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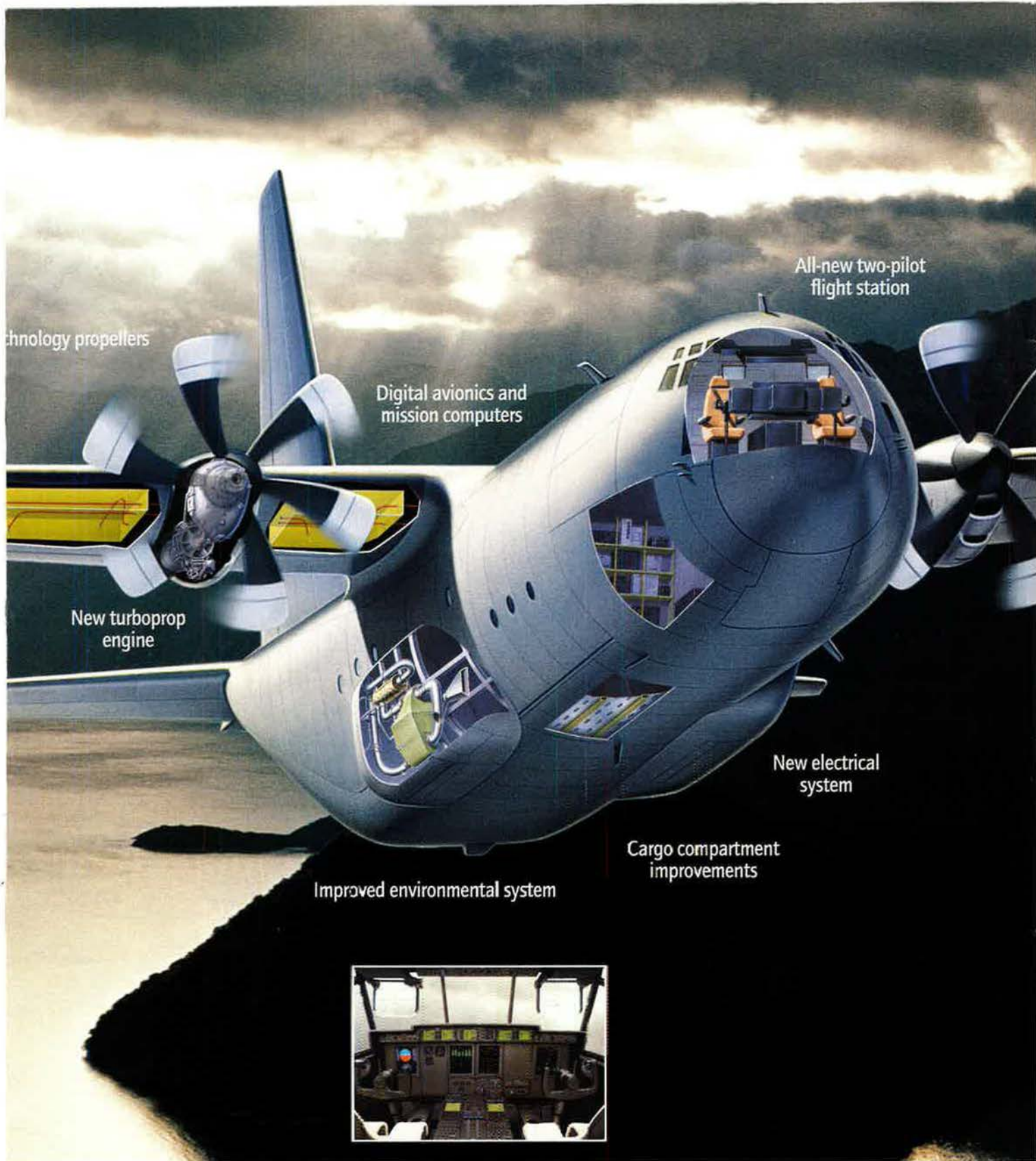
AIR FORCE

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MAGAZINE



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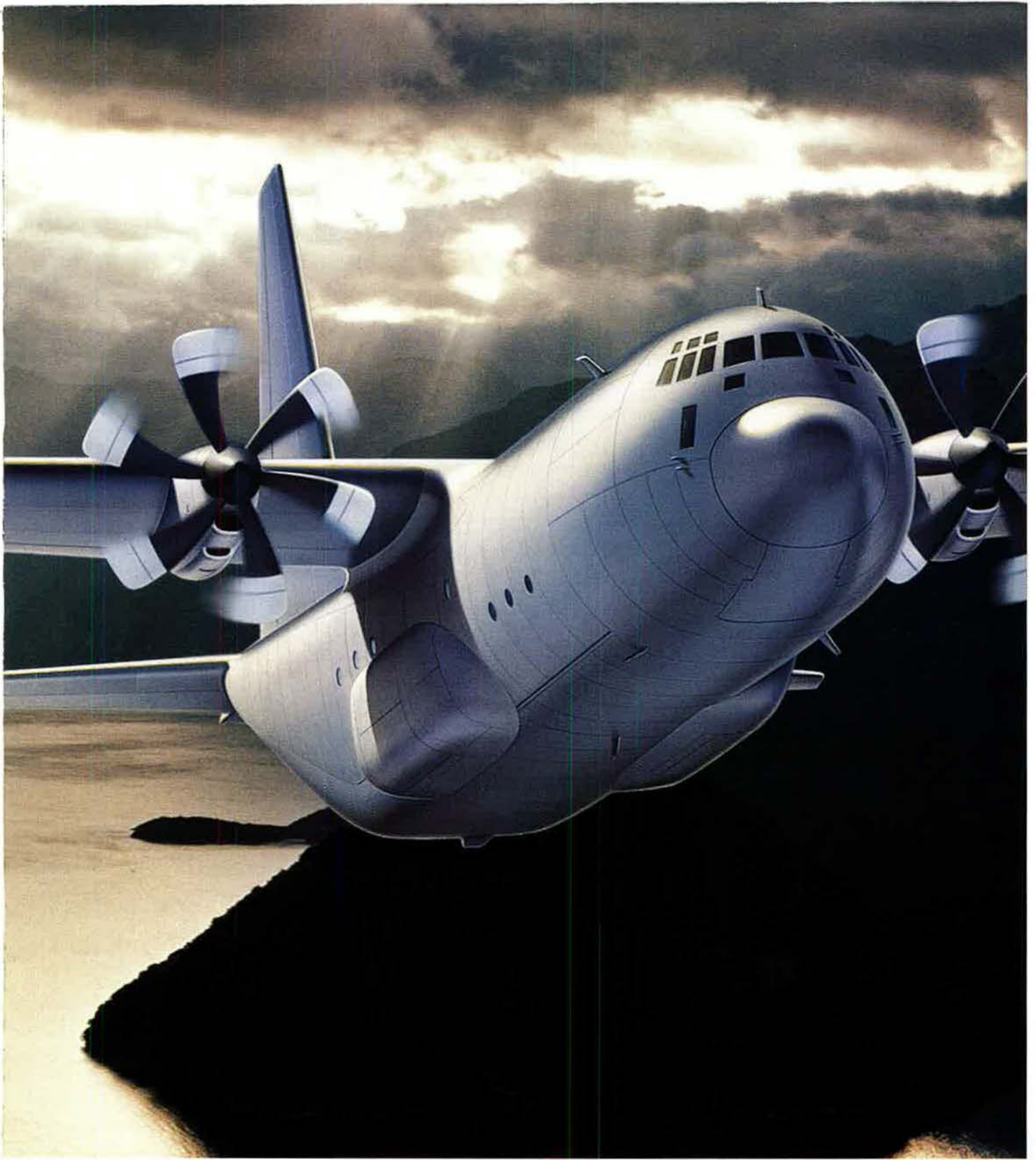
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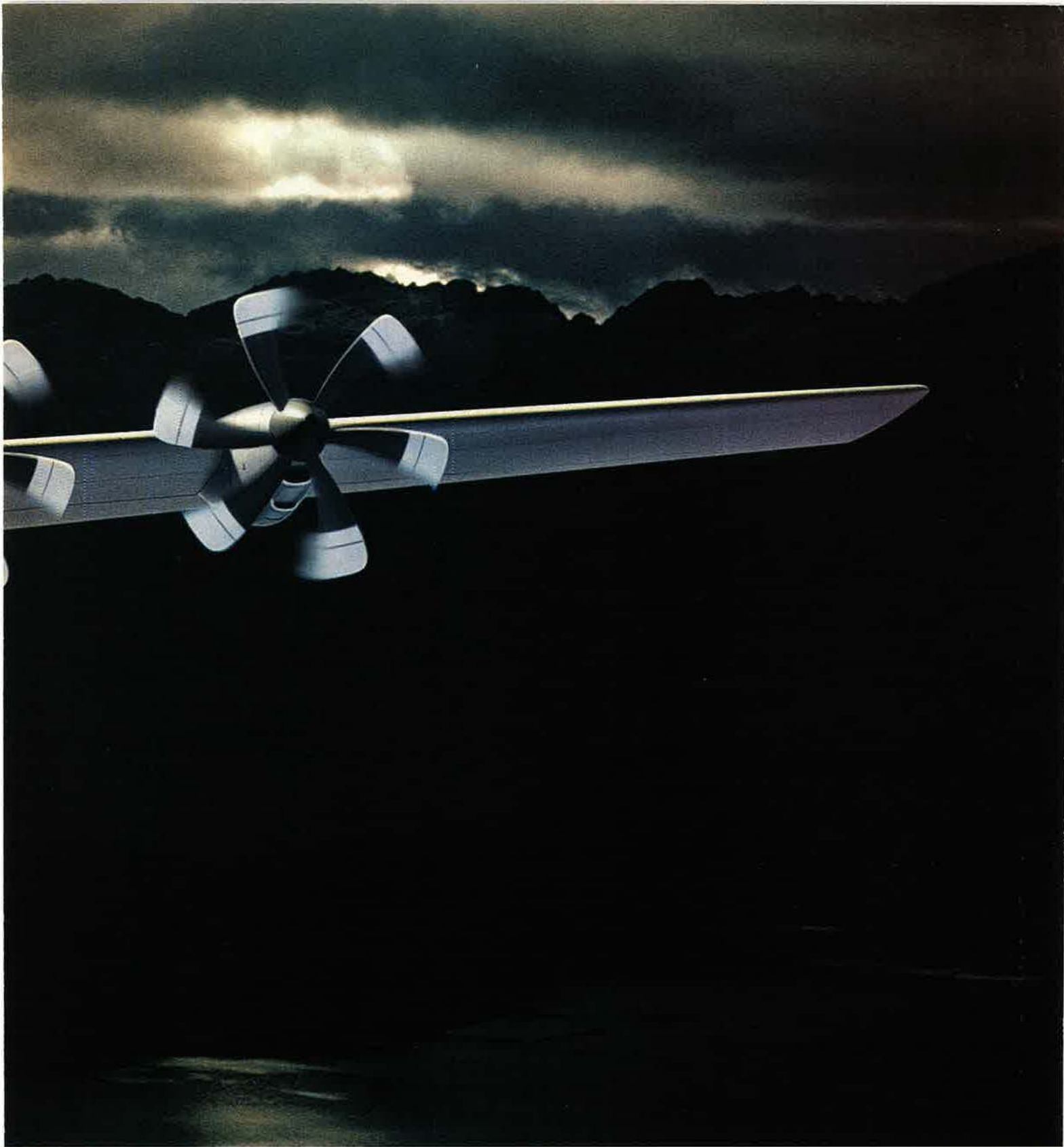
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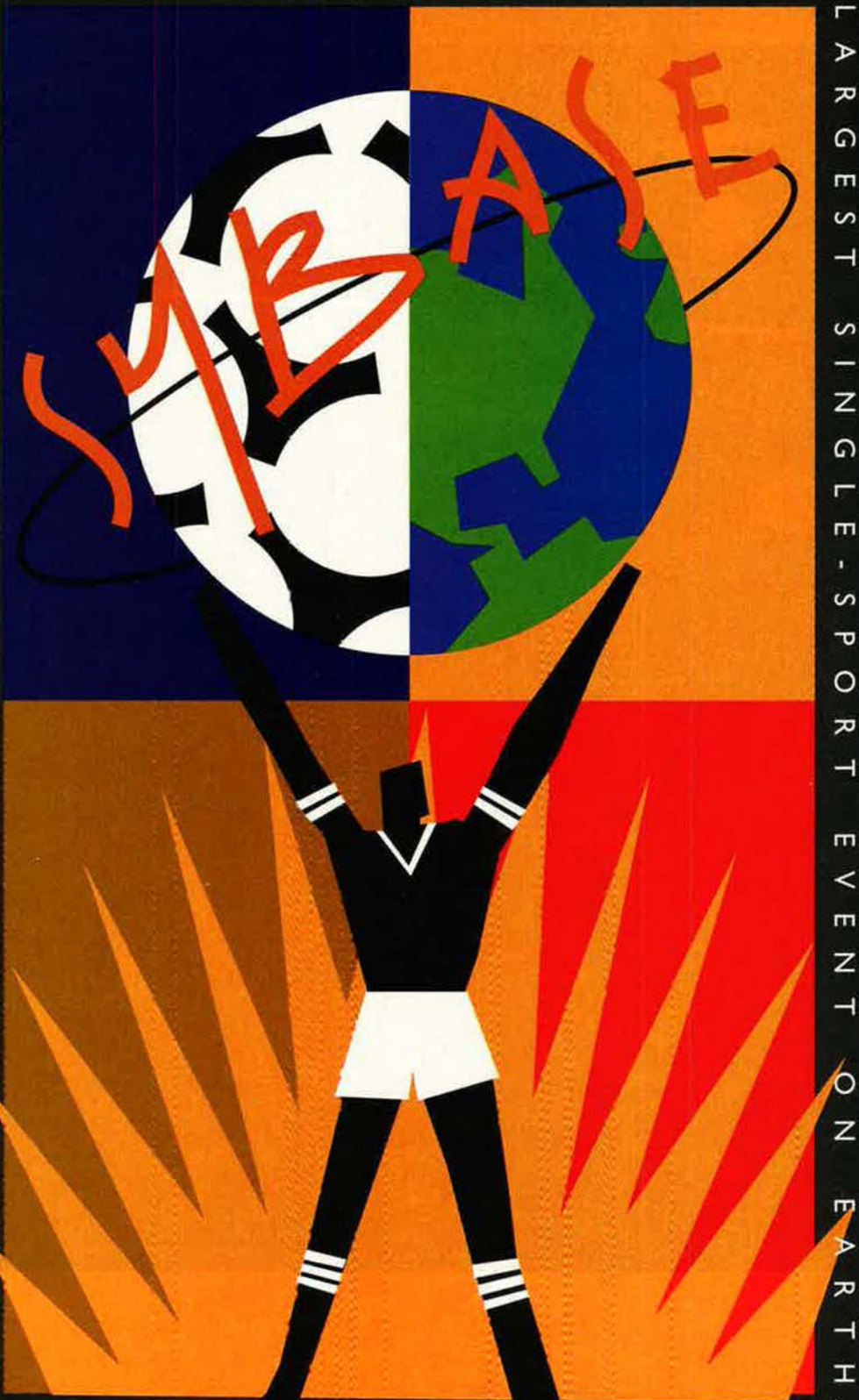
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About the Cover: Tin-roofed shanties cluster in an outlying area of Mogadishu, Somalia, where eighteen US service members died in a gunfight in October. See "Heroes at Mogadishu," p. 28. USAF photo by TSgt. Dave Nolan.

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By John T. Correll, Editor in Chief

Let's You and Him Fight

IF YOU went by press reports (some of them written by people who weren't there), you might believe that Gen. Merrill A. McPeak, USAF Chief of Staff, declared war on the Navy at an Air Force Association symposium February 18, the overt act being an attempt to grab a mission—projecting “presence” overseas—that supposedly belonged to the Navy.

Among those believing it, apparently, was *Navy Times* (which wasn't there either). Its editorial page proclaimed that “presence is a piece of America floating just 100 miles off shore, armed with nearly 3,000 tons of aviation ordnance and 53 combat aircraft.” That force can “strike within minutes,” the editorial said, adding that “carrier-based strike jets have been used for various operations 79 times since the early 1970s, while Air Force bombers have been called or five times.”

Following are some observations about this from one who was there—me—and who, for the record, also has a history of recognizing the value of naval airpower. To begin with, it was obvious from the context of what General McPeak said that he was talking primarily about how the Air Force has changed its own operation as it pulls back from many of its fixed bases overseas.

He said the capability to respond to global crisis from Stateside bases in less than a day is “a new form of military presence.” That is undeniably true. The capability was demonstrated on the opening night of the Persian Gulf War, and the Air Force now practices “global reach” missions to points in the Mediterranean, the Pacific, and southwest Asia on a weekly basis.

“Presence” is—and always has been—a shared mission. Part of it is performed by the two or three carriers the Navy keeps deployed. The larger part of presence, however, is Army and Air Force units stationed or operating abroad. The tempo of Air Force overseas operations has seldom been higher in peacetime. Since the Gulf War ended in April 1991, the Air Force has flown more

than 200,000 sorties in Somalia, Bosnia, and Iraq. Fifty-two Air Force satellites in orbit add another dimension of presence.

Furthermore, the Air Force will participate this year in international exercises in or near some fifty areas of potential conflict. That is a particularly useful form of presence. Granted, Air Force presence is not always minutes away, but neither is naval presence. When the Gulf cri-

“Presence” is a shared mission. There is more than one way to achieve it.

sis broke loose in 1990, for example, the closest carrier was *Independence*, on station in the Indian Ocean. It took three days to reach the Gulf.

The job does not stop with presence. The next task is crisis response, and if a regional aggressor of any consequence starts rolling in earnest, fifty-three aircraft flying off a carrier deck will not stop him. Arrival of additional carriers can help, but most of the air campaign—including the preponderance of attack on difficult, high-priority targets—will depend on the range, penetration, and versatility of Air Force bombers, fighters, and specialized combat aircraft. Without tankers and airlift, nobody much is going anywhere.

None of this is said in disdain of naval airpower. Carriers are not only important for presence but also definitely useful to have on your side in a fight. As the Air Force Association's

Advisory Group on Military Roles and Missions said last year, landbased and seabased airpower are complementary rather than competitive. Sad to say, Navy–Air Force competition has been a fact of life for fifty years. Over the past decade, both services have recognized that modern warfare is a joint proposition, but partisans on both sides maintain the feud. It could be a function of my particular sensitivities, but it seems to me that substantially more of the parochialism has been from the naval enthusiasts.

When the services attack each other, both tend to lose. People looking for plausible excuses to cut defense do not have to invent stratagems if they can rely on partisan military experts to do the job for them.

The politicians are in a bind. They have cut the military so much that the projected force may be insufficient to cover the strategy. To make matters worse, the defense budget is underfunded to cover the forces projected. The federal deficit is \$200 billion and expected to start rising again by the turn of the century.

As it does every spring, the Congressional Budget Office has brought forth a list of ideas to reduce the deficit. As always, CBO says it is presenting options, not recommendations, but as a practical matter, CBO's unendorsed “options” are frequently seized upon as opportunities and the disclaimers conveniently forgotten. The options on this year's list include the elimination of two Air Force wings (supposed savings, \$1.8 billion) or two carriers (\$6.8 billion savings). There are plenty of people who would delight in exercising both options.

It ill behooves us to help them in this endeavor by intramural mudslinging or overreaction to invented or imagined provocations. We can agree, certainly, on the value of “a piece of America” floating offshore—but let us also recognize the effect on would-be aggressors worldwide when they know that heavy hitters from Barksdale or Whiteman can be overhead by supertime. ■



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Letters

Politics and the Museum

As a former Chief of Air Force History for USAF and current chair of the National Air and Space Museum's Advisory Committee on Research and Collections Management, I take strong exception to the interpretation in John Correll's "War Stories at Air and Space" [April 1994, p. 24].

The article in tone and by innuendo endorses charges that the museum has an agenda of political correctness and "cultural reinterpretation" and has "a limited interest in its basic job" to "collect, preserve, and display aeronautical and space flight equipment of historical interest and significance."

To the contrary, the museum in the last few years has succeeded in broadening the scope and value of its exhibits by presenting thoughtful, balanced history rather than mere celebration of flight and space travel. The World War I exhibit is not at all hostile to airpower. It presents the war realistically and explains aviation's role in it.

By suspending the aircraft above the ground, where they participated in the war, the exhibit gains the space to explain how aircraft were produced, pilots trained, and operations mounted and to show their effect on the fighting. Mr. Correll objects to portraying airplanes as instruments of death. That is what they were in World War I, and to imply otherwise would be to forfeit the opportunity to present balanced and realistic history, which is what Mr. Correll advocates.

The same is true for the planned exhibit of the *Enola Gay*. Strategic bombing and atomic attacks were grim experiences, and audiences should be informed of the reality of their effects on the ground, as well as the purpose and history of the effort from the American perspective.

The exhibit on World War I and those planned for the *Enola Gay* and Vietnam are the product of the most careful research and the most extensive consultation with historians and knowledgeable participants from every conceivable perspective. Some in the Smithsonian do, no doubt, have

political agendas, but Martin Harwit has been adamant in insisting on scholarly integrity in all of the museum's programs. That is why the scripts undergo such extensive revision and why the museum seeks review and criticism from veterans groups, such as the Air Force Association, as well as from scholars in the Air Force historical program and universities. Under his leadership, the museum has made enormous progress toward exhibits of much greater depth, breadth, context, educational value—and balance.

Rather than neglecting its collection, the museum in the last five years has taken long-overdue steps to ensure the preservation of its priceless collection, hiring a conservator and other staff in collections management, and reallocating scarce resources to the critical tasks of making sure that artifacts and archives are safely stored, cared for, and made available for display and research.

The committee I chair, made up of distinguished scholars and museum professionals from across North America, including veterans, has been deeply impressed by the museum's commitment to its stewardship and by its extraordinary efforts to improve both its exhibits and its care of the collection. The committee's two predecessors singled out the World War I exhibit for special praise—for quality and depth of the history and presentation.

It seems to me that by implication, Mr. Correll himself advocates a cer-

tain political use of the museum: to downplay war's reality and to glorify military aviation. Such bias would not be in keeping with the museum's or the Smithsonian's mission and would embarrass the Air Force community, which, having experienced the history, would want it presented truthfully—with strength, balance, sensitivity, and integrity.

Richard H. Kohn
University of North Carolina
Chapel Hill, N. C.

■ *Editor in Chief John T. Correll replies:*

What I object to is portraying airplanes only as instruments of death, with little said about their contribution to the defense of freedom and the nation. I agree that the Enola Gay's task was a grim one, hardly suitable for glamorization. In fact, I said exactly that in the third paragraph. If Dr. Kohn believes I downplay war's reality, he may have missed my other article, "The Decision That Launched the Enola Gay," in the same issue.

I have never read a better accounting of the *Enola Gay* and the reasons for dropping the bomb on Japan than "War Stories at Air and Space" and "The Decision That Launched the *Enola Gay*" [April 1994, p. 30]. The two articles were well-balanced and well-documented and went deeper into the whys of the mission than any discussion I have seen in the forty-nine years since it happened. As graphically illustrated and documented by you, from the US and the Japanese points of view, there is no question regarding the need to drop atomic bombs on Hiroshima and Nagasaki. I hope the final version of the Air and Space Museum's exhibit mirrors the facts you presented.

I have a note of personal interest regarding the decision to drop the bomb. I was an eighteen-year-old swabbie who had finished ten weeks of boot camp when the bomb was dropped. I was on my way across the Pacific on a personnel carrier on August 31, 1945, and was in Japan

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

and assigned to a landing ship before the end of September.

There is no doubt in my mind that I would have been in on the November 1 invasion of Kyushu and, if I had lived, would have been in the March 1, 1946, invasion of Honshu. More than likely, I would have been one of the 220,000 to 500,000 casualties that our generals and admirals had predicted for the two operations.

Richard Lampl
Washington, D. C.

"War Stories at Air and Space" was a first-rate piece of research and writing that should call attention to the sad state of affairs at the National Air and Space Museum.

With the retirement of Robert McCormick Adams, secretary of the Smithsonian Institution, the time is right for Martin Harwit to step down as director of the National Air and Space Museum. As you point out, Mr. Adams was the father of politically correct exhibits at the Smithsonian. Dr. Harwit is one of his leading disciples.

Martin Harwit is an astronomer. The astrophysics laboratory he built in the museum with appropriated funds, now staffed and funded with museum resources, is a tribute to his

personal interests but little else. An astrophysics laboratory has nothing to do with the museum's congressional mandate to "memorialize the national development of aviation and space flight" and, in fact, duplicates the Smithsonian's astrophysics facility at Cambridge, Mass.

In my opinion, it is time for Dr. Harwit to leave and be replaced with a historian/administrator who would concentrate on putting the museum back on its true course.

Jack Whitelaw
Marshall, Va.

■ *Mr. Whitelaw served as executive officer of the National Air and Space Museum from 1971 to 1977.*—THE EDITORS

How fortunate Americans are to have Robert McCormick Adams and Martin O. Harwit to help us "clarify" our values, philosophies, and feelings. We might never have known how awful the world wars had been without them. How sad that Smithsonian visitors will learn next to nothing about how our enemies behaved and why.

Sadder still, this isn't new. The educated elite, some academics, some clerics, and a good share of the me-

dia have been pummeling people about it for a long time. In *The Irreversible Decision*, Robert Batchelder quotes a December 1945 *Harper's* magazine atomic bomb poll: Seventy-five percent of respondents supported the attacks. Nearly twenty-three percent felt the war ended too soon, before we got the chance to drop more bombs. Keepers of the nation's cultural and moral keys lost no time declaring such opinions unacceptable. Manhattan Project scientists and religious leaders barraged the public with second thoughts or lectured a morally benighted America on the grave sin it had committed in bombing Japan.

The pace of our self-proclaimed moral leaders has hardly slackened since. Notables continue to wail about the evils of atomic power and nearly all things technological, as readers of *The Bulletin of Atomic Scientists* know. Public figures tirelessly take the country to task for the bombing of Hiroshima and Nagasaki or condemn current weapons programs. . . . Airy dismissals of "inflated" invasion casualty estimates only put Smithsonian scriptwriters in step with scholarly writings still cropping up.

Curiously, the Smithsonian staff seems content to accept the bargain

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Letters

of "tens of thousands" of deaths from an invasion that never had to happen, rather than bear worldwide moral stigma for the bombings. Considering who the purveyors of political correctness usually cuddle up with (bloodthirsty Third World dictators, Communist tyrants, shills for whatever insanity those who "care" feel like forcing on us next), it is quite ironic. Don't they always claim the moral high ground, chastising us ethical illiterates for putting abstract principles before real people?

Dean C. Spraggins
Bellevue, Neb.

I am in total agreement with "War Stories at Air and Space." It seems to me that Smithsonian officials would like to delay exhibiting the *Enola Gay* until there are no longer any veterans of World War II alive, so they can display it any way they wish.

The curators would probably find a way to show the "other side" at the USS *Arizona* Memorial in Pearl Harbor. Public television did it in a program about the events of 1941 in which Japanese flyers who bombed Pearl Harbor, in interviews, told how happy and proud they were to have had a part in it.

We're supposed to show remorse?
Paul Metro
Edison, N. J.

I read your story and was appalled at the reported actions by the Smithsonian staff and, in particular, Martin Harwit and Robert Adams. Their re-writing of history and slanted agenda have no place in the Smithsonian. This story needs wider dissemination so more people can be informed of the travesty taking place in "our" museum.

Perhaps the officials need the mission of the Air and Space Museum posted over their desks: "Memorialize the national development of aviation and space flight; collect, preserve, and display. . . ."

Your article alerts people like me who don't get to the museum often, and I appreciate your reporting it. The museum is not the place for revisionism, twisting truths, bashing the US, apologizing for our use of the atomic bomb, or deriding the failure to provide strategic bombing at the battle of the Somme.

Lt. Col. Donald G. Jones,
USAF (Ret.)
Middlesex, Vt.

I had the privilege of visiting the Air and Space Museum in 1977, and as

an Air Force veteran, I found it the high point of my Washington trip. I was like a kid in a candy store—so much to see and so little time. It was a truly wondrous place.

In my seventy-one years, I have always found that a museum was a museum, something to be enjoyed and held in wonder. "War Stories at Air and Space" saddens me, leading me to think that this national treasure would become a "politically correct entity."

I always thought the Smithsonian was above something like this.

Robert M. Bascom
San Jose, Calif.

Whose Heritage?

I have just read the January 1994 issue. As usual, it was full of fascinating information about the Air Force. Then I got to "Pieces of History," p. 88. George Orwell could not have presented rewritten history with a more ideological spin.

I have been a strategic airlifter for nearly twenty years. I have been assigned to the three finest flying squadrons in the Air Force and have flown nearly 3,500 hours on air-land, air-drop, air refueling, and prime nuclear airlift force missions. . . . I have served in combat plans, command and control, and current operations at every level and in three nations. I am a MAC guy.

Scarves are not part of my heritage.

The unnamed author of the caption has gotten a few things wrong. Early scarves worn by aviators in open-cockpit aircraft served a purpose. Those aviators' successors—in fighter and pursuit aircraft—maintained that tradition. Others did not. My predecessors flew the big birds, and some may have worn scarves for symbolic purposes. Modern scarves issued by flying squadrons do not provide "a warm neck," and engine oil on the goggles is rarely a problem in the C-141/C-5 world.

The author also mistakes the attitude in the issuing squadrons. Far from providing a "highly prized" accoutrement, the issuing of scarves has been accomplished purely by top-down direction. Today's strategic airlifters—like yesterday's—do not want to wear an article of clothing that is part of someone else's heritage. The greatest challenge facing our young crew members (we have pilots, navigators, flight engineers, and loadmasters) is how to wear the damned thing so it doesn't show.

Strategic airlifters throughout the

world wear uniform items that reflect our heritage. Our squadron patches are our "local colors," known to our colleagues throughout the world. The symbolism of our Air Mobility Command patch traces our global roots through fifty-plus years of aviation heritage. On our left shoulders, we fly the US flag everywhere we serve around the globe. . . .

We have all the heritage we need. We don't need someone else's.

The Air Force has gone a long way in the past several years in ignoring the fact that we have different missions, different roles, different equipment, and different traditions. I wish long life to every aviator's tradition. Just don't make yours mine.

Lt. Col. Sidney J. Prejean,
USAF,
Moorestown, N. J.

The Functional Scarf

The picture was beautiful, but the comment that the scarf was silk to minimize chafing the pilot's neck is a bit off-base.

The engines of World War I leaked a lot of oil, often by design. For instance, rotary engines like the Le Rhone had great power-to-weight ratios compared to their water-cooled cousins, but the spinning crankcase and cylinders precluded the use of a conventional closed oil system. Oil was mixed with fuel to lubricate the engine—much as in the two-stroke engines found on today's chain saws, snowmobiles, and the like—even though the engine operated on the four-stroke cycle. Again, because of the spinning crankcase and cylinders, the exhaust stacks were very short, usually not exceeding six inches.

The best lubricant of the day for this application was castor oil. How long could a pilot sit a few feet behind one of these rotary engines and breathe the mist of warm castor oil without suffering debilitating effects that would continue for the next twelve to twenty-four hours? Almost all engines of the era used castor oil and passed various amounts of it into the slipstream.

Castor oil mist does not penetrate fine silk. The pilots would pull the silk scarf up over their noses and mouth to filter the air. It may not be glamorous, but it was highly functional and a necessity if a pilot wanted to socialize after the day's missions. Silk also provided an effective block against the wind, reducing the "wind chill" effect. It was not as good as cotton in wiping the goggles clean, and many pilots carried a separate cotton rag for that purpose, often shoving it up a sleeve of the flight jacket.

Streaming scarves from the neck or helmet were a Hollywood fiction made famous in movies of the 1920s and 1930s. Try flying an open cockpit biplane today, and see what a nuisance and safety hazard a streaming scarf is, and you'll know why they didn't do that in combat.

Richard E. Koehler
Washington, D. C.

Keep Them Flying

On the back page of the April 1994 issue, I found "Just Fix It" [*Pieces of History*, p. 96]. I wish to compliment you on printing it. In its own way, it tells part of the story that is rarely told—that of the aircraft mechanic, who keeps them flying.

I was the aircraft engineering officer of a B-26 squadron (454th Bomb Squadron, 323d Bomb Group) in World War II and can closely identify with the men in the background who made it possible to keep numerous aircraft in the air.

I thought that I was alone in extolling the aircraft mechanic. However, I notice from time to time your magazine writes of the dedicated men who play a major part in the Air Force of today and the Air Corps and Army Air Forces of yesterday.

Lt. Col. Eric P. Dundatscheck,
USAF (Ret.)
Half Moon Bay, Calif.

Checklist Error

Please correct the Integrated Maintenance Information System entry on p. 69 of the February 1994 issue [*USAF Human Systems Checklist*]. GDE Systems, Inc., is the prime contractor for this program.

The Integrated Maintenance Information System contract was awarded to the Electronics Division of General Dynamics. However, this division was sold by General Dynamics to The Carlyle Group November 20, 1992. The program made the transition with the Electronics Division to the new company, GDE Systems, Inc.

Michael D. Cummings
GDE Systems, Inc.
San Diego, Calif.

Not in Florida

"The Historic Dominator" [*March 1994 "Letters," p. 7*] states that the B-32 was flown to Clark Field, the Philippines, from Blanca Airfield, Fla. Not so. A squadron of B-32s was stationed on the island of Luzon in the Philippines, at an airfield called Floridablanca. The flight to Clark Field would have taken less than an hour.

T. A. Geer
Solvang, Calif.



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The Chart Page

Edited by Tamar A. Mehuron, Associate Editor

Russia's Nuclear Neighborhood

U K R A I N E

★ Intercontinental ballistic missiles	136
SS-19 "Stiletto"	110
SS-24 "Scalpel"	26
★ Long-range strategic bombers ..	43
Tu-95 "Bear-H16"	22
Tu-160 "Blackjack"	21
★ Medium-range theater bombers	137
Tu-16 "Badger"	53
Tu-22 "Blinder"	55
Tu-22M "Backfire"	29
★ Strategic nuclear warheads	1,264
Aboard missiles	920
Aboard bombers	344



When the USSR broke apart, roughly a third of the Soviet strategic arsenal was left outside Russian borders, in three new nations. Strategic weapons in Belarus and Kazakhstan are under undisputed Russian control. Ukraine has asserted "administrative control" of the weapons on its territory, but they are said to remain under Moscow's operational control. Another of Russia's neighbors, China, possesses several hundred nuclear weapons.

K A Z A K H S T A N

★ ICBMs (all SS-18 "Satan")	94
★ Long-range strategic bombers	40
Tu-95 "Bear-H6"	27
Tu-95 "Bear-H16"	13
★ Medium-range theater bombers	0
★ Strategic nuclear warheads	1,260
Aboard missiles	940
Aboard bombers	320



B E L A R U S

★ ICBMs (all SS-25 "Sickle")	54
★ Long-range strategic bombers	0
★ Medium-range theater bombers	122
Tu-16 "Badger"	15
Tu-22 "Blinder"	55
Tu-22M "Backfire"	52
★ Strategic nuclear warheads	54
Aboard missiles	54
Aboard bombers	0



Source: David Markov, Institute for Defense Analysis, Alexandria, Va.

Capitol Hill

By Brian Green, Congressional Editor

Rock Bottom on C-17s

General Fogleman tells Congress that the Air Force may be able to meet requirements with a fleet of seventy to eighty airlifters.

GEN. Ronald R. Fogleman, the Air Force's most senior mobility officer, told Congress that the Air Force has a rock-bottom need for seventy to eighty C-17 airlifters. The statement created fresh controversy on Capitol Hill, where it was noted that the General's number was well below USAF's stated requirement for 120 new transports.

The controversy arose when General Fogleman, commander of Air Mobility Command and commander in chief of US Transportation Command, came before the House Defense Appropriations Subcommittee on April 20. With a total fleet of seventy to eighty C-17s, he said, he could keep sixty to sixty-five on the ramp. He added that with this number, USAF could just meet its minimum outside cargo needs and meet its other needs with nondevelopmental airlift aircraft (NDAA).

General Fogleman's words surprised some lawmakers, who wondered whether he was stepping back from the official Air Force requirement, established in the 1991 Major Aircraft Review. The remarks spurred expressions of concern from C-17 supporters and prompted critics to renew their calls for cutting or curtailing the C-17 program.

