

April 1998/\$3

# AIR FORCE

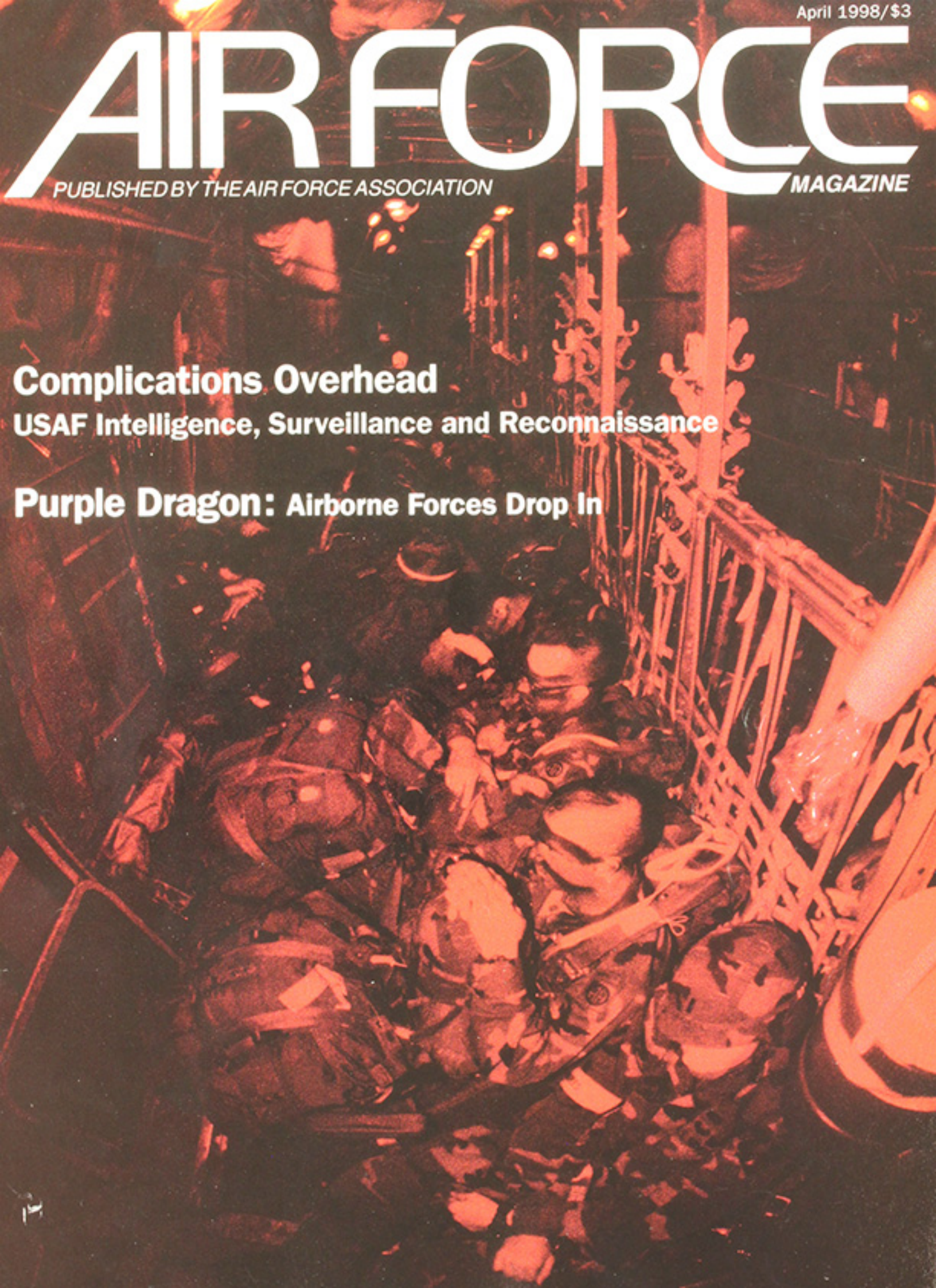
PUBLISHED BY THE AIR FORCE ASSOCIATION

MAGAZINE

## Complications Overhead

USAF Intelligence, Surveillance and Reconnaissance

Purple Dragon: Airborne Forces Drop In





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# MAGAZINE

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By John T. Correll, Editor in Chief

## Nuclear Abolition

**M**ORE than 100 notable international figures, including former Presidents Jimmy Carter of the United States and Mikhail Gorbachev of Russia, have signed up to the "distant but final goal" of completely eliminating nuclear weapons. Their declaration was announced Feb. 2 by retired Air Force Gen. Lee Butler on behalf of the State of the World Forum and the Committee on Nuclear Policy.

Again—as in December 1996, when he was a principal in presenting a similar statement from an international group of retired generals and admirals—Butler made an impassioned speech, tracing his own journey from his days as the last commander of Strategic Air Command to his emergence as the leading spokesman for the nuclear abolition movement. He first disclosed his newfound beliefs in 1996 when he and former Secretary of Defense Robert S. McNamara were the US members of the Canberra Commission on the Elimination of Nuclear Weapons.

In his February speech, Butler said nuclear weapons "intensified and prolonged an already acute ideological animosity." He (and we) perceived "the Soviet Union and its allies as a demonic threat, an evil empire bent on global domination." While "we clung to the notion that nuclear war could reliably be deterred, Soviet leaders derived from their historical experience the conviction that such a war might be thrust upon them and if so, must not be lost. Driven by that fear, they took Herculean measures to fight and survive, no matter the odds or the costs." Meanwhile, for us, "invoking deterrence became a cheap rhetorical parlor trick," he said.

Others, whose experience and knowledge are at least as good as General Butler's, disagree. Soviet policies and nuclear forces during the Cold War were an all-too-real threat. The actions of Stalin and his successors cannot be explained away as by-products of Western paranoia. There is every reason to believe that deterrence worked.

In such instances as the Cuban

missile crisis, the shadow of nuclear weapons led the superpowers to proceed most carefully or to step back from the brink of armed conflict. Deterrence also seems to work in some regional situations. Iraq, which had earlier used its chemical weapons against Iran and which had biological weapons ready, refrained from using them in the Gulf

**Doubting we would use nuclear weapons is one thing. Knowing we did not have any would be something else.**

War, apparently because the US might have retaliated with nuclear weapons.

By the Nuclear Nonproliferation Treaty of 1968, the United States and other nations subscribe to the elimination of nuclear weapons whenever international conditions and safeguards make that step feasible. At present, we are nowhere close to achieving such conditions and safeguards. Nuclear, chemical, and biological weapons of mass destruction continue to proliferate.

As retired Gen. Russell E. Dougherty, himself a former commander of Strategic Air Command, says, "The thought of a nuclear-disarmed United States being confronted and coerced by a nuclear-armed rogue nation is terrifying." Rogue nations want weapons of mass destruction because that is the easiest way for them to trump US conventional superiority. In a newspaper column last year, Brent Scowcroft and Arnold Kanter said that "it is precisely when others have foresworn nuclear weapons that those who want to change the world—or at least their place in it—will find possession of nuclear weapons most desirable."

Nuclear weapons cannot be disinvented. The recipe for producing them is not difficult to obtain. "And


so?" General Butler shot back in a recent interview with *The Nation*, arguing that the problem can be overcome by constructing "systems of enforcement" and "capabilities for intervention." In case of nuclear breakout by a rogue state, response by "the family of civilized nations" would be "virtually automatic."

We should not be too optimistic about the family of civilized nations. In the most recent Gulf crisis, a remarkable number of those nations declined to stand firmly with the United States and Britain to shut down Saddam Hussein's biological weapons factories. Some of them were among his suppliers and supporters.

We are moving as rapidly on arms control as prudence will allow. START II, still pending ratification by the Russian parliament, would reduce nuclear warheads to a third of their Cold War levels. Meanwhile, the Russians, supposedly cash-strapped and unthreatening, are developing a new ICBM, a new SLBM, a new Air Launched Cruise Missile, and a new strategic ballistic missile submarine. For post-Cold War Russia, the importance of nuclear weapons has increased rather than declined.

A ballistic missile defense system would lessen our vulnerability to nuclear weapons. We could share the technology with our allies. It might even diminish the attractiveness of nuclear weapons for rogue states. Ironically, ballistic missile defense is staunchly opposed by the leaders of the nuclear abolition movement on the grounds that it could undercut the arms control process.

We must not give up on deterrence until we find something better to replace it. If nations that possess weapons of mass destruction are too irrational to be deterred, that is all the more reason not to trust them by leaning too far forward on disarmament deals. An adversary who doubts that we would use our nuclear weapons is one thing. An adversary who knew for sure that we did not have any nuclear weapons would be an entirely different consideration. ■

A photograph of a man in a dark military uniform being embraced from behind by a young child with blonde hair. The child is wearing a green and red jacket and has their arms around the man's neck. The man's face is partially visible in profile, looking towards the right. The background is a plain, light-colored wall.

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## Dust Off "Lighter Than Air"

There were many interesting historical points brought out in ["*The Evolution of Air Mobility*," February, p. 68,<sup>1</sup> but to state that out of the Air Mobility Symposium came a "promising idea" about a cargo vehicle [able to reach] Mach 25 carrying 50,000 pounds and then to be reusable was absurd. We need to be looking at what we can do today to improve our airlift. Right now a war could be over by the time we could get our forces ready. It took us several months to get enough men and supplies to Saudi Arabia before we could launch an offensive against Iraq—over 90% of our supplies went by sealift at little more than 12 knots!

The most practical, down-to-earth report on [airlift] was a paper from the National War College published in April 1980, titled "New Directions for U.S. Strategic Mobility." It is a "must read" report for those who are serious about airlift. [It gave] a solution that would give our field commanders supplies in weeks rather than in the months it took for Desert Storm.

For 20 years a lot of work has gone into the future of "lighter than air" vehicles. New large airships can carry outside cargo long distances (without refueling) economically. Studies have shown that they are no more susceptible to damage than large cargo airplanes and perhaps even less so.

Even at only 90 knots, airships are many times faster than a 12-knot surface ship. They can go from point A to point B without having to go to a seaport. Nor does an engine failure abort a mission, as [engines] can be repaired in flight. Technology is available today to build and fly large airships. True, they won't fly halfway around the world at Mach 25, but they can fly halfway around the world at 90 knots carrying 200 tons of cargo!

Roy P. Gibbens  
American Institute of Aeronautics and Astronautics  
Meridian, Miss.

As with past articles, the [mobility] article omits any reference to the

C-7A Caribou, which supported the war effort in Vietnam. With its capability, it was able to do things and go places other airlift aircraft could not. It also supported the Marines at Khe Sanh, along with other base camps under siege. It was a workhorse in its day-to-day operations. Those who flew the C-7A, like all military personnel who served in Vietnam, deserve to be recognized.

SMSgt. Ronald L. Bouley,  
USAF (Ret.)  
Rome, N.Y.

## When the POWs Came Home

The photo on p. 19 ["*When the POWs Came Home*," February], in my opinion, is that of Neil Black, who was, at the time of the photo, an A1C helicopter crewman. Black was held, for the majority of his imprisonment, with two other helicopter crewmen, Sgt. Arthur Cormier and A1C Bill Robinson. These three airmen were the subjects of an intensive "Officers Training" educational regimen conducted by young Air Force officers with whom they were incarcerated. Many of these officers were recent graduates of the Air Force Academy.

After release, it is my understanding that the commissioning that had been conferred in North Vietnam was recognized by USAF.

Col. Ron Byrne,  
USAF (Ret.)  
Prescott, Ariz.

■ *Several individuals also called to say they thought the POW on p. 19 was Neil Black. We checked. Retired*

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

*Major Black stated that it's not him.—*  
THE EDITORS

The article brought back bittersweet memories of the many events leading to the repatriation of those released from captivity in Vietnam. Those of us who were privileged to deal with the policy problems of that day, and the humanitarian issues involved, were indeed humbled by these true heroes who kept the faith and responded to the call of duty, honor, and country. Tragically, many, whom we knew were in the hands of the enemy, were never released.

[I note] with some bitterness that the nation's civilian leadership of today seem to have forgotten the lessons of history, presented anew in Operation Desert Storm. Command must have the same integrity demanded of those who are commanded.

Col. David A. Ellis,  
USAF (Ret.)  
Fredericksburg, Va.

As a Vietnam veteran and new staff sergeant, I sat positively glued to my television set as these heroes were received at Clark AB, Philippines. Watching it was a very emotional experience in 1973 and [the memory of it] remains so today. It seems to me that no one should have to endure what these folks and their families went through. My hat is off to all of them for the pain and suffering they all experienced.

CMSgt. David B. Reese,  
USAF (Ret.)  
Las Vegas

As a career enlisted member in the midst of today's drawdowns, cutbacks, and realignments it's easy to lose sight of exactly what it is I am doing here.

In your photo tribute to Operation Homecoming, you illustrate the reasons I enlisted in the first place. It's not simple patriotism, nor just devotion to duty, but rather these and many other little things that have still got me wearing a blue uniform 15 years after first putting it on. I recall,



as a 9-year-old child, watching the men in your photographs coming off the airplanes at Clark AB. I was told that these men were finally coming home after fighting for themselves, their country, and everything they knew for so long.

We could get caught up in the fact that we enlisted feel we aren't receiving our just due under a pay structure that has seen little change since World War II. From an age where the difference between a commissioned officer, a warrant officer, and a non-commissioned officer was clearly defined, to today's blurred distinctions between the duties of all ranks, we are left with a pay structure that makes little allowance for any change.

Instead, let me think about the world-class training I have received in a variety of subjects, with nothing more required of me than to do the job I signed up to do. Let me think of the lifetime of experiences I have gained throughout a career that has spanned the globe. And lastly, let me dwell on the fact that I've been paid all along to do something I truly enjoy. If these are not facts enough to justify the service I owe, then I know no others, save one—that of those who have come before me and are willing to teach me everything they know, if I am but willing to listen.

SSgt. Bruce T. Lowry,  
USAF  
Fort Walton Beach, Fla.

### Facing Gray Fleets

With the fleet aging as it is in the present environment of budget cuts, the services need to form a group with the sole task of pooling their resources to research corrosion and fatigue cracking [*"Going Gray," February, p. 63*].

Why should [each of the] three services and the Coast Guard spend millions a year on corrosion research when they can share the results?

One possible solution is to do as the Navy does and that is "navalize" the airframe against seawater. This involves sealing the airframe from the harsh seawater environment. One problem with this approach [is] that sometimes a different metal must be used that is less susceptible to corrosion but is heavier, and that can mean a performance issue. However, I believe if this is designed in from the beginning, this can be a nonissue.

I am not saying the Navy is better at corrosion control, but their aircraft can show it sooner and they have a very aggressive approach to it.

Lt. Wayne K. Funderburk,  
USNR (Ret.)  
Charlotte, N.C.

As a USAF aircraft maintenance troop and flight engineer in the 1950s through 1984, I find amusing the statement, "The Air Force has never been forced to make do with so many old aircraft." The C-54s I flew [saw service in] the Berlin Airlift and World War II. The C-124s had over 20,000 flying hours and were over 20 years old. In fact, the loss of a C-124 and crew due to a wing crack/failure was one of the events that started USAF's Fatigue Tracking and Use management programs.

[The statement concerning replacement of C-5A lower wing surfaces] is misleading. The C-5A did have the lower wing surface replaced along with the upper surface and other structural parts of the wing. In fact, all C-5As received new wings beginning in 1982. [That] the replacement decision [was] due to cracks in the original wing as a result of fatigue is true as far as it goes. The critical point was the original wing plank design—the wing plank risers were too close to the edge of the plank. This led to the premature fatigue cracks.

The design problem was identified before delivery was taken on all of the C-5As. The original wing usage was closely monitored to maintain a reserve wing life to enable complete design use in the event of a major world crisis. This was a political football [during] the original production of the C-5A, with its cost overrun.

The new C-5A wing and C-5B wing exceeded both the strength and fatigue cycle test. In fact my experience leads me to believe the only thing wrong with the C-5 airplane is [that] its capabilities far exceed the mentality of the Air Force staff.

CMSgt. Troy F. Wood,  
USAF (Ret.)  
Custer City, Okla.

### Issue No. 1

[Regarding "Issue No. 1," February, p. 44,] a couple of nitpicks. On p. 45 you state [Retirees at age 65 and older] "are not eligible for treatment in military medical facilities." We are eligible but only on a space-available basis, which is a large part of the problem—that "space" is diminishing at a horrendous rate and is a large part of the whole equation as you indicate on p. 46.

Col. Loren D. Evenson,  
USAF (Ret.),  
Panama City, Fla.

■ *Even those who are 65 and older may still seek (seek, not necessarily get) treatment at military facilities but may not use their Medicare benefits or participate in Tricare. Under*

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## Letters

*Medicare Subvention, they could participate in Tricare Senior, using their Medicare benefits. Sorry for the confusion.—THE EDITORS*

### Blackbird

As an original USAF crew member for the SR-71, and eventual wing commander of that unit, I was delighted to see the superb photo coverage you gave to the Blackbird ["Blackbird," February, p. 54]. I guess it was kind of a last hurrah for a program that featured the most outstanding aircraft ever built. Those of us who had the privilege to fly Kelly Johnson's masterpiece operationally will always consider it the ultimate aviation experience. I was particularly pleased that you saw fit to give coverage to that valiant little band of guys who squeezed back into their pressure suits and returned to the cockpits during its brief reactivation period. They gave it their best shot to convince the naysayers that megabuck upgrades already completed on the "Habu" had given it new capabilities beyond anything else on the drawing board.

Unfortunately, no one in leadership wanted to listen. I suspect they have finally killed Kelly's Blackbird, a great national asset.

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

I enjoyed your pictorial essay on the SR-71 Blackbird aircraft. Yet I never found the name of Kelly Johnson, Lockheed's designer who, as legend has it, made the first sketch of the plane on either a menu or a cocktail napkin. Also from the vaults of legend is the story that the titanium used in construction of the SR-71 had to be procured from the Soviet Union through a trading company partner of the CIA. If this widely reported story is true, then I find it amusingly ironic that the Soviets sold metal to the USA which ended up being used to spy on them.

John L. Crabtree  
Paradise Valley, Ariz.

### Big Stick, Huh?

The discussion in your January issue of the plan to inject large aircraft such as the B-2 into a battle area early in the conflict in a "halt" mode reminds me of the big pre-Korean War airpower vs. everyone else fight ["The B-2s Are Ready," January, p. 25].

At that time, the B-36 was the USAF

big stick and the Navy was eventually asked to demonstrate the B-36's alleged vulnerability to reasonably modern air defenses. The B-36 I intercepted in this operation was inbound to California from Hawaii. We were given a general area of penetration and [estimated time of arrival], accurate to within perhaps an hour, but no [Ground Control Intercept] or other radar assist. We set up a Combat Air Patrol line above 25,000 feet, spotted the B-36, and made vertical full-deflection gun camera firing runs at about 22,000 feet. While this one intercept is hardly impressive, I add that we purposefully used aircraft with less-than-optimum intercept capability. I was flying an AD Skyraider.

Out of this I concluded that very few B-36 aircraft would have reached their target in wartime if the enemy was on the ball, but that was not surprising. Since WWI, large bomber enthusiasts have envisioned cheap long-range air campaigns to single-handedly win wars, but the reality is that, [without] mass destruction by special weapons, these aircraft have not been able to survive unprotected for long without total air superiority.

The points [are] that non-nuclear airpower is generally overstated to the public, politically impeded at the start of wars, frequently forced into use incompatible with its designed or planned mode, and consistently overrated in its effectiveness against a highly mobile, low-tech military force. The worst day the B-2 is likely to see is when one is intercepted in visual conditions by nothing more sophisticated than a MiG-15. Its ability to halt, or even slow, trained and dedicated light infantry is nil without early, forced employment of special weapons.

The last time we pursued a plan heavily laced with high-tech airpower and which avoided early taking and holding of real estate was the Vietnam War. We lost and deserved it. Like it or not, it is the infantry, holding ground, who finally determines who gets to vote in the next election in that corner of the world, and the sooner they get under way with the mostest to do their job the better.

Robert G. Aldrich  
Las Vegas

### More on the F-86

Regarding the statement by Lt. Col. Robert Vanden-Heuvel ["Letters," February, p. 4] that he had flown most fighters, including the F-86, and

had never seen a vortex generator on any fighter: It's amazing that he never saw an F-86D, the most produced model of the F-86. I don't know about other fighters, but I flew F-86Ds during the mid-1950s, and at least the F-86D had vortex generators under the tail.

Edward G. Schultz  
Bellevue, Wash.

The F-86D had vortex generators on the underside of the horizontal tail near the juncture with the fuselage. The mechanics and assemblers at North American Aviation used to call them "scalp slicers."

Victor Iglesias  
Newport Beach, Calif.

As a former North American Aviation Field Service technical representative, I would like to add these details. The USN XFJ-1 design was the progenitor of the F-86 whose ultimate design demanded notable command decisions by both NAA and USAF to meet all requirements.

The straight wing XP-86 design was actually approved by the AAF in June 1945. It cost the Air Force a six-month program delay to radically improve the design [to meet the 600+ mph requirement], but that period allowed NAA to document new construction features and manufacturing processes that built an airframe superior to that of the MiG-15(S).

The Air Force was sufficiently confident in the F-86 program in 1946 to order production of 33 F-86A-1s in December, some nine months before NAA test pilot George Welch made the XP-86 first flight on Oct. 1, 1947.

One F-86A-5, #AF49-1172, was fitted with a refueling receptacle in the radar/battery bay, replacing the GE ranging radar. The tests were successful, but additional installations were never made. The F-86 fleet never had in-flight refueling capabilities.

John L. Henderson  
Ventura, Calif.

### **Boneyard, Only to Some**

Ten lashes with a wet noodle! On p. 67 ["Going Gray," February] the caption states, "Above is a view of the boneyard ... with early model B-52s in the foreground." What an insult to the staff at the Aerospace Maintenance and Regeneration Center. Far from it being a "boneyard," [AMRC personnel use] multimillions of USAF and taxpayer dollars [to provide] diligent care for superb storage and record keeping of each and every item of their massive inventory. Parts and equipment retrieval for current flying aircraft models are

readily available for our DoD forces or other overseas nations flying similar models. The dollar savings are impressive!

Edward Kranch  
Glendale, Ariz.

### **Big Bomber?**

The headline for February's "Flashback" [p. 77] reads, "The First Big Bomber." Well, maybe not. How about Igor Sikorsky's four-engine bomber Ilya Murometz? Produced in quantity in 1915 and 1916, it was used in over 400 World War I bombing raids with just one aircraft loss. By 1919, Sikorsky was working in Dayton, Ohio, for the Army Air Service, drawing up plans for a large trimotor bomber. The project was canceled when appropriations for new aircraft were reduced by Congress. Could his large bomber ideas have influenced Barling's design?

Stephen Barclay Place  
Vista, Calif.

### **Battle Manager Shortage**

The short news article "Air Battle Managers in Demand" [February, p. 11] struck me as ironic. For the past several years USAF has done virtually nothing while the best of the ABM field has walked out the door. It has even encouraged their departures by closing the schoolhouse door for two years, letting the 4-10 year experience group leave active duty in great numbers, and not promoting ABMs in the numbers needed to fill the required manning slots.

This is not a new policy. It has been in effect for years because the Air Force and ACC (the biggest user of ABMs) have never had a coherent career policy toward ABMs. Instead of trying to lure the Guard and Reserve ABMs back, the Air Force should fix the items that made them leave in the beginning. While rating the career field, making career ABMs commanders, and shortening the TDY rotation will begin to help in the shortage problem, there is much left to be accomplished.

First, promote the career ABMs in a sufficient number to fill required manning slots. Second, send an increased number of ABMs to middle and senior staff school to help in the promotion rate. Third, continue and accelerate the process of rating the career field. Fourth, break the cycle of keeping new flying ABMs at their first assignment for five or more years. Let them cycle out after 4.5 years to another ABM assignment and then bring them back to fly the line. Finally, if you need quality ABMs, go after the ones who recently left. They

still have a current knowledge base, probably left for reasons that could be corrected, and, for the most part, still have a love for the job, the Air Force, and the nation. The Guardsmen and Reservists have jobs and most likely are in a place they wish to live. Why would they come back?

Warren Hudson,  
USAF (Ret.)  
Edmond, Okla.

### **Need New Assumptions**

Views expressed by Gen. Walter Kross ["Airlift Gets a Boost," December, p. 24], as critiqued by Col. Michael R. Gallagher ["Letters," February, p. 4], on current assumptions about the Guard and Reserve tend to overlook their worldwide employment in day-to-day, voluntary support of national objectives. Only in a few instances has mobilization of certain specialists been necessary.

Total Force policies enable the nation to meet its global commitments, cost effectively, by recruiting those who are leaving active service, voluntarily, in ever-increasing numbers. Common sense suggests enlarging the Reserve to make room for expensively trained, highly experienced pilots, aircrews, and support personnel who want to continue their careers in the Guard or Reserve.

Dusting off a 1980's Air Staff study will only reveal that long-range planners seldom get it right. Gallagher may find the just released "History of the Air Force Reserve" both enlightening, entertaining, and fact-filled. It may even make him wish the 1980 study group had a copy when they fast forwarded to 2000.

Col. John F. McCormick,  
USAF (Ret.)  
Destin, Fla.

### **Nukes**

["Security of the Russian Nukes," February, p. 74] was very interesting, especially to those of us who toiled in the ICBM leg of the Triad during the 1960s and 1970s. I was particularly struck by Gen. Eugene E. Habiger's account of his discussions with the commander in chief of the Strategic Rocket Forces concerning the exchange of missile commanders and crew members. Here was the realization of a seemingly impossible daydream!—and doubtless others—had back in the bad old days. Since we were constantly "crosstalking" between wings and numbered air forces, I always fantasized about crosstalks with our opposite numbers in the Soviet forces.

Nat Mushkin  
San Antonio

# The Chart Page

By Tamar A. Mehuron, Associate Editor

## The Defense Budget at a Glance

In February, President Clinton presented his proposed defense budget for Fiscal Year 1999. The document requests \$257.3 billion in budget authority and \$252.6 billion in outlays for the direct program (DoD activities only). The budget request for the total national defense program (DoD activities and defense activities in the Department of Energy and other federal agencies) is \$270.6 billion in budget authority and \$265.5 billion in outlays.

Funding levels can be expressed in several ways. Totals are most frequently stated in **budget authority**, which is the value of new obligations that the government is authorized to incur. These include some obligations to be met in later years. Figures can also be expressed in **outlays** (actual expenditures, some of which are covered by amounts that were authorized in previous years).

Another difference concerns the value of money. When funding is in **current** or **then-year** dollars, no adjustment for inflation has taken place. This is the actual amount of dollars that has been or is to be spent, budgeted, or forecast. When funding is expressed in **constant dollars**, or **real dollars**, the effect of inflation has been factored out to make direct comparisons between budget years possible. A specific year, often the present one, is chosen as a baseline for constant dollars.

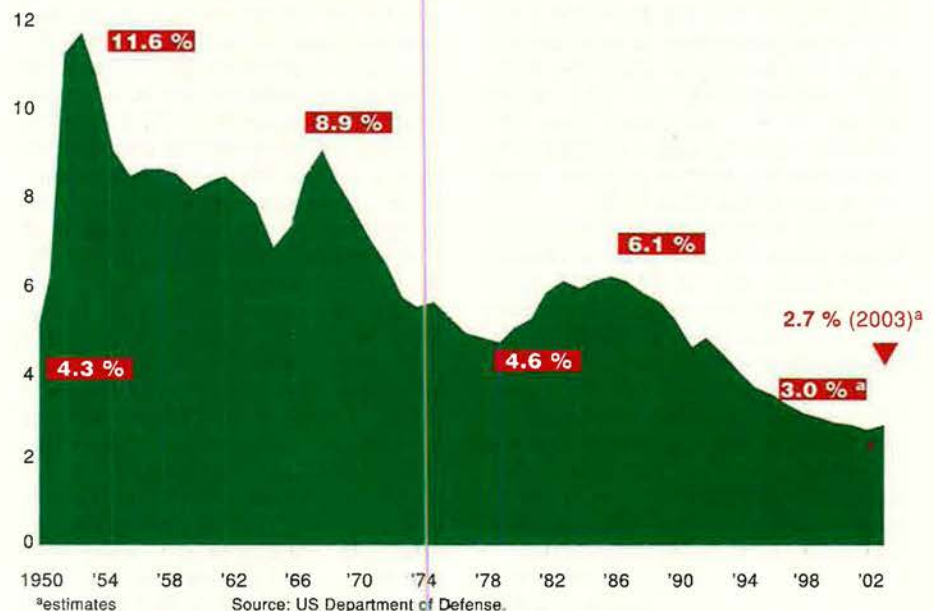
The following charts address only the Defense Department program. In some instances, numbers on the charts in this section may not sum to totals shown because of rounding. Years indicated are Fiscal Years. Civilian manpower figures are now measured in terms of Full Time Equivalents.

### DoD Budget Top Line

(\$ billions)

	1998	1999	2000	2001	2002	2003
<b>Budget authority</b> (current \$)	254.9	257.3	262.9	271.1	274.3	284.0
<b>Budget authority</b> (constant FY 1999 \$)	260.1	257.3	257.2	259.5	256.7	259.7
<b>Outlays</b> (current \$)	251.4	252.6	255.8	257.1	259.7	275.8
<b>Outlays</b> (constant FY 1999 \$)	256.4	252.6	250.4	246.2	243.2	252.9

### Defense Outlays as a Share of Gross Domestic Product



### Service Shares

(Budget authority)

	1998	1999	2000	2001	2002	2003
<b>Current \$ billions</b>						
Air Force	74.4	76.7	78.4	81.2	83.3	85.3
Army	60.5	63.8	65.2	66.7	69.2	71.0
Navy	80.9	81.3	82.3	86.8	84.8	87.8
Defense agencies	39.0	35.4	37.0	36.4	37.0	39.9
<b>Total</b>	<b>254.9</b>	<b>257.3</b>	<b>262.9</b>	<b>271.1</b>	<b>274.3</b>	<b>284.0</b>
<b>Percentages</b>						
Air Force	29.2	29.8	29.8	30.0	30.4	30.0
Army	23.7	24.8	24.8	24.6	25.2	25.0
Navy	31.7	31.5	31.3	32.0	30.9	30.9
Defense agencies	15.3	13.8	14.1	13.4	13.5	14.0

Fiscal 1999–2003 figures are from the Clinton Administration's Fiscal 1999 budget request.

**Total Funding of Major Programs**

(Current \$ millions, RDT&E and procurement funding)

	1999
<b>Air Force</b>	
C-17 transport	3,206.9
F-15E fighter	104.2
F-22 fighter	2,393.1
B-2 bomber	376.3
E-8 Joint STARS aircraft	654.4
Milstar satellite	550.9
JPATS	151.5
Joint Strike Fighter (RDT&E only)	456.1
<b>Army</b>	
AH-64D helicopter	633.7
RAH-66 helicopter (RDT&E only)	367.8
<b>Navy</b>	
DDG-51 destroyer	2,904.3
New attack submarine	2,302.5
F/A-18E/F fighter	3,275.3
Trident II ballistic missile	385.6
E-2C early warning aircraft	457.1
JPATS	0.6
Joint Strike Fighter (RDT&E only)	463.4

**Procurement of Major Air Force Systems**

(Current \$ millions)

	1998	1999
<b>Aircraft Procurement</b>		
B-2 bomber	336	245
C-17 transport	2,201	3,013
C-130J transport	24	126
E-8 Joint STARS	399	531
F-22 fighter	73	811
JPATS	76	107
<b>Missile Procurement</b>		
AMRAAM	104	115
Sensor Fuzed Weapon	150	126
<b>Other Procurement</b>		
AWACS	128	114
Titan IV (Titan II refurbishment)	451	579
GPS satellites	158	175
DSP satellites	105	90
Medium Launch Vehicle	202	188
<b>RDT&amp;E</b>		
Airborne Laser	151	292
Milstar satellite	628	551
Titan launch vehicles	71	87
EELV	87	284
SBIRS satellites	519	732
F-22 fighter	1,959	1,582
Joint Strike Fighter	432	456
B-1 bomber	208	195
B-2 bomber	335	131
JASSM	124	133
UAV	513	505

**Force Structure Changes**

	Cold War Base 1990	Base Force	1998	BUR Plan	1999	QDR Goal
<b>Air Force</b>						
Active fighter wings	24	15.3	13	13	12.7	12+
AFRC/ANG fighter wings	12	11.3	7	7	7.6	8
<b>Army</b>						
Active divisions	18	12	10	10	10	10
Army National Guard/Army Reserve	10	34 <sup>a</sup>	8	5+	8	8
<b>Navy</b>						
Aircraft carriers						
Active	15	13	11	11	11	11
Reserve	1	—	1	1	1	1
Carrier air wings						
Active	13	11	10	10	10	10
Reserve	2	2	1	1	1	1
<b>Marine Corps</b>						
Active MEFs	3	3	3	3	3	3
Reserve MEF	1	1	1	1	1	1

<sup>a</sup>Brigades.

**Operational Training Rates**

	1985	1990	1996	1997	1998	1999
<b>Air Force</b>						
Flying hours per crew per month, fighter/attack aircraft	19.1	19.5	20.0	19.3	18.7	19.1
<b>Army</b>						
Flying hours per tactical crew per month	13.1	14.2	13.9	14.5	14.5	14.5
Annual tank miles	850	800	618	654	652	800
<b>Navy</b>						
Flying hours per tactical crew per month	25.0	23.9	22.8	21.1	22.6	23.0
Ship steaming days per quarter						
Deployed fleet	53.6	54.2	50.5	50.5	50.5	50.5
Nondeployed fleet	27.4	28.1	29.6	28.0	28.0	28.0

**Acronyms**

<b>AFRC</b>	Air Force Reserve Command	<b>GPS</b>	Global Positioning System
<b>AMRAAM</b>	Advanced Medium Range Air-to-Air Missile	<b>JASSM</b>	Joint Air to Surface Standoff Missile
<b>ANG</b>	Air National Guard	<b>JPATS</b>	Joint Primary Aircraft Training System
<b>AWACS</b>	Airborne Warning and Control System	<b>MEF</b>	Marine Expeditionary Force
<b>BUR</b>	Bottom Up Review	<b>QDR</b>	Quadrennial Defense Review
<b>DSP</b>	Defense Support Program	<b>RDT&amp;E</b>	Research, Development, Test, and Evaluation
<b>EELV</b>	Evolved Expendable Launch Vehicle	<b>SBIRS</b>	Spacebased Infrared System
<b>FTE</b>	Full Time Equivalent	<b>UAV</b>	Unmanned Aerial Vehicle

### Cutting the Pie: Who Gets What

(Budget authority in current \$ billions)

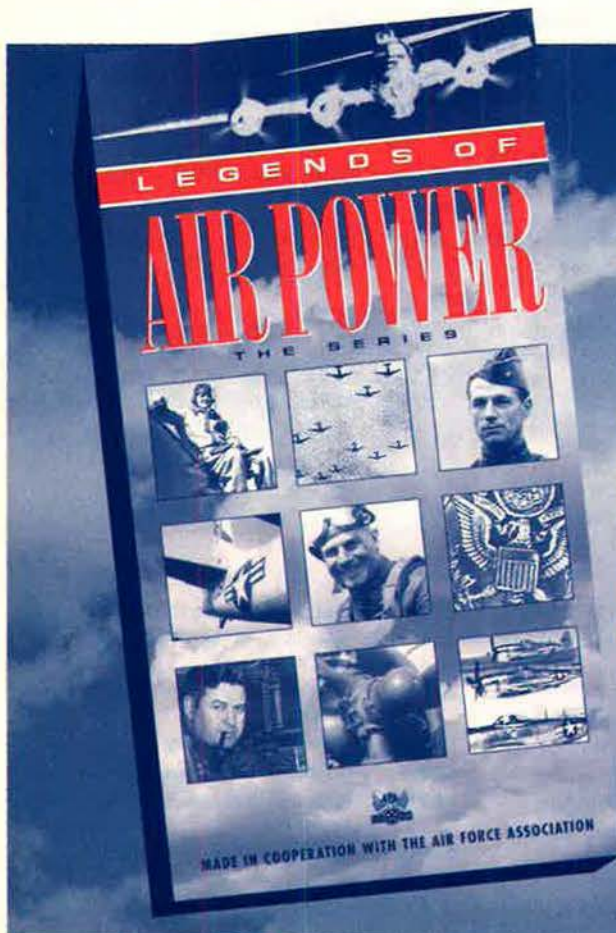
	1997	1998	1999	Change 1998-99	2000	2001	2002	2003
Military personnel	70.3	69.7	70.8	+1.1	70.7	71.6	73.0	74.9
Operations & maintenance	92.4	94.4	94.8	+0.4	95.9	97.8	99.6	101.9
Procurement	43.0	44.8	48.7	+3.9	54.1	61.3	60.7	63.5
RDT&E	36.4	36.6	36.1	-0.5	33.9	33.0	33.5	34.3
Military construction	5.7	5.1	4.3	-0.8	4.9	4.4	3.7	4.0
Family housing	4.1	3.8	3.5	-0.3	3.9	3.9	3.9	4.2
Other	6.1	0.5	-0.8	-1.3	-0.5	-0.9	-0.1	1.2
<b>Total</b>	<b>258.0</b>	<b>254.9</b>	<b>257.3</b>	<b>0.0</b>	<b>262.9</b>	<b>271.1</b>	<b>274.3</b>	<b>284.0</b>

### Manpower

(End strength in thousands)

	Change 1990-96	1997	1998	1999	Change 97-99	2003	Additional Reductions	QDR Goal
Total active duty	-597	1,439	1,419	1,396	-43	1,366	-6	1,360
Air Force	-150	377	372	371	-6	344	-6	339
Army	-260	492	488	480	-12	480	—	480
Navy	-166	396	387	373	-23	369	—	369
Marine Corps	-22	174	173	172	-2	172	—	172
Selected reserves	-208	902	886	877	-25	837	-2	835
Civilians (FTE)	-178	786	770	747	-39	672	-32*	640

\*These additional reductions will result from the Defense Reform Initiative.



