

July 1999, \$3

# AIR FORCE

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MAGAZINE



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**On Target in the Balkans**  
**Hawley's Warning**

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# AIR FORCE

PUBLISHED BY THE AIR FORCE ASSOCIATION

MAGAZINE

July 1999, Vol. 82, No. 7

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**About the cover:** A Reservist from Shaw AFB, S.C., is the pilot for this F-16. See "Future Total Force," p. 28. USAF photo by SrA. Jeffrey Allen.

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By John T. Correll, Editor in Chief

## Airpower and Its Critics

**O**PERATION Allied Force was barely begun in March before the clamor arose that airpower had been a failure in the Balkans. At the end of the first week, the eminent British military historian John Keegan said with measured condescension that "airpower simply does not seem to be working."

As the days rolled by, criticism of the operation in Kosovo—and of the air campaign which was at the center of it—grew more strident. Some of the comment recognized the political hobbles imposed on the airmen who were flying the missions. Some didn't.

Two months of bombing, it was pointed out, did not remove Slobodan Milosevic and his regime in Belgrade. It did not stop the ethnic cleansing under way in Kosovo. It had not restored stability to the Balkans.

In its May 17 issue, *Time* magazine said, "NATO's air campaign has begun to rack up an ugly record of accidental civilian casualties." (At that point in the action, according to the Associated Press running tally of "NATO's unintended targets," there had been exactly 10 instances of ordnance going astray in seven weeks.)

A particularly sour strain of criticism came from disgruntled advocates of ground power. Soldier-strategist Harry G. Summers said that if President Clinton had studied war, "he would have known that airpower alone has never been decisive." For example, Summers said, bombing had not broken the will of North Vietnam. (He did not say anything in that regard about ground power, which was not "decisive" in Vietnam, either.)

The criticism abated temporarily on June 3, when Milosevic and the Serb parliament agreed to yield to NATO's terms, but it then resumed when peace negotiations hit a glitch June 7.

Airmen would be among the first to agree that the strategy in Kosovo was ill-conceived. The political rhetoric was difficult to translate into missions that could be achieved by military means. The politicians insisted

on micromanaging the war and picking the targets themselves. The most senior military leaders in the chain of command were all soldiers, not airmen.

The operation began with great caution and phased escalation, Vietnam-style. The effects of shock and surprise were lost. It took weeks to strike targets that should have been hit the first night.

### **There is no shortage of commentators seeking to explain away what happened in Kosovo.**

Critics drew unfavorable comparisons with the Gulf War. It escaped their notice, though, that only about a tenth as many strike sorties per day were being launched in Kosovo as in the Gulf. Through May 27, US and Allied aircraft had flown a total of just 6,950 strike sorties in 65 days. In the Gulf War, by contrast, the coalition flew 47,588 strike sorties in 43 days. In Yugoslavia, about 25 percent of the total sorties were strike missions, comparec with 42 percent in the Gulf.

During the first three weeks, NATO aircraft averaged only 84 strike sorties a day. The air campaign was a month old before the target list was expanded to produce strategic results.

Despite the flawed strategy, airpower did well. Airmen made their sorties count, and they did it within restrictive rules of engagement that were enforced to prevent casualties and collateral damage.

"Of all the bombs we've dropped, 99.6 percent have actually hit the target, out of the 20,000 bombs," Air Force Maj. Gen. Charles F. Wald said at a Pentagon news briefing June 2. Wald did not make any "one target, one bomb" claims. Some targets took dozens of bombs. Wald emphatically

confirmed a reporter's observation that this had been "the most accurate air campaign in the history of air warfare."

In the most famous mistake of the conflict, a B-2 bomber put its ordnance precisely on the assigned spot. That the spot was occupied by the Chinese Embassy was a failure of Intelligence, not of airpower.

Summing up the effect of the air campaign in a signed column in the *Washington Post* June 4, Gen. Michael E. Ryan, Air Force Chief of Staff, said that "Serbia's air force is essentially useless, and its air defenses are dangerous but ineffective. Military armament production is destroyed. Military supply areas are under siege. Oil refinement has ceased, and petroleum storage is systematically being destroyed. Electricity is sporadic, at best. Major transportation routes are cut."