The new debate confirmed that the airlifter still faced serious political problems. As part of a comprehensive settlement with C-17 contractor McDonnell Douglas, the Pentagon capped the planned acquisition of 120 C-17s last year at forty, pending a 1995 review of the program. In early summer, Congress was debating whether to buy even that many.

Though the Pentagon was committed to buying only the first forty C-17s, the door was open to further purchases if McDonnell Douglas met certain performance goals. The General

emphasized that he still believed that the most cost-effective solution to US mobility problems would be to buy a full 120-plane fleet. "Every cost and operational effectiveness analysis we've done confirms that 120 C-17s, if [the plane] performs as planned, is the best option," he testified.

The Air Force reported that the General's testimony was based on internal AMC studies and continuing AMC reviews of both the 1992 Mobility Requirements Study and the Pentagon's 1993 Bottom-Up Review of defense needs, programs, and forces. General Fogleman testified that the shortfall of airlift capacity resulting from reduced acquisition of the C-17 could be made up by buying NDAA or more C-5 airlifters. He said that the alternatives might cost less but would provide less capability.

General Fogleman noted recent, dramatic improvements in C-17 program efficiency. The contractor, he said, was coming close to meeting its production schedule, software releases were improving, and measures to correct a structural deficiency in the wing were ahead of schedule. He said the key to further procurement was regular delivery of aircraft on time, at the contracted cost and expected level of performance. The benchmarks were utilization rates—expected to be about twenty percent higher than those of the C-5B—and the ability to perform on austere or congested airfields.

At a later congressional hearing, Deputy Secretary of Defense John M. Deutch took issue with General Fogleman's notion of acquiring fewer C-17s. Mr. Deutch said he too would prefer the full buy of 120 C-17s, if the plane worked as expected, because that was the most cost-effective solution to US airlift problems. If it did not work as advertised, he said, then the Pentagon should halt the program at forty C-17s and pursue other options. "I would not move to seventy or eighty," he told the Senate Armed Services Committee. "We can live with mixed wide-body commercial or C-5B fleets with C-17s if we cannot produce C-17s efficiently."

General Fogleman noted that the top airlift priority is to produce a new core airlifter to replace the aging C-141. The C-17 is the designated replacement, he said, but "if the C-17 fails to meet its reliability, maintainability, and availability expectations, we need to develop and field a new core airlifter." That, he added, would take a decade or more, and the Air Force would have to consider buying NDAA to provide an interim or supplemental capability.

Mr. Deutch advocated a cautious approach to NDAA acquisition. Testing to determine C-17 utilization rates will not occur until summer 1995. In the absence of that information, he said, the required number of C-17s would not be established. Until it is, the number and type of aircraft needed to supplement the C-17 cannot be determined. "If we have as few as forty C-17s, the argument for a C-5B, because of its outside [cargo carrying] capability, could be quite compelling. If you have a larger number of C-17s, the need for that outside capability is reduced, and the capabilities of a [commercial] 747 or MD-11 become more attractive," he said.

The new C-17 controversy came even as the need for more airlift generally—and the C-17 specifically—was being recognized by a variety of congressional witnesses. The strongest statement came from Gen. Joseph P. Hoar, USMC, commander in chief of US Central Command, who testified in March that "airlift in this country today is broken. . . . I'm not sure it's workable today for [even] one major regional contingency." While General Fogleman contended that "our airlift system is not broken," he conceded that "it's hurting, and hurting badly."

He added, "Today, I cannot provide the lift for two major regional contingencies. I can do it for one . . . although even there, there are some fairly heroic assumptions that are made with regard to activation of the Civil Reserve Air Fleet," which provides much of the total national airlift capacity. ■

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Aerospace World

By Frank Oliveri, Associate Editor

Friendly Fire Leaves Fifteen US Dead

Two US Air Force F-15Cs patrolling the no-fly zone over Iraq on April 14 accidentally downed two US Army UH-60 Black Hawk helicopters, killing fifteen US and eleven allied personnel.

The two pilots of the F-15Cs misidentified the Army aircraft as Iraqi Mi-24 Hind helicopters. The helicopters were said to be conducting routine visits to Kurdish villages in northern Iraq. Procedures were in place to ensure that all coalition aerial activities were coordinated, and a USAF E-3 AWACS aircraft was managing the action, but apparently the system failed, according to Defense Secretary William J. Perry. The Pentagon has launched an investigation.

Chairman of the Joint Chiefs of Staff Gen. John M. Shalikashvili said, "The procedures are that the aircraft, after making identification that the aircraft that is being attacked is not friendly, is authorized to attack. It is my understanding that visual identification was made, IFF [identification, friend or foe] interrogation was conducted, and no friendly response was received." General Shalikashvili could not say whether the AWACS aircraft correctly followed procedures.

The pilots of the F-15s made visual contact with the two helicopters, both of which were carrying external fuel tanks. The pilots on the scene did not need approval from the AWACS to shoot down an aircraft identified as unfriendly, according to the procedures in place at that time. Dr. Perry said that the pilots on the scene were also not required to attempt radio contact with the helicopters.

Dr. Perry said that one procedural change was made almost immediately after the incident, but he could not reveal the nature of the change.

General Shalikashvili said that he could not reveal the standard rules of engagement because the operation is ongoing. He said, however, that there was "no violation in that part of the procedure. Clearly, something went wrong, and an investigation will have to determine exactly what did go wrong."

The US has flown more than 1,400 helicopter and 27,000 fixed-wing aircraft sorties over northern Iraq since 1991 without mishap, General Shalikashvili said. The same procedures have been used throughout.

Both helicopters were outfitted with IFF transponders. The investigation will examine whether those systems were working at the time of the incident.

General Shalikashvili said the AWACS plane provided overall command and control of aircraft operating in the area. The two F-15s were part of a larger coalition force of thirty-four fighter aircraft cycled in and out of northern Iraq's airspace that day.

NATO Mounts First Air-to-Ground Attacks

US warplanes recently carried out NATO's first air attacks on ground positions since the Alliance was founded forty-five years ago.

The attacks were launched April 10 and 11 against Serb targets in Bosnia-Herzegovina near the besieged town of Gorazde. The official reason for the attacks was to provide support for UN troops in the Muslim town. However, Serb artillery had been shelling Gorazde, and the attacks were aimed at halting the Serb assault.

In the April 10 action, two Air Force F-16C fighters destroyed a Bosnian Serb army command post with three Mk. 82 500-pound bombs. Initially, the F-16s planned to attack tanks, but poor weather made targeting too difficult.

On April 11, after the shelling resumed, NATO launched a second strike, this time with two Marine Corps F/A-18 fighters. They destroyed three armored personnel carriers and a truck with bombs and 20-mm cannon.

The week's action also brought another Alliance milestone. On April 15, NATO suffered its first loss of an aircraft in combat when a Serb gunner, apparently using a shoulder-fired surface-to-air missile, downed a Royal Navy Sea Harrier. The jet was lost, but the pilot ejected safely and was rescued.

B-1Bs Set More Records

Two B-1B bombers and crews from the 319th Bomb Group, Grand Forks AFB, N. D., set eleven world speed records in April.

The crews and aircraft set the new records while flying a 10,000-kilometer course from Grand Forks southeast to Monroeville, Ala., northwest to Mullan, Idaho, southeast again to Monroeville, and northwest to Grand Forks.

In achieving the eleven records, the B-1s broke two that had been set in 1958 by a B-52 bomber. The first B-1 clocked in at ten hours, twenty-seven minutes, thirty-four seconds, for an average of 594 mph over the course. The second B-1 completed the course in ten hours, twenty-two minutes, twenty seconds, for an average of nearly 600 mph, besting the old record by more than thirty mph.

Criteria for the flights were established by the National Aeronautic Association (NAA). The distance traveled was equal to a flight from Chicago to Hawaii to San Francisco. Once the flights are verified, the 319th Bomb Group's B-1s will hold twenty-three records. The 319th set twelve world time-to-climb records in 1992.

Collier Goes to Hubble Fixers

The NAA awarded the 1993 Robert J. Collier Trophy to the Hubble Space Telescope Recovery Team.

The annual award recognizes the greatest American achievement of the year in aeronautics or astronautics improving performance, efficiency, or safety of an air or space vehicle. The team was selected for what the judges called "outstanding leadership, intrepidity, and the renewal of public faith in America's space program by the successful orbital recovery and repair of the Hubble space telescope." Until the team fixed it, the telescope had been bedeviled by technical problems that caused it to send blurred images to Earth.

The ten-member recovery team comprised four NASA mission directors—Joseph Rothenberg, Brewster Shaw, J. Milton Hefflin, and Randy

Brinkley—and seven space shuttle *Endeavour* crew members: Col. Richard O. Covey, Lt. Col. Thomas D. Akers, Cmdr. Kenneth D. Bowersox, Kathryn C. Thorton, Claude Nicollier, Jeffery A. Hoffman, and F. Story Musgrave.

Whiteman Trains B-2 Pilots

Lt. Col. Richard Y. Newton III, commander of the 393d Bomb Squadron, 509th Bomb Wing, Whiteman AFB, Mo., became the first Whiteman-trained pilot of the B-2 bomber in April.

Completing their B-2 training one week later were the 509th Bomb Wing's senior staff: Brig. Gen. Ronald C. Marcotte, commander, and Col. William M. Fraser III, 509th Operations Group commander.

For Colonel Newton, B-2 qualification required nearly three months of academic work and simulator training. He also completed four B-2 sorties. His final checkride profile covered ground operations, takeoff and landing, air refueling, high- and low-altitude simulated conventional bombing, airwork, and instrument and visual flight rules pattern activity.

The evaluation pilot was Lt. Col. Tony Imondi, the 509th Operations Group's deputy commander. Colonel Imondi was a member of the B-2 test cadre and has been with the program for five years.

X-31 Emulates Tailless Flight

In what the Pentagon calls the first-ever flight of its kind, the X-31 Enhanced Fighter Maneuverability aircraft in March successfully emulated tailless, supersonic flight.

The experimental aircraft climbed to 38,000 feet above the Edwards AFB, Calif., dry lake bed. Rogers Smith, NASA's chief test pilot, accelerated to Mach 1.2 and engaged a special control mode eliminating the stabilizing power of the vertical tail. Then, using X-31's special thrust-vectoring capability, he demonstrated the plane's stability and control in level flight and through gentle turns.

In a statement, the Defense Department said, "To accomplish this simulated 'cancellation' of the tail, the X-31 used its other conventional control surfaces to counteract the stabilizing influence of the tail, making the aircraft appear tailless to the flight-control computers. The thrust-vectoring vanes then took over and provided the same functions as the vertical tail could in conventional flight."

Eliminating the vertical tail could

bring big reductions in weight, drag, fuel consumption, and radar signature. The X-31's thrust-vectoring capability also showed enhanced maneuverability at slower speeds during close combat testing because it allowed the aircraft to maneuver beyond the aerodynamic stall boundary.

Pitsenbarger Award Goes to Mogadishu Hero

The Air Force Sergeants Association awarded its 1994 Pitsenbarger Award in March to TSgt. Timothy A. Wilkinson of the 24th Special Tactics Squadron, Pope AFB, N. C. Sergeant Wilkinson was honored for his heroic actions during the October 3-4 firefight in Mogadishu between US troops and Somali irregular gunmen. [See "Heroes at Mogadishu," p. 28.]

was also credited with saving several lives during the battle.

FEWS Out, ALARM In

After terminating the Follow-On Early Warning System (FEWS) satellite program, the Defense Department announced that it would pursue a low-cost alternative, the Alert, Locate, and Report Missiles (ALARM) system.

In February, the Pentagon reported that it would purchase one more Defense Support Program satellite—DSP 23—but would terminate models 24 and 25.

DoD said that ALARM would provide early warning of theater and strategic ballistic missile launches, with emphasis on theater launch. Air Force Space Command began an opera-



A C-5 Galaxy dispenses flares to confuse infrared heat-seeking guided missiles in a test near Eglin AFB, Fla. Under the Pacer Snow program, Lockheed Aeronautical Systems Co. has modified several C-5s for more secure operation in hostile environments.

The award annually recognizes an enlisted airman for an act of heroism, on or off duty, that saved lives or prevented serious injury. Sergeant Wilkinson recently won the Air Force Cross for his actions during the operation in which eighteen Americans died.

Sergeant Wilkinson was part of a combat search-and-rescue team sent into the teeth of the battle after the first of two US Army Black Hawk helicopters went down. He was cited for repeatedly venturing into danger of enemy fire in order to save wounded Army Rangers during the longest firefight since the Vietnam War. He

tional requirements document (ORD) for ALARM in December 1993. The draft ORD will be included in the request for proposal, which will be released this summer.

The ALARM satellite reportedly could be placed in orbit by a medium-lift vehicle, would not have on-board data processing capabilities, and would be linked to an updated, consolidated DSP ground system.

Two demonstration/validation contracts will be issued in February 1995, and the engineering and manufacturing development contract will be awarded in Fiscal Year 1998. The first satellite is to be delivered in

2004. The program is expected to cost about \$1 billion between Fiscal 1995 and Fiscal 1999.

20th FW Takes Daedalian Trophy

The 20th Fighter Wing, Shaw AFB, S. C., was named the 1993 winner of the Air Force Daedalian Trophy, the service announced in March.

The annual competition recognizes the organization that demonstrates the greatest capability to produce high-quality combat power and whose maintenance organization best cares for its equipment and personnel. The competition considered all aspects of maintenance, from aircraft performance to the wing's involvement in special programs and its function as a test unit for several systems.

Roles and Missions Panel Formed

Defense Secretary Perry appointed a Commission on Roles and Missions of the Armed Forces in March. The panel was formed to identify changes to improve military effectiveness and eliminate duplication, DoD said. The results of the commission's year-long study will be provided to the Pentagon and the House and Senate Armed Services Committees.

Heading the commission will be Dr. John P. White, director of the Center for Business and Government at Harvard University's Kennedy School of Government. He was assistant secretary of defense (Manpower, Reserve Affairs, and Logistics) and deputy director of the Office of Management and Budget during the Carter Administration. Other commission members include Les Aspin, former Secretary of Defense; Antonia H. Chayes, former Air Force under secretary; Jan Lodal, an Intelus Corp. executive; Franklin Raines, vice chairman of the Federal National Mortgage Association; Gen. Robert RisCassi, US Army (Ret.), former commander of US forces in Korea; and Lt. Gen. Bernard Trainor, USMC (Ret.).

Also working with the commission will be Gen. Larry Welch, USAF (Ret.), former USAF Chief of Staff; Adm. Leon Edney, USN (Ret.), former head of US Atlantic Command, and defense analyst Jeffrey Smith.

Financial Manager Confirmed

The Senate confirmed Robert F. Hale in April as assistant secretary of the Air Force (Financial Management and Comptroller).

Mr. Hale will be the Air Force's chief financial manager. He is a former naval officer who joined the Congressional Budget Office in 1975. After serving as an analyst for defense



Air Force Secretary Sheila E. Widnall presented the 37th Training Wing, Lackland AFB, Tex., with the first Secretary of the Air Force Unit Quality Award. Wing Commander Brig. Gen. (Maj. Gen. selectee) Henry "Mack" Hobgood (right) and CMSgt. Tom Voegtle accepted the award.

USAF photo by Wayne Bryant

manpower issues and CBO's deputy assistant director for national security, he became its assistant director for national security in 1981. In that position, he managed a group that analyzed such topics as options for fighter and attack aircraft.

Northrop Acquires Grumman

Northrop Corp. and Grumman Corp. entered a merger agreement under which Northrop will acquire Grumman at a cost of \$62 per share in cash. The total transaction is valued at \$2.17 billion.

The agreement ends a confrontation between Northrop and Martin Marietta, which originally bid \$55 per share for Grumman and thought it had a deal. However, Northrop made a hostile bid that eventually won out.

Northrop and Grumman had combined 1993 sales of more than \$8 billion, a backlog of more than \$13 billion in orders, and more than 40,000 employees.

The corporation will be called Northrop Grumman Corp. if stockholders approve, said Northrop Chairman, President, and CEO Kent Kresa.

Perry Seeks Tax Relief for Service Members

Problems caused by the federal Revenue Reconciliation Act of 1993 have prompted Defense Secretary Perry to ask Congress to provide special relief for service members.

The proposed change would alter current tax rules on moving expenses, reimbursement, and allowances—rules that Dr. Perry says "dispro-

portionately" affect junior service members. The law makes moving allowances taxable and subject to withholding, leaving servicemen and -women without enough money to cover expenses.

"More than 800,000 service members and their families move every year," said a Pentagon statement. "Approximately 200,000 of those moves are to and from overseas locations. Almost ninety percent of the overseas moves are [made by] enlisted service members."

DoD said that a service member with a family, awaiting housing in Naples, Italy, might receive \$11,000 in temporary lodging allowance. The tax on this amount would be about \$1,500.

"This additional tax burden is counterproductive as we struggle to maintain operational readiness and an acceptable quality of life for our dedicated men and women serving our country," said Dr. Perry.

Ellsworth Cedes Minuteman IIs

The last Minuteman II missiles at Ellsworth AFB, S. D., were pulled from their silos in late March and early April, ending twenty years of continuous service.

The missiles were part of the 44th Missile Wing, which will be inactivated in July. The wing will be the first of its kind to be inactivated under the Strategic Arms Reduction Treaty. The US signed the treaty with the former Soviet Union in 1992. It calls for the destruction of 450 single-warhead Minuteman II missile silos

and fifty Peacekeeper silos. The Air Force sent the warheads to the Department of Energy for dismantling. The missiles are being shipped to Hill AFB, Utah, for storage and possible use in space launches.

"Troops to Teachers"

The Pentagon is helping to finance teacher certification training for people leaving the armed services, the Department of Defense, the Department of Energy, and some defense contractors.



An advanced propulsion system for the C-130J Hercules transport is undergoing a two-month, fifty-hour flight test program at Marshall Aerospace in Cambridge, UK. The system, which uses an RAF C-130C Mk. 1 as the test platform, includes the Allison AE 2100D3 engine and the all-composite Dowty R391 propeller.

The program is called the Teacher and Teacher's Aide Placement Assistance Program, or "Troops to Teachers," and helps former military personnel gain certification to work in schools serving children from low-income families and experiencing teacher shortages.

More than 7,000 people have inquired about the program, and 1,300 have applied. Forty percent of the applicants are active-duty Air Force members.

To be eligible, applicants must have at least six years of continuous active-duty service, be eligible for an honorable discharge, and apply no later than one year after release from active duty. Civilians must be facing termination as a result of the draw-down or a base closure and may apply no later than sixty days after termination of employment.

Applicants must have a bachelor's

degree to become teachers. Military personnel who do not have a bachelor's degree at the time of their discharge have five years to earn one. Those applying as teacher's aides must have an associate's degree.

DoD will provide a stipend of up to \$5,000 to offset costs of alternative certification training. Participants must accept employment for five years in a school serving low-income families. Congress authorized \$65 million in Fiscal 1994 to fund the program.

JSOW Undergoes Testing

The USAF-Navy Joint Standoff Weapon (JSOW) system underwent wind tunnel testing in March at Arnold Engineering Development Center, Arnold AFB, Tenn., the service said.

The JSOW, developed by Texas Instruments, will be used as a "truck" to deliver a variety of weapons. Originally designed as a glide bomb/mis-sile capable of carrying 500- to 1,000-pound warheads up to forty miles, the system is now being studied for the potential of carrying ordnance and delivering supplies to isolated combat units.

During wind tunnel testing, scientists "flew" the JSOW on an F-16 and an F-15E, using five percent scale models of the aircraft and the system to investigate weapon dynamic loads, aircraft stability and control, and weapon separation characteristics. Data were gathered on several dif-

ferent configurations during the test at the center's four-foot transonic wind tunnel.

The JSOW may also be carried on the Navy's S-3 and F/A-18, the Marine AV-8B, and the Air Force's B-1, B-52, F-111, and F-22. The JSOW is a \$400 million program.

Joint SAR Exercise Completed

The United States, Canada, and Russia teamed in March to conduct the first-ever Arctic inland search-and-rescue exercise on US soil.

The exercise, Arctic Sarex '94, was held at Eielson AFB, Alaska, and Fort Greely, Alaska. It was designed to increase interoperability between the three nations for search-and-rescue operations in the Arctic regions of the northern Pacific.

The scenario focused on the rescue of fifty injured survivors of a simulated civilian passenger aircraft crash, using a combined force of helicopters and transports. Pararescue and medical personnel diagnosed, treated, and stabilized the victims for next-day evacuations.

US Helps Reduce Soviet Arsenal

In a major exercise in "cooperative threat reduction," the US has concluded and signed four umbrella agreements with the newly independent states of the former USSR, and the Defense Department is executing thirty-two implementing agreements.

DoD said nearly 5,000 items have been delivered in support of these agreements.

DoD notified Congress of its intent to spend \$800 million for equipment and technical assistance for projects to dismantle weapons of mass destruction in the Russian Federation, Ukraine, Belarus, and Kazakhstan.

Since 1992, Congress has authorized the Pentagon to provide nearly \$1 billion worth of assistance to the new nations. Funds are to be used for dismantling nuclear and other weapons of mass destruction; secure transportation, storage, and safeguard of weapons in connection with their destruction; and establishment of verifiable measures against weapons proliferation.

CBO Cites Budget Risks

The Congressional Budget Office, in a March report, maintained that the Clinton Administration took several risks in its 1995-99 defense plan and budget forecast—risks that might leave the armed forces seriously underfunded.

The Administration, said CBO, has

based its plan on assumptions that infrastructure cuts will produce large savings, weapons programs will not experience major cost growth, and environmental cleanup costs will not exceed expectations. The CBO reports there is reason to doubt the validity of all three White House assumptions.

The gist of the CBO report is that, if things do not go according to Administration plans in all three areas, less money will be available for the Pentagon to maintain personnel, readiness, operations, and modernization of the force.

The CBO report, "Planning for Defense: Affordability and Capability of the Administration's Program," said that the risks of the Administration's plan only increase over the longer term. "Over the 2000-2010 period," it said, "DoD would need an average of \$12 billion to \$25 billion more per year than the funding it would have if its budget only grew enough to offset inflation beyond 1999." It added, "Should additional funding for defense not be forthcoming, further force cuts could be necessary to balance operations and acquisition funding."

Schilling Wins Vanguard Award

The Non-Commissioned Officers Association awarded its 1994 Air Force Vanguard Award to SSgt. Daniel C. Schilling, 24th Special Tactics Squadron, Pope AFB, N. C., in March, for his actions in support of United Nations operations in Mogadishu, Somalia, on October 3-4, 1993.

The annual awards recognize enlisted people from each military service who perform a heroic act saving a life or preventing serious injury. Sergeant Schilling also received a Bronze Star with valor device as a part of the joint-service team sent to capture militia leaders believed to be responsible for an attack on US and UN troops.

Sergeant Schilling, a communications and fire-support specialist for the ground reaction force commander, risked his life to rescue a wounded teammate lying exposed to enemy fire in an open alley. He also was credited with saving the life of the NCO in charge of the task force Ranger convoy after the convoy was hit by small-arms fire.

Space Station Clears Hurdle

NASA reported in March that it had completed the International Space Station system design review, outlining the requirements and configuration of the system. Space Station Director Wilbur Trafton said, "We now

have a solid baseline for the program. We have an executable schedule with costs that maintain acceptable reserves within our budget cap."

The review was conducted by NASA, the European Space Agency, and the space agencies of Canada, Italy, Japan, and Russia, plus prime contractor Boeing and major subcontractors Rocketdyne and McDonnell Douglas.

The baseline configuration will use approximately seventy-five percent of the planned hardware of the space station Freedom. The International Space Station consists of US elements that include the integrated truss, habitation module, and laboratory module; Russia's science power platform, service module, and functional cargo block vehicle; the European Space Agency's laboratory module; Japan's experiment module and exposed facility; and Canada's remote manipulator system.

Assembly will begin with the launch of the Russian cargo vehicle in November 1997.

The US contribution will be about \$17.4 billion from 1994 until assembly is completed in 2002. This amount includes annual appropriations of \$2.1 billion for development, operations costs, and support during assembly.

Martin Marietta Purchase Approved

DoD approved in March the sale of General Dynamics Space Systems Division to Martin Marietta Corp. Deputy Secretary of Defense John M. Deutch said the move will save the US money, help preserve defense industrial capacity, and strengthen America as a competitor in the international space launch business.

Martin Marietta will consolidate its Titan IV launch vehicle business with GD's Atlas Centaur business. Facility consolidation is likely to relieve

increasing underuse of capacity at both companies.

Martin Marietta predicts the acquisition will save about \$60 million under the current Titan IV contract (forty-one vehicles). The savings would be split evenly between the company and the US government.

The Titan and the Atlas Centaur do not compete. Titan has a payload more than 2.5 times that of the Atlas. The acquisition provides Martin Marietta with greater access to the commercial launch market.

Military Photo, Video Awards

The Military Photographer of the Year for 1993 is Marine Corps SSgt. Earnie Grafton, a photographer for *Pacific Stars and Stripes* in Tokyo. The Military Videographer of the Year award goes to Marine Corps SSgt. Al Moore, assigned to the public affairs office at Quantico, Va., the Pentagon said in March.

The runner-up for the military videographer's award was Photographer's Mate 2C Peter Watson, assigned to the Navy Broadcasting Service Detachment at Keflavik, Iceland. The runner-up in the photographer category was Photographer's Mate 1C Ted Salois, a Navy photojournalist for *Pacific Stars and Stripes*.

Eurofighter 2000 Flies

The Eurofighter 2000 completed its first flight in March at the Deutsche Aerospace Flight Test Center in Germany.

The Eurofighter 2000 consortium includes British Aerospace Defence, Alenia in Italy, CASA in Spain, and DASA in Germany. The Eurofighter is projected to be an air-superiority fighter in beyond-visual-range and close-combat scenarios. The fighter was originally expected to fly two years ago.

Senior Staff Changes

PROMOTIONS: To be **Brigadier General:** Paul A. Weaver, Jr., Michael K. Wyrick.

CHANGES: **M/G Kenneth E. Eickmann** from Dir., Log., Hq. AFMC, Wright-Patterson AFB, Ohio, to Cmdr., Oklahoma City ALC, AFMC, Tinker AFB, Okla., replacing retiring M/G Joseph K. Spiers . . . **B/G (M/G selectee) Donald E. Loranger, Jr.**, from Cmdr., 435th AW, USAFE, Rhein-Main AB, Germany, to Vice Cmdr., 8th Air Force, ACC, Barksdale AFB, La., replacing retired B/G James L. Vick . . . **B/G (M/G selectee) Rondal H. Smith** from Dir., Log., Hq. AMC, Scott AFB, Ill., to Dir., Log., Hq. AFMC, Wright-Patterson AFB, Ohio, replacing M/G Kenneth E. Eickmann . . . **Col. (B/G selectee) Donald A. Streater** from Dep. Dir., Directorate for Prgms. and Eval., Hq. USAF, Washington, D. C., to Cmdr., 314th AW, ACC, Little Rock AFB, Ark., replacing retiring B/G Fredric N. Buckingham. ■

The first development aircraft flew for a total of forty-five minutes, with NASA chief test pilot Peter Weger at the controls. The aircraft retracted and extended its landing gear during its initial flight and completed tests on basic systems and handling. There are seven development aircraft, all structurally complete.

The aircraft has experienced numerous flight control glitches that have delayed the program. However, those problems are well in hand, according to British Aerospace. Eurofighter uses a fly-by-wire flight control system.

Colonels Marked for Retirement

A Selective Early Retirement Board identified 198 colonels for early retirement, the Air Force said in March.

Individuals selected by the board must retire by October 1, 1994. The board convened at the Air Force Military Personnel Center at Randolph AFB, Tex., in January. Board members considered 371 colonels from the 1967 year group, 538 from the 1969 year group, and twenty-four chaplains. The board chose 111, eighty, and seven from those groups, respectively.

News Notes

■ An Air Force initiative to streamline policy and regulations, now near completion, will eliminate 27,000 pages of directives and instructions. USAF's current 1,510 regulations will be replaced by 165 policy directives and some 690 instructions.

■ Elmendorf AFB, Alaska, won the

Air Force's 1993 Commander in Chief's Installation Excellence award. The award, presented in April, was established in 1984 by President Ronald W. Reagan to recognize outstanding efforts of those who operate and maintain Department of Defense installations and who make best use of their resources.

■ Air Force Secretary Widnall approved a waiver in March for reimbursement of advance pay to service members evacuated from Homestead AFB, Fla., as a result of Hurricane Andrew. The Air Force will waive the return of up to one month's pay for people forced to make permanent change of station moves after Hurricane Andrew ripped through southern Florida in 1992.

■ The Air Force said that 28,000 Air Force Reservists—about forty-two percent of the Reserve force—and more than 150 aircraft will train away from home this spring and summer. Most of the Reservists will train in the continental US, but some will travel to Turkey, Thailand, Alaska, and South America.

■ Orbital Sciences Corp. said in March that its rapid-response Taurus space launch vehicle successfully completed its first flight. The launch was conducted from the California coast, 150 miles north of Los Angeles, for the Advanced Research Projects Agency and the Air Force. The rocket put two satellites into the targeted low-Earth orbit. The rocket is ninety feet tall, weighs seventy-five tons, and can lift a 3,000-pound pay-

load to low-Earth orbit and 950 pounds to a geosynchronous transfer orbit.

■ The Air Force selected in February 1,101 of 23,827 eligible for promotion to senior master sergeant, a 4.62 percent selection rate.

■ The first of forty-six new F-16s was delivered to the Egyptian Air Force in March from the Tusas Aerospace Industries factory in Akinci, Turkey, near Ankara. Two F-16D fighters were flown to Egypt, and two others followed soon after. Egypt purchased 175 F-16s, including 129 delivered since 1982.

■ NASA's spacecraft *Galileo* sent to Earth the first-ever photos of a moon of an asteroid in March. The photos of Asteroid 243 Ida and its newly discovered natural satellite were taken by *Galileo* as the spacecraft flew past Ida last August. This is the first evidence of natural satellites of asteroids.

■ The second Milstar satellite successfully completed thermal vacuum chamber testing in March at Lockheed Missiles and Space Co. in Sunnyvale, Calif. The satellite spent three and a half months in Lockheed's thermal vacuum chamber being tested for its ability to withstand the harsh conditions it will face in space, such as freezing temperatures in the Earth's shadow and extreme heat during exposure to the sun.

■ Vought Aircraft Co. said in March that the missionized Pampa 2000 aircraft completed its flight test program and is ready for the initiation of the USAF-Navy Joint Primary Aircraft Training System selection process. Testing verified the Pampa's ability to carry out the JPATS mission.

Purchases

The Air Force awarded General Electric Aircraft Engines Group an \$82.8 million face-value increase to a firm fixed-price contract for twenty F118 engines for use on B-2 aircraft. Expected completion: December 1995.

The Air Force awarded Slingsby Aviation Ltd. a \$9.4 million face-value increase to a firm fixed-price contract for the T-3A Lot III buy consisting of thirty-three T-3A aircraft. Expected completion: November 1995.

The Air Force awarded McDonnell Douglas Government Aerospace, Transport Aircraft, an \$11.3 million face-value increase to a fixed-price incentive firm contract for design, development, installation, and testing of a defensive system for the C-17 aircraft. Expected completion: May 1995. ■

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Expeditionary force packages are on the move in practice deployments around the world.

Airpower From Home Base

By James W. Canan, Senior Editor

THESE days, Air Force bomber wings fly around-the-clock transoceanic missions as a matter of course, pummeling distant targets with dummy bombs and returning, usually nonstop, to bases in the continental US. Air Force fighter units based in CONUS are also on the go, routinely deploying to Europe, the Middle East, and the Far East to exercise with friendly forces and to get a feel for unfamiliar places where they may have to fight.

Such deployments are sharply on the rise. In 1992, bombers and fighters belonging to Air Combat Command (ACC) deployed overseas on twenty-seven occasions to take part in practice exercises or "real thing" contingencies. Last year there were forty-nine such deployments. This year the number is expected to climb to sixty-seven or more.

The reason for the rise is the overseas drawdown of US military forces, including a sharp decline in the number of Air Force units and bases abroad. Some Air Force leaders fear that the drawdown, while unavoidable in the aftermath of the Cold War, may have gone too far. One describes today's Air Force theater



Photos © Randy Jolly

F-15Cs, F-15Es, and F-16Cs of the 366th Wing at Mountain Home AFB, Idaho, converge on one of the wing's KC-135R tankers to gas up en route to the exercise Northern Edge in Alaska. On arrival (opposite), F-15Cs of this composite, air intervention wing stake out the Alaskan sky. CONUS-based Air Force units routinely deploy around the globe in exercises and in preparation for their roles in regional contingencies.

forces as "too big to stay out of trouble and too small to get out of trouble."

Those forces have shrunk to shadows of their Cold War selves. As the 1980s came to a close, US Air Forces in Europe owned sixteen main operating bases and had nine fighter wings with 636 fighters. By the end of this year, the number of USAFE bases will have dwindled to six, wings to two and one-third, and fighters to 168.





A1C Paul Eckert, left, and SrA. Casey Sparks prepare for an airlift mission with the composite 23d Wing at Pope AFB, N. C. The "air-land" wing is designed to team with the Army's 82d Airborne Division in expeditionary operations.

The story is much the same on the other side of the world. Pacific Air Forces (PACAF), covering 100 million square miles of territory, or about half the Earth's surface, is down to 3.5 fighter wings from 4.8 in 1988.

Bottoming Out

By 1995, the Air Force, barring further cuts, will have nearly bottomed out at 20.5 fighter wings, comprising thirteen active-duty wings and 7.5 Guard and Reserve wings. (Another half-wing will go by 1997, bringing the total of Fighter Wing Equivalents down to an even twenty.) USAF had thirty-eight wings at the end of the Cold War.

The redistribution of wings is as graphic as their reduction in number. More than two-thirds of them are based in CONUS and belong to ACC, which has become, in its first two years of existence, the power center of the combat Air Force.

A year ago, taking note of the US military's shift to a CONUS power base, Gen. John Michael Loh, ACC's commander, observed that the Air Force was fast becoming a CONUS-based expeditionary force rather than a forward-deployed force with USAFE and PACAF as pillars. Now the shift is complete.

"We are living the expeditionary Air Force today," General Loh declares. "We still have some forces in Europe and the Pacific, but we are

now essentially a home-based Air Force."

The ACC commander notes that the national military strategy "calls for us to win two MRCs [major regional contingencies] nearly simultaneously and in four different locations." Thus, he says, "our challenge is to be able to project our power rapidly so that we can control events to deter conflicts and, if not, to win them quickly and decisively."

ACC seems in shape to meet the challenge.

"All ACC fighter wings can deploy their first squadron in twenty-four hours and all their squadrons in seventy-two hours," General Loh asserts. "This means we can put considerable airpower into any base in the world in less than two days.

"This also assumes that hundreds of strategic assets, like KC-10s, KC-135s, C-141s, and C-5s, will be available to move our aircraft, personnel, and equipment," he adds.

Air Mobility Command's airlift fleet is the linchpin of the expeditionary Air Force. "I cannot overstate the importance of airlift," General Loh says. Although strategic airlift is not ACC's responsibility, General Loh joins with Gen. Ronald R. Fogleman, commander of AMC and commander in chief of US Transportation Command, in pressing for modernization of the airlifter fleet with whatever it takes, including C-17s.

The current fleet of C-141s and C-5s is overworked, spread thin, getting old, and increasingly difficult to maintain and sustain. Some US military leaders fear the worst for strategic airlift. Among them is Gen. Joseph P. Hoar, USMC, commander in chief, US Central Command, who has used airlift extensively in CENTCOM operations in Africa and southwest Asia.

"Strategic airlift in this country today is broken," General Hoar told the Senate Armed Services Committee last March. "I'm not sure it is



B-1B bombers like this one from the 28th Bomb Wing, Ellsworth AFB, S. D., are big hitters in the expeditionary Air Force. CONUS-based bombers routinely fly nonstop, round-trip, transoceanic missions lasting twenty-five to thirty-five hours.

workable today for [even] one major regional contingency.”

Air Force leaders don't go quite that far. They make it clear, though, that the condition of the strategic airlifter fleet is a prime concern that the nation must address for the sake of its future security. They also voice concerns about the future adequacy of the bomber force.

