closely identified with the deep-attack mission. Until the Joint Strike Fighter is operational around 2010, it will also be the only service with stealthy aircraft.

Historically, USAF has provided the majority of the deep-attack capability. In the Persian Gulf War, for example, missions into the lethal defense envelope around Baghdad were flown by the stealthy F-117A. The Air Force delivered seventy-two percent of the total gravity bombs and eighty-seven percent of the precision guided munitions. More than seventy percent of the interdiction sorties flown by US aircraft were by Air Force aircraft.

Nevertheless, the Air Force found itself at a disadvantage in the early rounds of the DAWMS because the Joint Force "Tacwar" model and some of the other study tools systematically undervalue airpower.

In May 1996, Maj. Gen. Charles D. Link, USAF assistant deputy chief of staff for Plans and Operations, sent a memo to DAWMS participants, saying that there was too much reliance on unrealistic models and too little attention to the real-world operational knowledge and experience of the services.

That memo, reported in the press, was the first public glimmer of the problem. In June, Gen. Ronald R. Fogleman, Air Force Chief of Staff,

stated more specific concerns about the use of war games and modeling in a memo to the Chairman of the Joint Chiefs of Staff.

"These legacy models are most relevant when considering linear battlespace, the FEBA [forward edge of the battle area], and an employment strategy of attrition and annihilation," General Fogleman said. "Models assessing force-on-force engagements, based upon force ratios and territory lost or gained, lack the capability to fully and accurately portray the significant effects of operations involving a nonlinear battlespace or an asymmetric strategy, directly attacking the enemy's strategic and tactical centers of gravity." He added that "clearly, current modeling/war-gaming results should not be used as the only data points when we make war-planning or resource-allocation decisions."

According to Pentagon sources, that criticism has had an effect, and Tacwar modeling predictions are now taken with a large dose of salt. However, that does not mean the controversy is settled. The war-gaming rules are only symptoms. The underlying problem is conflicting concepts of war and strategy.

New Way of War

"The need for mass on the battlefield has now changed. We don't need to occupy an enemy's country to defeat his strategy," General Fogleman said in a speech in April 1996. "We can reduce his combat capabilities and in many instances defeat his armed forces from the air."

As problems with the Tacwar simulations indicate, US war planning has not caught up with this shift in the nature of war, but General Fogleman's proposition is compatible with "Joint Vision 2010," a "conceptual template" of the future, published last summer by the Joint Chiefs of Staff.

The "Joint Vision" paper said, among other things, that "With precision targeting and longer-range systems, commanders can achieve the necessary destruction or suppression of enemy forces with fewer systems, thereby reducing the need for time-consuming and risky massing of people and equipment. . . . We will be increasingly able to accomplish the effects of mass—the necessary concentration of combat power at the decisive time and place—with less need to mass forces physically than in the past."

General Fogleman argues that the Napoleonic style of war—characterized by attrition, the clash of force on force, and high casualties—must give way to "asymmetric" strategy and "parallel warfare," in which the winning side attacks with overwhelming force before the enemy has time to adjust, adapt, or mount a counteroffensive.

"If you go back to World War II, you'll recall how Eighth Air Force attacked something like fifty target sets in all of 1943," General Fogleman said in a speech last year. "During Desert Storm, the coalition struck 150 individual targets in the first twenty-four hours of that 1,000-hour war. But very early in the next century, we may be able to engage 1,500 targets within the first hour, if not the first minutes, of a conflict."

Asymmetric strategy, as General Fogleman describes it, would concentrate on "the enemy's strategic and tactical centers of gravity," which "generally include the leadership elite, command and control, internal security mechanisms, war production capability, and one, some, or all branches of the armed forces." Unlike the Tacwar model, this strategy sets little store in pushing enemy ground forces back from a linear forward edge of the battle area.

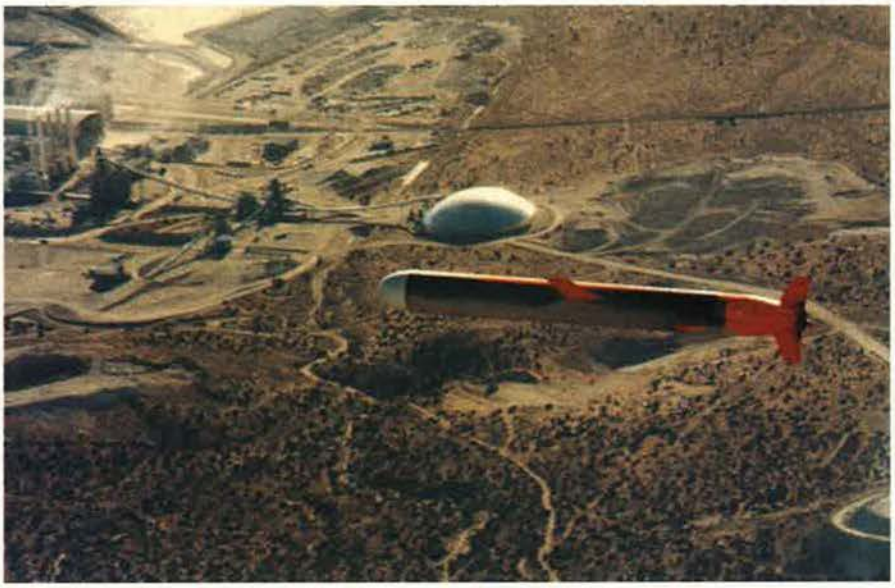
At a conference on doctrine in April, General Fogleman said that "It was not until Desert Storm that we discovered conventional air operations could not only support a ground scheme of maneuver but also directly achieve operational and strategic-level objectives—independent of ground forces or even with ground forces in support."

Desert Storm consisted of a forty-three-day air campaign, capped by a 100-hour ground offensive. Airpower destroyed Iraq's command-and-control system in the first day of the war. The air campaign then closed down the supply routes, kept the Iraqi Air Force out of action for the duration of the conflict, destroyed a high percentage of the enemy's armor, and induced mass desertions. Moreover, these results were achieved with low casualties and with limited collateral damage in civilian areas around the targets that were struck. It is generally conceded that airpower was the dominant feature of the war, but that view is rejected by Army traditionalists.

"The recent air campaign against Iraqi forces gained not a single one of the US or UN objectives in the Persian Gulf War," said Gen. Frederick J. Kroesen, USA (Ret.), of the Association of the US Army's Institute of Land Warfare and former commander in chief of US Army Europe in a letter published in the Washington *Post* in November 1994. "Four days of land combat—aided immeasurably by the air campaign—achieved every goal and victory."

Back to Strategic Airpower

Over time, General Link says, the



Until the Joint Strike Fighter is ready, the Navy will rely on cruise missiles for its portion of the deep-strike mission, but their utility is limited because of high cost and relatively small payload.

Army—and to an incredible extent, the Air Force—had drifted into the assumption that the primary component in conventional joint operations would always be the Army and that the Air Force's role was to support the Army.

For forty years, the Air Force said "strategic" only when it meant "nuclear," and the concept of strategic airpower in conventional conflict was essentially forgotten, he says. Nonnuclear attack forces in Tactical Air Command took up a partnership with the Army. Eventually, the drill became that "somebody else tells us where the target is, and we put a bomb on it," General Link says.

"By 1965, thinking of airpower as an auxiliary force or a supporting arm had pretty much become a habit," he says. "Vietnam could have given us an opportunity to rethink this idea, but we didn't take that opportunity. We did a pretty good job of supporting our soldiers on the ground in ways that helped them conserve artillery rounds and travel lighter. We perfected airpower as a substitute for mortar rounds.

"By the 1980s, the doctrine the US Army developed for defending central Europe, AirLand Battle, was widely if inaccurately considered the ultimate expression of airpower's contemporary potential. Basically, for lack of any other alternative, the United States Air Force enthusiastically embraced AirLand Battle. As a result, soldiers were encouraged to expect airpower to serve the land force objectives in the first instance. . . . Probably worse than the soldiers' expectation, airmen developed the same expectation."

The Gulf War, General Link says, "began repairing our vision of airpower, as airpower directly achieved primary objectives set by the theater commander." Both Generals Fogleman and Link have been hammering hard on the theme of strategic airpower. The Air Force will be the supporting force at some times, the supported force at other times. Airpower can achieve strategic results independent of ground power. In wars of the future, airpower is likely to deliver the main blow.

In 1994, in his last month as Air Force Chief of Staff, Gen. Merrill A. McPeak created a flap with his proposal to cancel the ATACMS. He said that its function—attacking the enemy's rear echelons and rear areas—was already covered, and covered better, by airpower.

During the Gulf War, all thirty-two ATACMS rounds expended were against twenty-two fixed targets. Army artillery firing deep into enemy territory used trajectories up to 20,000 feet, forcing aircraft to operate above that altitude. The projected range for advanced ATACMS is 130 miles with the trajectory reaching 100,000 feet and raising the altitude for aircraft.

Photo by Randy Jolly

Nonstealthy platforms with precision guided missiles remain cost-effective. This F-15E can put four 2,000-pound bombs on target for about $250,000, compared to $5 million for the same payload delivered via cruise missiles.

When General Fogleman became Chief of Staff, he adopted a less confrontational style and called off the attack on ATACMS, choosing instead to emphasize the Air Force's own core competencies. The main sticking point between the Army and the Air Force on deep attack, however, seems to be mostly one of control.

Writing in *Field Artillery,* Lt. Col. John Gordon IV, chief of the Army DAWMS team, said the deep-attack issue was important to the Army "because it influenced the future of ATACMS and the deep operations prerogatives of the land commander." The Army's position, he said, is that "the LCC [land component commander] must be responsible for synchronizing all actions within his area of operations" and "needs a mix of organic and supporting joint systems to conduct deep operations" within that area.

The "organic" system in that description is ATACMS, and the "supporting joint systems" include Air Force fighters and bombers.

The land component commander plots the fire support coordination line (FSCL), which generally marks the furthest point that artillery can reach. ATACMS would draw the line at 130 miles. Air strikes and other "fires" within that line must be approved by the land commander.

Targets 130 miles out may or may not have high priority for the land component commander focused on the close battle. Moreover, the delay before the air component is cleared to hit these targets can be costly. In the closing days of Desert Storm, the FSCL was drawn too far forward, providing the retreating Republican Guard with a sanctuary. The Army could not reach them, and the Air Force wasn't allowed to.

Cruise Missiles and Bombers

A 1994 study by the Center for Naval Analyses and the RAND Corp. compared cruise missiles and aircraft. "Cruise missiles should be the weapon of choice in situations calling for limited raids where precision contingency strikes against fixed targets are required and where the risks of aircrew loss are a dominant consideration," it said.

Cruise missiles, delivered by B-52 bombers and naval vessels in the Persian Gulf, were chosen for the strikes against Iraq on September 3. Both air-launched and sea-launched

cruise missiles were used extensively in the Gulf War. A famous instance was on January 16, 1991, when B-52s, flying a 14,000-mile round-trip mission from Barksdale AFB, La., struck targets deep inside Iraq with cruise missiles ninety minutes after H-hour on the first day of the war.

The CNA/RAND study said that bombers have roughly a four-to-one advantage in payload over cruise missiles. Aircraft can strike a wider spectrum of targets, provide greater flexibility, and achieve significantly greater accuracy. There is also a difference in cost. "An F-15E could deliver four 2,000-pound laser-guided bombs, which cost roughly $50,000 each," CNA/RAND reported. "The total cost for expendables would be less than $250,000, allowing for some operating costs. Achieving a comparable destructive potential would require at least four conventional cruise missiles at an average cost of $1,250,000 each, for a total of roughly $5 million."

Stealthy aircraft are preferred for the deep-attack mission for two reasons. Their low-observability features allow them to fly into airspace that would be deadly for other aircraft. And, unlike nonstealthy strikers operating in hostile territory, they do not require large numbers of other aircraft for escort and support.

"In the first twenty-four hours of the Gulf War, the combination of stealth and precision allowed a much greater proportion of targets to be attacked than attainable with similar numbers of nonstealth aircraft," the staff of the Commission on Roles and Missions said. "One stealth sortie was 'worth' approximately sixteen nonstealth sorties in attack planning."

USAF's F-117s and B-2s are the only operational stealth aircraft in the world. The next stealthy system, the F-22 fighter, will be exclusively the Air Force's as well. The Navy and Marine Corps will finally get stealth with the Joint Strike Fighter, but the largest part of the production in that program will be for the Air Force.

The ultimate in stealth as well as in deep-strike aircraft is the B-2 bomber. The decision on how many B-2s the Air Force should buy has been decided, reopened, and revised several times, and the question hangs over the DAWMS assessment and the other deliberations that will follow.

The original plan was to buy 132 aircraft. That was cut to seventy-five for budget reasons, then cut again to twenty. The Air Force acknowledges the value of the B-2 but has declined to push for more aircraft at the expense of other programs in a constrained budget. However, there is considerable support in Congress for the B-2, and the Administration used additional funding that was voted last year to equip a test aircraft for combat operations, thereby raising the projected operational fleet to a total of twenty-one aircraft.

Photo by Randy Jolly

For forty years, when the Air Force said "strategic," it meant "nuclear." No more. Even the B-52, strongly identified with Cold War strategic alerts, will have a wide variety of conventional roles to play well into the next century.

Concepts From the Sea

When the Cold War ended, the Navy and the Marine Corps announced that they were putting their global Maritime Strategy "on the shelf." In September 1992, the Navy adopted a concept called "From the Sea," in which operations were concentrated along the littorals and coastlines of continents. It shifted emphasis from big-ocean "blue water" concerns to "brown water" power projection.

In 1994, the Navy updated the concept in a paper entitled "Forward . . . From the Sea." This time it put more emphasis on forward presence—stimulated in part by the findings of the Bottom-Up Review the previous year that ten carriers were enough for the Navy's part of the strategy to fight two major regional conflicts simultaneously but that additional carriers would be needed if the strategy were overlaid by a naval-oriented presence mission.

Except for cruise missiles, the Navy is poorly prepared for deep attack. The plan had been to replace its aging A-6E bombers with the stealthy A-12 attack aircraft. The A-12, however, was canceled in 1991 for program mismanagement. The Navy will have no stealthy aircraft until the Joint Strike Fighter—of which it intends to procure 300—is ready.

In the meantime, the Navy is developing an E/F model of its F/A-18 fighter. This variant will have improved range and payload. There will also be some reduction in its frontal radar signature, but it will not be a stealthy aircraft. The standard mix of the carrier air wing of the future will be thirty-six F/A-18E/F Super Hornets and fourteen Joint Strike Fighters. The Navy says the Joint Strike Fighters will act as "pathfinders" for the F/A-18s. The Super Hornets also perform the fleet defense mission.

In February 1996, reports began to circulate of a draft plan entitled "2020 Vision" under which it was said that the Navy would develop a "very heavy conventional deterrent force" for attack operations inland with long-range missiles and aircraft carrying precision guided weapons.

The Norfolk *Virginian-Pilot,* which had seen a copy of the draft, said the Navy wanted to move beyond the capability to hold an enemy "until the big guns of the Army and heavy bombers of the Air Force could arrive" and equip itself with "the kind of massive firepower needed to strike a decisive blow." The assessment of

F-22 team photo by John Rossino

Loren Thompson of the Alexis de Tocqueville Institution, quoted by *Defense Daily*, was that the Navy was "making a bid to be the dominant deliverer of airpower."

Little has been heard about this plan since Chief of Naval Operations Adm. Jeremy M. Boorda died in May and was succeeded by Adm. Jay L. Johnson. The Navy is proceeding, however, with the Arsenal Ship program, which was established March 21. Arsenal ships would be fortified vessels with "vertical launch cells" for 500 weapons, mainly cruise missiles, and be operated by a crew of about fifty. They could give the Navy a new weapon for deep attack—although not with its carrier battle groups, which have been the preferred solution up to now.

Photo by Ted Carlson

Gen. Ronald R. Fogleman, USAF Chief of Staff, acknowledges that airpower visionaries "allowed their concepts to race ahead of technology." But, thanks to advances like the F-22 (top) and the B-2, technology is closing the gap.

The Lag in Doctrine

"Our very early airpower visionaries clearly allowed their concepts to race ahead of technology," General Fogleman said at the doctrine seminar in April. "Therefore, we found ourselves in a position where there were a lot of unfulfilled promises and false expectations relative to what airpower could and could not do." Technology is finally catching up with the vision, and "airpower has fundamentally changed the nature of warfare, but our joint and combined doctrine has not caught up with this development."

General Fogleman said that, although it has taken many years for the capabilities of airpower to fully mature, "we can now see the results of that approach as laid out in some of the visions of early airmen. . . .

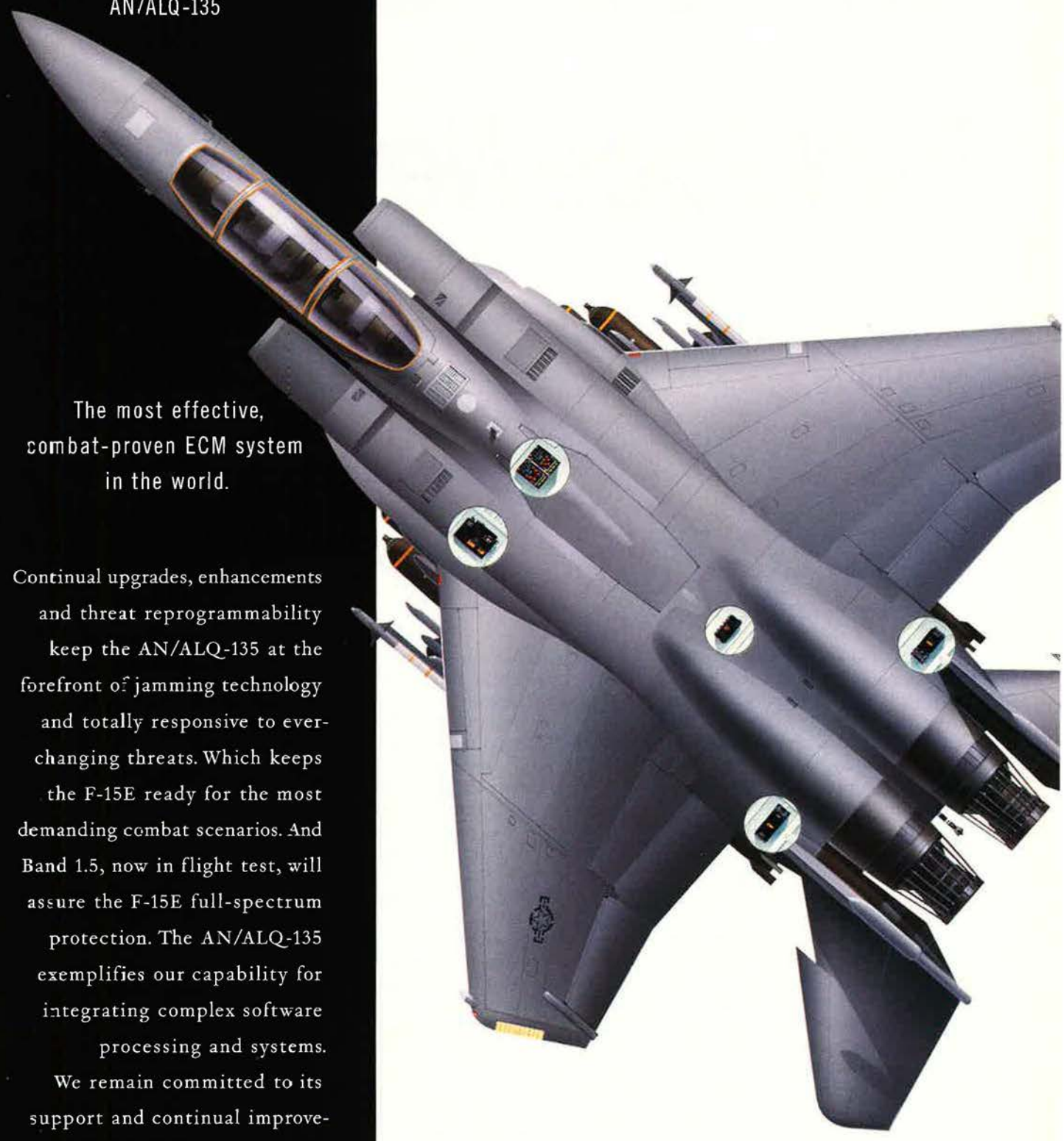
"Airpower has significantly increased our ability to exploit the dimension of time in warfare. Not only do our air and space platforms provide us global awareness on a near–real time basis, but our ability to project long-range combat power allows us to overcome some of the fog and friction of war."