One of the many errors in Operation Allied Force was telling Milosevic ahead of time that he did not have to worry about a ground offensive. That knowledge no doubt reinforced his defiance.

However, even if a ground offensive had been planned, it would have been preceded by an air campaign. The casualties from an immediate ground assault would have been intolerable, both to the invasion force and to Kosovars caught in the firepower of the battlefield.

It was a surprise to many when the air campaign brought the Serbs to the bargaining table. As negotiations to reach a settlement continued, there was no shortage of commentators ready to explain away what happened, but John Keegan was not among them. Long noted for his doubts about airpower, he had a change of mind and said so with alacrity.

Writing in the London *Daily Telegraph*, Keegan acknowledged that he had been wrong and said that June 3 marked a real "turning point" in history "when the capitulation of President Milosevic proved that a war can be won by airpower alone." ■

## For the Record

In the June edition of *Air Force Magazine*, I am quoted in your "Verbatim Special: The Balkan War," [p. 47] as saying: "I don't know if we can do it without ground troops." This quote, standing alone with your headline is taken out of context.

For the record, the quote about ground troops stemmed from an earlier interview in March 1999 with the *New York Times*. During that interview, I expressed concerns about the role of aerospace power in directly halting the ethnic cleansing being conducted by Mr. Milosevic's ground troops and police forces in door-to-door terrorist-like attacks. I said then, and still would say today, I don't know if we can do it (stop the door-to-door persecution of a people based on ethnicity and religion) without ground troops.

I am on the record as saying, "(t)here were few who believed that tactically constrained air attacks on a dispersed infantry force, brutishly looting and burning villages, could alone halt the atrocities or reverse the refugee flow. But we can and will destroy the army that has perpetrated those acts. It may take time, but it is inevitable." Additionally, "(o)ur forces have seen firsthand the destruction Milosevic has perpetrated against his own people in Kosovo solely because of their ethnicity and religion. We must stay the course. We know NATO's mission is just and NATO's actions justifiable, and we know NATO's forces will prevail."

I would appreciate clarification of the record.

Gen. Michael E. Ryan,  
Air Force Chief of Staff  
Pentagon

## No Single Cure

I fully share your view that Redux should never have occurred. [See "The Faith Not Kept," May, p. 3.] However, I also agree with some of the critics of its repeal that that alone will not cure existing retention problems. Retention is a mix of total service life vs. the personal and family costs which that implies. Pay [and]

retirement [are] probably not even the most important element[s] in that balancing act.

Most important now, it seems to me, is an answer to the question of what is the mission of a US serviceman today. Is he the defender of his own nation and its Constitution as his oath indicates? Or is he the global policeman for NATO, the UN, and an Administration that reacts in knee-jerk fashion to media claims, sentimental TV reporting, and its own need to draw attention from previous scandals and failings?

Before the Kosovo attacks are over, or immediately thereafter, we need a national referendum, led by Congress or whoever, as to what role our military plays and within what foreign policy (if anyone can presently identify such). If we are to return to our historic military role of acting primarily on the basis of national self-defense the debate must be open, brutal, and designed to attract the utmost media attention. This Administration does not understand or recognize gentlemanly or civilized criticism.

If the nation really does opt and support a military function of worldwide involvement in continuing conflicts for humanitarian purposes regardless of the threat or cost to this nation, then forget abolishing Redux and let's start thinking about a purely mercenary force because that is what we will need.

Bill Barry  
Huntsville, Ala.

The faith has not been kept since

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

the 1940s. On my enlistment papers it said that I would be commissioned in the Army Reserve upon completion of aviation cadet training. When I was commissioned it was in the Army of the United States. The faith not kept.

Complete 20 years of service and we will take care of your medical needs for life. I am now in a [private] HMO. The faith not kept. When you retire, your pay will be tied to active duty pay. The faith not kept.