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By Peter Grier

## DoD Mulls More Joint STARS

The Pentagon wants to talk with Congress about buying more Joint STARS radar airplanes, Secretary of Defense William S. Cohen said.

Last year's Quadrennial Defense Review reduced the planned Joint Surveillance Target Attack Radar System buy from 19 to 13 aircraft. In addition, NATO decided late last year not to proceed with a Joint STARS purchase, throwing even more doubt on the program's future and planned costs.

"We have to go back and see what we can work out. ... JSTARS [is] very important," said Cohen in a Jan. 31 discussion with reporters.

The proposed 1999 Air Force budget contains \$531 million for the 12th and 13th production Joint STARS models. Some members of Congress have asked that long-lead money for two more airplanes be inserted in the budget.

Sen. Joseph Lieberman (D-Conn.) said on Feb. 3 that he will seek to add \$72 million to Air Force funds for just such a purpose. The money would "keep the [Joint STARS production] lines moving," he said.

Meanwhile, Defense Department officials may be looking at a two-engine version of the airplane. Placing Joint STARS radar capability on a business jet-like aircraft, instead of the current four-engine 707 platform, could make an expanding US Joint STARS fleet affordable. It might also make the airplane more attractive to Britain and other NATO Allies.

Northrop Grumman is currently developing a smaller Joint STARS based on the Gulfstream V for Britain's Airborne Standoff Radar competition. Britain is seeking up to five ground radar aircraft but does not want a large four-engine version.

## USAF Chief Pushes Base Closure Plan

The Air Force needs to close more bases so that it can afford to create and maintain powerful expeditionary wings of the future, Air Force Chief of Staff Gen. Michael E. Ryan told members of Congress at a Feb. 4 meeting on Capitol Hill.



*Air Force Lt. Col. Eileen M. Collins will become the first woman to command a space shuttle when Columbia blasts off in December for the STS-93 mission. Selected as an astronaut in 1990, Collins has served as a pilot on her two previous space flights. Her first space flight was STS-63 in February 1995, when Discovery rendezvoused with the Russian space station Mir in a dress rehearsal for the first shuttle-Mir docking.*

Ryan is looking at reorganizing the service around fewer, larger units that can provide a strong deployed force while still supporting the service personnel who remain in the United States. A smaller service base infrastructure would make operation of these "superwings" more efficient, he told members of the Congressional Air Power Caucus.

His plea for fewer facilities is likely to be echoed by many top Department of Defense and armed services officials this year.

As part of his transmission of the proposed 1999 military budget, Secretary of Defense Cohen has asked Congress for two more rounds of base closings, to take place in 2001 and 2005. Such Base Realignment and Closure proceedings would free some \$2.8 billion annually for weapons modernization, according to Pentagon estimates.

## Cohen Seeks BRAC Ammunition

Lawmakers already are resisting the Administration's call for closing

more bases, inasmuch as bases are often key employers in Congressional districts. To help argue his case, Cohen has called for accelerating publication of a Congressionally mandated report on the costs and savings from past BRAC rounds.

The study, produced by the Defense Department Inspector General, claims that base closings have been more lucrative than projected, with savings underestimated by \$1.7 billion and costs overestimated by \$1.5 billion.

"We have to ask ourselves: Do we want depots in government hands or high-tech weapons in soldiers' hands?" said Cohen in a January address to the US Conference of Mayors. "Do we want to protect facilities or protect troops?"

## Unknown Service Member Might Be USAF Flier

Six bones buried in the Tomb of the Unknowns in 1984 may be the remains of Air Force 1st Lt. Michael J. Blassie, whose A-37 was downed over Vietnam in May 1972.

Documents received by Blassie's family now indicate that may be the case.

Searchers found the remains, plus a wallet and Blassie's identification card, at the crash site in 1972. The remains were sent to the US government forensic lab in Hawaii, where examiners believed, but could not prove, that they were Blassie's.

A Pentagon board reclassified the remains, by then known as X-26, as unidentifiable in 1980. In 1984 the bones were chosen to be placed in Arlington National Cemetery's Tomb of the Unknowns, along with unidentified US remains from World War I, World War II, and the Korean War.

Upon the selection, all documents pertaining to X-26 were destroyed. The family has asked that the bones be exhumed and modern DNA tests be carried out upon them.

DoD spokesman Navy Capt. Michael W. Doubleday said the case is a "very sensitive issue" and that the Pentagon will undertake a thorough investigation before deciding what to do.

#### Court Rules for Contractors in Navy's A-12 Dispute

The US Court of Federal Claims on Feb. 20 awarded General Dynamics and Boeing nearly \$1.8 billion in compensation for cancellation of the Navy's A-12 stealth fighter program. The federal court's judgment consisted of \$1.2 billion in payment plus more than \$500 million in interest, at more than \$200,000 per day.

The court rejected government claims that bad faith and negligence by the two companies led to inflated costs for the \$52 billion program. The ruling also rejected claims that the companies had negotiated improperly generous settlements with subcontractors after the program was halted in early 1991.

DoD announced immediately that it is filing an appeal, thus continuing what may be the most expensive federal contract dispute to date.

Work was halted on the carrier-based, radar-evading attack aircraft on the grounds that it was overweight and over budget. General Dynamics and McDonnell Douglas, now part of Boeing, had claimed that the fixed-price contract had imposed undue financial and technical risks on the firms and that the project would have eventually met military requirements.

The dispute has extended over seven years, during which the government suffered three successive defeats. The appeals process could last another three years, and, con-



SrA. Jonathan Songer (left) and a fellow airman from the 4406th Security Forces Squadron stand guard near F-117A stealth fighters at a base in South-west Asia. Both deployed as part of the early 1998 buildup of US forces.

USAF photo by A1C Greg L. Davis

sidering the daily interest charge alone, could add another nearly \$220 million to the Pentagon's bill.

#### VA and DoD Collaborate on Health Care

Veterans, active duty service members, and taxpayers stand to benefit from increased coordination between the Department of Veterans Affairs and DoD.

An executive council of senior VA and Defense Department health care officials is in the process of improving communication between the two departments, finding ways for their health care systems to work together conducting joint research projects and eliminating overlap in medical services.

The departments have already agreed to conduct joint exit physicals for service members. VA requirements are now incorporated into DoD physical exams of members leaving or retiring from military service. In turn VA has agreed to conduct physicals for separating or retiring service members filing claims with the VA before the person leaves the military.

Other initiatives include:

- Establishment of a joint Military and Veterans Health Coordinating Board.

- Allowing both veterans and active duty personnel to use specialized treatment centers, such as VA's spinal cord injury center and DoD's burn unit.

- Creation of compatible, computer-based patient records, ensur-

ing smooth transfer of information.

- Sharing of and collaborating on development of automation and technological products.

- Publishing of joint clinical practice guidelines.

- Collaboration on laboratory and pathology programs.

#### President Authorizes Call-Up

President Clinton on Feb. 24 signed an executive order authorizing the call-up of 500 National Guard and Reserve members to support operations in Southwest Asia.

Acting on the Presidential Selected Reserve Call-up Authority, Defense Secretary Cohen authorized the services to call up, for up to 270 days, selected reserve units and individuals not assigned to units. The reservists will beef up logistical and combat support skills in the Gulf region.

Types of units that might be called to active duty may include USAF Special Operations C-130 aircrews. More than 1,000 reservists are already on active duty to support Operation Southern Watch.

#### New Report Sees Lower NATO Expansion Costs

Defense Secretary Cohen on Feb. 23 released a report to Congress that downplays the anticipated costs of NATO expansion. The new DoD figures endorse NATO estimates of \$1.5 billion over 10 years, rather than \$6.2 billion announced by the Pentagon early last year.



The NATO estimate is based on a December 1997 study and reflects "more recent and more complete information than the [Pentagon's] February 1997 illustrative common-funded cost figures of \$4.9 billion to \$6.2 billion," stated Cohen. He had briefed Congress in October, after reviewing NATO's preliminary report, that he thought the DoD figures would prove high.

Release of the report came the day before Cohen and Secretary of State Madeleine K. Albright appeared before the Senate Foreign Relations Committee to make a final pitch for Senate approval of NATO expansion. This led some critics to claim that the cost estimates may have been manipulated for political reasons.

The Congressional Budget Office in 1996 estimated the total cost of expansion at \$61 billion to \$125 billion over 15 years. DoD's February 1997 study had estimated the total cost at \$27 billion to \$35 billion over 13 years. A study by RAND Corp. offered a figure of \$42 billion. [See "The Cost of NATO Expansion," *December 1997*, p. 56.] The cost estimates used different time frames, assumptions about potential threats, and types of costs.

#### **DoD Outlines Health Care Priorities**

In a speech to military health care professionals on Feb. 9, Rudy de Leon, undersecretary of defense for personnel and readiness, outlined priorities that he says are critical to the continued success of the military's health care system.

Protecting deployed forces from health hazards should be a top goal of US medics and doctors, de Leon said. This includes making sure immunizations are up to date for deployed troops and training service members to protect themselves in a nuclear, biological, or chemical warfare environment.

Improved access to health care is also a major concern. "It's tough to get in [to military hospitals and clinics]," de Leon admitted. "We have to work better."

The Defense Department also needs to take better care of its older patients, according to the Pentagon's top personnel and readiness official. While Medicare Subvention is a first step, DoD is studying other options for the future. "How we treat retirees is an important display of how we will treat the current active duty force when they are retired," he said.

Leveraging information technology could help meet DoD medical goals. De Leon said he strongly backs two major medical initiatives: computerized health records and digital "dog tags" which carry medical information on a chip.

"While we have a system in transition, it is a system dedicated to excellence," de Leon concluded.

#### **Medicare Subvention Test Begins**

On Feb. 12, Secretary of Defense Cohen announced the beginning of the Tricare Senior Project—a demonstration that will allow some Medicare-eligible military retirees to receive comprehensive health care

services through military treatment facilities.

Congress authorized a test of Medicare Subvention in the Balanced Budget Act of 1997 and approved funding in the Fiscal 1998 defense budget.

Since Tricare began in 1995, 65-and-older retirees have complained about not being able to receive the space-available care they are entitled to in military facilities. Under the subvention process, these Medicare-eligible retirees will be able to have all their health needs provided by military facilities. Medicare will then reimburse these facilities for the costs not covered by DoD participating hospitals.

The demonstration features two specific plans: Tricare Senior and Medicare Partners. The Senior option will work just like Tricare Prime, with test enrollees paying the same fees and receiving the same services as other military retirees. The Partners option will allow 65-and-older retirees who are enrolled in a limited number of Medicare+Choice plans to receive their health services in military facilities.

The demonstration will be conducted at these sites: Keesler AFB, Miss.; Brooke Army Medical Center and Wilford Hall Medical Center, San Antonio; Ft. Sill, Okla.; Sheppard AFB, Texas; Ft. Carson and the Air Force Academy, Colo.; Madigan Army Medical Center, Wash.; Naval Medical Center San Diego, Calif.; and Dover AFB, Del.

Enrollment at the first sites is planned for this summer, with health care delivery at the sites beginning 60 days after enrollment starts.

#### **Tricare Prime Becomes More Portable**

Ali Tricare Prime enrollees can now take their health benefit program with them if they move from one DoD health service region where Tricare is operational to another.

Such ease of portability has been the case for active duty families since last July. As of Dec. 1, 1997, portability has been extended to all other Prime enrollees, as well.

Active duty families can make such a switch as often as they like. Prime enrollees other than active duty families may transfer twice during an enrollment year, as long as the second move is back to their original region.

"Split" enrollments—the ability to pay one family enrollment and have family members enrolled in different Tricare regions—will be available in the spring of 1998, according to the DoD Tricare Support Office.



Photo by John Rossino

**Final assembly of the second F-22 was completed on schedule, and the stealth fighter rolled out of the main assembly building at Lockheed Martin, Marietta, Ga., on Feb. 10. Designated 4002, its first flight is scheduled for this summer.**

**GAO Backs Choice of Warner Robins for C-5 Maintenance**

The Air Force was correct in its choice last year of Warner Robins Air Logistics Center at Robins AFB, Ga., to perform maintenance on the C-5 airlifter, according to a review of the award done by Congress' General Accounting Office.

Maintenance on the C-5 went up for grabs after the Base Realignment

and Closure commission designated the original work site, San Antonio ALC, at Kelly AFB, Texas, for closure. Private contractors Boeing and Lockheed Martin vied with Warner Robins ALC for the job.

Contractor officials had complained about some aspects of the competition. But the GAO review of the proposal cost evaluation and adjustments found that "the award resulted in the

lowest cost to the government, given Air Force assumptions and conditions at the time of the award," according to the report.

**Battlelab Conference Shares Ideas**

The Air Force Command and Control Battlelab hosted an all-military-service battlelab directors' conference at Hurlburt Field, Fla., Jan. 21-23.

The purpose of the meeting was to explore opportunities for Joint research and set up communication links between the disparate battlelabs. Attendees included the heads of the six Air Force, 10 Army, one Navy, and one Marine Corps battlelabs, as well as a representative from the Joint Battle Center, Suffolk, Va.

"This way we can ensure we're working together and not wasting our time and efforts on a project somebody else has already done or is doing," said Col. Mike Carpenter, C<sup>2</sup> Battlelab commander.

Air Force battlelabs currently focus on rapidly identifying and proving the worth of innovative operations and logistics concepts, said Lt. Col. Ray Santiago, C<sup>2</sup> Battlelab logistics program manager.

The C<sup>2</sup> lab, for instance, is working on an advanced Joint forces air component command-and-control initiative with the Defense Advanced Research Projects Agency.

The Air Expeditionary Force Battlelab, Mountain Home AFB, Idaho, is working on a "common boresight system" that promises a significant reduction in logistics footprint and increased weapon system accuracy.

The Force Protection Battlelab at Lackland AFB, Texas, is working on an initiative named "Project Geese," which is studying how a wide array of passive and active sensors can improve force security response times at remote surveillance sites.

The Information Warfare Battlelab, Kelly AFB, Texas, is looking at an early warning system for computer network-based attacks.

The Unmanned Aerial Vehicle Battlelab is working on the capability to suppress enemy air defenses from unmanned platforms. The UAV initiative was recently put to the test in a series of demonstrations near Cannon AFB, N.M. A Hunter UAV flew a number of two-hour missions carrying a direction-finding package to identify and locate potential threats and an improved data modem to transmit information to fighters.

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*SrA. Mark Jacobson, a combat controller with the 22d Special Tactics Squadron, McChord AFB, Wash., observes an airdrop during Northern Edge '98, Alaska's largest annual military training exercise. More than 7,000 troops from all services, including reservists and Coast Guardsmen, participated this year.*

### **New USAF Executive Transport Makes First Flight**

The first of four new USAF aircraft intended to carry high-level US government officials all over the world made its initial flight on Feb. 11.

The Boeing C-32A—a slightly modified 757-200—took off from Renton MAP, Wash., and landed two hours later at Boeing Field in Seattle.

"The C-32A is designed as a place for conducting business," said Mark Rogers, Boeing C-32A program manager. "The US Air Force has a need for a dependable, efficient, and affordable office-in-the-sky for government officials, and that's exactly what Boeing will deliver in the C-32A."

The 89th Airlift Wing, Andrews AFB, Md., was scheduled to receive two of the aircraft in late March. Two more are scheduled to be delivered in October. The four airplanes will replace the aging fleet of VC-137s, Boeing 707-derived aircraft, that now fly the vice president, cabinet members, and Congressional delegations on official business.

Some Air Force VC-137 models are over 30 years old. Their C-32A replacements are state-of-the-art airliners that are far quieter and more fuel efficient than their predecessors. Each C-32A will be able to carry 45 passengers and 16 crew members and is designed for a 4,150-nautical-mile mission.

### **Looking Glass Fleet Flies Toward Retirement**

The first of seven EC-135 "Looking

Glass" command-and-control aircraft scheduled for retirement recently reached its final destination—the Aerospace Maintenance and Regeneration Center, otherwise known as the Air Force "boneyard."

Looking Glass EC-135s got their name from the fact that they mirrored the ground command post of the old Strategic Air Command. Those aboard were capable of launching a retaliatory nuclear strike if their command counterparts on the ground were knocked out.

At least one Looking Glass aircraft was always in the air from 1961 through July 1990. Subsequently they flew up to eight hours a day from their home base at Offutt AFB, Neb.

The planned retirement of the EC-135 fleet will also mean the deactivation of the 7th Airborne Command Control Squadron. All EC-135s are scheduled to reach their final resting place by October.

The airborne strategic command post mission will then pass to 16 US Navy E-6Bs. They will fly roughly the same shortened schedule that Looking Glass aircraft have kept up since 1990.

### **Super Hornet Procurement Depends on Fixes**

On Feb. 5, Secretary of Defense Cohen told a Congressional committee that he will not approve the Lot II purchase of 20 F/A-18E/F Super Hornets unless he is convinced that wing-drop problems with the airplane have been fixed.

Some \$2.4 billion for the Lot II buy

is part of Fiscal 1998 Pentagon procurement money. Release of the cash is currently scheduled for early spring.

The wing-drop problem involved uncommanded bank angles due to asymmetric lift. Navy officials call the glitch minor. Proposed fixes include the addition of stall strips, a porous wing fairing, and an extension of the wing snag.

Bad weather has slowed flight tests of the Super Hornet from NAS Patuxent River, Md., but the Navy is confident Cohen will find nothing wrong when the time comes for his decision.

The seriousness of the wing drop rates "a two or three on a 10-point scale," Navy Secretary John H. Dalton told Congress on Feb. 5. "We did not view it as a significant problem."

### **USAF Works on Munition-Carried BDA Sensors**

Air Force officials are working on ways to mount battle-damage assessment equipment on the very munitions whose work the sensors would check.

The program is known as the Responsive Mission Objective Reconnaissance Apparatus and is based at the Air Force armament product group at Eglin AFB, Fla. Mission objectives include low-cost use of off-the-shelf components.

Under REMORA, inexpensive weapons such as the Joint Direct Attack Munition would be outfitted with a sensor that would trail behind the bomb, connected by a long wire. The sensor would transmit data about the impact and subsequent destruction to command-and-control facilities.

Sensors for more expensive munitions, such as the Joint Air to Surface Standoff Missile, would not be wire-attached. Instead, they would be deployed from the weapon and then fly to the weapon's target coordinates via parasail or miniature vehicle. The sensor would hover and record the weapon's effects.

Penetrator weapons might use sensors connected in some manner to warhead accelerometers. These sensors would float behind on a parachute or balloon and collect data on the materials that emanated from the penetrators' entry points.

If all goes well REMORA equipment could pass the demonstration stage in 2000, according to Air Force officials.

### **USAF Wants to Remove Darts, Restore Wilderness**

The Air Force is looking at ways to remove hundreds of 17-foot aluminum darts now embedded in a part of the training range at Luke AFB, Ariz.,

that has been designated a national wildlife refuge.

The darts were previously used in air-to-air target training. Between 1956 and 1994, about 1,000 landed on what is now the Cabeza Prieta National Wildlife Refuge. When Congress declared most of the refuge legal wilderness in 1990, the Air Force and the US Fish and Wildlife Service began talking about ways to remove the darts.

"Wilderness is a place you should be able to go and see no trace that humans have been there," explained Laura Thompson-Olais, refuge ecologist. "That's why we'd like to remove these darts. But we need to do it without leaving tracks or disturbing the animals or vegetation."

A small Luke AFB team recently completed a test removal with personnel from the refuge.

"Because most of the refuge is defined as 'wilderness,' use of vehicles is very limited," said Maj. Scout Monroe, a Luke environmental official. "The two darts we removed recently were very near a road, but many of the darts are miles from roads. Plus, they weigh more than 200 pounds, so carrying them out isn't easy."

The refuge may allow a trial removal via helicopter in the fall. Helicopters may be the only option for darts deep in the wilderness, says Monroe. But the first stage of removal will depend on base volunteers digging up the darts closest to existing roads.



USAF photo by MSGT Greg Bade

*The F-117s that delivered lethal power against Iraq during Desert Storm were back in force in the Gulf region. Above, Capt. John Markle, 8th Fighter Squadron, Holloman AFB, N.M., leaves his F-117 after a marathon flight from Holloman to Al Jaber AB, Kuwait. Twelve Nighthawks were deployed there.*

**USAF Ends T-38 Crash Probe**

The Oct. 22 midair collision above an Edwards AFB, Calif., test range that killed two crew members of an AT-38 Talon training jet was caused when the pilot of an F-16, flying in formation with the trainer and a B-1, swerved to avoid hitting some birds, according to the final Air Force report about the incident.

The F-16 pilot, Lt. Col. Richard Stevens, misjudged how close he was flying to the AT-38, said Air Force

officials. When he banked to avoid the birds his left wing sliced through the training airplane's canopy. US Air Force flight instructor Lt. Col. William Nusz and a visiting Royal Air Force pilot, Ft. Lt. Leigh Alexander Fox, were knocked out of the airplane at 2,700 feet. Their parachutes were attached to their ejection seats, which remained in the airplane.

The two aircraft were flying photographic support for a B-1B that was conducting test drops of a practice bomb. The F-16 landed safely, although 3 feet were sheared off the airplane's left wing.

**Senior Staff Changes**

**RETIREMENTS:** Maj. Gen. Allen D. **Bunger**, Brig. Gen. Ronald T. **Sconyers**.

**NOMINATIONS:** To be Major General: James E. **Andrews**, Claude M. **Bolton Jr.**, Robert J. **Boots**, John W. **Brooks**, Richard E. **Brown III**, John H. **Campbell**, Bruce A. **Carlson**, Robert J. **Courter Jr.**, Daniel M. **Dick**, Paul V. **Hester**, Robert C. **Hinson**, Leslie F. **Kenne**, Tiu **Kera**, Donald A. **Lamontagne**, David F. **MacGhee**, Timothy P. **Malishenko**, Glen W. **Moorhead III**, Harry D. **Raduege Jr.**, Leonard M. **Randolph Jr.**, James E. **Sandstrom**, Lance L. **Smith**, Garry R. **Trexler**, Charles F. **Wald**, Tome H. **Walters Jr.**, Herbert M. **Ward**, Joseph H. **Wehrle Jr.**, William **Welsler III**, Michael E. **Zettler**.

To be Brigadier General: Glenn C. **Waltman**.

**CHANGES:** Maj. Gen. Stephen B. **Plummer**, from Dir., Jt. Theater Air and Missile Defense Orgn., Pentagon, to Cmdr., JTF-Southwest Asia, USCENCOM, Riyadh, Saudi Arabia ... Maj. Gen. Roger R. **Radcliff**, from Cmdr., JTF-Southwest Asia, USCENCOM, Riyadh, Saudi Arabia, to Vice Cmdr., 9th AF, ACC, and Dep. Cmdr., USCENCOM Air Forces, Shaw AFB, S.C.

**SENIOR EXECUTIVE SERVICE CHANGES:** Bernhard S. **Hoentle**, to Dir., Chief Information Office, Air Force Communications and Information Ctr., Pentagon ... John T. **Manclark**, to Dir., Test & Eval., USAF, Pentagon ... Cathlynn B. **Sparks**, to Asst. Auditor General, Field Activities, AFAA, Pentagon.

**SES RETIREMENTS:** Howard W. **Leaf**, Edward **Riojas Jr.**

**Reserve Navigators May Move to Pilot Seat**

Some Air Force Reserve Command C-141 and KC-135 navigators who face job loss due to aircraft modernization may qualify to switch to the pilot's seat under a program that waives age restrictions on such a move.

The displaced navigators would have to be less than 33 years old on Sept. 30, 2001, to enter specialized undergraduate pilot training, said Air Force officials. Those who qualify include C-141 navigators whose units are converting to C-17s and KC-135 navigators displaced by the avionics modernization program Pacer CRAG.

Paperwork for the move must be submitted by Sept. 30, 1999. Those interested must also have at least 10 years total commissioned service eligibility remaining before mandatory

separation date and score at least the minimum on the Air Force Officer Qualification Test, among other requirements.

### Two AWACS Go to Gulf

In February two E-3 Sentry Airborne Warning and Control System aircraft deployed to Southwest Asia, and approximately 100 personnel from Air Combat Command's 552d Air Control Wing, Tinker AFB, Okla., were airlifted there by an Air Mobility Command C-5.

"People and aircraft from the 552d will provide airborne command and control for coalition aircraft and surveillance of the northern and southern 'no-fly' zones over Iraq," said Col. Charles Winstead, 552d ACW vice commander.

The wing brings to Southwest Asia an airborne battle management platform with AWACS. The E-3 provides theater commanders with an airborne radar platform that identifies all friendly aircraft in its range and any potential airborne threats.

### Air, Space Basic Course Begins

A trial run of the Air and Space Basic Course School began at Maxwell AFB, Ala., Feb. 9, with 13 new second lieutenants attending.

The initial test will be a dry run of the two seven-week test courses planned for this summer and fall. It will focus on checking the ASBC curriculum for content, achievement of objectives, and flow.

The curriculum includes instruction and practice on Air Force core values, core competencies, importance of teamwork, and studies in air- and spacepower history, according to Col. Stefan Eisen, ASBC School commandant. It was created to help new officers understand the airman perspective and their role on the air- and spacepower team.

At the end of the course, "lieutenants will better understand how they fit into the air- and spacepower picture," Eisen said. He added that the main objective of the course is to equip participants with a better understanding of how air- and spacepower are generated, supported, and applied.

The course is designed to provide all new officers entering the Air Force with a common experience, fostering greater teamwork, and increasing officers' personal identification with the service.

### More Nighthawks Deploy to SWA

About 140 troops and six F-117A

Nighthawks from Holloman AFB, N.M., deployed in early February to Southwest Asia to add to the Air Force aircraft and thousands of Air Force members already in the area.

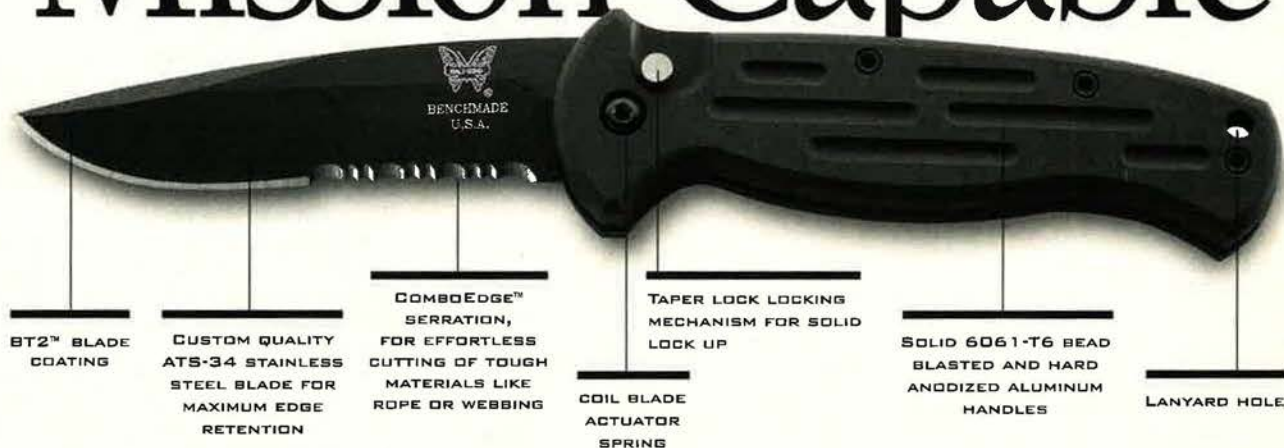
About 70 people from various units within the 49th Fighter Wing deployed to directly support F-117 operations. Additionally, about 35 people from the 48th Rescue Squadron deployed, as well as 20 to 30 49th Materiel Maintenance Group members.

### News Notes

■ Final assembly of the second F-22 was completed on schedule, and the aircraft was rolled out of the main assembly building at Lockheed Martin Aeronautical Systems, Marietta, Ga., on Feb. 10. The aircraft was towed across the runway to the F-22 engine test facility where it will undergo fueling and tank integrity tests. The aircraft, designated 4002, is scheduled to be flown for the first time this summer.

■ Twenty years ago, on Feb. 22, 1978, the first Navstar Global Positioning System satellite was launched from Vandenberg AFB, Calif. It was the first of four GPS satellites to be launched that year. The GPS is operated by Air Force Space Command's 2d Space Operations Squadron at

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Falcon AFB, Colo. Today, the system has a minimum constellation of 24 operational satellites that blanket the Earth around the clock with precise, all-weather, navigational information. By 2000, approximately 17,000 US military aircraft will be equipped with GPS receivers, and 100,000 portable receivers will be in use.

■ The Air Force Reserve turns 50 on April 14, and Air Force Reserve Command units throughout the country plan to celebrate the occasion. The theme for the 50th anniversary is "Dedicated Citizen Airmen—50 Years of Serving America." AFRC traces its origin to the National Defense Act of 1916, which authorized a corps of Reserve officer and enlisted aviators. On April 14, 1948, the Air Force Reserve became a component of the Air Force.

■ A B-1B Lancer crashed Feb. 18 near Mattoon, Ky. The aircraft, assigned to the 7th Bomb Wing at Dyess AFB, Texas, was on a training mission and was not carrying munitions. The crew members were Lt. Col. Daniel J. Charchian, pilot; Capt. Jeffrey Sabella, copilot; Capt. Kevin J. Schields, weapon system officer; and 1st Lt. Bert G. Winslow, weapon system officer. All four aircrew members ejected safely and were treated for minor injuries. A board of officers will investigate the accident.

■ The Air Force named the nation's newest B-2 Spirit stealth bomber *Spirit of Arizona* in a ceremony at Davis-Monthan AFB, Ariz., March 20. *Spirit*

*of Arizona* was the 18th B-2 stealth bomber to be named. All operational B-2s are based at Whiteman AFB, Mo.

■ More than 53 years after his B-24H was shot down by a German fighter, Pvt. William D. Stroud received a Purple Heart. While parachuting out of his aircraft with other members of his crew, Stroud was struck in the back of the head with shrapnel that nearly severed his left ear. Fighting through bouts of unconsciousness, he awoke to a German veterinarian who was bandaging his head. Stroud remained in German hands for more than a year as a prisoner of war. Air Combat Command Commander Gen. Richard E. Hawley recently presented him with the Purple Heart.

■ On Feb. 4 the Defense Department announced that two US Air Force fliers previously unaccounted for from the Vietnam War have been identified. The remains of Col. Paul G. Underwood of Goldsboro, N.C., and Capt. Donald B. Bloodworth of San Diego, Calif., were retrieved by joint US-Southeast Asian search teams in 1994 and 1995 and will now be returned to their families.

■ In late January, the Israeli Air Force took delivery of the first two of 25 F-15I fighters at Robins AFB, Ga. The F-15I, like the F-15E, is a dual-role fighter that combines long-range interdiction with air superiority capabilities.

■ On Feb. 13, Andrews AFB, Md., rededicated its Airman Leadership School in memory of the second Chief Master Sergeant of the Air Force,

Donald L. Harlow. A native of Waterville, Maine, the late Harlow served as the service's top enlisted member from 1969 to 1971.

■ The first major flight component of the X-33 arrived at the Lockheed Martin Skunk Works assembly plant in Palmdale, Calif., on Feb. 10. The 26-foot-long aluminum liquid oxygen tank will form much of the nose and forward third of the X-33, which is intended to demonstrate single-stage-to-orbit vehicle technology.

■ The Air Force Lodging Office has set up a toll-free telephone number for travelers to use in making reservations at USAF lodging in the continental US and Hickam AFB, Hawaii: 1-888-235-6343.

■ The warhead of the Boeing Joint Air to Surface Standoff Missile successfully penetrated a thick, reinforced concrete target in a sled test on Jan. 24. Boeing said the warhead casing sustained nothing more than scratches on its nose.

■ AFRC's 305th Rescue Squadron loaded two HH-60G Pave Hawks onto a C-17 on Jan. 17 at Davis-Monthan AFB, Ariz. The process verified that the helicopters could be stuffed into a Globemaster without removing their refueling probes and thus proved that the airlifters are an option for HH-60G deployment.

■ To improve the Air Force's squadron commander application and hiring process, the Air Force Personnel Center has added a squadron commander information home page to its World Wide Web site. The page will list upcoming squadron commander boards, eligibility criteria for the boards, names of those selected, and other pertinent information. The page is located at <http://www.afpc.af.mil/assignments/htdocs/> and can be accessed by clicking on the "Wing/SQ CC Information" link on the "Key Places to Go" menu.

■ The first two of four Boeing 767 AWACS aircraft built for the Japan Air Self Defense Force were scheduled to be turned over to Japanese officials on March 11.

■ On Jan. 29 the Air Force announced that the 28th Civil Engineer Squadron at Ellsworth AFB, S.D., has won the 1997 Air Force Restoration Award. Since 1990, the squadron has worked to clean up old landfills and keep the base environmentally safe through such means as maintenance of wetlands and electronic tracking of energy use on base.

■ The Air Force is moving ahead with plans to field a Mach 8 air-

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launched missile, officials said. The Fast Reaction Standoff Weapon would be a 3,500-pound munition launched from fighters and bombers and capable of carrying either air-to-ground or air-to-air submunitions.

■ The Air Force has picked Pratt & Whitney to continue development of scramjet technology that could be used in advanced, hypersonic missiles. The Storable Fuel Scramjet Flowpath Concepts program should reach the technology demonstration stage by March 2003.

■ A new Congressional Budget Office report says the need to replace or update systems bought during the defense buildup of the 1980s may necessitate an increase in the defense budget during the next decade. CBO predicts defense outlays will top \$300 billion by 2003, though it adds that many factors could still inhibit military spending.

■ Two top members of the House Committee on Veterans' Affairs have introduced legislation to codify the Arlington National Cemetery eligibility process. Chairman Rep. Bob Stump (R-Ariz.) and ranking minority member Rep. Lane Evans (D-Ill.) say their bill would eliminate the discretionary authority for burial that has led to controversy in recent months, while placing the interest of veterans and their families above all else.

■ The new Basic Allowance for Housing is unlikely to have immediate impact on overseas military members, according to US Air Forces in Europe officials. "The Overseas Housing Allowance computation is not expected to change for now," said Capt. Regina Goff, chief of USAFE financial services and entitlements, "but rate changes based on currency fluctuations and survey data will continue to have some effect on overall housing compensation overseas."

■ A B-1B bomber on Feb. 11 successfully dropped a satellite-guided Joint Direct Attack Munition, USAF said March 10. It was the first demonstration of that capability. Flying at 24,000 feet and Mach 0.85, the B-1B put the JDAM only 22 feet from exact center of the target—demonstrating an accuracy better than the test requirement, stated the Air Force.

■ The last aviation cadet still in uniform, Maj. Gen. David C. Gildart, retired at a Pentagon ceremony March 5 after 39 years of service. He was serving as mobilization assistant to USAF's Inspector General. The Aviation Cadet Program trained airmen to be pilots although they had not earned college degrees. Gildart's January 1961 class was one of the last. ■

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**We're getting better at intelligence, surveillance, and reconnaissance—but the problems are evolving, too.**

# Complications Over

By John A. Tirpak, Senior Editor





# head

A black silhouette of a U-2 spy plane is shown in flight, viewed from a low angle. The plane's long, thin fuselage and swept-back wings are prominent. Below the plane, a landscape is visible, featuring the Golden Gate Bridge and rolling hills under a clear sky. The overall color palette is dominated by blues and greys.

**W**HEN the Cold War ended, the US slashed its forces accordingly. Then, it cut even more. The latter action stemmed in part from the expectation of dramatic advances in intelligence, surveillance, and reconnaissance. The assumption was that, with improved ISR, Washington could meet all of its post-Cold War obligations with a relatively small force.

The idea was that the US, by knowing what was going on, could precisely employ military force in exactly the right place, at exactly the right time, with little wasted motion.

The gains in ISR are materializing as expected. However, the end of the Cold War and the global upheaval that ensued have created a new set of dangers. Regional aggressors, no longer restrained by superpower patrons, now are freer to act on their ambitions. Terror groups are acquiring the means to inflict great damage but often without having a fixed array of facilities to be watched and analyzed.

*USAF's "eyes and ears," like the U-2, are receiving upgrades and improvements to keep them in service indefinitely.*

*While gains in ISR are taking place as expected, the US faces a new breed of foes—such as regional aggressors and terrorist groups—that are more mobile, less predictable, and use increasingly sophisticated methods. Technologies being developed to meet this challenge include multispectral and hyperspectral imagery that provide fine-grain images.*



Moreover, these foes have proved to be more mobile, less predictable, and highly sophisticated in deception, jamming, and encryption. As some see it, they confront the Air Force's ISR community with the greatest challenge it has ever faced.

The new breed of threats constitutes "an entirely different problem" than that seen in the Cold War, according to Maj. Gen. John P. Casciano, director of ISR, Deputy Chief of Staff for Air and Space Operations.

### New Targets

Back then, the paramount concerns were strategic; the critical need was to keep tabs on advances in Soviet weapons and order of battle and to watch for warning signs of World War III. Today, the ISR establishment is preoccupied with finding weapons of mass destruction, watching for the eruptions of large regional conflicts, and monitoring the secretive activities of organized terrorist groups.

For the ISR community today, the main focus is to "take intelligence, turn it into useful information, and use it for planning and execution," Casciano said. Simplified, the goal is "real-time targeting support to the

cockpit, to the Air Operations Center, [and] to the decision maker."

The most intense concentration of effort under way in the ISR field, the general said, is in creating an "all-encompassing architecture that takes advantage of ... the network of sensors, command-and-control nodes, and shooters."

Virtually all of the platforms employed today by the American military—from large surveillance aircraft down to main battle tanks equipped with thermal sights—generate imagery or data that can supply the intelligence network with an updated, real-time database depicting the battlespace in great detail.

Collecting this information, turning it into a product a field commander or pilot can use, and then piping it to that person is the herculean task facing the ISR community. Making it easy for Americans to gain access to that information without also leaving it vulnerable to the enemy is almost as formidable an undertaking.

A classified Air Force study called "Airborne Recce 2010" will bring together these requirements and serve as a road map for achieving the sensor fusion and data distribution believed possible within the next decade.