Meanwhile, the so-called "revolution in military affairs" rolls on. Improvements in long-range precision strike, information technology, space systems, and other areas are making the kinds of assumptions embedded in the Tacwar models more obsolete all the time.

The Air Force is well aware that basic change in doctrine, plans, and operational concepts will require the understanding of the joint force theater commanders, none of whom is an Air Force officer. There is encouragement, however, in the example of Army Gen. H. Norman Schwarzkopf, commander of coalition forces in the Gulf War, who saw that circumstances were right for the air campaign and backed his air component commander while he carried it out.

Also, General Link likes to quote the perspective of one of the most famous soldiers of the century, Field Marshal Sir Bernard L. Montgomery of Great Britain, who was deputy supreme commander, Supreme Headquarters Allied Powers Europe, when he said, "It is clear from the strategy that I have outlined that the dominant factor in a future war will be airpower, and that is my very firm belief. But like so many things we do, we pay only lip service to this great truth. Flexibility and centralized control of all air forces in a theater of war are vital to success, but the West has sacrificed flexibility by basing the air command organization on the requirements of direct support of land forces, whereas it should be based on the organization necessary to gain the greatest measure of control of the air." ■

AN/ALQ-135



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For many, it's a challenge to balance the heavier operational schedule with employment and family responsibilities.

Total Force Never Stops

By Suzann Chapman, Associate Editor

ALMOST a quarter of a century has passed since the United States established its Total Force policy definition—formally integrating the Guard and Reserve with active-duty defense planning to meet national security objectives. Ever since, the citizen-airman has played a vital defense role, but it took the end of the Cold War and the resulting drawdown of active-duty forces to dramatically underscore that fact.

Today, Air National Guard and Air Force Reserve chiefs use one word to characterize their outfits—busy. They are not just busy training for war; more and more, they are participating in real-world missions. Without these forces, the Air Force would have great difficulty meeting extensive peacetime obligations.

Gen. Ronald R. Fogleman, Air Force Chief of Staff, recently noted in a speech to the National Guard Association of the US that USAF force structure had been cut about thirty-three percent and tasking increased to four times the Cold War rate. He concluded, "The Air Force simply could not sustain the pace and stress on its active-duty personnel."

Last year, in a move to reduce the optempo of active forces and give real-world experience to reserve components, the Department of Defense launched a pilot program to increase use of reservists in peacetime operations. The Pentagon expects the program to continue through Fiscal 1997.

However, Secretary of Defense William J. Perry already has declared it a success, based on preliminary reports. He told the Adjutants General Association of the US that theater commanders last year called on reserve personnel for ninety-seven missions and that the number would go up to 167 this year.

The Air Force says its commitment to the extensive use of Guard and Reserve forces dates to the 1950s. Through the decades, it has consistently budgeted more heavily for its reserve components than have other services, and this has shown results.

General Fogleman said his measure for success in Total Force efforts is when the theater commanders are told that USAF is going "to swap out a unit, and they never bother to ask whether the replacement is a Guard, Reserve, or active-duty out-

Guard and Reserve units handle large chunks of USAF's mission. For example, ANG performs thirty-three percent of the KC-135 air refueling mission and provides 100 percent of the fighter-interceptor force.

Photo by Ted Carlson

fit." Theater commanders have come to expect the same combat capability from Air Reserve Components that they receive from USAF active-duty units.

Busy, Busy, Busy

Maj. Gen. Donald W. Shepperd, ANG director, said Guard units "used to stay home to train for the big one," and "we still do that." However, he added, two brand-new elements have been introduced into Guard operations.

First, he said, "We are now taking regular rotations side by side with our active-duty and Reserve counterparts around the world." The second element, he said, is that ANG units "are immediately needed for every contingency of any size."

He explained, "Used to be, the active-duty [force] was big enough to handle it. If you went to war, you called up the Guard and Reserve. Now, they need us all the time—day to day."

In times past, Guard units would go to a few Air Force exercises every year. General Shepperd recalled that a heavy year might include five overseas deployments for training. For 1996, that number is twenty. "We're involved in every exercise, because they can't do it without us, because of the downsizing of the active-duty force."

The average ANG aircrew member is spending 110 to 120 days a year with the Guard. For the average ANG support person in a flying unit, the figure is sixty to eighty days a year. General Shepperd characterized that as "a very, very heavy load."

Within AFRES, the annual average for aircrews is more than 110 days per year. AFRES Chief Maj. Gen. Robert A. McIntosh reports record levels of activity for flying unit support persons as well. "There were times in 1995 when as many as a thousand Air Force Reservists were deployed around the world on any given day, supporting US national objectives," General McIntosh said in May Congressional testimony. He said the average was 600 to 700 per day.

What is surprising to many is that the two Air Reserve Components reached these high levels of participation solely with volunteers.

According to an April 1996 report prepared by the General Accounting Office, 18,000 personnel from six Defense Department reserve outfits voluntarily participated in peacetime operations from Fiscal Years 1992 through 1996. Of these 18,000, ANG and AFRES provided fully eighty percent.

The report said that "past success in obtaining volunteers is not necessarily predictive of the future" and expressed particular concern about the Air Force.

Rather than being concerned about this, General McIntosh called such participation in real-world operations critical to a successful Air Force Reserve. He told Congress, "Our people don't mind the extra work as long as it is productive and worthwhile."

In fact, a 1995 USAF survey showed that ninety percent of Air Reserve Component respondents would volunteer for overseas peacekeeping missions.

The one caveat for volunteer participation by citizen-airmen concerns length of deployments. Surveys have shown that Guardsmen and Reservists will continue to volunteer if their participation can be kept to thirty days or less.

Total Force Contributions

Air National Guard

Activity	Percent
B-1 bombers	9
C-5, C-130, C-141 airlift	8
Combat communications	68
Fighter-Interceptor Force/1st Air Force	100
F-15, F-16 fighters	30
HC-130/HH-60G rescue	27
KC-135 air refueling	33
Mobile Ground Station for space mission	100
Tactical airlift	40

Air Force Reserve

Activity	Percent
Aerial port capability	59
A/OA-10	20
B-52H bombers	6
C-5, C-141 airlift	24
C-5, C-141 airlift aircrews (shared aircraft)	57
C-9 aeromedical airlift aircrews (shared aircraft)	27
C-17 (shared aircraft)	23
C-130 airlift	23
F-16 fighters	5
Fixed-wing aerial spraying capability (DoD)	100
HC-130, HH-60 rescue	38
KC-135	14
KC-135 aircrews (shared aircraft)	7
KC-10 aircrews (shared aircraft)	41
Medical flight crew capability	92
Space operations	10
WC-130 weather reconnaissance	100

Plenty of Notice

General Shepperd said Guardsmen have been able to take ninety-day deployments alongside their active-duty counterparts by leaving their airplanes in place but rotating the people out every thirty days.

"We're at very high levels of participation right now," said the General, "but we are big enough, we have enough units that we don't go back to the same people all the time."

He continued, "Our ability to do things in the Guard and Reserve is controlled by the availability of our part-time people. "They will give you all the free time they can, but what they can give you is determined not only by their own desire but also by their family and their employer."

He said some citizen-airmen are self-employed, and others, such as airline pilots, have jobs that make it fairly easy to schedule active-duty deployments. Many school teachers can use their summers for training and real-world contingencies, but they don't have that flexibility during the school year. Others use weekends or vacation time, sometimes taking leaves of absence from their jobs.

Guardsmen walk "a fine line of cooperation" between their family and employer and their desire to participate in the Guard, said General Shepperd, adding, "Our job is to work carefully this balance . . . and we do that with planning."

In 1995, USAF held its first scheduling conference with AFRES and ANG participation. As a result, members of the reserve components have six to nine months of notice for deployments.

Guard and Reserve officials said that such planning time is key. "What we can't stand are short-notice pop-ups and short-notice cancellations," said General Shepperd. He added that schedulers can change a deployment location—say, from Saudi Arabia to Turkey, or from Turkey to Italy—but not the timing.

"We are learning to manage this new world," said General Shepperd. "It's very difficult, but it's working."

Gaining employer support for the increased optempo now being levied creates a unique challenge for the Guard and Reserve. However, recent surveys of key employers continue to show a very positive attitude.

DoD's National Committee for Employer Support of the Guard and Reserve credits Air Force success to its aggressive efforts to seek employer support. Committee officials note also that, although USAF uses its reserve components far more than the other services do, it does not generate the most complaints.

General McIntosh said that it is necessary now "to communicate much more than we did in the past with our employers and tell them why people are having to go to training." He said AFRES is working harder now in some cases, particularly if the employer is in some sort of transition, "to reschedule training to fit the employer's requirement where we can."

The General said, "We have surveyed employers, opened up communication with employers using DoD's [Employer Support of the Guard and Reserve] program to help that communication, and then started to make arrangements with employers to make this whole thing fit together."

General McIntosh emphasized the need to continue to look at legislation that assists employers and motivates them to hire reservists. One proposal in the discussion stage is a type of tax incentive, particularly for small and medium-size companies, for employing Guardsmen and Reservists if they are mobilized, he said.

"We're trying to figure out how to do it," he continued, noting that "that is not in the DoD program right now, and there is no [existing] legislation in that regard."

General McIntosh pointed out that employers want reservists to work for them for two primary reasons: "Number one, they understand the necessity of the Guard and Reserve. Number two, they like hiring Guard and Reservists because they are drug free, motivated, professional, and disciplined."

True Total Force

Some twenty years before the official implementation of the Total Force policy, the Air Force began to address continuing problems within its reserve components, General Fogleman noted in his National Guard Association speech. Recommendations from a 1953 board headed by Lt. Gen. Leon W. Johnson—a World War II veteran, Medal of Honor recipient, and commander of Continental Air Command—gave a push

to revitalization of the Air Reserve Components.

General Fogleman said the 1960s saw great improvement, but it was the implementation of the All-Volunteer Force in the 1970s that brought the reserve component forces onto the scope for national security planners once again. "As a result, our Guard and Reserve forces have achieved some of the highest states of readiness in the peacetime history of our nation. Units were provided with modern advanced weapon systems and some of the very best in realistic training."

Today, both Air Reserve Component leaders agree with that assessment.

"The Air Force is keeping us modernized with airplanes and equipment," said General Shepperd. General McIntosh maintained, "In the modernization effort and modification of older equipment, we're doing very well."

However, some problems do exist. General Shepperd noted three concerns about equipment: the need to equip Guard airplanes for precision guided munitions (PGMs), install Global Positioning System capability on all airplanes, and become proficient with night vision equipment.

"It's very difficult at a time when resources are going down to keep all that on track, but we're doing pretty well," he said.

General Shepperd told Congress that USAF has a near-term night capability upgrade for the ANG A-10 attack aircraft fleet. He expects similar support for F-15s and F-16s.

Photo by Randy Jolly

AFRES also flies a wide variety of aircraft and missions. These A-10s from the 442d Fighter Wing, Whiteman AFB, Mo., are typical of all reserve component units these days—busy. Increasingly, their schedule includes overseas deployments.

In addition, he said, the Guard needs continued support to add defensive systems to its C-130 airlift fleet, which provides forty percent of the total C-130 theater airlift forces. So far, only eight percent, or thirty-two aircraft, have been configured with defensive systems. The Air Force has provided funding to cover another twenty aircraft.

Reaping Benefits

AFRES, too, is reaping benefits from front-line USAF equipment through its Reserve Associate program, which began in 1968. This unique program pairs a Reserve unit with an active-duty unit to share a single set of aircraft. Reserve Associate aircrews fly active-duty C-5, C-17, C-141, C-9, and KC-10 aircraft. The Reserve took on a space mission in 1993, helping provide spacecraft command and control at Falcon AFB, Colo. It also added two KC-135 associate units—the first will be fully operational this year—created an Airborne Warning and Control System associate unit this past March, and entered the Explosive Ordnance Disposal business.

Reserve Associate crews provide fifty-seven percent of USAF's C-141 and C-5 aircrew capability, forty-one percent of the KC-10 capability, and twenty-seven percent of C-9 capability.

In testimony to Congress, General McIntosh emphasized the importance of continually upgrading Reserve aircraft capability to maintain mission compatibility with the active force. He specifically mentioned night combat operations, precision munitions delivery, and integration into the modern digital battlefield.

He told lawmakers, "Congressional support has allowed us to maintain an acceptable level of parity in critical areas, such as airlift defensive systems, F-16 multitask trainers, night vision lighting modifications for our F-16s, A-10s, and

USAF photo by SrA Andrew N. Dunaway II

Gen. Ronald R. Fogleman notes that force structure is down by one-third and assignments have quadrupled and that, without ANG and AFRES, USAF "could not sustain the pace and stress on its active-duty personnel."

Photo by Lans Stout

To keep up with their active-duty partners, ANG and AFRES constantly upgrade their equipment. The Florida ANG is moving from older F-16s (top) to upgraded F-15s, and reserve components are also improving munitions and other capabilities.

C-130s, and flare and chaff dispensing capability for the Reserve F-16 fleet." Other AFRES priorities included PGM capability for F-16s, better avionics for F-16s and A-10s, C-130 cockpit improvements, KC-135R engine upgrade kits, and unit-level training devices for A-10 and C-130 fleets.

Maintaining the Forces

Availability of modern and upgraded equipment has helped the Air Reserve Components maintain high readiness levels. Another key factor has been the high experience level of personnel.

General McIntosh said that combat readiness is at an all-time high and that the performance level on inspections meets or exceeds any that the reserve components have ever reached. He attributes this performance to a good retention rate and reaping "the benefits of recruiting good people as they leave the active Air Force."

During the past several years, both components took advantage of the active-duty drawdown. In 1989, AFRES enrolled 3,742 raw recruits, but from 1990 through 1996 the majority of new recruits had active-duty experience. During the drawdown, the Guard's standard experience ratio changed; whereas it once took in sixty percent prior-service and forty percent nonprior-service, it now takes in eighty percent prior-service and twenty percent nonprior-service.

However, the large influx of former active-duty members to the reserve components is over. Both components expect to return to business as usual next year, and recruiting and retention are high on their lists of likely challenges.

General McIntosh believes AFRES will be able to retain the former active-duty personnel.

"They came into the Reserve voluntarily because they like the camaraderie, they like the mission, they like being part of the Air Force, they like to be busy," he said. "I think we'll be able to retain these people that we've gotten over the last few years." The other part of the manning equation, he said, is to recruit "the brightest and best out of high school and college."

General Shepperd told Congress that ANG units are working "with the states to develop initiatives to ensure we reach our strength goals, while filling critical skill vacancies through the extensive use of enlistment bonuses and the highly visible incentives of the Montgomery GI Bill." He said the bill is a major motivator for six-year enlistments.

General Shepperd links future recruiting efforts to continued community support by the Guard, an element that has had an effect on force-structure decisions. Some Congressmen questioned his decision to reduce the primary aircraft authorized (PAA) in ANG squadrons to twelve in the Fiscal 1997 budget, rather than cut units. The Guard reduced its PAA increments during the past few years from twenty-four to eighteen, then down to fifteen in 1996.

Although he says it is clear that a twenty-four PAA unit is more efficient than a twelve PAA unit, General Shepperd sees other important considerations. One concerns support for the Air Force in the civilian community.

"We have civilian communities out there that have supported our noise, supported our recruiting, supported our deployments at the great expense of their employers for many, many years, and now our reward for them is to come and close the units in those areas," he said. "Well, nobody likes that, but if we have to do it because of budgets, we will do it."

He expresses concern that increased reliance on the Guard and Reserve for day-to-day operations might lead to the need to maintain the current number of units and even to "re-robust" those units back up to eighteen or twenty-four airplanes. Instead of eliminating some units now, General Shepperd said, "We have basically taken a pause."

The General said he wants to get through DoD's quadrennial review in 1997 and "find out where the force structure is going before we start closing units."

He pointed out that overhead for Guard units is very low compared with that of an active-duty base.

"We have eighty-nine flying units, most of them on . . . seventy-five to 120 acres leased on a civilian airport," he said. There are no facilities, such as exchanges, commissaries, or living quarters.

"We're not trying to do anything stupid and not trying to preserve units at all costs and not trying to do anything ridiculous," he added. "I've been criticized for that in some quarters, but quite frankly I am absolutely willing to take that criticism, because this is the right thing to do."

General McIntosh explained to Congress that AFRES has done some consolidation of units to try to ensure the most cost-effective number of aircraft. However, he emphasized, "You need to put Reserve and Guard units where the people are—where they work and where they want to serve." ■

Man-made debris in orbit poses a hazard and must be tracked.

Space Junk

By Suzann Chapman, Associate Editor

TODAY, more than 8,000 man-made items circle the globe in space. Only some seven percent of these space objects are active satellites. The remainder, called debris, comprises inactive satellites, spent rocket bodies, and pieces that have broken off from spacecraft. Much of the debris reenters the atmosphere and burns up. Some falls back to Earth. Other debris can and does strike satellites and space shuttles.

Dots shown here are not drawn to scale. In this rendering, each appears to be about the size of Rhode Island. US space surveillance units currently track 8,168 space objects that range in size from that of a baseball to the Mir space station. An inactive satellite can weigh several tons, while pieces of rocket bodies may weigh only ten pounds. Smaller fragments about the size of paint chips have nicked windows on the space shuttle but are too small to track with present-day sensors.

The US started tracking satellites and debris in 1957, when the USSR launched Sputnik 1. Since then, the US Space Surveillance Network (SSN), now numbering twenty sites around the world, has tracked more than 23,700 space objects.

Eighty-four percent of space debris can be found approximately 800 kilometers out, well beyond the space shuttle's orbit of 300 kilometers above Earth, according to US Space Command officials. Under current conditions, they say, the shuttle is likely to collide with a significant piece of debris no more than once in 10,000 years.

Nevertheless, USSPACECOM's Space Control Center (SCC), Cheyenne Mountain AS, Colo., uses powerful computers to process 70,000 observations of space objects daily. Air Force Space Command's 1st Command and Control Squadron, located within the SCC, compiles and analyzes the data, creating a running catalog.

This electronic image of the "junk" orbiting Earth looks dense enough to adversely affect navigation, if not to prevent the launch of anything new. The US Space Surveillance Network tracks and catalogs the debris daily, notifying NASA, other agencies, and foreign nations about potential problems.

During space shuttle missions, the SCC and the squadron calculate the possibility of objects in orbit passing close to the shuttle's planned flight path. The center notifies NASA about any space debris that may come within twenty-five kilometers of the shuttle. The catalog also provides data for collision avoidance as new satellites are launched.