The Essence of Global Power

General Loh has taken the lead in this. He portrays bombers, with their vast range and enormous firepower, as the essence of global airpower and of the expeditionary Air Force. He warns of a possible shortfall of bombers—too few to fight and win two nearly simultaneous MRCs—unless the Air Force is permitted to procure more than now planned.

Aerial tankers are a brighter story, it seems. They make everything else go. Without them, the Air Force can forget about global reach. Among other things, tankers make it possible for bombers to fly the far-reaching, nonstop, round-trip “global power projection missions” that ACC put into effect late last year.

“Our bomber wings routinely practice [such] missions,” says General Loh. “They take off from home bases in the nation's heartland, fly to the Mediterranean, the South Pacific, or southwest Asia, participate in a joint or multinational exercise, and fly home.”

“We're doing those missions weekly now, more and more all the time. They have a tremendous impact on our ability to project power—to get to an area of potential or actual conflict very rapidly, deliver weapons, and either come back to CONUS or land in-theater, and turn around and do it again. They're extremely valuable in training our crews how to handle twenty-five- to thirty-five-hour missions.”

Such missions are mounting fast this year. From mid-February to mid-March, for example, B-1s and B-52s from eight ACC bomber bases—Barksdale AFB, La.; Dyess AFB, Tex.; Ellsworth AFB, S. D.; Fairchild AFB, Wash.; Grand Forks AFB, N. D.; K. I. Sawyer AFB, Mich.; McConnell AFB, Kan.; and Minot AFB, N. D.—flew round-trip, nonstop missions across the Atlantic or the Pacific. Flights took twenty to twenty-five hours.



USAF photo by SSgt. Mark Bucher

An Egyptian Air Force F-4 zips past a USAF C-5 airlifter during Bright Star '94. Air Mobility Command's airlift fleet, linchpin of the expeditionary Air Force, is overworked, spread thin, getting old, and difficult to maintain.

CONUS-to-CONUS bomber flights of even longer duration were the rule late last year in Bright Star '94, the annual combined-arms exercise in Egypt teaming US and Egyptian air and land forces. ACC had bombers in the air, coming or going, throughout the exercise.

“We had a bomber bridge across the Atlantic and down the Mediterranean for about five days,” General Loh recalls.

Bombers from seven bases—Barksdale, Castle AFB, Calif., Dyess, Griffiss AFB, N. Y., K. I. Sawyer, McConnell, and Minot—crossed the Atlantic and the Mediterranean, put iron on targets, and flew home. Average flight time was nearly thirty hours. Two B-52s from Castle flew the greatest distance and were the only ones to make an intermediate stop, at Lajes Field in the Azores, on the way back home.

Bright Star marked the first overseas deployment of the composite 366th Wing from Mountain Home AFB, Idaho, a quick-response “air intervention” wing consisting of different kinds of aircraft and designed to be the spearhead of Air Force expeditionary operations.

To Egypt With an Alpha

The 366th Wing dispatched to Egypt an “alpha package” consisting of four KC-135 tankers, six F-15C air-superiority fighters, six F-15E deep attack fighters, and six F-16C

dual-purpose attack and counterair fighters, a squadron-size mix for many kinds of missions. Those planes teamed with B-52 bombers from Castle AFB, organic to the 366th Wing, and with B-1 bombers from Ellsworth AFB. The Air Force subsequently closed Castle and mothballed its B-52s. A squadron of Ellsworth B-1s now belongs to the 366th Wing.

ACC also sends its fighters far and wide. “We're conducting more short-duration overseas deployments with fighters than we did in the past,” explains General Loh. “It's important that our fighters visit and maintain access to places where we no longer have theater forces.”

Prime examples are southeast Asian nations on the Pacific rim. PACAF is no longer forward-based in that part of the world. PACAF combat units formerly in the Philippines are now in Alaska, far removed from it. PACAF forces in Japan focus on tinderbox Korea.

“PACAF is tied up and can't get down to Singapore, Malaysia, Indonesia, Brunei, and Thailand,” says General Loh. “All those countries have air forces that operate US equipment. They want [the US Air Force] to come frequently.”

ACC fighters now deploy, a few at a time, to such faraway places for as long as two weeks at a stretch. “We keep the deployments short so that they're not debilitating in terms of



Deployments to remote regions hinge on specialists skilled in setting up support infrastructure, turning bare bases into operating bases with water, shelter, and other necessities. Here, a 366th Wing civil engineer builds a barracks in Egypt.

time away from home, as are some of our longer deployments in response to real crises," General Loh explains.

ACC fighters are on the fly almost everywhere, it seems. "We're sending lots of squadrons to Europe and the Middle East," says General Loh, "because USAFE has drawn down significantly and has been tied up with Bosnia and [Middle East] operations."

CONUS-based fighters deployed to Italy when things got hot across the Adriatic in Bosnia-Herzegovina. CONUS-based C-130s teamed with, and often outnumbered, USAFE's C-130s in air-dropping food and other supplies to beleaguered Bosnians. Ownership of 354 C-130s was transferred last year from AMC to ACC, along with air rescue units.

Air Force theater CINCs welcome the support of ACC's Stateside units but indicate that it could become too much of a good thing. They warn against further reductions of USAF's forward presence in their theaters and, implicitly, against overreliance on Stateside expeditionary forces.

No Luxury

Gen. Robert C. Oaks, USAFE's commander in chief, raised the issue at an AFA symposium in Florida last February. He presented data from operations in Bosnia comparing the costs of Air Force deployments from within Europe and from the US east

coast. The inside-Europe deployments cost much less.

"The bottom line," he declared, "is that our forces in USAFE are not a luxury. They offer the most economical way to meet the needs of the conflicts that are ongoing. . . . You may detect that I am a strong advocate for forward presence and for NATO involvement."

Overseas contingencies in Europe, Africa, the Middle East, and, for counternarcotics operations, Latin America make heavy demands on specific ACC combat and support squadrons, but they account for only a fraction of all ACC deployments. Most deployments, says General Loh, are designed for "maintaining access and positive relationships with our friends and security partners everywhere, and we're doing it with these temporary, short-duration fighter deployments overseas."

A case in point was the deployment to Norway in March of twelve ACC F-16s from the 388th Fighter Wing at Hill AFB, Utah. The half-squadron from Hill exercised with the Norwegian Air Force, which also flies F-16s.

Maj. Gen. (Lt. Gen. selectee) Lawrence E. Boese, ACC's director of Operations, emphasizes that the purpose of all ACC fighter deployments is "to make sure that once we get over there in a crisis—in the Pacific, in Europe, or in southwest Asia—it's not unfamiliar territory,

that we've checked it out in advance."

General Boese says that CONUS fighter units deploy to Europe far more frequently than they did during the Cold War and that such deployments are as important to the well-being of the expeditionary Air Force as those to less familiar and less accessible parts of the world. ACC units must compensate for the USAFE drawdown, he says, by "maintaining the connectivity with our allies that was always maintained in the past in Europe by our large in-place [USAFE] forces."

General Boese, who was recently named commander of PACAF's 11th Air Force and Alaskan Command, also makes the point that overseas deployments are nothing new for CONUS-based fighter squadrons. "They've always deployed," he says, "and they're always ready to deploy." But there is a big difference between past and present. Destinations are no longer certain, and this, says General Boese, "greatly changes the mindset" of today's squadrons.

Until a few years ago, he explains, each CONUS squadron in the erstwhile Tactical Air Command was earmarked for a specific overseas base in time of crisis and flew there fairly often, in Checkered Flag exercises, to size things up. As a result, he notes, the CONUS squadrons "knew everything there was to know about their [overseas] bases—where the fuel was, the dining hall, the trucks, the shops. Each squadron had pictures of its [overseas] base all over its walls."

Think "Region"

Now, says General Boese, "the squadron mindset at the mission-ready level has to be worldwide, not base-specific. A squadron may have some [predeployment] tasking to go to a [given] base, but it doesn't really know where it will go. This is true of all squadrons. They used to think 'base'; now they have to think 'region.'"

"I tell them to be ready for anything, that we'll probably send them to a different place from the one they think they'll be going to."

The switch to a global mindset at the squadron level "pretty much began with the stand-up of Air Combat Command [on June 1, 1992]," says General Boese, "but it has taken

us the past year and a half to put it in place. We've discussed it—reinforced it—with the squadron commanders. The mindset is out there now.

"Do I think our squadrons can deploy worldwide? You bet I do."

Logistics can be a big headache. Ironing them out is a prime purpose of deployments. Each arriving squadron must have fuel, oil, hydraulic fluid, parts, test equipment, munitions, facilities to house and feed its operations and support personnel, and communications and intelligence infrastructures, including cables and satellite receivers. There are only two ways to make all such items available: preposition them for pick-up on arrival or fly them in from CONUS as part of the deployment.

Flying them in puts a burden on airlift and vastly complicates the planning and execution of logistics support. Prepositioning can be a problem in other ways.

In remote regions, most US military stocks are prepositioned on ships offshore or in ports. Getting the supplies to the incoming troops and squadrons can be cumbersome and time-consuming. Also, prepositioning sites in familiar territory are harder to come by these days.

Every time a US air base shuts down in Europe, its bomb dump goes away. Where do the bombs go? Back to the States, ACC officers point out, because there is nowhere else to



Photo by Dana Bell

Backdropped by Mount McKinley, an F-16D of the 354th Fighter Wing, Eielson AFB, Alaska, practices air-to-ground operations. PACAF moved units from the Philippines to Alaska, a long way from southeast Asian nations on the Pacific rim.

put them. This means that a CONUS-based fighter wing deploying to that European base in a crisis would have to order up airlift to lug the bombs back where they came from. This would also be the case with some of the maintenance infrastructures once in place at former Air Force bases abroad.

"Where would we get the transports for all that?" one ACC officer asks.

Expeditionary squadrons from Stateside would also have to bring

along much more ordnance—missiles and ammunition—than before. The Air Force has found that fighters can carry, if necessary, an external load of air-to-air missiles on transoceanic flights without inducing unacceptable drag. This is not the case with bulkier air-to-ground missiles, which must be ferried in airlifters or by sea.

For fighter outfits deploying overseas, the keys to situational awareness on arrival, along with satellites, are combat-support aircraft, such as the E-3 Airborne Warning and Control System, the E-8 Joint STARS, the EC-130 airborne command-and-control, the RC-135 Rivet Joint, and the U-2 reconnaissance planes. All are in heavy demand during contingencies, as demonstrated by their extremely high operational tempo in many climes since the Cold War ended. Their crews are experienced deployers, but they must check out strange places every now and then.

Crucial Connectivity

For all types of expeditionary units preparing to deploy, the big questions, says General Boese, are these: "What's my infrastructure support going to be? My command and control? Who do I contact on arrival? Who am I going to work with once I get over there?" In short: "What's my connectivity?"

Connectivity in the form of coordinated communications is indispens-



A 366th Wing F-15E is readied for cold-weather operations in Alaska during Northern Edge. Air Force units deploying far from home require logistical support and must have situational awareness as soon as they arrive.



Pilots prepare for a mission over Korea in Team Spirit '93. Such exercises serve notice on potential aggressors that USAF does not have to be based in a given region to apply timely airpower there. All it needs is access.

able to composite forces consisting of diverse units and aircraft. Such forces are in high fashion in ACC.

"We have been working very hard to integrate bombers and fighters in composite-force packages," General Boese says. In Red Flag exercises and others, he says, bomber units are often the "core units," and their commanders the orchestrators, of such forces.

The core unit of a war-time ACC expeditionary force is likely to be the 366th Wing. Its commander, Brig. Gen. David J. McCloud, says the composite wing is a natural to fill that role.

"When we go someplace," he says, "and when other units arrive to augment us with their unique assets, we can integrate them immediately into our composite force. We become the hub of the wheel. We have found, through local exercises and deployments, that it's easy for us to do that, because we do it day in and day out—building air tasking orders for multiple types of [aircraft] and doing the composite mission."

In Bright Star, the 366th Wing deployed about 1,000 combat and support personnel, along with lots of gear, from Idaho to Egypt. Airlift demands were lower than they might have been. In its two years of existence, the composite wing has cut its original airlift requirements in half, says General McCloud, by eliminating redundant loads among its squad-

rons and by other means. For example, the wing now brings with it two power carts instead of six or more for its fighter squadrons and a trauma-type field hospital—"an operating room and some beds," says General McCloud—much smaller than the full-blown field hospital originally required.

Airlifting the smaller hospital requires one and a half C-141s, and airlifting the larger one requires seven C-141s, which makes it "much too logistics-intense for an expeditionary force," says General McCloud. The smaller one "is all we're going to need for the first seven days, and on day eight, the rest of the hospital would show up if required."

Operational Start-Up

On a typical deployment, the composite wing's bombers go first, followed by its KC-135s ferrying a "fast action support team." This team consists of communications experts, civil engineers, transportation specialists, food-service personnel, and others skilled in setting up the support infrastructure. Their job is to transform a bare base, such as the one in Egypt, into an operating base with water, tents, communications lines, and other necessities of daily life.

The KC-135s also carry fighter pilots and fighter crew chiefs.

"Our goal," says General McCloud, "is to have a portion of our

air-superiority assets on alert status very soon after we arrive. We need to have fresh pilots already in place, with a mission plan in their hands. When the fighters arrive, with wall-to-wall missiles on board, the tired pilots get out, the fresh crew chiefs plug in the gas trucks, the fresh pilots get in, and the fighters are ready to go."

Crew fatigue can be a big problem on extra-long flights, especially the around-the-clock flights increasingly commonplace for bomber crews. Air Force medical experts prescribe the proper foods, drinks, and eating and sleeping habits for crews to ward off fatigue, but sleeping is impossible in fighters and next to impossible in bombers.

"There's no easy way around [the problem]," says General McCloud. "It's one of the things we train for and practice for. [Crews] just have to get up there and do it."

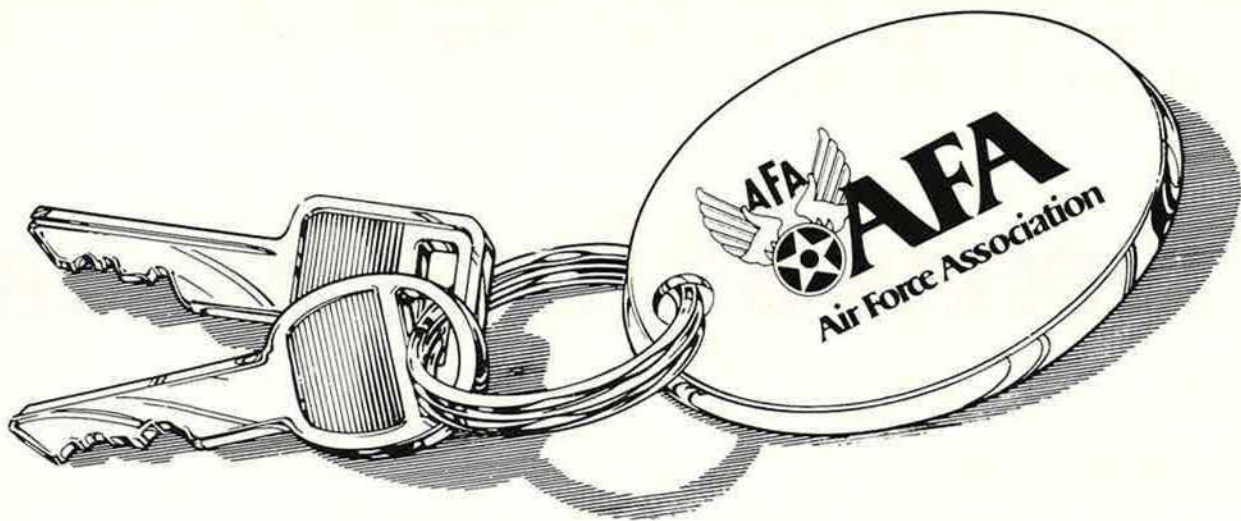
In Bright Star, the composite wing operated in support of Central Air Forces. Last March, it deployed to Alaska, in the exercise Northern Edge, for cold-weather work with—and sometimes against—11th Air Force fighter and attack units out of Elmendorf and Eielson AFBs. This summer, the composite wing will undertake its first joint Fleetex exercise with Navy and Marine forces.

"Joint operations are a must for an expeditionary force," General McCloud declares. "We need to mature in the joint arena, and we're going to get into every joint exercise we possibly can."

Another ACC composite wing, the "air-land" 23d Wing at Pope AFB, N. C., with F-16s, A/OA-10s, and C-130s, was joint from the start, tailored to team with the Army's 82d Airborne Division at nearby Fort Bragg, N. C. The Air Force is forming another air-land wing at Moody AFB, Ga.

General Loh calls the composite wings "our front-line forces of the future." Saluting the 366th Wing's performance in Bright Star, the ACC commander maintains that such exercises "send an important deterrence message to potential regional adversaries."

The message is that the Air Force does not have to be based in any given region in order to apply timely airpower there; all it needs is access. ■



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The Air Force decorates three Special Ops troopers—including an AFA Outstanding Airman of the Year—for bravery under fire.

Heroes at Mogadishu

By Frank Oliveri, Associate Editor

LAST October 3, a Somali gunman firing a rocket propelled grenade (RPG) launcher shot down a US Army MH-60 helicopter, sending the aircraft and its load of Rangers plummeting into the streets of Mogadishu. Somali irregulars raced to the scene. A successful Ranger raid, which had just bagged most of the high command of warlord Mohamed Farah Aideed, was about to go haywire.

Nearby, the main task force of some 100 Rangers, informed of the crash, snapped to alert. Under non-stop fire from automatic weapons and RPG launchers, the group moved 500 yards southwest to secure the crash site and protect Americans on the ground. The entire US party was soon engulfed in a ferocious firefight that lasted eighteen hours and became a war for survival against thousands of well-armed Somali toughs.

At battle's end, the US force had eighteen dead and eighty had been wounded. More than 300 Somalis were dead—including most of the original twenty Somali captives scooped up in the raid—and several hundred were wounded. It is not generally known that the US toll, bad as it was, could



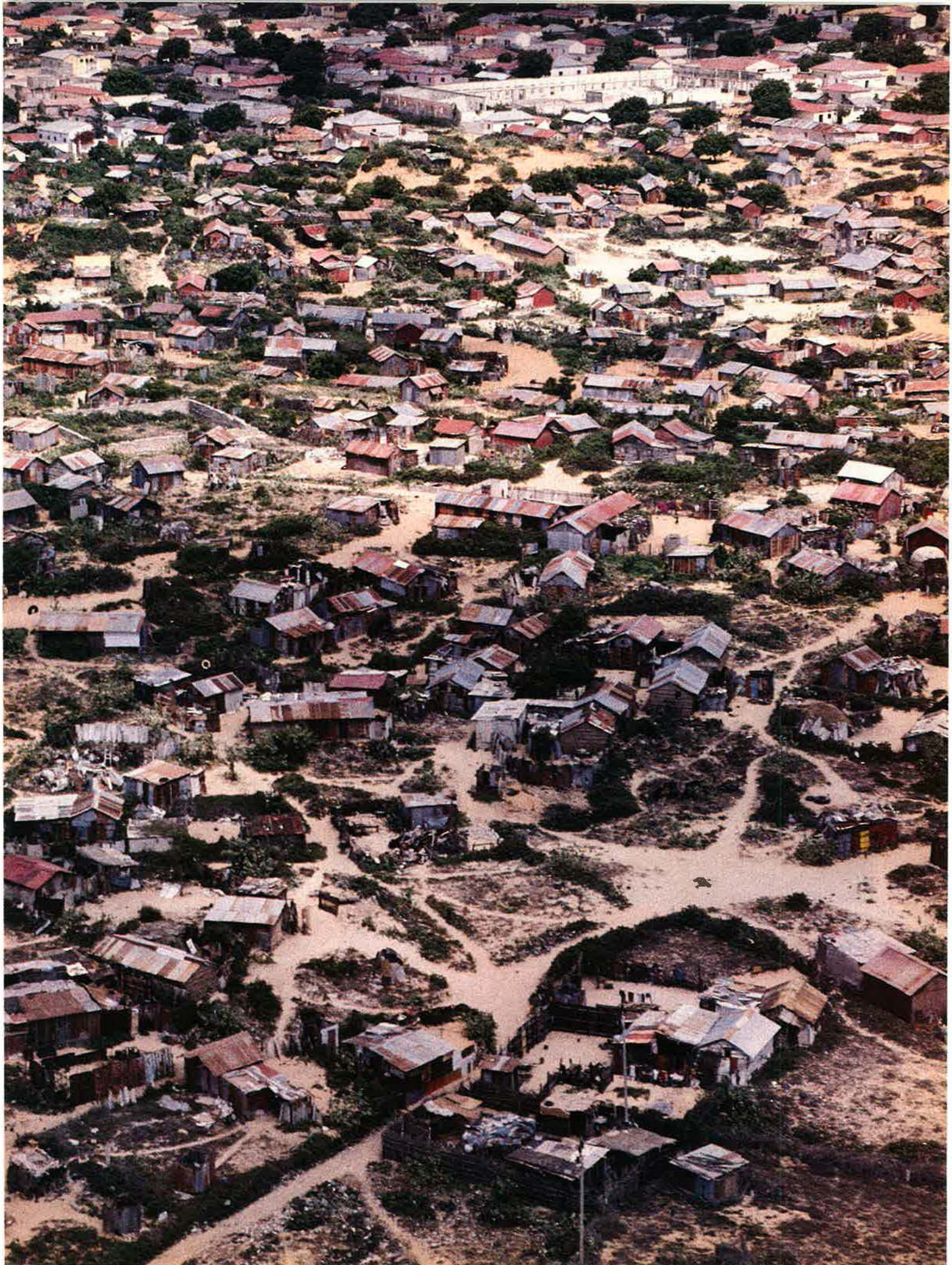
Silver Star and Purple Heart recipient MSgt. Scott Fales, who was wounded in the Mogadishu firefight, speaks of his battle experience. An AFA 1993 Outstanding Airman of the Year, Sergeant Fales fought bravely under harsh conditions in the Somali capital (opposite).

have been far worse had it not been for the uncommon valor of three airmen who played a major role in sustaining the wounded and beating back the attacks of the surrounding Somali forces.

They were TSgt. Timothy A. Wilkinson and MSgt. Scott C. Fales, both pararescue technicians, and SSgt. Jeffrey W. Bray, a combat controller. All three were assigned at the time to the 24th Special Tactics Squadron, Pope AFB, N. C. For his

Staff photo by Guy Acota

USAF photo by TSgt. David Nolan



actions October 3–4 in Mogadishu, Sergeant Wilkinson received the Air Force Cross, the Air Force's highest honor. Sergeants Fales and Bray also were honored, each winning a Silver Star. Earlier in 1993, Sergeant Fales had been named one of AFA's twelve Outstanding Airmen of the Year.

Sergeants Wilkinson and Fales went in as part of a fifteen-man combat search and rescue (CSAR) team sent in response to the downing of the helicopter. Sergeant Bray served with the main Ranger force whose goal had been to capture Aideed's top lieutenants.

A Wild One

The CSAR element came in by MH-60 helicopter. The pilot hovered his aircraft over the crash site despite intense small-arms and RPG fire. Sergeant Fales said that as they hovered, he thought, "This [is] going to be a wild one."

itself, they [the Rangers] had already progressed into the incident site," Sergeant Wilkinson said. "I set up some equipment and then started to make my way around the tail of the aircraft.

"That's when I saw Scott [Sergeant Fales] coming back around the corner, and I asked what was going on. He said he was going to the triage point. He said he'd been shot in the leg. I said, 'Shot? Holy s—!' Then I told him I was going into the incident site." With the help of a Ranger, Sergeant Fales limped back to the control point. He bandaged his own wound.

Sergeant Wilkinson saw that both helicopter pilots were dead, apparently killed when the helicopter crashed nose-first. The danger was compounded by the location of the crash site. It was on a rise in the road, exposing those in and around the aircraft to deadly crossfire.

Fales also found it necessary to start an intravenous line on himself to combat the onset of shock.

Sergeant Wilkinson worked furiously on patients. "One after the other, he continued working on people," Sergeant Fales said of his colleague. "He'd holler for some medical supplies every once in a while because"—here he smiled—"he always believes that you don't use your own med ruck. Always trash somebody else's."

Sergeant Wilkinson said, "As we carried folks back to the triage point, Scott positioned himself at the tail of the aircraft and was setting up and providing cover down the alleyways and up the street, and we would put the casualties behind him." Both medics, their citations noted, shielded the wounded from continuous rifle fire with their own bodies.

The airmen and Rangers ripped the bulletproof Kevlar floorboards from the downed MH-60 to build a barrier against Somali gunfire. Their position, up to that point, had been largely exposed. While building the shelter, Sergeant Wilkinson noticed Sergeant Fales sitting beside a Kevlar board. Wilkinson said, "Scott, why don't you get behind the damn boards?" Immersed in his work, Sergeant Fales had forgotten to seek cover.

A relief convoy was expected to come and pull the force out of the area. Sergeant Fales noticed some vehicles making their way to the site and called for a cease-fire to prevent friendly-fire casualties. At that point, Sergeant Wilkinson ordered Sergeant Fales onto a stretcher. He said, "No, I'm not getting on the litter. I'll shoot from here."

Finally, the troops convinced Sergeant Fales to get on a litter, but they found it necessary to tie him down. They soon learned that the convoy was meeting tremendous resistance and could not reach the area any time soon.

As the battle raged, cries for a medic came from across the intersection. Sergeant Wilkinson jumped up with his medical rucksack. Sergeant Fales and the Rangers around him were amazed and grimly amused when Sergeant Wilkinson turned to them, screamed, "Cover me!" and charged diagonally across the intersection.

There was no way Sergeant Fales or the wounded Rangers could provide covering fire against a foe shooting from every direction. Later, Ser-

Staff photo by Guy Aceto



TSgt. Timothy Wilkinson received the Air Force's highest honor—the Air Force Cross—for saving several lives and fearlessly placing himself in great danger while caring for wounded Army Rangers.

While Sergeants Wilkinson and Fales and thirteen Rangers slid down the ropes, their Pave Hawk took a direct RPG hit to its main rotor. The pilot held the crippled aircraft in position until troops were clear of the ropes. The helicopter made it home.

Intense AK-47 and RPG fire poured in from every direction as the two airmen assessed the situation. "By the time I got over to the aircraft

Five wounded Rangers were still on board the riddled aircraft. With the help of other Rangers, Sergeant Wilkinson extricated the injured one by one and brought them to the aid point where Sergeant Fales, despite his own wound, provided medical care. When all the wounded from the crash were gathered at the control point, Sergeant Wilkinson continued medical care and Sergeant Fales provided covering fire. Sergeant

geant Wilkinson said sheepishly, "It seemed like the appropriate thing to say. They do it in the movies, you know."

Sergeant Wilkinson made two more dashes across the four-way intersection, crying "Cover me!" each time, bringing armloads of medical supplies that would save the lives of at least three badly wounded Rangers. The Ranger team leader on the scene said that Sergeant Wilkinson displayed absolutely no fear.

In the meantime, Sergeant Fales had squirmed out of his litter bonds and continued to care for the wounded coming in.

Somali gunfire was fierce but seemingly random and inaccurate, Sergeant Fales said. It is now known that nearly any Somali with a weapon showed up to take shots at the Americans. They often used women and children as spotters; others seemed crazed, firing automatic weapons indiscriminately.

The Tide Turns

As dusk approached, Sergeant Fales took up a security position, from which he helped suppress rifle and RPG fire. However, he could not prevent it all. When five grenades flew over a wall toward the casualty point, Sergeant Fales yelled a warning and threw himself over two injured Rangers to protect them from shrapnel. Miraculously, the shrapnel missed everyone.

While Sergeant Fales stayed at the casualty point, then moved himself and the other casualties to a secure location, Sergeant Wilkinson remained with the wounded Rangers on the other side of the intersection for the remainder of the battle.

The Rangers were surrounded. Somali assaults continued. Another US helicopter was lost to ground fire, and the initial US quick-reaction force, sent to relieve the Ranger unit, sustained heavy casualties and was forced to pull back to wait for UN armored support.

Ammunition ran low for the lightly armed and outnumbered Rangers and airmen. Dehydration set in. Extreme exertion, lack of water, and the African heat were taking their toll. The Americans also contended with heavy RPG fire, which rocked the streets and buildings around them. As night fell, however, the Rangers and airmen felt the tide turn. Trained to



Staff photo by Guy Aceto

Silver Star recipient SSgt. Jeffrey Bray, a combat controller, directed precise helicopter rocket and machine-gun fire against Somali emplacements. The artillery fire was so close that shell casings fell on the surrounded US servicemen.

fight in darkness, Sergeant Bray said later, "We're most at home at night."

RPGs and rifle rounds were still cracking everywhere, and the roar of battle was continuous. "The RPGs, as they slammed into the walls and exploded, really shook everything," Sergeant Wilkinson said. "It definitely had a roll to it. . . . In target practice, you lie beside someone who is shooting, without ear protection, and it's deafening. That sound jars your brain. Well, while you are doing all this, and you're in a firefight, you don't hear any of that. It registers in your mind that all that is going on, but there is almost an absolute silence to things at the same time there is a deafening roar."

Despite superior numbers, the Somali force continued to make serious errors. Sergeant Bray recalled that the American group had set up a security position in a house and that

the local gunmen "would walk down in twos and threes right by the windows of the house that we were in. They were talking to each other, and we would sit right there and drop them. I remember thinking, 'What are they doing? We've been fighting from the same house all day. How can they not know we're here?'"

That night Sergeant Bray proved invaluable to the survival of the task force. He coordinated helicopter gunship fire on targets all around his position. His citation said he "personally redefined the term 'danger close.'" He developed tactics and techniques on the spot that allowed him to mark friendly forces' locations so that helicopter gunships could destroy close enemy concentrations.

Sergeant Bray said he sent runners out to marked points. In many cases, these points were marked with infrared strobe lights, which only

Requiem for the Other Heroes

In a statement issued after the three airmen received their decorations from Gen. Merrill A. McPeak, Air Force Chief of Staff, TSgt. Timothy A. Wilkinson, representing all three, said, "We feel it's necessary to put things in perspective. Today, you have honored us, and we are humbly grateful. I say humbly grateful because, though we are privileged to enjoy the honors you have bestowed upon us for our efforts, one must be humbled by the sacrifices of our comrades who are no longer with us—our fallen teammates—who have given the fullest measure. There is no greater love than for one man to give his life for another. We would ask, as you have honored us today, remember our fallen teammates, and when you remember these events of today and of 3-4 October, that you remember them, their families, and their loved ones."



The airmen faced possible death in combat with great fortitude and even humor. Sergeant Bray became angry that he might not ride his motorcycle again, while Sergeant Fales fretted that he would never fish again.

the orbiting gunships could see. The runners found targets and relayed the information to Sergeant Bray. He plotted each location and called the missions in to the gunships. He said he plotted the locations out beyond the targets and corrected the fire by walking it in to enemy positions. At times, he coordinated fire on targets only fifteen meters away.

Sergeant Bray's citation said his actions were integral to the survival of the Ranger task force. His expertise in controlling air-to-ground fire almost without question prevented friendly-fire casualties.

The Americans were aware of their extreme vulnerability. All three sergeants, at one time or another, faced the likelihood of dying. "There were points, I think, where everybody—though nobody actually said it—thought, 'This is going to be it,'" Sergeant Wilkinson said later. "At the point when we got the call that the Humvee [High-Mobility Multi-purpose Wheeled Vehicle] element, which was trying to get through to us, could not because they had taken too-heavy casualties, and it was going to be a long time before help came, several of us thought, 'We'll fight until we have no more ammo. This is how it's going to end.'"

Sergeant Wilkinson said there was never a sense of futility, only a sense of purpose. "When Jeff [Sergeant Bray] was calling in danger close missions on the wall right next to

us—that I'm almost leaning up against—and hot brass is raining down on my head, and the whomp of the rockets they are shooting is shaking the house, you have a sense that things are *indeed* grave."

At one point, Sergeant Wilkinson said, he saw a flash of light and heard clicking. He quickly swung his weapon around and leveled it at the noise and flash. Over on a couch in the room was an injured Ranger. Sergeant Wilkinson said, "This guy had just been through a heck of a battle. He had shrapnel wounds from his foot up to his backside and his side to his face. I said, 'What are you doing over there?' He said, 'I'm trying to light a cigarette, Sarge.' I said, 'Man, you've got to stop that smoking. That s— will kill you.'"

The two later joked that they were hungry and should file for missed meals and, perhaps, a per diem for a night on the town.

Sergeant Fales said that the Somalis moved up a heavy machine gun. He and the wounded sprawled on the floor when the gun began spitting bullets through the house. "Somebody started firing this heavy machine gun straight through the walls," Sergeant Fales said. "As these tracers [went] through, it lit the room up like a flashbulb going off." Scrambling Rangers would appear frozen, and debris suspended in the air, each time a strobe-like tracer round flashed through.

One Ranger, badly wounded, immobilized, and in a lot of pain, couldn't reconcile himself to the fact that he could not take part in the fight. Sergeant Fales said, "He wanted to get up and help so bad. He had a pretty serious wound. . . . He would try to get up. Then he would collapse and say, 'God, I'm worthless.'"

Sergeant Bray said that when he realized he might not survive the battle, his only regret was that he might not ride his beloved motorcycle again.

"I had a Harley-Davidson," he said, "and I had just spent a lot of money on it. That morning I got a package in the mail—[the Harley] had a custom paint job—and it had pictures of it," Sergeant Bray said. "I was so excited; I was running around showing everybody. I remember going back to where Tim [Sergeant Wilkinson] was and saying, 'You know what [irritates] me about this? I'm not going to get to ride that damn Harley now.'"

Sergeant Fales worried that he would never go fishing again.

Help at Last

Help finally broke through in the early morning of October 4 in the form of an armored UN task force. By 7:00 a.m., local time, most of the original task force had walked to safety. Somali gunmen melted back into the dusty streets and houses. Upon arrival at their base of operations, the men quickly were overcome by exhaustion, and many dropped off to sleep.

All three airmen credited their survival to training—intense, realistic, and frequent. "We train a lot, and it takes the stress out of it," Sergeant Fales said. "Everything is muscle memory. I don't even remember changing magazines in my rifle. It was happening so fast. [We were] moving from cover to cover. There's a thought process for some people, but for us, we train like we're going to fight. We trained to react in a certain way, so we did.

"We were thinking ahead all the time. We were planning what we were going to do all the time. When one factor would weigh against us, no one [said], 'Well, that's it. Fort Pit. It's over.' Everybody said, 'OK, they did this. Now we're going to do this and move here.'"

"Our training was right on the money." ■

The Landlord Speaks

"I have the document to prove that the czar did not *sell* it to you; he *leased* it to you for ninety-nine years, the way China leased Hong Kong to the United Kingdom."

Vladimir Zhirinovsky, head of Russia's extremist, ultranationalist Liberal Democratic Party, in a statement to interviewer Ranan R. Lurie concerning Russia's legal claim to Alaska, as reported in New York Newsday, April 7, 1994.

From Land, From Sea

"No one will deny that we should have some part of our tactical air force capable of launching from sea-borne bases. It's absolutely invaluable. . . . It's more expensive, . . . but it's worth it, for those contingencies where bases are not immediately available or if for some other reason we're blocked from using bases for a while at the outset. The real question is, How much can we afford? How much of our total tacair capability can we afford to configure this way? I'm a little bit concerned that, as the Air Force tactical fighter force has been cut in half, roughly, since 1988, down to twenty wings, . . . this is too small a fraction of the nation's total tacair to be configured in this form."

Gen. Merrill A. McPeak, USAF Chief of Staff, in February 18, 1994, remarks at an AFA symposium in Florida.

To the Eastern Front

"We're leaving because we're under orders to leave, but none of us want to go. I won't have a place to live when I get back home. The Germans killed millions of our people and burned a third of our country [in World War II], and now they're all rich, and we're being kicked out like dogs."

Unnamed Russian Army officer, quoted March 4, 1994, in the New York Times as thousands of Russian troops based at Wünsdorf, Germany—once a huge Soviet garrison—prepared to board trains and return permanently to Russia.

Four Days

"The real issue is, How fast might the north [North Korean troops] move south if they chose to? They've got about seventy percent of that sizable force located within sixty miles of the border. It has been estimated that they have more than 4,000 artillery pieces and 2,000 rocket launchers on that border, many of which are within range of the outskirts of Seoul. . . .

"Seoul . . . contains about a quarter of the population [of] Korea. I think it's instructive to look back at what happened in the summer of 1950. Seoul fell in four days."