When he was USAF Chief of Staff, Gen. Ronald R. Fogleman frequently predicted with high confidence that the United States would be able to "find, fix, track, target, and engage anything of military significance" on the surface of the Earth. Actually, he said, US systems could do it already but not in near-real time, which was the goal.

According to Casciano, Fogleman outlined "a tremendous vision for our Air Force and our military." Fulfilling the vision will require a careful balance between maintaining and adapting the Cold War or "legacy" data collection systems and investing in the new platforms and systems needed to take on the new threats, he explained.

Into the foreseeable future, Casciano maintained, "We're going to have a mix of manned and unmanned platforms, and I think [manned] platforms ... are going to be around [for a long time] because they have proven technologies, and they have no ready replacement at this point in history."

Several key platforms—the Air Force's "eyes and ears" that form the nucleus of today's ISR capability—are engaged in a slow transition. Airborne systems such as the U-2 spy plane, RC-135 Rivet Joint, EC-135, and E-3 AWACS aircraft will be in service indefinitely. All of them have recently received improvements or upgrades and all have thousands of hours of service life left in them. And all are heavily tasked.

### Heavy Demand

For example, the RC-135 electronic intelligence aircraft is in such high demand around the world that the Air Force purchased two additional aircraft for the fleet, bringing the total to 16 by the end of next year. These extra aircraft are needed to help reduce the crushing operating tempo its crews have been maintaining throughout the 1990s.

On another front, the Air Force nearly has completed the re-engining of the U-2 spy plane, boosting the reliability and flexibility of the system. The U-2 also has undergone upgrades to its electronic and signals intelligence capabilities. In an effort to meet another technological priority—putting more so-called Moving Target Indicators into action—the Air Force in the U-2 up-

grade outfitted the high-flying aircraft with an MTI.

According to one Air Force official, "It's flying in Korea right now." Field commanders there are impressed by the "high-altitude, deep look" the MTI-equipped U-2 gives them.

The Air Force is moving rapidly to field its fleet of E-8 Joint STARS airplanes, which can monitor the movements of large numbers of surface vehicles, provide real-time targeting, and offer the means to orchestrate battle operations. The E-3 AWACS, which provides the same kind of information pertaining to the air battle, has undergone major improvements in recent years.

The operating tempo of these "high-demand" systems is so great that many have questioned whether USAF may be pushing its system operators out of the service.

One who thinks not, however, is Maj. Gen. Kenneth R. Israel, director of the Defense Airborne Reconnaissance Office. "Is going TDY 200 days a year too much?" Israel asked rhetorically. "Well, another generation of our leaders did it. And I'm not saying it's the right thing to do, but they did it, and they got us through the Cold War. When you're a world power, you have to do what's required."

He added that the high optempo rate is "not something we're proud of. ... We're trying to change it, because quality of life is important."



Photo by Ted Carlison

**This Global Hawk undergoing testing at Edwards AFB, Calif., is among the UAVs that help ease the burden on manned recon aircraft while offering greater endurance, ability to broadcast data, and flexible sensor payloads.**

### The Push for UAVs

Part of the answer, according to Israel, lies in Unmanned Aerial Vehicles. The emergence of the UAV as a data collection platform has substantially relieved the burden on the legacy systems, he said, and new UAV platforms will reduce it further still. It would have taken a huge number of missions with manned platforms to generate the 3,600 hours of video obtained by the Predator UAV in Bosnia, he observed.

"That saved a lot of optempo," said Israel.

The technological initiatives of DARO and the rest of the ISR community are "addressing" the optempo issue, and by sharing more responsibilities with Allies and being more choosy about "what kinds of commitments we're getting into ... we are attacking the problem," he said. Moreover, "we're trying to make sure that all of our platforms are 'multi-Int,' or capable of collecting data in a variety of intelligence spectra, "so that we can collect more information on every mission."

Israel said that USAF and other services have to be "careful ... about the proverbial 'one more straw,' " but he believes the troops are up to the challenge.

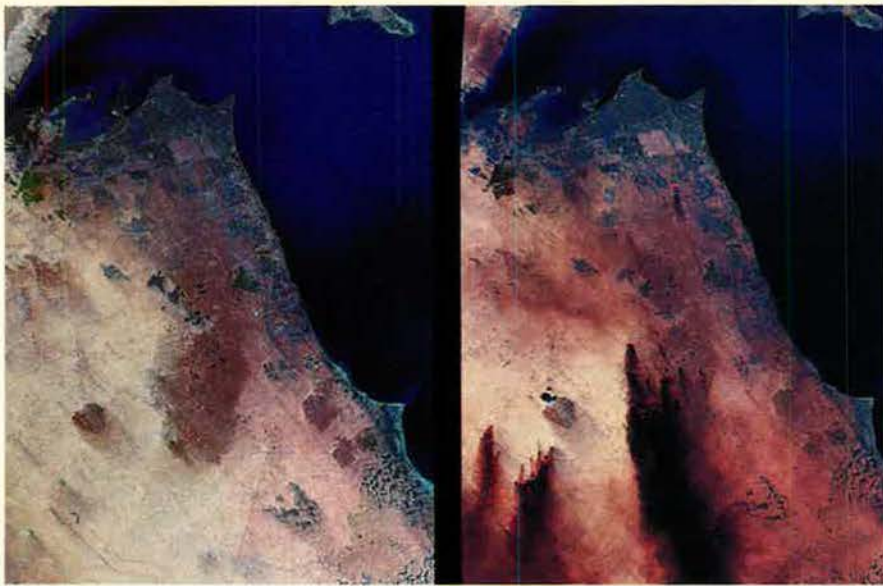
UAVs are in the spotlight, to be sure; they are expected to offer greater mission duration, lower operating cost, greater ability to broadcast data to those who need it, and more flexible sensor payloads. The new systems include the high-altitude, stealthy DarkStar; its longer-duration, less-stealthy stablemate Global Hawk; the medium-altitude Predator; and the tactical Outrider. [See "The Robotic Air Force," September 1997, p. 70.]

Casciano pointed out, however, that the UAVs have had a somewhat checkered history in recent years. He said the Air Force is constantly reviewing the ISR mission to determine how much of it should be performed by airborne manned and unmanned systems and which of those



Photo by Ted Carlison

**The RC-135 is one of the airborne reconnaissance systems whose crews are heavily tasked. USAF purchased two additional aircraft to help address the problem. The aircraft itself has thousands of hours of service life left.**



The US military used SPOT satellite images, like these of the Kuwaiti oil fires during Desert Storm in 1991, to plan air and missile raids. The ISR community is turning to such commercial satellites to take up surveillance tasks.

surveillance missions should be allowed to “migrate” into space.

According to Casciano, USAF is looking at “the requirement the nation is going to have” and wants to figure out the “kind of mix we need to maintain today and what kind of mix we need to build toward for the future.” An all-unmanned airborne recon mission is not yet in the cards, he declared.

“The UAV technology is still maturing,” he said. “I think we’re learning a lot about UAVs from our experience with Predator and we’ll learn even more when we fly Global Hawk and DarkStar, but we’re really talking about technologies that haven’t fully matured, yet.”

There are many “cost trade-offs” as well as operational considerations in that analysis, he said. If it wanted UAVs to provide everything that today’s manned recon systems do, said Casciano, the Air Force would have to develop sensor packages that are “much smaller” than the ones currently in hand.

Among the Air Force’s top technological priorities, said Israel, is the development of synthetic aperture radars of extremely light weight, in the range of 50 pounds. At that weight, such radars could be mounted on the small Outrider and give the US a quantum jump toward meeting its main objective: “day/night, all-weather capability.”

Israel also pointed to the strong need for a lightweight, onboard pro-

cessing and broadcast system for UAVs, one that would make it possible to pipe information to the shooters. Eliminating the intel “middleman” will be key to “staying inside the enemy’s decision loop,” said Israel.

Other technologies being explored include:

- Moving target exploitation, which allows semiautomatic target recognition from video.
- Better “geolocation sensors” to improve weapons accuracy.
- Larger, more detailed databases

which preserve information collected in an area “just in case we have to go back” for another contingency.

■ New “multispectral and hyperspectral” imagery which will allow extraction of more data from “before and after” images. “If you see algae growing around a vehicle, you know it hasn’t moved recently,” Israel explained. Such fine-grain sensing, with an array of new filters and techniques will be possible from a variety of platforms.

### The Right Decision?

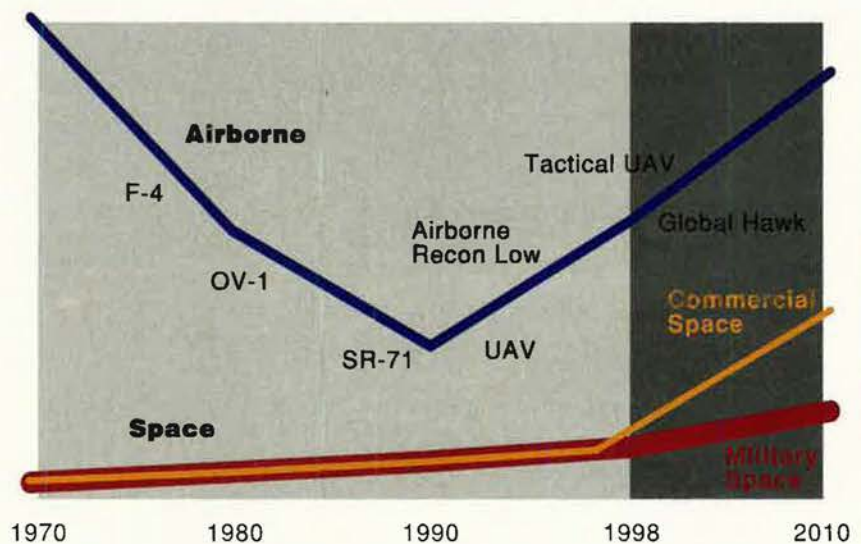
The whole subject of UAVs has been controversial within the Air Force. Casciano believes USAF was right to “bet” on UAVs, despite the steep learning curve and the inevitable Congressional criticism that attended the highly visible false starts and accidents attending the UAV program.

“I think the decision to jump-start our transition into unmanned vehicles was the right one,” he asserted.

The UAVs were brought toward operational use under a fast-track effort to field promising experimental technology as quickly as possible. The approach highlighted some of the problems inherent in trying to transition from an experimental test bed to a production vehicle, Casciano acknowledged, but he added that the problems are now understood and can be overcome.

“We’ve learned a lot,” he said.

### Reconnaissance Trends



After a long decline, the use of manned and unmanned airborne assets, supplemented with space-based assets that provide global awareness, is on the increase.

"We're just going to get better at the transitions."

Though most seem reasonably pleased with the outcome, funding of the quick introduction of the UAVs for reconnaissance came at a price. In order to finance the new systems, the Air Force "deferred" some critical upgrades to the manned fleet—for example, re-engining the RC-135 Rivet Joint and upgrading the antiquated cockpit of the U-2.

"I don't think it's impaired our mission performance to any great degree," Casciano said, "but it's deferred some necessary modernization."

The Pentagon made some choices that have proved highly unpopular with Congress and the National Defense Panel, a group of outside civilian analysts and retired flag officers charged by Congress with assessing US military forces and policies and then recommending changes. The NDP issued its final report in December.

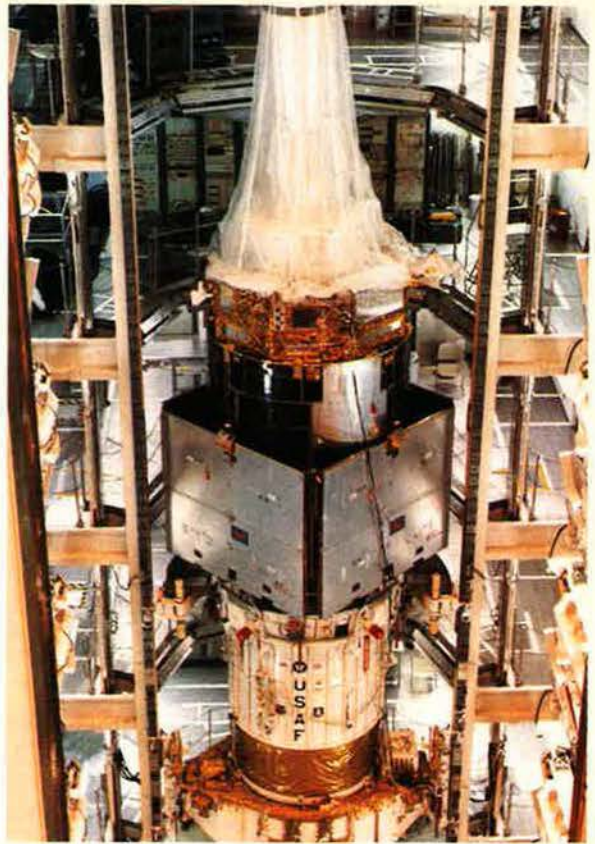
The prime example of displeasure focused on DoD's controversial decision to cut back the Air Force's planned fleet of Joint STARS aircraft.

Just a few years ago, then-Deputy Defense Secretary John M. Deutch said that the E-8 would make the US so dominant on the battlefield that he could not anticipate a time "when we will not be building Joint STARS."

However, in last year's Quadrennial Defense Review, DoD cut the program, reducing the number of planned operational airframes from 19 to only 13. (Another test aircraft would have brought the total planned fleet to 20.) In making that decision, Defense Secretary William S. Cohen had expected that NATO would buy some number of Joint STARS as an Alliance asset for its air-to-ground surveillance system—just as it had purchased AWACS years before—and he counted on having these aircraft to supplement the US fleet in places such as Bosnia, where NATO is having great success using Joint STARS data. NATO has declined to pursue Joint STARS, however.

Cohen now "is committed to re-visiting [the issue of] the number of Joint STARS," Casciano said, adding that the review of the decision is expected to be made during the spring

*A Defense Support Program spacecraft is readied at the Kennedy Space Center, Fla., in 1991. DSP satellites, which detect ballistic missile launches, have "served us well over the years," said Maj. Gen. John Casciano, ISR director, "but the environment has changed and we need a much finer-grain capability to work the missile problem."*



and summer, with a conclusion ready in time for "building the next [DoD] budget," which will be unveiled in early 1999.

The NDP opined that large, expensive platforms like Joint STARS are vulnerable to attack or mishap. It further hinted that there are now in existence other technologies that could supply the same capability at lower cost and with less risk.

Casciano acknowledged that such new technologies will have to be considered in the course of the Joint STARS fleet size review, but he seemed skeptical of their utility. For example, he noted, UAVs have been mentioned in the context of the Joint STARS mission, but a UAV "won't give you the full range of capabilities we have in Joint STARS now," especially the large battle-management element, said Casciano.

The review will look at current and prospective airborne technologies, as well as the possibility of a space-based Joint STARS, both of which might not exactly substitute for Joint STARS but which could "figure into an architecture for battlefield surveillance and real-time strike," Casciano said.

The Joint STARS issue underscores the reasoning behind estab-

lishing DARO three years ago, he added. "The idea of setting up [DARO] ... was to put the majority of theater ... recce assets into [it], creating a funding pool, and then make the trade-offs within that. ... And that is essentially what has been done," Casciano explained.

### The View From Space

Like the rest of the force, the ISR community is turning to commercial sources for satellites to take up some of the burden of global surveillance.

"A few years ago, we made a national decision to allow industry to put up remote sensing capabilities in space [with] one-meter resolution or higher, and some of those are going to be usable for mapping, for wide-area surveillance, for mission planning," and other purposes, Casciano noted.

He added, "We're just now in the process of working with [National Imagery and Mapping Agency] to get access to some samples" of the imagery that can be provided "to see how we can integrate them into our planning and operations."

NIMA has the lead—and the funding—for acquiring commercial imagery and making it available to regional commanders in chief.



**U-2s upgraded with Moving Target Indicators now fly over Korea, giving field commanders a high-altitude deep look. They help address ISR's toughest task—keeping track of terrorists and weapons of mass destruction.**

One thorny issue confronting decision makers concerns the extent to which—even whether—the United States should be able to deny an adversary the “take” from commercial satellite sensors in a crisis. Casciano observed, “It’s something we’re going to have to confront.” That’s because, “while we can leverage what’s available [commercially], so can anyone else who has the money and the will and the contractual vehicle to get it.”

He added that the issue may force a review of the commercial imagery policy over time to see if it is, on the whole, a benefit or a danger. In any event, “the ability of a potential adversary to sense what we’re doing will be greater than it has been in the past,” he said.

Casciano went on to say that the ISR community is facing a major debate on whether to pursue smaller, more numerous US recce satellites or stick with “big battleship” types, the latter including the Keyhole and Lacrosse systems.

Casciano said Keith R. Hall, the director of the National Reconnaissance Office and assistant secretary of the Air Force (Space), and Gen. Howell M. Estes III, commander in chief of US Space Command, “have worked all this smartly in terms of bringing black-world and white-world space into some kind of convergence.”

“That has really been a breath of fresh air,” Casciano noted, adding

that it will allow the Air Force to address larger issues of large-and-few vs. small-and-many.

In some cases, “the spaceborne solution may be cheaper. In other cases, what you may want to do is use space-based assets for that kind of global awareness, with some ability to focus from space, but then supplement that with airborne [assets], both manned and unmanned,” Casciano said.

### Tomorrow's Priorities

Asked to describe ISR priorities, Casciano put the Space-Based Infrared System at the top of the list.

He said that the Defense Support Program, a series of satellites that watch for plumes of ballistic missile launches, “has served us well over the years, but the environment has changed and we need a much finer-grain capability to work the missile problem, whether it be the strategic missile or, especially, the theater missile.”

The Air Force will loft 24 low-Earth-orbit SBIRS satellites, two in high Earth orbit and four in geosynchronous orbit, for a total constellation of 30 spacecraft, starting in 2004.

The second highest priority Casciano put as the Information Superiority/Air Expeditionary Force.

The IS/AEF is a short-notice deployment of Joint STARS, Rivet Joint, and AWACS airplanes to a contingency in order to start “building up situational awareness, doing

intelligence preparation of the battlespace, and supporting whatever mission is required,” Casciano said. [See “The Electronic Triad,” January, p. 54.] The next crisis faced by the US military “will probably be one we haven’t thought about, and we need to be able to get in there quickly and provide the National Command Authority with the information they need to make decisions.”

The third highest priority in ISR Casciano would put on “communications throughput capacity.” The force is so information-dependent, and the flow of information is getting so heavy, that “we need more bandwidth,” Casciano said.

“We need to take advantage of data compression capabilities ... upgrades to [Defense Satellite Communications System] and Milstar and commercial communications capabilities,” he said. “We’ve got to be able to move large amounts of imagery ... threat pictures.”

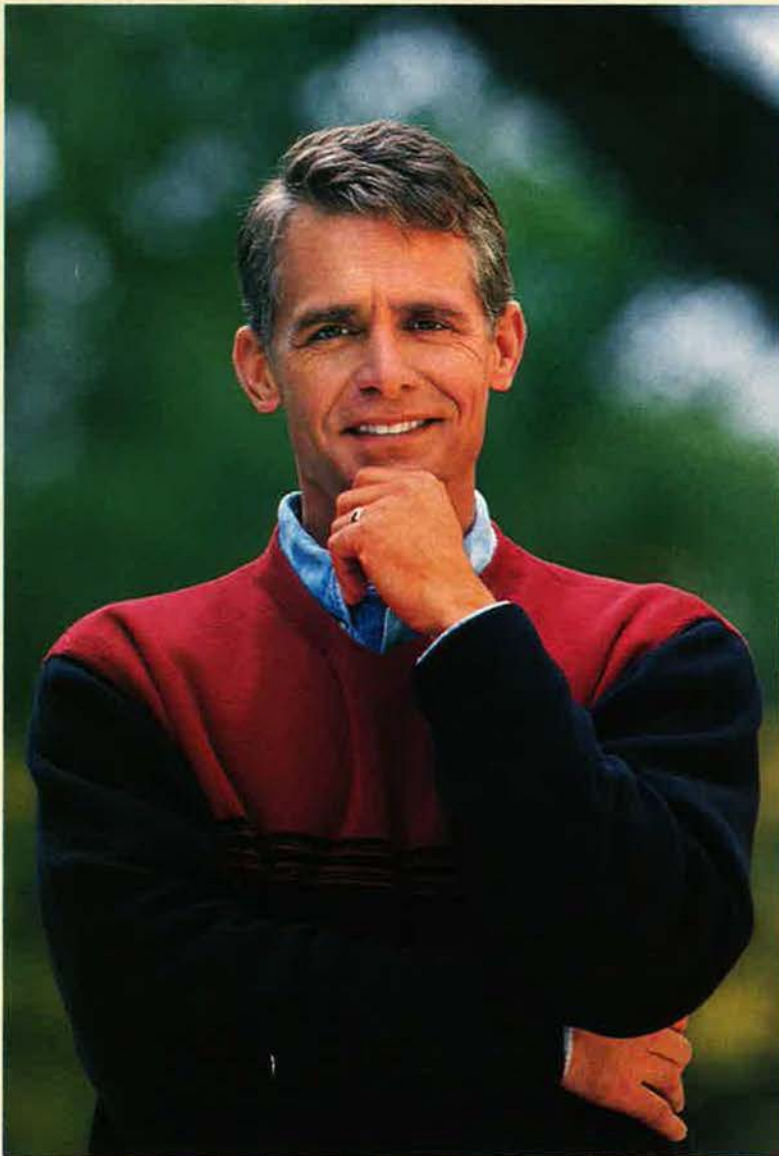
Israel agreed that increased bandwidth is a top concern because commercial interests are already starting to lay claim to frequencies not used by the civil sector in the past; before they are auctioned off, the military need for them should be determined. “Our spectrum is getting smaller and smaller because other people want to get access to it,” he said.

Casciano, looking into the future, maintains without hesitation that the toughest ISR task will be keeping track of terrorists and weapons of mass destruction.

“Some technologies are available, or will be available, to help us,” said Casciano, when it comes to tracking down chemical, nuclear, or biological weapons. There are technological “opportunities ... in measurement and signatures intelligence”—sensors that could “detect precursor materials” for WMDs—[that may make it possible] “to do this throughout the entire life cycle of production and deployment.”

Such technologies are “pretty sensitive and highly classified,” Casciano said. For that reason, he could not discuss them openly, but he allowed that the research involves “digging things out of the physical environment that maybe we haven’t picked out before [and] going after some of these esoteric phenomenologies.” ■

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The Air Force and the Army demonstrate two very different cultures where Total Force is concerned.



Photo by Erik Hildebrandt

# Guard Controversies

*Air National Guard and Air Force Reserve personnel, like ANG boom operator SSgt. James Perrott, are an integral part of USAF's Total Force.*

By James Kitfield



**I**n their camouflage field uniforms, Brig. Gen. Paul R. Cooper and Col. Willie Jones seem very much alike. Both are tall and middle-aged, sporting crew cuts graying at the temples, and each displays a sense of command bespeaking years of experience. Each serves in a reserve component of the Total Force.

Cooper, however, is a member of the Air Force Reserves, which, with the Air National Guard, provides the reserve capability of the Air Force. Jones serves in the Army National Guard. As a result, their experiences, responsibilities, and relationships with active duty counterparts are worlds apart.

In 1996, Air Force officials placed Cooper, then a colonel, in charge of Tuzla AB in Bosnia. Cooper, in command of active, Air National Guard, and AFRC units, coordinated all activities at the central air hub for US forces deployed on the Balkan peace-keeping mission. Though Cooper's position carried great responsibility, neither he nor his troops thought it unusual that USAF gave the job to him, a Reservist.

"In fact, most people don't even realize I'm in the Reserves or that we have nine other Reservists and Air National Guardsmen in positions of responsibility here at Tuzla," said Cooper at the time.

He went on, "Because I am a Reservist and have not spent much time rotating through staff positions during my career, I have more experience managing at the wing level and more flying hours than any of my active duty counterparts."

Jones has a different story to tell.

In his 22 years in the Army National Guard, his unit has never been activated for a live contingency. That unit, 103d Combat Engineers Battalion, is part of the Pennsylvania National Guard's 28th Infantry Division (Mechanized). The 28th is one of the eight Guard combat divisions which the Army says are so superfluous to US military demands of the post-Cold War era that they don't even appear on any official war plans.

The estrangement of the ARNG from the Regular Army is so great that, for more than five years, Jones

has had virtually no contact with his active duty counterparts.

### Not Happy

"The problem with combat elements in the National Guard is that there's very little chance that we'll ever get called up for a contingency to use the skills we train for as a unit, and we're not happy about that," said Jones, who in civilian life is a Philadelphia parole official.

As part of the Army cost-cutting campaign of recent years, the Army has even eliminated exchange programs between active and Army National Guard officers in his unit.

"It's a shame the Army doesn't do that anymore," Jones remarked, "because those exchanges kept you from getting an 'us-and-them' attitude. When we worked together the active Army could see that we're committed just like they are."

The clashing experiences of Cooper and Jones are indicative of a wider split that continues to confound Pentagon and service leaders. While the regular Air Force and its reserve components—Air Force Reserve Command and Air National Guard—enjoy what is viewed as a close-knit and respectful working relationship, Army-ARNG ties have plummeted to a historic low.

Today's tension stems from threats to force structure and personnel. The Regular Army, as part of the Pentagon's Quadrennial Defense Review in 1997, decided to cut Army National Guard strength by 38,000 positions. This sparked open political warfare between the two components that, with the Army Reserve, make up the Total Army.

Senior Army leaders reasoned that it was time for ARNG to give blood, as the other components had. In the years since the end of the Cold War, they noted, the active duty force had been reduced by 35.7 percent and the Army Reserve (which is a wholly federal organization) by 34.8 percent. In contrast, the Army National Guard had been cut 19.7 percent.

Convinced that the Army had purposely left them out of the QDR's final decision-making process, the Guard leadership lashed out with an

open and unusually vitriolic campaign to reverse the QDR findings. The effort was spearheaded by the state adjutants general, those senior National Guard leaders who normally report not through the military chain of command but to state governors (unless activated by the federal government).

Nearly half of the nation's governors wrote to President Clinton to protest the 38,000 cut in Guard strength. Further inflaming the split was an unusually harsh public statement issued jointly by the Adjutants General Association of the United States and National Guard Association of the United States. The paper, called "National Military Strategy and the Rebuttable Presumption," contained the following allegation: "Because of the Army Staff's obstinate shortsightedness, the Total Army that won the Cold War is on the brink of extinction. The Army Staff's obvious personal desire to eliminate the Army National Guard as military competition [left] the adjutants general shocked by the entire process."

### Congress Steps In

This open defiance infuriated Army leaders, but Guard leaders received a sympathetic hearing on Capitol Hill, where the Guard traditionally has enjoyed wide support. Some lawmakers openly sided with the Guard, noting in the process the wide and deep differences in the Air Force and Army experiences.

"We're proud of how the Air Force and Air Guard work together," pointedly declared Sen. Christopher Bond (R-Mo.), co-chair of the National Guard Caucus. Bond went on to note, "The Army doesn't seem to have figured out yet how important the National Guard is as a mobile ready reserve. Given that you can maintain a National Guard unit at 25 to 30 percent of the cost of an active unit, I think they are going to become increasingly important as budgets contract."

Since the release of the QDR, Pentagon and Army officials have been in a defensive crouch, trying to quell the rancorous debate and do something about the obviously growing



*Aerial refueling is one part of the ANG mission, carried out here by a KC-135 crew: (l-r) Maj. Dwayne Lee, 1st Lt. Jeff Jones, SSgt. James Perrott, and Maj. Rich Johnson, 171st Air Refueling Wing (ANG), Pittsburgh IAP/ARS, Pa.*

rift between the Regular Army and the Army National Guard.

Their job has been dramatically complicated by increased Congressional entanglement in the dispute. A group of lawmakers led by Sen. Ted Stevens (R-Alaska) moved to raise the head of the National Guard to four-star level and give him a position on the Joint Chiefs of Staff. At present, the National Guard is led by a three-star Army National Guard officer, Lt. Gen. Edward D. Baca.

Secretary of Defense William S. Cohen rejected this idea, and it failed in Congress—this time. Instead, Cohen announced the establishment of two new JCS staff positions, each to be filled by two-star generals from the National Guard and Reserves. Each will serve as special assistants to the Chairman of the Joint Chiefs of Staff and will advise on Guard and Reserve matters.

Last summer, Cohen also ordered the Army to hold an “off-site” caucus bringing together Regular Army, Army National Guard, and Army Reserve leaders, the goal of which was a compromise solution to the QDR force-cut issue. The deal that emerged from that meeting called for the Regular Army to take, as planned, its entire QDR troop cut of 15,000 in the next three years. In that same period, the Army National Guard was to give up 17,000 troops—not 38,000—and the Army Reserve 3,000.

Army leaders insist that they did not back away from the QDR’s plans, which envisioned slicing away the additional 21,000 ARNG troops by 2002. In their view, those cuts are still in the cards for future years. However, Army Guard leaders exited the off-site meeting with the clear belief that they had staved off those cuts and would revisit the whole matter at a later time.

The ARNG view was summarized in this way by Maj. Gen. William A. Navas Jr., director of the Army Na-

tional Guard Bureau in the Pentagon: “Our position is that the 17,000 cut ... will bring us to about 350,000 troops, which we think is basically the level necessary to have a viable National Guard.”

### False View?

ARNG officials maintain that the Regular Army has misrepresented its position on the matter of force cuts. “We’re being widely depicted as recalcitrant [because of] our effort to retain combat force structure,” said Navas, “but remember that we’re talking about American citizens fighting for the right to bear arms and possibly die for their country.”

Throughout the controversy, policymakers and members of Congress have continually asked Army leaders why they can’t take a page out of the Air Force’s book and use it to develop more amicable relations with the Army Guard.

It is true, as the Army often notes, that there are substantive differences between the Army and Air Force missions and organization, and these make it hard to draw direct comparisons. However, a number of Air National Guard experts maintain that the Army could observe the Air Force and learn some valuable lessons.

The first of these lessons, they say, would be this: The project of integrating the service elements has a better chance of succeeding if the regular force leaders accept the re-



*An OPFOR tank rumbles through the desert at the Army’s National Training Center at Ft. Irwin, Calif. Though the regular Air Force and its reserve components enjoy a close-knit relationship, Army-ARNG ties are strained.*

serve components' commitment and ability to perform the mission. They say that, in the Air Force, that kind of attitude is only too evident, in ways both obvious and subtle.

Here is the view of Maj. Gen. Ronald O. Harrison, an Air National Guardsman and Florida adjutant general: "Call it culture or a mind-set, but if you ask an Air Force officer how many fighter wing equivalents the service has, he'll say, 'Twenty.' He won't say, 'Thirteen active and seven reserve.' Ask an Army officer how many divisions the Army has, and he'll say, 'Ten.' But that's not true. The Army has 18 divisions—10 active duty and eight National Guard."

Harrison believes the issue boils down to loyalty.

"Most National Guardsmen," he said, "are proud to wear the Army uniform, and they want the Army to succeed. And while the Air Force has proved it wants the Air National Guard to succeed, the active component Army has yet to prove that it wants the Army National Guard to succeed."

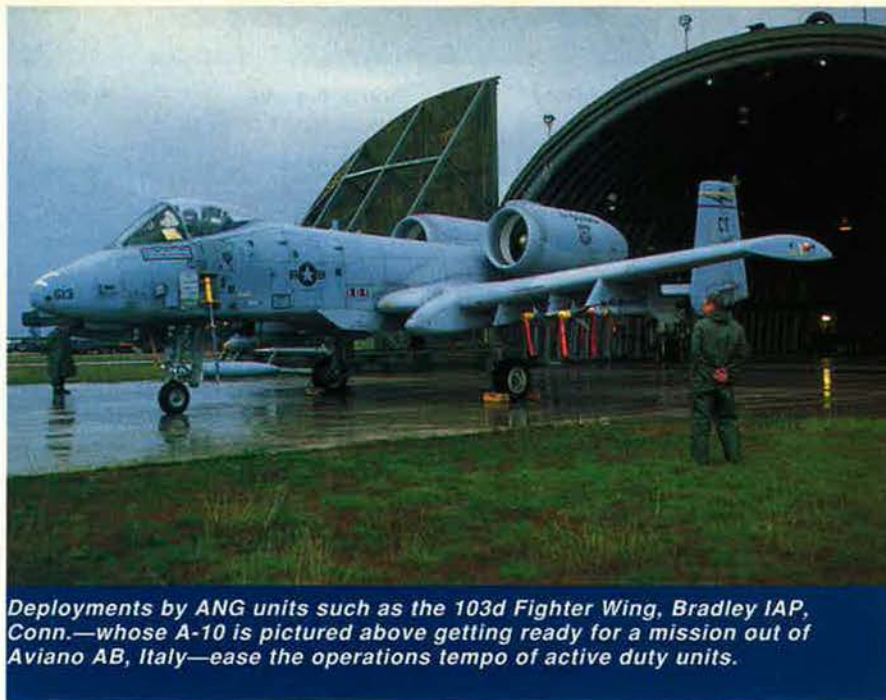
Brig. Gen. Daniel James III of the Air National Guard recalls being struck by the Regular Army's attitude toward the Guard when he first assumed responsibilities as Texas adjutant general.

### Missionless

Said James: "I can remember coming into a meeting and asking my Army National Guard commanders what their wartime mission was and who they would be chopped to in an emergency. The chief of staff looked at me and said that our Guard division didn't have a mission. I said, 'My God, man, how can that be? Do you realize what the active duty Army is telling you?'"

The issue of the readiness and capability of the Army National Guard's eight combat divisions lies at the center of the present controversy.

Citing studies prepared by the General Accounting Office, RAND Corp., and DoD's 1995 Commission on Roles and Missions, the Army concluded that the Army National Guard has significant excess combat force structure. Army leaders estimate that it would take nine to 12 months to bring a National Guard heavy combat division to wartime



*Deployments by ANG units such as the 103d Fighter Wing, Bradley IAP, Conn.—whose A-10 is pictured above getting ready for a mission out of Aviano AB, Italy—ease the operations tempo of active duty units.*

readiness. For this reason, the Army and Joint Chiefs of Staff continue to resist writing the eight Guard divisions into the US war plans even in a worst-case scenario of having to fight two major regional wars nearly simultaneously.

War planners and a number of independent experts say the need for such a large "strategic reserve" largely disappeared with the collapse of the Warsaw Pact and Soviet Union.

And, Army officials say, the divisions could become even more irrelevant and underfunded in the future unless the National Guard accedes to an Army request to reshape its heavy combat divisions into less expensive light infantry units.

Besides making the Guard divisions better suited to missions such as those seen in Somalia, Haiti, and Bosnia, he said, such a restructuring would also facilitate 28,000 of the Army National Guard's troop cuts dictated by the QDR.

Regular Army officers are cynical about where the debate might be headed. "We know that the National Guard considers its combat divisions as the coin of the realm," said a senior Army general. "The chief of staff of the Army has said to the National Guard, 'If you will reconfigure the combat divisions from heavy to light, we will give you more real-world missions than you can stand,' and forever put to rest this argument about their relevance. Unfortunately, that

proposition has fallen on deaf ears. The National Guard has refused to consider it, out of hand."

While the issue of the National Guard's eight combat divisions remains unresolved, Army officials insist that progress has been made in recent years in attempting to make Guard units more relevant and ready. Under a 1996 division redesign agreement, for instance, the Army began transitioning 12 National Guard combat brigades into much needed support units. Under a "first to fight" funding scheme, the service invested \$17.4 billion to modernize the Army National Guard between Fiscal 1992 and 1997. The program includes 15 "enhanced" combat brigades established in 1993 and written into present war plans.

"A lot of this comes down to some very tough choices in terms of resource allocation and the fact that we're trying to spread the hurt of budget cuts as best [as] we possibly can," said Army Chief of Staff Gen. Dennis J. Reimer, speaking to defense reporters. "But if you look at our funding of the National Guard and Army Reserves as a percentage of our Total Obligation Authority, it's now at the second highest level it's been in the 35 years I've served. So while the relationship between the Army and National Guard has not been the best in the last year or so, one of my top priorities is to listen to everyone's concerns and to

Staff photo by Guy Aento

## Fiscal 1999 End Strengths (Proposed)

Service	Active Duty	Guard/Reserve	% Split
USAF	370,882	181,223	67/33
Army	480,000	565,000	46/54
Navy	372,696	90,843	80/20
USMC	172,200	40,018	81/19
<b>Total</b>	<b>1,395,778</b>	<b>877,084</b>	<b>61/39</b>

## Fiscal 1999 Force Structure (Proposed)

Service Combat Element	Active Duty	Guard/Reserve
USAF fighter wings	12.6	7.6
USAF air defense squadrons	0.0	6.0
Army divisions	10.0	8.0
Army separate brigades	0.0	15.0
Navy carriers	11.0	1.0
Navy carrier air wings	10.0	1.0
USMC divisions	3.0	1.0
USMC air wings	3.0	1.0

*The tables on this page suggest important differences between services on National Guard and Reserve policies. The two maritime services—the Navy and Marine Corps—maintain only small reserve components, which account for only about one-fifth of the strength of their total forces. In the Air Force and Army, the ratio is much higher. Only the Air Force, however, operates all of its backup forces as part of a totally integrated whole.*

make sure everybody understands our commitment to the Total Army.”

### Bigger Problem

Reserve force structure, the resources devoted to it, and the impact on readiness are central to the differences between the Army and Air National Guard. Even Guard proponents, for instance, note that the Army has far more reserve structure to support than does the Air Force. “In all fairness, the Air Guard and Reserves only comprise about one-third of the Air Force, while the Army Guard and Reserve comprise roughly 55 percent of the Army,” said Baca, the chief of the National Guard Bureau in the Pentagon.

However, Baca believes that the Army could benefit from adopting the Air Force practice of conducting objective readiness tests for all units in the reserves. He said such a test in the Army might go a long way toward dispelling concerns among active duty officers that Army National Guard units are not ready for prime-time combat roles.