The cataloging process also ensures that the US and other countries don't mistake falling debris for evidence of an unfolding missile attack. To missile-warning radars, space debris returning through Earth's atmosphere gives the appearance of a live reentry vehicle. By knowing where each significant piece is, and by predicting its fall, USSPACECOM can provide data to prevent a false alarm in missile-attack warning sensors of the US and other countries.

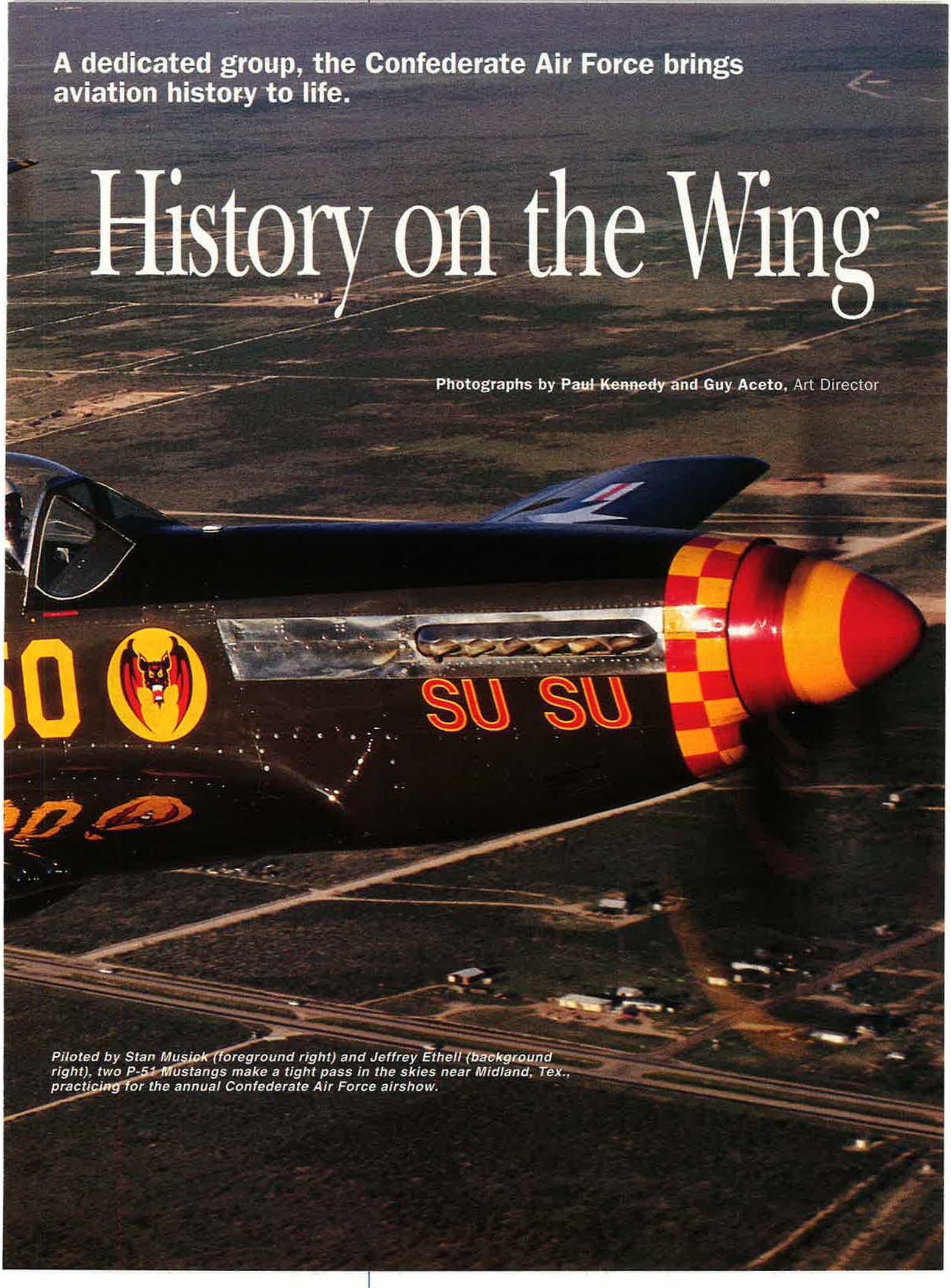
The lion's share of the space surveillance work load falls to the forty-six-member 1st Command and Control Squadron, which manages the tracking duties of USAF's twenty worldwide SSN radar and sensor sites. It maintains positional data on more than 97.3 percent of the man-made objects in orbit. ■

Staff photo by Guy Aceto

A dedicated group, the Confederate Air Force brings aviation history to life.

History on the Wing

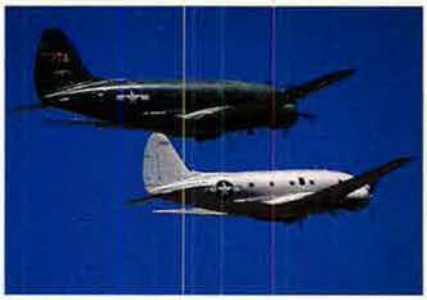
Photographs by Paul Kennedy and Guy Aceto, Art Director



Piloted by Stan Musick (foreground right) and Jeffrey Ethell (background right), two P-51 Mustangs make a tight pass in the skies near Midland, Tex., practicing for the annual Confederate Air Force airshow.

Staff photo by Guy Aceto

Whether from a Pratt & Whitney radial or a Rolls-Royce Merlin, the sound of a piston-driven aircraft engine producing nearly 1,500 horsepower is unmistakable and unforgettable. It is a sound retired AAF flight instructor Lloyd P. Nolen had in mind when, about six years after World War II, he bought a surplus P-40 Warhawk. He and his friends then began buying and restoring war surplus aircraft, including the P-51 Old Red Nose *(left) that still flies today. This handful of pilots, who wanted to continue flying the aircraft they had flown in the war, called themselves the Confederate Air Force, using "confederate" in the sense of a group joined in a common cause and making a jocular reference to their southern origins.*



Photos by Paul Kennedy

From that beginning, the CAF and its American Airpower Heritage Museum in Midland have amassed the world's largest collection of flyable US combat aircraft from World War II. Some of them are among the last of their types in existence. Along with responsibility for more than 130 restored Allied and Axis aircraft in various locations, the CAF headquarters and museum have a research library and archives—a treasure trove of World War II artifacts, memorabilia, and firsthand accounts. Whether on display (above) or behind the scenes (left), the museum's inventory receives top-notch care from a highly professional staff and about 200 volunteers.

Staff photos by Guy Aceto

In 1963, the CAF organized its first airshow in Mercedes, Tex. Tight formation flying required for performances called on many of the skills CAF members had learned as combat pilots. Originally, almost all CAF aviators had military experience; today, only about half have had military training, and few have experience in the kind of flying that shows visitors what these aircraft did in combat.

The Confederate Air Force has developed a demanding set of standards at a school called TRARON (Training Squadron One). Pilots who want to fly the vintage aircraft during CAF airshows are given rigorous instruction. Safety is paramount. After hours of classroom time, students walk through maneuvers before they fly. Some of the best aircraft to train in are the same ones used fifty years ago. Above, the T-6 Texan and the Navy SNJ version of it are still around, so when CAF pilots get together, they jump at the chance to get into one and practice their skills. The CAF also uses the Vultee BT-13 for training. "Check rides" come at the end of class, and only those who pass will be allowed to fly the tight formation sequences in the airshow. At middle right, CAF instructor Ray Kinney (in the rear seat) will monitor moves during practice for a weekend airshow.

Staff photos by Guy Aceto

In 1966, the CAF began looking for a B-29 Superfortress to add to its collection. The search led to the Naval Weapons Center at China Lake, Calif., where a number of the bombers had been deteriorating out in the desert near a target range since the mid-1950s. After looking them over, the CAF settled on one that they felt could be restored to flying condition. They then began weeks of paperwork to acquire it. A CAF maintenance crew arrived at China Lake in March 1971, and only nine weeks later the B-29 was ready to fly. Navy regulations precluded a test flight. Once the aircraft took off from the China Lake runway, it was not allowed to return. In a tribute to the expertise of the maintenance and flight crew, the aircraft took off from China Lake and completed its first flight in seventeen years—a nonstop, 1,250-mile journey to Harlingen, Tex.—without a hitch. Complete restoration of the aircraft took another three years.

Today, Fifi, the only B-29 Superfortress still flying, is a crown jewel of the Confederate Air Force.

Photos by Paul Kennedy

The CAF's annual headquarters airshow is the perfect opportunity for old friends to get together and not only reminisce but also learn new ways to keep the old airplanes in top form.

One of the CAF's better-known P-40 pilots is former AFA President and Board Chairman O. R. Crawford (above), who has been flying the P-40 since World War II. Above (right) is CAF pilot Dan Secker at the controls of Fifi *during a flight over Midland. At right, P-51 owner Ike Enns (on the right) trades stories with Wallace Sanders about the Mustangs they fly and maintain so well.*

Staff photo by Guy Aceto

Keeping vintage aircraft flying is a major undertaking. Maintenance is crucial. Parts must be scrounged from a variety of sources. Expertise must be handed down to keep the planes flying. The CAF constantly searches out prospective members, seeking those who know these aircraft well and those willing to learn. Some of the CAF volunteers used to work on such engines as the Pratt & Whitney R2800s that power the A-26 Invader at left. This aircraft flew to the CAF's 1996 airshow in Midland from the organization's Nevada Wing, based in Las Vegas.

Staff photos by Guy Aceto

The CAF collection of about sixty types of World War II aircraft includes the B-17G at left. It is among the many aircraft owned by the CAF but based with the organization's more than eighty chapters—called wings, squadrons, or detachments—located in twenty-nine states and in Australia, France, New Zealand, Switzerland, and the United Kingdom. This outlying CAF fleet takes turns on display at the headquarters and at CAF events, and all that are in flying condition participate in airshows across the country. More than eighty aircraft in the collection fly regularly. Some long-term restoration projects include a rare Douglas B-23 Dragon and a P-82 Twin Mustang night fighter.

Most of the aircraft have fascinating stories behind their journeys back into the skies. Among the rarest is the Mitsubishi A6M2 Zero. One of only two Zeros in the world still regularly flying, it was rebuilt from remains found on an island in the South Pacific in 1968. It took seventeen years to bring the Japanese carrier fighter back to flying status. Left, at the CAF's 1996 airshow, pilot Randy Wilson (standing) gives Orville Long a close-up look at an adversary Mr. Long saw frequently as a World War II B-24 pilot. Above, Mr. Wilson taxis out during that event's re-creation of the attack on Pearl Harbor. Re-created air battles and displays of pyrotechnics enhance the realism that the Confederate Air Force shows are famous for.

Photos by Paul Kennedy

Even as the annual airshow at Midland draws to a close, plans get under way for the next one. Maintenance and restoration are year-round tasks, and volunteers in hangars and museums across the country must continue to train for the next airshow. The success that the Confederate Air Force has achieved in finding and preserving these planes has inspired others to help keep aviation history alive and flying. When the results roar into the skies, onlookers get an amazing eyeful of the past.

The CAF's members are determined to pass on to a new generation the legacy of such warplanes as the P-51 (above) and the P-38 (below right). Through unforgettable airshows, the American Airpower Heritage Museum's educational programs, and the efforts of hundreds of volunteers, they put people in touch with history through those who made it. For the Confederate Air Force, these are not just a collection of flyable warbirds but national treasures that embody the spirit of the men and women who built, maintained, and flew them. ■

Curved blades mean more thrust, less fuel and less noise.
Just another way the "J" saves you money over its life span.

A prop that's 18% more efficient. And 100% funnier-looking.

If you're thinking of snickering at the odd-looking propellers on the new C-130J Hercules, you're going to have second thoughts after reading this. Simply by twisting the blades a bit and increasing their number to six, we've managed to give the aircraft 18% greater thrust at the same power setting.

It means at maximum gross weight, the "J" can now climb to 20,000 feet in just 14 minutes, compared to the 22 to 28 minutes of its predecessors. And with the prop's improved aerodynamic efficiency, the aircraft also uses less fuel and runs quieter.

Of course, this is just one of the many technological triumphs we've installed on the new C-130J -- additions that will lead to significant cost savings over the life span of the aircraft.

Twin-spool engines complete the aircraft's propulsion system, and allow for higher operating temperatures, higher altitudes and a MTBF of 5,000 hours -- five times greater than before.

In addition, we've replaced a full 600 pounds of hard wiring with MIL-STD 1553 databus architecture -- keeping critical systems in constant communication with one another. Complete mission plans -- everything from terrain to weather conditions to precise drop sites -- are now put on a 2-by-3 inch card and inserted into the J's mission computer.

We offer the load master remote control for safety and more precise drops. And we've installed twin Head Up Displays that allow the flight crew to maintain their focus outside while key instrument readings are displayed in front of them.

We've done all this for one reason only. To help you achieve the objectives of your mission. It's been our *modus operandi* since the Hercules debuted in 1955. And with this all-new, cost-efficient aircraft, it will continue to be for years to come.

LOCKHEED MARTIN

Mission Success

New aerospace technologies promise dramatic change in air combat operations, a noted RAND analyst argues.

Technology and Air War

By Benjamin S. Lambeth

AIRPOWER, coupled with information power, has arguably become the dominant force element in most circumstances of war. Ever since World War II, it has provided US and allied ground forces with the freedom to operate unmolested from above. Now, through a combination of technology development and astute concepts of operations, it could become an even more pivotal element of national power, if the possibilities before it are wisely cultivated.

The past decade has seen many airpower instruments evolve from advanced development to operational use. These systems have aggregated mainly in the areas of stealth, precision standoff attack, and enhanced information availability. Such capabilities were brought together for the first time in combat in the 1991 Persian Gulf War. In an unprecedented convergence of technology, doctrine, concepts of operations, and leadership, the coalition promptly attained an unquestioned dominance of the air.

Today, new aerospace technologies either in hand or on the horizon promise to generate even more dramatic changes, further widening the gap between states that possess them and those that do not. When it comes to the technical nature of systems, these developments are likely to cause changes in degree rather than in kind. Even so, from an operational perspective, they foreshadow a qualitative change. These fall into four categories:

■ **Advanced Platforms.** The F-22 fighter is the first next-generation combat aircraft nearing production. An engineering and manufacturing development model will fly next year, with initial operational capability planned for 2004. USAF intends to procure 442 to replace the F-15. Later, the US will field a Joint Strike Fighter to replace USAF's F-16, the Navy's A-6E, and USMC's AV-8B.

Successor generations of combat aircraft are likely to be quite different. Leading the pack may be what the USAF Scientific Advisory Board's "New World Vistas" study called uninhabited combat aerial vehicles (UCAVs). Now in concept development, these would feature pilots who sit in an execution center in the US and fly the aircraft as far as half a globe away through high-speed fiber-optic and satellite links.

UCAVs promise levels of performance unattainable from manned aircraft because they won't have to operate within limits of human tolerance. UCAVs with plus-or-minus twenty-G capability will be able to defeat nearly all opposing antiaircraft missiles.

Vehicles can be made smaller by eliminating displays, ejection seats, controls, life-support gear, and other aspects of manned aircraft, increasing stealth. Stealthy UCAVs with low-observable, long-range missiles will lessen the need for manned aircraft to penetrate defenses. They can extend aerodynamic performance to hypersonic range, permitting a direct attack of high-value targets from US soil anywhere in the world in less than an hour.

Such vehicles are in their infancy. In particular, it may take decades for unmanned aircraft to be used in the strike role.

■ **Precision Weapons.** Precision guided munitions (PGMs) largely swung the outcome of the Gulf War by quickly shutting down Iraq's air defenses. Such munitions already have provided a thousandfold increase in destructive power, compared to unguided bombs. As the US

Lockheed electronic artist's concept by Steve Moore

An artist's concept of the F-22 in the markings of the 3d Wing flies past Mount McKinley, Alaska. The F-22 and the Joint Strike Fighter will change the existing rules of combat and help the US achieve air dominance in any future conflict.

approaches near-zero-miss-distance accuracies, it can design and build smaller munitions and perhaps maintain fewer stocks.

Near-term systems include PGM upgrades and the Joint Direct Attack Munition. Next-generation sensor-fuzed smart weapons will be able recognize, identify, and sort targets even as their sensors guide them, achieving accuracies measured in centimeters rather than meters.

The march of technology is taking the United States away from primary reliance on the time-tested means of attack—putting iron on a target. US forces also will use disruptive measures, such as energy (lasers and high-power microwave bursts), electrons (directed radio-frequency energy), and deception.

Also in development are "information munitions" to attack, destroy, confuse, or fool information systems. This portends capabilities for entering a command's computers and destroying or distorting files. Information warfare techniques could enable a warfighter to sift through an enemy's e-mail, discover locations of his weapons, and scramble his air defense computers.

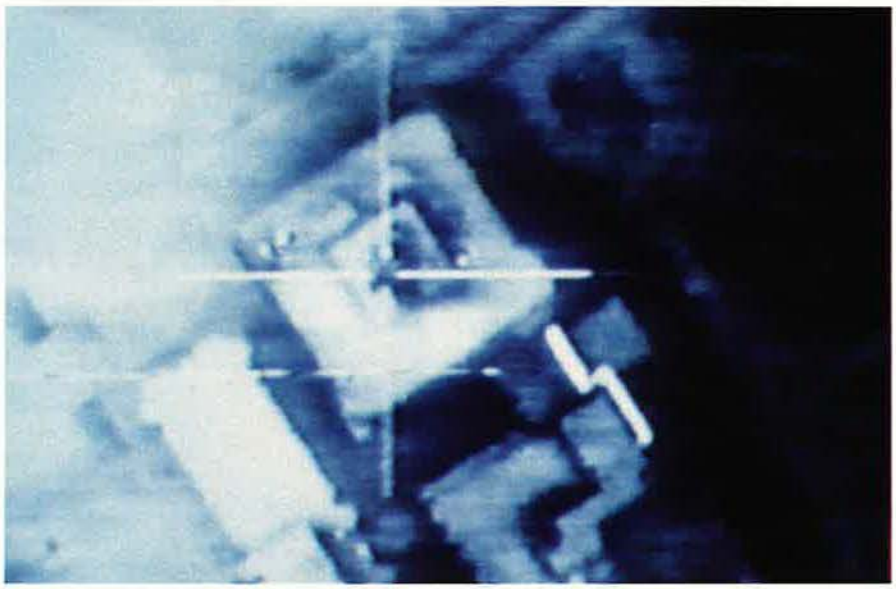
High-power microwave and laser weapons may work in tandem with or replace many traditional explosive weapons. They may, for example, penetrate an enemy fighter cockpit, illuminate the fire warning light, shut down digital engine controls, or make other surreptitious inputs like penetrating flight controls and forcing an uncommanded break turn. At the least, this will destroy formation integrity and make the enemy predictable. It will also surprise his socks off the first time it happens.

■ **Sensors and awareness aids.** "Situational awareness" is a term much in vogue, but fighter pilots have seen it for decades as the vital difference between winning and losing in combat. It determines combat outcomes more than all other factors combined, including previous combat experience.

Now in store are major upgrades for the E-3 Airborne Warning and Control System and E-8 Joint Surveillance and Target Attack Radar System aircraft. The E-3 will gain a doubled radar range against fighter-sized targets and an improved ability to detect and track cruise missile–sized targets. Technology promises high-speed processors exceeding today's capability by a factor of 10,000 for AWACS and 1,000 for Joint STARS. Synthetic aperture radar will be incorporated in sensors on distributed satellite constellations, unmanned aerial vehicles, munitions, and ground stations. Eventually, satellites will be able to locate an emitter with enough accuracy to permit delivery of Global Positioning System–guided weapons even if emissions cease.