Gen. Robert L. Rutherford, commander in chief, Pacific Air Forces, in February 17, 1994, remarks at an AFA symposium in Florida.

One Man's Luxury . . .

"We've got . . . bases today in places like Rhein-Main, Aviano, and Incirlik. What if we didn't have bases in Europe and the USAFE people that run these bases? Is forward basing really a luxury? If we were to conduct . . . lesser regional conflicts from the United States on a pure[ly] rotational basis, as some have suggested, what would it cost? . . . We conducted a comparative analysis using real-world data from our operations in Bosnia-Herzegovina. . . . It turns out that deploying these Air Force personnel and equipment from within Europe for a Bosnia-sized operation saves about \$55 million a year, when compared to rotation from the east coast of the United States. The cost avoidance is even higher—\$90 million a year—if we consider an operation from a main operating base with permanently assigned forces."

Gen. Robert C. Oaks, commander in chief, US Air Forces in Europe, in February 18, 1994, remarks at an AFA symposium in Florida.

Go Ahead, Make My Day

"If the people who were amnestied by the State Duma even begin any sort of activity which threatens the security of the Russian Federation, they will be re-arrested."

Russian President Boris N. Yeltsin, in March 3, 1994, remarks to the Russian Security Council following release from prison of several ringleaders of the October 1993 parliamentary uprising, which resulted in bloodshed and the arrest of many opposition Russian politicians.

MIA Progress

"We have a permanent office in Hanoi. We have visited every tradition house and museum in [Vietnam]. We have been in the prisons. We have followed up on every live sighting report, with no evidence that any of them are true. We have a full-time archive in Hanoi where Americans and Vietnamese are working side by side to resolve remaining questions. We have received thousands of artifacts, photographs, and documents. We have a formal program of debriefing Vietnamese wartime leaders. We have reduced the list of [unsolved] discrepancy cases. . . . Six months ago, that number was ninety-two. It is now seventy-three. That means we know what happened to another nineteen servicemen. We know they are not languishing in cages, as some suggest. . . . We know where and how they died. We know they did not die after 1973 but earlier. That is progress."

Sen. John F. Kerry (D-Mass.), former chairman of the Senate Select Committee on POW and MIA Affairs, in a January 27, 1994, floor speech to the Senate.

The Draft Is Dead

"With reduced force levels combined with two decades of successful experience with raising and maintaining a volunteer force, . . . recent victorious wartime experiences, and the quality of active and reserve personnel, it is highly unlikely that we will have to reinstate the draft in the foreseeable future."

Excerpt from a March 3, 1994, Defense Department report to Congress on the future utility of peacetime draft registration and the Selective Service System. ■

RUSSIAN MILITARY ALMANAC

By Tamar A. Mehuron, Associate Editor, with Harriet Fast Scott, William F. Scott, and David Markov

ORGANIZATION OF THE RUSSIAN ARMED FORCES

During their two years of existence, the Russian Armed Forces have undergone many changes, brought about by political, economic, and technological realities. The Commonwealth of Independent States (CIS) agreed in February to form a Council of Defense Ministers. Russian Deputy Defense Minister Gen. Col. Boris Gromov was appointed chairman of the first session. The chairmanship will rotate among the members.

The structure of the Armed Forces of the Russian Federation is very similar to that of the now-defunct Soviet Armed Forces. A primary difference is that the five service commanders in chief are no longer deputy defense ministers, and they may not have the same power. As before, Russians frequently refer to the Ground Forces, Strategic Rocket Forces, Troops of Air Defense, and Air Forces as "the Army." Functions performed by the US Air Force are spread across the latter three Russian services.

The Defense Ministry. Gen. of the Army Pavel Grachev has completed his second year as Minister of Defense, with Gen. Col. Mikhail Kolesnikov, chief of the General Staff, and Dr. Andrei Kokoshin as his first deputies. As a result of the violent events of early October 1993, when Russian tanks fired point-blank into the Russian parliament building, rumors have abounded about major shifts and retirements in the top Russian military structure. As of spring 1994, nothing significant had happened.

The Strategic Rocket Forces (RVSN) apparently continue to rank first in importance among the five Russian services. It is this force, Moscow spokesmen admit, that enables Russia to maintain its position as a military superpower. Deep shelters housing the underground command posts are being maintained. Despite the number of these already in existence, billions of rubles are being spent on the construction of another massive underground battle station in the Ural Mountains near Ufa. A new mis-

sile is under development to replace the mobile, single-warhead SS-25. In contrast to the other services, which are undermanned from thirty to fifty percent, the Strategic Rocket Forces maintain close to their full complement of personnel.

For a brief period, control of the strategic nuclear forces in Russia, Ukraine, Belarus, and Kazakhstan went through the Commander in Chief of the Joint Armed Forces of the CIS. This structure is now out; command and control are centered in Moscow, with "black boxes" in the hands of the Russian President, Minister of Defense, and Chief of the General Staff. In accordance with provisions of the START I and START II agreements, all ICBMs and related warheads in Belarus, Ukraine, and Kazakhstan were to be transferred to Russia. Belarus is complying fully with the provisions. Both Ukraine and Kazakhstan have pledged to meet this requirement, though final compliance is by no means certain.

The Troops of Air Defense (VPVO) remain the second largest service, possessing interceptor aircraft, radars, and surface-to-air missiles, along with a branch devoted to missile and space troops. This latter branch has two components: (1) missile, space, and air attack early warning troops and (2) direct missile and space defense, plus the space control system. Consideration is being given to redesignating the service "Air-Space Defense Troops."

With the breakup of the USSR, Russian General Staff planners were concerned that early warning radars located on the territory of former Soviet republics would be lost to Russian use. For the present, however, bilateral military agreements and the new CIS security structure will permit most early warning sites to continue operations. Arrangements also appear to have been made with Latvia to let the early warning radar there continue operations. The VPVO forces in the Moscow Air Defense District have

ninety-two percent of authorized officer personnel and eighty-five percent of other grades. VPVO units elsewhere can muster less than fifty percent of authorized strength.

The Air Forces (VVS) are divided into long-range (strategic), frontal (tactical), and transport aviation. Long-Range Aviation and Military Transport Aviation each have a designated commander; Frontal Aviation units were subordinate to the TVD or military district commanders. Changes are under way in the frontal aviation structure, and a single commander has been appointed. This will permit concentration of airpower in support of mobile forces.

Research and development work continues. In January 1994 the press heralded a new-generation fighter prototype, which, in the words of one report, "has no parallel in aviation history." This prototype is forecast to become the superfighter of the twenty-first century. Attention also is given to the new fourth-generation Su-34 tactical bomber, designed to replace the Su-24 and Su-25. The Su-34 is advertised as having a range of 4,000 kilometers (about 2,500 miles) using internal tanks only and equipped for aerial refueling.

With the breakup of Aeroflot, the emergence of small airlines, and a shortage of maintenance and fuel, Russia's civilian air transport is no longer able to serve effectively as a backup to military transport aviation. This undercuts the ability of Military Transport Aviation to simultaneously provide lift for airborne forces and perform other air transport tasks. Hopes are placed on the new Il-96M airbus, planned to carry 380 passengers and with range and fuel efficiency increased by installing US engines and equipment. Military transport pilots were the only Russian flyers who escaped flying-hour cuts in 1993.

The Ground Forces (SV), numerically the largest of the five services, remain divided into motorized rifle troops, tank troops, airborne troops,

rocket and artillery troops, and air defense troops. It is not intended, however, to recreate a massive, Soviet-style, general-purpose force. Plans are under way to form mobile forces, consisting of immediate-reaction forces and rapid deployment forces. The first would be able to react within twenty-four hours, the second within three days. Airborne troops and transport aviation may become the major components of this new structure.

For the present, the primary role of the Ground Forces is peacekeeping, both within Russia and in the "near-abroad"—the republics of the former Soviet Union.

The Navy (VMF) is in serious trouble. Large numbers of Russia's warships are reported to be rusting in various ports in the Arctic, Pacific, Black Sea, and Baltic Sea. Personnel shortages exist in all units. However, a new submarine-launched ICBM is

scheduled for production, as is a new multipurpose attack submarine. The Russian Navy continues to maintain its Cold War submarine bases in Cienfuegos, Cuba, and the port at Cam Ranh Bay, Vietnam. At present, the Navy is responsible for about one-quarter of all of Russia's strategic nuclear potential. Knowledgeable observers said they expect this figure to grow to roughly forty-five percent in the years ahead.

Lineup of Russian Aerospace Power, 1993

Strategic Rocket Forces

884—Intercontinental Ballistic Missiles. SS-11: 95. SS-13: 40. SS-17: 40. SS-18: 195. SS-19: 170. SS-24: 46 (10 silo-based, 36 rail-based). SS-25: 298 (road-mobile).

284—External Russian-Controlled ICBMs.* SS-18: 94. SS-19: 110. SS-24: 26 (all silo-based). SS-25: 54 (road-mobile).

74—Long-Range Bombers. Tu-95 Bear-B/G: 43. Tu-95 Bear-H: 27. Tu-160 Blackjack: 4.

788—Submarine-Launched Ballistic Missiles. SS-N-6: 64. SS-N-8: 268. SS-N-18: 224. SS-N-20: 120. SS-N-23: 112.

52—Strategic Ballistic Missile Submarines. Delta I-class: 17. Delta II-class: 4. Delta III-class: 14. Delta IV-class: 7. Typhoon-class: 6. Yankee-class: 4.

*See "Eurasian Strategic Nuclear Weapons," page 38.

Air Defense Forces

1,350—Interceptors. MiG-23 Flogger: 676. MiG-25 Foxbat: 174. Su-27 Flanker: 200. MiG-31 Foxhound: 300.

25—Airborne Early Warning and Control Aircraft. A-50 Mainstay: 15. Tu-126 Moss: 10.

100—Strategic Antiballistic Missile Launchers. ABM-3 (SH-11) Gorgon: 36. ABM-3 (SH-08) Gazelle: 64.

3,175—Strategic Surface-to-Air Missile Launchers. SA-2: 300. SA-3: 200. SA-5: 600. SA-10: 2,075.

Air Forces

195—Medium-Range Theater Bombers. Tu-16 Badger: 30. Tu-22 Blinder: 65. Tu-22M Backfire: 100.

1,031—Tactical Counterair Interceptors. MiG-23 Flogger: 400. MiG-25 Foxbat: 21. MiG-29 Fulcrum: 430. Su-27 Flanker: 150. MiG-31 Foxhound: 30.

1,192—Ground-Attack Aircraft. MiG-27 Flogger: 400. Su-17/22 Fitter: 120. Su-24 Fencer: 480. Su-25 Frogfoot: 192.

630—Reconnaissance/ECM Aircraft. Tu-16 Badger: 70. Tu-22 Blinder: 30. MiG-25 Foxbat: 85. Su-24 Fencer: 90. Su-17 Fitter: 50. Yak-28 Brewer: 40. Il-20/22 Coot: 20. An-12 Cub: 125. An-26 Curl: 100. An-30 Clank: 20.

50—Tanker Aircraft. 3MS-2 Bison: 10. Tu-16 Badger: 20. Il-78 Midas: 20.

718—Main Aircraft of Military Transport Aviation. An-12 Cub: 350. An-22 Cock: 45. Il-76 Candid: 297. An-124 Condor: 26.

666—Other transports. An-2 Colt: 300. An-24 Coke: 100. An-32 Cline: 50. An-72/74/79: 20. An-225: 1. Tu-134/154: 20. Yak-40 Codling: 25. L-410VP Turbojet: 150.

Naval Aviation Forces

2—Aircraft Carriers. *Kuznetsov*-class CTOL ship: 1. *Gorshkov*-class VTOL ship: 1.

195—Bombers and Strike Aircraft. Tu-16 Badger: 15. Tu-22 Blinder: 15. Tu-22M Backfire: 165.

82—Fighter Interceptors. MiG-29 Fulcrum: 47. Su-33 Flanker: 20. Yak-38 Forger: 15.

227—Fighter/Attack Aircraft. Su-17 Fitter: 35. Su-24 Fencer: 107. Su-25 Frogfoot: 55. MiG-27 Flogger: 30.

6—Tankers. All Tu-16 Badger.

84—Reconnaissance/Electronic Warfare Aircraft. Tu-16 Badger: 24. Tu-95 Bear-D: 24. Tu-22 Blinder: 6. Su-24 Fencer: 20. Il-20 Coot: 3. An-12 Cub: 7.

388—Antisubmarine Warfare Aircraft. Tu-142 Bear-F: 58. Il-38 May: 36. Be-12 Mail: 55. Ka-25 Hormone-A: 88. Ka-27 Helix-A: 88. Mi-14 Haze-A: 63.

Space Facts

■ In 1993, the Russian press revealed that the USSR and its successor, Russia, had launched roughly 2,300 spacecraft since 1957. Some 1,400 launches were military; 300 were dual-purpose. At least three of seven "peaceful" laboratories were put in orbit for classified purposes.

■ In 1992, Russia formed the Military Space Forces as a branch of the Supreme High Command. It operates reconnaissance, communications, and navigational satellites in addition to the Baikonur and Plesetsk cosmodromes and Russian spacetrack stations. The new entity also manages manned spaceflights. Another new branch, Missile and Space Defense Troops, has been added to the Troops of Air Defense. The world's only antiballistic missile system, protecting Moscow, is under this branch.

■ In December 1993, the Russian Federation Council of Defense Ministers issued a statute on "State Support and Backing for Space Activity of the Russian Federation." This law provides a detailed plan for support of the Russian space program until 2000. Funds for this purpose are to be "protected" budget items. The Russian Space Agency and the Military Space Forces are to conclude contracts to construct rocket and space equipment and a new cosmodrome in the Far East.

■ In 1993, Russian Military Space Forces conducted twenty-six launches from Plesetsk, putting into orbit thirty-six satellites, and twenty-two launches from Baikonur, putting in twenty-three satellites. Two-thirds of these launches were for the Ministry of Defense. The year's launches marked a slight decline from 1992, when Russia conducted fifty-five launches of seventy-five spacecraft.

RUSSIAN DEFENSE MINISTRY

Gen. of the Army Pavel Sergeevich Grachev



Born 1948. Russian. Russian Federation Minister of Defense since May 1992. Member of Security Council (October 1993, February 1994). Actively supported Boris Yeltsin in October 1993 crisis. Commander of a detached airborne regiment, then chief of

staff, commander of an airborne division in Afghanistan. Five years in two tours in Afghanistan (1981-83, 1987-89). First Deputy Commander of Airborne Troops. Commander of Airborne Troops (December 1990 to August 23, 1991). First Deputy Minister of Defense, USSR, and Chairman of the State Committee, RSFSR, for Defense Questions (August 23, 1991). First Deputy Commander in Chief, Joint Armed Forces CIS (January-April 1992). First Deputy Minister of Defense, Russian Federation (April-May 1992). Ryazan Higher Airborne Command School (1969). Frunze Military Academy (1981). Military Academy of the General Staff. Hero of the Soviet Union (1988). Promoted May 1992. Married, two sons.

Gen. Col. Mikhail Petrovich Kolesnikov



Born 1939. Russian. Chief of the General Staff and First Deputy Minister of Defense since December 1992. Served thirteen years in the Far East. Commander of a corps (1983). Commander of an army in the Transcaucasus Military District, USSR. Chief of

Staff and First Deputy Commander of the Military District of Siberia (1987). Chief of Staff and First Deputy Commander in Chief of the Southern TVD, USSR (1988). Chief of the Main Staff and First Deputy Commander in Chief, Ground Forces, USSR (1990). Deputy Chief of the General Staff, Chief of the Main Organization and Mobilization Directorate (1991). Same for Joint Armed Forces CIS (April-June 1992). First Deputy Chief of the General Staff, Armed Forces of the Russian Federation (June-December 1992). Omsk Tank-Technical School (1959). Malinovsky Military Academy of Armored Forces (1975). Military Academy of the General Staff (with gold medal, 1983). Promoted 1990. Married, son and daughter.

Dr. Andrei Afanasievich Kokoshin



Born 1945. Russian. Civilian First Deputy Minister of Defense since April 3, 1992. Deals primarily with the military-industrial complex. On Council for the Military-Technical Policy of the Ministry of Defense. Previously Deputy Director of the Institute of

the United States and Canada, specialist for military-political questions and national security. Graduated from the Moscow Bauman Institute of Technology (1969). Doctor of Sciences (History). Professor. Corresponding member, Russian Academy of Sciences. Reserve officer. Married, two children.

Gen. Col. Vladimir Mikhailovich Toporov



Born 1946. Russian. Deputy Minister of Defense (for logistics and quarters) since June 10, 1992. Coordinates Rear Services (food, clothing, fuel, medicine, military stores) and Construction and Billeting of the Russian Federation Armed Forces (includes

special construction). Member of Russian Federation permanent delegation for talks with

UNIFORMED CHIEFS OF THE MILITARY SERVICES

Gen. Col. Igor Dmitrievich Sergeiev



Born 1938. Russian. Commander in Chief, Strategic Rocket Forces, since August 26, 1992. Transferred from coastal artillery to Strategic Rocket Forces in 1960. Chief of staff, then commander, of a rocket division (1975). Chief of staff and first deputy

commander of a rocket army (1980-83). Deputy Chief of Main Staff of Strategic Rocket Forces (1983), then First Deputy (1985). Deputy Commander in Chief, Rocket Troops, USSR, for Combat Training (1989 to December 1991). Deputy Commander, Strategic Forces, Joint Armed Forces CIS; Deputy Commander, Strategic Rocket Forces for Combat Training (January to August 1992). Black Sea Higher Naval School (1960). Dzerzhinski Military Engineering Academy (1973). Military Academy of the General Staff (1980). Promoted in 1991. Married, one son.

Gen. Col. Vladimir Magomedovich Semenov



Born 1940. Karachai-evets. Commander in Chief of the Ground Forces since August 1992. Chief of staff and deputy commander (1975-76), then commander of a division (1979). Commander of an army corps (1982) and commander of an army

(1984). First Deputy Commander, Transbaykal Military District (1986-88), then Commander (1988-91). Commander in Chief of the Ground Forces and Deputy Minister of Defense, USSR (August 31 to December 31, 1991). Commander of General Purpose Forces, Joint Armed Forces CIS (March 1992). Baku Higher Combined Arms Command School (1962). Frunze Military Academy (1970). Military Academy of the General Staff (1979). Promoted in 1989. Two daughters.

Gen. Col. of Aviation Victor Alexeievich Prudnikov



Born 1939. Russian. Commander in Chief of the Troops of Air Defense since August 1992. Commander of a fighter aviation regiment for over two years (1971). Deputy commander (1973), then commander (1975) of an air defense division; first deputy commander of a

detached air defense army (1978-79 and 1981), then commander (1983). Deputy commander of a district for Troops of Air Defense. Commander of the Moscow Air Defense District (1989-91). Commander in Chief of the Troops of Air Defense and Deputy Minister of Defense, USSR (August 25-December 31, 1991). Commander, Troops of Air Defense, Joint Armed Forces CIS (January

Kazakhstan. Twenty years in Airborne Troops. Chief of Staff and First Deputy Commander, Far East Military District (1989–91). Commander of Moscow Military District (September 1991). Odessa Artillery School (1968). Frunze Military Academy (1975). Military Academy of the General Staff (1984). Promoted 1991. Married, two sons.

Gen. Col. Valery Ivanovich Mironov



Born 1943. Russian. Deputy Minister of Defense (for contract service, training, assignments) since June 10, 1992. Member of Russian Federation's permanent delegation for talks with Estonia. From December 1979 to 1982, Commander of the 108th

Motorized Rifle Division, part of the 40th Army that invaded Afghanistan. First deputy commander, then commander of an army, Soviet Forces Germany (1984–89). First Deputy Commander of the Leningrad Military District (1989–91). Commander of the Baltic Military District, renamed (November 1991) the Northwest Group of Forces (September 1991). Moscow Higher Combined Arms Command School (1965). Frunze Military Academy (1973). Military Academy of the General Staff (1984). Promoted 1991. Married, daughter and son.

Gen. Col. Georgi Grigorievich Kondratiev



Born 1944. Russian. Deputy Minister of Defense (peacekeeping, troubleshooting for "hot spots" in near abroad) since June 10, 1992. First deputy commander of a tank army in the Turkestan Military District (1985). First Deputy

Commander of the 40th Army in Afghanistan (1986–88). Commander of an army (1988). First Deputy Commander (1989), then Commander (1991) of the Turkestan Military District. Kharkov Guards Tank Command School (1965). Malinovsky Military Academy of Armored Forces (1973). Military Academy of the General Staff (with gold medal, 1985). Promoted 1992. Married, daughter and son.

Gen. Col. Boris Vsevolodovich Gromov



Born 1943. Russian. Deputy Minister of Defense since June 25, 1992. (Troubleshooter for withdrawal from areas outside Russia. Involved in peacekeeping, nuclear arms reductions, and services' flying safety.) First Chairman of the CIS Council of Defense

Ministers (March 1994). From early 1980 to 1982, part of the 108th Division in Afghanistan. Served again in Afghanistan from March 1985 to April 1986. Commander of an army in

Belorussian Military District (1986). As the last Commander of the 40th Army (1987–89), completed withdrawal from Afghanistan. Commander, Kiev Military District (1989–90). First Deputy Minister of Internal Affairs (December 1990–September 1991). First Deputy Commander of Ground Forces/General Purpose Forces, Joint Armed Forces CIS (1992). Suvorov military prep school. Leningrad Higher Combined Arms Command School (1965). Frunze Military Academy (1972). Military Academy of the General Staff (with gold medal, 1984). Promoted in 1989. Hero of the Soviet Union. First wife killed in airplane accident. Two sons. Remarried.

Gen. of the Army Konstantin Ivanovich Kobets



Born 1939. Russian. Deputy Minister of Defense since June 1993. Chief Military Inspector of the Armed Forces (September 1992). Doctor of Military Sciences. Professor. Chief of Signal Troops, USSR, and Deputy Chief of the General Staff

(1987–91). Actively supported Yeltsin in October 1993 crisis. In 1991–92, Chairman of the State Committee, RSFSR, for Defense and Security; State Advisor, RSFSR, on Defense; since September 1991, at the same time Chairman of the Committee to Prepare and Carry Out Military Reform. Kiev Military Signals School (1959). Military Signals Academy (1967). Military Academy of the General Staff (1978). People's Deputy Russian Federation. Promoted 1991. Married, one son.

1992). Armavir School for Pilots (1959). Gagarin Military Air Academy (1967). Military Academy of the General Staff (1981). Military Pilot First Class. Promoted in 1989. Married, one son. (Younger son died in September 1991.)

Gen. Col. of Aviation Peter Stepanovich Deynekin



Born 1937. Russian. Commander in Chief of the Air Forces since October 1992. Bomber pilot. Deputy commander (1982), then commander of an air army (1985). Commander of Long-Range Aviation (1988). First Deputy Commander in Chief, Air Forces

(1990–91). Commander in Chief of the Air Forces and Deputy Minister of Defense, USSR

(August 31–December 31, 1991). Commander, Air Forces, Joint Armed Forces CIS (January–July 1992). Balashov Military Aviation School for Pilots (1957). Gagarin Military Air Academy (1969). Military Academy of the General Staff (with gold medal, 1982). Distinguished Military Pilot (1984). Promoted 1991. Married, three children.

Adm. Felix Nikolaievich Gromov



Born 1937. Russian. Commander in Chief of the Navy since August 1992. Pacific Fleet 1967–76. Chief of staff of training division, Leningrad Naval Base (1977–81). Chief of staff, then commander of an operational squadron (1981–84). First Deputy

(1984–88), then Commander of the Northern Fleet (1988–92). First Deputy Commander of the Navy, CIS (March 1992). Pacific Ocean Higher Naval School (1959). Naval Academy (1983, by correspondence). Military Academy of the General Staff (1991, by examination). Promoted in 1988. Married, daughter and son.

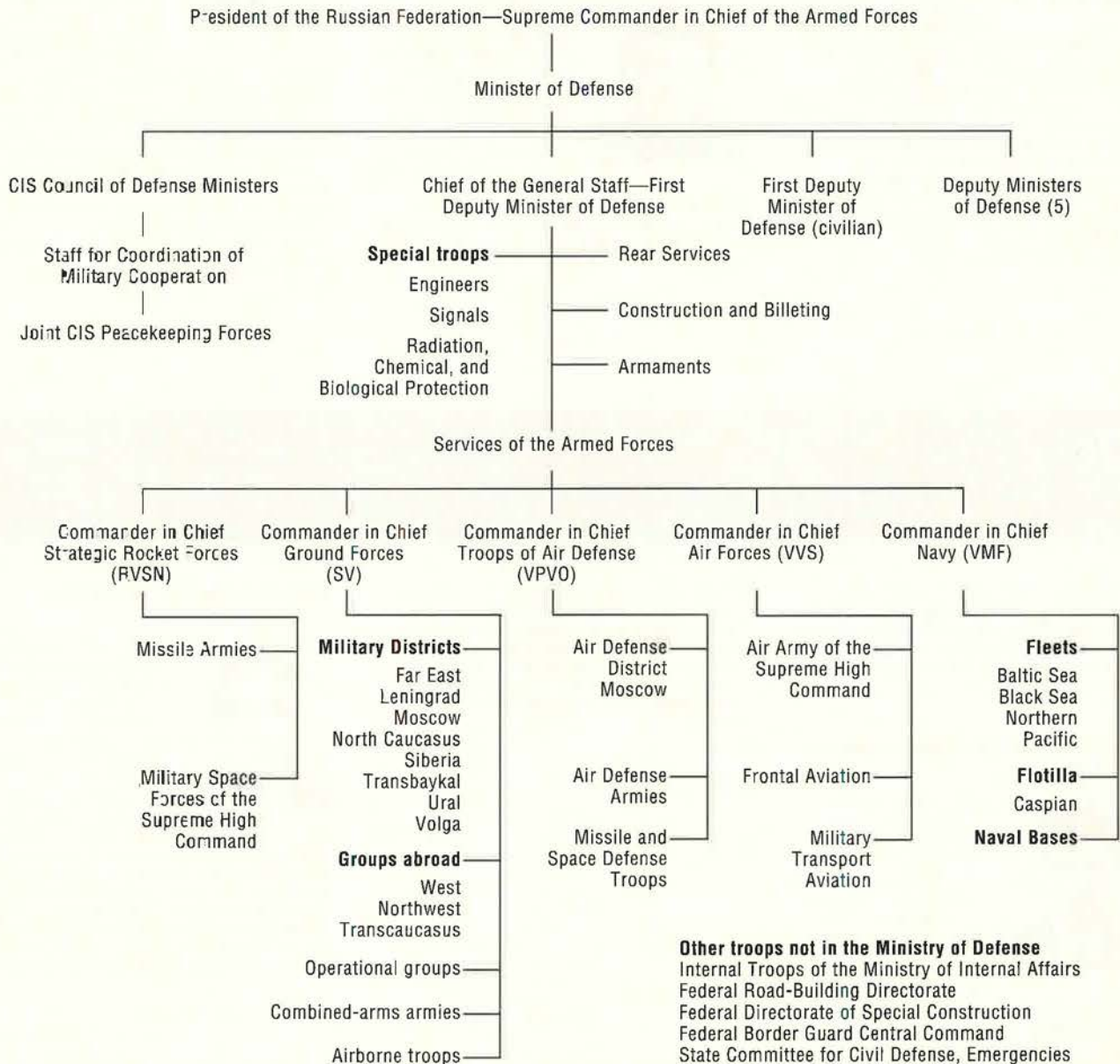
Eurasian Strategic Nuclear Weapons, 1993

Russia and the Other Nuclear-Armed Former Soviet Republics

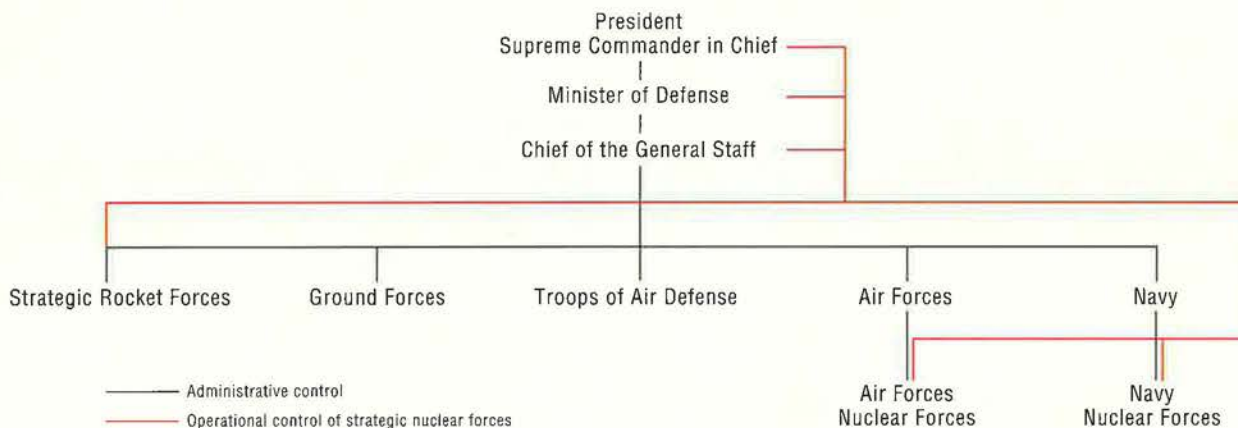
Country	ICBMs	Bombers	SLBMs	Warheads
Russia	884	74	788	6,766
Ukraine	136	43	0	1,264
Kazakhstan	94	40	0	1,260
Belarus	54	0	0	54
Total	1,168	157	788	9,344

In addition to operating its own arsenal, Russia has both administrative and operational command and control over the nuclear weapons of Kazakhstan and Belarus. Russia maintains operational control over the weapons of Ukraine, but Ukraine has asserted administrative control over the nuclear forces on its territory. Some sources cite significantly higher numbers of force loadings, but such totals include many types of tactical nuclear weapons such as artillery shells, mines, air defense weapons, and naval depth charges.

Structure of the Russian Armed Forces



Supreme High Command of the Armed Forces of the Russian Federation



Russian and US Ranks

Naval ranks in italics

Russian Federation	United States
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Five Stars

Marshal of the Russian Federation	General of the Army General of the Air Force <i>Admiral of the Fleet</i>
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Four Stars

General of the Army	General (USA)
Marshal of Aviation	General (USAF)
<i>Admiral of the Fleet</i>	<i>Admiral (USN)</i>

Three Stars

General Colonel	Lieutenant General
<i>Admiral</i>	<i>Vice Admiral</i>

Two Stars

General Lieutenant	Major General
<i>Vice Admiral</i>	<i>Rear Admiral (Upper Half)</i>

One Star

General Major	Brigadier General
<i>Rear Admiral</i>	<i>Rear Admiral (Lower Half)</i>

O-6

Colonel	Colonel
<i>Captain (1st Class)</i>	<i>Captain</i>

O-5

Lieutenant Colonel	Lieutenant Colonel
<i>Captain (2d Class)</i>	<i>Commander</i>

O-4

Major	Major
<i>Captain (3d Class)</i>	<i>Lieutenant Commander</i>

O-3

Captain	Captain
<i>Captain Lieutenant</i>	<i>Lieutenant</i>

O-2

Senior Lieutenant	First Lieutenant
<i>Senior Lieutenant</i>	<i>Lieutenant Jr. Grade</i>

O-1

Lieutenant	Second Lieutenant
<i>Lieutenant</i>	<i>Ensign</i>

No Russian officer currently holds the rank of "Marshal of the Russian Federation." Four "Marshals of the Soviet Union" are alive today: S. L. Sokolov, V. G. Kulikov, V. I. Petrov, and D. T. Yazov. The first three are officially listed as "advisors to the Minister of Defense of the Russian Federation." Marshal Yazov was imprisoned for his role in the August 1991 coup attempt in Moscow but was released under the parliamentary amnesty granted in February 1994 to numerous political plotters.

Active Military Population

Force Element	Authorized	Actual
Ground Forces	1,300,000	800,000
Air Forces	170,000	102,000
Naval Forces	340,000	180,000
Strategic Defensive Forces	230,000	140,000
Strategic Offensive Forces ¹	144,000	90,000
Command and Rear Services	165,000	100,000
Total	2,349,000	1,412,000

¹Includes Strategic Rocket Forces and strategic nuclear elements of the Air Forces and Navy

Paramilitary Forces

Internal Troops of Ministry of Internal Affairs	180,000
Border Troops of the Russian Federation ¹	200,000
Total	380,000

¹Formerly Ministry of Security, Border Defense Troops

External Deployments and Peacekeeping Forces

Bosnia-Herzegovina (peacekeeping)	1,200
Cuba	1,000
Estonia	4,000
Georgia (peacekeeping)	5,000
Germany	35,000
Latvia	16,000
Moldova (peacekeeping)	5,000
Tajikistan (peacekeeping)	6,000
Vietnam	500
Total	73,700

USAF and US Army units deployed up to 3,000 miles south for training with Ecuadoran special forces.

Southern Exposure

USAF photographs by SSgt. Paul R. Caron, Jr.



In March, US forces went to Ecuador to train in special operations skills, including premission activities, establishing and sustaining an operating location, teaching in the host country's language, and redeploying. Detachment 7, Special Operations Combat Operations Staff (SOCOS), from Hurlburt Field, Fla., participated in the two-week-long operation along with the Army's 1st Battalion, 7th Special Forces Group, from Fort Bragg, N. C., and Guard and Reserve units. (Det. 7 is now the 6th Special Operations Flight.)

Right: At Lago Agrio AB, Ecuador, US Army Capt. Bryan Fenton (left) and Special Forces troops from the 1st Battalion and the Ecuadoran Army check equipment as they prepare for a jump. The 109th Airlift Squadron, 133d Airlift Wing, Minnesota ANG, flew the C-130E jump plane for the troopers who parachuted over the lush, green landing zone at Manta AB, Ecuador (opposite).







In a search-and-recovery exercise at Manta AB, a member of the Ecuadoran Air Force Special Operations Forces pops smoke, signaling an Ecuadoran SA 316B Alouette III helicopter (below left) to land and pick up a downed and "wounded" USAF pilot.

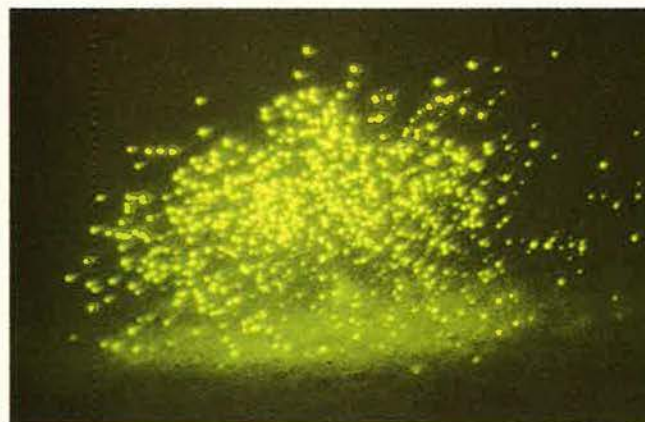


At left, a 1st Battalion medic and Ecuadoran Air Force Special Operations Forces troops prepare a litter to carry the USAF pilot to the rescue helicopter (above).



USAF Reservists from the 919th Special Operations Wing, Duke Field, Fla., brought an AC-130A Spectre to Manta AB for a demonstration. In a call-for-fire exercise, they familiarized Ecuadoran military forces with the gunship's precision firepower, reconnaissance and interdiction, and close air support capabilities.