And such a change in attitude can, in fact, occur. USAF’s Chief of Staff, Gen. Michael E. Ryan, points out that, as World War II ended, the

drive for a separate Air Force was in full gear, but proponents of a separate Air Force saw little role for the Air National Guard in their vision of the post-World War II Air Force. “The Air National Guard was virtually forced on a newborn Air Force by political pressure,” Ryan said. “In those early years, there was very little understanding or trust between the active duty and the Guard.” Ryan pointed out that one Air Force general even referred to the Air National Guard as “flyable storage.”

That attitude was dramatically changed over the years, given great impetus by the establishment in 1973 of the Total Force policy.

“When the Total Force policy was first established, the Air Force made a conscious decision to accept the Air National Guard and to administer objective readiness tests,” said Baca. “If a unit is found not to be ready in the Air National Guard, then the Air Force officers in charge of overseeing their training are held accountable. The Army has not reached the point yet where it is willing to administer an objective readiness test to its reserve units.”

Establishing a reliable readiness test for Army National Guard units,

say experts, might avoid a disastrous replay of 1990 when the Army, on the brink of the Gulf War, balked at mobilizing two Guard combat “round-out” brigades to complete the structure of two divisions, as called for in war plans.

The Army eventually sent the Guard’s 48th Infantry Brigade, based at Ft. Stewart, Ga., to the National Training Center in Ft. Irwin, Calif., for post-mobilization training during Desert Shield. After it was put through its paces, the Army relieved the unit’s commander and said the brigade was unfit to fight. Much of the bad blood so evident between the active Army and National Guard today can be traced directly back to that decision.

### Forced to Fail?

One who says so is retired ANG Maj. Gen. Edward J. Philbin, executive director of the National Guard Association in Washington. “That’s when much of the present mistrust started, because after [Desert Storm], I became convinced the Army would never call up a Guard combat unit. They foresaw the coming drawdown and didn’t want us to prove we could, in fact, fight.”

Experts believe there are critical differences between the Air Force and Army in the training and mission orientation of the reserve components. It has long been noted that Air National Guard units frequently prevail over their active duty counterparts in airdrop and fighter competitions. This is largely credited to the experience level in reserve units, which are composed of prior-service personnel, and the fact that their members may work together in tandem for many years.

Those units do not excel, however, as a result of the standard reserve training period of one weekend per month and one annual two-week reserve training tour, according to ANG Maj. Gen. Tandy K. Bozeman, adjutant general of California.

Bozeman observed, “When the Air Force initially came to the Air National Guard 20 years ago and said it wanted us to shoulder more of the mission, we initially said it wasn’t possible. Over the years, however, the nature of the Air Guard units changed. You routinely have pilots today who love to fly and who spend 100 days a year flying as Guards-

men. They essentially have two part-time jobs. One is civilian, and one is with the Air Guard."

The general added, "I think if the Army did the same thing with its Guard units, and funded them appropriately, it would be surprised at how elastic they are in conforming to the mission."

Army officials note, however, that while most communities have an air base within reasonable commute for pilots who want to fly on their off time, not many National Guard armories are within easy drive of a combat maneuver range.

It is also generally acknowledged that the closer a reservist's civilian job is to his or her military speciality—be it as a mechanic or civilian airline pilot—the easier it is to quickly make the transition from civilian life to active duty in an emergency.

Reimer, the Army chief of staff, maintained that this poses a serious problem for the Army, compared to the Air Force.

"I think the relationship of the Air Force and its reserves is very, very good, and we're also working on being able to more quickly transition reserve component units that have civilian skills that lend themselves to military skills," said the Army's leader. "I think we can do that with truck companies, but I don't know of any civilian equivalent of a tank crew. Those skills atrophy over time, and we have to conduct post-mobilization training to regain them."

### More Complexity

Army officials also believe that there is a different dynamic to ground warfare that makes it more difficult to train reserve units to a high state of readiness. While the individual skills taught in the Air National Guard and Reserves are more difficult to master, they say, the unit coordination is more complex for ground maneuver units.

"What the Air Force focuses on is taking individuals and training them to be proficient members of a crew on a piece of machinery, and they are superb at it," said a senior Army general. "The Army focuses on training as a unit in synchronized ground



*The Air National Guard and Air Force Reserve sometimes even lead the way for the active force. F-15s from the 199th Fighter Squadron, Hawaii ANG, were the first in USAF to test and develop night-vision goggle tactics for the Eagles' nighttime flying.*

Photo by Erik Hildebrandt

maneuver warfare, where you are simultaneously fighting the close fight, bringing in artillery and close air support, reconstituting and resupplying your force on the move, and at the same time planning the next fight. That's a much harder problem in terms of keeping a reservist trained and ready."

As a result of that complexity, the Army has essentially taken a cue from the Marine Corps on integrating its reserves. The Marines have long focused on integrating reservists primarily at the small unit level and in keeping a cadre of active duty officers and noncommissioned officers permanently assigned to its reserve units as trainers and instructors.

"I am a proponent of integrating reserve units at the lowest level possible, because the more sophisticated tasks in terms of battle integration and synchronization are done at the higher levels," said Reimer. "Above brigade level you start to get into the business of synchronizing direct and indirect fires with a lot of electrons flying around the battlefield. That's a pretty complicated business that requires a great deal of training, skill, and coordination."

At the direction of Congress, the Army is introducing some 5,000 of-

ficers and noncommissioned officers into reserve units, including all 15 of the Guard's enhanced combat brigades.

"As I travel around to the field and talk to our reserve component personnel, they tell me that that program has been very successful," said Reimer. "Ultimately, the bottom line is that everybody now accepts the fact that those Army National Guard enhanced brigades will contribute to our warfighting. We've funded them under our first-to-fight philosophy."

Besides improving the readiness and capability of the National Guard enhanced brigades, the program will have the added benefit of spurring closer interaction between the active Army and Army National Guard. Only after both components of the Total Army routinely get their boots dirty together will they draw back the veil of suspicion and distrust that has arisen between them.

"If you don't have firsthand interaction between the active Army and National Guard, so we can show them what we're capable of, the active officers are going to continue to form judgments and harbor perceptions that are wrong," said ARNG Maj. Gen. Richard C. Alexander, adjutant general of Ohio and president of the National Guard Association. "We will never solve this problem as long as there's a wedge between the active component and the National Guard." ■

*James Kitfield is the defense correspondent for National Journal in Washington. His most recent article for Air Force Magazine, "The Space and Air Force," appeared in the February 1998 issue.*



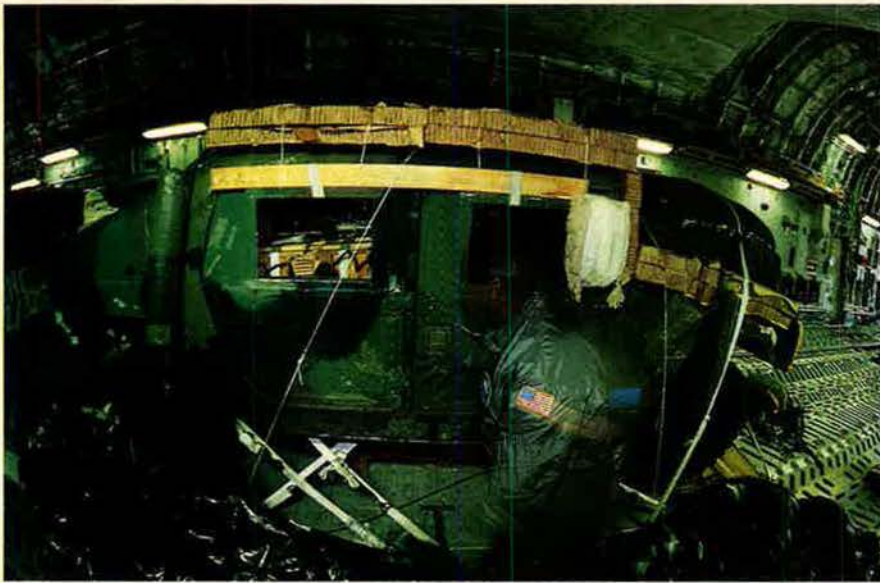
**More than 30,000 service members took part—and with more than 2,800 of them in the skies over North Carolina, things were jumping.**

# Purple Dragon

*Loaded down with equipment they need to get to the battle and fight, paratroopers from the Army's 82d Airborne Division, Ft. Bragg, N.C., board an Air Force C-130 as part of Operation Big Drop, one of the largest activities of Joint Task Force Exercise 98-1, better known as Purple Dragon.*

**Photographs by Erik Hildebrandt**





**P**urple Dragon brought together some 30,000 soldiers, sailors, airmen, and marines for three weeks in January and February. They trained in a simulated high-threat environment, with operations that included maritime interdiction, forcible entry using airborne and air assault tactics, surveillance, rescue, and ground operations. Staggering in scope, Purple Dragon maneuvers ranged along the eastern seaboard from Florida and Puerto Rico to Virginia. At left, an Air Force loadmaster checks on a Humvee as it is loaded aboard a C-17 Globemaster III.

A major feature of the exercise was Operation Big Drop, a massive nighttime airdrop of 2,800 troops and a helicopter assault force of 1,400. Five C-17s, 37 C-141s, and 27 C-130s from AMC, AETC, ANG, and AFRC units supported the huge operation. "It was a great day to be an airlifter," said mobility forces mission commander Col. Bob Cosand, 305th Operations Group, McGuire AFB, N.J.



Purple Dragon was truly Joint, from cooperative intelligence efforts to the airdrop. Jumping along with soldiers were airmen—ranging from combat controllers to Tactical Air Control Party personnel. At left, airmen check each other's "six," making certain that each piece of equipment is in perfect readiness for the next jump.



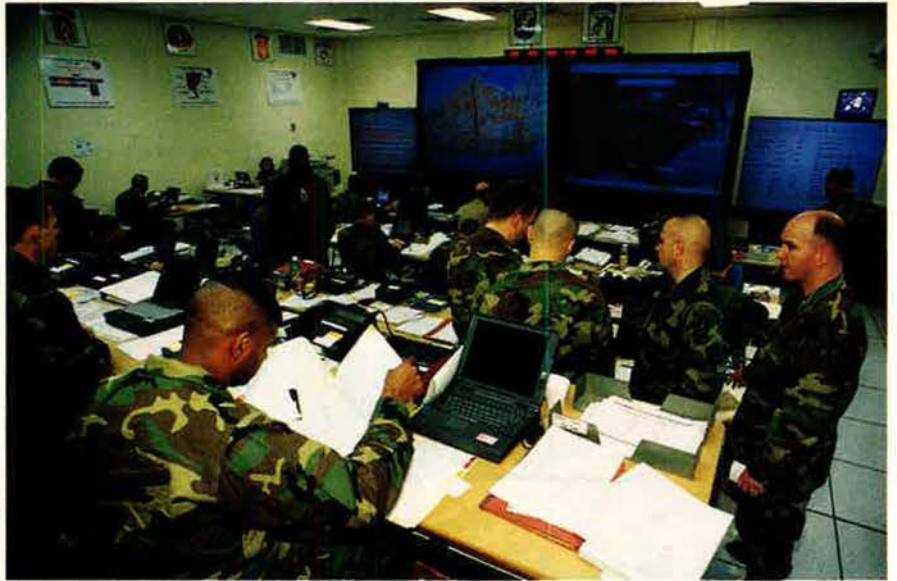


Above, some of the C-130 aircraft tasked to participate in Purple Dragon line the flight line at Pope AFB, N.C. The exercise was built around an intricate scenario designed to put the troops into extremely challenging conditions. In the story line, US forces come to the aid of the fictional country "Kartuna" and deter military action by "Florida," which is believed to be exporting weapons to Kartuna's enemy, "Korona." Ultimately, Koronan offensive capability must be destroyed and the territorial integrity of Kartuna restored. The airdrop and assault occurred at night, at the peak of the exercise, at four separate drop zones under simulated combat conditions. At right, as darkness begins to fall, troops stage next to their assigned aircraft.



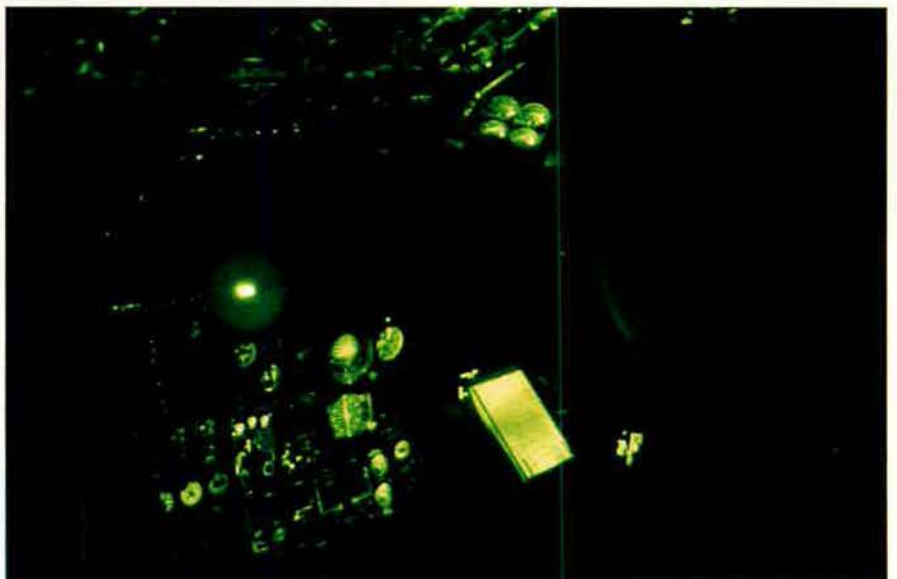
Once Air Force TACP members are on the ground, they work with Army ground units to check out the area to locate potential targets. Then, they direct air support from aircraft like this 75th Fighter Squadron A-10, shown at far left preparing to launch from Pope.

Central to the success of an exercise is coordination of resources—no small feat for one of this scope. At right is the hub of the operation, known as the “Rock”—a bustling, interconnected planning and operations center from which the “war” is run. Here, the battle staff and all the major players can follow the exercise as it unfolds. Refined tactics and updated methods of command, control, communications, and intelligence streamline much of the work.



Pope provided much of the aircraft—from airlift to close air support—and served as the staging area for Operation Big Drop. A-10s, like the one at left from the 23d Fighter Group at Pope, had plenty of time on target, as did Navy, Marine, and ANG fighter aircraft.

Adding an additional measure of reality during nighttime drops, aircrews flew with night-vision equipment. At right, the cockpit instruments of a C-130 lend an eerie glow to the faces of the flight deck crew as the airlifter approaches its assigned drop zone.





*Jumpers from the 82d Airborne fill the belly of a C-130 (above). Once airborne (below), the leadmaster and jumpmaster are the undisputed bosses—checking and rechecking preparations and equipment. At right, the jumpers, heavily loaded with equipment and parachutes, look ungainly and barely able to move, but when the jumpmaster says it's time, paratrooper after paratrooper plunges into the darkness over the drop zone. These scenes were photographed with a red filter to preserve the night vision of the troops.*



*Purple Dragon and similar exercises with their "as real as it gets" approach provide vital Joint training—meshing the unique and necessary skills and assets that each service brings to a fight. Through Joint training operations US combat forces remain ready to engage an enemy and to win decisively. ■*



# Statistics From the Storm

**E**ver since it ended, the 1991 Persian Gulf War has been the focus of intense controversy.

Claims and counterclaims have obscured many fundamental facts of the air campaign—what really happened, who did what, and what airpower actually achieved. The charts on the following pages provide some of the facts about Desert Storm.

Data on these pages are drawn from several official and unofficial studies. The two principal sources are Gulf War Air Power Survey, Eliot A. Cohen, et al, USAF, Washington, 1993; and Airpower in the Gulf, James P. Coyne, the Aerospace Education Foundation, Arlington, Va., 1992. Also consulted were studies from the US Air Force, Department of Defense, and Congress.



USAF photo by Fernando Sierra



*This F-15D from the 1st Tactical Fighter Wing, Langley AFB, Va., was among the first US forces to arrive in the Persian Gulf after Iraq invaded Kuwait.*

## Chronology

### 1990

- Aug. 2.** Iraq invades Kuwait.
- Aug. 6.** King Fahd gives permission to base US forces in Saudi Arabia.
- Aug. 7.** USAF F-15 squadrons depart for Gulf. USS *Independence* battle group arrives in Gulf of Oman, south of Persian Gulf.
- Aug. 8.** F-15s from 1st TFW and elements of 82d Airborne Division arrive.
- Nov. 8.** US sends 200,000 more troops for "offensive option."
- Nov. 29.** UN authorizes force to eject Iraq from Kuwait.
- Dec. 29.** First ANG fighter unit arrives in Gulf.

### 1991

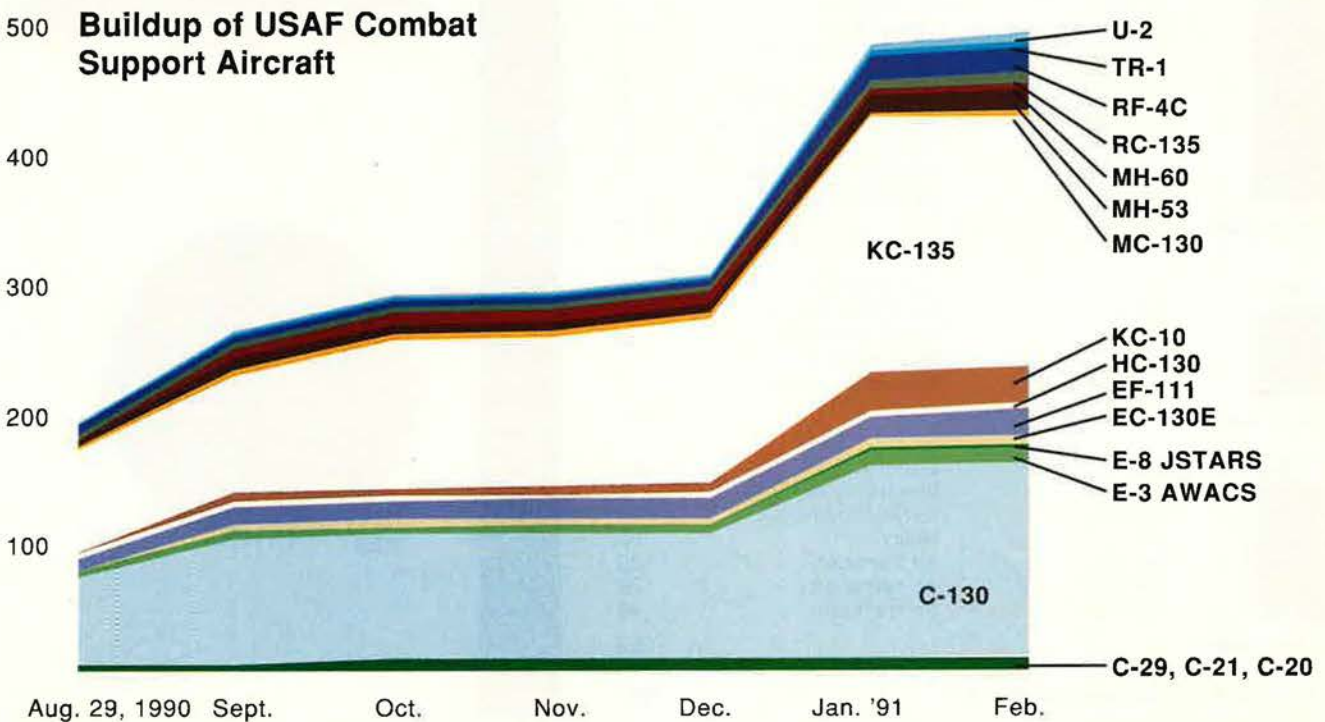
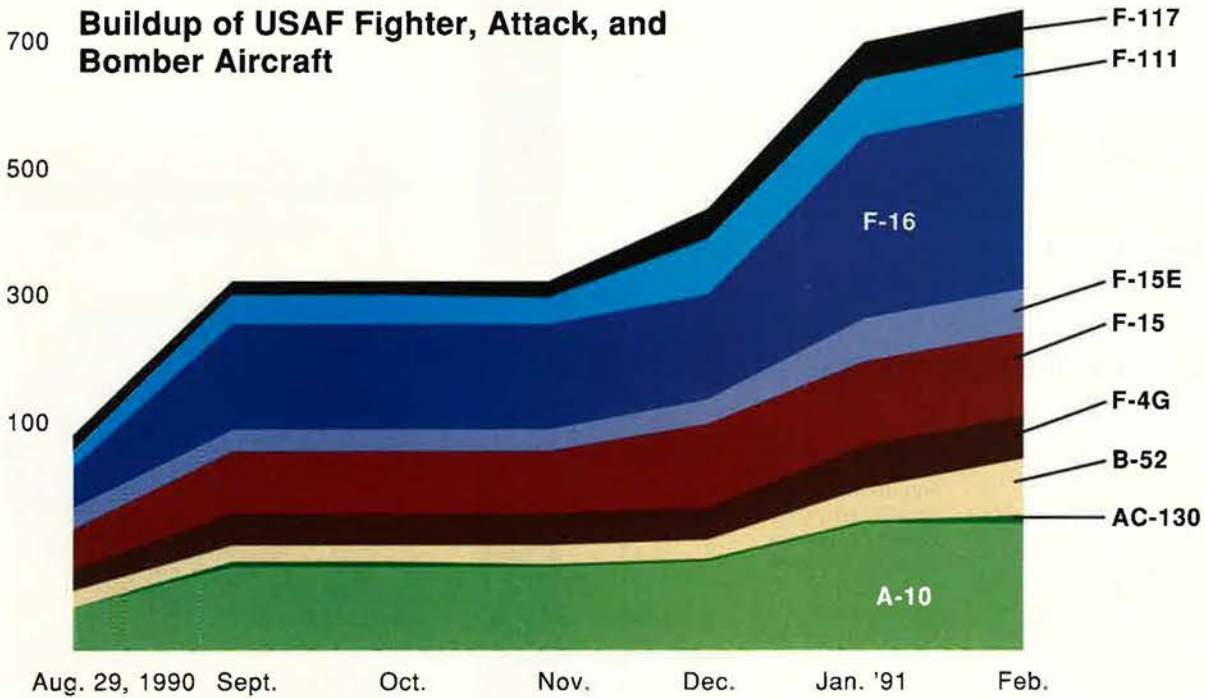
- Jan. 12.** Congress approves offensive use of US troops.
- Jan. 15.** UN deadline for Iraqi withdrawal passes.
- Jan. 17.** D-Day. Coalition warplanes strike massive blow against numerous Iraqi targets.
- Jan. 18.** Iraq launches Scuds at Israel, Saudi Arabia.
- Jan. 25.** USAF opens attacks on Iraqi aircraft shelters.
- Jan. 26.** Iraqi aircraft begin fleeing to Iran.
- Jan. 29–31.** Airpower destroys Iraqi force in Battle of Khafji.
- Feb. 24.** G-Day. Start of 100-hour ground battle in Kuwait, Iraq.
- Feb. 26.** Fleeing Iraqi forces blown to pieces by airpower on the "Highway of Death."
- Feb. 28.** Cease-fire becomes effective at 8 a.m. (Kuwait time).

## Flight Operations Summary

- USAF's in-theater fighter, bomber, and attack aircraft numbered 693 at the height of the war, or 58 percent of US in-theater air assets. They flew 38,000 wartime sorties.
- USAF aircraft dropped nearly 160,000 munitions on Iraqi targets, 72 percent of the US forces total.
- Air Force aircraft dropped 91 percent of all precision bombs and 96 percent of precision missiles used in the war.
- Air Force B-52 bombers flew 1,624 combat missions and dropped 72,000 bombs, or 26,000 tons of ordnance.
- Before the ground battle began, the USAF-led air campaign against Iraqi ground forces destroyed 1,688 battle tanks (39 percent of total), 929 armored personnel carriers (32 percent), and 1,452 artillery tubes (47 percent).
- USAF combat support aircraft numbered 487 at the height of the war, 54 percent of the US support assets in-theater.
- Air Force C-5, C-141, KC-10, and Civil Reserve Air Fleet lifters flew 14,000 long-range missions to the Gulf, delivering some 539,000 tons of cargo and nearly 500,000 troops and other passengers.
- KC-10 and KC-135 tankers flew 17,000 sorties and conducted 52,000 aerial refuelings, off loading 800 million pounds of fuel.
- Air Force Special Operations Forces aircraft flew 830 missions.
- During Desert Storm, C-130 tactical transports flew nearly 14,000 sorties, including many dedicated to the redeployment westward of Army forces.

# Preparation for War

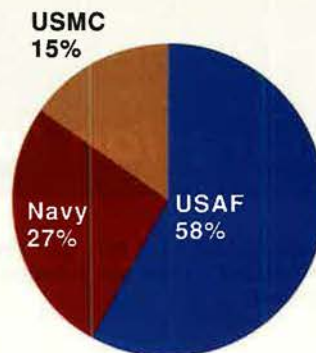
After President Bush gave the "go" order, USAF's presence in the Gulf swelled to epic proportions. USAF, at the war's height, provided 58% of US combat aircraft and 54% of support aircraft.



## US Air Order of Battle: Fighter, Attack, Bomber Aircraft

As of Feb. 1, 1991

Service	Aircraft	Type	Number	Share
<b>USAF</b>	F-15	Fighter	96	58%
	F-16	Fighter/attack	212	
	F-4G	Fighter/attack	49	
	A-10	Attack	144	
	AC-130	Attack	2	
	F-15E	Fighter/bomber	48	
	F-111F	Fighter/bomber	64	
	F-117A	Fighter/bomber	42	
	B-52	Bomber	36	
<b>Total USAF</b>			<b>693</b>	
<b>Navy</b>	F-14	Fighter	109	27%
	F/A-18	Fighter/attack	89	
	A-7E	Fighter/attack	24	
	A-6E	Fighter/bomber	96	
<b>Total Navy</b>			<b>318</b>	
<b>USMC</b>	F/A-18	Fighter/attack	78	15%
	AV-8B	Attack	84	
	A-6	Fighter/bomber	20	
<b>Total USMC</b>			<b>182</b>	
<b>Total US Combat Aircraft</b>			<b>1,193</b>	

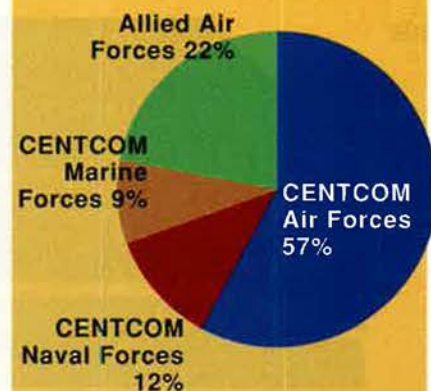


## US Air Order of Battle: Combat Support Aircraft

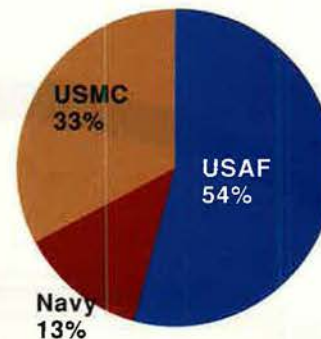
As of Feb. 1, 1991

Service	Aircraft	Type	Number	Share
<b>USAF</b>	TR-1A	Reconnaissance	4	54%
	U-2	Reconnaissance	5	
	RF-4C	Reconnaissance	18	
	RC-135	Reconnaissance	7	
	E-3 AWACS	Surveillance	11	
	E-8 JSTARS	Surveillance	2	
	EC-135	Electronic warfare	2	
	EF-111	Electronic warfare	18	
	KC-10	Aerial refueling	30	
	KC-135	Aerial refueling	194	
	C-20/-21/-29	Air transport	9	
	C-130	Air transport	149	
	HC-130	Special operations	4	
	EC-130E	ABCCC	6	
	EC-130	Special operations	2	
	EC-130H	Electronic warfare	5	
	MC-130	Special operations	4	
	MH-53	Special operations	13	
	MH-60	Special operations	4	
	<b>Total USAF</b>			
<b>Navy</b>	E-2	Surveillance	29	13%
	EA-6	Electronic warfare	27	
	KA-6	Aerial refueling	16	
	C-2	Air transport	2	
	S-3	Reconnaissance	43	
<b>Total Navy</b>			<b>117</b>	
<b>USMC</b>	OV-10	Surveillance	19	33%
	EA-6	Electronic warfare	12	
	KC-130	Aerial refueling	15	
	UH-1	Utility	50	
	CH-46	Air transport	120	
	CH-53D	Air transport	29	
CH-53E	Air transport	48		
<b>Total USMC</b>			<b>293</b>	
<b>Total US Combat Support Aircraft</b>			<b>897</b>	

### Prelude: Sorties Flown in Desert Shield

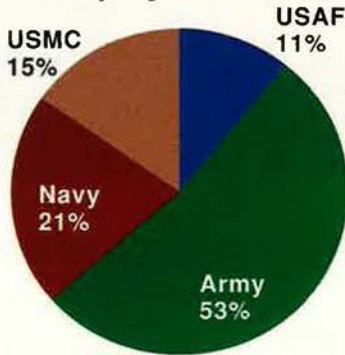


The Desert Shield run-up to war was an enormous undertaking, with USAF handling the lion's share of air operations.

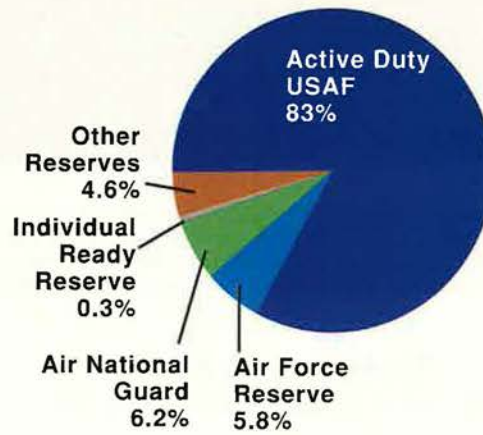




### US Active Duty Troops Deployed to Gulf



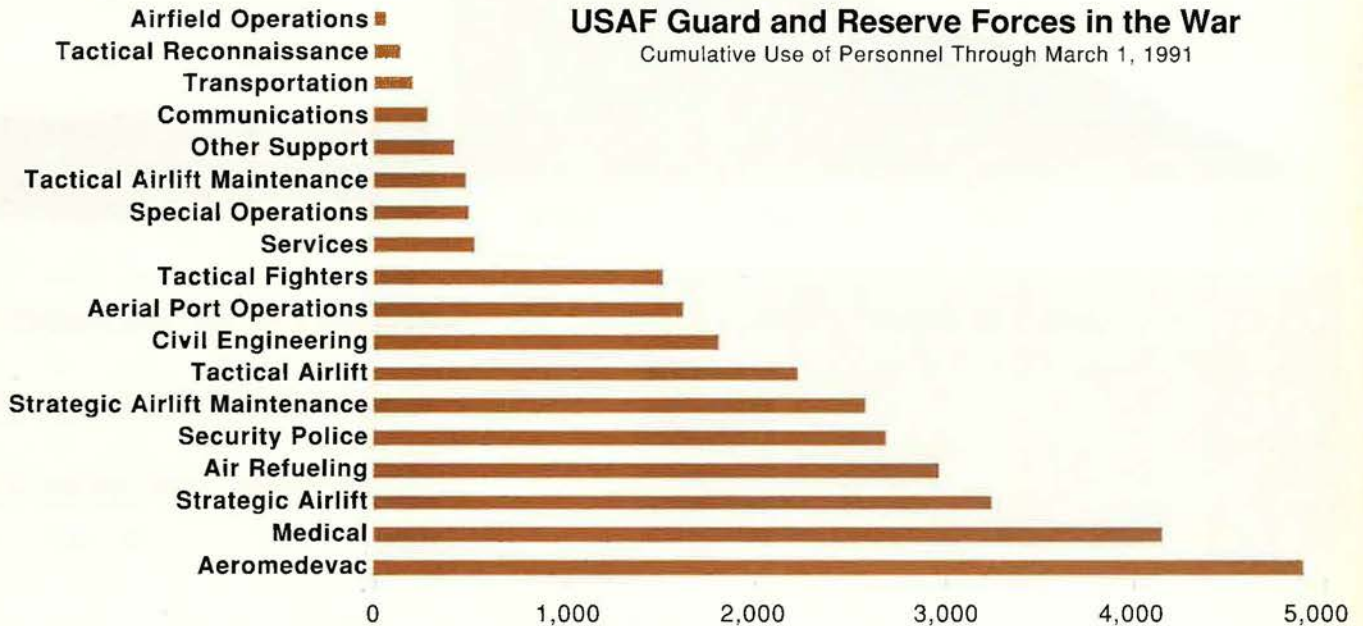
### Active, Guard, Reserve Forces Deployed to Gulf



The Gulf War was the first conflict of the Total Force era. Troops from USAF's reserve components comprised 17% of its deployed wartime force, not counting many reservists who remained in the US. Some 30,000 members of the Air National Guard and Air Force Reserve handled a wide variety of critical missions at one time or another during Desert Shield and Desert Storm, as seen in the graph below.

### USAF Guard and Reserve Forces in the War

Cumulative Use of Personnel Through March 1, 1991



### Elements of the Strategic Airlift

USAF Long-Range Airlift Force Structure in Late 1990

Aircraft	Mission	USAF	AFR	ANG	Total
C-5	Long-range airlift	83	32	12	127
C-9	Aeromedevac	23	0	0	23
C-135	Long-range airlift	12	0	0	12
C-141	Long-range airlift	254	8	8	270
KC-10	Aerial refueling	59	0	0	59
KC-135	Aerial refueling	496	30	116	642
<b>Total aircraft</b>		<b>927</b>	<b>70</b>	<b>136</b>	<b>1,135</b>

Upwards of 80% of each type committed to Desert Shield and Desert Storm  
Does not include Civil Reserve Air Fleet aircraft

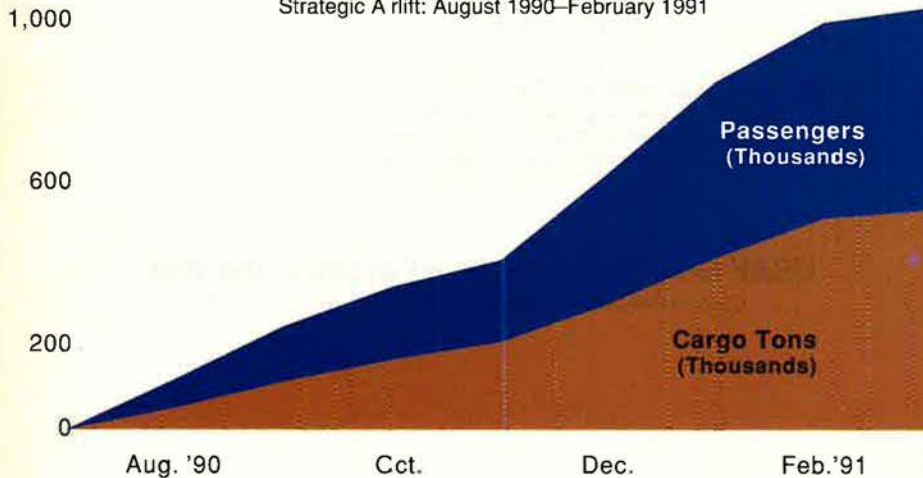
*Virtually all USAF airlifters and tankers got into the act, working overtime everywhere to rush forces to the Gulf and keep them supplied.*

# Air Mobility Effort

By mid-August 1990, 93% of USAF's C-5s, 73% of its C-141s, and many Civil Reserve Air Fleet aircraft were "flying the pipeline" from the US to the Gulf, supported by KC-10 and KC-135 tankers. All told, the long-range air mobility team delivered about 539,000 tons of cargo and nearly 500,000 passengers.