Global awareness will include not only threat-related information but also information on one's own and allied forces—individual aircraft maintenance status, location, availability, mission status, and so on. It may include information from an enemy's databases. In fact, it may be more useful to preserve an enemy's command, control, communications, computer, and intelligence net than to destroy it, because US forces can take advantage of knowing what the enemy knows about his own assets.

■ **Information processing.** The Joint Tactical Information Distribution System (JTIDS) now offers an F-15 flight lead a god's-eye view of his tactical situation. This has greatly driven up kill ratios in peacetime air combat training. It permits real-time data exchange between aircraft and, accordingly, new tactics. It shows



Precision guided weapons, such as the one used in this attack against Iraq, provide a thousandfold increase in destructive power compared to unguided bombs. Future accuracy will be measured in centimeters rather than meters.

Staff photo by Guy Aceto

The Joint Tactical Information Distribution System is already offering F-15 pilots vastly improved awareness of the tactical situation, enabling prompt and precise application of force.

the position of all aircraft in a formation or strike package, as well as the location of enemy aircraft, ground forces, and other threats.

JTIDS allows an exchange of digital information on relative positions, weapons availability, and fuel status, among other things, reducing the need for intraflight voice communications. It indicates when other friendly fighters are being illuminated by radars. Its "buddy lock" feature notes when other fighters have radar locks on hostile aircraft.

Other systems include advanced data-fusion software, interlinked but physically dispersed databases, and high-speed, large-capacity communications nets, all of which will enable prompt and precise application of force.

Operational Implications

What do these trends mean for the operator? What are the advantages?

The first and most important payoff area entails the capability for maximizing US situational awareness while denying it to the enemy. If pursued to fruition, the new systems and capabilities outlined above will provide users at all levels with virtually complete and current knowledge of an operational situation: information dominance.

A second big payoff area is the synergism that will come from the greater efficiencies of seamless joint operations aimed at using the right assets in the right place at the right time. Technology is forcing movement toward true combined-arms and multinational operations.

This does not mean that the individual services or force elements will no longer perform as soloists in a combined-arms orchestra (to use retired USAF Col. John Warden's apt metaphor), with the soloist of the moment varying with the tactical and operational situation. However, traditional service lines more and more are breaking down under the pressure of the continuing integration of systems and capabilities.

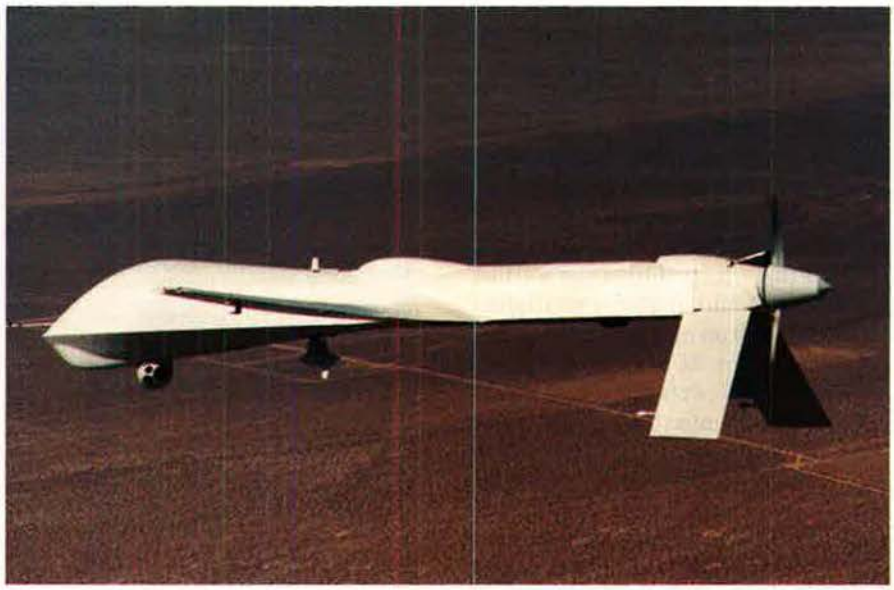
In future wars—in which air activity will be a precursor to any land operation and naval weapons can engage a wider range of land targets—the interests of mission effectiveness will require cross-service communication as a matter of routine.

The US is approaching a time when an Air Force sensor operator and coordinator could assign a Navy platform to launch an Army weapon in support of Marines.

A third payoff area concerns the broadening of airpower's ability to accomplish tasks previously beyond its powers to address. Better information availability and directability mean reduced cycle time—a force-multiplier that creates a larger apparent force from small numbers by permitting a higher operations tempo. The next generation of aircraft will embody significant improvements in reliability, maintainability, and sustainability, making possible even greater leverage from fewer numbers.

These advances even now permit the Air Force to maintain air dominance over hostile territory and enforce no-fly and no-drive zones.

These are new concepts. On the first count, allied control of the air over Iraq after the first week of Operation Desert Storm was so secure that in-flight refueling operations inside enemy airspace were possible. As for the second count, even if USAF had had the ability ten years ago to look deep with such platforms as AWACS and Joint STARS, it could have done little with the resulting information because it lacked the needed reach, standoff capability, and precision.



Without displays, life-support gear, or other necessities of piloted aircraft, Predator UAVs and future UCAVs can be much smaller than fighters. They can also ignore human tolerances and achieve plus-or-minus twenty-G capability.

Middle and Upper Air

Airpower can now make effective use of the middle and upper air to avoid enemy infrared surface-to-air missiles and antiaircraft artillery. Ironically, just as it has reached near-perfection, the low-altitude capability afforded by Low-Altitude Navigation and Targeting Infrared for Night may have been overtaken for most scenarios by the new attack options provided by long-range standoff capability and precision guidance, which now allow combat aircraft to work effectively from the safer medium-altitude environment. This new operating window also permits easier target acquisition. With the reduced risk of attrition it affords, numbers of aircraft needed in attack packages can be commensurately smaller.

The F-117's stealthiness was a key factor in enabling the coalition to achieve air dominance early in Desert Storm. Stealth in the F-22 and Joint Strike Fighter will further change the existing rules of aerial combat. It is already forcing a complete change in tactics, both in air-to-air and in surface attack, for the possessor as well as for the side that lacks it.

Stealth will allow airpower to operate virtually at will. The stealthy F-22 can use bistatic radar without revealing its location; the active transmitter can be on an off-board platform like AWACS, and the fighter can receive intercept vectors with its radar operating in a standby mode, so as not to emit radiation that would reveal its location.

Closely related in importance are the emerging advantages in reach in air-to-air combat (more commonly called "first shot with impunity") and survivability to kill heavily defended ground targets, which low observability offers.

A fourth payoff area is situation control from the outset of fighting. Thanks to this breakthrough, the initial blow can now achieve strategic goals in the first moments of combat and thus determine the subsequent course and outcome of a war.

Before long, the initial attack may even be surreptitious—for example, into computer systems, to pave the way for fire and steel to follow.

Photo © Handy Jolly/Arms Communications

Emerging technologies can be used to protect such high-value targets as KC-135 tankers and E-3 AWACS aircraft and allow them to operate with impunity, as they did during the Persian Gulf War.

As Desert Storm showed, the ability of independently applied airpower to control airspace and shape the battlefield eliminated any urgent need to commit ground forces. Virtually the only factor driving a demand to wrap things up quickly was the certainty of approaching summer heat, which would have made operations by all forces difficult, if not impossible.

Changed Essence of Air War

These payoffs will keep an enemy at arm's length indefinitely by providing the wherewithal to conduct deep battle as a rule rather than as the exception.

This change foreshadows a decline in the need for armies to prepare for close-maneuver ground combat and a similar decline in the need for air forces to plan and train for close air support—other than as an emergency mission of last resort.

All of this means a reduced incidence of casualties for friend and foe alike. Indeed, possibly the single greatest impact of the technology revolution on airpower and its effectiveness relative to other force components is its capacity to save lives. It saves enemy lives through the use of precision attack to minimize noncombatant fatalities and friendly lives by the substitution of technology for manpower and the creation of battlefield conditions in which land elements, once unleashed, can more readily do their jobs because of the degraded capabilities of enemy forces. This can prevent casualties on a scale that could undermine popular support for the use of US ground forces.

After the fact, Desert Storm was hailed as an exemplary demonstration of the technology revolution. Yet there was nothing foreordained about its outcome. It is certain that the coming revolution in aerospace technology will spur have-nots to produce countermeasures—quite possibly asymmetric countermeasures.

A determined rogue state could do much on the cheap to negate US technological superiority. Options include dedicated attacks on high-value targets, such as Joint STARS, AWACS, and tankers. Attacks on airlifters moving materiel into a theater and denial operations against rear-area terminals and other bases offer additional near-term options. Ever-present is the possibility of a desperate resort to a counterdeterrent based on nuclear and other weapons of mass destruction.

In short, as capable as they may be, these emerging aerospace technologies promise only a period of advantage but no "end of history" with respect to the enduring dialectic between offense and defense in military affairs. ■

Benjamin S. Lambeth is a senior staff member at RAND Corp., specializing in international security affairs and airpower. This article was condensed from a longer paper delivered at a conference on "New Era Security" held in Australia. His most recent article for Air Force *Magazine, "Hard Times for the Russian Air Force," appeared in the July 1995 issue.*

When he or she receives a brevet, spot, or other unusual promotion that the US armed forces have tried over the years.

When Is a Major Not (Exactly) a Major?

By Bruce D. Callander

PROBLEM: You have picked an officer for a new post but find that some of his staff will outrank him. Solution: "Frocking."

Within the church, the term refers to investing a person with a new office or, more literally, robes of the office. In the military, frocking is one of several ways to promote members, at least temporarily, for special requirements.

For example, Col. Steve P. Strobridge, USAF (Ret.), recalls frocking's being used in the mid-1980s when he served in Europe. A lieutenant colonel, he was assigned to a billet where he would be the boss of a Belgian colonel. In order to preserve a proper relationship, USAF let Colonel Strobridge wear his eagles ahead of his pin-on date.

The approach also has been used in wartime to fill vacancies in the field while headquarters is catching up on the paperwork.

Today's Air Force still occasionally uses frocking to make officers eligible for international or interservice assignments calling for higher ranks. Others are frocked to qualify them for foreign professional military education courses or for the State Department's senior seminars, where military attendees must be at or above the grade of colonel.

Air Force policy (AFL 36-2501) allows frocking of an individual only when his or her name is on a promotion list that already has been confirmed by the Senate. They may wear insignia of the higher grade but may not draw the pay or receive the performance reports for those grades until they are actually promoted. Another stipulation is that the officer "should not already be known in the lower grade by the new contacts."

Three Percent Limit

Defense Department rules allow the services to frock up to three percent of their field-grade authorizations, but the 1996 defense authorization bill lowered this limit to one percent. In fact, the Air Force uses the procedure so sparingly that neither ceiling is a problem. Over the last three years, it has frocked fewer than 300 officers—245 to colonel, forty-one to lieutenant colonel, and eleven to major.

USAF does not frock officers in company grades or in any enlisted grades, officials say, because they rarely hold jobs that would require it. In 1995, the Enlisted Evaluation System Group did consider a proposal to frock all enlisted members when they are selected for promotion, but the policy was not adopted.

Frocking and other devices have been used over the years largely to deal with funding problems or grade limitations. During the Great Depression, for example, Congress froze the pay of government employees, civilian and military. For a time, service members could be promoted but could not receive the pay of the higher grades. Few Air Corps officers were affected by this involun-

tary frocking, however. Promotions were scarce for all service members. Air officers, most of whom were younger than their ground-bound peers, stood low on the Army-wide promotion lists.

Earlier, the Air Service used a variation of frocking to lure volunteers into the still-risky business of flying. Under laws passed in 1916 and 1917, lieutenants and captains who were qualified for flight pay also temporarily received the rank of the next highest grade. Unlike frocked officers, however, they also received the increased pay and allowances.

The National Defense Act of 1920 stripped officers of the temporary grades awarded in World War I. One of those affected was Henry H. "Hap" Arnold. He had had only ten years of service when he was posted to Air Division headquarters in Washington, D. C., where he rose from permanent captain to temporary colonel. In 1920, he reverted to his permanent rank but simultaneously was promoted one grade. He continued to serve as Air Officer of the 9th Air Corps Area at the Presidio, Calif., but as a major, not a colonel.

Such temporary wartime grades had been called brevet ranks. Some very high ones went to very junior officers. At the start of the Civil War, George Armstrong Custer was a twenty-one-year-old second lieutenant fresh out of West Point, where he had graduated at the bottom of his class. Given command of a volunteer unit two years later, he was breveted as a brigadier general and later to major general. At war's end, he reverted to captain. He had risen only to lieutenant colonel when he arrived at Little Bighorn.

In the Spanish-American War, Army Capt. Leonard Wood and Theodore Roosevelt, assistant secretary of the Navy, organized the 1st US Volunteer Cavalry Regiment (The Rough Riders) and became its colonel and lieutenant colonel, respectively. When Wood was promoted, Roosevelt took over the unit and colonelcy and led the charge up San Juan Hill. His total military service amounted to little more than one year.

World War II brought a surge of rapid advancements. The case of Jimmy Doolittle was one of the most dramatic. In 1930, he resigned his regular commission as a thirty-three-year-old first lieutenant, took a new job with industry, and accepted a Reserve commission. Ten years later, he returned to active duty as a major. In 1942, he led the Tokyo Raid as a lieutenant colonel, was promptly bumped to brigadier general, and later made two more stars. General Doolittle kept his wartime rank, but many others lost theirs. He received a fourth star in 1985 as the result of a special act of Congress.

"Model-T NCOs"

During the war, enlisted members advanced even faster than officers, particularly when they served on aircrews. The AAF, to avoid becoming top-heavy with NCOs, used what amounted to reverse frocking. It gave especially skilled enlisted members the pay of higher grades without the military rank. These technicians wore a "T" on their stripes and became known as "Model-T Noncoms."

When the Air Force became an independent service in 1947, it inherited a complex system of temporary and permanent promotions in regular and reserve grades. An officer might hold a permanent grade at one level and temporary grade one or more ranks higher. He might qualify for a reserve grade considerably higher than the one he held on active duty.

These complicated rules grew out of service efforts to man units effectively while staying within Congressionally imposed strength ceilings and the legal grade limits for regular forces. Where the service could not fill requirements with the allowed numbers of regulars in permanent grades, they fleshed out the force with regulars holding higher temporary grades and with reservists.

This approach not only met the needs of the moment but provided the forces with fallback positions in case of strength cuts. In a drawdown, officers could be dropped from temporary to permanent grades, and reservists could be sent home while regulars remained aboard.

Much of the activity ended in September 1981 with the Defense Officer Personnel Management Act. DOPMA discontinued temporary promotions and applied the same rules to all active-duty officers, regular and reserve. It standardized appointment, promotion, separation, and retirement rules for all services.

Even under DOPMA, some differences remain between reserve and regular officers. For one thing, Air Force policy limits reserve officers to twenty years of active duty, while regulars may stay for up to thirty years, depending on grade. Reservists also are subject to reduction-in-force action, and many were forced out during the recent drawdown. Though DoD gave the armed services the power to RIF regular officers as well, USAF did not use it.

Even after DOPMA, promotion policies for the non-active-duty reservists remained different from those for regular officers. But some of those differences were removed on October 1, 1996, when the Reserve Officer Personnel Management Act took effect. Similar to DOPMA, ROPMA standardizes promotion rules among the services and, among other things, supplements the unit-vacancy rule with authority to promote to any position vacancy in the Selected Reserve. ROPMA also will apply to Guard officers, but Guard units have some unique rules because of their dual status as both state and federal entities. For example, the state adjutants general, who administer the Guard programs, still are appointed by the governors, most of them as major generals.

Morale Boosters

Officer promotions have long been structured, but, until recently, the advancement of enlisted members was less regulated. After World War II, for example, enlisted hikes were made to fill unit vacancies and were so scarce that the service had to resort to unusual steps to maintain morale.

The problem was that the newly formed Air Force already began with an oversupply of NCOs who had soared up the promotion ladder during the war. The ranks were swelled further by wartime officers who, finding no commissioned billets in the peacetime force, were allowed to enlist as master sergeants.

In 1948, USAF decided to relieve the promotion stagnation by making one-time hikes to technical sergeant and master sergeant regardless of time in grade. It promoted 750 service members to E-7 and 1,500 to E-6, announcing that these would be the last such special hikes until grade inequities evened out. The buildup

for the Korean War brought at least temporary relief. USAF eased some of the enlisted grade crunch slightly during that war by returning many of the former officers who had been appointed master sergeants to their commissioned status.

During the Korean War, USAF again waived time in grade and encouraged rapid promotion. Master sergeants with three or four years of service were not uncommon, but the practice set the stage for another postwar promotion drought.

In those days, the few promotions available still were made by unit commanders. They literally had the power to strip the stripes from the arm of one airman and hand them to the next. Where they lacked unit vacancies, they also were permitted to appoint "Acting NCOs," under a frocking arrangement that allowed enlisted personnel to wear the stripes of the higher grade but not collect the pay.

In a succession of steps, the Air Force eliminated the unit-vacancy rule, centralized selections, and developed the Weighted Airman Promotion System. For a long time, however, enlisted members as well as officers continued to receive temporary promotions that did not become permanent until the members reached specific lengths of service. And commanders retained power to "bust" them back to their permanent grades for a variety of infractions.

Even after headquarters took most of the promotion power away from unit commanders, it continued to give the field discretion to advance specific members.

"Spot Promotions"

Perhaps the most memorable example was Strategic Air Command's "spot promotion" system. Gen. Curtis E. LeMay, SAC commander in chief, was given the power to advance the officers of select bomber crews even though they were not selected by USAF headquarters. Later, spots were authorized for enlisted crew members as well.

The promotions were "real" in the sense that members received the pay as well as the insignia of the higher grades. But they still were only temporary, and the members went back to their previous grades when they left their aircrews or were rated deficient in operational evaluations.

Spot promotions were intended as motivation and morale boosters for elite crews, but other members were convinced the promotions were made at their expense, and USAF eventually stopped the program. Even after it adopted an equal-opportunity policy for airman promotions, however, it sometimes broke its own rules to steer a few hikes toward skills where retention was a problem. Again, enlisted members complained that it was robbing the overall quotas to favor a few specialties.

A complicated set of promotion rules grew out of service efforts to man units effectively while staying within Congressionally imposed ceilings.

Some of the old spot-promotion philosophy lives on in a current program called Stripes for Exceptional Performers. STEP gives field units the power to advance deserving "hard chargers" who went unpicked in the normal selection process. Commanders of major commands and some other units may promote to the grades of staff through master sergeant under this limited authority.

Unlike spot promotions, however, STEP hikes are permanent, are not limited to one command, and may be used to promote enlisted members in any specialty, not just aircrew members. STEP authority also is limited to enlisted members, while spot promotions went both to airmen and to officers.

If spot promotions were a source of annoyance to many members, grade rules for Women in the Air Force (WAF) were an even greater irritant to female members. The Women's Armed Services Integration Act of 1948 provided that no more than two percent of the regular forces could be female, that no more than ten percent of regular lieutenant colonels could be women, and that only one woman in each service could be a colonel.

The Air Force decided its only female colonel would be the director of WAF. A woman could hold the grade only as long as she held that position. Some early directors reverted to lieutenant colonel when their terms were up, so they could serve long enough to qualify for retirement. They then retired as colonels because it was the highest grade held on active duty.