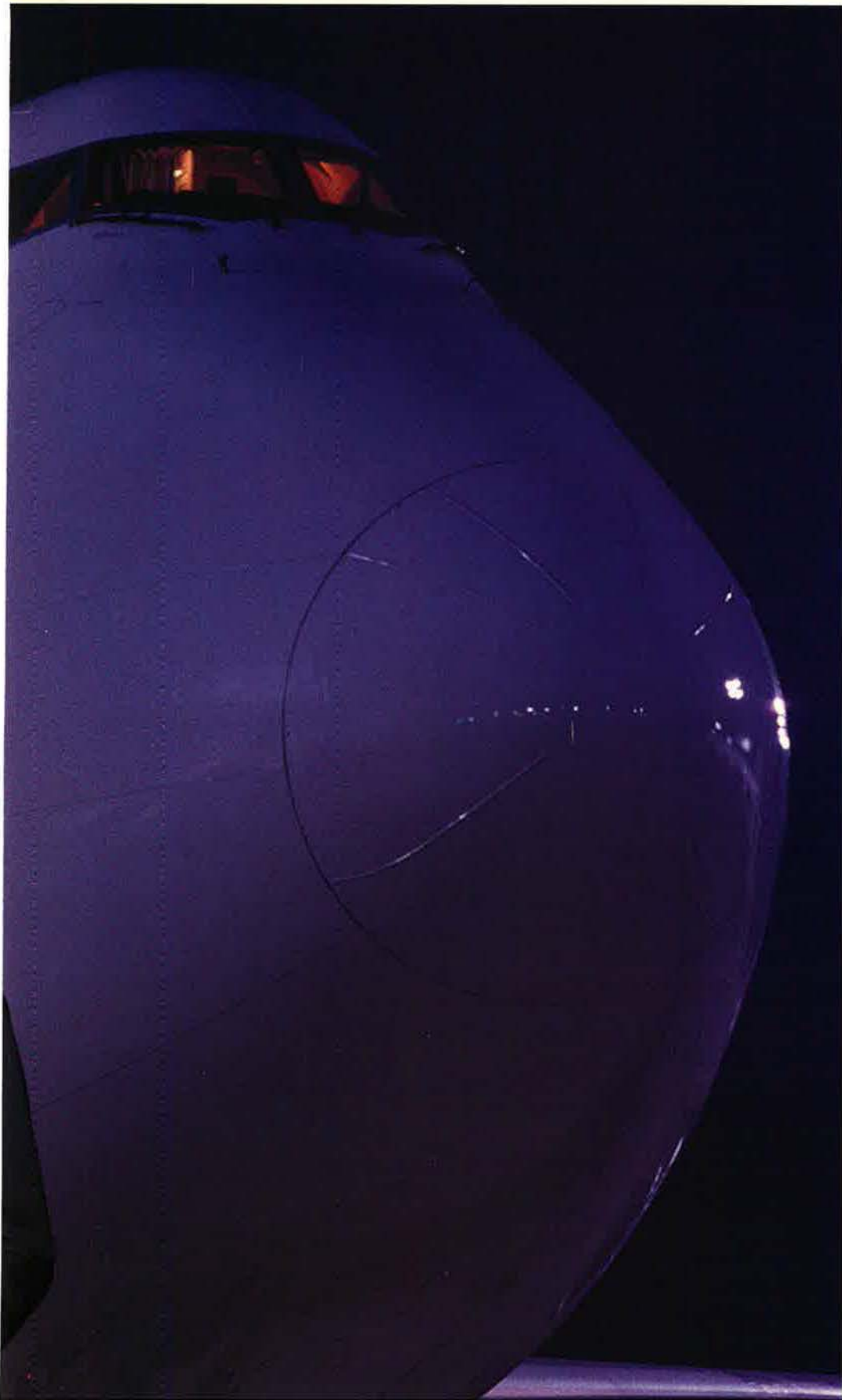
At right, as seen through night vision equipment, the 919th SOW's AC-130A circles the target range over Manta AB in a live-fire demonstration. The gunship hit the targets, an impressive sight through night vision goggles (bottom).



A photograph of three people in professional business attire standing in front of a large, metallic aircraft fuselage. The scene is lit with dramatic, low-key lighting, creating strong highlights and deep shadows. The background is dark, emphasizing the metallic texture of the aircraft. The text is centered in the upper half of the image.

With today's defense budgets, simpler may be better.

Tim Traynor, Customer Engineering, Commercial Airplane Group; Sam Galagaza, Product Development, Defense & Space Group; Teresa Karupiah, Preliminary Design



Defense & Space Group.

The Pentagon is looking for ways to use available, proven commercial products to save money for the military. Everything from laptop computers to airplanes. One big example: the Boeing 747. Jumbo jets routinely fly millions of tons of cargo—including military cargo. So the Air Force is considering 747s for its fleet to cut costs. It won't be the first Boeing commercial jet to wear a uniform. America's flying command post is a 747. So is Air Force One. Boeing jetliners serve as aerial refueling tankers. They also are the 707 and the 767 AWACS (Airborne Warning and Control System). And Boeing 737s serve as trainers. There are limits to off-the-shelf opportunities, of course. But, where it makes sense, it can save billions and still make certain America's forces are ready and well-equipped.

BOEING

The training exercise covered a wide range of operations and activities. At right and below, Ecuadoran Air Force Special Operations Forces practice self-defense moves at Quito AB as self-defense instructor SSgt. Vic Garcia, Det. 7, SOCOS, observes the action. In another exercise, Ecuadoran Air Force fire trucks at Manta AB (below, right) scramble to evacuate a pilot from a "burning" aircraft.



MSgt. Robert L. Tschumy of Det. 7 and Ecuadoran Air Force maintenance personnel at Quito AB dismantle a C-130 engine's turbine unit. One objective of this deployment was to enhance the training and advising abilities of Det. 7 personnel.



A C-130E from the 109th Airlift Squadron, 133d Airlift Wing, Minnesota ANG, prepares for takeoff from Lago Agrio AB, loaded with 1st Battalion Special Forces troops and Ecuadoran Army commandos who will be dropped over Manta AB.



It's 3,000 miles from Minneapolis to Quito, a long way from home for Minnesota ANG Capt. Matthew J. McCann of the 109th AS. At left, he plots the course for a C-130E about to drop US Army Special Forces and Ecuadoran Army troops over the landing zone at Manta AB. At bottom, a 1st Battalion jumpmaster checks conditions for the joint jump mission.



Consequences of the drawdown may start showing up soon in Air Force personnel programs.

Ugly Chickens Come Home to Roost

By Bruce D. Callander

IF CURRENT plans hold up, 1995 will be the last year the Air Force has to take a major troop cut. However, it may also be the year in which some ugly chickens hatched in the massive defense drawdown start coming home to roost.

USAF's budget plan shows that once it cuts 25,600 troops in Fiscal Year 1995, it will face only minor cuts in the next four years.

Still, next year's reductions would take end strength down to 400,051, a level some thirty-four percent below the post-Vietnam peak of 608,200 in 1986 and lower than at any time since 1948, USAF's first year as a separate service.

Senior Air Force officers pondering what it will take to sustain the force in future years express mounting concern about the declining quality of new recruits and the difficulties of maintaining high retention rates among senior enlisted personnel in the face of an improving domestic economy. They expect serious erosion in both recruit quality and retention in 1995.

These officers, who are shaping the Air Force's plans for the next round of force cuts, concede that some

personnel actions taken in the past few years will make it harder to rebuild the force in years ahead. For example, years of holding down enlisted accessions means the Air Force will need a big infusion of high-quality young talent over the next few years. However, until the drawdown is really over, USAF cannot boost input too much without imposing even deeper cuts on its career force, which service leaders are loath to do. When the opportunity to bring in new blood finally does arrive, finding enough qualified people to accept a military career may be difficult.

For Fiscal 1995, the service's recruiting goal is 35,300, about the same as last year's, but barely half the 1986 figure. Officer input will remain low. In fact, the Air Force plans to add only 3,533 new officers, the smallest complement taken since the onset of the drawdown. (Of these, 1,014 will come from the US Air Force Academy, 1,945 from the Reserve Officers Training Corps, and 574 from Officer Training School.) Everyone agrees that the number of new officers and enlisted troops must rise in future years if the force is to be sustained.

The Air Force's goal in the face of mandated personnel cuts is to reduce short-term surpluses while retaining enough members with vital skills to perform essential missions. Opposite, two maintainers of the 33d Fighter Wing, Eglin AFB, Fla., work on an F-15C.



Photo © Randy G. Jolly / Arms Communications

The Biggest Danger

Air Force personnel officials say that because the future force will be smaller, new recruits will have to be highly skilled and able to perform a wide variety of duties. Therein lies the biggest potential problem of all. The Department of Defense's 1993 Bottom-Up Review, which gave the conceptual underpinning for an ongoing reduction of end strength and force structure, barely hinted at this particular difficulty.

"Thus far," said the final report of the Bottom-Up Review, "the services have continued to meet their recruiting objectives with top-notch people, although educational achievements of incoming personnel have declined slightly from the unprecedented highs of the past few years."

The review found "somewhat worrisome" the Pentagon's most recent surveys showing young Americans to be less interested in joining the armed services. In only five years, for example, the percentage of recruit-age Americans interested in the Air Force dropped from seventeen to eleven. The Bottom-Up Review laid the blame for the decline, in part, on uncertainty over the long-term via-

bility of military careers and seemed to suggest that interest would rebound when stability returned to the force.

Air Force officials think the problem might be compounded by a drop in the number of eighteen- to twenty-one-year-old males, USAF's prime recruiting market. This means that the absolute number of young people interested in USAF service probably is even smaller than the Pentagon's surveys suggest.

Whatever the cause of the drop-off in interest, the service is feeling the impact already. "The Air Force continues to make its recruiting goals," said one official. "However, the trends are all down."

Early in Fiscal 1994 (which began October 1), recruiters fell short of numerical targets in some areas. The quality of new recruits, as measured by results of standardized tests and other objective criteria, has been dropping for some time. For example, 85.5 percent of all USAF recruits taken in Fiscal 1992 scored in the top half of the acceptable mental categories of the Armed Forces Qualifying Test. In Fiscal 1993, the figure fell to about eighty percent. In Fiscal 1994, the downward trend has

continued and perhaps even accelerated, say Air Force officials.

More Washouts?

The test scores are designed to predict rates of success reliably once recruits enter USAF training. Usually, lower scores translate into higher personnel attrition in basic military and technical training and, therefore, more difficulty in bringing recruits up to standards. Experience has taught the Air Force that when scores drop, it must enlist even more recruits to compensate for higher washout rates and to ensure that the required number of trainees graduate. That is not easy to do in a shrinking and less receptive market of eligible youth.

To add to the problem, the Air Force has eighteen percent fewer recruiters today than it had just three years ago and has less money to spend advertising its selling points. In 1993, the service shelled out an average of about \$247 per recruit. In 1994 dollars, that was the lowest ratio since 1977 and about one-third the amount spent in 1974, the year the All-Volunteer Force was begun. The Air Force has asked for more

recruiting and advertising money in the new budget, but, even with more funds, selling USAF careers in today's market won't be easy. It could become even harder as the economy improves and young people have more job options.

Retention also could be a problem as the force levels off. Because the Air Force has held down new accessions for almost ten years, smaller numbers of military personnel are completing their initial obligations, and the Air Force will have to hold higher percentages of them to sustain the force.

At the moment, officer retention looks good—particularly among pilots, where the retention rate stands at a ten-year high. Officials give major credit to Aviation Career Incentive Pay (ACIP), the pilot bonus, and to steps the Air Force has taken to remove irritants cited by departing pilots as among their reasons for leaving. In setting up the operations management career field, for example, it relieved pilots of most non-flying duties. The fact that the civilian airlines are hiring fewer new pilots also has helped retention.

Improvement in the civilian economy, particularly if it led to a surge in airline hiring, could quickly change the picture. USAF's best hope, officials say, is to use bonuses to "lock up" as many pilots as possible now so that they will not be tempted to bolt if the airlines increase their hiring.

Such incentives are costly, and the Air Force tries to target them carefully to the group most likely to be lured away. The pilot bonus goes to those at levels of major and below who have completed their service commitments from flight training but do not have more than twelve years of service. Such officers have worked off their legal obligations and do not yet have enough rank and seniority to ensure that they will stay until retirement. Air Force officials estimate that ACIP improves pilot retention by four to seven percent. Considering the cost of replacing trained pilots, it's a good investment.

Pay for Play

The Air Force uses similar financial inducements to hold needed airmen; so far, they have been working. It offers selective reenlistment bonuses in forty-seven key skills with

the amounts geared to time in service. Again, the idea is to pay the most to those most likely to be tempted to leave.

Even a return to record retention rates would not help unless the Air Force were able to bring in enough

If the reduced accessions and traditional separation programs work, neither an officer nor an enlisted RIF should be needed.

high-quality people and, in the case of pilots, to boost its initial flight training rates enough to provide a bigger pool of rated officers in future years. Lt. Gen. Billy J. Boles, deputy chief of staff for Personnel, began making that point forcefully last year. If the Air Force continued to train only about 500 pilots per year for too long, he said, it could retain 100 percent of them and still not satisfy its future requirements.

Though it is keeping an eye on these more distant problems, the Air Force must design the next round of cuts to do the least damage to the present force. As in past years, it has set its accession goals low enough to prevent massive force-outs.

Flight school graduations also will remain limited for another year because of continuing rated surpluses. Undergraduate pilot training will turn out about the same number of new flyers in 1995 as for this year. Navigator training rates will be much lower. The shift of navigation training from Mather AFB, Calif., to

Randolph AFB, Tex., has caused a short-term reduction. That and the overall surplus of navigators allow for only twenty-three graduates this year. The total will increase to fifty-two in Fiscal 1995 and more in later years, but the Air Force does not plan to produce more than 100 new navigators per year through Fiscal 1998.

There are a couple of bright spots in the flight training picture. One is that candidates for flight schools will no longer have to wait for openings in flight training, a problem both Academy and ROTC graduates have faced in the past. Some 630 ROTC graduates of 1990-92 and 335 members of the Academy's class of 1992 are still waiting for pilot training. The last are scheduled to enter by the end of Fiscal 1996.

The other good news is that new flight school graduates can count on going directly to cockpit assignments. That was not the case a few years ago, when the Air Force "banked" hundreds of new flyers in ground jobs because of the pilot surplus. The last pilot was banked in September 1993, and it will be Fiscal 1996 before all are returned to active flight duty.

Eliminating Surpluses

The Air Force's problem both in flight training and within its overall population has been reducing short-term surpluses while holding needed people in critical skills. Next year, it will again make both voluntary and involuntary separations in the skills and year groups where it can best afford the losses.

If the reduced accessions and traditional separation programs work, USAF officials say, neither an officer nor an enlisted reduction in force (RIF) will be needed. The Air Force RIFed almost 1,600 officers in 1993, when it was unable to generate enough voluntary separations. Since it is looking for only about 150 voluntary officer losses in Fiscal 1995, chances of another such force-out seem remote. So far, the Air Force has not used RIFs among airmen at all.

The bulk of the separations will be among members who leave voluntarily with between five and twenty years of service. The programs will remain the same as in past years, but the eligibility groups will change. Troops eligible to leave with fewer than twenty years of service can claim

a Voluntary Separation Incentive (VSI) or Special Separation Benefit (SSB). To qualify, they must have completed any active-duty service commitments they may have incurred for training or other reasons. Those with at least fifteen years of service have a third option of retiring with a reduced annuity but with many of the other benefits of a full twenty-year retirement.

To exit with either the VSI or the SSB, an officer must be nonrated and have at least five years of continuous service before separation. For Fiscal 1995, the eligibles will include majors in the 1980 and 1981 year groups and captains in the 1983 to 1985 year groups.

Airmen who want the VSI or the SSB must be eligible for reenlistment, have at least five years of continuous service at the time of separation, and have a total of ten years of active service. Staff sergeants and below with service dates of July 1, 1980, through June 30, 1985, qualify if they do not hold excluded Air Force Specialty Codes. The excluded skills include all of those on the reenlistment bonus list plus medical and dental skills.

Early retirement is open to officers who have at least eight years of commissioned service and meet other eligibility rules for their grades and skills. Line majors and lieutenant colonels, for example, may be either deferred or nondeferred and may be rated so long as they are not in excluded weapon systems categories (pilots on F-15Es, F-4Gs, and E-3s and systems officers on F-15Es, F-4Gs, B-1s, and EF-111s).

While no new RIFs are planned, other forms of involuntary separation will continue. A Selective Early Retirement Board (SERB) met in January to consider line colonels in the 1967 and 1969 year groups and chaplain colonels with twenty years of service. A SERB for lieutenant colonels, scheduled for January 1995, is expected to consider only deferred officers.

Some other officers will be forced to retire—but not necessarily immediately. Majors twice deferred for

promotion will not be continued, and those who qualify will be offered fifteen-year retirement. Those with fewer than fifteen years of service will be continued until they have completed their commitment, and those with eighteen years of service

Without HYT exits to spread the losses across all grades and year groups, promotions in the shrinking force would stagnate.

will be allowed to stay until they have completed twenty.

First Enlisted SERB?

If voluntary enlisted losses fall short of targets, a SERB also could consider master sergeants and senior master sergeants with more than twenty years. This would take place in late Fiscal 1994. Eligibility criteria and the mechanics of such a board are still being worked out. This would be the first enlisted SERB since the drawdown began.

Other members will have to leave as they reach their high year of tenure (HYT), the point at which they must separate or retire if they have not been picked for promotion. The HYTs for several NCO grades were lowered in 1991 and remain at those levels. Though the Air Force now counts

HYT exits as "normal losses," not involuntary separations, like force-outs, they cause members to leave sooner than they might have wished.

Without these actions to spread the losses across all grades and year groups, promotions in the shrinking force would stagnate. The fact that advancements have continued at near-normal rates has helped retention of needed skills.

Those who remain feel some effects of the drawdown, and even if Fiscal 1995 sees the last of the big force cuts, some personnel turbulence is likely to continue. The Air Force faces additional overseas troop withdrawals and US base closings and realignments.

Overseas withdrawals are unfinished business. The Fiscal 1993 Defense Authorization Act set two overseas strength ceilings. One calls for an across-the-board level of sixty percent of Fiscal 1992 assigned strength. The second sets an all-service cap of 100,000 on military strength in Europe. The services have until the end of Fiscal 1996 to achieve these goals in both cases.

How much impact these changes will have on Air Force members remains to be seen. If the total force and the number of overseas slots remain roughly proportional, assignment patterns will change little. Only if the overseas strength were drawn down at a greater rate than that for the total force would foreign duty become less common.

Either way, the Bottom-Up Review suggests that the cuts will require more short-term deployments to some areas. This would mean more frequent family separations and other disruptions for some members. Reserve units already share some of the deployment burden in such areas as Bosnia-Herzegovina, but there is a limit to the number who can be used in this role and how often they can be called on. Much of the job still must be shouldered by active forces.

For the moment, however, the Air Force will have its hands full making its Fiscal 1995 cuts and trying to recruit and retain qualified people for the future force. USAF's aim during the long drawdown has been to trim the force by the required numbers without threatening its ability to attract and keep capable people. The coming year may show how well that approach is working. ■

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Iraqi missile attacks in the Persian Gulf War were only the precursors of an escalating defense problem.

Scud's Bigger Brothers

By Bill Gertz

Short-Range Third World Missiles

Type	Range	Payload	Military Users
1 SS-21 Scarab	120 km	450 kg	Libya, Syria, Yemen
2 Green Bee	130 km	400 kg	Taiwan
3 MGM-52 Lance	130 km	450 kg	Israel, South Korea
4 Nazeat	130 km	300 kg	Iran
5 NHK-1/2/A	250 km	300 kg	South Korea
6 SS-1 Scud B	300 km	985 kg	Afghanistan, Algeria, Egypt, Iran, Iraq, Libya, North Korea, Syria, Vietnam, Yemen
7 Jericho 1	500 km	500 kg	Israel
8 Al Hussein	650 km	500 kg	Iraq
9 Hatf 1	80 km	500 kg	Pakistan
10 MB/EE-150	150 km	500 kg	Brazil
11 Alacran	200 km	500 kg	Argentina
12 Prithvi	250 km	1,000 kg	India
13 SS-300	300 km	1,000 kg	Brazil
14 M-11	300 km	1,000 kg	China, Pakistan
15 Hatf 2	300 km	500 kg	Pakistan
16 MB/EE-600	600 km	unknown	Brazil
17 M-9	600 km	1,000 kg	China, Libya, Syria
18 Hatf 3	600 km	1,000 kg	Pakistan
19 Scud C	650 km	500 kg	Egypt, Iran, Iraq, Libya, North Korea, Syria
20 Al Abbas	900 km	350 kg	Iraq
21 Condor 2	900 km	500 kg	Argentina, Egypt, Iraq
22 Al Fatah	950 km	500 kg	Libya
23 Sky Horse	950 km	500 kg	Taiwan



Sources: US Space Command, Department of Defense, and Central Intelligence Agency

Intermediate-Range Third World Missiles

Type	Range	Payload	Military Users
CSS-1	1,200 km	1,000 kg	China
CSS-N-3	2,700 km	1,000 kg	China
CSS-2	3,000 km	1,100 kg	China, Saudi Arabia
4 No Dong 1	1,000 km	unknown	North Korea
5 Badr 2000	1,200 km	500 kg	Egypt, Iraq
6 Jericho 2	1,500 km	1,000 kg	Israel
7 Arniston	1,500 km	1,000 kg	South Africa
8 Al Aabed	2,000 km	750 kg	Iraq
9 Tae-Po Dong 1	2,000 km	unknown	North Korea
10 CSS-X-5	2,500 km	1,000 kg	China
11 Agni	2,500 km	1,000 kg	India
12 Tae-Po Dong 2	3,500 km	unknown	North Korea
13 CSS-NX-4	unknown	unknown	China



Key

- deployed
- in development
- deployed
- in development

ON FEBRUARY 25, 1991, the threat to US military forces of ballistic missile attack became harsh reality. Twenty-eight US soldiers were killed and more than 100 were wounded when an Iraqi ballistic missile warhead landed on a crowded barracks in Dhahran, Saudi Arabia. The strike killed more Americans in a single attack than in any Persian Gulf War battlefield action up to that point.

Iraq's Scud missile attacks on Saudi Arabia and Israel during that war highlight the threat of missile attack that US government officials now see as a major problem, expected to grow worse in the coming years. "Ballistic missiles are becoming the weapon of choice for nations otherwise unable to strike their enemies at long ranges," stated CIA Director R. James Woolsey at a January 25 Senate hearing.

The Army's Lt. Gen. Malcolm R. O'Neill, director of the Defense Department's Ballistic Missile Defense Organization (BMDO), considers the ongoing spread of theater-range ballistic missiles armed with nuclear, biological, and chemical warheads to be a significant threat to deployed US forces as well as friends and allies.

"Ballistic missile deployments are expected to increase worldwide, despite stepped-up efforts to inhibit their proliferation," General O'Neill told the Senate Foreign Relations Committee March 10. "Many potentially hostile nations now possess tactical ballistic missiles capable of targeting wide areas within Europe, the Middle East, South Korea, and Japan."

General O'Neill described the spread of these weapons as a "growing, comprehensive threat capability" that, when coupled with the unpredictability of potential adversaries, "represents a serious threat to vital United States national interests."

The Missile Club

Today at least fifteen developing countries possess, produce, or are developing ballistic missiles with ranges greater than 300 kilometers, or about 186 miles. Five of these countries have shown an interest in

making longer-range ballistic missiles to sell on the international arms market. By 2000, say officials, as many as twenty nations may have such missiles, and many of these states are driving to build weapons of mass destruction. US officials observe that ballistic missiles have been used in five regional conflicts since 1973.

Senior US military officers have been saying with increasing urgency that forward-deployed US forces are vulnerable to these weapons. "We've got to move out on ballistic missile defense," said Air Force Gen. Charles A. Horner, the commander in chief of US Space Command, who served as the air boss of coalition air forces during Operation Desert Storm. "I call it the sucking chest wound of our defense program. It's the one thing we can't cover on the battlefield."

General Horner added, "If people put poisonous material in the nose of their missile and the Patriot [air defense missile] fuzes it, then it spreads all around and now you've got to go out with a broom and moon suits and self-contained breathing and clean it up. We've got to get something that attacks these systems beyond the terminal phase."

The Air Force is likely to have a major part in any effort to combat the threat. One aspect of this was on display during the Gulf War: direct attacks by fighter aircraft on missile launchers and facilities. For possible active defenses, Space Command wants a new and more sensitive early warning satellite, one that could detect even dim, theater-missile launches. The US also has been considering a cuing satellite system named Brilliant Eyes. Brilliant Eyes would take over the task of tracking a missile warhead in midcourse flight. Some Air Force officers also are pushing for the development of space-based antimissile weapons, though this step faces seemingly insurmountable political and budgetary obstacles at the moment.

Mr. Woolsey recently disclosed that North Korea is building two new intermediate-range ballistic missiles (IRBMs) capable of hitting targets throughout much of the Pacific region. Government analysts say the

new missiles, dubbed Tae-Po Dong 1 and Tae-Po Dong 2, will have ranges of 2,000 kilometers (about 1,200 miles) and 3,500 kilometers (about 2,200 miles), respectively.

Last year, North Korea test-fired its first 1,000-kilometer No Dong missile, which uses the "ganging," or coupling, of engines first made for the Soviet-designed Scud B missile and uses adapted technology from the 1960s for its mechanically operated inertial guidance systems.

The ballistic missiles of both Iraq and North Korea were modeled after the Scud B, the most common guided ballistic missile in the world. It has been purchased, reverse-engineered, and modified by at least sixteen nations, not all of which are developing countries. North Korea has gone further than building its own Scuds. Pyongyang has established licensed manufacturing assembly lines in Egypt, Syria, Iran, and Iraq.

The Persian Gulf War made "Scud" a household word. From the Soviet Scud, Iraq developed three versions of the missile: Al Hussein, Al Abbas, and Al Abed.

China, another major missile exporter, has built its M series of solid-propellant missiles with the specific goal of selling them abroad. China also set a new standard for proliferation by being the first nation ever to export IRBMs. That occurred in the 1988 sale of CSS-2 missiles to Saudi Arabia. The CSS-2 was designed for nuclear warheads, and its utility with conventional warheads is limited. Saudi Arabia chose not to fire any CSS-2s during the Persian Gulf War because of the missile's current inaccuracy.

Libya is working on its own Al Fatah solid-propellant missile and at one time received help from Brazil and China. Argentina, until recently, was building the Condor 2 ballistic missile and sold this technology to Egypt and Iraq. Egypt and Argentina have announced their intention to halt Condor-based programs, but US officials say these countries retain the capability to restart their efforts at any time.

The current Israeli arsenal contains two types of ballistic missiles, Jericho 1 and Jericho 2. Israel also secretly cooperated with South Af-

rica in that nation's long-running program to build ballistic missiles. South Africa now has announced a halt to its military missile program, which it claimed was part of a space-launch effort.

The Israeli missiles also are used as space-launch vehicles, highlighting the problem of how missile technology can serve both civilian and military purposes and how other nations, under the guise of developing space launchers, could build offensive missiles.

Taiwan has successfully reverse-engineered a US Lance missile, which it is calling the Green Bee. South Korea has reverse-engineered a US Nike-Hercules antimissile interceptor into three versions of an offensive surface-to-surface missile.

In south Asia, Pakistan and India—both now considered nuclear powers, even though they may not have stockpiled any weapons—have developed indigenous ballistic missile systems.

More Threats

"The proliferation threat will increase in many dimensions: range, accuracy, number of countries, and number of weapons of mass destruction," concluded a Pentagon report prepared for the Strategic Defense Initiative Organization, BMDO's predecessor. "Modest increases in range (factors of two and three) can be achieved by increasing fuel capacity, reducing payload, or reducing weight in other areas."

All of these missiles pose new regional threats, especially since the end of the East-West struggle and the growth of ethnic, nationalist, and religious conflicts that now dot the globe.

Janne Nolan, a senior fellow at the Brookings Institution, views missile proliferation as closely integrated with the spread of nuclear, biological, and chemical weapons. "It's not the missiles per se [that are so troubling] but the potential offensive capabilities that countries could develop with them," she claims.

Ballistic missile know-how was once limited to the technologically advanced nations, but less-developed nations are taking advantage of a "redistribution of technical capacity" to build their own missiles to gain power and independence, notes Ms. Nolan. For policymakers and military plan-

ners alike, "Missile development has been a real wake-up call," she says.

A senior US government official said many developing nations will acquire or develop ballistic or cruise missiles because they require less infrastructure and cost less than high-performance aircraft. Advances in technology are making missile components smaller, more accurate, and more capable of carrying larger warheads over longer distances.

Information on production levels for most developing countries is limited, but US officials said missile production for the most part is lim-

The most common tactical ballistic missile in the world, the Scud B is part of the militaries of Afghanistan, Algeria, Egypt, Iran, Iraq, Libya, North Korea, Syria, Vietnam, and Yemen. In all, as many as 10,000 Scud Bs have been produced, although the numbers reported are not known.

Russia also manufactures the SS-21 Scarab, a single-stage, solid-propellant missile that replaced the unguided FROG (free rocket over ground) missile. Its range is 120 kilometers with a CEP of about thirty meters.

Ukraine, Belarus, and Kazakhstan have deployed long-range ballistic

Beyond Conventional Warheads

US Space Command, headquartered at Peterson AFB, Colo., maintains that many developing nations either possess or are actively seeking to acquire the technology for building unconventional warheads for use on ballistic missiles.

The command reports that chemical warhead work could be carried out by Afghanistan, Angola, Argentina, Brazil, Burma, Chile, China, Egypt, Ethiopia, India, Indonesia, Iran, Iraq, Israel, Laos, Libya, North Korea, Pakistan, Peru, Saudi Arabia, South Africa, South Korea, Sudan, Syria, Taiwan, Thailand, and Vietnam.

Biological warfare warheads could be produced by Argentina, Brazil, China, Colombia, India, Iran, Iraq, Israel, Libya, North Korea, Pakistan, South Africa, South Korea, Syria, and Taiwan.

Nuclear warheads could be fielded or eventually produced by nations as diverse as Argentina, Brazil, China, Colombia, India, Iran, Iraq, Israel, Libya, North Korea, Pakistan, South Africa, and Vietnam.

ited to relatively small numbers, perhaps "tens" per year for China's and North Korea's programs.

Here is a closer look at some of the ballistic missile producers and buyers, based on US government reports and interviews with government intelligence and defense officials and nongovernment experts in the field.

Russia and other former Soviet states. The SS-1C Scud B missile, operational since 1962, can deliver conventional, chemical, or nuclear warheads as well as a variety of submunitions to ranges of up to 300 kilometers with an accuracy of 450 meters CEP (circular error probable, the area around a desired aimpoint in which half the number of warheads would fall). Scuds were deployed with Warsaw Pact forces for decades. The Scud B is a short-range, road-mobile missile fueled by liquid propellant and carrying a single warhead. It is a single-stage rocket, and its guidance is inertial.

missiles, and Russian forces stationed in many of the former Soviet republics are armed with Scud and FROG missiles.

The former Soviet satellites in eastern Europe—Poland, the Czech and Slovak Republics, Hungary, Romania, and Bulgaria—also inherited Scud, SS-21, and FROG missiles.

China. China developed its first missiles following the delivery in 1958 of two Soviet missiles. The CSS-1, first flight-tested in 1964, is a single-stage IRBM similar in design to the Soviet SS-3. The missile has a range of about 1,200 kilometers and was first deployed in 1970.

The CSS-2 was built during the 1960s and can carry either nuclear or conventional warheads. A single-stage, inertially guided missile, the CSS-2 has a range of nearly 3,000 kilometers. In 1986 an upgraded version was developed with three 100-kiloton nuclear warheads that can be guided to individual targets.

The M-class missiles in China's arsenal include the M-9 and M-11 and possibly an M-7, M-8, M-12, or M-18. All use solid-propellant fuel. The M-9 is a single-stage missile, and the M-11 has two stages. Carried on road-mobile transporter-erector-launchers (TELs), the M-9 is believed to have inertial guidance and a range of about 600 kilometers. The M-11 is believed to have a range of about 300 kilometers.

North Korea. Pyongyang has been producing missiles since about 1987 after the completion of Scud B production lines franchised by the Soviet Union.

In May 1993, the No Dong missile, which has an estimated maximum range of 1,000 kilometers, was test-fired over the Sea of Japan. It did not travel its full range and struck the water after about 500 kilometers.

Earlier this year, US intelligence agencies detected two completely new North Korean ballistic missiles, which the agencies have designated the Tae-Po Dong 1 and Tae-Po Dong 2. The government of Iran has expressed interest in buying the longer-range missiles once they are fully developed.

Israel. Israel's well-developed space industry supports its military ballistic missile program and vice versa. The program, active since the 1960s, was assisted by France. The road-mobile Jericho 1 short-range missile uses solid propellant and can carry a single warhead—conventional, nuclear, or chemical—a maximum range of 500 kilometers. It has been described as similar to a US Pershing I in terms of size and performance.

The Jericho 2 is a two-stage IRBM, capable of launching a 1,000-kilogram warhead a distance of about 1,500 kilometers. It is carried on a road-mobile launcher.

Iraq. All of Iraq's ballistic missiles were developed indigenously, based on the design of Scud Bs acquired from Moscow and Scud B and C derivatives provided by North Korea. Al Hussein, with a range of 650 kilometers, was first launched in 1988 during the Iran-Iraq war and was used again in the Persian Gulf War. The longer-range Al Abbas has not seen action, but its range is estimated to be 900 kilometers. It is believed to be a modified version of

Al Hussein, with longer propellant tanks and a lighter warhead. Both Al Hussein and Al Abbas are road-mobile and are carried on eight-wheeled TELs.

Al Abed is reported to be a three-stage missile with a range of 2,000 kilometers. Its first stage was tested in 1989 as part of the Tamouz 1 satellite launcher. The first stage is powered by five Al Abbas motors configured together, the second stage by a single Al Abbas motor. The third stage has an unidentified motor capacity.

Iraq was required under United Nations mandate to destroy all its ballistic missiles and weapons of mass destruction, but its compliance continues to be questionable. US officials recently detected covert efforts by Iraq to purchase missile-related technology, and they suspect Iraq will reconstitute its missile development program should UN sanctions be lifted.

Iraq took part, along with Egypt and other nations, in Argentina's Condor 2 missile program. The Condor is a 900-kilometer missile. Iraq dropped out of the joint venture but retained some missile technology. US officials are concerned about Iraq's plans to develop a Badr 2000, which is said to have a range of about 1,200 kilometers.

Iran. Tehran has relied on foreign assistance, including support from China, in developing its indigenous ballistic missiles. One missile, known as the Iran-130 Nazeat, may have been deployed operationally in 1990. This road-mobile missile uses solid propellant and is armed with a single warhead. Its range has been estimated to be 130 kilometers. A second missile, the Shahin 2, may be under development.

North Korea has shipped Scud missile production equipment to Iran to support missile manufacturing, and North Korea also sold Iran Scud Bs and Cs in unspecified numbers. Iranian government officials have gone to North Korea for several missile tests that US officials say were sales demonstrations.

India. India's ballistic missile program was an offshoot of its space industry. India has one of the most extensive space industries among developing countries. Its military missiles are the Prithvi and Agni, and its ballistic missile program is

second only to China's among developing nations.

The Prithvi is a short-range missile that uses liquid propellant and carries a single warhead. It was first tested in 1988. The design may have been supported by European and other foreign companies. The Prithvi has a range of about 250 kilometers and is inertially guided. Warhead varieties include high-explosive, cluster munitions, and possibly fuel air explosive.

The Agni is an Indian IRBM with a single warhead carried by two or three stages. Only one "technology demonstrator" was built, and US officials expect India to announce a new type of missile in the future, based on the Agni design.

Pakistan. Pakistan has received assistance and technology from China in building its ballistic missiles. According to some intelligence reports, it has purchased M-11 missiles from China. Pakistan's own missiles are known as the Hatf 1 and Hatf 2. They are short-range, road-mobile missiles with ranges of eighty kilometers and 300 kilometers, respectively. The M-11s purchased from China currently use the designation "Hatf 3," but that is only temporary. Pakistan is working on a new, 600-kilometer missile, which will be designated Hatf 3. The Chinese weapons will then get a new name.

Libya. Libya has supported Brazil's MB/EE family of road-mobile missiles, and a Brazilian missile reportedly was test-fired in Libya in 1988.

An indigenous missile program has been under way to build the Al Fatah missile, and US officials say Tripoli is making slow and steady progress with its development. Libya fired a Scud missile in 1986 at the US Coast Guard facility at Isola di Lampedusa, in the Mediterranean Sea. The missile missed narrowly.

Egypt. Egypt sought to build long-range missiles at one time but did not succeed. Instead the Egyptians have developed an indigenous Scud missile production capability with assistance from North Korea. Another missile program under way is the Vector, which may be an outgrowth of either the Scud or Condor program. The Vector may have a range of 1,200 kilometers.

Argentina. Under pressure from the US, Argentina announced that it

will not further pursue ballistic missile development, specifically the Condor program, with other nations. It had developed the Alacran, a single-stage, solid-propellant missile related to the Condor I, and the Condor 2, a two-stage, solid-propellant missile. The range of the Alacran is about 200 kilometers, and the Condor 2 has a range of about 900 kilometers.