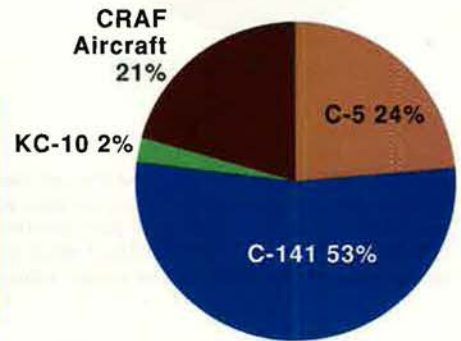
## The Aluminum Bridge

Strategic Airlift: August 1990–February 1991



## Dividing Up Strategic Airlift

Percent of Missions



## Tankers Deployed at Peak of the War

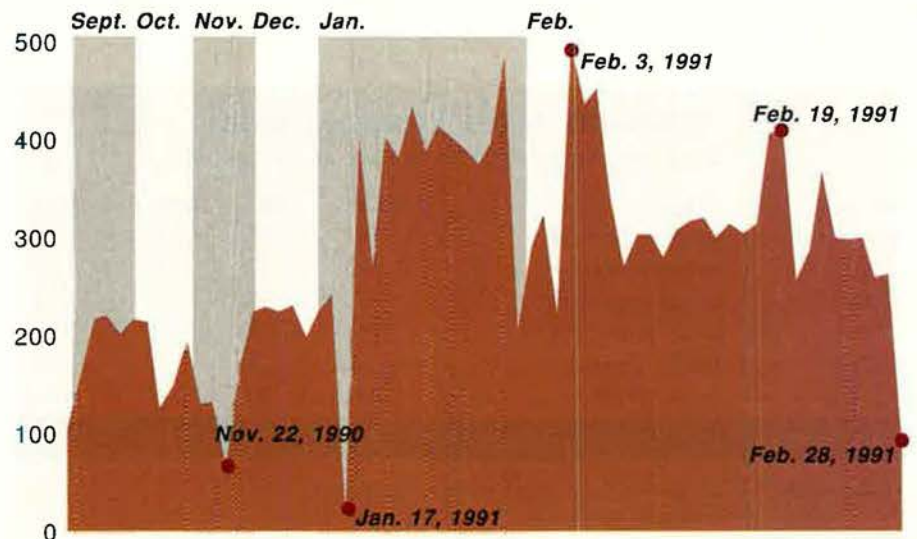
Type	In the AOR	In Support	Total	% of Type
KC-10	29	17	46	81
KC-135A	36	25	61	34
KC-135Q	26	3	29	54
KC-135E	66	15	81	48
KC-135R	65	26	91	45
<b>Total</b>	<b>222</b>	<b>86</b>	<b>308</b>	<b>45</b>

## The Tankers of Desert Storm

Aircraft Type	Sorties	Hours	Refuelings	Pounds
KC-10	3,278	16,717	10,915	283.6 million
KC-135A/R/Q	9,897	34,635	27,390	353.0 million
KC-135E	3,690	14,886	13,391	164.1 million
<b>Total</b>	<b>15,865</b>	<b>66,238</b>	<b>51,696</b>	<b>800.7 million</b>

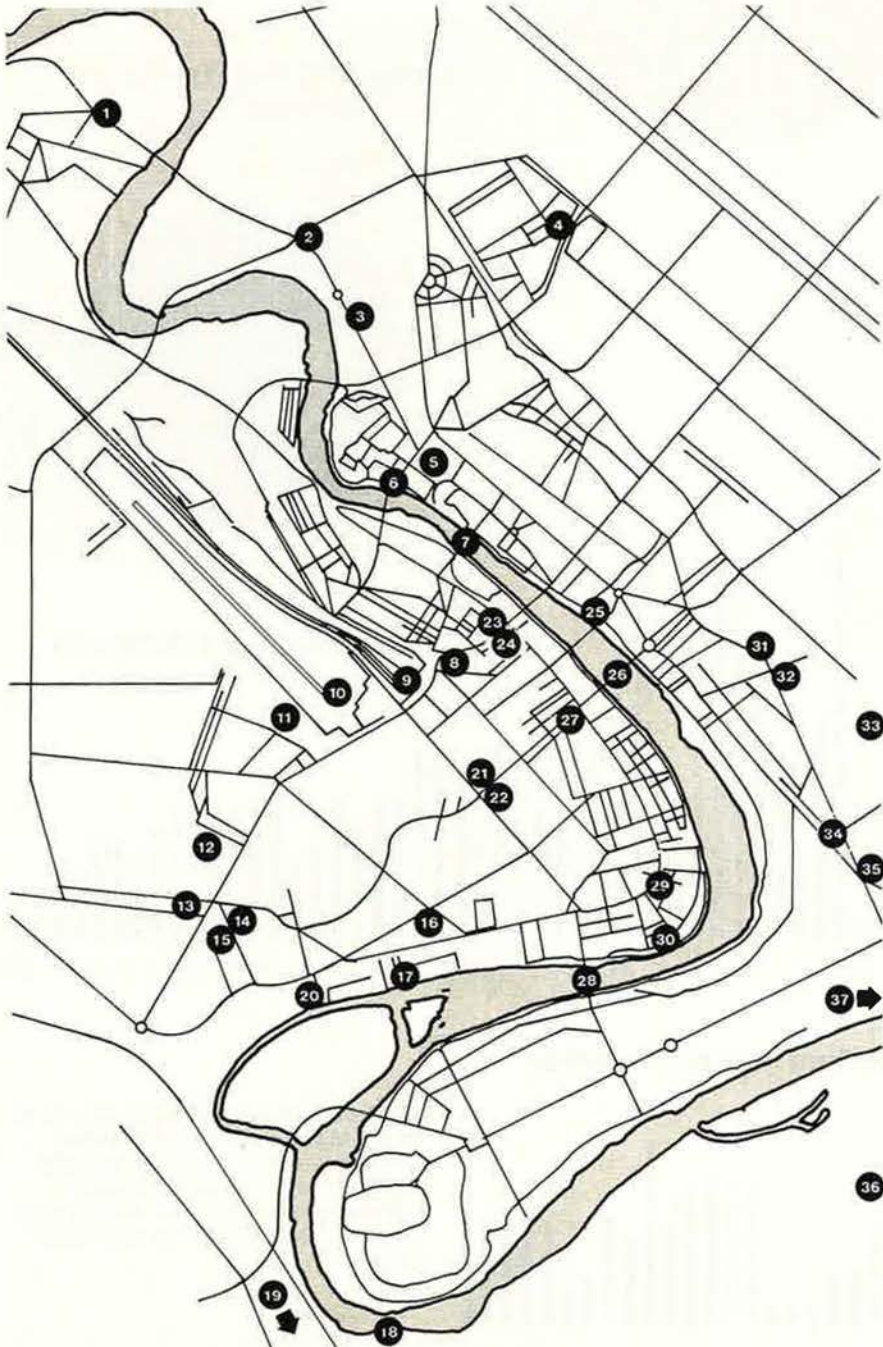
## USAF Theater Airlift

C-130s and other tactical lifters played a critical role in the war, with daily sorties spiking after D-Day as a result of resupply and redeployment efforts.



# The Air Campaign

During the first 24 hours of the war, USAF and other coalition aircraft struck critical targets in heavily defended Baghdad and elsewhere. These initial attacks destroyed Iraq's command-and-control system and were so overwhelming that Iraq was unable to mount a coherent response thereafter. Star of opening night was the F-117 fighter, the only stealth aircraft in the US inventory, which struck a disproportionately large number of these key targets.



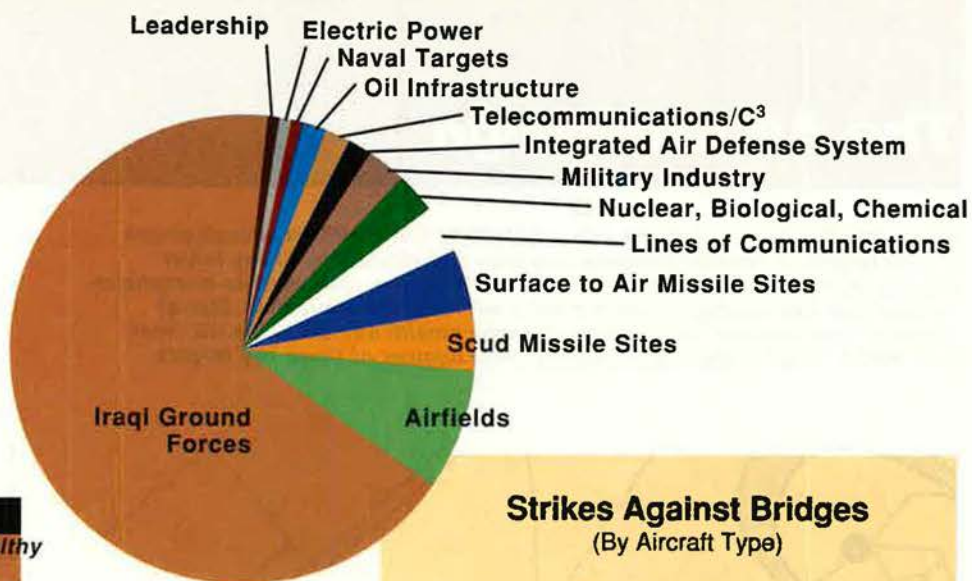
1. Directorate of Military Intelligence
- 2, 5, 8, 13, 34. Telephone switching stations
3. Ministry of Defense national computer complex
4. Electrical transfer station
6. Ministry of Defense headquarters
7. Ashudad highway bridge
9. Railroad yard
10. Muthera airfield (military section)
11. Air Force headquarters
12. Iraqi Intelligence Service
14. Secret Police complex
15. Army storage depot
16. Republican Guard headquarters
17. New presidential palace
18. Electrical power station
19. SRBM assembly factory (Scud)
20. Baath Party headquarters
21. Government conference center
22. Ministry of Industry and Military Production
23. Ministry of Propaganda
24. TV transmitter
- 25, 31. Communications relay stations
26. Jumhuriya highway bridge
27. Government Control Center South
28. Karada highway bridge (14th July Bridge)
29. Presidential palace command center
30. Presidential palace command bunker
32. Secret Police headquarters
33. Iraqi Intelligence Service regional headquarters
35. National Air Defense Operations Center
36. Ad Dawrah oil refinery
37. Electrical power plant

## The Key Role of Stealth

(First 24 Hours)

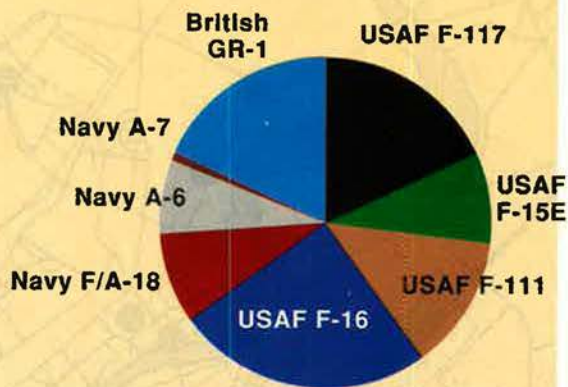


## Specific Targets and Strikes



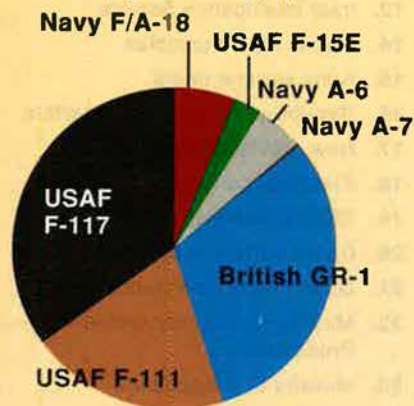
## Strikes Against Bridges

(By Aircraft Type)

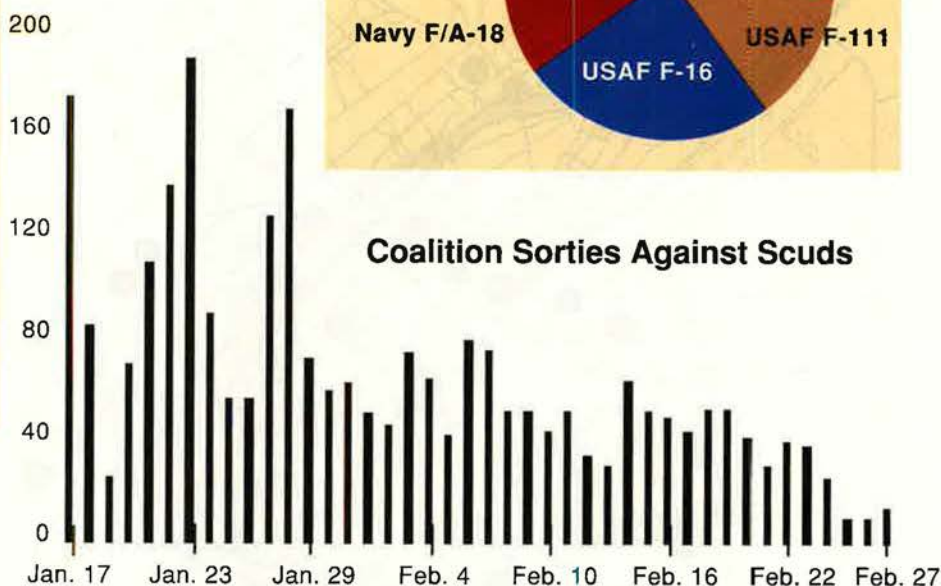


## PGM Strikes Against Bridges

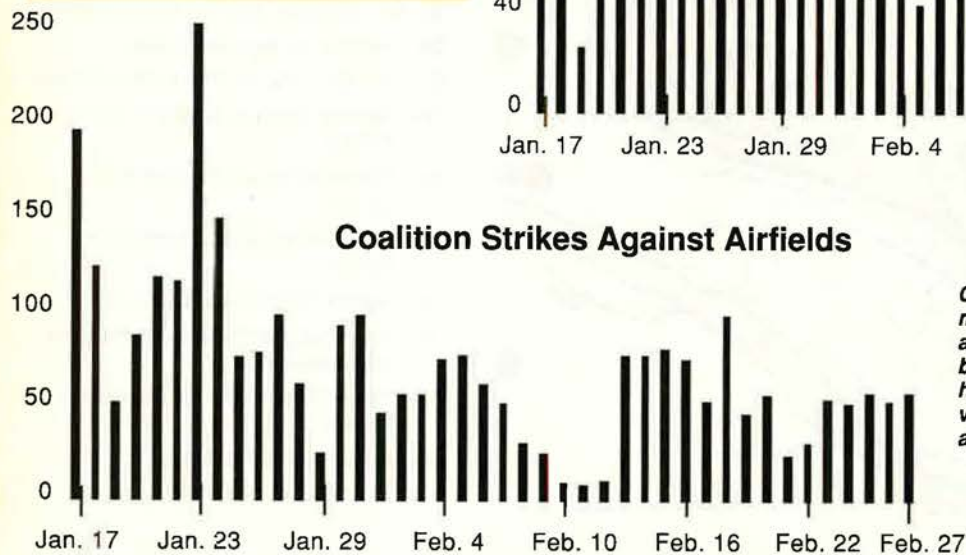
(By Aircraft Type)



## Coalition Sorties Against Scuds



## Coalition Strikes Against Airfields



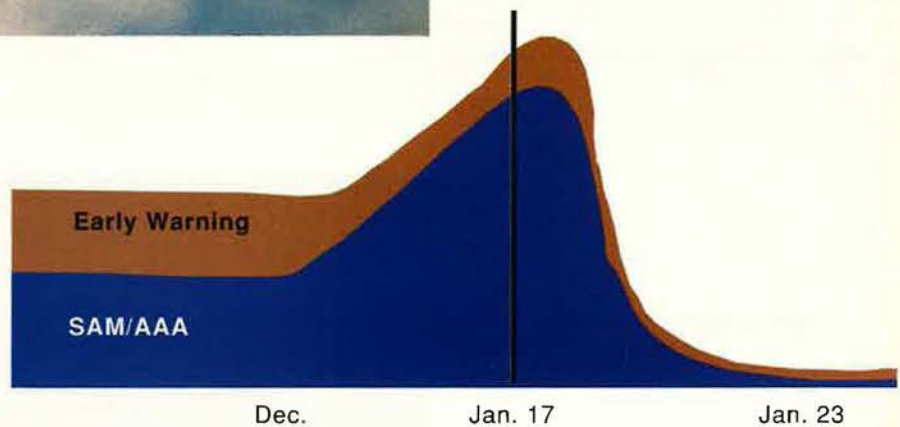
Coalition aircraft flew thousands of missions against Scud missiles, airfields, and bridges—especially bridges on Baghdad-to-Kuwait highways and railways, which were vital to resupplying the Iraqi field army.

# Results



*F-4G Wild Weasels, like this one from Spangdahlem AB, Germany, zeroed in on SAM guidance radars, and other aircraft hit early warning systems. Iraqis quickly learned to turn off radars, which virtually blinded the enemy force.*

## Iraqi Radar Activity



*At left is the result of a USAF Wild Weasel attack against an Iraqi SA-2 SAM launcher.*



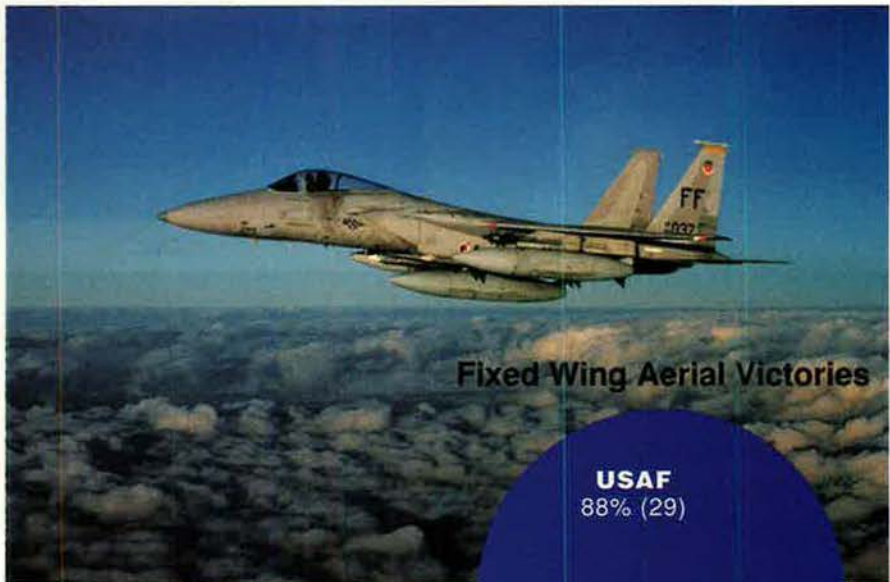
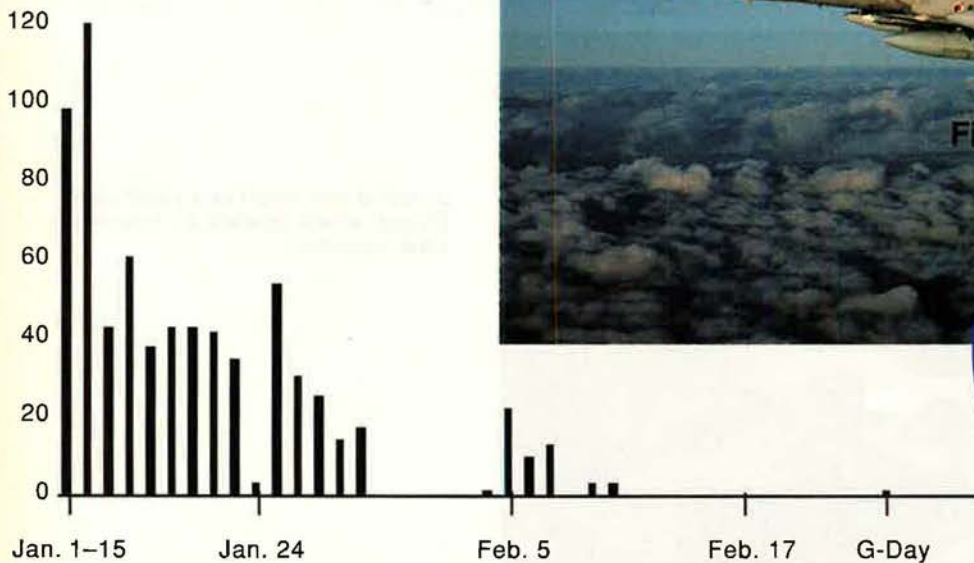
*This SU-25 "Frogfoot" ground attack aircraft apparently was "dropped" just as it was taxiing.*

### The Destruction of Iraqi Airpower

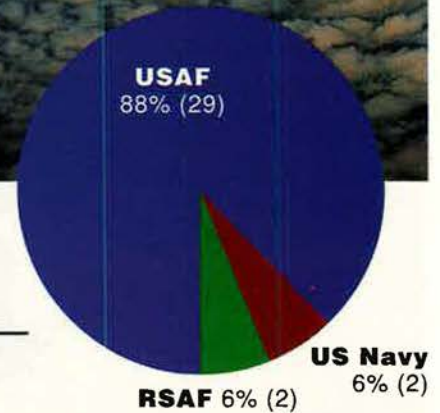
Iraqi Fixed-Wing Inventory as of Jan. 10, 1991	724
Iraqi Aircraft Lost or Destroyed by Feb. 28, 1991	408
Shot down .....	33
Destroyed in the open .....	113
Destroyed in shelters/bunkers .....	141
Fled to Iran .....	121
Iraqi Fixed-Wing Aircraft Left at War's End	316

*The Iraqi air force never really got off the ground after the first day of battle, when it took heavy losses. It tried to ride out the war in hardened shelters, but coalition aircraft began attacking Iraqis in their bunkers. Soon, the Iraqi air force "flushed" to Iran and ceased to be a factor.*

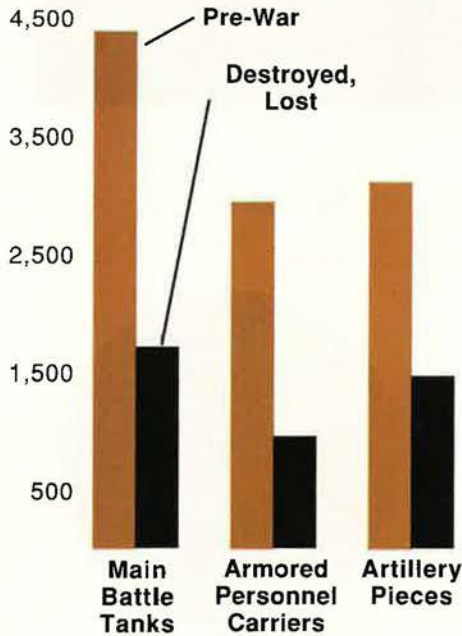
### Iraqi Flight Activity



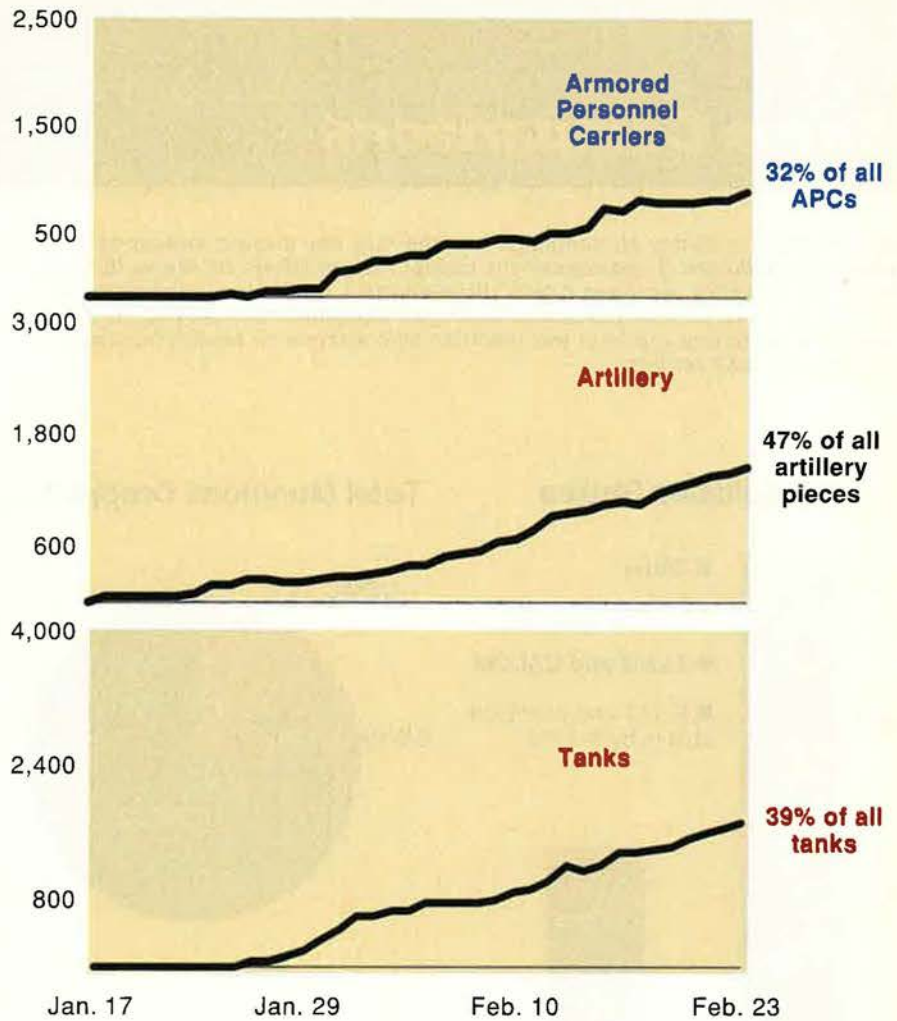
### Fixed Wing Aerial Victories



### Destruction of Iraqi Ground Forces From the Air

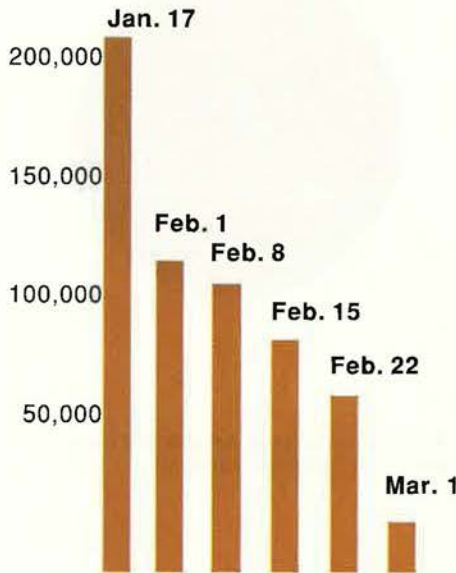


### Steady Attrition of Iraqi Land Power



### Choking Off Highways

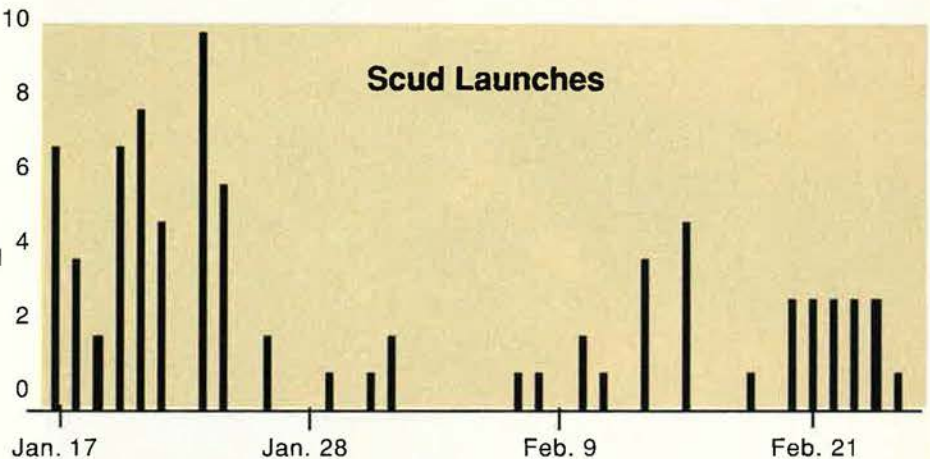
(Metric Tons per Day)



Attacks from the air steadily constricted the capacity of the main supply route to Iraq's field army in Kuwait.

Around the clock, USAF-led coalition air forces pounded Iraqi armor, artillery, infantry vehicles, the Republican Guard, logistics installations, command posts, and command-and-control facilities. Before the ground battle began on Feb. 24, casualties and desertions had reduced Iraqi troop strength by at least half. F-111Fs and F-15Es using laser-guided bombs made smoking ruins of Iraqi tanks, as did F-16s and A-10s, using Maverick missiles.

### Scud Launches

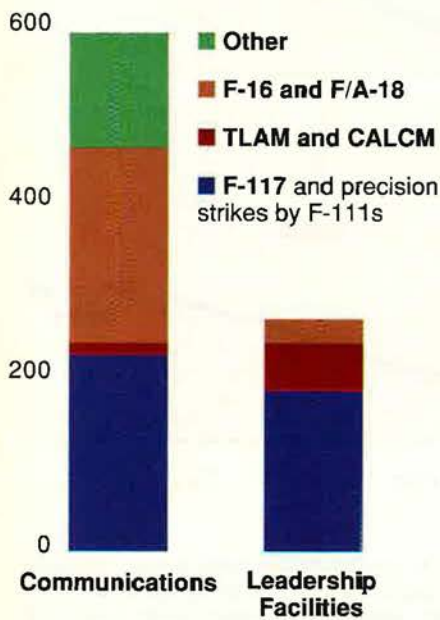


Scud hunting did not eliminate the problem, but it reduced, suppressed, and degraded Iraq's terror weapon. As the war wore on, harried Iraqi missile forces launched fewer missiles, with less accuracy.

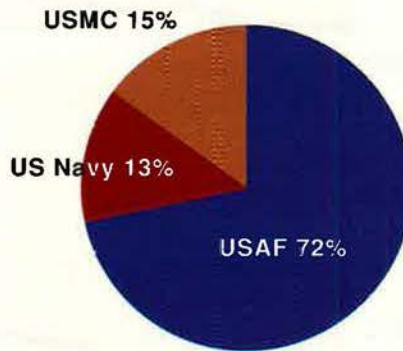
# Some Comparisons

Desert Storm's 38-day air campaign and the four-day ground-and-air campaign that followed it showcased the capabilities of USAF. Its crews flew the majority of sorties, dropped nearly three-quarters of all air-to-ground munitions (and more than 90 percent of precision weapons), and played the major role in decapitating the Iraqi war machine with attacks on leadership and communications targets.

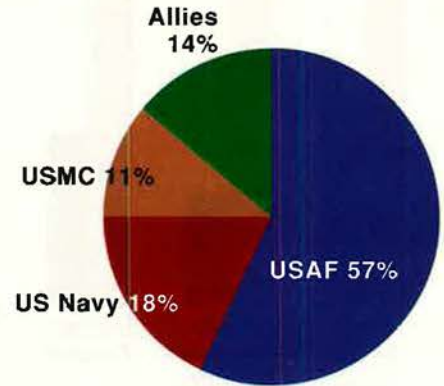
## Decapitation Strikes



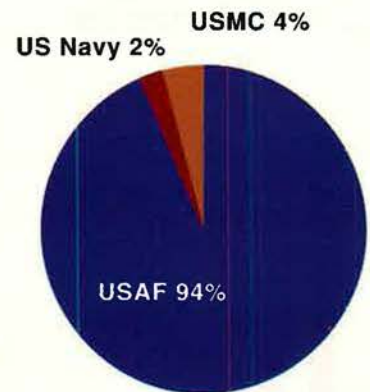
## Total Munitions Dropped



## Sorties Flown



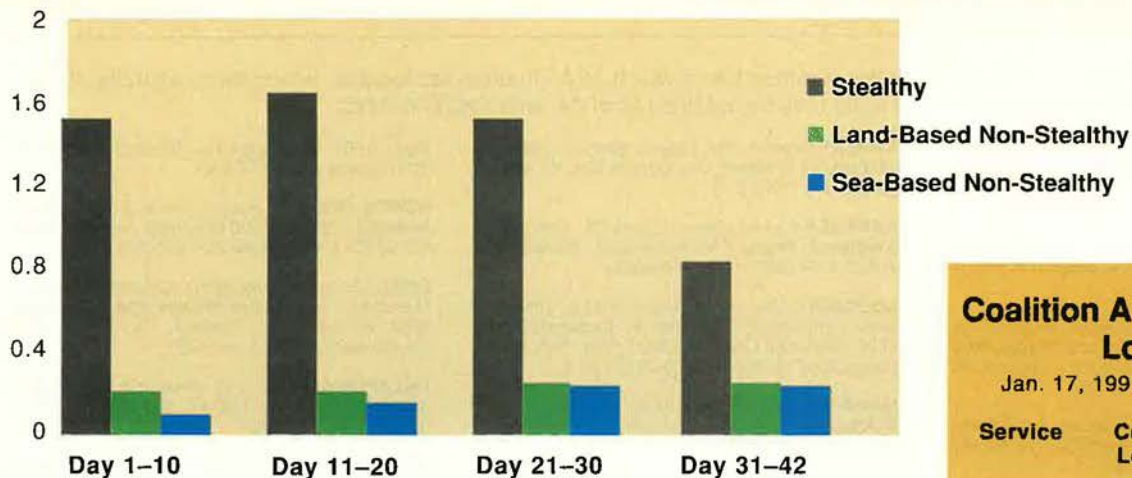
## Total PGMs Dropped



An Iraqi command bunker hit by a precision guided munition.



## Ratio of Targets Per Aircraft Sortie



*F-117 stealth aircraft, the key to the opening moves of the war, played a major role throughout the conflict.*



## Coalition Aircraft Combat Losses

Jan. 17, 1991–Feb. 28, 1991

Service	Combat Losses	% of Losses
USAF	14	36.8%
US Navy	6	15.8%
USMC	7	18.4%
Saudi Arabia	2	5.3%
Britain	7	18.4%
Italy	1	2.6%
Kuwait	1	2.6%
<b>Total Forces</b>	<b>38</b>	<b>100%</b>

*Although it was a short war, 21 US personnel were briefly held as Prisoners of War. At left, USAF Col. David W. Eberly, the ranking POW, is greeted by well wishers on his release. He and Maj. Thomas E. Griffith were captured when their F-15E was shot down on Jan. 19.*

*A1C Emmett Hamilton directs F-117 pilot Lt. Col. Doug Stewart as he taxis the stealth fighter in Southwest Asia during a deployment for Southern Watch, in which US and coalition forces have patrolled southern Iraq since the end of Desert Storm. Both men are from the 49th Fighter Wing at Holloman AFB, N.M.*



USAF photo by TSgt. G. M. Kobashigawa

# AFA State Contacts



Following each state name are the names of the communities in which AFA chapters are located. Information regarding these chapters or any of AFA's activities within the state may be obtained from the appropriate contact.

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# Books

Compiled by Chanel Sartor, Editorial Associate

**Anderson, David L., ed.** *Facing My Lai: Moving Beyond the Massacre.* University Press of Kansas, 2501 W. 15th St., Lawrence, KS 66049-3904 (913-864-4155). 1998. Including maps, appendices, and index, 237 pages. \$24.95.

**Chang, Iris.** *The Rape of Nanking: The Forgotten Holocaust of World War II.* BasicBooks, 10 East 53d St., New York, NY 10022. 1997. Including photos, notes, and index, 290 pages. \$25.00.

**Dick, Air Vice-Marshal Ron,** RAF (Ret.), and Dan Patterson. *Spitfire: RAF Fighter.* Howell Press, 1147 River Rd., Ste. 2, Charlottesville, VA 22901 (800-868-4512). 1997. Including photos, 66 pages. \$15.95.

**Drendel, Lou.** *Walk Around: B-25 Mitchell.* Squadron/Signal Publications, 1115

Crowley Dr., Carrollton, TX 75011-5010 (972-242-8663). 1997. Including photos, 80 pages. \$14.95.

**Ford-Jones, Martyn R.** *Desert Flyer: The Log and Journal of Flying Officer William Marsh.* Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310 (610-593-1777). 1997. Including photos, appendices, and bibliography, 336 pages. \$29.95.

**Franks, Norman, and Alan Bennett.** *The Red Baron's Last Flight: A Mystery Investigated.* Seven Hills Book Distributors, 49 Central Ave., Cincinnati, OH 45202 (513-381-3881). 1997. Including photos, diagrams, appendices, and index, 143 pages. \$24.95.

**Ginn, Richard V.N.** *The History of the U.S. Army Medical Service Corps.* Government Print-

ing Office, Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954 (202-512-1800). 1997. Including photos, charts, appendices, bibliography, and index, 536 pages. \$36.00.

**Henkels, John B.** *They Also Serve: An Armorer's Life in the ETO.* Dorrance Publishing Co., Inc., 643 Smithfield St., Pittsburgh, PA 15222 (800-788-7654). 1997. Including photos and bibliography, 273 pages. \$18.00.

**Johnson, Richard D.** *Seeds of Victory: Psychological Warfare and Propaganda.* Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310 (610-593-1777). 1997. Including photos and appendices, 283 pages. \$49.95.

**Kinzey, Bert.** *TBF & TBM Avenger in Detail & Scale.*

Squadron/Signal Publications, 1115 Crowley Dr., Carrollton, TX 75011-5010 (972-242-8663). 1997. Including photos, 72 pages. \$12.95.

**Llinares, Rick, and Chuck Lloyd.** *Warfighters 2: The Story of the U.S. Marine Corps Aviation Weapons and Tactics Squadron One (MAWTS-1).* Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310 (610-593-1777). 1997. Including photos, glossary, and appendices, 398 pages. \$59.95.

**Michel, John J.A. Mr.** *Michel's War, From Manila to Mukden: An American Navy Officer's War With the Japanese, 1941-1945.* Presidio Press, 505 B San Marin Dr., Ste. 300, Novato, CA 94945-1340 (415-898-1081). 1998. Including photos, 297 pages. \$26.95.



**TELLS PEOPLE WHAT YOU'VE DONE.**

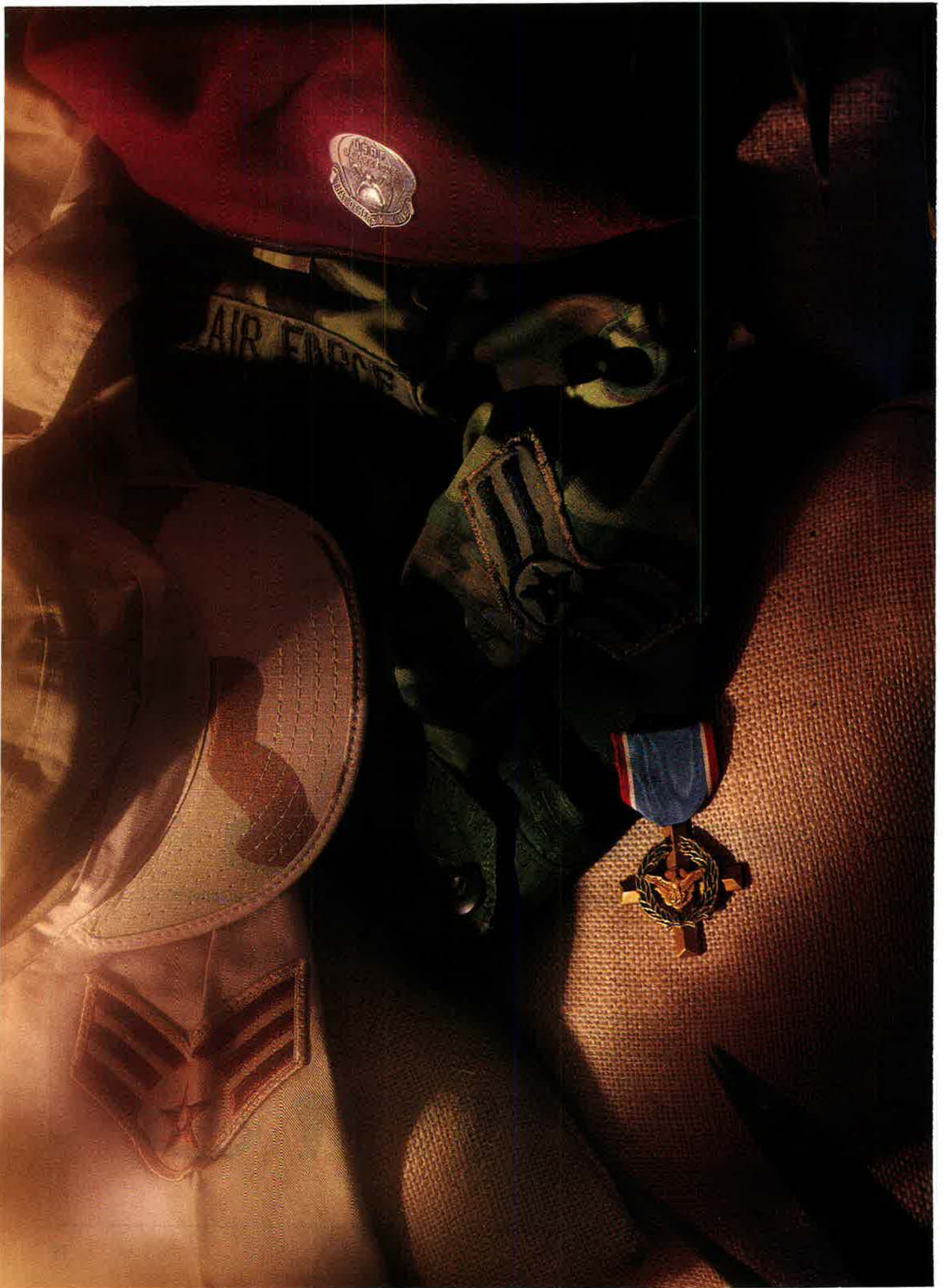


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In the service's history, only 21 enlisted members have received the Air Force Cross. Here are their stories.