When I arrived in combat it was 25 missions [to receive a] DFC [Distinguished Flying Cross]. It was raised to 35 missions, then 40, 45, 50, and 75. They changed a mission to a sortie so it took more flights into combat to get a mission. I almost caught up at 73, but the war ended and still no DFC. The faith not kept.

We were told that the COLA program would keep our pay up, and they added a 1 percent boost so we wouldn't fall behind. That is gone like so many other promises. The faith not kept.

So don't hold your breath on this one. They have never kept the faith. So be aware of what the future holds and act accordingly.

Lt. Col. Julius N. Clemmer,  
USAF (Ret.)  
New Port Richey, Fla.

## Kirk Was an Admiral—?

I wholeheartedly agree with Gen. [Michael E.] Ryan's idea to split off a separate Space Force [*"Washington Watch," May, p. 34*]. He left out the obvious: that it should be the Navy Space Force. If history teaches us anything, it is that Capt. James T. Kirk (later Admiral Kirk) is the correct nomenclature—not later General Kirk. Let's not mess with destiny. It is given that ships at sea, or at space, are Navy missions.

Barrett Craig  
USN (Ret.)  
Pensacola Beach, Fla.

■ *Not so fast, Admiral Kirk. Ryan said creating a separate space force would be a mistake. [See "Watch," p. 35.] His words: "I don't know how you*

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could separate air forces from space forces."—THE EDITORS

## Japanese Wake-Up Call

I am writing in response to a passage which appeared in the "Verbatim" section of your May issue [*Military Pre-emption by Whom?*, p. 106]. That piece discussed the possibility of a Japanese pre-emptive military attack against North Korea.

The scenario has been discussed in Japan before. In 1956, the then-director general of the Japan Defense Agency testified before a committee of the Japanese House of Representatives, the lower house of the Japanese Diet. There, he stated that the position of the Japanese government, then led by Prime Minister Ichiro Hatoyama, was that a Japanese attack against missile launch sites in another country would be permissible and constitutional as a last resort.

The Aug. 31, 1998, launch by the Democratic People's Republic of Korea (North Korea) of a Taepo Dong 1 ballistic missile over Japanese territory (according to Japanese media reports, the missile's trajectory passed virtually right over the US air base at Misawa) ignited the debate over the joint US-Japanese Theater Missile Defense system which could provide protection for Japan and for US forces there. It was as a result of this event that discussion of a Japanese retaliatory strike was revived, when JDA Director General Fukushima Nukaga stated in September 1998 that Japan had the constitutional right to retaliate if attacked by ballistic missiles.

Having been in Japan when this event occurred, I can say from firsthand observation that the reaction in Japan was one of shock and outrage. The *Yomiuri Shimbun*, Japan's largest circulation daily national newspaper, called for closer defense cooperation with the US. A national debate on TMD (which from the Japanese perspective can be considered a national missile defense system) took place in the Japanese media. They recognize the potential of such a system to defend Japan from ballistic missile attack, but they also recognize that some problems remain.

In mid-August 1998, there was debate within the Japanese government over whether funding for research in support of a joint US-Japan TMD system should be increased. It was decided that such funding would be delayed in order to avoid a diplomatically awkward situation during the scheduled 1998 visit by Chinese President Jiang Zemin to Japan. Less than two weeks after this decision

was taken, the DPRK launched their Taepo Dong 1 over Japan, and that fundamentally changed the nature of the TMD debate in Japan. The People's Republic of China and Russia oppose a joint US-Japan TMD system, even though Russia's S-300V (NATO SA-12B Giant) surface-to-air missile system has been described by *Air Force Magazine* as having the ability to intercept near-strategic warheads. China considers a US-Japan TMD program destabilizing, although China seems rather quiescent on the subject of how destabilizing DPRK ballistic missile programs might be, let alone the PRC's own massive military modernization programs and apparent regional ambitions. At any rate, the Japanese government has now decided to proceed with research for a joint US-Japan TMD system.