Brazil. Like Argentina, Brazil has for the moment halted its ballistic missile development effort, which was an outgrowth of its program of sounding rockets used for environmental research. One missile in development was the SS-300 with a reported range of 300 kilometers. It was a road-mobile, single-warhead missile. A second missile, the MB/EE-150, has a range of about 150 kilometers. An MB/EE-600 has also been reported, with a range of 600 kilometers.

Saudi Arabia. The Saudis purchased 120 CSS-2 IRBMs from China in 1988. This missile has a range of nearly 3,000 kilometers, and the systems are operated by Chinese technicians. Designed for use with nuclear warheads, the CSS-2 is not regarded as militarily effective with conventional warheads but serves as a deterrent. Saudi Arabia had attempted to develop an indigenous missile program before purchasing the CSS-2s. A Saudi diplomat said the kingdom turned to Beijing after its efforts to buy US missiles were rebuffed.

South Africa. With Israeli assistance, South Africa has been developing ballistic missiles at two test facilities, including one in the Indian Ocean. The South African missile, called Arniston, is believed to be a version of Israel's Jericho 2.

South Africa has said it is halting its ballistic missile development program, but it continues to build its space-launch industry.

Syria. Syria received Scud missiles from the Soviets in the early 1970s and obtained SS-21s in 1983. Efforts to obtain Soviet SS-23s, with a range of 500 kilometers, were unsuccessful. Syria has purchased Scuds from North Korea, and US intelligence agencies have reported that Syria has obtained M-9s from China. With little or no defense industry, Syria is not capable of modifying or producing its own missiles.

Taiwan. The Republic of China has built a ballistic missile similar in size and characteristics to the US Lance missile. It is called the Green Bee. Another missile, with a range of 950 kilometers and known as the Sky Horse, reportedly is under development.

South Korea. Seoul has developed a two-stage ballistic missile known as the NHK, believed to be a derivative of the US Nike-Hercules surface-to-air missile provided to South Korea by the US in the 1960s. Two versions of the missiles may be deployed, one with a range of 250

In addition to these nations, the United States has contributed the Lance missile, a single-stage, liquid-propellant weapon with a range of about 130 kilometers. The mobile missile has been sold to NATO countries, Israel, and South Korea. A follow-on system was canceled in 1990.

Japan has a well-developed space-launch program that could easily be diverted to the production of military ballistic missiles. North Korea's drive for nuclear weapons has raised concerns that Tokyo might feel pressured to develop its own nuclear ca-

Cruise Missiles: The Alternate Status Symbols

The missile threat is not limited to the nations that now possess guided ballistic missiles of some type. Sixty-six countries possess aerodynamic missiles, some of which are sea- and land-skimming cruise missiles. While ballistic missiles defined superpower status in the 1960s, "it is likely that cruise missiles will become the alternate status symbol in the 1990s," a recent study by US Space Command concludes.

Of particular concern are the efforts of some countries to couple cruise missile guidance systems with the Global Positioning System navigation constellation, which could improve accuracy significantly. The recent relaxation of controls on sales of US spy satellite imagery and the international availability of other relatively high-quality remote-sensing imagery could be used to assist cruise missile programs. Satellite imagery is crucial for programming on-board cruise missile computer guidance systems.

USSPACECOM sees two classes of cruise-type weapons in the future: strategic nuclear-tipped cruise missiles with ranges of between 400 and 2,500 kilometers and tactical cruise missiles with high-explosive warheads and ranges between 300 kilometers and 1,500 kilometers. Only a few nations have cruise missile development programs, but as many as a dozen nations have the technology for air-to-surface cruise missiles.

Current suppliers of nonballistic missiles and missile technology include China, France, Israel, Italy, Russia, the UK, and the US. Germany, Norway, and Sweden have been identified as emerging suppliers. Indigenous aerodynamic missile programs have been detected in Brazil, Iraq, Japan, South Africa, and Taiwan.

kilometers. A longer-range version may be under development. US officials say South Korea recently has made inquiries about purchasing ballistic missiles from an unspecified country other than the United States.

Afghanistan. During the Afghan war, the Soviets provided Kabul with as many as 2,500 Scud Bs, and the missiles were deployed extensively in battlefield operations. As many as 2,000 Scuds were launched against *mujahedeen* rebels.

pability and a missile delivery system for it. The Japanese government formally denies it has any intentions to develop or manufacture nuclear weapons. The Japanese build several types of aerodynamic missiles, including a coastal-defense and ship-launched cruise missile and the Type 80 ASM-1, an air-launched version of the same weapon. A Type 88 ASM-2 could be fielded in 1995. It has an estimated range of about 150 kilometers. ■

Bill Gertz covers national security for the Washington, D. C., Times. His most recent article for AIR FORCE Magazine, "The Secret Mission of NRO," appeared in the June 1993 issue.

The Alliance today bears little resemblance to the one that existed from 1949 to 1991.

New World NATO

By Peter Grier

FOR DECADES, US armed forces assigned to NATO spent their training time preparing to fight a massive, high-intensity war in the heart of Europe against a heavily armored foe. Combined-arms readiness of that sort remains a high priority for US air, land, and naval units, but recent months have seen the training regimen expand to cover a new mission: peacekeeping on the Continent's disturbed fringes and ethnic fault lines.

The US Army, for example, has radically changed the environment at its major European training facility at Hohenfels, Germany, the better to expose troops to the kinds of challenges that peacekeepers routinely encounter. Hohenfels now boasts "the largest and best mock city that the Army owns," said Gen. David M. Maddox, the commander in chief of US Army, Europe (USAR-EUR). The place has a mayor, police, volatile citizens, even two television reporters who pop up and ask annoying questions. Hohenfels has become the site of a fictitious nation—"Danubia"—carved up by three ethnic factions and remnants of a regular military force.

This change in the Army's view on how US soldiers should be trained stems from a belief that effective peacekeeping demands skills very different from those required in all-out battle with a heavily armored, nuclear-equipped adversary, such as the old Warsaw Pact forces.

The role of US Air Forces in Europe—and the way it trains—is changing fast, spurred primarily by the new demands of peace enforcement in Bosnia-Herzegovina. On February 28, in NATO's first-ever combat operation, two USAF F-16s shot down four Bosnian Serb aircraft caught violating the United Nations ban on flights over Bosnia. On April 10, two other USAF F-16 fighters, flying under NATO command, bombed Serb positions near the predominantly Muslim town of Gorazde in eastern Bosnia. Serbian forces had disregarded the UN's demands that they pull back and cease shelling the town.

The bombing marked the first time NATO fighters had ever attacked ground targets, and it was done in the name of defending UN peacekeepers on the scene in Bosnia. In another sign of the times, none of the

F-16Cs of the 52d Fighter Wing, Spangdahlem AB, Germany, carry multitarget AMRAAMs and Sidewinders. In their NATO role, USAF F-16s fought the Alliance's first combat engagement and bombed its first ground targets—both as part of NATO's recent operations in Bosnia-Herzegovina.



Air Force warplanes fought from a home base; all of the jets on call for Balkan operations were part of an expeditionary force whose components had deployed to Aviano AB, Italy, from other locations.

Gen. Robert C. Oaks, USAFE's commander in chief, thinks the command has to be prepared not only for major wars on the order of Desert Storm but also for such "lesser regional conflicts" as those in Somalia, Bosnia, and the northern part of Iraq. Even though these types of operations are smaller, said the General, they will pose "the same basic requirements for complete mission packages as do larger conflicts." He foresees a need for all-weather, day-and-night fighter operations, aerial refueling, massive airlift operations, and the like.

No Common Threat

This is the "New World NATO," an alliance that bears little resemblance to the organization that existed from 1949, when it was formed at the dawn of the Cold War, to the collapse of the Warsaw Pact in 1989-91. No longer are the sixteen member countries of the forty-five-year-

old military organization bound by a common perception of a Soviet threat. Rather, Allied forces are struggling to ready themselves to combat more diffuse threats to European peace—ethnic conflict, border disputes, religious violence. At the same time, Alliance leaders are reaching out to create formal military ties with former East Bloc foes.

The long-standing nightmare scenario in the West—the eruption of World War III on the rolling plains of Germany—has all but evaporated. Still, US officials insist that NATO remains relevant as a military organization. Only NATO, they say, has the integrated command structure, forward-deployed troops, and history of parceling out roles and missions to different members that will be necessary to combat political unrest and violence certain to arise frequently in or near its area of operation.

Gen. George A. Joulwan, the US Army officer who serves as NATO's Supreme Allied Commander, Europe, and commander in chief of US European Command (USEUCOM), told Congress, "It is the only organization, now and in the foreseeable future, with the tools to deal with the

complex question of European security and stability."

Ironically, the Cold War standoff that saw hundreds of thousands of troops and vast quantities of modern weapons facing each other across the Iron Curtain posed such great danger that it suppressed many smaller conflicts simmering below the surface of European political life. The passing of that danger has unfrozen history, and long-dormant rivalries have flared anew. Crises have erupted at several points on or just beyond the rim of NATO, including Bosnia, Azerbaijan, Moldova, and ex-Soviet Georgia. The tide of refugees in USEUCOM's area of operation (which includes Africa) has become staggering, with some fourteen million people now estimated to have been uprooted from their homes. General Joulwan said that "this vast theater," as he called Europe, is "far more unstable today than it was when the Berlin Wall fell."

More Work, Fewer Workers

Regional conflicts have already greatly increased activity for US troops assigned to NATO. Where US units were once a forward-

deployed shield intended to fight from their European bases, they now are dispatched at short notice to places from Liberia to northern Iraq. By early 1994, USAF units in northern and southern Iraq had flown more than 175,000 post-Desert Storm sorties. In Bosnia, 4,600 airlift and airdrop sorties have delivered 51,300 tons of food, fuel, and medicine; Operation Provide Promise, the relief effort there, has lasted longer than the 1948-49 Berlin Airlift. The Air Force has flown more than 3,900 air control sorties around Bosnia.

Since the end of the Persian Gulf War in February 1991, more than 20,000 troops from USAREUR have participated in forty-two operational deployments. From the end of World War II up to that time, USAREUR had taken part in just twenty-nine deployments, involving 12,000 troops.

The challenge of all this action is falling on the shoulders of fewer and fewer people. USAFE is undergoing dramatic reductions, from nearly nine wings of fighters in 1990 to only 2.3 in 1995. End strength will be cut roughly in half, from 65,000 to 34,000 troops. Next year the Air Force will have only 168 fighters in the European theater, compared to 636 in 1990. In the Army, the picture is much the same. Four years ago, USAREUR deployed 213,000 soldiers and aviators; today, there are fewer than 100,000, and current plans call for that number to drop to 65,000 by Fiscal 1996.

Base infrastructure is shrinking as well. Four years ago, USAFE had sixteen main operating bases; by Fiscal 1996, it will have six. Northern, central, and southern regions will each have main operating hubs—a concept similar to that used by US commercial airlines. The hubs will be RAFs Lakenheath and Mildenhall in Britain (north), Ramstein and Spangdahlem ABs in Germany (central), and probably Aviano AB in Italy (south).

In Washington, some members of Congress continue to call for cutbacks in US forces overseas. Air Force officials insist that forward basing is not a luxury, especially if regional crises continue to smolder on NATO's perimeter. A US air mission similar in size to today's Bosnia operation would cost \$55 million more each year if the forces had to deploy from the east coast of the US rather than

from European bases, according to Air Force figures.

The Air Force presence already has been reduced to the point where smaller, multinational units will be crucial in helping NATO meet new threats. USAF officials point out that US aircraft to date have flown only about half of the sorties required in Operation Provide Promise.

The new NATO does not require the kind of massive presence needed for superpower deterrence. Still, many of the units involved in such deployments as Provide Promise have had to work at an exhausting pace. And playing the role of a peacekeeper is not easy. "It is tougher than high-intensity, full-arms warfare in the desert," claimed General Maddox.

USAREUR first realized early in 1993 that its troops needed intense peacekeeper training. In reconfiguring part of the Hohenfels training area into a pseudo-Bosnia, General Maddox opened up the spectrum of tasks for his units. Officers quickly found that US troops were not attuned to subtle uses of force as they made their way across Danubia. "I'll give you an example," said General Maddox. "An armor unit pulled up, and there was a roadblock. They wanted to get through the roadblock, and they couldn't get through the roadblock. So they shot it."

This destroyed the delicate Danubian balance of power and threw the country into chaos—just as it would in a real country where NATO troops were trying to enforce a peace agreement between factions. The rules of engagement in peacekeeping are far different, and more complicated, than they are in all-out battle, said the General.

Soft-Hearted—and Dead

On the other hand, exercises at Hohenfels have shown that US troops may not be suspicious enough in certain instances of low-intensity conflict. General Maddox reported that American units sometimes have serious trouble when practicing a search for terrorists in a four-story apartment building. In one room, exercise officials put a woman wailing over the body of her dead husband. US soldiers have had a tendency to ignore the woman, leaving her to her grief. This proves a mistake. She pulls a rifle from under the bed and "kills" them.

General Maddox argued that the Army should not develop specialized peacekeeping units. Disciplined regular soldiers are more than capable of carrying out the mission, he said. But the murky business of distinguishing friend from foe while trying to uphold a cease-fire places great demands on junior officers and NCOs. They are the ones who make moment-to-moment decisions on rules of engagement; they are the ones whose reports from routine patrol are an invaluable intelligence apparatus for successful operation in an environment where the slightest change may signify danger.

"The type of operation you get into in peacekeeping is decentralized," said General Maddox. "You need to expose your leadership and soldiers to those situations before you have them go execute peacekeeping."

Even as they change their mission focus and deal with the complex drawdown, US forces in NATO are working more closely than ever with compatriots from other countries. On one level, downsizing means more interaction with Allied units. The Army's V Corps, for instance, now includes a German division, and a US division similarly serves a German corps. On another level, NATO as a whole is moving to create ties with the militaries of former Warsaw Pact foes, as the Alliance looks toward eventual expansion.

An official NATO military-to-military outreach program for the nations of central and eastern Europe was chartered two years ago. US officials say such engagement promotes stability and democracy by holding out the positive example of how Western militaries relate to their governments. Said General Joulwan, "A stable, open military is not just a by-product of democracy; it is a prerequisite of democracy."

Military liaison teams deal with such issues as codes of justice and the role of NCOs. General Maddox said that officers of the former Warsaw Pact nations are especially interested in simply placing observers in NATO units so they can learn how Western militaries foster decentralized leadership styles.

The number of visits has been escalating rapidly. In 1992, USAREUR undertook eighteen exchanges with former Warsaw Pact nations. In 1993,

the number jumped to 144. This year it will be far higher. USAREUR was involved in 128 visits just in the first three months of 1994.

Among other things, the visits tell NATO officials that in some ways the Warsaw Pact was farther from the West's standards than they ever realized. "How you make an established NCO corps more professional isn't the right subject," said General Maddox. "It's 'How do you create an NCO corps?'"

Banging on the Door

This assessment is important because the nations of eastern and central Europe are clamoring to be accepted as full members of NATO. NATO's military-to-military exchange program has become the model for something far larger: Partnership for Peace, the US-devised program intended to serve as an interim, probationary stage on the way to full membership in the exclusive NATO club.

NATO officially adopted Partnership for Peace at a summit meeting in Brussels early this year, in part to counter criticism that the Alliance was not moving fast enough to address serious security concerns of such fledgling democracies as Poland and Hungary. The Partnership program calls for interested countries to join NATO in military maneuvers, to exchange advisors, and in general to begin establishing formal ties. Units from Partnership nations may participate in "out of area" peacekeeping operations undertaken by NATO's new Combined Joint Task Force.

Partnership for Peace participants must make formal declarations to NATO of the size and capabilities of their military assets. They must also lay out plans for upgrading their forces to NATO standards in everything from weaponry to doctrine to the organization of defense ministries. The Czech Republic Air Force, for instance, is already planning to purchase Western air-to-air missiles for its fleet of Soviet-built fighter aircraft. The planes will also be outfitted with transponders to meet NATO's communication standards. Eventually the Czechs would like to purchase some top-end Western fighters.

As Partnership members progress down the prescribed path, NATO

officials will be watching and evaluating them. "NATO will expand," said Under Secretary of Defense for Policy Frank G. Wisner. "Partnership for Peace for many is a door, not a fence that has to be climbed over."

Though some former East Bloc nations have continued to press for



immediate full NATO membership status, the Partnership rolls are filling up gradually. Within months of the Brussels summit, NATO had enrolled fourteen nations: Albania, Bulgaria, the Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Slovakia, Slovenia, and Ukraine.

NATO officials had hoped to hold a command-post exercise with Partnership nations this spring and a full field exercise in the fall, possibly somewhere in eastern Europe. That schedule has slipped, however. As of April, NATO had not progressed beyond the point of identifying office space for new liaison staffs from the former Warsaw Pact at the Supreme Headquarters Allied Powers Europe in Mons, Belgium.

NATO nations see the Partnership for Peace initiative as a way to address a fundamental security challenge now facing the West: how to convert the military institutions of the former Communist world to democratic control. Stephen Oxman, US

assistant secretary of state for European and Canadian Affairs, told Congress that the program represented "the functional equivalent of decommunization."

No New Lines

US officials are quick to insist that they are not trying to redraw East-West lines through Europe. They are sensitive about provoking Russian nationalists, who have charged that Partnership for Peace is just a US plot to extend its military influence and control right up to Russia's borders.

Some critics still think NATO is not moving fast enough to bolster the situation in the East. F. Stephen Larrabee of the RAND Corp. holds that eastern Europe's security has continued to unravel since 1989. The conflict in former Yugoslavia and continued disintegration of some ex-Soviet republics hold obvious dangers, said Mr. Larrabee, adding that even the peaceful breakup of Czechoslovakia could in time produce dangerous ethnic quarrels. Partnership for Peace is a useful "stopgap measure," wrote Mr. Larrabee in a new RAND report, but the Alliance should pursue a rapid expansion eastward, "not primarily because there is a threat from Russia . . . but because there is a dangerous security vacuum in eastern Europe."

Others warn that Washington may be overestimating the depth of US public support for its prospective NATO allies. If the US public is to commit to defending Warsaw as well as Paris, London, or Berlin, these critics say, the Clinton Administration must soon start promoting its program at home. Otherwise, as budget cuts continue, pressure on Capitol Hill for further US disengagement from Europe is likely to increase.

Warned Sen. Carl Levin (D-Mich.), who chairs the Subcommittee on Coalition Defense and Reinforcing Forces of the Senate Armed Services Committee, "The US and our NATO allies need to be honest with our citizens . . . about our willingness to extend the all-for-one security guarantee." ■

Peter Grier is the Washington, D. C., defense correspondent for the Christian Science Monitor and a regular contributor to AIR FORCE Magazine. His most recent article, "Behind the High Readiness Rates," appeared in the March 1994 issue.

The next round is at least a year away, but efforts to influence the decisions have begun.

More Base Closures Coming Up

By James Kitfield

WHEN Air Force Secretary Sheila E. Widnall visited Davis-Monthan AFB, Ariz., last spring, she was given an extraordinary reception. Her hosts laid on private talks with Arizona's governor, Fife Symington. In Tucson, Mayor George Miller and Chairman of the Pima County Board of Supervisors Mike Boyd rolled out the red carpet and made what may be an unprecedented offer: If the Air Force kept Davis-Monthan off its upcoming base closure list, area taxpayers would pony up \$42 million to build a new runway to relieve local air traffic congestion.

Secretary Widnall could only promise to study the legality of the proposal and get back to them. Eventually she turned down the offer.

What happened in Arizona was an unmistakable sign of the mounting pressure that the armed services and local communities are feeling as they approach the fourth and final scheduled round of the dreaded base closure and realignment process. Because base closures are lagging far behind force-structure reductions, many observers expect the next round of closures to be the biggest and most devastating yet. Capitol Hill already is alert to the dangers.

In actions announced in 1988, 1991, and 1993 by the Presidential Base Realignment and Closure (BRAC) Commission, the federal government decided to shut down and dispose of sixty major and 104 minor bases across the country. "There's a rumor on the Hill that one out of every three existing bases or facilities will be recommended for closure under the current direction in which they're moving," said Sen. John W. Warner (R-Va.), a senior member of the Senate Armed Services Committee, during the Febru-

ary confirmation hearing of Defense Secretary William J. Perry. "To me, that level of closure would be unacceptable."

Secretary Perry denied the existence of such a formula, but his assurances did not satisfy everyone in Congress. Across Capitol Hill, a non-partisan group of House Armed Services Committee members announced their intention to amend the upcoming Fiscal Year 1995 defense authorization bill to delay the next round of base closures until 1997. They noted that the Pentagon was still struggling to shut down and dispose of all the installations that Congress has voted to close since 1988. Rep. James V. Hansen (R-Utah) claimed the Defense Department was going too far, too fast.

Secretary Perry may not have had a formal base-closing "formula," but he had instructed each service to be ready in the next BRAC round to take a bottom-line cut of fifteen percent, which would be roughly equivalent in size to the combined total of all three previous base closure rounds. In light of the fact that many of the most obvious and cost-effective closures have already taken place, the Secretary's direction left some experts worried.

One of these concerned officials is James F. Boatright, the Air Force's deputy assistant secretary for Installations. "The fifteen percent target represents a very large reduction," said Mr. Boatright, "and we're predicting that the closings in the next round are going to prove much more costly per base, with a longer payback [period] for any savings."

Saving \$7 Billion

Given the military's need to reserve money for readiness, personnel, and modernization, Pentagon officials seem determined to shutter unnecessary facilities. In his January 1994 Annual Report to Congress, Secretary of Defense Les Aspin explained that in the current defense drawdown, the domestic base structure had declined by only fifteen percent, while the overall defense budget had shrunk by more than forty percent and force levels had dropped by thirty percent.

The Pentagon estimates that the first three sets of BRAC Commission closures, when completed, will save roughly \$7 billion annually. For

the Air Force, the result of the BRAC announcements was authorization to close twenty major bases and realign seven others to serve mainly as homes for various units of the Air Force Reserve and Air National Guard. Former Secretary Aspin and other officials said that many of the nation's remaining 495 major and minor domestic bases and 1,650 overseas facilities are inefficient and significantly underfunded.

Now the services are deeply engaged in preparing their recommendations for the next round, which is set to take place in 1995.

BRAC '95, as the new round is called, is on a fast track. By March 1, 1995, the Secretary of Defense must submit his closure and realignment recommendations to Congress and the commission. If the commission proposes any changes to those recommendations, it must publish them in the Federal Register by May 17, 1995.

On July 1, 1995, the commission will submit its findings and recommendations formally to the President, who has until July 15 to approve or disapprove them. After the President gives his approval to a list, Congress has forty-five days to disapprove it in its entirety by joint resolution. If that does not happen, the list goes into effect.

As in the previous three rounds, the commission and Department of Defense officials will determine closures based on eight criteria: military value, including contribution to operational readiness; availability of land and condition of facilities; potential to accommodate contingency mobilizations and future force-structure requirements; return on investment; level of manpower and cost savings; economic impact on local communities; ability of the community to support the base; and the overall environmental impact of closing the base. Communities that are able to assess their own value objectively, based on those criteria, can begin to calculate their vulnerability.

Arizona officials clearly recognize that Tucson's rapid expansion has brought the city's population too close to Davis-Monthan's flight path. The Air Force has cited such air and ground encroachment as a key factor in deciding to close or realign several installations, including Berg-

	Service				Total
	Army	Navy/ USMC	Air Force	DoD	
US bases in operation in 1988	109	168	209	12	498
BRAC reductions	1988	7	4	5	16
	1991	4	9	13	26
	1993	1	21	4	28
US bases in operation in 1994	97	134	187	10	428

Source: US Department of Defense

strom AFB, Tex., Carswell AFB, Tex., and Castle AFB, Calif. Such was the genesis of the proposal by Arizona officials to fund a new runway, an unprecedented show of community support. Tucson officials can argue that closing the base would have a severe impact on the local economy. According to a study by the University of Arizona, closing Davis-Monthan will cost Tucson 11,300 jobs and \$446 million.

A Wrenching Process

In the end, many communities will simply find themselves standing in a steadily tightening game of musical chairs. During the 1993 round of base closures, for instance, the Air Force determined that it had more large bases in the eastern US than were needed to support the numbers of bombers, tankers, and airlifters outlined in the Bush Administration's Base Force. Despite Air Force calls to keep Plattsburgh AFB, N. Y., open, the BRAC Commission instead chose to continue operations at McGuire AFB, N. J. Announced for closure or realignment were Plattsburgh, Griffiss AFB, N. Y., and K. I. Sawyer AFB, Mich.

Travis AFB, Calif., ranked highest when weighed as an air mobility hub for the West Coast. March AFB, Calif., ranked lowest and was placed on the 1993 realignment list. Other bases in the region that ranked below Travis included Beale AFB, Calif.; McChord AFB, Wash.; and Malmstrom AFB, Mont. Those communities might be nervously contemplating the 1995 round, which will be based on the smaller force structure outlined in the Bottom-Up Review.

Two areas also likely to be hard hit in the next BRAC round are sup-

port installations and reserve bases. "We know for a fact that we have more support infrastructure than we need, and we're going to have to make substantial reductions in that area," said Mr. Boatright, adding that consolidations are likely even on support installations that remain open.

Sacramento ALC at McClellan AFB, Calif., barely escaped the ax in the 1993 BRAC round. Both Ogden ALC at Hill AFB, Utah, and San Antonio ALC at Kelly AFB, Tex., have announced major work force reductions during this year. Mr. Boatright pointed out that during the past two BRAC rounds, the size of the dedicated reserve component base structure actually grew.

As wrenching as the process has been at home, the pace of base closures overseas has proven even more dramatic. Foreign base closings began two years after domestic closings and have doubled the domestic cuts in both magnitude and speed. The Pentagon closed thirty-two percent of its overseas bases in just four years. "Base closures overseas have progressed rapidly and are closely mirroring force-structure reductions, so I don't think there's a lot of additional opportunity for closings there," said Mr. Boatright.

Two factors account for the disparity between closures of domestic and overseas bases, according to experts. First, with the end of the Cold War, DoD has moved away from a forward-deployed posture to one that emphasizes deploying forces from the continental US. Second, political pressure has hampered base closure in the US. Domestic politics require a long lead time for closure, allowing local communities time to adjust. On average, it takes more

Base Closings: Lessons Learned

"People are sometimes shocked at how long it takes to close a domestic base," says Alan K. Olsen, director of the Air Force Base Conversion Agency. Norton AFB, Calif., the last of the domestic bases identified for closing by the 1988 Base Realignment and Closure (BRAC) Commission, just padlocked its doors in March, nearly six years after the process began.

"When you add in the time it takes to conduct environmental studies and cleanup, you're probably talking a total of between five and seven years to fully close a base," says Mr. Olsen.

He credits the Clinton Administration's base revitalization initiative, announced last July, with focusing attention and much-needed funds on the base redevelopment effort. The five-year, \$5 billion program permits the Defense Department to turn over property to local communities at a discount specifically for the purpose of job creation, provides additional funds for transition and redevelopment assistance programs, and identifies clean parcels of land for early reuse.

Those who have been through the process of closing a base claim that local communities can smooth the transition by taking four important steps.

Accept the inevitable. A number of communities have retained a threatened base by building a strong case and presenting it in public hearings before the BRAC Commission. However, once the commission, the President, and Congress have made their decisions, fighting in court only delays the inevitable at the cost of community reuse.

"In the earlier rounds, it did take some communities time to understand that their base really was going to close," says Mr. Olsen. "What we try to emphasize now is that there's life after the Air Force for these communities, and there have already been 3,500 jobs created at bases closed in early BRAC rounds."

Know where to get help. The AFA National Staff in Washington, D. C., can provide background information, copies of legislation, information on lessons learned from earlier rounds, and references. Useful federal contacts include the Homeowners Assistance Program, Federal Aviation Administration, Office of Economic Adjustment, and the Pentagon's Priority Placement Program. State governments also provide assistance.

Start planning early. "The major lesson you learn in this business is that [converting] a base is a tremendous undertaking involving a lot of hard work, so it's important for both the Air Force entity and the local community to organize and start planning very early," says Mr. Olsen. Such early planning helped local residents near Fort Ord, Calif., attract interest in the site as a California State University branch campus.

Speak with one voice. Communities need to establish a single organization that can build a consensus on how to reuse a base. Naturally, the most popular use of a former air base is as a civilian airport. "If the community can afford to operate an airport, and especially if they've outgrown their present one, this obviously presents a golden opportunity," Mr. Olsen notes.

Even after a community decides how to reuse a base, it is important to retain a single organization with the authority to make decisions. "The Air Force is there to dispose of property, clean up environmental contamination, and facilitate community reuse of a base," says Mr. Olsen, "but the community ultimately has the job of redevelopment, and it's important that they coordinate their actions closely so we can support whatever it is they're trying to do."

than four years to close a domestic base. In contrast, DoD averages less than two years to close a foreign base.

Because the strategic situation in the Pacific has not changed as dramatically as that in Europe, relatively few base closures were absorbed by US Pacific Command, whose air component is Pacific Air Forces. The decision to close Clark AB in the Philippines was largely the result of local political opposition to the base and severe damage caused by the eruption of Mount Pinatubo. The Air Force has also closed two small, outdated bases in South Korea.

Severe Reductions in Europe

The largest cuts have come in Europe, which accounts for 773 of the 840 overseas sites where operations have ended or have been severely reduced. That has created particular challenges for officials from US Air Forces in Europe (USAFE), which will dwindle from thirty-seven installations and sixteen main operating bases in 1990 to fourteen installations and six main operating bases by Fiscal 1996.

USAFE's drawdown plan calls for consolidating the command's 2.3 remaining fighter wings and support craft at main operating hubs in Europe's northern, central, and southern regions. In the northern region, the hubs of operation will be RAFs Lakenheath and Mildenhall, UK; in the central region, Ramstein and Spangdahlem ABs, Germany; and in the southern region, most likely Aviano AB, Italy.

The choice of Aviano is not definite because the site has never been used as a USAFE main operating base. Until 1992, air combat forces in the southern region were based at Torrejon AB, Spain. When that base reverted to Spanish control, the Air Force could find no obvious replacement. At Aviano, additional infrastructure and housing would be required. Congress is unlikely to fund new base construction in Europe. USAFE officials hope to fund the improvements from savings of \$73 million in annual operations and maintenance costs at Rhein-Main AB, Germany.

"Since we pulled out of Spain in 1992, establishing a base of operations in the southern region has been our biggest challenge," says Lt. Gen. John G. Lorber, USAFE's Vice Commander in Chief, who notes the NATO missions already being flown out of Aviano and Incirlik AB, Turkey. "We need an anchor in the South."

Each time another large base in Europe closes, General Lorber worries about the impact on his operations. For instance, the command is trying to shift airlift operations from Rhein-Main near Frankfurt to Ramstein AB in southwest Germany even as its pilots continue airlifting humanitarian supplies to Bosnia-Herzegovina as part of Operation Provide Promise.

"This very ambitious plan we have to consolidate even while we conduct contingency missions really is a house of cards," says General Lorber, voicing a sentiment that is common throughout the Air Force. "If you pull out the wrong card and one side falls down, the whole thing can collapse." ■

James Kitfield is a defense correspondent for Government Executive Magazine in Washington, D. C. His most recent article for AIR FORCE Magazine was "Technologies Built for Two" in the December 1993 issue.

Flashback

A Bully Cockpit

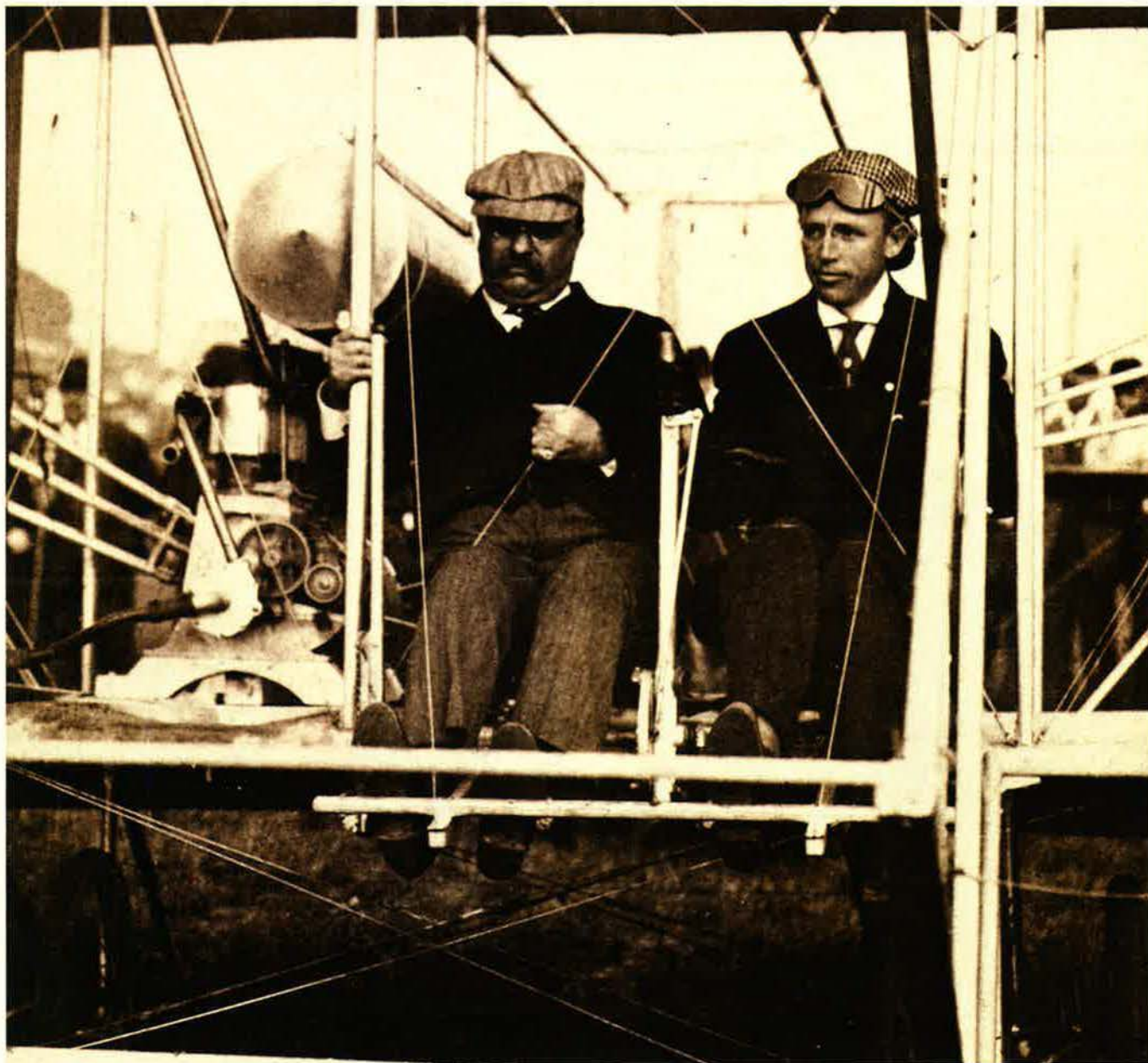


Photo via C.V. Glines

In an era when most people questioned the sanity of the few barnstormers and daredevils willing to take to the air, Theodore Roosevelt became the first former President to fly. On October 10, 1910, at an air meet at Lambert Field, Mo., he took off in a Wright Type B pusher, piloted by flying instructor Arch Hoxsey. The

former chief executive, an avid proponent of the strenuous life, termed the airplane "a practical and safe vehicle of transit."

Rare photography adds color to the retelling of aviation's role in breaching the Third Reich's Atlantic Wall.