# Crosses and Stripes

By Wendy Alexis Peddrick, Staff Editor

**T**he Air Force Cross is awarded to US and foreign military personnel and civilians who have displayed extraordinary heroism in one of the following situations: while engaged in action against an enemy of the United States, while engaged in military operations involving conflict with a foreign force, or while serving with a friendly nation engaged in armed conflict against a force in which the United States is not a belligerent party. In the honor it confers on a recipient, the Air Force Cross is surpassed only by the Medal of Honor.

Congress formally established the Air Force Cross on July 6, 1960. Before then, the Air Force used the Distinguished Service Cross to honor the heroic actions of enlisted members. In the Vietnam era, countless airmen performed acts of bravery above and beyond the call of duty. However, only a few enlisted members were awarded the Air Force Cross. Since 1975, it has been awarded to only one airman, bringing the total to 21. (Asterisks indicate posthumous awards.)

## A1C William H. Pitsenbarger \*

On April 11, 1966, near Cam My, South Vietnam, A1C William H. Pitsenbarger, 38th Aerospace Rescue and Recovery Squadron pararescue jumper, sacrificed his life to save nine others. While evacuating American casualties during a firefight in a jungle area, he descended from the HH-43 Huskie to assist in rescue efforts. He treated the wounded and transferred three to the Huskie but stayed on the ground, waiting to send more troops to a second chopper. As the first Huskie returned the fighting intensified, and the rescue chopper took many hits and began losing power. The rescue pilot signaled for Pitsenbarger to grab the hoist, but the PJ waved him off. Pitsenbarger continued to treat the wounded, collected ammunition to distribute to those who could use it, and helped fight off the enemy. When his body was found the next day, rescuers saw that he had been shot repeatedly. The Air Force Sergeants Association has established the William H. Pitsenbarger Award for Heroism, awarded annually to recognize heroism among enlisted airmen.



### A3C Arthur Neil Black

A3C Neil Black, a pararescuer aboard a 38th Air Rescue Squadron HH-43B, was on a rescue mission to recover a downed pilot about 40 miles south of Vinh, North Vietnam, on Sept. 20, 1965. The rescue team found the pilot, but as they attempted to hoist him up into the aircraft, the helicopter was shot down. The entire crew was captured. Black and fellow Air Force Cross recipient A1C William A. Robinson, a flight engineer on the same helicopter, were POWs until their release in February 1973.



**A3C Neil Black is the third in line (above) and A1C William Robinson is just behind him aboard the aircraft returning them and other POWs to freedom. (Maj. Ronald E. Byrne Jr. is in the lead with Capt. George R. Hall next.)**

### A1C William A. Robinson

A1C William A. Robinson was a flight engineer on a 38th ARS HH-43B as it flew a rescue mission to recover a downed pilot about 40 miles south of Vinh, North Vietnam, on Sept. 20, 1965. The rescue team found the pilot, but as they attempted to hoist him, the helicopter was shot down. The entire crew was captured. Robinson and fellow Air Force Cross recipient A3C A. Neil Black, a pararescuer on the same helicopter, were not released until February 1973.



**TSgt. Donald Smith stands with Brig. Gen. Frank K. Everest Jr. at the medal presentation.**

### TSgt. Donald G. Smith

On Oct. 24, 1969, the crew of the 37th ARRS HH-3 Jolly Green 28, including pararescuer TSgt. Donald G. Smith, set out to retrieve two F-100 crewmen. When they located the fighter crew in the jungle, Smith was lowered to the ground, where he attached himself and the pilot, who had a broken leg, to the hoist. As they were being lifted, hostile fire damaged the external hoist mount, forcing the flight engineer to sever the cable, sending Smith and the pilot hurtling to the ground. Jolly 28 was forced to make an emergency landing about 1.5 miles away in a marshy area. The chopper's remaining crew members were immediately picked up by a companion HH-3. Despite injury, Smith cared for the fighter crew, directed air assaults against the enemy, and repelled enemy probes for several hours, until another rescue chopper successfully extracted him and the pilot.

### A1C Charles D. King \*

On Christmas Day 1968, A1C Charles D. King, a 40th ARRS pararescueman, and his fellow HH-3 crew members set out to find a downed pilot in Laos.

When they located him, King descended, freed the wounded pilot from his parachute, and secured him to the hoist. However, as King tried to maneuver the pilot to a spot beneath the helicopter, intense enemy fire erupted, wounding King and hitting the chopper. King told the HH-3 pilot to pull up. The hoist cable snagged in a tree and pulled loose from the mount. His instructions to the Jolly Green saved the aircraft and crew. Two days of searching for King were unsuccessful. He was declared missing in action until Dec. 5, 1978, when he was listed as killed in action.



### Sgt. Larry W. Maysey \*

On Nov. 9, 1967, 37th ARRS para-rescue specialist Sgt. Larry W. Maysey and the crew of HH-3 Jolly Green 26 attempted the night extraction of ground reconnaissance team members during heavy enemy fire. Another Jolly Green on the mission picked up three recon members before it was driven off by hostile fire. As Jolly Green 26 attempted to pick up the remaining two recon troops, hostile fire continued, but Maysey assisted in getting the recon members on board. Jolly Green 26 was hit by automatic weapons fire and burst into flames, killing Maysey, two other crew members (including the other enlisted Air Force Cross recipient on the mission, SSgt. Eugene L. Clay), and the two recon team members.

### SSgt. Eugene L. Clay \*

On Nov. 9, 1967, SSgt. Eugene L. Clay, a flight engineer with the 37th ARRS, and the crew of HH-3 Jolly Green 26 attempted to extract a ground reconnaissance team at night during heavy enemy fire. Another Jolly Green picked up three recon members before it was driven off by hostile fire. As Jolly Green 26 attempted to pick up the remaining two recon troops, hostile fire continued. Clay assisted in getting the recon members on board, but the rescue chopper was hit by automatic weapons fire and burst into flames. The conflagration killed Clay, two other crew members (including the other enlisted Air Force Cross recipient on the mission, Sgt. Larry W. Maysey), and the two recon team members. (Photo unavailable.)

### CMSgt. Richard L. Etchberger \*

On March 11, 1968, ground radar superintendent CMSgt. Richard L. Etchberger was manning a defensive position when the base was overrun by an enemy ground force. After his entire crew was killed or wounded and while the enemy fired from higher ground, Etchberger continued to return fire, direct airstrikes, and radio for air rescue. When air rescue arrived, Etchberger risked enemy fire to load his three surviving wounded crew members into rescue slings for airlift out. As his turn finally came, Etchberger was killed by enemy ground fire. His actions also helped save other surviving troops at the base. (Photo unavailable.)

### Sgt. Charles D. McGrath

Pararescueman Sgt. Charles D. McGrath with the 40th ARRS was lowered from HH-53 Super Jolly Green 73 on June 27, 1972, to rescue a badly wounded F-4 pilot downed in North Vietnam. He dragged the pilot through thick brush to the recovery site, but the helicopter was hit by hostile fire and lost its hoist, leaving the two men stranded. When another rescue chopper arrived, McGrath got the wounded pilot ready and rode up the hoist with him amid gunfire. Once safely inside, McGrath treated both the F-4 pilot and another PJ whose leg had been shattered by the gunfire.



### Sgt. Russell M. Hunt

A UH-1F helicopter, with flight mechanic Sgt. Russell M. Hunt in the crew, was shot down while evacuating American and Allied ground forces on March 31, 1967. Hunt sprang to work, aiding an increasing number of wounded men despite his own painful injuries and hostile fire. When the enemy action forced the ground party to move, he carried his mortally wounded aircraft commander to a designated landing zone. In the landing area Hunt braved enemy fire to give manual landing directions to the recovery helicopters and refused to leave until every seriously wounded man had been evacuated.

**At left, Sgt. Russell Hunt receives the Air Force Association's Citation of Honor from AFA Board Chairman Jess Larson on April 5, 1968.**

### SSgt. John D. Harston

On May 15, 1975, SSgt. John D. Harston, a helicopter flight mechanic, was on a CH-53 Super Jolly Green helicopter sent to rescue crew members of SS Mayaguez, which had been seized by Communist Khmer Rouge forces. The helicopter was hit by enemy fire and crash-landed on Koh Tang, just off the shore of Cambodia. Although Harston was wounded, he helped survivors exit the burning helicopter. He fired his rifle until it jammed and emptied a revolver before inflating his life preserver. He then picked up two injured Marines before paddling to deeper water, where they waited three hours before they were rescued.

**SSgt. John Harston stands between fellow medal recipients Col. Thomas J. Curtis and Capt. Donald R. Backlund at a ceremony in 1975.**





### Sgt. Nacey Kent Jr.

On May 5, 1968, Sgt. Nacey Kent Jr., an AC-47 flight engineer, and fellow crew members were defending Pleiku AB, South Vietnam, against enemy attack when their aircraft was critically damaged by enemy fire. Even though Kent suffered a broken leg in the ensuing crash landing, he helped other enlisted crew members evacuate and re-entered the burning aircraft to carry the severely wounded navigator to safety. Kent then boarded the aircraft again to assist other crew members and fight the fire.

**Sgt. Nacey Kent receives the Air Force Cross from Maj. Gen. J.C. Sherrill in 1969.**



### Sgt. Thomas A. Newman

During a rescue mission in Laos on May 30, 1968, 40th ARRS pararescueman Sgt. Thomas A. Newman descended from a Jolly Green helicopter while under heavy hostile fire to rescue a downed Air Force pilot. Hindered by darkness and concentrated automatic weapons fire, he asked the helicopter pilot to hover out of enemy range to avoid being hit or disclosing his location. He kept searching for the downed pilot, risking detection by the enemy by calling the pilot's name. Newman finally found him and radioed for the Jolly Green. When the chopper returned, Newman secured the pilot to the hoist and shielded him with his own body as they were lifted into the aircraft.

### TSgt. Victor R. Adams

TSgt. Victor R. Adams was an aerial gunner on a 20th Helicopter Squadron UH-1F when it was downed by hostile ground fire, crashing in the dense jungle near Duc Co, South Vietnam, on Nov. 27, 1968. Ignoring his own injuries and heavy enemy fire, he rescued crew members from inside the burning aircraft until he was forced to abandon his efforts by the severity of the fire and subsequent explosions. (Photo unavailable.)

### SSgt. Charles L. Shaub

C-130 loadmaster SSgt. Charles L. Shaub and fellow crew members were to drop ammunition and supplies to US forces in the Vietnamese jungle on April 15, 1972. En route, the airplane was hit by anti-aircraft fire, which caused a fire in the cargo area. Shaub instinctively jettisoned the explosive crates on board—which exploded within seconds of their exit—and began extinguishing the fierce fire within the plane. Although he suffered severe burns, he had the blaze under control within minutes, saving the airplane and his four crewmates. (Photo unavailable.)

### Sgt. Theodore R. Hamlin

A combat radio operator, Sgt. Theodore R. Hamlin was trying to coordinate the evacuation of several wounded soldiers in the Vietnamese jungle on the evening of Oct. 25, 1969, when he was hit by enemy gunfire. He disregarded his wounds and finally made radio contact with rescuers. Instead of letting the rescue chopper find the wounded on their own, he went to the landing site and illuminated it. When the helicopter landed, Hamlin helped to carry the wounded soldiers to it but refused to leave with them, choosing to fight side by side with the remaining soldiers for the rest of the night. (Photo unavailable.)

### Sgt. Michael E. Fish

On Feb. 18, 1969, Sgt. Michael E. Fish, a 38th ARRS pararescue specialist, was lowered from an HH-43B Huskie through intense hostile ground fire into a dense jungle canyon near Tuy Hoa AB, South Vietnam. He came to treat and rescue four seriously injured US Army UH-1 helicopter crew members whose aircraft had been downed by enemy fire. Unable to immediately free the pilot from the wreckage, Fish chose to remain on the ground overnight, even though the HH-43 ran low on fuel and had to leave. The rescue chopper refueled and returned but because of darkness and extreme haze could not find the site again. During the next 15 hours, Fish faced attacks by enemy forces but cared for the pilot until the chopper returned at dawn on Feb. 19 and successfully extracted them.



Sgt. Michael Fish chats with television's "This Is Your Life" host Ralph Edwards in 1972.



A1C Joel Talley receives the Air Force Cross from Gen. Howell M. Estes Jr. at Da Nang AB, South Vietnam, in 1969.

### TSgt. Leroy M. Wright

On Nov. 21, 1970, the US conducted a rescue mission at the Son Tay POW camp in North Vietnam. At the prison compound, enemy fire forced one of the rescue helicopters to make a rough landing, in which helicopter flight mechanic TSgt. Leroy M. Wright severely injured his leg. Despite his injury and the danger of the helicopter exploding, he let everyone else exit the aircraft before him. He then used his weapon to help Army combat troops advance to their target. Realizing that requesting assistance could jeopardize the mission, Wright, who was suffering intense pain, returned to the recovery area on his own. He was the only enlisted member to receive the Cross for that mission. (Photo unavailable.)

### A1C Joel E. Talley

On July 2, 1968, A1C Joel E. Talley, a 37th ARRS pararescueman, entered the jungle at Dong Hoi, North Vietnam, to rescue an injured F-105 pilot. The pilot had landed in the midst of enemy forces that had immediately established gun positions to ensnare rescue helicopters. Three rescue attempts were thwarted, and a supporting attack aircraft was shot down. Finally, chopper Jolly Green 21 was able to penetrate the area and lowered Talley, who had to conduct an extensive search to locate the injured pilot. The PJ determined the pilot had a broken pelvis and decided he would have to direct the helicopter to their location. As soon as he strapped the pilot on the forest penetrator and gave the radio signal to hoist away, enemy fire erupted again. When Talley and the pilot cleared the treetops, the chopper departed the area with him and the pilot dangling, then slowly brought them aboard the aircraft.

### A2C Duane D. Hackney

*On Feb. 6, 1967, A2C Duane D. Hackney flew two sorties as a 37th ARRS pararescueman on an unarmed HH-3E Jolly Green helicopter to recover a downed pilot near Mu Gia Pass, North Vietnam. On the first flight, despite the presence of hostile ground forces, he conducted a ground search for the survivor until ordered to evacuate. On the second flight, Hackney located the pilot. As the rescue crew departed the area, their helicopter was hit repeatedly and caught fire. Hackney fitted his parachute on the rescued pilot and then located and donned a second chute, just as he was blown out of the helicopter by an explosion. Hackney managed to deploy his unbuckled parachute and was later rescued by another helicopter crew.*

**A1C Duane Hackney was the first living recipient of the Air Force Cross, here presented to him, along with the Purple Heart, by Gen. Howell M. Estes Jr. in 1967.**



### TSgt. Timothy A. Wilkinson

*On Oct. 3, 1993, TSgt. Timothy A. Wilkinson, a pararescueman with the 24th Special Tactics Squadron, responded as part of a 15-man combat search-and-rescue team to the downing of a US Army MH-60 helicopter in the streets of Mogadishu, Somalia. Wilkinson repeatedly exposed himself to intense enemy fire while extracting five wounded Army Rangers, one by one, who were still on the crashed helicopter, bringing them to the aid point, where he provided medical treatment. As the battle continued, he responded to cries for a medic from across the intersection. He crossed this four-way intersection twice more bringing additional medical supplies to the Rangers, saving the lives of at least three who were badly wounded. He remained with them, using both his medical and weapons training, until the conclusion of the intense, 18-hour combat engagement.*

Suggestions are afloat to cut back on commissaries and exchanges and reimburse active duty families—but not retirees—with direct compensation.



Photo by Paul Kennedy

# More Questions About Military Stores

By Peter Grier

## Subsidy Costs of DoD's Retail Activities in the US for 1995 (Millions)

	Commissaries	Exchanges	Total
<b>Business income</b> (sales receipts minus wholesale cost of goods)	\$260	\$1,760	\$2,020
<b>Operating Costs</b>			
Paid from DoD appropriations	670	160	830
Paid from surcharges or NAF	270	1,540	1,810
<b>Costs not paid by DoD</b>			
Forgone return on capital	160	440	600
Forgone sales taxes	230	370	600
Forgone excise taxes	100	100	200
<b>Total costs</b>	<b>1,430</b>	<b>2,610</b>	<b>4,040</b>
Subsidy (total costs minus business income)	1,170	850	2,020
Subsidy provided by DoD	680	-60	620

**T**HE list of America's largest retail operations contains many of this country's most familiar brand names, from Sears and Wal-Mart to J.C. Penney and Safeway. But it would not be complete without an addition many might find surprising: the Department of Defense.

Despite the steep decline in the size of the US military since the end of the Cold War, the Pentagon infrastructure of on-base groceries, department stores, and other retailers remains one of the most extensive consumer operations in the nation. Its annual sales exceed \$14 billion, and it employs some 100,000 civilian workers—one for every 15 uniformed members of the US Air Force, Army, Navy, and Marine Corps.

The relatively low prices and convenience of on-base commissaries and exchanges rank among the most valued benefits of military membership, according to survey after survey of the armed forces' rank and file. Moreover, many retirees view access to the stores as a right earned through years of service. For their part, top DoD officials see the Pentagon's retail system as an inexpensive way to foster a sense of military community.

However, the system—and its subsidies—has long been controversial. Some lawmakers question whether a network that was created when many military bases were geographically isolated is relevant in an age when civilian discount shopping is

available in the smallest of towns. They have attempted during recent years to impose reductions and cut-backs.

### "Under Attack"

As the Air Force Association said in a recent policy paper on the subject, the system "once again ... is under attack."

The lessening of the federal government's big budget deficits may reduce Congressional pressure to make cuts in the Defense Department retail system, but DoD's proposed Fiscal 1999 spending plan

would make individual services responsible for far more of the costs of their consumer sales activities. Moreover, a new Congressional Budget Office report again calls into question the value of the system and likely will generate new pressure.

The CBO study flatly stated, "From a social perspective, government-run stores with below-market prices are not a cost-effective alternative to cash compensation."

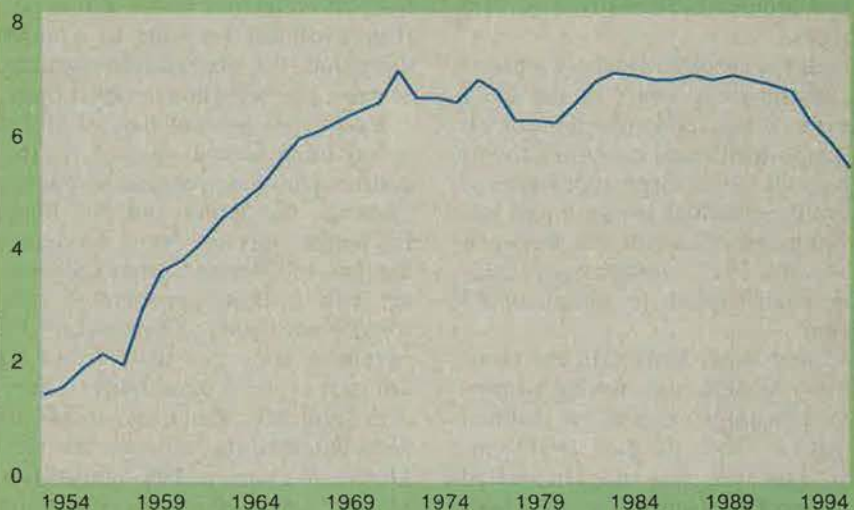
The DoD retail system is a vast, multifaceted operation. It covers everything from groceries to clothing stores to fast-food outlets and cappuccino carts. In general, however, it can be divided into two parts: commissaries and exchanges.

Of the two, commissaries have the deepest military roots. They date to the immediate post-Civil War years, when Congress authorized the Army to sell foodstuff at cost to military personnel at Ft. Delaware, Del. This first commissary resembled the dry-goods stores of the era. It had a single counter, and customers made their purchases from a list of 82 items carried in stock.

Today's military commissaries are intended to be the equivalent of civilian supermarkets, in their selection of goods if not in prices. There are some 300 of the stores on DoD bases around the world, all of them run by the Defense Commissary Agency since the agency was activated in 1991.

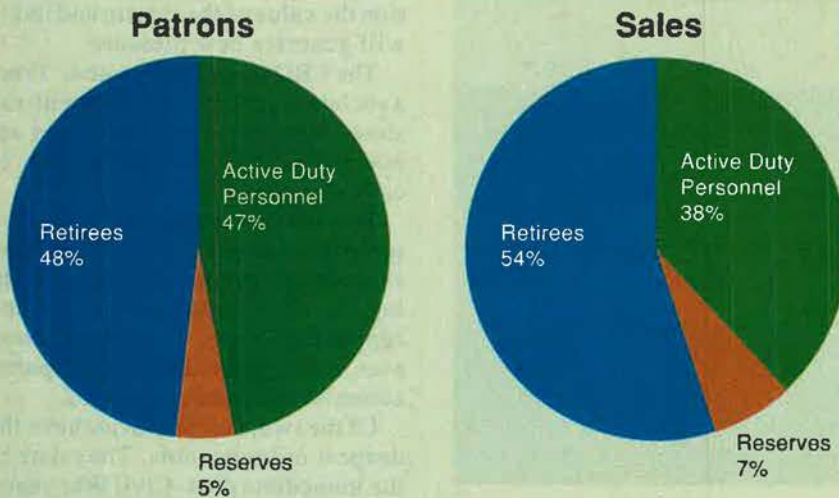
## DoD Commissary Sales Worldwide, 1954-95

Billions of 1995 Dollars



Source: Congressional Budget Office, based on data from the Department of Defense.

## Distribution of Commissary Patrons and Sales in the United States for 1993



Source: Congressional Budget Office, based on data from the 1993 Patron Demographic Survey, a survey of 5,000 patrons at 28 US commissaries conducted by the Defense Commissary Agency's Office of Strategic Planning and Analysis.

Commissaries sell food and other grocery items at a flat five percent markup. This profit margin is used to pay for the cost of capital investments, utilities at US-based stores, and store supplies such as bags and cash register tapes.

The cost of labor, transportation, and overseas utilities are paid by DeCA, which in turn receives its funds from a direct Congressional appropriation. In 1997, DeCA received \$936 million in appropriated funds. It sold goods having a wholesale cost of \$5.2 billion and collected around \$250 million in surcharges.

Today's system is largely a product of the early years of the Cold War era, when the Pentagon took on the responsibility of providing town-like services to a large population of married personnel living on an expanding base infrastructure. Between 1954 and 1972, commissary sales more than tripled, to a high of \$7 billion.

At that time, DoD said the commissary system was needed to provide consumer choices to isolated facilities. From the late 1970s onward, however, this concern shifted to an emphasis on the overall benefits commissaries can provide.

Now, DoD defends the system as

an important noncash means of compensation for active duty and retired military members. DeCA estimates that a dollar spent in a commissary buys the same market basket of goods as \$1.40 spent in a commercial supermarket.

Military exchanges are different from commissaries both in their goods and in their pricing and financing.

Whereas commissaries are basically food stores, exchanges more closely resemble department stores or, in some cases, retail malls. Their offerings can cover the whole spectrum of consumer wants and needs, from clothing for kids to a quick doughnut, tax-preparation services, or even pay telephone connections.

Exchanges are not part of DeCA or any other federal agency, for that matter. The three separate exchange systems, the Army and Air Force Exchange Service, Navy Exchange System, and Marine Corps exchanges, are run as nonappropriated-fund (NAF) activities. That means the revenues they get from sales are not part of the federal budget; however, typically about two-thirds are distributed to the services for their Morale, Welfare, and Recreation programs. The remaining one-third funds salaries and capital improvements for the stores.

## Videos and Burgers

Of the three exchange systems, AAFES is by far the largest, with 219 main retail stores and some 10,000 smaller services ranging from video rental to burger joints. Its 1997 sales were upwards of \$6.9 billion.

AAFES shares a number of basic goals with its Navy and Marine counterparts. These include providing service members with an important noncash benefit by selling goods and services 20 percent cheaper than commercial prices, ensuring that overseas military personnel have access to familiar US goods, and raising NAF earnings that can be used to subsidize morale-boosting activities and facilities, such as golf courses.

About 78,000 people work in exchanges. Half of them are from families of active duty personnel, making the store system an important source of supplementary income for many servicemen and -women.

Total exchange system sales in 1997, for all three systems, were about \$9.1 billion. That figure alone would make the Department of Defense among the top 15 retailers in the United States.

Whatever their funding and product differences, military commissaries and exchanges serve the same basic customer base: the widely dispersed population of active duty soldiers, sailors, airmen, and marines; military retirees; and reservists. (While they have unlimited access to exchanges, reservists currently are limited to 12 commissary visits per year, one day per month.)

Within this base, retirees are becoming more and more prominent, as the number of retired members of the US military has now come to outnumber active duty personnel. The percentage of sales made by the Pentagon's retail services to retirees has been gradually increasing since the 1960s, according to DoD figures.

A DeCA survey found that retirees and their families accounted for 54 percent of US-based commissary sales in 1993, with 38 percent going to active duty personnel and seven percent to reservists. Similarly, retirees account for about half of the sales at US exchanges.

Some subsidiary exchange services, such as pay phones, are primarily convenience items used by active forces, however.

## Distribution of US Commissary Sales for 1993

	% of Sales	% of Force	% of Regular Military Compensation
Junior enlisted	16	46	32
Senior enlisted	62	40	43
Warrant Officer	2	1	1
Junior officer	9	8	11
Senior officer	11	5	13

*Source: CBO, based on data from DoD.*

### Seven Only

The fiercely competitive nature of civilian retail operations, with the spread of discount stores and malls across the country's landscape, means that active duty military families do not have to rely on on-base stores for their daily shopping. In 1995 only seven commissaries in the US did not have a commercial equivalent within 10 miles. Two of those seven were Dugway Proving Ground, located in the remote reaches of Utah, and Ft. Irwin, in the California desert.

According to DoD figures, the typical active duty US military family buys about 60 percent of its groceries from on-base commissaries and makes 30 percent of its general retail purchases at exchanges. The more senior the military member, the more money his or her family spends at base retail outlets. This is unsurprising, given that older personnel have both more cash and, generally, more expenses. Senior active duty officers typically spent \$2,300 in commissaries in 1995, according to a DoD survey. Senior enlisted personnel spent \$2,000. Junior officers spent \$1,200. The survey also noted that junior enlisted personnel spent an average of just \$500, probably because many are single and eat in dining halls.

As retirees become more and more important to per-store sales, exchange and commissary officials face pressures to rethink their mix of products. This problem is particularly acute for exchanges.

Retirees, whose children usually are grown and gone and who usu-

ally have more money to spend on themselves, are prone to purchase high-markup goods of relative luxury: china, handbags, and the like. Younger active duty personnel are often looking for more downscale items, such as cheap school clothing for kids.

"Finding the appropriate balance between discount store and upscale department store has long been a source of controversy for the exchanges," the CBO noted in its study, "The Costs and Benefits of Retail Activities at Military Bases," published last October. "But that controversy has intensified in recent years as the size of the active duty force has declined."

It is important to remember that

this problem largely is confined to bases in the United States. Overseas commissaries and exchanges tend to serve a customer base that is much more heavily weighted toward those still in uniform. Seventy-three percent of the patrons of commissaries in Europe, for instance, are active duty personnel or are members of their families.

Overseas stores account for about 16 percent of total commissary sales and some 25 percent of total exchange receipts. Often, the local exchange is the only source of US-style music, videos, or reading material for young military families that suddenly find themselves in a foreign culture. And the higher retail taxes in many European countries make the tax-free nature of on-base retailing much more attractive.

"Like commissaries, overseas exchanges make an especially important contribution to the lives of US military personnel and their families," concluded CBO.

### Target of Critics

The Pentagon's vast retail system has long been the target of criticism from Congressional deficit hawks concerned about its cost and from private retailers concerned about the competition that the system poses to their own enterprises. These critics argue that most commissaries and exchanges no longer serve their original function of providing shopping



**During a stopover at Rhein-Main AB, Germany, a soldier calls home from a pay phone while his buddy finishes a meal at the AAFES cafeteria. Such services and facilities are part of DoD's vast and comprehensive retail system.**

USAF photo by A1C Esperanza Lopez

## Distribution of DoD Exchange Sales Worldwide for 1995

Marine Corps Exchanges  
\$0.6 billion

Navy Exchange System  
\$1.9 billion

Army and Air Force Exchange Service  
\$6.7 billion

Source: Congressional Budget Office, based on data from the Department of Defense.

Note: Includes sales made by concessionaires.

services that otherwise would not be available. Raising troops' pay would be a more efficient method of compensation, some contend.

CBO analysts claimed that the United States could save roughly \$1.5 billion by shuttering its commissaries and exchanges and giving larger paychecks. It is not only the direct \$1 billion subsidy to commissaries that is at issue, the analysts said, but also foregone taxes and services provided to DoD's retail stores, which also constitute a tax on Americans.

CBO's savings figure includes a pool of \$500 million used to increase military basic pay about one-half of one percent. Such a direct subsidy would make up for the lost lower base costs of commissaries and exchanges, said CBO, and would be easy to target at midcareer noncommissioned officers and other personnel the American military most wants to retain.

Standing to lose the most would be military retirees, the report acknowledged. At present, they enjoy lifetime shopping privileges in the military stores. That would be taken away, with no compensating increase in military retired pay.

CBO said on-base shopping should be contracted out and limited to fast-food and other services attractive to active duty forces. The study claimed that the military role in retail has grown and persisted partly because many of its costs, such as foregone taxes and return on capital, fall outside the bounds of the federal budget.

"If DoD faced the full cost of its role in retail activities, it might well reassess and reduce that role," stated the CBO report.

Others, including AFA, don't buy that argument. AFA, as a matter of policy, strongly supports the Pentagon's retail system as an important part of the overall military benefits package. The AFA position is that the commissary privileges of Guard and Reserve members should be expanded and become comparable to those enjoyed by active duty members and retirees. Moreover, it said, the restrictions on what military exchanges can sell should be eased or lifted.

Said AFA's 1998 Personnel Policy Paper: "Easing or eliminating restrictions would give exchanges new flexibility and allow them to compete better with civilian retailers. However, these changes will need approval of Congress and are being bitterly contested by many retail trade associations with considerable political clout."

It appears unlikely that the CBO study will result in quick, drastic change in the DoD retail system. However, it will be the central focus of House hearings later this year. And the Pentagon does continue to look for ways to trim its retail operations and save within the basic infrastructure that now exists.

*Peter Grier, the Washington bureau chief of the Christian Science Monitor, is a longtime defense correspondent and regular contributor to Air Force Magazine. His most recent article, "Making the Case for FEHBP," appeared in the March 1998 issue.*

Consolidation is one option. Blending the three service organizations that currently oversee exchange operations could save overhead, for example. The Pentagon is also experimenting with combined commissary-exchange stores, where food items are sold at the basic five percent markup but nonedible items are sold at higher exchange-style markups. Such "BX Marts" exist at NAS JRB, Carswell Field, Texas, and Homestead ARB, Fla.

Some cuts have already been made. Since its inception DeCA has closed some 100 stores, many of them as part of the base realignment and closure actions.

### Pressure on Services

Now the Pentagon is taking action to make the services more cognizant of commissary costs.

Under the Pentagon's proposed 1999 budget, DeCA would no longer receive its \$1 billion subsidy as a Pentagon line item. Instead, the Defense Department will distribute that money to the military services. Then it will ask for it back, in the form of budget contributions to DeCA from service MWR budgets.

The plan would allow the services to increase funding for commissaries, if they wish. But military officials are not necessarily happy about the proposed move, which they think might mean competition for MWR funds between commissaries and other quality-of-life programs such as child care centers.

DeCA officials reply that the change would recognize the importance of commissaries in military quality of life and the role of the services in funding decisions. They also point out that the 1999 budget foresees a fixed baseline of commissary funding through at least 2003—something they interpret as a vote of confidence in the system.

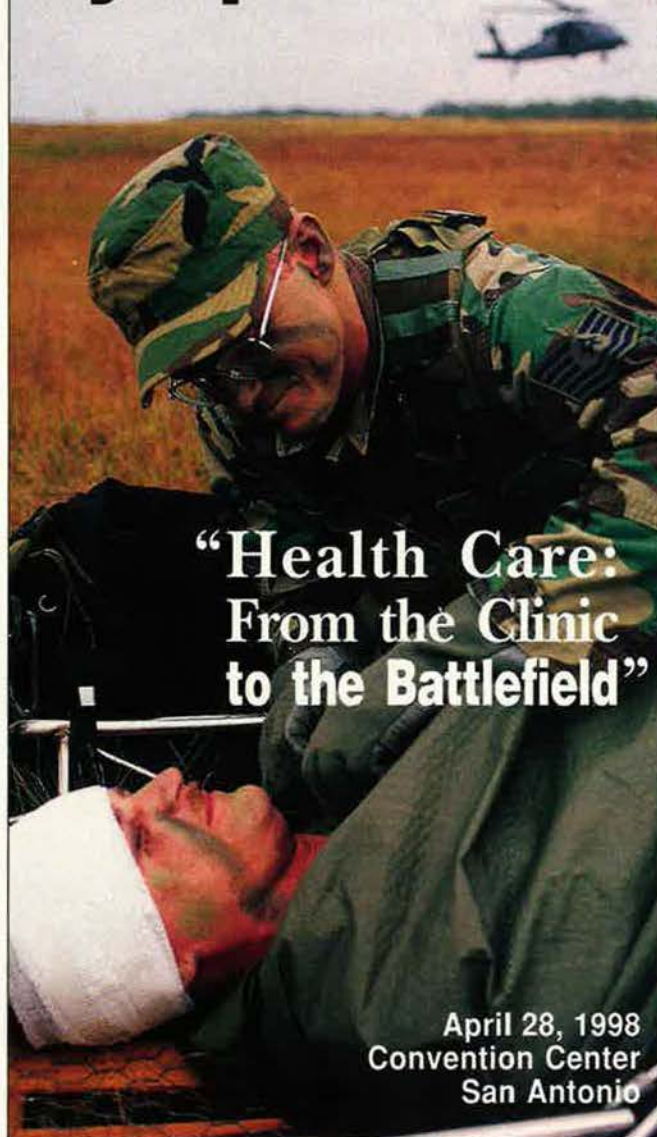
"In essence, this process has reaffirmed the importance of the commissary benefit to the military community," said the DeCA director, retired Army Maj. Gen. Richard E. Beale Jr. ■





**Air Force Association's**

# National Policy Symposium



**“Health Care:  
From the Clinic  
to the Battlefield”**

**April 28, 1998  
Convention Center  
San Antonio**

## Registration

Advance registration closes April 20, 1998. No refunds can be made for cancellations after this date. Symposium fee for AFA Individual or Industrial Associate member is \$75. Fee for non-member is \$125. Fee includes continental breakfast, coffee breaks, lunch, and farewell reception.

For more information call Jennifer Krause at (703) 247-5838 (e-mail: [jkrause@afa.org](mailto:jkrause@afa.org)), call the fax on demand service, available 24 hours a day at 1-800-232-3563 and order document 321, or visit our web site (<http://www.afa.org.sananton.html>). For DoD personnel registration information, please call Barbara Coffey at (703) 247-5805 (e-mail: [bcoffey@afa.org](mailto:bcoffey@afa.org)).

The Air Force Association will host a major symposium that will explore today's health care problems and solutions, a topic of prime concern to both the military and civilian audience. The Defense Department medical community is going through its own revolution in health affairs as it adapts to the same shrinking budgets, technological changes, and force structure realignments that line members of the services have already faced. At this AFA symposium, senior leaders in both the military and civilian health care world will discuss what revised policies and new capabilities are emerging in medicine today. Additionally, a host of smaller professional breakout sessions—including current medical support of Military Operations Other Than War; a futuristic vision of health care outlined by the Koop Foundation; future prevention of Gulf War Syndrome-type occurrences; and nano/biotechnological breakthroughs—will open new windows on the state of the medical profession today. Whether your interest is as a practitioner or customer of the health care system, you won't want to miss this symposium. Invited speakers include:

**Assistant Secretary of Defense for Health Affairs  
Vice Chief of Staff of the Air Force  
Surgeons General of the Army, Navy, and Air Force  
Commander, Air Education and Training Command, USAF  
President, University of Texas Health Science Center  
at San Antonio  
Congressional leaders**

A welcome continental breakfast, lunch, coffee breaks, and a farewell reception honoring all speakers are included.