The political realities of Japanese defense policy are quite complex, and a proper discussion of these could take up a decent-sized book.

First, I happen to support a joint US-Japan TMD program. Japan is a good candidate for cooperation with the US on TMD. The Japan Self-Defense Forces operate Patriot surface-to-air missile systems, which could act as part of a land-based TMD system. Japan also has Aegis warships, which form the basis of the US Navy's own sea-based TMD concept. The US Air Force's [YAL-1A] Attack Laser would be suitable for deployment to Japan in the event of a crisis in northeast Asia.

Second, the issue is not nearly as cut-and-dried as the passage quoted from the *Asian Wall Street Journal* editorial made it out to be. I certainly do not agree with what I see as the somewhat alarmist tone of that piece, although historical issues are no doubt a factor. Discussion within Japan of pre-emptive or retaliatory attacks against enemy ballistic missile launch sites are not exactly new, but I think that many in Japan realize that even "situations in areas surrounding Japan," to use a current catchphrase in US-Japan security relations, may pose a threat to Japan, and that expanded cooperation with US forces in northeast Asia could be warranted. The Taepo Dong 1 incident was a wake-up call to Japan.

Andrew Cummings  
Frisco, Texas

## The Common Approach

Your recent issue of USAF Almanac [May] 1999 was terrific. However, the stress in the statistical summaries leans toward only a few segments of the Air Force (Army Air Corps). On p. 73 great emphasis is



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## Letters

on aces and heroes [*"Guide to Aces and Heroes"*]. Little or no mention is made of the reconnaissance pilots and the large number of fighters that delivered the munitions at low altitudes and under great waves of anti-aircraft fire. If you ask the ground soldiers who they looked to for help, they would say the fighter-bombers. Stephen Ambrose, in his book *Citizen Soldiers*, repeatedly brings this out. Therefore, in the future please give us old jocks some credit.

Col. Arthur G. Witters,  
USAF (Ret.)  
Orlando, Fla.

### F-117 Is How Old?

The information regarding age of the F-117 in your May issue, 1999 USAF Almanac, p. 64, is incorrect. First delivery and operational flight of the aircraft was in 1981. Last delivery was in July 1990. That would mean the age of the F-117 fleet is between 8 and 17 years, as of Sept. 30, 1998.

SMSgt. Timothy E. Echard,  
F-117 Aircraft Maintenance  
Superintendent  
Langley AFB, Va.

■ The data in the "Age of the Active Duty Fleet" are from USAF. There were apparently 56 F-117s in the Total Active Inventory as of Sept. 30, 1998, between 6-9 years old. In 1997, the Air Force listed 57 F-117s between 3-6 years of age. In 1994, 58 between 0-3 years of age. So the active fleet of F-117s is aging, but the oldest F-117s may not now be part of the active fleet.—THE EDITORS

### More Than One Hourglass

[On] p. 71, you [stated the Hourglass Device] "is issued for each succeeding award of the Armed Forces Reserve Medal" and only show one of the Hourglass devices.

The first 10 years is a Bronze Hourglass Device. The second 10 years, the Silver Hourglass Device replaces the Bronze. For 30 years in Reserve or Guard service, the Gold Hourglass Device replaces the Silver.

You do show that there is a Bronze and Silver Star Device and also that there is a Bronze and Silver Oak Leaf Cluster.

CMSgt. Robert K. Strobel,  
USAF Reserve (Ret.)  
Charleston, S.C.

■ We will amend our information for next year's almanac.—THE EDITORS

### It's Grey

You listed Combat Weather under "Berets" [on] p. 71. The correct color of berets for Air Force weather personnel assigned to jump positions is grey. The picture shows a beret similar in color to that worn by tactical air control party personnel. All airborne-qualified Air Force weather personnel assigned to 18th Weather Squadron (ACC), Ft. Bragg, N.C., are assigned to airborne weather teams, and 10th Combat Weather Squadron, 720th Special Tactics Group, Special Operations weather teams (AFSOC) are authorized to wear the distinctive grey beret. In addition, the flash shown is for AFSOC units. Personnel assigned to 18th WS wear the flash of the [Army] unit they support.