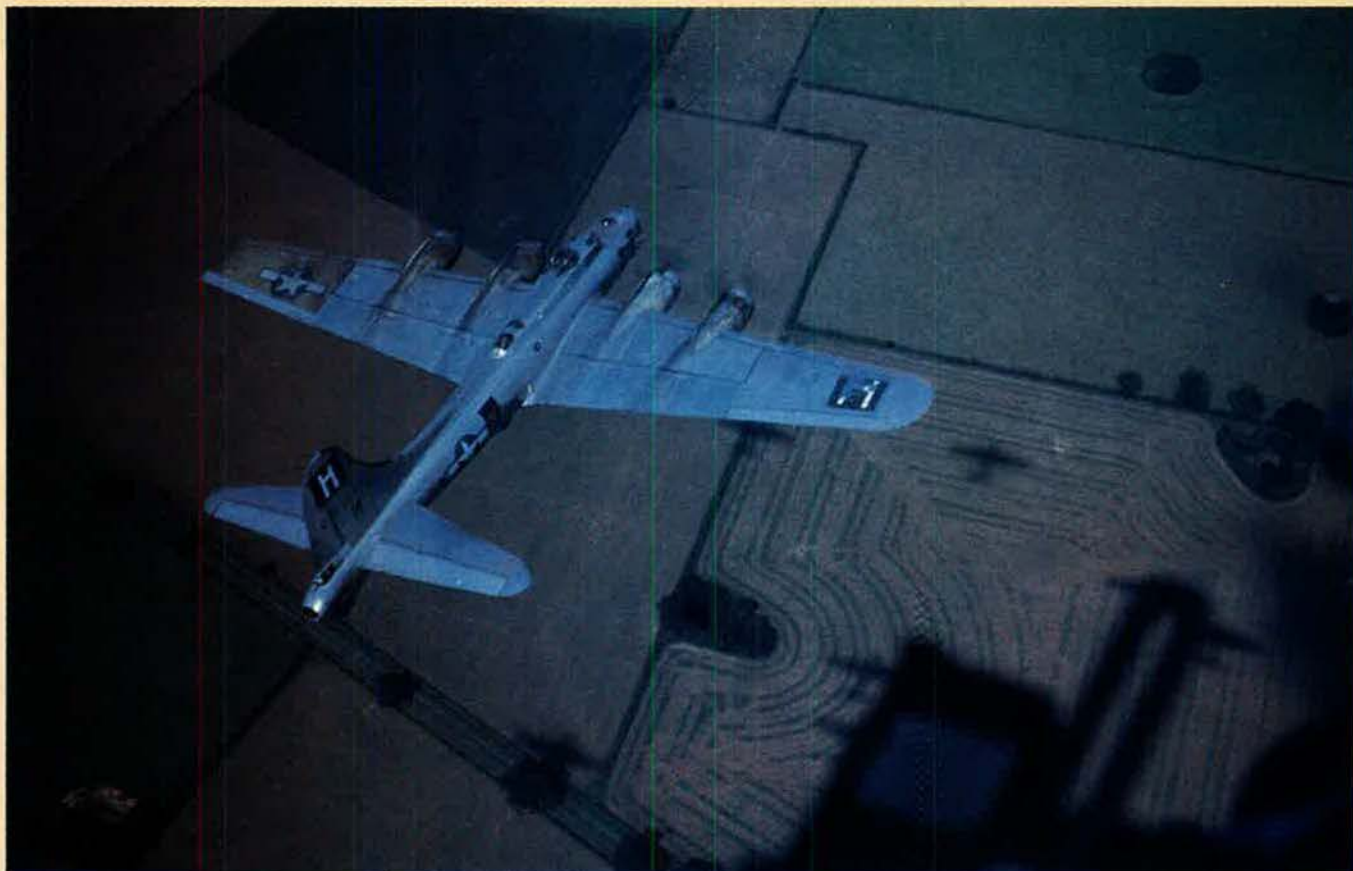
Airpower Over Normandy

Photography from the collection of Jeffrey L. Ethell



On June 6, 1944, the Allies mounted the largest air and amphibious invasion in history. Among the first participants were airborne troops who parachuted from C-47 Skytrains, like this one from the 303d Troop Carrier Squadron, 422d TCG. C-47s, painted with distinctive "invasion stripes" to distinguish them from German aircraft, also towed gliders that landed Allied troops behind enemy lines to prevent German reinforcements from reaching the coast.





Robert Astrella



John Meyers

Top: A worse-for-wear B-17 (note replacement wing panel) leads a formation to England after striking tactical targets in France. **Above:** The B-24 Tubarao served as a group assembly aircraft with the 491st Bomb Group, supporting ground troops at Saint-Lô. **Right:** A 386th BG B-26G Marauder, a favorite for Ninth Air Force tactical missions. **Bottom:** An F-5E Lightning. These photoreconnaissance planes helped keep track of the fluid situation on the ground in Normandy.



Robert Astrella

Right: Lt. James Lane confers with the crew of Butch, his P-51D Mustang of the 336th Fighter Squadron, 4th Fighter Group. The 4th FG received its P-51s in late February 1944 and concentrated on interdiction and air-to-air missions over Normandy. Below, right: This P-47D specialized in covering downed airmen in the English Channel until rescue boats could arrive.



Edward B. Ritchie

Stan Wyglendowski



Mark H. Brown / USAFA

Alexander C. Sloan



In the days leading up to Operation Overlord, conditions for Ninth Air Force flyers (above, left) could best be termed "Spartan." Eighth Air Force Nissen huts (left) were also far from palatial. Temporary airfields in England were the norm since crews transferred to airfields on the Continent as quickly as possible.

John Quincy via Stan Wyglendowski



Comforts on the Continent remained rudimentary as USAAF troops sought to keep up with the advancing First and Third Armies. Left: Sgt. Melvin E. Crooks grabs a shave on the fly while stationed on the Cherbourg peninsula. Below, right: Airmen of the 406th FG take a break at a bare base in France.

Richard H. Perley



Above: Capts. Phil Savides and Dick Perley check a map before a 50th FG mission. They may have been checking their own location—the fast-moving 50th FG changed stations six times between June and November 1944. The 56th FG and its P-47s (bottom) remained stationed in England, contributing mightily to the breakout at Saint-Lô.



Robert Astrella



Mark H. Brown / USAFA



Robert T. Sand



Support for D-Day was not the only game in town in 1944. Eighth Air Force bombers continued to strike targets deep inside Germany with 500-pound and 1,000-pound bombs (above). Its fighter groups hunted the Luftwaffe well behind enemy lines. Some came home severely damaged, like the 55th FG P-38 at left, and many did not return. The 56th FG's P-47 Bonnie (bottom) was forced to belly in, and pilot Hiram Bevens was captured.

Mark H. Brown / USAFA



Mr. Ethell continues to collect color slides from World War II and the Korean War for upcoming publications. If you would like to contribute, write to him or call: Jeffrey L. Ethell, Rte. 1, Box 3154, Front Royal, VA 22630. Phone: (703) 636-1816.

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By Laura Ann Campbell

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Cummock Boudreaux Carr



Coffinger Harlow McAuliffe



Ray Schittulli Shellhammer



Shepherd Smith Wilkins



Day

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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ARIZONA (Green Valley, Phoenix, Prescott, Sedona, Sierra Vista, Sun City, Tucson): **William A. Lafferty**, 1342 W. Placita Salubre, Green Valley, AZ 85614 (phone 602-625-9449).

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By John L. Frisbee, Contributing Editor

Colin Kelly

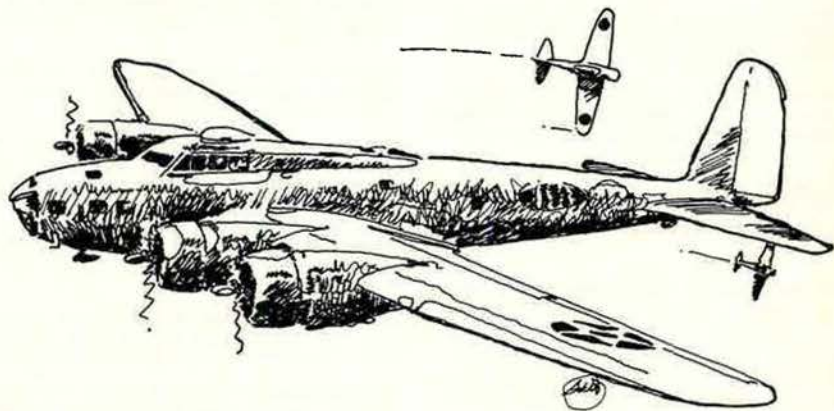
He was a hero in legend and in fact.

ON THE morning of December 10, 1941, six B-17Cs of the 14th Bomb Squadron, 19th Bomb Group, sat in the rain at a rough landing strip near San Marcelino on the Philippine island of Luzon. The crews had spent the night without food, sleeping in or under their planes. Of the war situation they knew little except that Japan had attacked Clark Field and other installations near Manila on December 8—Pearl Harbor on the 7th—and some 400 Japanese aircraft had destroyed most of the US B-17s and pursuit planes.

Squadron Commander Maj. Emmett "Rosy" O'Donnell, Jr., had flown to Clark before daylight to get orders for his squadron. He radioed his pilots to proceed to Clark at daybreak. Only three of the B-17s were allowed to land. They were flown by Capt. Colin P. Kelly, Jr., and Lts. George E. Schaetzel and G. R. Montgomery. Captain Kelly, a 1937 graduate of the US Military Academy and a former B-17 instructor, was one of the most experienced and respected pilots of the 19th Bomb Group.

An imminent air attack sent the three bombers off to their respective targets before refueling and bomb loading were completed. Captain Kelly had only three 600-pound bombs aboard and orders to attack airfields on Formosa (Taiwan), some 500 miles north of Clark. The mission would earn Colin Kelly a place in American history and legend.

In the confusion of the early days of the Pacific war, Kelly was credited with sinking a Japanese battleship and with award of the Medal of Honor. Overnight he became a national hero. It later was determined that Kelly and his crew did not sink a battleship, nor was he awarded the Medal of Honor, although some still believe both. In fact, Colin Kelly was recommended for the Medal of Honor by Maj. Gen. Lewis H. Brereton, commander of the US Far East Air Forces. The award he received was



the Distinguished Service Cross, on the orders of Gen. Douglas MacArthur's headquarters.

This is what actually happened, as told in mission debriefings by members of Kelly's crew and in an official report of the mission prepared in February 1942.

For Captain Kelly and his crew, it was a solo mission deep into territory where the Japanese held absolute air superiority. They had no fighter escort. By December 10, there were only twenty-two flyable P-40s and a few obsolete P-35s left. As they flew north toward Formosa, Kelly and his crew passed over a large Japanese landing in progress at Aparri on the north coast of Luzon. The presence of an enemy carrier in the vicinity had also been reported.

Kelly radioed Clark Field for permission to attack the landing force, which was supported by several destroyers and a large warship, thought to be a battleship, bombarding the coast from several miles offshore. After two calls to Clark that brought only a response to stand by, Kelly told the crew they were going ahead on his decision to attack the battleship—actually a cruiser. Kelly made two dry runs at 20,000 feet, giving bombardier Sgt. Meyer Levin time to set up for an accurate drop.

On the third run, he told Levin to release the bombs in train. As best the crew could tell, two of the three bombs bracketed the ship with one direct hit. Smoke prevented more accurate assessment. The B-17 then headed for Clark Field, its bomb bay empty.

As it approached Clark, the bomber was hit by enemy fighters.

The first attack killed TSgt. William Delehanty, wounded Pfc. Robert Altman, and destroyed the instrument panel. A second attack set the left wing ablaze. The fire spread rapidly into the fuselage, filling the flight deck with smoke.

Captain Kelly ordered the crew to bail out while he still had control of the doomed bomber. Fire began to engulf the flight deck. SSgt. James Halkyard, Pfc. Willard Morey, and Private Altman went out the rear. Navigator 2d Lt. Joe Bean and Sergeant Levin, after a time-consuming struggle, pried open a stuck escape hatch and took to their chutes.

The nose of the aircraft was now an inferno. Colin Kelly remained at the controls as copilot 2d Lt. Donald Robins moved to the upper escape hatch. At that moment, the bomber exploded, hurling a badly burned Robins clear of the aircraft.

The B-17 crashed about five miles from Clark Field. Colin Kelly's body was found at the site. The early report of his heroism, which inspired a nation in shock, is in no way diminished by the actual events of that December day in 1941. Alone and far from friendly territory, he attacked and damaged a heavily armed ship, then sacrificed his own life to save his crew. ■

Thanks to Robert Altman, a member of Capt. Colin Kelly's crew, captured by the Japanese during the surrender of the Philippines, and for forty months a POW in Japan.



You might say our testing standards are rather extreme.

Once the engineers tested the C-17, we let mother nature take over. Alaska took the first shot with chilling winds, snow, and extreme temperatures. Then came Wisconsin's sheet, wind, and temperatures below freezing. Through it all, C-17 operations have been nothing but remarkable.



The next challenge is in Southern Arizona, where scalding sun and desert conditions will test the C-17 in extremes at the opposite end of the thermometer.

Even under the most adverse conditions, the C-17 carries an outsize payload directly to

anywhere in the world and lands in 3,000 feet.

Although our testing may seem extreme, we believe it is essential. After all, we're out to prove what many already know: the C-17 performs to the highest degree.



MCDONNELL DOUGLAS

Performance Above and Beyond.



National Report



Air Force Chief of Staff Gen. Merrill A. McPeak congratulates MSgt. Scott C. Fales after presenting him with the Silver Star for gallantry in action on January 31.

AFA Outstanding Airman Is Hero

AFA congratulates MSgt. Scott C. Fales, one of 1993's 12 Outstanding Airmen, who received the Silver Star for gallantry in action for heroic actions during a deployment to Somalia [See related article in this issue of AIR FORCE Magazine].

Fales, who also received the Purple Heart, was shot in the leg while attempting to rescue a copilot and sniper from the wreckage of a downed helicopter.

Air Force Chief of Staff Gen. Merrill A. McPeak presented the Silver Star to Fales and to SSgt. Jeffrey W. Bray. The Air Force Cross for extraordinary heroism was presented to TSgt. Timothy A. Wilkinson.

Fales serves on AFA's Enlisted Council. AFA salutes the heroism and selflessness of all three courageous airmen.

AFA Opposes Extra Taxes Levied on Retirees

For the last five years, AFA and other associations in the Military Coalition have been working together to right an injustice: the two-tier tax system that many states imposed on retirees. On one tier (at a lower rate) were those who retired from state or local government; on another tier (at a higher rate) were all other retirees, including military and federal retirees, a situation that amounted to discriminatory taxation.

When a 1989 case was making its way to the United States Supreme Court, AFA and the Coalition filed an *amicus curiae* brief with the Court outlining our position. The Supreme Court found

in favor of our position, and the states affected said they would discontinue the practice, but would not pay the funds back to those who had filed at the higher amount. That stand prompted AFA and the Coalition to file another brief with the Court supporting the position that the states owed refunds plus interest to those who had paid at the higher rate. Again, the Court affirmed our position.

Some states have already settled. Others should follow suit in the near future. If you believe you are affected and have not heard from your state department of taxation, you should contact the attorney general's office in your state capital. Attorneys seeking legal and precedent citations to assist their clients may contact AFA's National Defense Issues Department at (703-247-5800).

AFA Concerned about Vets' Gulf War Illnesses

The illnesses facing our Desert Storm veterans have been on AFA's legislative agenda right from the beginning. AFA leaders and national staff members have been working this issue on Capitol Hill since reports first surfaced about the unexplained illnesses. Recently, AFA President James M. McCoy and Executive Director Monroe W. Hatch, Jr., had the opportunity

to discuss this issue with Secretary of Veterans Affairs (VA) Jesse Brown. Secretary Brown has accepted AFA's invitation to address the delegates to AFA's National Convention this September on this issue. AFA's National Defense Issues (NDI) staff has also monitored numerous hearings before both the House and Senate Veterans' Affairs committees and the House and Senate Armed Services committees and met with several key congressional leaders, including Rep. Ike Skelton (D-MO) and Rep. Sonny G.V. Montgomery (D-MS).

How are we doing?

The Air Force Association is a top flight organization that has proved to be a valuable asset to me. Its magazine and staff are excellent sources of authoritative information.

—Rep. Floyd Spence (R-SC), Ranking Republican on the House Armed Services Committee



By Daniel M. Sheehan, Assistant Managing Editor

Soaring On Wings of Eagles

Though it is not the largest chapter in the state, the **On Wings of Eagles (Fla.) Chapter** makes up for its lack of size with a tightly knit organization and a knack for promotion. Recently, a local tour of vintage aircraft from World War II gave the chapter the opportunity to distribute membership applications and enlist Community Partners. To catch the public's eye at such events as the fly-in of the B-17 and B-24, the chapter employs a 1929 Model A Ford, complete with AFA logo. These tactics have been highly successful, according to Chapter President William B. Gemmill, enabling him to enlist two new Community Partners at the fly-in and boosting chapter membership from twenty-five to more than 160 in just six years.

Chapter News

Coping with a base closing or downsizing is always hard, but when that downsizing is accompanied by a natural disaster on the scale of Hurricane Andrew, a chapter's task is



Assistant Secretary of Defense for Reserve Affairs Deborah R. Lee meets with National President James M. McCoy to discuss the reserve component's role as defined in the Defense Department's Bottom-Up Review.

doubly difficult. The **John W. DeMilly, Jr. (Fla.) Chapter** soldiers on despite the damage done by Andrew and

the attendant downsizing of Homestead ARB. With an assist from the **Miami Chapter**, the DeMilly Chapter hosted a dinner welcoming AFRES Brig. Gen. James L. Turner, commander of the 482d Fighter Wing as guest speaker. Chapter President Mike Richardson gave General Turner a copy of *The Real Heroes* in appreciation for his speech, which centered on the increased role of the Reserve and Air National Guard in today's smaller Air Force.

One of the keys to success for the expanded role of the Guard and Reserve is employer support. Guardsmen and Reservists who know they have the support of their full-time employers are better able to serve their country. Recognizing this, the **Phoenix Sky Harbor (Ariz.) Chapter** has instituted a program to honor employers who gave their unstinting support to members of ANG's 161st Air Refueling Group, especially during such extended deployments as Operations Desert Shield and Desert Storm. Sears, Roebuck and Co.; Safeway Stores; and Mi Fanchito Mexican Food Products, Inc., were among those honored by Chapter President



Rep. G. V. "Sonny" Montgomery (D-Miss.) has long been a strong advocate for veterans' causes on Capitol Hill. In recognition of Representative Montgomery's support, Nation's Capital Chapter President Paul E. McManus (right) presented the chapter's Distinguished American Award to him, praising his "outstanding leadership in preserving and protecting the traditions and values" of the US.

Photo by Dave Tripp

Coming Events

June 3-4, **Illinois State Convention**, Rantoul, Ill.; June 3-5, **Oklahoma State Convention**, Enid, Okla.; June 10-12, **Arizona/Nevada State Convention**, Las Vegas, Nev.; June 10-12, **New York State Convention**, Cheektowaga, N. Y.; June 17-18, **Missouri State Convention**, Whiteman AFB, Mo.; June 24-26, **Alabama State Convention**, Huntsville, Ala.; June 24-26, **Minnesota/North Dakota/South Dakota State Convention**, Minneapolis, Minn.; June 24-26, **Ohio State Convention**, Newark, Ohio; July 8-9, **Virginia State Convention**, McLean, Va.; July 15-17, **Oregon State Convention**, Portland, Ore.; July 15-18, **Pennsylvania State Convention**, Pittsburgh, Pa.; July 22-24, **Texas State Convention**, Fort Worth, Tex.; July 23-24, **Iowa State Convention**, Des Moines, Iowa; July 29-31, **Florida State Convention**, Melbourne, Fla.; August 5-6, **New Mexico State Convention**, Albuquerque, N. M.; August 6, **Montana State Convention**, Three Forks, Mont.; August 12-13, **Arkansas State Convention**, Hot Springs, Ark.; August 12-14, **California State Convention**, Vandenberg AFB, Calif.; August 18-22, **Washington State Convention**, Seattle, Wash.; August 19-21, **Kansas State Convention**, Wichita, Kan.; August 20, **Indiana State Convention**, Indianapolis, Ind.; September 12-14, **AFA National Convention and Aerospace Technology Exhibition**, Washington, D. C.

Glenn O. Plaumann with Community Partner memberships. Mr. Plaumann has since been succeeded by Tom Molloy.

In other recent ceremonies, the Phoenix Sky Harbor Chapter presented a national Exceptional Service Award to Maj. Gen. Donald L. Owens, retiring adjutant general of the Arizona ANG, and the chapter sponsored an Eagle Grant scholarship for an outstanding Community College of the Air Force graduate. The \$250 award went to SSgt. Lisa Clemens of the 161st Air Refueling Group.

The **Lawrence D. Bell-Niagara Frontier (N. Y.) Chapter** got a front-line perspective on NATO's first armed engagement from Navy Reserve Capt. Frederick Kass, who was aboard the E-3 AWACS command-and-control aircraft that directed USAF F-16s to



Air Force Secretary Sheila Widnall (third from right) spoke at the Thomas W. Anthony (Md.) Chapter's Women of Distinction Banquet. She is pictured with honorees (from left) CMSgt. Andrea Ledgerwood, MSgt. Pamela Coffey, ANG Maj. Gen. Roberta Mills, Capt. Margith San Souci, Maxine Clark, Ethel Williams, MSgt. Catherine Danzy, and Margaret Feldman and emcee ANG Brig. Gen. Irene Trowell-Harris.

shoot down four Bosnian Serb Super Galeb jets over Bosnia-Herzegovina on February 28. Captain Kass described the operation in detail, including the challenges of working with an international team within the Alliance framework, and afterward fielded questions about NATO's role in enforcing the no-fly zone.

Chapter President Barry H. Griffith presented Captain Kass with the traditional Bronze Buffalo in appreciation for his speech. Ed Loomis, president of the Aero Club of Buffalo, which cosponsored the evening, gave Cap-

tain Kass a silver tray. Chapter Secretary Robert C. Bienvenue praised Captain Kass for his timely presentation and for ably standing in for Maj. Gen. Michael S. Hall, New York ANG adjutant general, the scheduled speaker.

The **San Bernardino (Calif.) Chapter** did not let National Salute to Hospitalized Veterans Week pass unnoticed. Chapter Vice President (Veterans Affairs) Tom Van Meter was among those who traveled to the Jerry L. Pettis Memorial Veterans Hospital in Loma Linda, Calif., to visit veter-



The Contrails (Kan.) Chapter staged a highly successful POW recognition dinner in April. Brig. Gen. Charles R. Henderson (center), commander of the 384th Bomb Group at McConnell AFB, was the guest speaker. He is flanked by the honored former POWs, including Bataan Death March survivors William Brenner (fifth from left) and Henry Patton (fifth from right).

ans and let them know they were not forgotten. In all, the chapter's members visited more than 300 veterans this year.

A Special Reenlistment

SSgt. Jeffrey Woffinden is no ordinary state vice president. Massachusetts Vice President (Aerospace Education) Woffinden, Airman of the Year for Air Force Materiel Command and one of AFA's twelve Outstanding Airmen of the Year for 1993, was in Orlando, Fla., for a meeting of AFA's Enlisted Council when a unique opportunity presented itself. He mentioned to CMSAF Gary R. Pflingston

that he was due for reenlistment and asked if USAF Chief of Staff Gen. Merrill A. McPeak might be willing to do the honors. Chief Pflingston forwarded the request, and General McPeak was happy to oblige by officiating at the swearing-in, to the delight of Sergeant Woffinden. "I'll never forget it," he said.

N. J. Aviation Hall of Fame

Brig. Gen. Michael J. Jackson, USAF (Ret.), of the **Thomas B. McGuire, Jr. (N. J.), Chapter** has joined some distinctive company in becoming a member of the New Jersey Aviation Hall of Fame, the oldest state

aviation hall of fame in the nation. In almost thirty-five years of service, General Jackson accumulated more than 4,000 hours of flying time. As a member of the 56th Fighter Group in England during World War II, he became a fighter ace with eight confirmed victories. Among his many decorations are a Silver Star, a Purple Heart, and an Air Medal with fifteen oak leaf clusters.

Have AFA/AEF News?

Contributions to "AFA/AEF Report" should be sent to Dave Noerr, AFA National Headquarters, 1501 Lee Highway, Arlington, VA 22209-1198. ■

Unit Reunions

AACS Alumni Ass'n

Airways and Air Communications Service alumni will hold a reunion September 29–October 2, 1994, in Tampa, Fla. **Contact:** Ted Carlson, P. O. Box 177, Stickney, SD 57375. Phone: (605) 732-4476.

Air Transport Command

Veterans of Air Transport Command (European division) who served in World War II will hold a reunion September 23–25, 1994, in New Orleans, La. **Contact:** Sal Maggio, 3720 Rockford Heights, Metairie, LA 70002. Phone: (504) 455-7679 or (504) 367-3720 (office).

BAD 2 Ass'n

Veterans of Base Air Depot 2 who were stationed in Warton, England (World War II), will hold reunions in September 1994 in Knoxville, Tenn., and in June 1995 in England. **Contact:** Ralph G. Scott, 228 W. Roosevelt Ave., New Castle, DE 19720-2565.

Combat Security Police

Veterans of Combat Security Police Operation Safeside will hold a reunion August 18–21, 1994, in Las Vegas, Nev. **Contacts:** CMSgt. Lyle D. Brakob, USAF (Ret.), 4150-2 Schaefer Ave., Chino, CA 91710. Phone: (310) 942-6841 or (602) 747-0734 (Carey Stark).

George Field Ass'n

Military and civilian personnel who served at George Field, Ill., between 1942 and 1945 will hold a reunion September 8–10, 1994. **Contact:** Allie DeLoria, P. O. Box 301, Lawrenceville, IL 62439-0301.

Navigator Classes

Navigators of Classes 6402, 6403, and 6404

Readers wishing to submit reunion notices to "Unit Reunions" should mail their 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.

(James Connally AFB, Tex.) will hold a reunion September 30–October 1, 1994, in San Antonio, Tex. **Contact:** James R. Faulkner, 4109 Timberlane, Enid, OK 73703. Phone: (405) 242-0526.

RAF Croughton

Members of the AACs/AFCS/AFCC units who served at RAF Croughton, England, will hold a reunion the last weekend in July 1994. **Contact:** MSgt. Richard L. Kao, USAF (Ret.), 5021 S. 13th Strasse, A-2, Milwaukee, WI 53221-3600.

Randolph Field

Instructors and students assigned between 1943 and 1946 to Randolph Field, Tex. (46th Single Engine Instructor Squadron), will hold a reunion in conjunction with the Confederate Air Force air show October 6–9, 1994, in Midland, Tex. **Contact:** Lt. Col. Phillip Coody, USAF (Ret.), 12935 Rio Oso Rd., Auburn, CA 95602. Phone: (916) 269-2302.

Ravens

Forward air controllers who operated under the "Ravens" designation in southeast Asia will hold a reunion October 14–16, 1994, at Randolph AFB, Tex. **Contact:** Craig Morrison, 1437 Wessington Rd., Atlanta, GA 30306. Phone: (404) 876-5520.

1st Strategic Air Depot Ass'n

The 1st Strategic Air Depot Association (Honington-Troston, England, 1942–46) will hold a reunion October 6–9, 1994, in Tulsa, Okla. **Contact:** William K. Garms, 5525 S. Toledo Pl., Tulsa, OK 74135. Phone: (918) 496-8413.

3d Air Depot Group

Veterans of the 3d Air Depot Group (Agra, India, World War II) will hold a reunion October 6–9, 1994, in San Antonio, Tex. **Contact:** Walter B. Neidert, 8300 Meadow Fire St., San Antonio, TX 78251.

3d Hospital Group

Veterans of the 3d Hospital Group, 7510th USAF Hospital, and the 163d General Hospital Group, US Army, who served at Wimpole Park, England (World War II), will hold a reunion October 7–9, 1994, at the Best Western Landmark Resort Hotel in Myrtle Beach, S. C. **Contact:** Rowland D. Garver, 182 E. Fifth St., Peru, IN 46970-2340. Phone: (317) 473-7184.

4th Emergency Rescue Squadron

Members of the 4th Emergency Rescue Squad-

ron will hold a reunion September 28–October 2, 1994, in Colorado Springs, Colo. **Contact:** Melville Turner, 9562 Hwy. G, Kelly Lake, Suring, WI 54174-9693. Phone: (414) 842-4422.

7th Combat Cargo Squadron

Members of the 7th Combat Cargo Squadron, 2d Combat Cargo Group, 54th Troop Carrier Wing, 5th Air Force (World War II), will hold a reunion October 21–23, 1994, at the Holiday Inn–Briley Parkway in Nashville, Tenn. **Contact:** Louis V. di Donato, 8822 Silverarrow Cir., Austin, TX 78759-7442. Phone: (512) 343-6832.

7th Photorecon Group Ass'n

The 7th Photoreconnaissance Group (World War II) will hold a reunion with the 8th Air Force Historical Society October 4–9, 1994, in San Diego, Calif. **Contact:** Claude Murray, 16810 Boswell Blvd., Sun City, AZ 85351-1270. Phone: (602) 972-3991.

8th Bomb Squadron

Veterans of the 8th Bomb Squadron (B-57 only) will hold a reunion September 22–24, 1994, at the La Quinta Motor Inn in Arlington, Tex. **Contact:** Lt. Col. Don Baldwin, USAF (Ret.), 6501 Baldwin Acres Ct., Arlington, TX 76017. Phone: (817) 472-9040.

8th Photorecon Squadron

The 8th Photoreconnaissance Squadron, 5th Air Force (World War II), will hold a reunion October 6–10, 1994, in Minneapolis, Minn. **Contact:** Andy Kappel, 6406 Walnut St., Kansas City, MO 64113. Phone: (816) 363-0261.

9th Bomb Group Ass'n

Veterans of the 9th Bomb Group who served on Tinian in 1945 will hold a reunion September 15–17, 1994, at the Holiday Inn–Hampton Coliseum in Hampton, Va. **Contact:** Herbert W. Hobler, 295 Mercer Rd., Princeton, NJ 08540. Phone: (609) 921-3800.

12th Tactical Fighter Wing

Veterans of the 12th Tactical Fighter Wing who served at Cam Ranh Bay and Phu Cat AB, Vietnam, will hold a reunion September 9–11, 1994, in Washington, D. C. **Contact:** Gregory T. Scott, 643 McKinstry Ave., Chicopee, MA 01020-1122. Phone: (404) 532-1519.

17th Photorecon Squadron

The 17th Photoreconnaissance Squadron, 4th Photoreconnaissance Group, will hold a reunion

in September 1994 in Dayton, Ohio. **Contact:** Morris Van Daele, 1526 Swallow Rd., Twin Lakes, WI 53181-9740. Phone: (813) 367-4099.

27th Fighter-Bomber Group

Veterans of the 27th Fighter-Bomber Group (World War II) will hold a reunion September 28–October 2, 1994, at the Holiday Inn Resort in Orlando, Fla. **Contact:** Lowell Smith, Diplomat Shores, 166 Sorento Dr., Leitchfield, KY 42754. Phone: (502) 242-7868.

36th Fighter Group

Veterans of the 36th Fighter Group (World War II) will hold a reunion October 6–8, 1994, in Seattle, Wash. **Contact:** Bill Adams, 20909 S. E. 403d St., Enumclaw, WA 98022. Phone: (206) 825-3084.

39th Bomb Group

Veterans of the 39th Bomb Group, 314th Bomb Wing, who served on Guam in 1945 will hold a reunion August 18–20, 1994, in Colorado Springs, Colo. **Contacts:** James W. Wyckoff, 2714 E. Hayt Corners Rd., Ovid, NY 14521-9768. Phone: (607) 869-2574. Robert E. Weiler, 516 Canal Rd., Sarasota, FL 34242. Phone: (813) 346-0188.

Class 42-A

Members of Class 42-A (Brooks Field, Tex.) will hold a reunion October 19–23, 1994, in Springfield, Mo. **Contact:** Lt. Col. Harry C. Strawn, USAF (Ret.), 3214 Glenhaven Ave., Springfield, MO 65804-4530. Phone: (303) 627-8145 (May–August) or (417) 882-3074.

Class 54-M

Members of Class 54-M will hold a reunion July 15–17, 1994, at the Marriott Hotel in Oklahoma City, Okla., in conjunction with the Aerospace America air show. **Contact:** Lt. Col. Jack R. Seay, USAF (Ret.), 1219 E. 13th St., Tulsa, OK 74120-5093. Phone: (918) 583-3181 (work) or (918) 599-9803 (home).

Class 54-R

Members of Pilot Training Class 54-R will hold a reunion September 9–11, 1994, at the Holiday Inn–International Drive in Orlando, Fla. **Contact:** S. Hart, 3027 Bridgestone Dr., Jacksonville, FL 32216. Phone: (904) 636-8572.

61st Troop Carrier Squadron

Veterans of the 61st Troop Carrier Squadron (World War II) will hold a reunion September 29–October 1, 1994, at the Ramada Hotel in Fort Worth, Tex. **Contact:** Lew Johnston, 2665 Chestnut St., San Francisco, CA 94123. Phone: (415) 567-4717.

65th Troop Carrier Squadron

Veterans of the 65th Troop Carrier Squadron will hold a reunion August 3–7, 1994, in San Antonio, Tex. Veterans of the 433d Troop Carrier Group are invited. **Contact:** Willis Cooper, 416 Truman St., Houston, TX 77018. Phone: (713) 695-1845.

89th Airlift Wing

Members of the 89th Airlift Wing "Sam Fox" Association are planning to hold a reunion October 6–8, 1994, at Andrews AFB, Md. **Contacts:** Sam Fox Association, c/o 89th Airlift Wing, Andrews AFB, MD 20331. Phone: (301) 981-5835 (SMSgt. Kip Coppage, USAF) or (301) 981-2855 (Lt. Col. Everett DeWolfe, USAF).

89th Troop Carrier Group

Veterans of the 89th Troop Carrier Group and headquarters squadrons (World War II) who served between 1942 and 1945 at Bergstrom AFB, Tex., will hold a reunion September 14–17, 1994, in Charleston, S. C. **Contact:** Wayne Taylor, 5015 S. W. 20th Terr., Topeka, KS 66604-3576. Phone: (913) 272-2584.

100th Air Refueling Squadron

Veterans of the 100th Air Refueling Squadron will hold a reunion October 2–5, 1994, in Portsmouth, N. H. **Contacts:** Charles R. Wagner, P. O. Box 150, St. Peter, MN 56082-0150. Phone: (507) 931-6973 or (603) 436-8745 (Bob Fitzgerald).

301st Veterans Ass'n

Members of the 301st Veterans Association will hold a reunion October 6–9, 1994, in St. Louis, Mo. **Contact:** Reinhold Schulz, 5231 Kings Park Dr., St. Louis, MO 63129-3310.

315th Troop Carrier Group

The 315th Troop Carrier Group, 9th Air Force (World War II), will hold a reunion October 5–9, 1994, in St. Louis, Mo. **Contact:** Robert L. Cloer, 1417 Valley View Dr., Yuba City, CA 95993. Phone: (916) 674-3681.

376th Heavy Bomb Group Ass'n

Veterans of the 376th Heavy Bomb Group will hold a reunion August 31–September 4, 1994, at the Doubletree Hotel in Austin, Tex. **Contact:** William V. Barnes, 4304 Denton Cir., Waco, TX 76710-2125. Phone: (817) 776-4847.

390th Bomb Group Ass'n

Veterans of the 390th Bomb Group, 8th Air Force (World War II), will hold a reunion September 12–18, 1994, in Spokane, Wash. **Contacts:** Marshall Shore, 2616 E. 58th Ln., Spokane, WA 99223. Phone: (509) 448-1501. 390th Bomb Group Veterans Association, P. O. Box 15087, Tucson, AZ 85708.

438th Troop Carrier Group

Veterans of the 438th Troop Carrier Group (World War II) will hold a reunion November 10–13, 1994, in Orlando, Fla. **Contact:** Ronald H. Worrell, 419 S. 4th St., De Kalb, IL 60115-3736. Phone: (815) 756-6582.

440th Signal Battalion

Members of the 440th Signal Battalion will hold a reunion October 4–6, 1994, at the George Washington Inn in Williamsburg, Va. **Contact:** Grover K. Smith, 627 St. Louis St., Lewisburg, PA 17837.

450th Bomb Group

The 450th Bomb Group (World War II) will hold a reunion September 29–October 2, 1994, at the Marriott Mission Valley Hotel in San Diego, Calif. **Contact:** Doid K. Raab, 5695 Ireland Rd., N. E., Rte. 4, Lancaster, OH 43130. Phone: (614) 536-7635.

452d Bomb Wing

Veterans of the 452d Bomb Wing who served in Korea will hold a reunion August 6, 1994, at the Naval Station Officers Club in Long Beach, Calif. **Contact:** Gene Hoffman, P. O. Box 3785, Long Beach, CA 90803. Phone: (310) 438-7138.