## Tentative Schedule

7:30–8:30 a.m.	Continental Breakfast
8:30–Noon	Symposium Session I
Noon–1:30 p.m.	Buffet Luncheon
1:30–5:30 p.m.	Symposium Session II
5:30–7:30 p.m.	Reception

## Other Activities

AFA's Alamo Chapter will sponsor a golf tournament at the challenging Quarry Golf Club course, rated one of the best public golf courses in America, on April 27, followed by a reception. Also the chapter plans to sponsor a dinner Tuesday evening, after the exhibit hall reception, at the historic Menger Hotel. For golf details, call John Williams, (210) 616-5550; dinner ticket information, Dave Stoltz, (210) 925-1531, ext. 688.

## Hotel Reservations

For hotel reservations, call the historic Menger Hotel, 1-800-345-9285, and mention that you are attending the AFA symposium for a special rate of \$99.00 plus 15% tax, single or double. Although the cutoff date was March 24, rooms may still be available.

**“The military health system is positioned to be the benchmark health care delivery system of the 21st century.”**

**Joint Strategic Plan statement by  
service Surgeons General and the  
Assistant Secretary of Defense for Health Affairs  
1997**

Despite its readiness concerns, the Air Force says that force modernization funding cannot be put off.

# Pressures Build on the New Budget

By Robert S. Dudney, Executive Editor

**A**ir Force leaders are testing a bold proposition this spring as they present their 1999 budget request to Congress. The service during recent years emphasized operations, maintenance, training, and the like over modernization of weapons. This, it is said, kept USAF fighting units ready to meet the blistering pace of post-Cold War operations.

F. Whitten Peters, Acting Secretary of the Air Force, does not disagree that current readiness is critical. However, he told the Senate Armed Services Committee on Feb. 12, in times of budget austerity, "We must assume some risk in current readiness in order to pay for modernization that is key to future security."

Accordingly, USAF shaped its new budget to boost modernization by a considerable amount. Procurement bottomed out in 1997, at \$14.7 billion. Then, this year, it will begin to turn up, rising to \$15.8 billion. The proposed amount for 1999, \$17.5 billion, would increase procurement outlays by another 11 percent over this year's level. Combined procurement and research and development spending comes in at \$31.1 billion.

The unusual part was that USAF took this step even as worries mounted about slipping readiness. Sen. Strom Thurmond (R-S.C.), chairman of the Senate Armed Services Committee, told Peters and Gen. Michael E. Ryan, USAF Chief of Staff, that the panel was "very concerned" about readiness indicators. The prime question is whether, as Peters said, "Ultimately, readiness improvements will depend on modernization."

Peters said that, at present, 91 percent of USAF's combat units are in C-1 or C-2 readiness status and that front-line units in Europe and the Pacific boast higher ratings. Even so, he and Ryan freely acknowledged that USAF readiness indicators are dropping. For example, aircraft mission capable rates have fallen 6.8 percent since the Gulf War. Engine readiness is down. Pilot retention, said Peters, is a "grave concern."

According to the USAF leaders, the causes of readiness problems are many and complex. Maintenance of engines suffered as a result of turmoil in the logistics workforce and shortages of spare parts. Depot work was disrupted by moves to new locations. In response, USAF invested in new engines for certain high-use aircraft. The service planned to reactivate a TF-39 engine repair facility at Travis AFB, Calif., in an effort to improve engine reliability on the C-5 transport.

### The Real Problem

However, Peters made clear that these are considered stopgap measures, steps that do not address the underlying problem—a decade of underfunding in the aircraft and hardware accounts that has led to a graying inventory. "Across our fleet," he argued, "old age has increased the difficulty of keeping aircraft running and has raised the cost of readiness."

Ryan agreed. "The mission capability rates of our operational flying units have dropped seven percent in the last eight years," he reported. "I attribute that to the aging nature of our aircraft. In 1999, the average age of an Air

Force aircraft will be 20 years old. Predicting the breakage rate is getting harder and harder. That's why modernization is so important to us and our future readiness."

This tug-of-war between current and future readiness seems sure to continue throughout Congress' review of the new Pentagon budget, the first to be based explicitly on the results of 1997's Quadrennial Defense Review. The budget Defense Secretary William S. Cohen unveiled on Feb. 2 seeks \$257.3 billion for DoD in Fiscal 1999, which starts Oct. 1.

This would represent a one-year real drop of \$2.8 billion from the Fiscal 1998 level and mark the 14th straight year that US defense spending has fallen. Plans call for real defense spending to be flat in 2000 and for years afterward. The 1999 budget is part of a six-year blueprint projecting total spending of \$1.55 trillion during the years 1998–2003.

In contrast with previous years, DoD's procurement account actually enjoys a boost. DoD's plan provides \$48.7 billion for procurement of new weapons and other systems. Projections call for weapon purchases to hit \$61.3 billion in 2001, achieving the \$60 billion goal previously set by the Administration.

USAF's share comes to \$76.7 billion which, in real terms, marks a small increase—about one percent—over this year's \$75.8 billion. Everything is relative, however. As recently as 1989, the service's budget was \$121 billion, in 1999 dollars.

The Air Force's new spending plan breaks out into these categories: research and development, \$13.6 billion; procurement, \$17.5 billion; operations and maintenance, \$24.4 billion; military personnel, \$19.5 billion; and construction and family housing, \$2.1 billion. The aggregate is reduced by \$440 million in offsetting receipts.

### Airlift and Tankers

Once again, airlift modernization dominated the annual Air Force procurement proposal.

The new budget allots \$3.2 billion to procure 13 new C-17 airlifters and to fund their spare parts, R&D, and basing support construction. DoD has an official requirement for 120 C-17s. Air Force budget documents maintain that getting large numbers of the new lifter into the force is USAF's No. 1 near-term need. USAF plans to spend \$13.2 billion more for C-17s, with the 120th aircraft to be purchased in 2003.

In addition, the Air Force has programmed almost half a billion dollars to carry out C-5 engine and avionics upgrades, declaring that the service is optimistic about the result of these changes.

The Air Force also will spend \$126 million to continue to buy a single new C-130J tactical airlifter, one that it did not ask for.

Aerial refuelers also get attention. The budget provides \$291 million to modify aging KC-135 aircraft in the active force, Air National Guard, and Air Force Reserve Command. The 1999 investment in the PACER CRAG program upgrades the avionics suites of 121 KC-135s with state-of-the-art glass cockpit systems.

## Fighter-Attack Aircraft

The Air Force's fighter of the future gets its procurement start in the new spending plan.

The Pentagon budgeted \$2.4 billion for the F-22 program in Fiscal 1999, enough to continue with full development efforts and to pay for the first two production aircraft. Pentagon officials envision a steady increase in funding for the F-22 over the next several years, allotting \$2.7 billion in 2000; \$3.3 billion in 2001; \$3.8 billion in 2002; and \$4.3 billion in 2003.

The Air Force fighter fleet is aging. By late 2004, when the F-22 enters into service, the F-15 will be 30 years old.

The Air Force will spend heavily on yet another combat aircraft program—the Joint Strike Fighter, which is expected to produce new fighters for the Air Force, Navy, Marine Corps, and Britain's Royal Navy. USAF plans to commit \$456 million of a Pentagon-wide total of \$920 million to continue development of the JSF. The Navy provides the rest.

In a surprise move, the Air Force plans to buy no new F-15Es or F-16s, though it is short of attrition reserve aircraft for both types of fighters. Service officials said they would like to have more, but there was no money.

USAF budgeted some \$300 million in Fiscal 1999 for yet another type of theater combat aircraft—the Attack Laser.

The YAL-1A, the prototype designation, is a jumbo jet equipped with a high-energy laser, that would attack threatening ballistic missiles in their boost phase and perhaps be capable of shooting down aircraft.

The Air Force expects to spend \$1.4 billion over the next five years to develop the Attack Laser technologies and hardware.

(In other services, the Pentagon also emphasized

aviation. DoD planned in 1999 to commit \$3.2 billion for the development and procurement of 30 more Navy F/A-18E/F Super Hornet fighters. In addition, DoD would provide \$1.1 billion to procure seven Marine Corps V-22 aircraft.)

## Battlefield Awareness

DoD's battlefield awareness investments include major Air Force programs designed to provide detailed, timely information on air and surface battles. Among them: \$654.4 billion for two more E-8C Joint Surveillance Target Attack Radar System aircraft in 1999, the final systems in what is now a planned fleet of 13 Joint STARS aircraft.

As part of the budget debate, however, DoD and Congress are discussing the possibility of increasing the Joint STARS purchase. Cohen last year cut the planned buy from 19 to 13, but he now says, "We have to go back and see what we can work out." Senators and Congressmen of both parties have urged Cohen to approve the purchase of more E-8Cs.

Other investments include:

- \$732 million for continued development of the Space-Based Infrared Satellite (SBIRS) system, successor to the Defense Support Program warning satellite.

- \$550.9 million for the Milstar satellite follow-on system.

- \$258.6 million for the Global Positioning System, about half of which will go toward buying additional satellites, and the other half will fund more research.

- \$142.4 million to complete the E-3 Airborne Warning and Control System upgrade to Block 30/35 electronic support measures, Central Computer Memory Upgrade, Joint Tactical Information Distribution System, and GPS. The Radar System Improvement Program continues.

- \$619.8 million for Predator, Global Hawk, and DarkStar unmanned aerial vehicles for air surveillance system and several ground stations.

## Heavy Bombers

Long-range airpower was barely visible in the new Pentagon spending plan. The budget contains \$376.3 million to continue work associated with the B-2 stealth bomber and its systems, though USAF is prohibited from spending any of that money on additional aircraft. The Administration provided no funds for B-2s beyond the 21 previously authorized.

The new budget contains some \$91.6 million to continue to modify the fleet of B-1 bombers for conventional theater war.

"We, of course, would like to have more long-range systems," said Peters in testimony to the Senate. "We would like to have more short-range systems also, because there are issues that go into how long you want to run an operation and the number of sorties that you want to put across, as opposed to one strike in and one strike out."

Money also flowed to precision guided munitions. Another \$399 million is earmarked in 1999 for procurement of four types of precision weapons—the Joint Air to Surface Standoff Missile, the Joint Standoff Weapon, the Joint Direct Attack Munition, and the Sensor Fuzed Weapon. The money will buy 3,258 PGMs.

## The Long Budget Slide

The 1999 national defense budget request came in 36 percent below the inflation-adjusted sum of \$419.4 billion voted in 1986, the peak year of post-Vietnam defense spending.

As a share of the nation's GDP, defense spending will go down again to 2.9 percent in 1999 and will fall to 2.6 percent in 2002, compared to 6.1 percent of GDP in the mid-1980s.

Most defense spending will go to everyday activities—training, maintenance, exercises, repairs, payroll, health care, and the like. The operations and maintenance account is projected to hit \$94.8 billion, consuming 37 percent of the budget. Military personnel accounts take another \$70.8 billion, or 27.5 percent. Family and other housing will take up \$3.5 billion. Taken together, these operational, fast-spending categories account for nearly two-thirds of the budget.

The remaining one-third of the total will go to long-term investment—procurement, research and development, and construction.

## Service Shares

In 1999, \$221.8 billion, or 86 percent of the Pentagon spending total, would go to the three military departments: Air Force, Army, and Navy. (The Navy Department includes the US Marine Corps.) All would receive about the same share as in prior years.

The Air Force's \$76.7 billion budget represents a 34.6 percent share of the services' total; the Navy Department (Navy and Marine Corps) gets \$81.3 billion, or 36.7 percent; and the Army gets \$63.8 billion, or 28.8 percent.

The remainder—nearly \$35.5 billion—goes to Department of Defense agencies and defense-wide activities.

### USAF Active and Reserve

USAF's active duty strength at the end of 1997—the latest complete fiscal year—stood at 377,000 troops. Plans call for the service to cut another 5,000 this year, dropping the total to 372,000, and then in Fiscal 1999 to trim another 1,000 members. The level at the end of 1999 would be 371,000.

However, the QDR established a new and lower projected figure of 339,000 troops in 2003, meaning USAF must shed another 32,000 active duty members during the period 2000–03.

When the Air Force achieves the lower projected level, it will be 44 percent smaller than it was at its Reagan-era peak of 608,000. New reductions require Congressional approval.

The latest USAF budget provides for a combined military force of 181,200 in Air National Guard and Air Force Reserve Command—107,000 Guardsmen and 74,200 Reservists.

ANG will operate 1,170 aircraft and pull 357,800 flying hours in the interceptor, tactical airlift, air refueling, general-purpose fighter, and reconnaissance missions.

AFRC, with 60 flying units and 393 aircraft, will provide 100 percent of the Air Force's weather reconnaissance, 50 percent of its strategic airlift, and 30 percent of the air rescue and medical airlift capability.

### Readiness

The Air Force's Fiscal 1999 O&M funding—\$24.4 billion—supports the day-to-day activity of 20 fighter wing equivalents, 87 major installations, 4,874 primary authorized aircraft, 550 intercontinental ballistic missiles, and 24 Global Positioning Satellites. It funds 1.8 million flying hours.

Flying time in 1999 for active Air Force fighter and attack aircrews has been set at 19.1 hours per month, up slightly from 18.7 this year but down from 19.3 the year before. Bomber crews, which flew about 20 hours per month in 1997, will get only 17.9 hours per month in 1999, but this is not viewed as a worrisome problem.

DoD funded many programs to acquire or hold on to high-quality personnel. In military pay accounts, it pro-

posed the full legal pay hike of 3.1 percent in 1999 and three percent for each of the ensuing four years. The budget also funds improvements to military "quality-of-life" factors such as housing, medical services, child care, and other important benefits.

USAF is deeply concerned that both pilot and navigator retention rates have declined each of the past three years. Since 1995, pilot retention has fallen from 87 to 71 percent and navigator retention has slipped from 86 to 73 percent.

Leading indicators are also showing increasingly downward trends. The number of pilots accepting Aviator Continuation Pay is down from 59 percent in 1996 to 33 percent as of mid-January 1998. In 1994, the figure was 81 percent.

Despite problems, military leaders maintain that the forces were ready for war. The Chairman of the Joint Chiefs of Staff, Army Gen. Henry H. Shelton, told the Senate Armed Services Committee on Feb. 3: "It is my assessment ... that we are within an acceptable band of readiness and risk in the context of our national military strategy of two Major Theater Wars, and we are ready to execute that strategy."

### End Strengths

Since the big drawdown began in the late 1980s, federal officials and lawmakers have approved a net reduction of 755,000 active duty troops. The large US force of 2,174,000 deployed at the end of Fiscal 1987 will have shrunk to 1,419,000 by Sept. 30, 1998. That constitutes a drop of some 35 percent. Plans call for the uniformed military in Fiscal 1999 to lose another 23,000 active duty troops over the next year, with the force to level off at 1,396,000.

The 1999 budget contains few significant force-structure changes. The QDR decided not to touch the Army's 10 active and eight National Guard divisions, the Navy's 12 aircraft carriers, or the Marine Corp's three active and one reserve division. The Air Force, however, will transfer one active duty fighter wing into reserve status, leaving USAF with 12 active and eight reserve wings sometime after the turn of the century.

The Air Force plans to maintain a bomber fleet of 94 B-52s, 93 B-1Bs, and 21 B-2s. Of these, 44 B-52s and 48 B-1s are primary mission aircraft, meaning that they are fully funded in terms of operations and maintenance, load crews, and spare parts, and are ready for immediate deployment.

All of the B-52s and B-1s in the inventory, including those in attrition reserve, will be kept in flyable condition and will receive planned modifications. DoD plans to reduce the B-52 inventory to 71 aircraft (44 primary mission) in 1999. B-1 primary mission aircraft will rise to 70 by 2001.

The USAF airlift fleet of 1999 will consist of 37 C-17s, 135 C-141s, 104 C-5s, and 414 C-130s (all aircraft assigned for performance of wartime missions). The long-range tanker force consists of 472 KC-135 and 54 KC-10 Air Force primary mission aircraft.

The Pentagon seeks \$4 billion for the Ballistic Missile Defense program in 1999 and \$12.8 billion during the four-year period 2000–03. Funds were added as a result of the QDR. ■

**Some parts of the operational workload have a more negative impact than others.**

# Dissecting

**I**N recent months, Air Force attention has been drawn repeatedly to the “tempo problem”—specifically, the strains caused by frequent and fast-paced operations and the increased demands on personnel. The service, as the situation wore on, conducted a number of studies, each trying to analyze the situation and identify the real problems. USAF wants to know just how units spend their time and what really is bothering the troops.

A RAND Corp. study found that units still spend most of their time—53 percent—on routine peacetime operations and local training. The next biggest block of time—19 percent—was consumed by inspections and wing exercises. The rest of the members’ time—28 percent—was taken up with activities such as Military Operations Other Than War, off-station training, Joint and combined exercises, and headquarters and local tasking.

From the perspective of the people involved, peacetime operations and local training constituted the best part of Air Force life. The most grievous parts of it—and where the tempo affects morale and makes life hard to take—were MOOTW, inspections, and wing exercises.

USAF’s conclusion was that the growing demands of peacekeeping, humanitarian actions, and other non-traditional activities have had an impact on morale and threaten future retention. In addition, though the service itself can do little to reduce the demands placed on it by national leaders or to limit necessary training and normal duties, it can at least ease up on the Air Force’s own inspections and exercises.

Air Force leaders announced that, beginning this year, it will reduce by 15 percent the number of USAF

troops sent to support Joint Chiefs of Staff exercises. In Fiscal 1999 and 2000, it will reduce by five percent the scale of USAF and Joint training exercises. The Air Force has called a halt to Quality Air Force Assessments, effective as of Jan. 1. It will make a 10 percent reduction in the number of inspectors used for operational readiness in Fiscal 1998 and another 20 percent reduction in Fiscal 1999.

Moreover, said Air Force officials, the service will, when possible, combine inspections with real-world deployments.

## “Marginal Improvements”

Such actions should help, but a recent study by the RAND Corp. suggested that broader remedies may be in order. The study, like others, focused on inspections and exercises as prime causes of stress. But, the researchers also said, “We are concerned that improving the focus of inspections and exercises and reducing the time devoted to them without considering other Air Force efforts involving planning, missions, and organizations may yield only marginal improvements in overall Air Force performance.”

While USAF leaders apparently agree, and have been looking at other areas in which to ease the burden on units and members, further solutions may not be easy to come by.

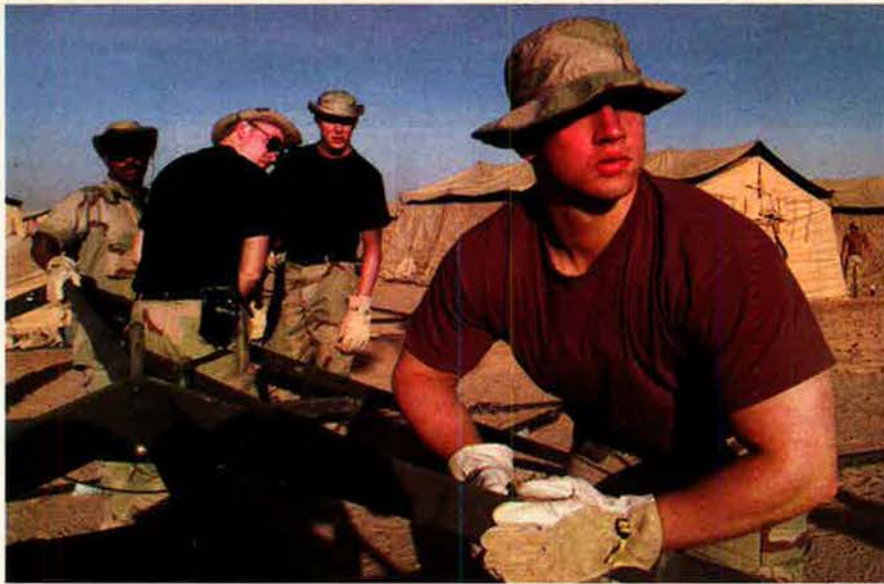
The RAND study, entitled “What Helps and What Hurts: How Ten Activities Affect Readiness and Quality of Life at Three 8AF Wings,” determined that USAF inspections and exercises generally had the greatest negative impact on such elements as readiness, members’ personal growth, and the quality of Air Force life. However, some other activities drew almost as much fire from mem-

**By Bruce D. Callander**

*A study of three 8th Air Force wings found that routine peacetime operations and local training were credited with doing the most to improve readiness. USAF inspections and exercises, on the other hand, were among the activities receiving negative reviews.*

# the Tempo Problem





**SrA. Joseph Bittenger, 89th Civil Engineering Squadron, Andrews AFB, Md., helps construct tents during a recent Southern Watch deployment. Increased TDY was noted by study respondents as one of the worst parts of Air Force life.**

bers. These include peacekeeping activities, MOOTW, increased TDY, or temporary duty, and special taskings by headquarters and local commanders.

The RAND study provides an interesting case history in the Air Force's effort at self-analysis. It was requested by Lt. Gen. Phillip J. Ford, the commander of 8th Air Force, and focused on operations at three Air Force wings: 27th Fighter Wing, Cannon AFB, N.M.; 314th Airlift Wing, Little Rock AFB, Ark.; and 5th Bomb Wing, Minot AFB, N.D. In calling for the survey, the general said, "We know we are working hard. But are we working smart?"

Past studies had explored the situation, but most limited their concern to the impact of increased TDY on specific squadrons. To get a broader picture, RAND surveyed all units within the three wings and looked at the full range of work activities, not just TDY alone.

The researchers intentionally chose wings with diverse missions, Cannon being a fighter base converting from F-111s to F-16s, Little Rock a C-130 tactical airlift base, and Minot a B-52 bomber base. And, rather than concentrate on operational personnel alone, they looked at those in logistics, support, medical, and other work areas as well.

RAND conducted face-to-face interviews with some 500 commanders and supervisors and asked them to speak not just for themselves but

for all the personnel at their levels. The answers thus represented the views of about 15,000 military and civilian members, RAND said, and about 80 percent of the organizational units within the three wings.

### The Troublesome 10

The responses of the sample group were weighted, based on the unit populations involved. In its study, RAND asked participants to consider the impact on their units of these 10 types of activities:

- Routine peacetime operations and training.
- Off-station training.
- Inspections, including preparations for them.
- Peacekeeping and other MOOTW.
- Wing exercises with multiple squadrons.
- Command exercises involving units from other wings.
- Joint exercises involving units from other services.
- Combined exercises involving units from other countries.
- Higher headquarters tasking for special operations.
- Local tasking for such events as air shows.

The study looked at each activity in terms of the time and intensity of work it required, its impact on readiness, and its effect on professional growth (opportunities for study, formal military or academic training, and community involvement) and personal life (ability to take annual

leave and attend family events, health problems, and family difficulties such as separations and incidents of abuse).

In addition to the statistical data it acquired, the RAND report was laced with personal comments from members, some of them highly critical of the situation in which they work.

Most respondents agreed that the most positive activities in which their units were involved were routine peacetime operations and local training. More than three-fourths of those surveyed would have preferred to increase the time spent on these activities. They now account for only about half the units' workloads, according to the study, but they were credited with doing the most to improve both wartime and peacetime readiness.

At the other end of the scale, more than 70 percent said that inspections and wing exercises degrade readiness because they often entail fruitless activities that consume inordinate amounts of time.

Such activities increase work weeks from the average 48 hours to more than 60 hours. Since the intent is to practice and test capabilities under stress, the study said, this is not inherently bad. Most respondents, however, argue that they do not improve readiness.

Inspections and wing exercises elicited particularly negative reactions at Minot. One respondent at that base agreed that "all opportunities to practice our wartime skills have a positive effect on our wartime readiness." But the respondent added, "[However,] the frequency of inspections and exercises does not allow us enough time to identify mistakes, learn from them, and then develop and implement corrective actions. We end up making the same mistakes over and over. Not so serious in practice but absolutely catastrophic in war."

Off-station training activities drew mixed reviews. The other eight activity areas consistently received more negative ratings. In fact, all groups said they saw a degradation of mission readiness in almost all nonroutine activities and most said they were hurting the quality of Air Force life as well.

The survey looked at the quality-of-life impact in two categories: professional growth and personal and family life.



In general, the respondents said that quality of life was best under routine operations and local training and off-station training. At least, they said, these activities had no negative effect on professional growth and had the least adverse impact on personal and family life.

### **MOOTW and Other Disruptions**

The activities seen as most negative to quality of life were MOOTW, inspections, and various exercises. Which of these factors was considered the worst, however, varied somewhat by base.

One commander at Cannon said, "Prep[aration] and training time for deployment and the extended deployment time (90–175 days) eliminate the potential for college classes or [Professional Military Education]."

Another Cannon respondent said, "[Our] 11–14-hour days make it next to impossible to do [senior service school] or read material on leadership, quality improvements, etc."

In terms of impact on family life, the study said, MOOTW has the greatest negative effect, but all types of TDY and heavy workloads are taking their toll.

A Minot commander said, "In the last six months, a total of seven people have filed [for] and been granted divorces. In a squadron of 65 people, this is really bad. Everyone has been either TDY or caught up in the high ops tempo area."

A respondent from Cannon said, "Younger troops have a lot of problems ensuring that their families are taken care of. Now, a lot are getting out because they know more deployments are coming."

Time off is not a solution, in the view of a respondent at Little Rock. "Taking leave is a no-win proposition," that person said. "It's difficult to find time to take leave, and work just piles up while an individual is on leave, creating stress upon return to duty."

Interestingly, the responses from some support units were more negative than those from operational members. Security police squadrons, for example, found activities such as MOOTW, inspections, and wing exercises to be highly disruptive of personal and family life. Medical groups were even more outspoken about the negative effects of such activities, even though the report noted that these groups already spend more time on routine activities and do not see as much increase in workload with exercises and inspections as other groups do.

### **Missing the Mark?**

The RAND study acknowledged that the services have made numerous efforts to measure the impact of nonroutine activities and have launched various initiatives, but it questioned whether they had gotten to the heart of the problem.

Early DoD efforts were directed

at "stressed systems" and their crews on the national level. The Pentagon responded with the Global Military Force Policy. Issued by the Joint Chiefs of Staff, this policy requires decision makers to be aware of the thresholds at which readiness and quality of life degrade and of the adverse effects of continued operations above these thresholds. GMFP identified stressed systems, however, not units. It assumed all units would carry a fair share of taskings.

The Air Force Studies and Analyses Agency looked at squadrons with these stressed systems and expanded the focus from systems to activities causing stress. AFSAA identified negative effects of optempo/pers-tempo on people and equipment, but it did not look at activities of units that didn't own stressed systems (operational and support).

AFSAA made recommendations for limiting and/or managing taskings, for improving the management of human resources, and for adopting initiatives to improve the quality of Air Force life.

Until recently, however, the Air Force has focused heavily on one particular activity associated with stress—TDY. It has tried to develop a "corporate view" of what happens to Air Force people in such circumstances, but this has been difficult, RAND said, because of varying definitions of TDY.

Air Combat Command has researched yet another aspect of stress-inducing activities—how the taskings from outside sources accumulate at wing level. ACC's Scheduling Integrated Process Team led to a worldwide contingency and exercise scheduling conference to build "breathing room" into deployments and spread the work more evenly across the force. Again, however, the focus was mainly on TDY-related activities and exercises.

ACC's Optempo IPT identified more activities that cause stress and established ways to identify "hot" units. They looked at contingency and/or exercise participation, deployment intervals, TDY rate, "spin-up" and "spin-down" (preparation and recovery) times for contingencies and Operational Readiness Inspections, as well as at the number of exercises and surges, overdue training, and five- to seven-level manning for certain specialties.

Photo by Paul Kennedy



*The Air Force Senior NCO Academy at Maxwell AFB, Ala., is the capstone of enlisted Professional Military Education, but study respondents pointed out that deployments and preparations for them eliminate many opportunities for PME.*



**The timing and even the substance of competitions like William Tell (1994 event shown above) have changed dramatically as USAF makes adjustments in optempo and perstempo. The next William Tell isn't scheduled until 1999.**

Last summer, 7th Wing at Dyess AFB, Texas, completed a review of its workload, trying to capture all the activities in all operational and support areas. The effort pointed to the value of looking across all units within a wing, not just the squadrons owning stressed systems, and of looking at all types of work activities, not just TDY-related activities.

RAND's study continued that kind of probing by trying to establish the existence of differences or similarities within and between wings and groups (operations, security police, medical operations squadrons, fighter squadrons, etc.). It also surveyed members of the wing staff (chaplains, judge advocates, etc.) but found their functions so diverse that the results would not be meaningful and did not include them in the analysis.

### Where Time Is Hardest

Of the two activities taking up most of their time, the respondents gave their highest marks to routine peacetime operations and local training and their worst to inspections and wing exercises. In terms of disruptions to professional growth and personal and family life, routine activities again received the best marks and inspections and wing exercises the worst, along with MOOTW. Other activities were rated in between these extremes but generally on the negative side.

Looking at individual wings, however, RAND found some differences

in how they spent their time. Respondents from Minot said they spent more than the average amount of time on inspections and wing exercises, and Cannon respondents said they spent more time on MOOTW.

Individual groups also varied both in the amount of time they spent on activities and in their recommendations. While all groups recommended increases in routine operations, medical personnel were less concerned than support personnel about reducing instances of MOOTW.

Security police, services, and communications squadrons indicated they spent less time on routine operations than other groups. But respondents in almost all units and specialties recommended spending more time on routine duties and training.

The workloads involved with various activities were estimated by the respondents. On the average, they said that routine operations and local training, off-station training, and other local taskings required about a normal 48-hour work week.

MOOTW increased the average week to almost 53 hours, and exercises raised it to around 60 hours. The heaviest increases were for wing exercises, which the respondents said

pushed the work week to more than 70 hours.

Some activities not only increased the length of the work week but raised the level of intensity. Again, the respondents said that wing exercises and inspections involved the highest levels of work intensity. Routine operations and local training generally were said to be the least intense activities.

RAND noted that nonroutine activities, such as inspections and exercises, should be expected to increase stress because they are designed, at least in part, to tax people and systems and show how they react under such circumstances. The question, however, is whether they improve or reduce readiness. Another part of the study was designed to show how members think various activities affect readiness.

Respondents generally agreed that routine operations and local training improved readiness but that most other activities hurt it. Inspections and wing exercises scored low on the readiness scale, particularly at Minot. Headquarters and local taskings also were seen as contributing little to readiness.

### Get Well Programs

In January, USAF Chief of Staff Gen. Michael E. Ryan reported some of the efforts the Air Force has made or is planning to address the optempo/perstempo problem. Borrowing a term normally used to alert aircrews to flight conditions, he issued what he called a notice to airmen, or NOTAM, and promised more such reports in the future.

In his initial NOTAM, Ryan detailed plans to reduce exercises and inspections. In addition, he said, USAF has launched new efforts to ease burdens on the families of deployed people, including a unit ombudsman program and improved family communications with videophone connections.

Meanwhile, the Air Force plans to continue its self-study in hopes of not only diagnosing its maladies but finding cures. ■

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*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, "The Evolution of Air Mobility," appeared in the February 1998 issue.*

By John L. Frisbee, Contributing Editor

## Valiant Volunteer

Capt. Jack Weatherby knew the risk as few did when he volunteered to fly a photo-reconnaissance mission against a new kind of target.

**T**HE most hazardous operation in the war in Southeast Asia was reconnaissance. Recce pilots flew alone or sometimes with a wingman against high-value, heavily defended targets, generally deep in enemy territory. Their loss rate was far higher than that of strike fighters. Only exceptional pilots with the experience to make on-the-spot tactical decisions were used as recce pilots.

In the early months of the SEA war, the photorecce workhorse was the McDonnell RF-101, a supersonic aircraft derived from an early 1950s-developed penetration fighter. It had neither electronic jamming equipment nor side-looking radar as did the RF-4C that, in 1965, was to succeed it for deep penetration missions.

The scope and danger of photorecce work expanded in early 1965 when North Vietnam began deploying Soviet-made and -operated SA-2 Surface-to-Air Missiles around Hanoi. At that time, Allied aircraft were not permitted to destroy the SAM sites, but it was essential that their location be known. Eventually 200 SAM sites were established north of the demilitarized zone. The first USAF aircraft to be shot down by a SAM was an F-4 on July 24, 1965. More aircraft were downed by the anti-aircraft guns protecting the sites than by the missiles themselves.

At the time, two of the most experienced photorecce pilots were Maj. Jerry Lents and Capt. Jack W. Weatherby, based at Tan Son Nhut near Saigon. Lents had flown 48 missions, and Weatherby, who was considered one of the best recce pilots, flew the first mission against a SAM complex.

As they were returning from an incountry mission on July 29, 1965, they picked up a radio message from



higher headquarters concerning a run against a SAM site northwest of Hanoi. Weatherby immediately volunteered to lead the mission and Lents asked to go as his wingman. Weatherby's unique experience in reconnoitering a SAM site should help them on this one. His earlier experience convinced Weatherby that no pilot could expect to survive many SAM photo missions, but never mind that.

This particular mission would be not only harrowing but long. The site they were to photograph was 700 miles from Tan Son Nhut and more than 300 miles north of the DMZ. After take off, Weatherby lost his UHF transmitter and Lents took the lead. Near the DMZ they rendezvoused with a tanker and took on a load of fuel. Although his transmitter was out, Weatherby's receiver still worked. The two pilots were able to establish somewhat shaky communications by Lents asking questions and Weatherby responding with clicks of his microphone button. Weatherby made it known that he wanted to resume the lead.

The weather was deteriorating rapidly, with severe thunderstorms in the area. For a time it looked as though the mission could not be completed, but finally they broke out of the clouds a short distance south of the target area. Weatherby let down to their approach altitude of 200 feet, and they began their run about 40 miles out and at 600 knots. Ground fire became increasingly heavy as they neared the SAM complex.

Weatherby had turned on his cam-

eras when he was hit by an anti-aircraft shell that passed through the fuselage without exploding. Fuel began leaking from both sides of the plane, and within seconds small flames appeared under the fuselage. Without knowing if Weatherby's receiver was still working, Lents screamed at him to get out before the aircraft exploded. Ignoring the damage to his aircraft and the likelihood of a fatal crash, Weatherby continued his photo run. He believed there was a remote possibility that the flames would blow out and that he might be able to reach a friendly airfield. If he bailed out, the film would be lost and almost certainly he would become a POW.

Leaving the SAM complex, they flew on the deck up a valley so narrow that evasive action was not possible. Gunfire was coming from both sides, but with each passing second the possibility of escape improved. It was not to be. Weatherby's aircraft exploded and crashed to the ground in a ball of flame. Lents flew through the flames, cleared the hills, and made it back to a tanker and to Tan Son Nhut. Though the film was gone, he was able to pinpoint the location of the SAM complex. He continued to fly recce missions until his return to the States.

On Nov. 23, 1965, at Carswell AFB, Texas, Capt. Jack Weatherby was awarded the Air Force Cross posthumously for his heroism that July day. He was the 12th man to be awarded the AFC in the Vietnam War. He laid his life on the line to complete a mission of vital importance to USAF. His selfless valor was an inspiration to those who followed him. ■

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New Jersey



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**Gene Taylor**  
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Massachusetts



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Guam



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California



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Rhode Island



**Allen Boyd**  
Florida



**Adam Smith**  
Washington



**Loretta Sanchez**  
California



**James H. Maloney**  
Connecticut



**Mike McIntyre**  
North Carolina



**Ciro Rodriguez**  
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**Cynthia McKinney**  
Georgia

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South Carolina



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**Pat Roberts**  
Kansas

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Ranking Minority Member  
Michigan



**Edward M. Kennedy**  
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**Jeff Bingaman**  
New Mexico



**John Glenn**  
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**Robert C. Byrd**  
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**Max Cleland**  
Georgia



**C.W. "Bill" Young**  
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Pennsylvania



**Jerry Lewis**  
California



**Joe Skeen**  
New Mexico



**David L. Hobson**  
Ohio



**Henry Bonilla**  
Texas



**George R. Nethercutt Jr.**  
Washington



**Ernest J. Istook Jr.**  
Oklahoma



**Randy "Duke" Cunningham**  
California

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(formerly House Defense Appropriations Subcommittee)



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Ranking Minority Member  
Pennsylvania

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Washington



**W.G. "Bill" Hefner**  
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**Martin Olav Sabo**  
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**Thad Cochran**  
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Kentucky



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Alabama



**Judd Gregg**  
New Hampshire



**Kay Bailey Hutchison**  
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## Defense Appropriations Subcommittee



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Ranking Minority Member  
Hawaii

## Democrats



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South Carolina



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West Virginia



**Patrick J. Leahy**  
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**Dale Bumpers**  
Arkansas



**Frank R. Lautenberg**  
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Illinois



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Massachusetts



**Chet Edwards**  
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## Military Construction Appropriations Subcommittee

# Senate

## Republicans



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Chairman  
Montana



**Kay Bailey Hutchison**  
Texas



**Lauch Faircloth**  
North Carolina



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Idaho

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Washington



**Harry Reid**  
Nevada



**Daniel K. Inouye**  
Hawaii

# AFA / AEF National Report

By Frances McKenney, Assistant Managing Editor

## AFA's Senior Advisers Hold First Meeting

A February breakfast held on Capitol Hill and hosted by the Air Force Association, with the Airpower Caucus—a bipartisan Congressional group—and Air Force Chief of Staff Gen. Michael E. Ryan, highlighted the first meeting of AFA's senior advisers.

The advisers, appointed last November from the ranks of national directors emeriti, are John R. Alison, Russell E. Dougherty, George M. Douglas, Jack B. Gross, Martin H. Harris, H.B. "Buzz" Henderson, William V. McBride, Julian B. Rosenthal, and William W. Spruance.

During two days of sessions at AFA headquarters, National President Doyle E. Larson and Chairman of the Board



Senior advisers such as William McBride (center) and George Douglas (left) give AFA and AEF valuable perspectives on how the association's programs and goals have evolved over the years. AEF Chairman of the Board Thomas McKee (at right) listens carefully to their ideas.



USAF Chief of Staff Gen. Michael Ryan (center) dropped in on the first meeting of AFA's senior advisers at AFA headquarters and had a chance to chat with Russell Dougherty (left) and John Alison.

Gene Smith sought ideas, feedback, and other input from the advisers and gained an important historical perspective on AFA's development and directions.