Maj. Mike Bramhall,  
USAF  
Ft. Leavenworth, Kan.

■ We actually do have the grey beret. We didn't, however, catch that our color reproduction is off. We'll shoot a new photo and start over next year.—THE EDITORS

### Corrections

In the June issue, the date of the New York Times quote for Gen. Michael Ryan in "Verbatim" [p. 47] should be March 29.

In the May issue, the ceiling listed for the C-135 Stratolifter [*"Gallery of USAF Weapons,"* p. 143] is incorrect; it should read 50,000 ft. Also in the Gallery, under unit locations for A-10 aircraft [p. 135], Barksdale AFB, La., NAS JRB New Orleans, La., and Whiteman AFB, Mo., should be listed under AFRC. In the Gallery, under unit locations for C-141s [p. 144], Charleston AFB, S.C., McChord AFB, Wash., and McGuire AFB, N.J., should be listed under Active; AFRC has associate units at those locations. Also, AFRC has no C-141s at Travis AFB, Calif.

Also in the May issue, the 931st Air Refueling Group (AFRC), McConnell AFB, Kan., [4th Air Force wiring diagram, p. 102] was made part of the 507th Air Refueling Wing (AFRC), Tinker AFB, Okla., as of March 1, 1999.



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Compiled by Chanel Sartor, Editorial Associate

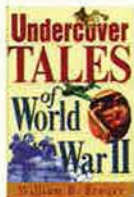
**Adcock, Al.** *On Deck: USS Alabama.* Squadron/Signal Publications, Inc., 1115 Crowley Dr., Carrollton, TX 75011-5010 (972-242-8663). 1999. 79 pages. \$14.95.



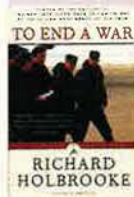
**Herrington, Stuart A.** *Traitors Among Us: Inside the Spy Catcher's World.* Presidio Press, 505 B San Marin Dr., Ste. 300, Novato, CA 94945-1340 (415-898-1081). 1999. 409 pages. \$27.95.



**Neubeck, Ken.** *Walk Around: A-10 Warthog.* Squadron/Signal Publications, 1115 Crowley Dr., Carrollton, TX 75011-5010 (972-242-8663) 1999. 79 pages. \$14.95.



**Breuer, William B.** *Undercover Tales of World War II.* John Wiley & Sons, Inc., 605 Third Ave., New York, NY 10158-0012 (212-850-6000). 1999. 242 pages. \$24.95.



**Holbrooke, Richard.** *To End a War.* Modern Library Paperbacks, 201 E. 50th St., New York, NY 10022 (800-726-0600). 1999. 410 pages. \$15.95.

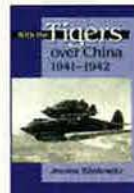


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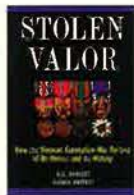
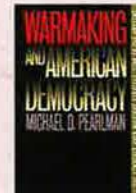
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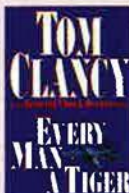


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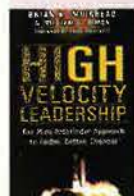
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# Aerospace World

By Peter Grier

## Air Force Implements Stop-Loss Order

The manpower demands of the Balkan crisis caused the Air Force to implement Stop-Loss, halting separations and retirements for personnel in critical career fields.

The May 26 announcement came from F. Whitten Peters, the acting Secretary of the Air Force, and Gen. Michael E. Ryan, USAF Chief of Staff. Their plan called for the order to become effective June 15.

Twenty-three percent of Air Force Specialty Codes have been identified as the critical skills needed to perform the mission. [See box, p. 19.]

The Air Force decision followed President Clinton's announcement that he would call up 33,000 Guardsmen and Reservists to help support NATO operations over Kosovo. This call-up order authorizes mobilization of reservists for up to 270 days. Air National Guard and Air Force Reserve refueling units totaling 2,000 people were first on the call-up list.