The Air Force normally does not allow officers to carry into retirement higher grades than they held on active duty. It does have special provision, however, for permanent professors at the USAF Academy. At the direction of the President, those professors in grades below brigadier general can be retired with one star.

If such promotions are rare in the Air Force, Col. Paul Arcari, USAF (Ret.), a former USAF personnel official, remembers their being common in the Navy, which routinely advanced officers one grade on retirement. Largely honorary, these promotions allowed the retirees to use the titles of the new grade but had no effect on pay or benefits. They were known as "tombstone promotions," presumably because the higher grades would be more impressive on the members' grave markers.

The closest the Air Force comes to such a practice is its advancement of officers who are selected for promotion but die before they can pin on their new ranks. They may be promoted posthumously to the higher grades (up to colonel), but the promotions do not affect any benefits or entitlements due the next of kin. ■

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, "Revisions to Retirement," appeared in the October 1996 issue.*

Valor

By John L. Frisbee, Contributing Editor

Men Against the Sea

The B-29 crew bailed out over the Bay of Bengal, where no air-sea rescue submarines were on station. Raw courage and a stroke of luck brought most of them through.

THE B-29 Superfortress was developed primarily for long-range strategic bombing of Japan. Until the Mariana Islands could be retaken, the B-29s were based in India, and strikes against Japan were staged through bases in eastern China. One of the early groups based in India, at Chakulia to the west of Calcutta, was the 40th Bomb Group. It participated in the first strategic strike—against steel plants at Yawata, Japan—on June 15, 1944.

The big bombers also were used frequently against tactical targets in Southeast Asia. On February 26, 1945, one of the 40th's crews was assigned an unescorted photoreconnaissance mission to Singapore, about 1,800 miles away from home base. No survivor of Capt. James Lyons's crew will ever forget that day.

On their flight home from a thus-far uneventful sortie, their B-29 was attacked by an enemy fighter. Copilot Mills Bale, who was at the controls, turned into the bandit, and central fire control gunner Pfc. J. M. Moffit fired continuously but with no results. The CFC system clearly was out of sync. Bad news, because much of the flight home would be in range of enemy fighters.

Shells from the Japanese plane set the nose section afire, seriously wounded bombardier 1st Lt. William Kintis, and knocked out the number two engine. While radio operator Sgt. Joseph Dimock helped extinguish the flames, Captain Lyons pulled the unconscious Kintis out of the flames, burning his hands so badly that when he later removed them from the controls, the skin remained on the wheel.

The enemy fighter struck again, hitting a full auxiliary fuel tank in the rear bomb bay. When the damaged tank was jettisoned, it hit the bomb bay doors and became lodged partially out of the aircraft. Radar operator TSgt. John Topolski and left gunner TSgt. Louis Sandrick went into the open bomb bay with no parachutes and managed to release the tank, but it hit and bent the bomb bay doors so badly they would not close. If it became necessary to abandon the aircraft, ditching was out. They would have to parachute into the water, with a reduced chance of rescue.

Despite the bomber's damaged condition, Captain Lyons thought the B-29 would get them home. They were losing altitude slowly when he noticed a small spot on the leading edge of the wing near the feathered number two engine. The spot gradually expanded. It was a fire in the wing. An hour later, Sandrick, who had been watching the wing, heard an explosion and saw the upper skin of the wing flex. Captain Lyons knew it was time to get out. Their approximate location was reported by another B-29 that was following them, air-sea rescue forces were notified, and, soon after the crew bailed out, a search got under way.

A line had been attached to the rip cord of Bill Kintis's parachute, and the still-unconscious bombardier was dropped out, followed as rapidly as possible by other crew members. Kintis was never seen again, nor were the tailgunner Sgt. J. J. Carney or CFC gunner Moffit. The B-29 exploded while the crew members were still descending in their chutes.

The sea was relatively calm, but swells made it impossible for the men to see each other. By shouting, Lyons, Bale, SSgt. Anthony P. Peleckis, flight engineer Lt. Frank Thorp, and Sandrick found each other in the next few hours and tied themselves together to ride out a long night with an uncertain outcome. The next day, about twenty hours after they bailed out, the five were rescued by an RAF Catalina flying boat.

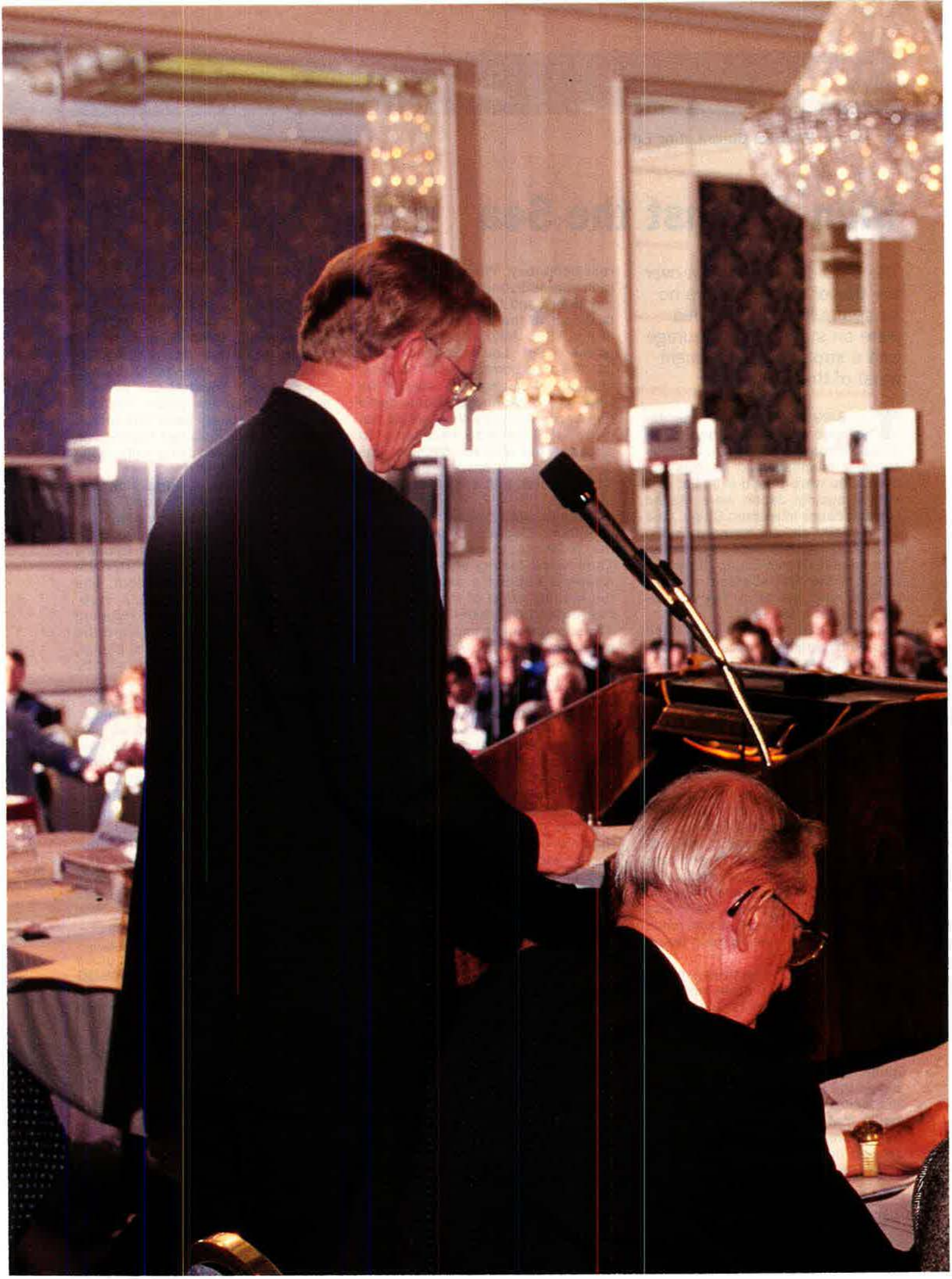
Soon after the crew had punched out, a 40th Bomb Group B-29 located some of the other men and dropped a raft, which Sergeant Dimock retrieved. Paddling toward their shouts, he picked up navigator Lt. Nathan Teplick and Vernon Lester, but Sergeant Topolski had become separated from the others. His Mae West could barely keep him afloat. Half swimming and half floating, he spent a lonely, terrifying night in the shark-infested water.

By great good fortune, the British submarine HMS *Seadog,* which was patrolling for enemy shipping, picked up the signal of the B-29 that had been following Lyons's Superfortress and had reported the location of the crew's bailout. The submarine's captain, Lt. E. A. Hobson, abandoned his antishipping mission and navigated toward the coordinates of the B-29's signal, despite the danger of attack by Japanese surface ships.

At midafternoon the next day, *Seadog* spotted the raft bearing Dimock, Teplick, and Lester. The three persuaded Lieutenant Hobson to continue a hazardous search for other members of their crew. The submarine finally found an exhausted Topolski, who had been in the water for nearly thirty hours and would not have lasted another night. The four men were transferred to an RAF Catalina and flown to Calcutta. It was the same flying boat that had picked up Lyons and those with him, then returned to continue the search.

After recuperating in the hospital, the nine survivors rejoined their group at Tinian, its new base. The 40th BG continued to fly missions against Japan, earning two Distinguished Unit Citations in addition to the one it had been awarded for its part in the initial attack on Yawata. But they never flew another mission quite comparable to their return from Singapore. ■

Thanks to William A. Rooney, a former member of the 40th BG and editor of the 40th Bomb Group's newsletter, "Memories."



AFA 1996 NATIONAL

CONVENTION

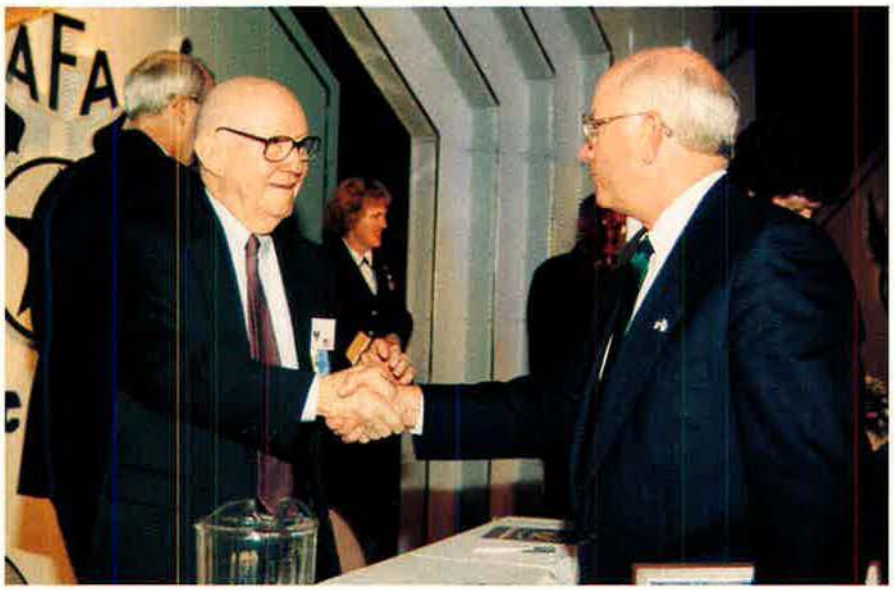
Photo by Paul Kennedy

Attracting more than 8,300 visitors and 374 delegates, the 1996 AFA National Convention and Aerospace Technology Exposition saluted AFA's fiftieth anniversary. Here, outgoing National President Gene Smith addresses the Convention. To his right are Chairman of the Board James M. McCoy and National Treasurer Charles H. Church, Jr.

AFA Recalls the First Fifty Years

By Tamar A. Mehuron, Associate Editor

Photo by Susan Kennedy



John R. Alison (left), former National President and Chairman of the Board, accepts congratulations from William D. Croom, Jr., winner of a 1996 Presidential Citation, on his keynote speech at the Convention. Opposite: thirteen current and former national officers gathered for a group portrait: (top row, left to right) Gene Smith, George Douglas, O. R. Crawford, Martin Harris, Joe Shosid, James McCoy, and (seated, left to right) Victor Kregel, Mr. Alison, Harold Stuart, James Trail, Gerald Hasler, John Henebry, and David Blankenship, all of whom served as Board Chairman and President, except for Mr. Trail, who was Board Chairman in 1958–59.

AFA's 1996 National Convention, held September 16–18 at the Sheraton Washington Hotel in Washington, D. C., celebrated the theme of AFA's fiftieth anniversary with an array of speeches, ceremonies, and other festivities.

The keynote speaker was Maj. Gen. John R. Alison, USAF (Ret.), Fourteenth Air Force "Flying Tigers" ace and AFA President and Chairman of the Board in the 1950s. Last year, when the Convention theme was the fiftieth anniversary of the end of World War II, General Alison accepted the Association's H. H. Arnold Award on behalf of his fellow World War II Army Air Forces veterans.

It is fitting, General Alison said, that World War II and AFA anniversaries merged into each other and overlap with the fiftieth anniversary of the US Air Force, coming up next year.

"AFA was born out of World War II," he continued. "Going into the war, airpower was very much a junior partner in the armed forces." By the end of the war, "we had seen what airpower could do when put to the test, and we had visions of what airpower could contribute for the future security of our nation." The campaign to make the Air Force a separate service "was the first thing the brand-new Air Force Association would take on" after it was established in 1946.

"In this anniversary year, we look back—but as AFA has always done—we also look ahead," he said. "The World War II generation knew what it was like to go to war unprepared. Partly because of that, AFA has from the very beginning put priority, in its programs and in its policy positions, on military preparedness and force modernization."

Before the opening gavel on Monday of Convention week, many of the delegates went by bus to Arlington National Cemetery where Air Force leaders laid wreaths at the grave of Gen. H. H. "Hap" Arnold, wartime commander of the Army Air Forces, as the inaugural event in the Air Force Fiftieth Anniversary commemoration. Joining Miss Jane Fogleman, wife of USAF Chief of Staff Gen. Ronald R. Fogleman, in placing a floral tribute on the grave of Mrs. Arnold was Kathy McCoy, wife of AFA's Chairman of the Board, James M. McCoy.

The Air Force Association saluted its fiftieth anniversary and that of

Photo by Paul Kennedy

the Air Force during the Anniversary Dinner on September 17. Festivities included an interactive, multimedia presentation by various elements of the US Air Force Band and Singing Sergeants, conducted by Lt. Col. Lowell Graham. It honored the late Gen. Jimmy Doolittle and the founding of the Air Force Association.

Fifteen AFA past presidents and chairmen of the board gathered on stage and received special recognition for their substantial contributions to the Association.

The Convention was the scene of major addresses by the Secretary of the Air Force, Sheila E. Widnall, and General Fogleman. USAF Vice Chief of Staff Gen. Thomas S. Moorman, Jr., and CMSAF David J. Campanale spoke at the Outstanding Airmen of the Year dinner. The three-day Aerospace Technology Exposition featured nearly seventy exhibiting companies.

Photo by Susan Kennedy

Members of the New Jersey delegation sport the colorful ribbons that help identify Convention-goers. Red is for official delegates; green is for Association charter members; and yellow is for members of high-performing chapters.

Election of Officers

Doyle E. Larson of Burnsville, Minn., was elected National President of the Air Force Association for a first term. Gene Smith of West Point, Miss., was elected Chairman of the Board for a first term. Mary Anne Thompson of Oakton, Va., was elected National Secretary for a third term, and Charles H. Church, Jr., of Lenexa, Kan., was elected National Treasurer for a second term.

More than 8,300 people took part in one or more of the Convention-related activities. The 374 registered delegates, representing forty-six states and the District of Columbia, were joined by senior military and government officials for the Aerospace Technology Exposition, featured speeches, and social events. On hand to cover the Convention were 111 reporters and other representatives of the news media.

Meeting concurrently with the

Photo by Susan Kennedy

Newly elected National President Doyle E. Larson addressed the Convention. President Larson, a retired USAF major general, flew seventy-one combat support missions during the Vietnam War and was the first commander of Electronic Security Command.

Convention were trustees of the Aerospace Education Foundation and the Senior Enlisted Advisors of the USAF major commands as well as AFA's Air National Guard Council, the Civilian Advisory Council, Enlisted Council, Junior Officer Advisory Council, Reserve Council, Veterans/Retiree Council, and the Board of Trustees of the Air Force Memorial Foundation.

There was also a joint meeting of the National Executive Boards of the Arnold Air Society and the Angel Flight/Silver Wings Society.

Resolutions and Changes

The delegates amended AFA's Constitution and bylaws to modify the authority and responsibilities of the President and Chairman of the Board in appointing and chairing committees of the Association, and they approved the creation of an Operations and Procedures Manual.

Congressional Activity

Thirty-six state delegations sponsored twenty-one Congressional breakfasts on Tuesday and Wednesday of Convention week. Forty-five members of Congress participated. Among them were Senate Armed Services Committee members, including Sens. Kay Bailey Hutchison (R-Tex.), James M. Inhofe (R-Okla.), J. James Exon (D-Neb.), Edward M. Kennedy (D-Mass.), and Richard H. Bryan (D-Nev.). Others who attended included Sens. Ben Nighthorse Campbell (R-Colo.), who is on the Senate Committee on Veterans' Affairs, and Patty Murray (D-Wash.), who is on the Senate Appropriations Committee.

Also participating in the AFA breakfast meetings were several members of the House National Security Committee, including Reps. Herbert H. Bateman (R-Va.), Joel Hefley (R-Colo.), Jim Saxton (R–N. J.), J. C. Watts, Jr. (R-Okla.), Saxby Chambliss (R-Ga.), Walter B. Jones, Jr. (R–N. C.), G. V. "Sonny" Montgomery (D-Miss.), Ike Skelton (D-Mo.), John S. Tanner (D-Tenn.), Gene Taylor (D-Miss.), Martin T. Meehan (D-Mass.), and Norman Sisisky (D-Va.). Rep. Martin O. Sabo (D-Minn.), member of the House Appropriations National Security Subcommittee, also joined in the morning gatherings. Rep. Ron Packard (R-Calif.), a member of the House Appropriations Committee, also participated.

Visits by New Jersey Republican Reps. Bob Franks, Rodney Frelinghuysen, Frank A. LoBiondo, Bill Martini, and Richard A. Zimmer highlighted the New Jersey delegation's breakfast.

During a visit to Capitol Hill, AFA's South Carolina delegation presented an award for a lifetime of service to Sen. Strom Thurmond (R–S. C.), chairman of the Senate Armed Services Committee. The Florida delegation presented an AFA appreciation award to Rep. Sam M. Gibbons (D-Fla.).

Secretary Widnall and General Fogleman took part in several of the Congressional breakfasts. Secretary Widnall visited breakfasts hosted by the South Carolina, Pennsylvania, Florida, Oklahoma, and Massachusetts delegations. General Fogleman visited the morning gatherings of groups from the South Central and Northwest Regions. He also appeared at many individual breakfasts, including those held by North Carolina, Utah, Georgia, California, and Florida. Visits by General

Photo by Paul Kennedy

Miss Jane Fogleman (kneeling), wife of Air Force Chief of Staff Gen. Ronald R. Fogleman, and Kathy McCoy, wife of AFA Chairman of the Board James M. McCoy, lay a wreath at the grave of Eleanor "Bee" Arnold, wife of USAF founding father Gen. "Hap" Arnold during ceremonies at Arlington Cemetery.

Moorman and the deputy chief of staff for Plans and Operations, Lt. Gen. John P. Jumper, highlighted the Texas delegation breakfast. Other senior Air Force officials also participated in the various delegation breakfasts.