Larson and Smith also updated the group on a wide range of future plans for and initiatives under way

within AFA. AFA staff members presented additional information to the advisers.

The Airpower Caucus was organized in January 1997 by Rep. Saxby Chambliss (R-Ga.) and Rep. Norman D. Dicks (D-Wash.) to focus attention on airpower.

At the February breakfast meeting with the caucus and the AFA advisers, USAF's top officer highlighted the importance of the Air Force's emphasis on becoming an Air Expeditionary Force. Ryan also covered USAF readiness, modernization plans, and concerns such as operations tempo and pilot retention.

### Cash for Trash

For the Mercer County (N.J.) Chapter, money is just lying around, waiting to be picked up. The chapter's fund-raising idea not only puts its name before the public, it also has generated \$6,000.

On a two-mile stretch of Route 33 and Route 130, near Trenton, N.J., a road sign identifies the AFA chapter as the section's litter patrol. Four times a year, chapter volunteers pick up litter along the road.

Chapter President Arthur Beach says nearly a dozen members always turn out for the activity, organized by member Frank W. Joslin. Armed with garbage sacks and fluorescent-colored vests provided by the state, they pick up everything from paper trash to tires, road signs, and even dollar bills.



But the real fund-raising comes from turning in the aluminum cans that people have tossed out their vehicles' window. Beach reports that the chapter has so far earned \$6,000 in the past five years through recycling the cans.

### Battle Stars

**Pasadena Area (Calif.) Chapter** President Martin W. Ledwitz reported that former flight nurse Lillian Keil, a highly decorated captain in the Army Air Corps and USAF, spoke about her wartime experiences at a joint meeting that the chapter held in January with local chapters of the Reserve Officers Association of the United States and Military Order of the World Wars.

Keil, a native of California, was a registered nurse in 1938 when she was hired by United Airlines to be a stewardess. In 1943, she joined the AAC as a flight nurse. She logged 250 air evacuation missions, accompanying wounded troops out of France and Belgium. This included 25 transatlantic crossings.

After World War II, Keil returned to United as an assistant chief stewardess based in Los Angeles, a po-

sition created especially for her because of her wartime service. Keil rejoined USAF for the Korean War and participated in 175 air evacuation missions.

Among Keil's many military awards are an Air Medal, American Defense Service Medal, American Campaign Medal, Korean Service Medal, and Republic of Korea Presidential Unit Citation. She also earned more than 10 service stars, received for medical missions during such actions as the Normandy invasion, Battle of the Bulge, invasion of Inchon, and battle of Chosin Reservoir.

Ledwitz also noted that Keil was featured on the TV program "This Is Your Life" and served as technical adviser for the 1954 movie "Flight Nurse."

### South Dakota

The **Rushmore (S.D.) Chapter** hosted President Larson in January when he traveled to South Dakota.

Larson began two days of events by visiting Ellsworth AFB's 28th Bomb Wing, where he spoke at an induction ceremony that honored airmen being promoted into the senior NCO and NCO

ranks. Lt. Col. Patricia A. McCollom, Rushmore Chapter president; George E. Masters, national vice president (North Central Region); and other AFA leaders then joined Larson for a meeting with 28th Operations Group Commander Col. Glenn Spears.

The Rushmore Chapter hosted an AFA dinner that evening for about 90 people, where Larson also served as a guest speaker.

The following day, Larson and Masters headed a roster of presenters at a chapter workshop. Other speakers were Ronald L. Garcia, North Dakota state president; Victor C. Seavers, national director; Coleman Rader Jr., Minnesota state president; and Charles A. Nelson, South Dakota state president. Rushmore Chapter officers Maj. Louise M. Lund-Vaa and 2d Lt. Randall T. Campbell also assisted in the planning of this event and hosting of the special guests.

### AFA Day

Nov. 13 was AFA Day at Sundstrand Corp.'s Plant 6 in Rockford, Ill. The **Greater Rockford Chapter** arranged the activity with Sundstrand, which is a leading supplier of primary and secondary power systems for commercial and military aircraft. The company is headquartered in Rockford.

Chapter President Larry Ackerman and Chapter Secretary Stormy Jones hosted three half-hour sessions for Sundstrand employees. They showed AFA videos on the USAF 50th anniversary celebration in Las Vegas and on aircraft history.

John D. Bailey, Illinois state president, and Eunice L. Bailey, state secretary, attended the presentations and also provided technical support. Bailey began each session with a talk on AFA, and afterward chapter members handed out copies of *Air Force Magazine*.

Sundstrand set up a display of products it has built for the Air Force, such as the electrical generating systems for the F-22 and C-17 and a Pratt & Whitney F119 fuel pump. The company also promoted AFA Day with colorful posters.

Bailey reported that this was the



**AFA National President Doyle Larson (holding cap) visited the Rushmore Chapter in Rapid City, S.D., to conduct a workshop attended by many chapter members and AFA leaders, including (front row, l-r) Jan Laitos, Ron Garcia, Vic Seavers, George Masters, and (at far right) Coleman Rader Jr.**

first time the chapter had attempted such an event. About 275 Sundstrand employees attended—more than the chapter had expected—and several people signed up to become AFA members.

**Speaking to the Hooligans**

Looking for insight into the future of Grand Forks AFB, N.D., the **Happy Hooligan (N.D.) Chapter** invited Brig. Gen. (sel.) James A. Hawkins to address the group.

Commander of the 319th Air Refueling Wing at Grand Forks and a member of the **Red River Valley (N.D.) Chapter**, Hawkins spoke about the transition from the Global Reach—Global Power strategy of 1990 to USAF's newest vision of Global Engagement, unveiled last year.

Hawkins said that in the question and answer session following his talk, chapter members expressed concern about the future of Grand Forks AFB, worried that because the state has two major bases and an ANG facility, it could be a tempting target for base closure actions.

Chapter President Terrance Sando said the chapter felt it was getting an insider's viewpoint because Hawkins



*The Richard I. Bong Chapter named SrA. Joseph Fronden, 148<sup>th</sup> Fighter Wing (ANG), as one of its airmen of the year. ANG Maj. Penny Dieryck (left) and Community Partner Albert Amatuzio congratulated Fronden.*

had served as chief of staff of the White House Military Office from March 1995 until last June.

**Honoring the Airmen**

At a December quarterly meeting the **Richard I. Bong (Minn.) Chapter** honored three Airmen of the Year

from the 148th Fighter Wing (ANG), Duluth IAP, Minn.

MSgt. Jodi L. Stauber, SSgt. Audra A. Bean, and SrA. Joseph M. Fronden received AFA Citations and AFA and USAF 50th anniversary commemorative coins. Bean is an information management specialist, and Stauber

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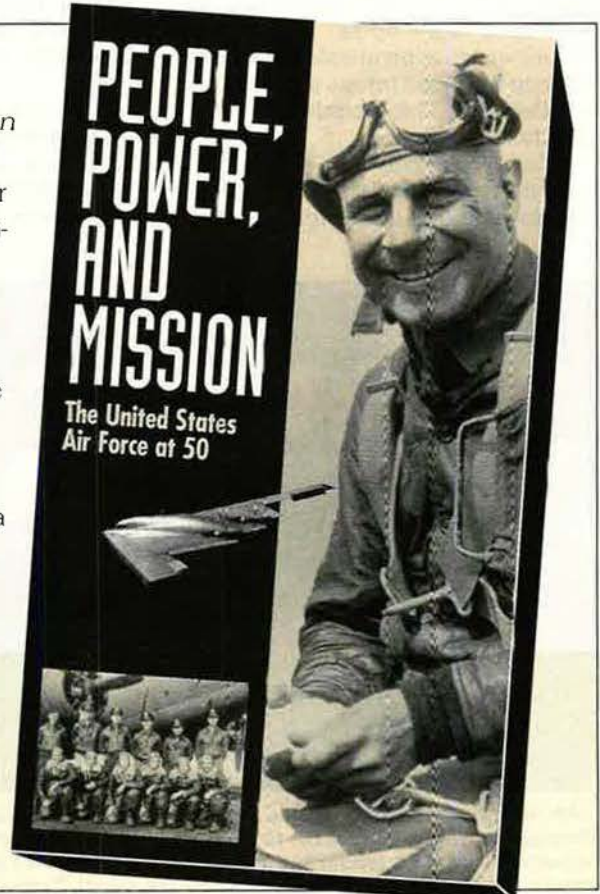
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is a personnel technician (career enhancement). Both are full-time guardsmen. Fronden is a customer service specialist.

Albert J. Amatuzio, chapter member and also a Community Partner, was asked to make the presentations on behalf of the chapter because his generous donation helped pay for the awards. Chapter President Richard P. Giesler served as master of ceremonies at the event, attended by over 50 people.

Following the presentations at this quarterly chapter meeting, ANG Brig. Gen. Raymond T. Klosowski, Minnesota ANG chief of staff and the chapter's past president, spoke on military leadership and on new developments in weapons.

## AFA Conventions

April 17-18, **Alabama State Convention**, Montgomery, Ala.; April 24-25, **North Dakota State Convention**, Grand Forks, N.D.; May 2, **Minnesota/South Dakota State Convention**, Minneapolis; May 2, **New Jersey State Convention**, Atlantic City, N.J.; May 8-9, **South Carolina State Convention**, Sumter, S.C.; May 8-10, **Louisiana State Convention**, New Orleans; May 15, **Maryland State Convention**, Andrews AFB, Md.; May 15-16, **Tennessee State Convention**, Nashville, Tenn.; June 5-6, **Ohio State Convention**, Columbus, Ohio; June 5-7, **Iowa State Convention**, Waterloo, Iowa; June 5-7, **New York State Convention**, Ronkonkoma, N.Y.; June 6-7, **Arizona/Nevada State Convention**, Laughlin, Nev.; June 13, **Illinois State Convention**, Galesburg, Ill.; June 19-20, **Arkansas State Convention**, Jacksonville, Ark.; June 19-20, **Mississippi State Convention**, Columbus, Miss.; July 17-19, **Texas State Convention**, San Angelo, Texas; July 17-19, **Virginia State Convention**, Hampton, Va.; July 24-26, **Pennsylvania State Convention**, Carlisle, Pa.; July 25, **Florida State Convention**, Melbourne, Fla.; Aug. 7-8, **North Carolina State Convention**, Goldsboro, N.C.; Aug. 14-16, **California State Convention**, Vandenberg AFB, Calif.; Aug. 14-15, **Oklahoma State Convention**, Oklahoma City; Aug. 15, **Georgia State Convention**, Savannah, Ga.; Aug. 22, **Indiana State Convention**, Indianapolis; Sept. 12, **Delaware State Convention**, Dover, Del.; Sept. 14-16, **AFA National Convention and Aerospace Technology Exposition**, Washington.



*A generous backer of numerous scholarships, William Spruance (center), national director emeritus, presented four to AFROTC cadets at Embry-Riddle Aeronautical University's Daytona Beach, Fla., campus. The cadets are (l-r) John Platt, who received the CMSgt. David C. Noerr Scholarship; Jeffrey Burdette, recipient of the Spruance Scholarship; Kathleen Barr, who received the Col. and Mrs. Warren A. Bennett Scholarship; and Christine Perez, winner of the R.E. "Gene" Smith Junior ROTC Scholarship.*

## Best in the State

When cadets from Indian River High School in Chesapeake, Va., were chosen as the state's outstanding Air Force JROTC unit, the **Tidewater (Va.) Chapter** was proud to recognize the occasion by presenting them with a plaque.

ROTC headquarters at Maxwell AFB, Ala., nominated the 132-cadet unit for the honor on the basis of an annual inspection.

Chapter President James M. Dellaripa Sr. presented the award to James L. Frye, the school's principal; retired Col. Thomas R. Kelley, senior aerospace science instructor; and retired MSgt. Ruben L. Davis, assistant ASI.

Earlier, chapter representatives also visited Deep Creek High School in Chesapeake to present AFA Certificates of Appreciation to JROTC cadets Justin A. Howe, Eumika J. Minggia, and Darren S. Michalski. The awards served as thanks to the cadets, who had performed as a color guard representing the AFA chapter in a Veterans Day parade held in Virginia Beach. The certificates also recognized the color guard for their part in the chapter's September celebration of USAF's 50th anniversary.

Dellaripa presented the awards to the cadets with help from Nathan T. Hardee, principal; Lt. Col. Raymond G. Brown, USAF (Ret.), the senior ASI; and CMSgt. Gilbert L. Southall, USAF (Ret.), ASI. Brown is a Tidewater Chapter member.

John P. Gaffney, chapter vice presi-

dent for aerospace education, said the school principals expressed appreciation to the chapter for their year-round support of school activities. He added that the chapter supports four AFJROTC units in the city, including cadets at Oscar Smith and at Western Branch high schools.

## Normandy Remembered

Thirty military veterans of the Normandy Invasion received Jubilee of Liberty Medals in a Valentine's Day ceremony organized under the leadership of Marylyn V. Zywan and other members of New York's **Nassau Mitchel, Francis S. Gabreski, and Queens chapters**.

Col. Bobby Brittain, commander of the 106th Rescue Wing (ANG), made the presentations at the Hofstra University Club, Uniondale, N.Y.

Among the special guests were John Kilbride, special assistant to Rep. Peter King (R-N.Y.); Gary Gerth, Veterans Service Agency director; and Lt. Col. Stephen Arata, USA (Ret.), commander of Hofstra University's Army ROTC cadet corps, which provided a color guard for the ceremony.

William G. Stratemeier Jr., New York downstate vice president, presented AFA Certificates of Appreciation to the Normandy veterans and to ROTC units that participated in the ceremony.

Stratemeier wrote that the Jubilee of Liberty Medal was commissioned in 1991 by the local government in Normandy, France, to recognize Allied soldiers. He said that France



*Dr. Newton: Gen. Lloyd W. "Fig" Newton (left) received an honorary doctorate from Embry-Riddle Aeronautical University. Dr. Steven Sliwa, at right, is the university's president. The Brig. Gen. James R. McCarthy Chapter sponsored a celebration luncheon afterward for the general.*

presented the medals to more than 35,000 veterans at 50th anniversary events in 1994 and 1995 and that several organizations had been authorized to conduct ceremonies to award the honor to those who couldn't travel to France.

This was the second time the tri-county chapters had honored Normandy veterans.

Zywan reported that her chapter helped with the event's programming and contacted dignitaries and military organizations to invite their participation. Queens Chapter President Edward W. Keil helped run the registration desk at the event, while the Gabreski Chapter helped in advertising it.

### Still Got Those Reflexes

When a Klaxon horn was tested during an AFA regional meeting held in the Warrior Center at Barksdale AFB, La., it was a familiar sound to former SAC crew members in the audience. Some of those old-timers nearly bolted out the door for their alert aircraft, reported Ivan L. McKinney, national vice president (South Central Region).

The **Ark-La-Tex Chapter** hosted the January meeting, attended by 55 AFA members from Alabama, Arkansas, Louisiana, Mississippi, and Tennessee.

AFA National President Larson served as keynote speaker for the evening awards banquet. He was also among the guest speakers for the business portion of the gathering, held earlier that day.

Others who spoke at the busi-

ness session included Brig. Gen. Donald A. Streater, 8th Air Force vice commander; Brig. Gen. Andrew W. Smoak, 2d Bomb Wing commander; and George P. Cole Jr., Ark-La-Tex Chapter president.

A chapter Community Partner, Horseshoe Casino, hosted a cocktail party as part of the events.

In December, the chapter awarded eight \$500 AFROTC scholarships at a dining-in for cadets from Grambling State University in Grambling, La., and Louisiana Technical University in Ruston, La.

Brig. Gen. Leroy Barnidge Jr., vice commander of San Antonio Legis-

tics Center at Kelly AFB, Texas, and a Louisiana Tech graduate, was guest speaker for the evening. He also helped present scholarships to Grambling cadets Jacquelynn Coles, Balinder Alexander, Vianesa Penn, and Charlotte R. Bennett and to Louisiana Tech cadets Joshua D. Hathaway, Daniel E. Durr, Carolyn J. Raburn, and Timagnus D. Traylor.

### Honorary Doctorate for a General

Gen. Lloyd "Fig" W. Newton, commander of Air Education Training Command, received an honorary doctorate in aeronautical science from Embry-Riddle Aeronautical University, Daytona Beach, Fla., at the school's December graduation ceremonies.

The **Brig. Gen. James R. McCarthy (Fla.) Chapter** hosted a luncheon for Newton, to celebrate the occasion. Special guests included William W. Spruance, national director emeritus; Tommy G. Harrison and William L. Sparks, both national directors; David R. Cummock, Florida state executive vice president; and Robert F. Cutler, Florida Central West Area president.

At the luncheon, Newton presented AFA Exceptional Service Awards to chapter members Marguerite H. Cummock and James W. Council.

### Have AFA/AEF News?

Contributions to "AFA/AEF National Report" should be sent to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: fmckenney@afa.org.



*Tidewater Chapter President James Dellaripa Sr. (second from right) thanked cadets Justin Howe, Eumika Minggia, and Darren Michalski from Deep Creek High School in Chesapeake, Va., for their service as a color guard. At far left is Nathan Hardee, the school's principal; next to him is retired CMSgt. Gilbert Southall, ASI; at far right is retired Lt. Col. Raymond Brown, senior ASI.*

# Unit Reunions

**1st Air Commando Assn (CBI/WWII).** Sept. 2-6, 1998, at the Holiday Inn Airport Convention Center, Moline, IL. **Contact:** Will S. Mitsdarffer, 1215 N. Marquette St., La Salle, IL 61301 (815-223-7515).

**5th Air Force (WWII and Korea).** Sept. 16-20, 1998, in Lexington, KY. Units include the 314th Composite Wg and Hq. squadron, 5th Bomber Command, 5th/108th Station Hospital, 80th Service Gp, 405th Signal Co, and 502d Tactical Control Gp. **Contact:** Louis J. Buddo, PO Box 270362, St. Louis, MO 63127 (314-487-8128, 314th Composite Wg and 5th Bomber Command). Virgil Staples, 1233 17th St., West Des Moines, IA 50265 (515-225-8454, 80th Service Gp). Jeff H. Seabock, PO Box 3635, Hickory, NC 28603 (704-324-6464, 5th/108th Station Hospital). Phil Treacy, 2230 Petersburg Ave., Eastpointe, MI 48021-2682 (810-775-5238, 405th Signal Co). Fred Gorsek Jr., 5015 Wolf Creek Rd., Sherman, IL 62684 (217-496-2510, 502d Tactical Control Gp).

**8th AF (aircrew and support personnel).** June 19-22, 1998, in Lebanon, PA. **Contact:** Frank Smoker, 100 E. Herrman Ave., Lebanon, PA 17042 (717-272-3845 or fax 717-272-4672) (fhs@mbcomp.com).

**8th FG/8th FW (5th AF), 33d, 35th, 36th, and 80th Sqs.** September 1998, in Charleston, SC. **Contact:** Walter Harvey Jr., PO Box 491, Pinopolis, SC 29469 (803-899-7032).

**8th FG, 8th TFW, 8th Fighter-Bomber Wg.** Sept. 17-20, 1998, at the Radisson Inn and Suites in Colorado Springs, CO. **Contact:** Bob Pardo, 821 Meadow Run, Golden, CO 80403 (303-279-1353).

**11th BG Assn.** September 1998 (last reunion). **Contact:** George Kay, 208 W. Virginia Rd., Browns Mills, NJ 08015-5304 (609-893-9563).

**12th TFW (Vietnam).** July 17-19, 1998, at the Crowne Plaza Dayton Hotel in Dayton, OH. **Contact:** Dave Hutchings, 781 McDonald Rd., Port Byron, NY 13140 (315-776-8932 or 919-736-3711).

**Flying Tigers of the 14th AF Assn.** Sept. 6-10, 1998, at the Hyatt Regency Hotel San Antonio. **Contact:** Lauren R. Barnebey, 13119 Hunters Valley St., San Antonio, TX 78230-2833 (210-492-4740).

**15th Troop Carrier Sq (WWII).** Sept. 24-27, 1998, at the Radisson Dallas Park Central Hotel, Dallas. **Contact:** Fred Freeman, 3046 Wildflower Dr., Dallas, TX 75229-3709 (972-247-3824).

**27th Air Transport Gp, 310th, 311th, 312th, and 325th Ferrying Sqs; 86th, 87th, 320th, and 321st Transport Sqs; and 519th and 520th Service Sqs.** Sept. 24-27, 1998, in Seattle. **Contact:** Fred Garcia, 11903 N. 77th Dr., Peoria, AZ 85354 (602-878-7007).

**34th BG, 8th AF (WWII).** Sept. 10-13, 1998, in Boise, ID. **Contact:** Robert H. Wright, 411 Parkovash Ave., South Bend, IN 46617-1029 (219-232-4287).

**46th and 72d Recon Sqs, Ladd Field, AK; Mountain Home AFB, ID; and Travis AFB, CA.** Sept. 10-13, 1998, in Williamsburg, VA. **Contact:** John H. Allison, 11751 Bollingbrook Dr., Richmond, VA 23236-3216 (804-794-7988 or fax 804-794-7550).

**55th Weather Recon Sq, WC-135B.** July 25, 1998, at the VFW in North Highlands, CA. **Contact:** Leslie Nowack, 4633 Swindon Way, Antelope, CA 95843 (916-723-9281) (coopco@ns.net).

**156th Fighter-Interceptor Sq (NCANG).** Sept. 18-20, 1998, in Charlotte, NC. **Contact:** Bill Allen, 3318 Woodleaf Rd., Charlotte, NC 28205 (704-536-3170).

**339th FG Assn (WWII).** Aug. 27-31, 1998, at the DeSoto Hilton Hotel in Savannah, GA. **Contact:** Richard C. Penrose, 142 S.W. 17th St., Bend, OR 97702 (541-389-0305) (cockshy6@bendnet.com).

**339th FS Assn.** Sept. 30-Oct. 4, 1998, in Ontario, CA. **Contact:** Vernon C. Allison, 10732 Shaffer Rd., Versailles, OH 45388 (937-526-4344).

**345th BG.** Sept. 9-13, 1998, in San Antonio. **Contact:** Ken Gastgeb, 2143 Melrose Ct., #221, Norman, OK 73069-5269 (405-364-1350) (kensoffice@juno.com).

**368th FG Assn (WWII).** Sept. 10-13, 1998, at the Doubletree Hotel National Airport, Pentagon City in Arlington, VA. **Contact:** Randolph Goulding, 2000 Clearview Ave. NE, Atlanta, GA 30340 (770-455-8555 or fax 770-455-7391).

**381st BG (H) Memorial Assn.** Sept. 2-6, 1998, in Savannah, GA. **Contact:** David Shackley, 408 E. Huntington St., Savannah, GA 31401-5719 (912-234-1083) (Jkwadd@aol.com).

**384th Air Refueling Sq, 1955-66 (Westover AFB, MA).** Sept. 14-17, 1998, at the Short Stay Navy Recreation Area, Moncks Corner, SC. **Contact:** Ken Godstrey, 12018 Maycheck Ln., Bowie, MD 20715-1551 (301-464-1150) (godstrey@erols.com).

**394th BG Assn, 584th, 585th, 586th, and 587th BSs (WWII).** Sept. 20-24, 1998, in San Diego. **Contact:** John Beale, 4206 Shadow Oak Woods, San Antonio, TX 78249 (210-493-0221).

**405th FS, 371st FG, 9th AF (WWII).** September 1998, in Atlanta. **Contact:** Herbert Zwerner, PO Box 29885, Atlanta, GA 30359 (404-633-6957).

**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.**

**454th BG (WWII, Italy).** Sept. 23-27, 1998, in Seattle. **Contact:** Ralph Branstetter, PO Box 678, Wheat Ridge, CO 80034-0678 (303-422-6740) (branst19.idt.net).

**460th FS (WWII).** Sept. 27-30, 1998, in Orlando, FL. **Contact:** Curt Keeler, 302 Bryce Ct., Sun City Center, FL 33573 (813-634-5700).

**467th BG (H).** Sept. 17-22, 1998. **Contact:** Vincent La Russa, 8570 N. Mulberry Dr., Tucson, AZ 85704-3351 (520-742-3609).

**482d BG Assn (aircrew and support personnel), Station 102, Alconbury, UK.** Oct. 13-18, 1998, in Cherry Hill, NJ. **Contact:** Tru Hermansen, 5414 Capella Ct., Atlantic Beach, FL 32233-4582 (904-249-4968).

**530th FS, 311th FG (CBI/WWII).** Sept. 27-30, 1998, at the Ramada Plaza Hotel in Asheville, NC. **Contact:** F.H. "Tiny" Wilbourne, 4118 Keagy Rd., Salem, VA 24153 (540-387-0562).

**548th Recon Tech and 6th Photo Tech Sqs.** Sept. 15-18, 1998, at the Ramada Inn Central, Williamsburg, VA. **Contact:** Sherwood H. Tutwiler, 8225 Ireton Rd., Richmond, VA 23228-3015 (804-266-9274).

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**648th Aircraft Control and Warning Sq, Benton, PA.** September 1998, in Wilkes Barre, PA, area. **Contact:** Bernie Wall, 528 Ridgewood Dr., Northfield, NJ 08225 (609-646-1079).

**665th ACWS, Calumet, MI (1951-88).** Aug. 14-16, 1998, at the Bicentennial Arena in Laurium, MI. **Contact:** Tom Beveridge, PO Box 41, Copper Harbor, MI 49918 (906-289-4592).

**7330th FTW and attached units, Furstenfeldbruck, Germany.** Aug. 19-23, 1998, in Furstenfeldbruck, Germany. **Contact:** Don Spiegel, 2450 St. Paul Rd., St. Paul, MO 63366-5103 (314-978-1175).

**Air Force Photo Mapping Assn.** Sept. 30-Oct. 4, 1998, at the Henry VIII Hotel in St. Louis. **Contact:** Dale C. Kingsbury, 225 Southside Ave., Webster Groves, MO 63119 (314-961-0519).

**Air Force Security Police Assn.** Aug. 27-29, 1998, in San Diego. **Contact:** Jerry Bullock, 818 Willow Creek Cir., San Marcos, TX 78666-5022 (888-250-9876).

**Air Transport Command Hump Pilots, CBI.** May 13-17, 1998, in Midland, TX. **Contact:** Arthur Sutton, 2154 Tudor Castle Way, Decatur, GA 30035-2164 (770-981-4640).

**Air Weather Recon Assn.** Sept. 24-26, 1998, at the Marriott Overland Park in Overland Park, KS. **Contact:** Glen Sharp, 306 Sunset Ln., Belton, MO 64012 (816-331-2039).

**Dyersburg AAB Memorial Assn.** Aug. 29-30, 1998, at Arnold Field in Halls, TN. **Contact:** Dyersburg Army Air Base Memorial Assn, 719 W. Main St., Halls, TN 38040 (901-836-7400) or Patricia M. Higdon (evening 901-836-7448).

**Roswell AAF/Walker AFB Veterans Assn.** Sept. 11-13, 1998, at the Roswell Inn in Roswell, NM. **Contact:** RAAF/WAFB Veterans Assn, PO Box 2744, Roswell, NM 88202 (505-622-5413).

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Seeking information on three **B-26s** that came to the aid of **Lady in the Dark** Dec. 28, 1944, in the Bologna, Italy, area. **Contact:** Bernard L. Rosch, 56 Whaley Ave., Bethpage, NY 11714.

Seeking photos of a **Piper L-4** with ARS or USAF markings, 1948-52; **Beech T-11** with ARS markings; and **Lockheed WU-2A** with AWS markings. **Contact:** Nicholas M. Williams, 1002 Ridgewood Blvd., Waverly, IA 50677-1114.

Seeking information on **1st Lt. Clarence R. Stephenson Jr.**, nicknamed "the DFC Kid," KIA Sept. 6, 1944, and the **8th WRS** and the **652d BS**, 802d Recon Gp. **Contact:** Robert R. Rooks, PO Box 809, Upton, NY 11973-0890.

Seeking **patches** from the 74th, 75th, and 76th TFSS, 23d TFW; 353d, 355th, and 356th TFSS; 354th TFW; 81st TFW and attached squadrons; and any other wings or squadrons that fly or flew A-10s or OA-10s. **Contact:** Jeff Handwerker, 11501 Lochwood Dr. #606, Yukon, OK 73099.

Seeking **Lt. Col. James F. Berry**, USAF, West Point graduate, stationed in Germany 1947-49. **Contact:** Robert L. Healy, 2626 S. Atlantic Ave. #208, Daytona Beach Shores, FL 32118 (Rhealy 2626@aol.com).

Seeking information on Vietnam air war in 1967 from **355th TFW F-105** pilots, **432d TRW RF-101** pilots, and **USAF photo interpretation specialists** who were stationed in Thailand and South Vietnam. **Contact:** Larry Fry, 1202 Ridge Rd., Pylesville, MD 21132 (410-452-8539).

Seeking information about 9th AF, **3d Central**

**Medical Establishment**, France, in April 1945. **Contact:** Richard P. Ebersbach, Rt. 136-A, Crown Point, NY 12928.

Seeking photos of the nose art on **B-50s**, 57th WRS, about 1956-57, Hickam AFB, Hawaii. **Contact:** Ron Carlson, 31450 County Rd. 384B, Buena Vista, CO 81211.

Seeking information on **2d Lt. Harry Dingman**, 22d TCS, 374th TCG, KIA in New Guinea, who was a member of Aviation Cadet Class 43-A, Kelly Field, Texas, and trained at Lake Charles AAF, La., in 1942. Also looking for the yearbook from this cadet class. **Contact:** Rhoda P. Amundson, 8211 Adler Cir., Las Vegas, NV 89129.

Seeking contact with or information on **Col. Jack E. Shuck** and **1st Lt. Joseph W. Tribble**, 336th BS, 95th BG. **Contact:** John J. Lieb, 2554 Homestead Rd., Enid, OK 73703-1647 (580-242-2331).

Seeking memorabilia, photos, and history of **429th BS**, 2d BG, 15th AAF (B-17s), stationed at Foggia, Italy, WWII. **Contact:** Jim Pfeiffer, 2201 Crestwood Dr., Glenwood Springs, CO 81601 (970-945-1136).

Seeking information on and anyone experienced with **ejection seats** or ejection from aircraft. **Contact:** Vincent L. Menza, PO Box 267, Belleville, NJ 07109 (vlmenza@aol.com).

Seeking **Leonard Moran**, who was stationed in or near Derbyshire, UK, 1945-46, and who knew Doris Marshall from the Normanton area of Derbyshire. **Contact:** Judith Clifford, 19 The Common, Quarndon, Derbyshire DE22 5JY, UK.

Seeking members of **Det. 2, PAC Security Region**, USAFSS at Hickam AFB, Hawaii, 1964-67. **Contact:** Brad Perkinson, 71 N. Windsail Pl., The Woodlands, TX 77381-3324 (281-419-0610) (CBPerk@worldnet.att.net).

Seeking classmates from **Wethersfield School**, grades 6-8, Wethersfield AFB, near Finchingfield, UK, 1953-54, and information on **American Bushy Park High School**, London, UK, 1954-58. **Contact:** Rodger M. Williamson, Box 220029, Deatsville, AL 36022.

Seeking **Donald J. Robertson** of Whittier, CA, and **David J. Reasbeck** of Conneaut Lake, PA, assigned to Det. 421, Alice Springs, Australia, 1955-57. **Contact:** Clentis Bailey, 4712 Glenwood Hills Dr. NE, Albuquerque, NM 87111 (505-263-3950).

Seeking Thailand-based **F-105 Thunderchief** pilots for information for scale models. **Contact:** Glenn D. Kleiber, 815 Manor Ln., East Liverpool, OH 43920 (330-386-3308).

Seeking information on navigator **Lt. Carl Helton Jr.**, 524th BS, 8th AF, whose B-17F was lost over Osnabruck, Germany, Dec. 22, 1943. **Contact:** Robert F. Darden Jr., 4825 Scottwood Dr., Waco, TX 76708-1246.

Seeking a 1957 SAC Bomb-NAV competition **patch**. **Contact:** Joe Weber, 24072 Country View Dr., Trabuco Canyon, CA 92679-4164.

Seeking **MSgt. Joseph Hazelbrouck**, last seen in Etain, France. He was NCOIC of a GCA unit and was a B-24 flight officer during WWII. He may also have been in Southeast Asia as a mercenary. **Contact:** Robert H. Barnes, PO Box 1697, Battle Creek, MI 49016.

Seeking former **8th AF** aircrews and support personnel who served at Station 102, Alconbury, UK (482d BG (P), Pathfinders, Bomber Command,



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If you need information on an individual, unit, or aircraft, or want to collect, donate, or trade USAF-related items, write to "Bulletin Board," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Items submitted by AFA members have first priority; others will run on a space-available basis. If an item has not run within six months, the sender should resubmit an updated version. Letters must be signed. Items or services for sale, or otherwise intended to bring in money, and photographs will not be used or returned.—THE EDITORS

and 440th Sub Depot (Sp), Service Command. **Contact:** Pete Ardizzi, 835 Saint Davids Ave., Warminster, PA 18974-2548 (215-675-9194 or fax 215-675-0853).

Seeking former enlistees who served with **3653d Military Tng. Sq.**, Ft. 1845, Sampson, NY, July–September 1952; **3753d Student Tng. Sq.**, Sheppard AFB, TX, September–March 1953; **306th PMS** MacDill AFB, FL, April 1953–February 1955; **42d PMS**, Loring AFB, ME, March 1955–June 1956; and **RAF Fairford**, UK, June 1953. **Contact:** Joseph E. Couturier, PO Box 229, Mars Hill, ME 04758.

Seeking **Charles Francis Bailey**, stationed in Bermuda in 1955, and **Ingeleore Carnahan**, stationed at McConnell AFB, KS, in 1974. **Contact:** Billie C. Woullard Jr., 9315 Northgate Blvd. #223, Austin, TX 78758-6192.

Seeking movies or photographs of **T-6** aircraft during Operation Smack against T-bone Hill in Korea, Jan. 25, 1953. **Contact:** Thomas M. Crawford Jr., 5129 W. Maplewood Ave., Littleton, CO 80123 (303-795-2818).

Seeking **Norword G. Duplechain**, instructor pilot at Laredo AFB, TX, November 1954. **Contact:** Gary Smith, 613 Esplanade, Redondo Beach, CA 90277 (310-540-2448).

Seeking information about **389th BG** between January 1943–September 1945 and a member of the 389th with the last name **Siry**. **Contact:** Raymond E. Lyon, 9416 Gentle Cir., Gaithersburg, MD 20879 (Ray.Lyon@WJ.com) (RayLyon1@aol.com).

Seeking **Frank Kijowski**, USAAF, from Pennsylvania, who was stationed in Freckleton, UK, in 1945 and who knew Monica Riley of Preston, UK. **Contact:** Brian T. Atherton, 4 Coniston House, Westmoreland Close, Penwortham, Preston, Lancashire PR1 0UT, UK.

Seeking **Patricia Margaret Burley Cameron**, who married A1C James Cameron in 1954 in Prescott, UK, and is the mother of Catherine Patricia. **Contact:** Stephen G. Burley, 17 Gosfield Rd., Dagenham, Essex RM8 1JY, UK.

Seeking members of **4468th TRG(P)** who were stationed at King Khalid Military City during Desert Storm. **Contact:** Doug Livingston, 11884 E. Wagon Trail, Tucson, AZ 85749-8604 (520-749-0032). Also seeking **GLCM veterans**. **Contact:** The GLCM Historical Foundation, 8987 E. Tanque Verde, Ste. 309-338, Tucson, AZ 85749-9399.

Seeking members of **354th** or **356th FG**, stationed in Germany in 1945, who remember **Jane Froman**. **Contact:** Shirley A.F. Gilroy, PO Box 1735, Manchester, CT 06045.

Seeking alumni of the **Manhattan High School of Aviation Trades**, New York City. **Contact:** Irwin R. Ziff, 3719 Prosperity Ave., Fairfax, VA

22031 (703-280-5637 or fax 703-280-0905) (Irvziff@aol.com).

Seeking information on USAF members who died as a result of nonhostile causes, within the combat zone (Thailand, Laos, Cambodia, North or South Vietnam, and surrounding waters), during the **Vietnam War, 1956–75**. Also seeking anyone who served at **Millville AAF**, NJ, during WWII. **Contact:** David W. Schill, 132 Harding Ave., Moorestown, NJ 08057 (609-234-2273 or fax 609-234-2914) (DWSchill@aol.com).

Seeking former **USAF pilots and aircrews** who worked for Capital/United, Continental, Northeast, and Aloha airlines. **Contact:** William Reid, 1600 Prairie St., Essexville, MI 48732.

Seeking **military attorneys** who had dealings with OSS personnel during WWII and **USAF special operators** during the Korean War. **Contact:** Phil Smith, 8324 Miles Johnson Rd., Tallahassee, FL 32308-1438 (850-878-2612).

Seeking **Steven Widdocks**, stationed at Woolaton Hall, UK, 1946–49, with an airborne division. **Contact:** Stephanie Hopkins, 16 Ryeholme Close, East Leake, Loughborough, Leicestershire LE12 6QP, UK.

Seeking photos of **Capt. Walter Kosko** of the 563d TFS, Takhli AB, Thailand, or the F-105D #62-4527 that he was flying July 27, 1965. **Contact:** Frank Kosko, 6738 Sacramento Dr., Redding, CA 96001-5483.

Seeking former crew of **B-52D #550054**. **Contact:** Jeff Lichtig, 135 Spinnaker Mall, Marina Del Rey, CA 90292 (310-821-6765 or 310-813-5560).

Seeking **B-26 crew members**, 585th BS, 394th BG, especially **Ralph Will**. **Contact:** W.M. Palmer, 2929 Barton Skyway #365, Austin, TX 78746 (512-327-4455).

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General Headquarters Air Force were redesignated in 1941. These four remained stateside during the war, but 12 others were created for service overseas. These 16 NAFs were featured monthly along the spine of Air Force Magazine. Following the war, five were disbanded and the others were placed under three new commands: Strategic Air Command, Tactical Air Command,

and Air Defense Command. Today, the Air Force has 15 active, one Air National Guard, and three Air Force Reserve Command NAFs.

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