By implementing Stop-Loss at the same time as reserve mobilization, the Air Force intends to "send a signal to employers that we're not calling Guardsmen and Reservists while letting active duty people go," said Maj. Gen. Paul A. Weaver Jr., Air National Guard director.

Stop-Loss was last used during the Gulf War. It will last indefinitely, pending resolution of the situation over Kosovo.

However, the service has no intention of halting the retirement or separations of anyone who is not considered critical to the Kosovo warfighting mission.

"We must implement Stop-Loss to preserve our operational capability and retain critical skills necessary to perform the Operation Allied Force mission," said Maj. Gen. Susan L. Pamerleau, Air Force director of personnel force management.

## Effect of Stop-Loss Widespread, Worrisome

In making the announcement, the Air Force said that Stop-Loss will



USAF photo by SrA. Greg Davis

*A USAF B-52 from 2nd Wing, Barksdale AFB, La., turns for its temporary home at RAF Fairford, UK, after completing a bomb run over Yugoslavia May 25 as part of Operation Allied Force. The Balkan War ended June 9 when Yugoslavia acceded to NATO terms. It was June 10, however, before NATO was convinced that Belgrade was serious and suspended its air operations.*

have an immediate impact on the plans of roughly 6,000 troops. That is the number of airmen who requested and received permission to separate or retire from the Air Force after June 15 and who will be required to remain in uniform.

The impact clearly will go much deeper over time, however. The order covers career fields that, taken together, account for 40 percent, or 120,000, of those now on active duty. Stop-Loss also temporarily blocks changes of status of members of the Air Guard and Reserve that would allow a member to leave units at risk for call-up.

"We do not take this action lightly," said Peters. "Stop-Loss is designed to preserve the critical skills essential to support our missions [and] ... allow us to keep our training base intact."

Peters acknowledged, "We are acutely aware that ours is a volunteer force and that this action, while essential to meeting our worldwide obligations, is inconsistent with fun-

damental principles of voluntary service." He added, "We have done our best to minimize this disruption."

## USAF Accelerates JDAM Production

The air war over Yugoslavia has already had at least one major hardware implication for the Air Force. It has forced the Pentagon to accelerate production of Joint Direct Attack Munition kits to meet the demand for the relatively inexpensive precision weapon.

JDAM contractor Boeing has increased the workload at its St. Charles, Mo., production facility. The company had been producing about 200 JDAM kits a month. The line will now churn out 300 kits a month.

The Air Force awarded Boeing a \$50 million contract increase for 2,527 JDAMs in April. The kits cost about \$15,000 each and turn gravity bombs into precision munitions that can be guided toward a target with Global Positioning System locator target data.

The JDAM was used in combat for the first time March 24, when two B-2s dropped 32 on Yugoslav targets.

### Finch Named 13th CMSAF

Air Force Chief of Staff Gen. Michael E. Ryan announced June 3 that the new Chief Master Sergeant of the Air Force is CMSgt. Frederick J. "Jim" Finch. Finch is currently the command chief master sergeant for Air Combat Command.

CMSAF Eric W. Benken will retire July 30, after more than 29 years in the Air Force. He has served in the service's top enlisted spot since Nov. 5, 1996, longer than most of his predecessors.

"Chief Benken has been a tremendous advocate for the enlisted corps," Ryan said.

Ryan added that the selection was a tough decision since there were several highly qualified candidates. He said that Finch has been deeply involved in the transition from a Cold War posture to the Expeditionary



USAF photo by SSGT. Chant Devers

*TSgt. Denis Brennan, 104th Expeditionary Operations Group ammunitions specialist, moves a group of bombs at Trapani AB, Italy. The 104th is made up of about 500 Guardsmen called to active duty in May from the 104th FW, Barnes MAP, Mass.; 124th Wing, Boise Air Terminal, Idaho; and the 110th FW, W.K. Kellogg Airport, Mich.*

## The Battle of Arlington Ridge

### Circuit Court Upholds Air Force Memorial

ARLINGTON, VA., May 25—The Air Force Memorial Foundation keeps on winning in court—and its opponents keep on finding new ways to package their challenge.