Other Elections

Seven new National Vice Presidents were elected, and five were reelected. Newly elected are Charles G. Durazo (Central East Region), Arthur Trost (Far West Region), John J. Politi (Midwest Region), Dolores Vallone (Northeast Region), Ivan L. McKinney (South Central Region), Craig R. McKinley (Southeast Region), and Kenneth W. Calhoun (Southwest Region).

Elected to the Board of Directors for three-year terms were Henry W. Boardman of Gulfport, Miss., James E. Callahan of East Amherst, N. Y., Dr. Dan Callahan of Warner Robins, Ga., William A. Lafferty of Green Valley, Ariz., Stephen M. Mallon of Hampton, Va., and Joseph A. Zaranka of Bloomfield, Conn.

Three new Under-Forty Directors joining the AFA Board are Capt. Dale E. Seiber of Malmstrom AFB, Mont., Sandra L. Henninger of Cheyenne, Wyo., and Maj. Kevin Sluss of Randolph AFB, Tex.

For a complete list of Vice Presidents and Directors, including those reelected, see "This Is AFA," p. 86.

Aerospace Education Foundation

A video on "Meeting the AFJROTC Mission" won the Foundation's annual contest for presentations by AFJROTC cadets. For the third straight year, the winning entry was from Unit CA-863 at Del Campo High School in Fair Oaks, Calif. The cadets demonstrated how they fulfilled the AFJROTC mission by participating in leadership training, drill meets, and encampments. They also participated in a youth leadership council on drugs and alcohol and worked with the needy during the holidays.

Susan L. Roche, nominated by the Highpoint (N. J.) Chapter, won the Christa McAuliffe Memorial Award as the year's outstanding aerospace science, mathematics, and computer science teacher. The General E. W. Rawlings (Minn.) Chapter received the Sam E. Keith, Jr., Aerospace Education Award of Excellence. The award is named in honor of the late AFA leader and former National President and Board Chairman from Fort Worth, Tex.

Acknowledgments

Parliamentarian for the AFA National Convention was Martin H. Harris. David L. Blankenship was Sergeant at Arms. Inspectors of Elections were Dr. Phillip J. Sleeman (Chairman), R. Donald Anderson, and William D. Croom, Jr. Robert J. Cantu chaired the Credentials Committee, serving with Harold F. Henneke and Cheryl L. Waller.

The Association is particularly grateful to a corps of volunteers who assisted the staff in Convention support: Tammy Baker, Cecil Brendle, Jimmy Canlas, Evie Dunn, Noel Garcia, Charles and Mary Lucas, Jenifer and Julie Petrina, Glenda R. Shepela, Debbie Snyder, Daren Sorenson, Dana Steinhauser, Janet Voltz, and Leola Wall.

The 1997 Convention will be held at the Sheraton Washington Hotel, Washington, D. C., September 15–17. ■

Photo by Paul Kennedy

AFA National Secretary Mary Anne Thompson (right) pauses for refreshments during the Convention with former President Stuart (left) and his wife, Frances Langford Stuart (center), and former President Blankenship and his wife, Joan.

Photo by Paul Kennedy

National Director Tommy G. Harrison accepts Member of the Year honors from President Smith. Mr. Harrison, a member of the Central Florida Chapter, received a Presidential Citation for his work in 1995.

Photo by Paul Kennedy

Chairman of the Board James M. McCoy (left) and Florida State President William L. Sparks (right) award Rep. Sam M. Gibbons (D-Fla.) an AFA Citation in his office on Capitol Hill.

New Jersey State President Martin T. Capriglione (right) and Rep. Rodney Frelinghuysen (R–N. J.) (left) listen as Gen Ronald R. Fogleman, USAF Chief of Staff, and Rep. Jim Saxton (R–N. J.) discuss defense issues.

Photo by Paul Kennedy

Photo by Paul Kennedy

Sen. Edward M. Kennedy (D-Mass.), a member of the Senate Armed Services Committee, addressed a breakfast held by the Massachusetts delegation, including State Vice President Winston Gaskins (right).

Photo by Paul Kennedy

Rep. J. C. Watts (R-Okla.) (left) met with Air Force Secretary Sheila E. Widnall (right) and members of AFA's Oklahoma delegation—(left to right) former State President and current National Vice President (South Central Region) Kenneth W. Calhoun, State Vice President (Membership) Ann Ragland and State Vice President (Community Partners) Rhonda M. Trent.

Photo by Paul Kennedy

Sen. Strom Thurmond (R–S. C.) (third from left) received an award from AFA's South Carolina delegation for a lifetime of service. With Senator Thurmond are (left to right) James C. Wray, Charles W. Myers, State President Rodgers K. Greenawalt, James K. Rogers, and Gerald A. Daniel.

Photo by Paul Kennedy

Rep. Louise McIntosh Slaughter (D–N. Y.), a member of the House Budget Committee, accepts a Special Award from fellow New Yorker Robert C. Bienvenue, L. D. Bell Niagara Frontier Chapter member and a 1996 AFA Medal of Merit recipient.

Awards

Photo by Paul Kennedy

McDonnell Douglas President and CEO Harry C. Stonecipher accepts congratulations from National President Gene Smith on receiving the John R. Alison Award, AFA's highest honor for industrial leadership.

Crew Awards and Special Citations

Award	Recipient(s)	Achievement	Accepted by
Lt. Gen. Claire Lee Chennault Award	Maj. Robert J. Beletic, 31st Fighter Wing (4190th Provisional Wing), Aviano AB, Italy	Best aerial warfare tactician	Maj. Robert J. Beletic
Brig. Gen. Ross G. Hoyt Award	An aircrew of the 384th Air Refueling Squadron (KC-135), McConnell AFB, Kan.	Best air refueling aircrew	Capt. Glenn M. Farrar
Gen. Curtis E. LeMay Award	Crew R-70, 96th Bomb Squadron Barksdale AFB, La.	Best bomber aircrew	Capt. Russell F. Mathers
Gen. Jerome F. O'Malley Award	RC-135 Cobra Ball crew, 45th Reconnaissance Squadron (Crews R-04/R-15) and 97th Intelligence Squadron, Offutt AFB, Neb.	Best reconnaissance crew	Capt. John M. Harrison and TSgt. Robert T. Brandriff
Gen. Thomas S. Power Award	Crew S-121, 742d Missile Squadron, 91st Missile Wing, Minot AFB, N. D.	Best missile combat crew	Capt. Paul B. McArthur
Space Operations Award	Titan IV/K-15 Launch Crew, 30th Space Wing, Vandenberg AFB, Calif.	Best space operations crew	Lt. Col. Michael E. Hatch
Lt. Gen. William H. Tunner Award	An aircrew of the 1st Helicopter Squadron, 89th Airlift Wing, Andrews AFB, Md.	Best strategic airlift crew	Capt. Michael W. Harding
USAF Test and Evaluation Team of the Year	C-17 Initial Operational Test and Evaluation Team	Best test team	Col. Donald M. Dessert, Jr., USAF (Ret.)

National Aerospace Awards

Award	Recipient(s)	Achievement
H. H. Arnold Award *AFA's highest honor in national security to a member of the armed forces*	Gen. Ronald R. Fogleman, Chief of Staff, USAF	Dynamic leadership as Chief of Staff of the US Air Force; instilling stability and confidence within the force; initiating a revolutionary planning process that will lead the Air Force into the twenty-first century with powerful, new, and critically needed capabilities.
W. Stuart Symington Award *AFA's highest honor in national security to a civilian*	Sen. Ted Stevens	Longtime, strong support of the US military during twenty-eight years in the US Senate; tireless efforts in support of USAF and its members, both uniformed and civilian, significantly enhancing national security.
John R. Alison Award *AFA's highest honor for industrial leadership*	Harry C. Stonecipher, President and CEO, McDonnell Douglas Corp., Saint Louis, Mo.	Acknowledged leadership in the defense community, fostering an appreciation of the contributions of industry to national security; superb management and leadership in reengineering McDonnell Douglas's business and production techniques; intense focus on affordability, innovation, and partnership, leading his company to prominence in aerospace and enhancing defense industrial resources.
David C. Schilling Award *outstanding contribution in flight*	9th Bomb Squadron, Dyess AFB, Tex.	Outstanding leadership in global power-projection capability by successfully executing mission Coronet Bat, a circumnavigation of the globe by B-1Bs, in record time, exemplifying US resolve and power and contributing significantly to US security.
Theodore von Kármán Award *outstanding contribution in science and engineering*	Gene H. McCall, Ph.D. Scientific Advisory Board, Washington, D. C.	Brilliant direction of the "New World Vistas" technology study. In the tradition of Dr. Theodore von Kármán's landmark effort, "Toward New Horizons," that set the stage for a post–World War II Air Force, Dr. McCall's contribution will significantly improve aerospace industry, USAF, and the nation's security.
Gill Robb Wilson Award *outstanding contribution in arts and letters*	552d Air Control Wing, Public Affairs Team, Tinker AFB, Okla.	Effective communication of the Air Force message while expertly handling public affairs requirements for more than a dozen events of national and international significance, including the Oklahoma City bombing, while meeting normal requirements in an outstanding fashion.
Hoyt S. Vandenberg Award *outstanding contribution in aerospace education*	Harold C. Stuart, Jensen Beach, Fla.	Distinguished and inspirational leadership for almost fifty years in support of Air Force education, particularly in connection with the establishment, policy direction, and guidance of the US Air Force Academy; determined efforts that led the Academy to the forefront as the premier military service undergraduate educational institution.
Thomas P. Gerrity Award *outstanding contribution in logistics*	Col. Thomas L. Barr, Barksdale AFB, La.	Strong leadership, superior performance, and dedication to duty as commander, 2d Logistics Group, Barksdale AFB, La., which provided exemplary support to the 2d Bomb Wing and thirty-six associate units.
Department of Veterans Affairs Employee of the Year Award	Dr. Paul A. Heath, VA Regional Office, Muskogee, Okla.	Consummate professional performance as a counseling psychologist for the Veterans Affairs Regional Office, Muskogee, Okla., with duty at Oklahoma City, Okla.; selfless actions and compassion following the bombing of the Alfred P. Murrah Federal Building. After freeing himself from the rubble, he made numerous trips back into the building to help carry out his wounded friends and co-workers and within days resumed his normal caseload.

Citations of Honor

Recipient(s)	Achievement
Lt. Col. James P. Callahan, Hq. USAF, Washington, D. C.	Outstanding contribution to the nation's ability to project airpower in crucial regions of the world; created an integrated test and evaluation concept that allowed early fielding of the advanced End Game Countermeasures System (EGCMS) for the F-16 aircraft, which increases protection against surface-to-air missile attack; successful fielding of the EGCMS on F-16s supporting Operation Deliberate Force, which flew more than 350 sorties with no losses to SAMs.
Darleen A. Druyun, Hq. USAF, Washington, D. C.	Spearheading the successful Lightning Bolt acquisition reform initiatives that are revolutionizing Air Force business practices, producing billions of dollars in documented savings, and setting the standard for acquisition administration in the Department of Defense.
Hon. Richard C. Holbrooke, Washington, D. C.	Significant contribution to US security interests while assistant secretary of state for European and Canadian Affairs; decisive support of airpower as an instrument of foreign policy during his negotiation of peace accords for the Balkans; advocacy of precision air strikes and ability to capitalize on the conclusive military results, giving the Balkans a genuine opportunity for enduring peace.
Maj. Gen. Charles D. Link, Hq. USAF, Washington, D. C.	Outstanding support to the Commission on Roles and Missions while serving as assistant deputy chief of staff, Plans and Operations; driving enthusiasm and ability to energize his staff, leading to better understanding of airpower across all services, the Joint Staff, and the Department of Defense.
Robin E. Pozniakoff, Los Angeles AFB, Calif.	Inspirational and effective leadership in the development of a Global Positioning System training simulator; superior management and efficient acquisition approach, resulting in a highly capable system deployed ahead of schedule and contributing to greater operational effectiveness of USAF.
Spacebased Infrared System Program Office, Los Angeles AFB, Calif.	Leading a renaissance in the nation's infrared space surveillance program and significantly contributing to the revolution in the Department of Defense acquisition system—providing the US and its allies with state-of-the-art space surveillance well into the twenty-first century.
31st Fighter Wing, Aviano AB, Italy	Meritorious service in leading the 5,000-strong multinational, multiservice force in enforcing the UN's mandated no-fly zone over Bosnia-Hercegovina; flew more than 9,000 combat and support missions, despite adverse weather, twenty-four-hour operations, a congested airfield, and continual enemy threats; reengineered the wing's intelligence facility into what Department of Defense leaders have called the future of all intelligence facilities, the Wing Tactical Integration Planning facility.
37th Airlift Squadron, Ramstein AB, Germany	Outstanding contribution to national defense through extraordinary support of numerous and diverse operations, exercises, and rescue missions in the European theater, fostering friendships among nations, building international teamwork, and preserving human life.
89th Airlift Wing Andrews AFB, Md.	Excellence in its primary mission of transporting senior government officials; outstanding support of the requirements of Ambassador Richard C. Holbrooke's diplomatic efforts in the Balkans.

Management and Environmental Achievement Awards

Award	Recipient
AFMC Management	
AFMC Executive Management Award	Col. James H. Russell, Kelly AFB, Tex.
AFMC Middle Management Award	Col. Alan W. Schoolcraft, Wright-Patterson AFB, Ohio
AFMC Junior Management Award	Capt. Michelle C. Miller, Los Angeles AFB, Calif.
Environmental Achievement	
Gen. Edwin W. Rawlings Award for Environmental Excellence (Management)	Capt. James F. Grant, Jr., Andersen AFB, Guam
Gen. Edwin W. Rawlings Award for Environmental Excellence (Technical)	SSgt. Jeffery S. Caudill, Hill AFB, Utah

Professional, Civilian, and Educational Awards

Award	Recipient
CMSAF Thomas N. Barnes Award for Crew Chief of the Year	SSgt. Thomas G. Woller, Hurlburt Field, Fla.
Gen. Billy Mitchell Award for C^4 Excellence	Capt. Todd L. Glanzer, Ramstein AB, Germany
Paul W. Myers Award for Physicians	Lt. Col. J. Christopher Farmer, Lackland AFB, Tex.
Verne Orr Award for Human Resources	17th Training Wing, Goodfellow AFB, Tex.
Juanita Redmond Award for Nursing	Capt. Mona P. Mayrose, Pope AFB, N. C.
Stuart R. Reichart Award for Lawyers	Douglas J. Heady, Hq. USAF, Washington, D. C.
Personnel Manager of the Year	A1C Michelle A. (Rieper) Brewer, Offutt AFB, Neb.
Civilian Wage Employee of the Year	Donald E. Wade, Luke AFB, Ariz.
Civilian Program Specialist of the Year	Sigrid J. Gobel, Rhein-Main AB, Germany
Civilian Program Manager of the Year	John Borodko, RAF Lakenheath, UK
Civilian Senior Manager of the Year	Diana Filliman, Los Angeles AFB, Calif.
AFROTC Cadet of the Year	Theodore R. Meek, Utah State University, Logan, Utah
CAP Aerospace Education Cadet of the Year	Nicholas Kalair, Milan, Mich.
Diane O'Malley Angel of the Year	Mary Elizabeth Cardarette, Texas A&M University, College Station, Tex.
Joan Orr Award for Air Force Spouse of the Year	Melissa R. Hagan, Elmendorf AFB, Alaska
Christa McAuliffe Memorial Award for Teachers	Susan L. Roche, Vernon, N. J.
Sam E. Keith, Jr., Aerospace Education Award of Excellence	General E. W. Rawlings Chapter, Minn.
George D. Hardy Award	Richard A. Ortega, Central Florida Chapter, Fla.
Outstanding Initiative in Visions of Exploration Program Award	Alamo Chapter, Tex.
Outstanding Visions of Exploration Chapter Award	Fort Worth Chapter, Tex.
Aerospace Education Foundation 1995–96 AFJROTC Winner	Del Campo High School, Fair Oaks, Calif.

Richard A. Ortega, winner of AEF's George D. Hardy Award, is all smiles as he receives thanks from AEF Board Chairman Thomas J. McKee (left) and applause from AEF President Walter E. Scott (right).

Photo by Susan Kennedy

Air National Guard and Air Force Reserve Awards

Award	Recipient(s)	Achievement	Accepted by
Air National Guard Outstanding Unit	104th Fighter Wing, Barnes MAP, Mass.	Outstanding ANG unit of the year	Col. Thomas Astaldi
Air Force Reserve Outstanding Unit	419th Fighter Wing, Hill AFB, Utah	Outstanding Reserve unit	Brig. Gen. David E. Tanzi
President's Award for the Air Force Reserve	A crew of the 64th Airlift Squadron, 928th Airlift Wing, O'Hare IAP/ARS, Ill.	Outstanding Reserve aircrew	MSgt. James F. Downey
Earl T. Ricks Award	A pararescue team of the 129th Rescue Wing, Moffett Federal Airfield, Calif.	Outstanding airmanship in the Air National Guard	CMSgt. Alan L. Williams
CMSgt. Dick Red Award	CMSgt. James H. Honeycutt McGhee Tyson Airport, Tenn.	Leadership and technical expertise in aircraft maintenance	CMSgt. James H. Honeycutt

This Is the Aerospace Education Foundation

As of September 19, 1996

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1996 Unit Activity Awards

Donald W. Steele, Sr., Memorial Award: AFA Unit of the Year
Montgomery Chapter, Ala.

Outstanding State Organization
AFA Florida

Outstanding Chapters
Colorado Springs–Lance Sijan Chapter, Colo. (more than 900 members)
Northeast Texas Chapter, Tex. (401–900 members)
On Wings of Eagles Chapter, Fla. (151–400 members)
Northern Shenandoah Valley Chapter, Va. (20–150 members)

Exceptional Service Awards
Central Florida Chapter, Fla. (Aerospace Education)
Harry S. Truman Chapter, Mo. (Best Single Program)
Fort Worth Chapter, Tex. (Communications)
Ark-La-Tex Chapter, La. (Community Relations)
Cape Canaveral Chapter, Fla. (Overall Programming)
Maj. Gen. Oris B. Johnson Chapter, La. (Veterans' Affairs)

Photo by Susan Kennedy

Arthur C. Storz, Sr., Membership Awards

AFA's most prestigious membership awards are named for Arthur C. Storz, Sr., a former permanent AFA National Director, a Life Member, and a principal founder of the Ak-Sar-Ben (Neb.) Chapter. The Storz Membership Awards, made possible through a generous endowment to the Association by his son Art Storz, Jr., have been awarded for membership excellence based on criteria approved by AFA's Board of Directors for the year ending March 31, 1996.

Chapter Award

Presented to the AFA chapter that produces the highest number of new members during the twelve-month period ending March, 31, 1996, as a percentage of total chapter membership as of March 31, 1995. The chapter must also meet certain other minimum indicators of overall performance and excellence.

Long's Peak Chapter, Colo.

Individual Award

Presented to the AFA member who has done the most to promote AFA membership during 1995–96.

Col. Pharris "F. J." Johnson, USAF

1996 AFA Membership Awards

Photo by Paul Kennedy

Opposite: Col. Pharris "P. J." Johnson, USAF (center), stands with President Smith (right) and AFA Chairman of the Board James M. McCoy after being presented with the Arthur C. Storz, Sr., Individual Membership Award. Above, Chapter President Roy A. Boudreaux thanks President Smith on behalf of the Montgomery (Ala.) Chapter, recipient of the Donald W. Steele, Sr., Memorial Award for being AFA's Unit of the Year.

The following chapters have qualified for these awards based on their recruitment of new members during the twelve-month period ending March 31, 1996.