461st Fighter Squadron

Members of the 461st Fighter Squadron will hold a reunion July 28–31, 1994, at Luke AFB, Ariz., and at The Wigwam Resort and Country Club in Litchfield Park, Ariz. **Contacts:** Capt. John Clark, USAF, or Lt. Col. John Carter, USAF, 7125 N. Fighter Country Ave., Luke AFB, AZ 85309. Phone: (602) 856-7395.

463d Bomb Group

Veterans of the 463d Bomb Group will hold a reunion October 12–16, 1994, in Las Vegas, Nev. **Contact:** Rev. Eugene Parker, Rte. 3, Box 188, New Matamoras, OH 45767. Phone: (614) 473-1515.

465th Troop Carrier Wing

The 465th Troop Carrier Wing will hold a reunion September 22–24, 1994, in Dayton, Ohio. **Contact:** Lt. Col. Paul F. Ross, 4074 San Marino St.,

Kettering, OH 45440-1316. Phone: (513) 299-2011.

466th Fighter Squadron

Veterans and members of the 466th Fighter/Fighter-Escort/Strategic Fighter/Tactical Fighter Squadrons will hold a fiftieth-anniversary reunion October 15, 1994, at Hill AFB, Utah. **Contact:** Capt. Ken Warren, USAF, 419th Fighter Wing, Hill AFB, Utah 84056. Phone: (801) 771-1725.

481st Tactical Fighter Squadron

Veterans of the 481st Tactical Fighter Squadron and those who served TDY with them at Cannon AFB, N. M., will hold a reunion October 21–22, 1994, in Tucson, Ariz. **Contact:** Lt. Col. Robert W. Finley, Jr., USAF (Ret.), 6618 E. Valle di Cadore, Tucson, AZ 85715. Phone: (602) 577-1006.

482d Bomb Group Ass'n

Veterans of the 482d Bomb Group (World War II) who served at Alconbury, England, including the 36th, 812th, 813th, and 814th Bomb Squadrons and attached units, will meet during the 8th Air Force Historical Society reunion October 4–9, 1994, at the Town and Country Hotel in San Diego, Calif. **Contact:** Lois L. Ring, One Scanlan Plaza, St. Paul, MN 55107-1629. Phone: (612) 298-0997.

484th Bomb Group

The 484th Bomb Group (World War II) will hold a reunion November 7–11, 1994, aboard the cruise ship *Ecstasy*, which will depart from Miami, Fla. **Contact:** Bud Markel, 1122 Ysabel St., Redondo Beach, CA 90277-4453. Phone: (310) 316-3330.

486th Bomb Group Ass'n

Veterans of the 486th Bomb Group, 8th Air Force, and supporting units who served in Sudbury, England, between 1944 and 1945 are planning to hold a reunion September 22–25, 1994, in St. Louis, Mo. **Contact:** John W. Pedersen, 507 Nannette Dr., St. Louis, MO 63125-3302. Phone: (314) 892-1482.

501st Tactical Control Group Ass'n

Members of the 501st Tactical Control Group who served in Germany in the late 1940s through the 1960s will hold a reunion September 28–October 2, 1994. **Contact:** Col. Joseph H. Livernash, USAF (Ret.), P. O. Box 27293, San Diego, CA 92128-1293.

509th Bomb Wing

The 509th Bomb Wing will hold a reunion September 21–25, 1994, in Albuquerque, N. M. **Contact:** Lt. Col. Don Scheid, 901 E. Pueblo, Espanola, NM 87532. Phone: (505) 753-9786.

530th Fighter Squadron

Veterans of the 530th Fighter Squadron, 311th Fighter Group (World War II), will hold a reunion September 14–18, 1994, in Springfield, Mo. **Contact:** F. H. Wilbourne, 4118 Keagy Rd., Salem, VA 24153. Phone: (703) 387-0562.

601st AC&WS/TCS

Veterans of the 601st Aircraft Control and Warning Squadron who served in Germany between 1947 and 1960 and of the 601st Tactical Control Squadron who served in Germany (1945–60) will hold a reunion in September 1994. **Contact:** Harry Ambrose, 18720 Dallas Ln., Little Rock, AR 72211. Phone: (501) 821-3509.

735th AC&WS

Veterans of the 735th Aircraft Control and Warning Squadron who served between 1950 and 1960 in Morocco will hold a reunion August 25–27, 1994, in Charlotte, N. C. **Contact:** CMSgt.

Robert A. Ewing, USAF (Ret.), 109 Willowside Dr., Mt. Holly, NC 28120-9006. Phone: (704) 827-5156.

868th Bomb Squadron

The 868th Bomb Squadron ("The Snoopers") will hold a reunion in conjunction with the 63d Bomb Squadron October 13-15, 1994, in San Antonio, Tex. Members of the 308th Bomb Group, 14th Air Force, who flew "Snooper" missions are invited. **Contact:** Fred Stanley Howell, 33233 Avenue F, Yucaipa, CA 92399. Phone: (909) 795-5658.

1503d AAFBU

Members of the 1503d AAF Base Unit who served at Hamilton Field, Calif., in 1944 and 1945 will hold a reunion September 13-14, 1994, in Las Vegas, Nev. **Contact:** Robert Mengelos, 8251 Riverview Rd., Peshastin, WA 98847.

3558th Combat Crew Training Squadron

Instructors and permanent party personnel of the 3558th Combat Crew Training Squadron who served between 1953 and 1961 at Perrin AFB, Tex., will hold a reunion October 21-23, 1994, in San Antonio, Tex. **Contact:** Ed Whinery, 124 Russwood Cir., Universal City, TX 78148. Phone: (210) 659-2064.

3917th Air Base Group

Members of the 3917th Air Base Group who served at RAF Stations Manston and East Kirkby, England, will hold a reunion October 21-23, 1994, at the Sheraton Inn in Fort Smith, Ark. **Contact:** George J. McNally, 123 School Rd., Bethel, PA 19507-9410. Phone: (717) 933-4849.

Flight Instructors

For a reunion in 1995, I am trying to locate some of the first civil contract flight instructors for Primary Flying Schools (July-September 1939) assigned to Chicago Primary, Glenview, Ill.; Dallas Primary, Dallas, Tex.; Grand Central Primary, Glendale, Calif.; and Hancock College of Aero Primary, Santa Maria, Calif. **Contact:** Col. Robert F. Schirmer, USAF (Ret.), Class 40-A Association, 8978 E. Anna Pl., Tucson, AZ 85710. Phone: (602) 886-0730.

MAC Aircrews

For the purpose of organizing a reunion scheduled for December 25, 1994-January 3, 1995, I am seeking contact with Military Airlift Command C-141 aircrew members who brought assistance to Darwin, Australia, damaged by Cyclone Tracy in 1974. All US service personnel who served in Darwin in 1974 and 1975 are invited. **Contact:** Collin Gibbons, 34-A Village Bay Close, Marks Point, NSW, Australia 2280. Phone: 011-61-49-451-099.

Thomasville Airfield

Seeking contact with members of the 59th Fighter Group, 59th Reconnaissance Group, and the 339th Base Unit who served at Thomasville AAF, Ga., between 1943 and 1945 and are interested in having a reunion. **Contact:** Col. Samuel A. Owens, USAF (Ret.), 125 Bayview Dr., Suite A, San Carlos, CA 94070. Phone or fax: (415) 595-4344.

Class 53-A

Seeking contact with members of Class 53-A (Enid, Okla.) for a reunion. **Contacts:** Clyde Luther, 9732 Burke View Ct., Burke, VA 22015. Phone: (703) 250-9767. Nicholas A. Travaglini, R. D. 2, Green Ln., Chester Springs, PA 19425. Phone: (610) 469-6518.

80th Service Group

For the purpose of organizing a reunion in June 1994 or June 1995, I am trying to locate members of the 80th Service Group who served in World War II and transferred into Headquarters and Headquarters Squadron, V Bomber Command. **Contact:** Virgil Staples, P. O. Box 270362, St. Louis, MO 63126.

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Bulletin Board

Seeking the whereabouts of **Capt. Cleve Waters** (Korea, 1953), base armament officer. **Contact:** Commandant John C. Bolitho, South Africa Air Force (Ret.), 12 Garfield Rd., Claremont 7700, Cape Town, South Africa.

Collector and historian seeking **World War I or World War II memorabilia**, especially leather flight jackets, uniforms, flight equipment, and photo albums. **Contact:** Jon Cerar, 425 John St., Carlinville, IL 62626.

Seeking contact with members of or information on the **Guinea Pig Club** from World War II for a commemorative article. Also seeking information on **Queen Victoria Hospital** or **Archie McIndoe**. **Contact:** George R. Bauer, P. O. Box 10129, Olathe, KS 66051.

Seeking information on the USAAF station at **Poltava, Ukraine**, during 1944-45. **Contact:** M. H. Abbott, 2007 Mound Rd., Jacksonville, IL 62650.

Model-builder seeks information and photos of the **Convair NB-36H Crusader** and all chase aircraft, including C-119 troop carriers. Also seeking detailed, color photos showing serial numbers of the aircraft. **Contact:** Marc Williams, 17705 Breckenridge Ct., Granger, IN 46530.

Seeking contact with **flight surgeons** who graduated from the School of Aviation before 1942 with diploma numbers under 340 who are still flying. **Contact:** Col. J. Basil Hall, USAF (Ret.), 601 McDonald St., Apt. 205, Mount Dora, FL 32757.

Seeking unit identification and date information from aircrew members who participated in dropping supplies over **Warsaw, Poland**, during the September 1944 uprising. **Contact:** Dr. Dan Mortensens, HQ USAF Historical Office, 170 Luke Ave., Suite 400, Bolling AFB, DC 20332-5113.

Seeking the whereabouts of **Craig Scott Powell**, a former public relations officer, who retired in the Washington, D. C., area. He was a friend of Lt. Col. Jim Scott Travis, USAF (Ret.). **Contact:** Karen Houchin, 112 W. Missouri, Floydada, TX 79235.

Seeking the whereabouts of **Sgts. William S. Bronson, Frank T. Gaeta, Arthur C. Lehmann, Jr., and Franklin D. Walling**, who were stationed with the 3917th Air Base Group, RAF Station East Kirkby, England. **Contact:** MSgt. G. J. McNally, USAF (Ret.), 123 School Rd., Bethel, PA 19507.

To identify potential witnesses for litigation regarding a former oil refinery site near Tacoma, Wash., seeking veterans who were in **Chemical Warfare Service** units at McChord AFB, Wash., during or just after World War II. **Contact:** MSgt. Larry Anderson, Air Force Legal Services Agency, Environmental Law and Litigation Div., 1501 Wilson Blvd., Suite 629, Arlington, VA 22209.

Seeking contact with veterans of the **92d Bomb Group**, 8th Air Force, who served in England during World War II. **Contact:** 92d Bombardment Group Memorial Corp., 3935 Young Ave., Napa, CA 94558.

Seeking information on a B-17, B-19, or B-29 crew that flew from the Philippines and made an emergency stop at **Beroekoe or Mokmer AB, Biak, New Guinea**, sometime between January 15 and March 20, 1962. It was almost fired upon by Dutch AAA crews. **Contact:** G. A. F. Zwakenberg, Europastraat 27, 4641 CJ Ossendrecht, the Netherlands.

Seeking contact with veterans of the **440th Signal Battalion**, particularly from World War II, Korea, and Japan. **Contact:** Isaac W. Huff, Jr., 3701 Meadow Brook Ct., Auburn, CA 95602.

Seeking the whereabouts of **John H. Moser**, who took B-17 pilot training in Class 43-H at Hobbs AAF, N. M. **Contact:** Lt. Col. Raleigh H. McQueen, USAF (Ret.), 50 Ramsgate Rd., Savannah, GA 31419.

Seeking contact with anyone who flew or has knowledge of **O-2A #68-6872**, believed to have been assigned to the 23d Tactical Air Support Squadron in southeast Asia. **Contact:** Lt. Col. Hank Hill, USAF (Ret.), 10713 Gideon Ct., Fredericksburg, VA 22407.

Seeking contact with former crew chiefs or ground personnel assigned to the **4th Fighter-Interceptor Group** during the Korean War for a book on the 4th Fighter Group's history. **Contact:** Larry Davis, Squadron/Signal Publications, Inc., 4713 Cleveland Ave., N. W., Canton, OH 44709.

Seeking the whereabouts of **Robert Archibald**, who was stationed at Westover AFB, Mass., in April 1944 and was in Pilot Class 44-A, Valdosta, Ga. He was a friend of John Logan. **Contact:** Mrs. Gordon Summers, 2324 Indian Trail, Topoka, KS 66614.

If you need information on an individual, unit, or aircraft, or if you want to collect, donate, or trade USAF-related items, write to "Bulletin Board," AIR FORCE Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Letters should be brief and typewritten; we reserve the right to condense them as necessary. We cannot acknowledge receipt of letters. Unsigned letters, items or services for sale or otherwise intended to bring in money, and photographs will not be used or returned.—THE EDITORS

Seeking the whereabouts of **Lt. Sam Holland**, possibly of the 31st Wing in 1964-65. He survived a crash in Magdeburg, West Germany. **Contact:** Capt. Donald F. Henry, USAF, 4880 E. 29th St., #9203, Tucson, AZ 85711.

Seeking contact with members of the **25th Fighter Squadron** or other squadrons of the **51st Fighter Group** stationed at Naha, Okinawa, 1947-49. **Contact:** David Llorente, 3127 Avenue J, Santa Fe, TX 77510.

Seeking the whereabouts of **Richard Shellkoff** (or Shellkopf), who was stationed at Burtonwood or Lakenheath, England, in 1950-51. He knew Elizabeth Margaret Hullock. **Contact:** M. K. W. Straub, 4 Lapwing Gate, Priorslee Farm, Priorslee, Telford, Shropshire TF2 9SU, UK.

Seeking information on **Lt. Col. Russell Rogers**, who flew F-80s and F-51s in the Korean War. He was a test pilot at Edwards AFB, Calif., and an F-105 squadron commander in the Pacific. **Contact:** John N. Cashman, 1637 Beechwood Dr., Martinez, CA 94553.

Researcher seeks information on **Sir Frederick H. Sykes**, chief of the Air Staff of the RAF in 1918. **Contact:** Maj. Eric Ash, USAF, 1537 Varsity Estate Dr., N. W., Calgary, Alberta T3B 3Y5, Canada.

Seeking contact with anyone who served in the military and attended **Bright Star High School**, Bright Star, Ark. **Contact:** CMSgt. J. P. Brown, USAF (Ret.), 5408 Bates Mill Rd., Cabot, AR 72023-9604.

Researcher seeks information or photographs from anyone who flew or worked on the **British Hawker Hunter** aircraft. **Contact:** Andrew McNeil, 2 Tracey Ln., Augusta, NJ 07822.

Seeking photos of and information on the **CF-105 Arrow, RA-5C, A-5B, T-45, MiG-25, and F-15**. Also seeking preliminary design drawings for the F-4 replacement. **Contact:** David Heggie, 33 Apple Blossom Ln., Westfield, MA 01085.

Seeking the whereabouts of **Louis Anthony Medina**, who worked at the hospital on Beale AFB, Calif., 1958-61. He knew Josephanie Payne and Ann Marie Paye. **Contact:** Sharon L. Allen, 311 S. Washington, LaHarpe, KS 66751.

Seeking squadron or wing **patches** from World War II, **Stars and Stripes** from 1942 to 1945, and **Air Force Magazines** from 1938 to 1947. **Contact:** Dwain Christian, 226 Primrose Dr., Prattville, AL 36067.

Collector seeks **patches, unit insignia, and security police crests**. **Contact:** CMSgt. Don Huff, USAF (Ret.), 2355 Choctaw Dr., Choctaw, OK 73020.

Writer seeks information on and photographs of **Maj. Gen. Paul B. Wurtsmith** from his Pacific theater assignments to his post as temporary commander, 8th Air Force. **Contact:** Peter J. Esterle, 3427 Wright Rd., Uniontown, OH 44685.

Seeking contact with pilots of the **57th and 79th Fighter Group** P-40K-1 operations in North Africa and the **82d and 83d Air Depot Groups**, in 1942-43. Also seeking information on the B-26 **Miss Salvage**, delivered to the CBI theater. **Contact:** John W. Swancara, 1002 E. Mariposa Ave., El Segundo, CA 90245-3114.

Military aviation history buff seeks contact with **pilots** who flew F-4s in **Vietnam** or F-4s, F-15s, F-16s, F/A-18s, or F-117As during **Operations Desert Shield and Desert Storm**. Also interested in stories from Desert Storm POWs. **Contact:** Monica L. Koeppel, 75 Strauss Dr., Suite 104, Winnipeg, Manitoba R3J 3R6, Canada.

Seeking information about the **6000th Operations Squadron**, based at Tokyo International Airport (Haneda), and on **C-54 #09027**. **Contact:** John K. Haroutunian, 7428 Camelot Dr., West Bloomfield, MI 48322.

Seeking the whereabouts of **Richard F. Hottle, James T. McDonough, Jr., Edward L. Masquellier, James R. Morris, and William J. Ryan** of the 85th Bomb Squadron, stationed at Sculthorpe, England. **Contact:** Richard L. McCormick, 307 S. Meridian St., Greenwood, IN 46143.

Seeking contact with **Dick Kiertzner**, formerly of Florissant, Mo., who wanted patches from B-66 bomb squadrons. **Contact:** James M. Short, 135 Melaleuca Dr., Satellite Beach, FL 32937.

Seeking a copy of **Mission With LeMay: My Story** by Gen. Curtis E. LeMay with MacKinlay

Kantor, originally published by Doubleday and Co. in 1965. **Contact:** David A. Torgenrud, P. O. Box 1494, Boise, ID 83701-1494.

Seeking contact with **R. C. Spain**, who was stationed in Colorado Springs, Colo., in 1978-79 and went on to Germany. **Contact:** M. E. St. Clair, 14738 4th St., #307, Laurel, MD 20707.

Seeking volunteers for the **San Diego Flight Museum** to bring aircraft to flight status. **Contact:** Reg Finch, P. O. Box 180934, San Diego, CA 92178-0934.

Seeking anyone who is working or has worked in **Air Force Public Affairs** or **Air Force Broadcasting Service** career fields. **Contact:** John Terino, Air Force Public Affairs Alumni Association, P. O. Box 540, Fairfax, VA 22030-0540.

Collector seeks color name tag from the **528th Bomb Squadron** and patch from the ACE detachment at Pease AFB, N. H. Also seeking a white with red Pegasus scarf from the 509th Air Refueling Squadron and scarves from the 389th Tactical Fighter Training Squadron, 391st Tactical Fighter Squadron, 522d Tactical Fighter Squadron, and 715th Bombardment Squadron (pre-1988). **Contact:** Curtis J. Lenz, 32 June St., Nashua, N. H. 03060-5345.

Seeking information on **2d Lt. Roy C. Rom** and **Flight Officer Earl R. Goodyear**, P-40 fighter pilots who collided near Arcadia, Fla., on March 24, 1945. **Contact:** Hal Thompson, Carlstrom Field, Rte. 1, Box 487-X, Arcadia, FL 33821.

Seeking an authentic World War II pilot's summer/winter **fifty-mission-crash cap**, size 7¼, with flexible visor and made of wool gabardine.

Contact: J. S. Dailey, Jr., 100 N. Louisiana Ave., Martinsburg, WV 25401.

Seeking contact with **Sgt. Danial Willson** of the 68th Bomb Squadron, 44th Bomb Group, 14th Combat Wing, based at Shipdham, England, in 1944. **Contact:** M. Matthews, 15 The Moorings, Hindhead, Surrey GU26 6SD, UK.

Seeking a copy of **Queens Die Proudly** by W. L. White. **Contact:** James R. Martin, 230 Sweet Briar Ln., Madison, MS 39110-9553.

Seeking contact with **Lt. Col. William P. Sullivan**, USAF (Ret.), who served at Kimpo AB, South Korea, in 1957, and at Travis AFB, Calif. He may have moved to Hawaii. **Contact:** William M. Barlow, Jr., 40 Phillip St., Bloomfield, NJ 07003.

Seeking information on how the Air Rescue and Recovery Service adopted their **Green Giant** logo and whether they obtained official authorization to use it. **Contact:** Charles H. Isackson, Jr., P. O. Box 352, Huron, SD 57350.

Seeking information on the World War II service of **C-47A #42-92838**, assigned to 8th Air Force in April 1944 and 9th Air Force in June 1944. In September 1945, it returned to the US and served with the 435th Troop Carrier Group. **Contact:** Lt. Col. James Monsees, USAF (Ret.), 11116 Lakeridge Run, Oklahoma City, OK 73170.

Seeking contact with relatives of a **B-24 Liberator bomber crew** that crashed in Willingdon, England, on February 2, 1944. The ten crew members belonged to the 506th Bomb Squadron, 44th Bomb Group, 8th Air Force. **Contact:** Kevin Watson, 29 Downs Valley Rd., Lower Willingdon, Eastbourne, East Sussex BN20 9QG, UK.

Seeking the whereabouts of **Sgt. Donald Brown**, **Harold J. Buttler**, **2d Lt. Austin Dunning**, **William Ferrell**, **Ralf Sack**, and **Edward Zabinsky**, who were aided by the Belgian underground in spring 1944. **Contact:** Herman Bodson, Rte. 1, Box 13, Taos Canyon, Taos, NM 87571.

Historian seeks information, anecdotes, and memorabilia on **12th Air Force**, all eras. Also seeks contact with 12th Air Force squadron, group, or wing associations. **Contact:** Dr. Robert B. Sligh, 5340 E. Gafford Way, Rm. 104, Davis-Monthan AFB, AZ 85707.

Seeking contact with **SSgt. Julius H. Schultz** or any member of the 710th Bomb Squadron, 447th Bomb Group, Rattlesden, England, who knew **Sgt. Woodrow W. Harper**. Sergeant Harper was a flight engineer/top turret gunner on *Dot's Goot*, a B-17 commanded by Lt. Herbert W. Overdorf and lost on March 11, 1944. **Contact:** Maj. Stephen A. Scott, USAF, 2618 Broken Bough Trail, Abilene, TX 79606.

Seeking information on **Lt. Verne Gibb**, 72d Air Service Command Squadron, who was reported missing over India on October 19, 1945. Also seeking information on **Lt. Jack Horan** and **Lt. George Holcomb**, who flew P-47s in Burma, and **Lt. Bob Partridge** of the 12th Combat Cargo Squadron, 3d Combat Cargo Group. **Contact:** Dick Mulhern, 8982 Neill Lake Rd., Apt. A, Eden Prairie, MN 55347.

Seeking the whereabouts of **Lt. Col. Robert Dow** and contact with members or staff of the **44th Fighter Squadron**, 13th Air Force, or the **12th Fighter-Bomber Squadron**, 18th Fighter-Bomber Group. **Contact:** Eric Mingleddorf, 3100 Deborah Dr., Apt. 61, Monroe, LA 71201. ■

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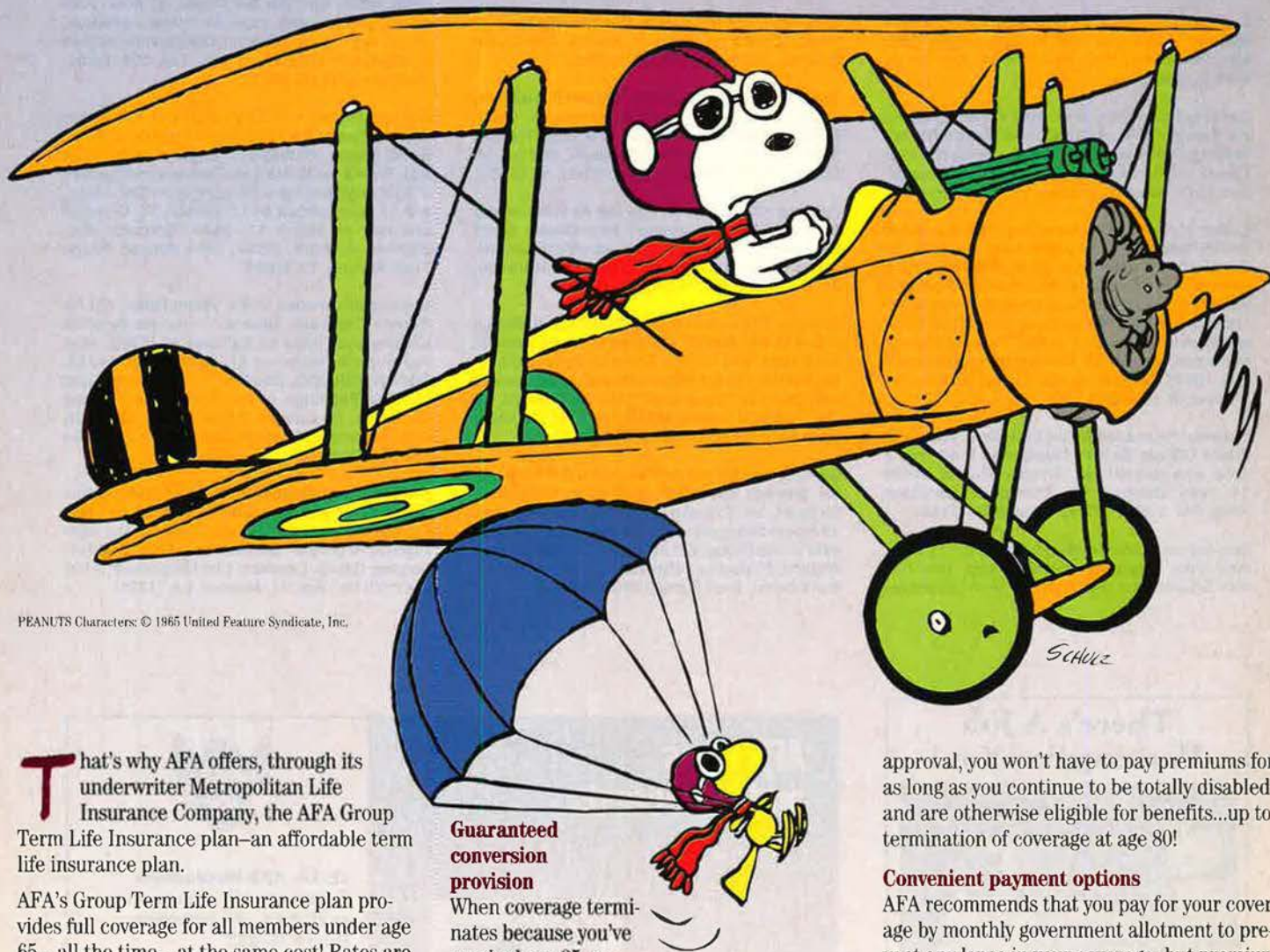
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	High Option Plus	High Option	Standard Plan	Spouse	
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25-29	350,000	262,500	175,000	50,000	5,000
30-34	250,000	187,500	125,000	40,000	5,000
35-39	180,000	135,000	90,000	30,000	5,000
40-44	100,000	75,000	50,000	20,000	5,000
45-49	60,000	45,000	30,000	10,000	5,000
50-54	40,000	30,000	20,000	7,500	5,000
55-59	28,000	21,000	14,000	5,000	5,000
60-64	18,000	13,500	9,000	3,000	5,000
65-69	8,000	6,000	4,000	2,000	5,000
70-74	5,000	3,750	2,500	1,000	5,000
75-79	4,000	3,000	2,000	1,000	5,000
80-84	3,000	2,250	1,500	1,000	5,000

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Your Name (Last) (First) (Middle)

Address (Number and street) (City) (State) (Zip)

Daytime phone Social Security No. Date of Birth Age Height Weight
 () (Mo./day/year)

Primary Beneficiary (name and relationship)

Secondary Beneficiary (name and relationship)

In the past twelve months have you used any tobacco products? Yes No

This insurance coverage may only be issued to AFA members. Please check the appropriate box below:

I enclose \$25 for annual AFA membership dues (includes \$18 for subscription to Air Force Magazine). I am currently an AFA member.

Please issue coverage as follows: Member only Member and dependents

(Please select your preferred payment frequency and indicate the correct premium amount.)

PLAN OF INSURANCE	Standard		High Option		High Option Plus	
	Member Only	Member and Dependents	Member Only	Member and Dependents	Member Only	Member and Dependents
Monthly government allotment (only for military personnel). I enclose 2 months' premium to cover the necessary period for my allotment (payable to Air Force Association) to be established.	<input type="checkbox"/> \$10.00	<input type="checkbox"/> \$12.50	<input type="checkbox"/> \$15.00	<input type="checkbox"/> \$17.50	<input type="checkbox"/> \$20.00	<input type="checkbox"/> \$22.50
Quarterly. I enclose the amount checked.	<input type="checkbox"/> \$30.00	<input type="checkbox"/> \$37.50	<input type="checkbox"/> \$45.00	<input type="checkbox"/> \$52.50	<input type="checkbox"/> \$60.00	<input type="checkbox"/> \$67.50
Semi-Annually. I enclose the amount checked.	<input type="checkbox"/> \$60.00	<input type="checkbox"/> \$75.00	<input type="checkbox"/> \$90.00	<input type="checkbox"/> \$105.00	<input type="checkbox"/> \$120.00	<input type="checkbox"/> \$135.00
Annually. I enclose the amount checked.	<input type="checkbox"/> \$120.00	<input type="checkbox"/> \$150.00	<input type="checkbox"/> \$180.00	<input type="checkbox"/> \$210.00	<input type="checkbox"/> \$240.00	<input type="checkbox"/> \$270.00

I am currently insured under the Standard High Option Plan. My certificate number is _____.

Please increase my coverage to the High Option High Option Plus Plan.

Monthly: Government allotment (please submit 2 months' premium with your application; instructions for requesting an allotment will be sent with your certificate of coverage).
 AFA/Visa or MasterCard _____ Exp. date _____

Quarterly: _____ **Semi-annually:** _____ **Annually:** _____

Names of dependents to be insured	Relationship	Date of Birth	Height	Weight

The following questions should be answered for you and any dependents for whom you are requesting coverage:

- 1) Have you been hospitalized during the preceding 90 days? Yes No
- 2) In the past three years, have you received treatment or been told you had:
 - a) cancer, leukemia, Hodgkin's disease, or other associated malignancies? Yes No
 - b) heart disease, stroke, or other cardiovascular disease? Yes No
- 3) Within the past two years, have you had persistent cough, pneumonia, chest discomfort, muscle weakness, unexplained weight loss of ten pounds or more, swollen glands, patches in mouth, visual disturbance, recurring diarrhea, fever, or infection? Yes No
- 4) Has any application made by you for life or health insurance been declined, postponed or issued other than as applied for? Yes No
- 5) Are you receiving, entitled to receive, or would be entitled to receive upon timely application, any benefits due to sickness or injury (other than medical expense benefits) under any private policy or plan or governmental program, whether insured or non-insured? Yes No

If you answered "Yes" to any of the above questions, please give the names of the persons to whom your answer applies and provide details, dates, diagnosis, treatment and name and address of the health care provider(s) and hospital(s). Use additional paper if necessary.

Information in this application, a copy of which shall be attached to and made a part of my certificate when issued, is given to obtain the plan requested and is true and complete to the best of my knowledge and belief. I agree that no insurance will be effective until a certificate has been issued and the initial premium paid. I understand that the coverage will not become effective until approved by MetLife.

I understand that if on the Effective Date I am not eligible for such insurance by reason of (i) age or (ii) membership status, insurance will not become effective on my life.

"Hospitalized" means inpatient confinement for: hospital care, hospice care or care in an intermediate or long-term care facility. It also includes outpatient hospital care for chemotherapy, radiation therapy, or dialysis treatment.

Authorization to Furnish Medical Information

For underwriting and claim purposes, I hereby authorize any physician or other medical practitioner, hospital, clinic or other medically related facility, insurance company or other organization to furnish MetLife, on my behalf, with information in his or its possession, including the findings, relating to medical, psychiatric or psychological care or examination, or surgical treatment given to the undersigned. This authorization shall be valid for two years. A photocopy of this authorization shall be considered as effective and valid as the original.

Member Signature _____ Date _____ 4570-G1-MetLife **AFM 6-94**

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Information Disclosure: In most cases, the information we have about you will be sent to third parties only if you authorize us to do so. In some cases where disclosure is required by law or necessary to conduct our business, we may send the information to third parties without your consent.

Access and Correction Information: Upon written request, we will make information we have about you available to you. You have certain access and correction rights with respect to the information about you in our files.

Further Information About Our Practices: Upon written request, we will send you more information about our underwriting process and your access and correction rights. Also, upon your written request we will give you more information about the circumstances under which we will disclose the information about you to third parties without your authorization. Please write MetLife at the following address about these matters:

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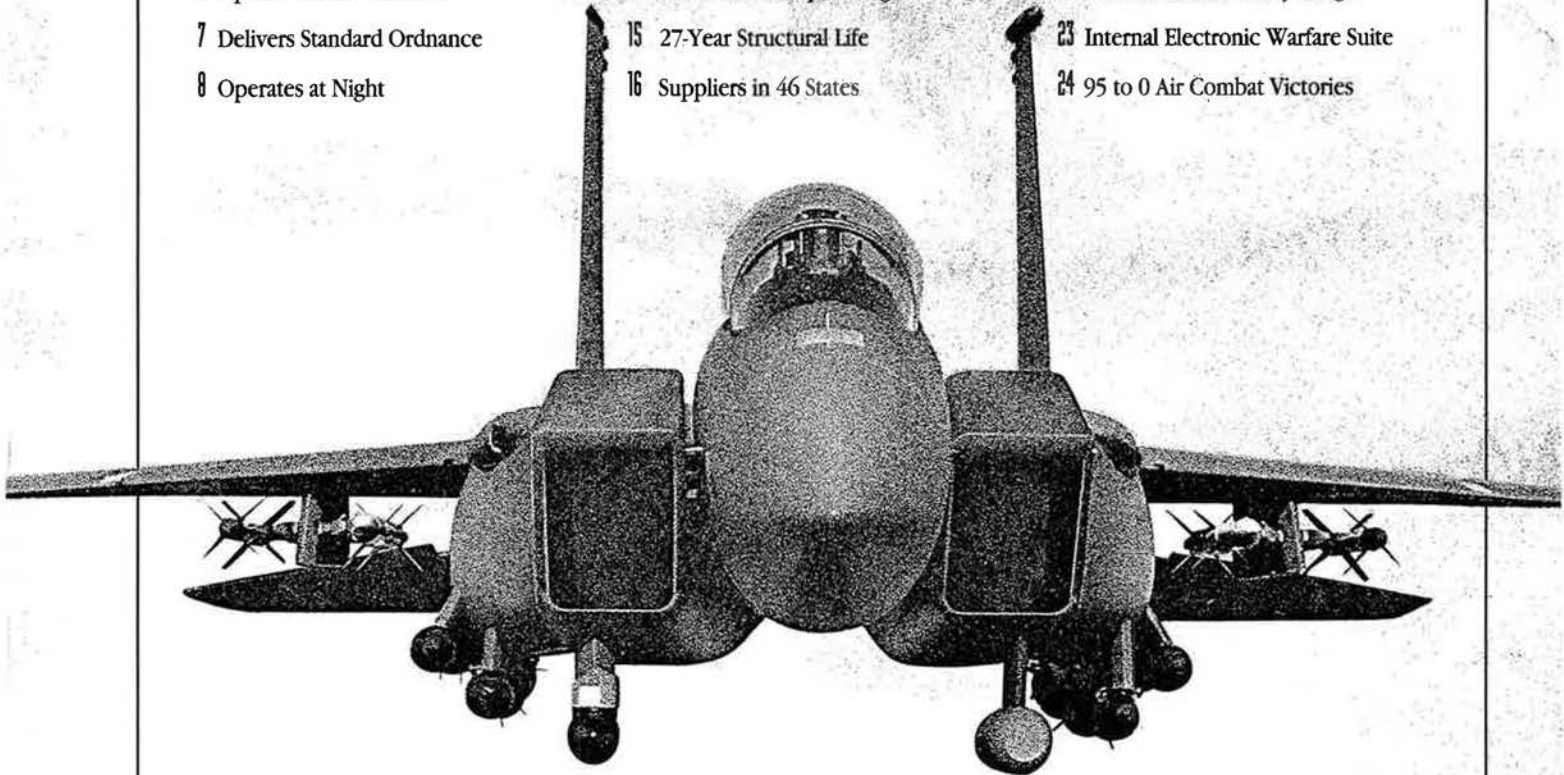
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