Jack Gross Awards

These awards recognize the chapter in each size category with the highest number of new members as a percentage of chapter size at the beginning of the membership year. A minimum of ten is required.

Small Chapter: Northern Shenandoah Valley, Va.
Medium Chapter: Long's Peak, Colo.
Large Chapter: L. D. Bell Niagara Frontier, N. Y.
Extra Large Chapter: General B. A. Schriever Los Angeles, Calif.
Chapter Larger than 1,500: Tucson, Ariz.

Special Recognition—Sustained New Member Recruitment

These awards recognize chapters that have attained the quarterly new-member recruitment goal for three consecutive quarters, from October 1995 to June 1996.

Anchorage, Alaska
Ark-La-Tex, La.
Boston, Mass.
Cape Canaveral, Fla.
Cape Fear, N. C.
Central Florida, Fla.
Central Missouri, Mo.
Cochise, Ariz.
Col. H. M. "Bud" West, Fla.
Colorado Springs–Lance Sijan, Colo.
Concho, Tex.
Contrails, Kan.
Eagle, Pa.
Enid, Okla.
Florida Highlands, Fla.
Fort Wayne, Ind.
Fresno, Calif.
Gen. Charles L. Donnelly, Jr., Tex.
General Robert E. Huyser, Colo.
Greater Rockford, Ill.
Grissom Memorial, Ind.
Highpoint, N. J.
Indian River, Fla.
Kitty Hawk, N. C.
Lawrence D. Bell Museum, Ind.
L. D. Bell Niagara Frontier, N. Y.
Leigh Wade, Va.
Lloyd R. Leavitt, Jr., Mich.
Lloyd Schloen Empire, N. Y.
Long's Peak, Colo.
Lufbery-Campbell, Germany
Madison, Wis.
Mel Harmon, Colo.
Mercer County, N. J.
Miami, Fla.
Northeast Iowa, Iowa
Northeast Texas, Tex.
Northern Shenandoah Valley, Va.
On Wings of Eagles, Fla.
Ouachita, Ark.
Panhandle AFA, Tex.
Peace River, Fla.
Permian Basin, Tex.
Phoenix Sky Harbor, Ariz.
Pioneer Valley, Mass.
Richard Bong, Minn.
Richard S. Reid, Ariz.
Roanoke, Va.
Robert H. Goddard, Calif.
Sal Capriglione, N. J.
Southern Indiana, Ind.
Steel Valley, Ohio
Thomas B. McGuire, Jr., N. J.
Tri-County, N. J.
Tucson, Ariz.
Union Morris, N. J.
William A. Jones III, Va.

AFA and the Air Force want you to be part of **Air Force Fifty**—the celebration of USAF's fiftieth anniversary in Las Vegas April 22–26, 1997.

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- A spectacular multimedia historical retrospective of the first fifty years of the US Air Force.
- An international airpower symposium. Among the dignitaries expected to attend are 112 chiefs of foreign air forces.

For registration information, write to:

Air Force Fifty
Air Force Association
1501 Lee Highway
Arlington VA 22209-1198

or call AFA's Fax on Demand System
(800) 232-3563 and order document number 1997

Air Force Fifty staff can be reached at (800) 552-5427

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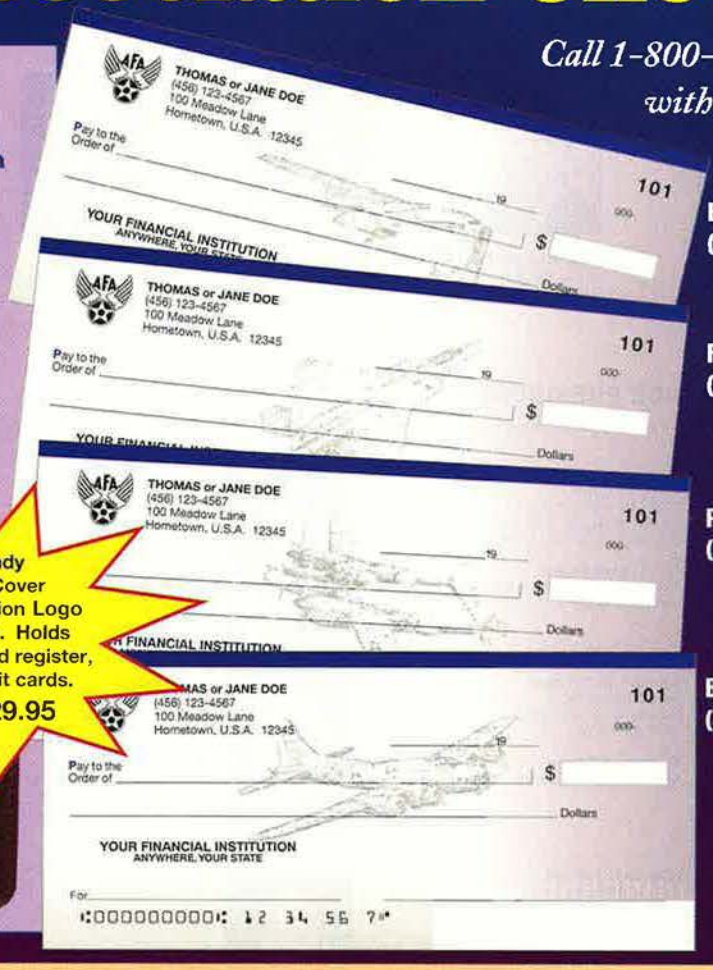

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Books

Compiled by Wendy Alexis Peddrick, Editorial Associate

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Way, Chris. *Glenn Miller in Britain Then and Now.* RZM Imports, P. O. Box 995, Southbury, CT 06488. 1996. Including photos and index, 159 pages. $39.95. ■

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Verbatim

Strong Spirit

"No military authority I know of argues that the twenty-one B-2s currently approved and funded represent an adequate modern bomber force. Secretary of Defense [William J.] Perry and Air Force Chief of Staff [Gen. Ronald R.] Fogleman are both on record that more B-2s are desirable but precluded by budget constraints. I simply cannot agree with the premise that a $250 billion annual defense budget cannot accommodate what is clearly our most capable and reliable deep-strike weapon. It is instructive to note that the cruise missiles used to strike Iraq [in September 1996] cost approximately $70 million. Two B-2s could have delivered thirty-two precision bombs (having much better accuracy) costing only $6 million—and future precision guided bombs will lower the cost for such a mission to just $600,000. If not for a slow and cumbersome procurement process, we could have these cheaper precision guided bombs today. This is exactly the kind of leverage a capable and reusable platform like the B-2 offers."

Rep. Newt Gingrich (D-Ga.), Speaker of the House, in a September 16, 1996, letter to President Clinton supporting procurement of B-2 Spirit bombers beyond the twenty-one currently programmed.

Assume Nothing

"Europeans should never take for granted American interest in participating in European security. There is a strong streak of isolationism in the United States. For the last fifty years, we have suppressed that streak. . . . We, as Americans, have to continue to work to suppress that isolationist streak. You, as Europeans, also have to work at maintaining our involvement."

Defense Secretary Perry, in September 24, 1996, remarks to a European defense seminar in Copenhagen, Denmark.

The "Crucial" F-22

"This bill makes good on our pledge to keep our armed forces the best-trained, best-equipped fighting force on Earth. It carries forward our modernization programs by funding crucial weapon systems, such as the F-22."

President Clinton, in a September 23, 1996, statement at the signing of the Fiscal 1997 defense authorization bill.

Warning Did Exist

"Intelligence did provide warning of the terrorist threat to US forces in Saudi Arabia. As a result, those responsible for force protection had both time and motivation to reduce vulnerabilities. However, it was not enough. Tactical details were needed, and they could only have been provided by human intelligence."

Gen. Wayne A. Downing, USA (Ret.), in a September 16, 1996, news briefing at the release of the report on the June 25 bombing of Khobar Towers in Saudi Arabia.

The Last of Tailhook?

"I attended Tailhook . . . in 1990 and 1991 in my official capacity as assistant chief of Naval Personnel for Distribution. We, the leadership of naval aviation, including myself, permitted an atmosphere to exist wherein bad things could happen and did happen. . . . While I can't change the past, I can and I did learn from it, and so did the rest of the Navy. I was cautioned by the Secretary of the Navy for not being proactive in monitoring the conduct of junior officers and not taking effective action to prevent misconduct at Tailhook. . . . I believe very strongly that [the caution] brings me strength. . . . I regret, as I said in my opening statement, every day that we got ourselves into a situation where we have to be still talking about Tailhook. There was a fundamental flaw in all of us as leaders to allow that to happen."

Adm. Jay L. Johnson, in July 31, 1996, testimony before the Senate Armed Services Committee on his nomination to become the US Navy's new Chief of Naval Operations.

The Age of Info-Dangers

"During the last fifteen years, we have experienced at least three major information revolutions—each introducing unique security problems—with additional revolutions expected into the indefinite future. The personal computer revolution begat viruses passed by floppy disk or downloaded from bulletin boards. The widespread explosive growth of the Internet brought greatly increased hacking, and its related 'packet sniffers' and 'packet spoofers,' that easily crossed international and organization boundaries. The World Wide Web phenomenon, with its browsers and the Java language and 'applets,' is promoting the use of downloadable, executable code from strangers, while bypassing normal fire-wall protections—a combination that is ripe for exploitation by malefactors."

Robert H. Anderson, head of RAND Corp. Information Science Group, in June 25, 1996, testimony to the Senate Governmental Affairs Committee.

Hussein's New Strength

"In general, I believe that Saddam Hussein's position has been strengthened in the region recently. Why? First, six years of containment and sanctions have failed to dislodge Saddam Hussein from leadership. Second, Saddam Hussein still has the possibility of threatening his neighbors. . . . Third, there is a perception of weakened determination of the coalition to meet Iraqi aggression. . . . Fourth, [there is] Turkey's apparent willingness to deal more directly with Saddam. . . . Finally, Saddam Hussein has cleverly parlayed concerns about relief to UN Resolution 986, which will permit Saddam to export oil, . . . and hopes to gain a collapse of the sanctions. . . . All of these factors contribute today to a strengthened position for Saddam Hussein in the region."

CIA Director John M. Deutch, in September 19, 1996, testimony to the Senate Select Committee on Intelligence. ■

AFA/AEF National Report

By Frances McKenney, Assistant Managing Editor

AFA Presents Picture of Unity

Twenty senior association representatives to the Military Coalition coordinated their busy schedules and gathered on Capitol Hill in August. The informal meeting "reaffirmed our purpose, the spirit of cooperation," said AFA Executive Director John A. Shaud. The group portrait (right) that resulted symbolizes the unity that the coalition can bring to its legislative initiatives in Fiscal Year 1997.

This agenda includes veterans and survivor benefits; personnel and compensation concerns, such as a three percent pay raise; Guard and Reserve issues, such as tax credits for employers of deployed reservists; and health-care reform, such as enacting Medicare Subvention and a test to determine the feasibility of offering the Federal Employees Health Benefit Program as an alternative to Tricare.

The Military Coalition, a diverse group of military and veterans associations that have worked together for more than ten years, numbers twenty-four organizations, collectively representing more than five million members.

Representatives from the Military Coalition and its affiliated and supporting organizations gathered on Capitol Hill in August. First row (l–r): Roger Sandler, Reserve Officers Association of the US (supporting organization); Carol Cole, National Military Family Association; Richard West, Association of the US Army (affiliate member); John Muench, The Retired Enlisted Association; and Mike Nelson, The Retired Officers Association.

Second row: Mike Lord, Commissioned Officers Association of the US Public Health Service; Chuck Calkins, Fleet Reserve Association; Bob Lewis, Chief Warrant and Warrant Officers Association, US Coast Guard; and Don Hess, US Army Warrant Officers Association.

Third row: William Dando, The Military Chaplains Association of the USA; Bob Lyman, Naval Enlisted Reserve Association; Peter Huhn, Navy League of the US (supporting organization); Joe Watts, National Order of Battlefield Commissions; Herb Rosenbleeth, Jewish War Veterans of the USA; and John Shaud, Air Force Association (affiliate member).

Fourth row: Bob Walker, United Armed Forces Association; Steve Mirick, Association of Military Surgeons of the US; Ray Hord, Marine Corps Reserve Officers' Association; Michael Cline, Enlisted Association of the National Guard of the US; and Paul Haynes, National Guard Association of the US (supporting organization).

Not shown: Richard Stephenson, Army Aviation Association of America; Paul J. Seton, Marine Corps League; Bob Manhan, Veterans of Foreign Wars, and Tom Scaramastro, US Coast Guard Association and the US Coast Guard Enlisted Association.

USAF Legend Stars in AFA Video

Col. Francis S. "Gabby" Gabreski, USAF (Ret.), USAF's top living ace, traveled to AFA headquarters in August to tape his part of the new AFA video, "People, Power, and Mission: The United States Air Force at 50." The thirty-minute video covers the history of USAF and includes recollections by Air Force veterans and their families.

Colonel Gabreski, who has 34.5 victories to his credit and who also survived ten months as a prisoner of war at Stalag Luft I in Germany, was interviewed about his career, most memorable missions, and the future of airpower.

Before returning to his home in Dix Hills, N. Y., Colonel Gabreski visited the Korean War Veterans Memorial on the National Mall in Washington,

Photo by Christy Franchol James

Honorary Chairman Stuart Symington, Jr., and Janey Symington, Gen. Robert Rutherford and Kita Rutherford, National Director Mary Ann Seibel, and civic leaders Elizabeth Peterson and Roger Peterson (left to right) enjoyed the Ball of Mid-America at the Ritz-Carlton Saint Louis in Clayton, Mo., in May.

D. C. During the Korean War, the Colonel served with the 4th Fighter-Interceptor Wing and later commanded the 51st FIW, becoming a jet ace on April 1, 1952.

Honors for Outstanding Missileers

Lt. Gen. Brent Scowcroft, USAF (Ret.), former National Security Advisor to Presidents Gerald Ford and George Bush, joined the **Northern Utah Chapter,** Air Force Space Command, and the Intercontinental Ballistic Missile System Program Office at Hill AFB, Utah, in honoring outstanding missileers at the seventh annual Scowcroft/AFA ICBM Awards Banquet. The occasion also served as the chapter's salute to AFA's fiftieth anniversary.

The Northern Utah Chapter (formerly the Ogden-Wasatch Chapter) organized the banquet, held at the Hill Aerospace Museum, with generous funding from the ICBM SPO's associate contractors. Fifteen people were recognized as the best maintainers from various Space Command missile wings and best technicians from the Ogden Air Logistics Center at Hill.

General Scowcroft, who retired from the Air Force in 1975, is a native of Ogden and a consultant.

In June, the Northern Utah Chapter sponsored the dedication of a conference room at the ICBM SPO headquarters in the name of Gen. Bernard A. Schriever, USAF (Ret.).

Chapter President Michael D. Jackson described General Schriever as "the father of the nation's ICBM weapon systems." The General commanded the Air Force Western Development Division in Los Angeles, Calif., in 1954, directing the development of the ICBM and USAF's initial space programs. He is now a management consultant based in Washington, D. C., and a member of the **Nation's Capitol (D. C.) Chapter.**

Table for 9,000?

These people really know how to party: The **Ak-Sar-Ben (Neb.) Chapter** threw a picnic in July, and 9,000 people showed up.

The chapter joined the Bellevue, Neb., Chamber of Commerce and the Offutt AFB Advisory Council in sponsoring the event at the base's lake.

Cathy L. Williams, a chapter board member and the Nebraska state vice president for Communications, said the idea for the picnic came about because the chapter is "always looking for different ways to show appreciation for the military."

Convening in California

An ANG facility offered a special venue for the California State Convention. In July, the 144th Fighter Wing (ANG) welcomed the Golden State's nineteen chapters to its facility at Fresno Air Terminal, kicking off four days of convention activities with a tour of the base and a barbecue at its club.

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"If you want to be 'in the know' about developments concerning national security, you need to read Air Force *Magazine."*

—Rep. Walter B. Jones, Jr.

The convention later held a luncheon in Fresno, where sixty-nine awards were presented. They included recognition for membership growth in a small chapter, **Bakersfield Chapter;** medium chapter, **Golden Gate Chapter;** and large chapter, **Sacramento Chapter.**

Brig. Gen. Larry K. Arnold, ANG assistant for Readiness to the director of the Air National Guard and commander of the ANG Readiness Center at Andrews AFB, Md., was keynote speaker for an awards banquet held that night. Thirty-three awards were presented, among them Chapter of the Year to the **Bob Hope Chapter.**

The **Fresno Chapter,** headed by CMSgt. Patrick L. Morin, ANG, hosted the convention.

Photo by Kenneth Jacobi

Lining up to honor a native son are (left to right) Wisconsin State President Gilbert Kwiatkowski, Billy Mitchell Chapter President Charles Marotske, Robert Jones—who received the chapter's Billy Mitchell Award—guest speaker Ernest Norquist, and master of ceremonies Maj. James Masters, ANG.

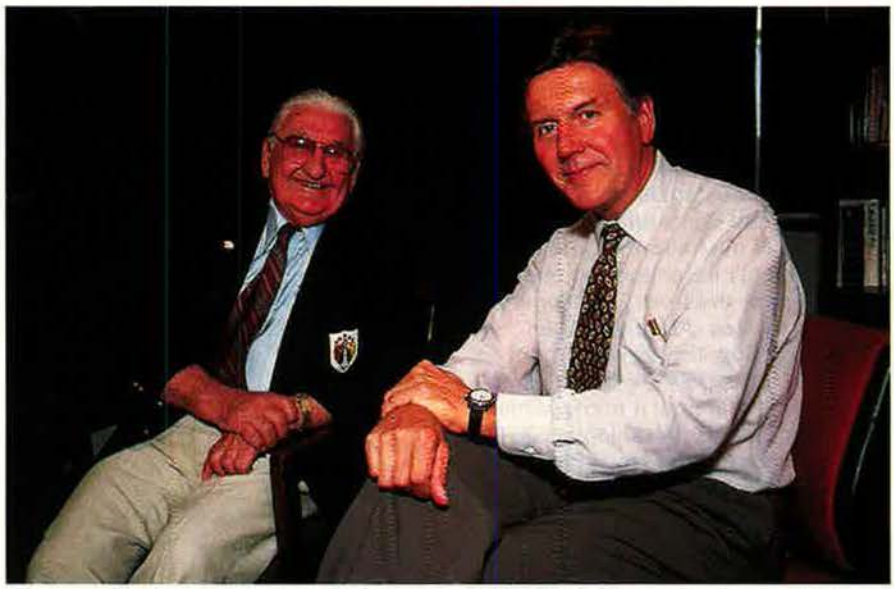
USAF Support at Dak To

As a soldier in the Army's 173d Airborne Brigade in the Vietnam War, 1st Lt. Gerald T. Cecil fought in the battle of Dak To against North Vietnamese Army regulars who were planning to attack a US Special Forces camp there. The hill-by-hill fighting lasted from November 3 until December 1, 1967.

Lieutenant Cecil earned a Distinguished Service Cross for his actions as a platoon leader at Dak To.

Lexington (Ky.) Chapter member Glenn Dishman read about these events in a 1993 book, *Dak To: The 173d Airborne Brigade in South Vietnam's Central Highlands, June–November 1967,* by Edward F. Murphy. He had an interest in the topic, having supported the 173d as an EC-47 pilot. He noticed in the book's epilogue that Lieutenant Cecil—now a retired Army Reserve colonel—lived in nearby Winchester, Ky. He tracked him down, and that's how Colonel Cecil became a guest speaker for a recent chapter meeting.

In recounting his experiences at Dak To, Colonel Cecil gave credit to the Air Force for providing critical air support during the month-long series of firefights.



Staff photo by Guy Aceto

For an AFA video, Col. Francis S. Gabreski, USAF (Ret.), recalled some highlights of his Air Force years for interviewer Tim White (right). USAF's top living ace, whose post-military career included executive positions with Grumman and the Long Island Railroad, is a member of the Iron Gate (N. Y.) Chapter.

In Billy Mitchell's Home State

In August, the **Billy Mitchell (Wis.) Chapter** selected Col. Robert J. Jones, USAF (Ret.), as recipient of its thirty-third Billy Mitchell Award. The award recognizes outstanding contributions to aerospace made by a Wisconsin native or someone who has spent a significant number of years in the state.

Colonel Jones is a native of Ashland, Wis., and a member of the **Sacramento (Calif.) Chapter.** He enlisted in the Army Air Corps in 1940 and was at Clark Field in the Philippines when the Japanese attacked Pearl Harbor. He survived the Bataan Death March and forty-one months as a POW. Colonel Jones also served two tours of duty in Vietnam, flying 316 sorties in C-123Bs. He retired from the Air Force after thirty years and went on to fly for several civilian airlines in Hawaii.

The Billy Mitchell Chapter held the award dinner for Colonel Jones at the 128th Air Refueling Wing (ANG) facility at General Mitchell IAP, Wis. The guest of honor flew in from Roseville, Calif., for the event, and about two dozen of his relatives from Wisconsin and Michigan helped celebrate the occasion.

Hosting the Warbirds

A visit from the Collings Foundation's restored World War II bombers garnered AFA some eye-catching newspaper coverage in Mansfield, Ohio, when the **Frank P. Lahm (Ohio) Chapter** hosted the fly-in and exhibit of the B-17G Flying Fortress *Nine-O-*

Nine and the B-24J Liberator *All American.*

Chapter President Ralph E. Shadel said the Collings Foundation, of Stowe, Mass., found him through another AFA chapter and asked him to arrange the second Ohio stop on the warbirds' 1996 Celebration of Freedom tour. Mr. Shadel and chapter officers MSgt. A. John Esbenshade, Jr., ANG; Mearl A. Nichols; 2d Lt. Timothy P. Kern, ANG; and Robert J. Puglisi set to work, securing a location, lodging, transportation, meals, and publicity for the event.

Mr. Shadel said hundreds of visitors were on hand at the Mansfield Lahm Airport to watch the planes land on August 11 and take off three days later. The pilots told the chapter members that they would be able to keep the warbirds flying only as long as parts were available. For this reason, Mr. Shadel said, some of the "old-timers" stood at the flight line, shaking their heads as they watched the bombers take off, sad that they might never see them flying again.

More Chapter News

Jo Smith of the **Central Oklahoma (Gerrity) Chapter** was elected state president at the Oklahoma State Convention in July. Ms. Smith is a worldwide inventory management specialist in the Commodities Division at Oklahoma City Air Logistics Center, Tinker AFB, Okla. Formerly the Oklahoma State Executive Secretary, she also coordinated this year's convention, hosted by her chapter.

One highlight of the convention was a visit to the Airborne Warning and Control System facility at Tinker and a tour of the E-3 AWACS aircraft of Brig. Gen. Silas R. Johnson, Jr., then 552d Air Control Wing commander.

Active-duty awards went to Capt. Paul Eberhart of Vance AFB, MSgt. Randy Bauer of Altus AFB, TSgt. Paul K. Crouch of Tinker AFB, and SrA. Francesca Wheeler of Altus AFB. Capt. Mary K. Roehl and TSgt. Mitchell Chandran, both from the 507th Air Refueling Wing, Tinker AFB, received Reserve awards. SSgt. Brian D. Lavoie of Standard Systems Group at Tinker AFB was introduced to the audience as one of USAF's twelve Outstanding Airmen for 1996.

Earlier in the year, the Central Oklahoma Chapter honored Lt. Gen. Kenneth E. Eickmann, then commander of Oklahoma City ALC, with the Earl T. O'Loughlin Achievement Award for logistics management. It recognized his leadership during the rescue effort after the bombing of the Alfred P. Murrah Federal Building in Oklahoma City in 1995, his interservice initiatives with the Navy, and his support for Tinker AFB during the base realignment and closure process. General Eickmann is now commander of Aeronautical Systems Center at Wright-Patterson AFB, Ohio.

The **Mile High (Colo.) Chapter** hosted the thirty-sixth annual Colorado State Convention in August. The **Colorado Springs–Lance Sijan Chapter** was named Chapter of the Year, and its president, Howard Vasina,

In July, Joan Blankenship, National Secretary Mary Anne Thompson, Oklahoma Air Logistics Center Commander Maj. Gen. Charles Perez and Miriam Perez, and the new Oklahoma State President Jo Smith (left to right) donned western dress for an Oklahoma State Convention banquet at the National Cowboy Hall of Fame.

AFA/AEF National Report

took home the Member of the Year award. Gen. Joseph W. Ashy, then commander in chief of NORAD and US Space Command and commander of Air Force Space Command, was guest speaker.

Former National Vice President (Southeast Region) Stanley V. Hood, of the **Columbia (S. C.) Chapter,** presented an AFA Medal to Cadet Maj. Gibb Little at a May awards banquet at Dutch Fork High School in Irmo, S. C.

At an awards banquet in April, Edgar Wolf, Jr., of the **Brig. Gen. Frederick W. Castle (N. J.) Chapter,** presented an AFA Medal to Cadet 1st Lt. Shaheen Mozaffari of Washington Township High School in Sewell, N. J. The next month, Mr. Wolf presented another AFA Medal to Cadet Maj. John Nicholas Strasser of Cherry Hill High School West, Cherry Hill, N. J., during an awards ceremony and drill competition.

The **Frank Luke (Ariz.) Chapter** presented Cadet Col. Nick Kruszalnicki, from Agua Fria High School in Goodyear, Ariz., with an AFA Medal in an award ceremony in May. Cadet Kruszalnicki was the AFJROTC commander at the school and this fall was scheduled to join the AFROTC program at Arizona State University.

If you were named Jason, you had a good chance of receiving an award at the **Roanoke (Va.) Chapter's** annual awards dinner. The AFJROTC Outstanding Cadets for 1996 were Cadet Lt. Col. Jason L. Crockett of Patrick Henry High School and Cadet Col. Jason D. Wimbush from William Fleming High School. Jason Hultquist, of Addison Aerospace Magnet School, took home the award for Outstanding Aerospace Student. The school's principal, Paul McKendricks, accepted the Chapter President's Award at the ceremony. All schools are located in Roanoke.

Chapter President George McKay also reported that their quarterly meeting featured a presentation by Andrew J. Vinson, executive director of a 240-bed comprehensive care center for Virginia's veterans. Mr. McKay said this meeting topic was part of an ongoing series aimed at educating chapter members on veterans' services available in their area.

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. ■

Unit Reunions

Operation Linebacker II participants from all services and military historians. February 1, 1997, in Tampa, Fla. **Contact:** Maj. Neil Cosentino, USAF (Ret.), 708 S. Davis Blvd., Tampa, FL 33606-3914. Phone: (813) 251-4669.

7th Bomb Wing B-36 Ass'n. April 23–27, 1997, at the Ramada Hotel Downtown in Fort Worth, Tex. **Contact:** Richard S. George, P. O. Box 330279, Fort Worth, TX 76163-0279. Phone: (817) 292-4932.

7th Special Operations Squadron (1968–74). April 3–6, 1997, in Fort Walton Beach, Fla. **Contact:** Col. James W. Bushey, USAF (Ret.), 1216 N. Lakeshore Dr., Niceville, FL 32578. Phone: (904) 897-4516.

Pilot Class 45-B, Marfa, Tex. April 3–4, 1997. **Contact:** David Emison, 19110 Candletrail Dr., Spring, TX 77388. Phone: (713) 353-1661.

444th Fighter-Interceptor Squadron. April 18–19, 1997, at the Holiday Inn Airport in North Charleston, S. C. **Contact:** Lt. Col. Wallace E. Mitchell, USAF (Ret.), 535 Mimosa Rd., Sumter, SC 29150. Phone: (803) 469-3297.

465th Troop Carrier Wing. April 21–25, 1997, at the Gold Coast Hotel and Casino in Las Vegas, Nev. **Contact:** Jim Strickland, 3218 Greenwood Ct., Fort Collins, CO 80525-2916. Phone: (970) 282-0209.

556th Reconnaissance Squadron. April 4–6, 1997, in Las Vegas, Nev. **Contact:** Lt. Col. Donald J. Chase, USAF (Ret.), 3923 N. 111th Plaza, Omaha, NE 68164-2858. Phone: (402) 493-5612.

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.

The following reunions will be held in conjunction with USAF's fiftieth-anniversary celebration:

F-86 Sabre Pilots Ass'n. April 22–26, 1997, in Las Vegas, Nev. **Contact:** Col. Charles C. Carr, USAF (Ret.), 4464 Rheims Pl., Dallas, TX 75205. Phone: (214) 526-4039.

2d Bombardment Ass'n (2d Bomb Group/Wing). April 22–26, 1997, in Las Vegas, Nev. **Contact:** Kemp F. Martin, 806 Oak Valley Dr., Houston, TX 77024. Phone: (713) 464-0401.

306th Bomb Wing (McCoy AFB, Fla.). April 22–27, 1997, in Las Vegas, Nev. **Contact:** Joe Demes, 1585 Mercury St., Merritt Island, FL 32953. Phone: (407) 452-4417.

AFROTC Det. 752, Wilkes University (formerly Wilkes College). Seeking graduates for a reunion in March 1997 in Wilkes-Barre, Pa. **Contacts:** Lt. Col. Christopher F. Greco, USAF, or Maj. Marian Watkins, USAF, AFROTC Det. 752, Slocum Hall, 262-264 S. River St., Wilkes University, Wilkes-Barre, PA 18766-0001. Phone: (800) 945-5378, ext. 4860.

Seeking Air Force personnel stationed in **Berlin, Germany,** 1945–94, for a reunion in Kansas City, Mo., in 1997. **Contact:** Les Rosenbaum, 244 E. Hamel Rd., Huachuca City, AZ 85616. Phone: (520) 456-1910. Fax: (520) 458-0314.

Officer Candidate School (1946–47), Lackland AFB, Tex. Seeking graduates for a reunion in February 1997. **Contact:** Col. Jack A. Buzbee, USAF (Ret.), Box 406, Hurst, IL 62949. Phone: (618) 987-2684.

Pilot Class 57-L, Bryan AFB, Tex. Seeking members for a reunion in 1997. **Contacts:** Richard D. Jerome, 20432 N. 109th Dr., Sun City, AZ 85373. Phone: (602) 566-0982 or (602) 956-9666 (Dan Blanton).

126th Bomb Wing, 108th, 168th, and 180th Bomb Squadrons, and ground support groups and squadrons (1951–53). Seeking contact with active-duty and Guard members who served at Langley AFB, Va., and Bordeaux and Laon, France, for a reunion in May or June 1997. **Contact:** Thomas G. Baranski, 6190 Quince Rd., Memphis, TN 38119. Phone: (901) 683-1206. ■

Pieces of History

Photography by Paul Kennedy

Enlisted Heritage

Memorabilia courtesy Enlisted Heritage Hall, Maxwell AFB, Gunter Annex, Ala.

Serving as everything from personnel managers to missile maintainers to pararescuemen, noncommissioned officers are the backbone of the Air Force. Thirty years ago, when Paul W. Airey became the first Chief Master Sergeant of the Air Force, they gained a strong advocate in the Pentagon as well. Today's NCOs "don't want to be just tradesmen and technicians," said CMSAF David J. Campanale before his retirement. "They also want to be professionals." These well-worn NCO uniforms—the uniform with the "A" from World War I (center), a woman's uniform from the 1960s (bottom), and the familiar green fatigues—testify to the evolving but always vital role of the enlisted force.

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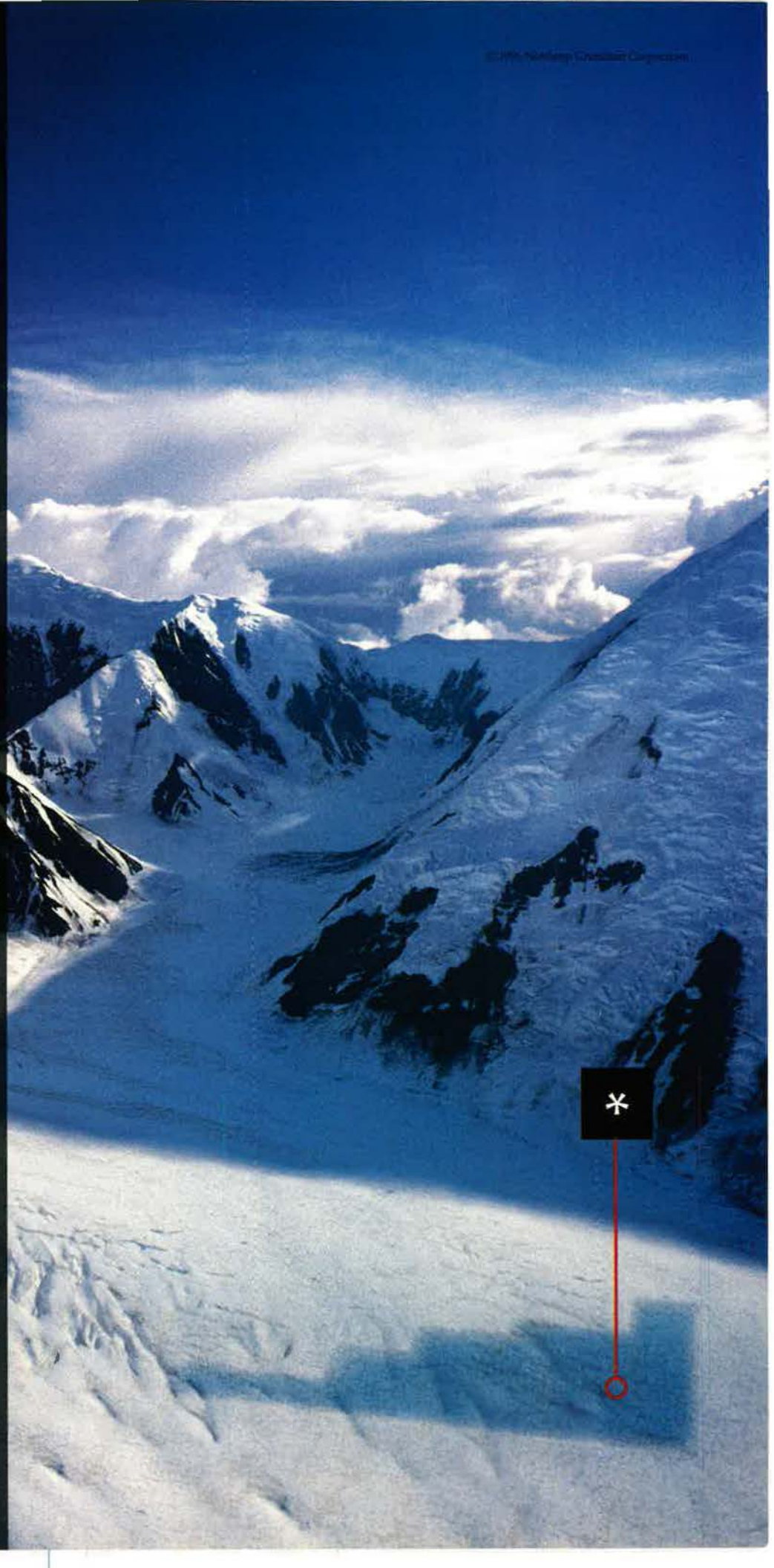

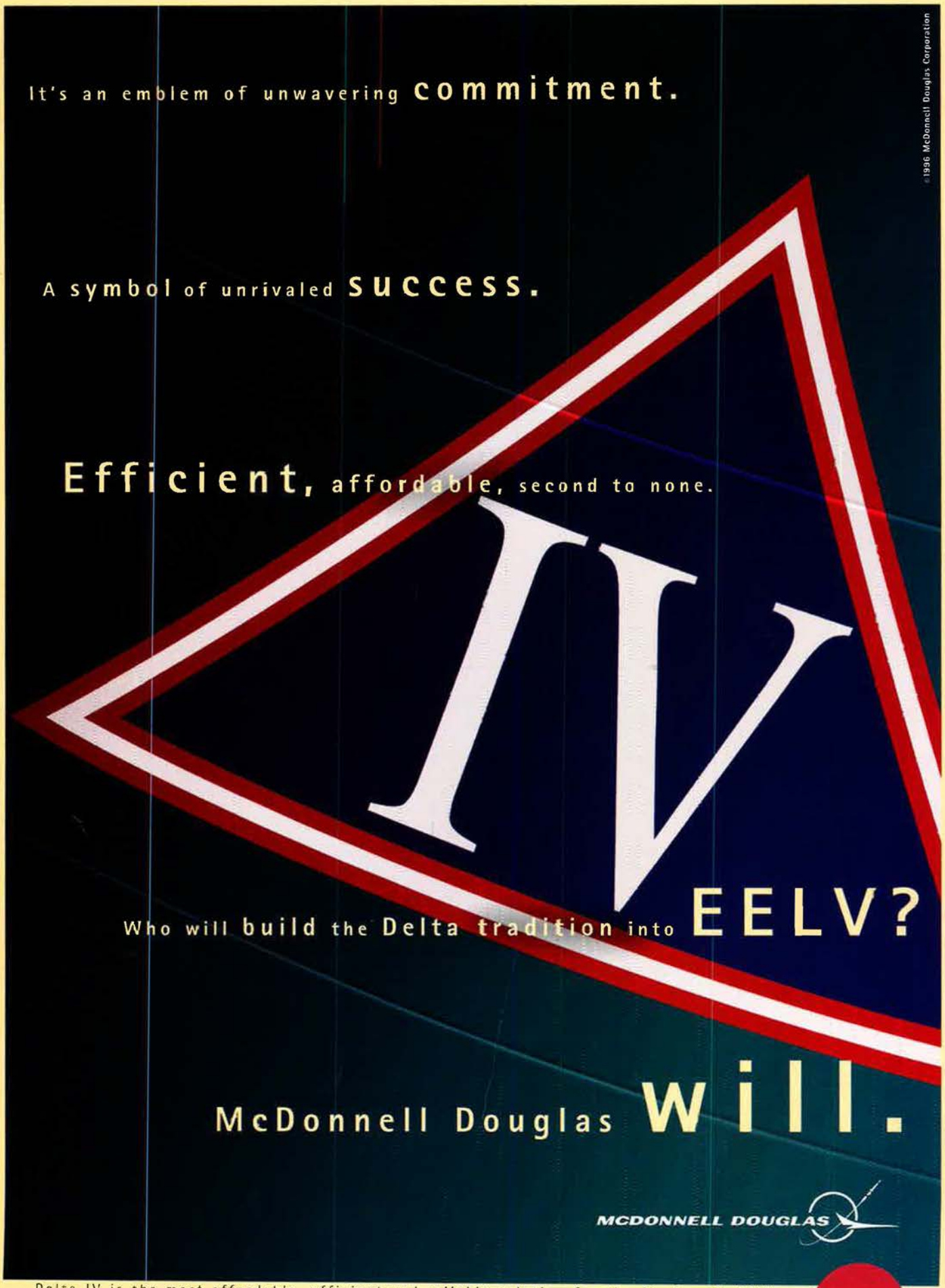
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