Last summer, a federal district judge dismissed "with prejudice" a lawsuit seeking to stop construction of the Air Force Memorial on Arlington Ridge, overlooking the Potomac River. That ruling was affirmed May 7 by the US Circuit Court of Appeals in Richmond, Va., in a thumping 13-page judgment which essentially said those challenging the Air Force Memorial had no case.

The suit had been brought by an Arlington neighborhood group, "Friends of Iwo Jima," and Gerald B.H. Solomon, formerly chairman of the Rules Committee in the House of Representatives and a former Marine. It was one of numerous efforts over the past two years to block the Air Force Memorial. Solomon and his colleagues claim it would encroach on the "hallowed ground" of the Iwo Jima Memorial, situated up the hill on eight of the 25 acres of Arlington Ridge.

After the Court of Appeals ruling, Air Force Memorial Foundation President Charles D. Link said, "Our Air Force Memorial has now been approved by an act of Congress, by four different government agencies, and has twice won judgments in federal courts. It is time to move forward."

In the lengthy process established by Congress for memorials, the project had to be approved by the National Park Service, the National Capital Planning Commission, the US Commission of Fine Arts, and the National Capital Memorial Commission.

In a May 18 newspaper column, Rep. Cliff Stearns (R-Fla.) and Rep. Sam Johnson (R-Texas) said, "After months of legal uncertainty, Congressional challenges, federal inspections, and agency approvals, the path is now clear for construction of an Air Force Memorial in its fitting and proper location—the serene solemnity of Arlington Ridge, near the site of the Wright brothers' first military flight and

adjacent to the last resting place for generations of airmen in Arlington National Cemetery."

On May 19, however, Friends of Iwo Jima announced that it would be joined by two other groups, "Iwo Jima Preservation Committee" and "Combat Veterans of Iwo Jima," in yet another challenge to the Air Force Memorial. The new groups are headed, respectively, by Lt. Gen. Charles G. Cooper, USMC (Ret.), and Maj. Gen. Fred Haynes, USMC (Ret.), both of whom were involved prominently in the previous challenges.

The three groups said they were "set to battle the National Park Service over environmental issues" and announced the hiring of a law firm, Covington & Burling, which was successful recently in freezing temporarily, on environmental grounds, the federal project to replace the Woodrow Wilson Bridge across the Potomac River south of Washington, D.C., with a 12-lane span.

As Stearns and Johnson noted in their newspaper column, the Air Force Memorial would occupy a quarter as much space as the Iwo Jima monument and stand less than two-thirds as tall. Link told a reporter in early May, "The Marines have eight acres of very sacred ground, ... but they want to declare more ground sacred."

The truly hallowed ground, Link said, was Arlington Cemetery, "where the remains of brave soldiers, sailors, Marines, and airmen lie in quiet repose."

Later this summer, the Air Force Memorial must gain approval of its preliminary design and acceptance of the environmental assessment by the Commission of Fine Arts and the National Capital Planning Commission. Final design approval will then be sought from those bodies around the end of the year.

More than half of the \$30 million needed to build the Air Force Memorial has been raised. The plan is to have the project fully funded by early 2000 and to complete its construction in 2002.

USAF photo by MSgt. Val Gemples



During a recent Cobra Gold '99 at Korat AB, Thailand, TSgt. Michael Amposta, 613th Air Communication Squadron, Andersen AFB, Guam, helps link ground terminals to satellites in space. The annual exercise improves US and Thai combat readiness and interoperability.

Aerospace Force concept and understands the challenges.

Finch, who was born July 29, 1956, joined the Air Force in 1974. He has had various assignments in missile maintenance and professional military education, including commandant of the Pacific Air Forces Noncommissioned Officers Academy.

#### Peters To Get Nod for Secretary

President Clinton announced his intent June 2 to nominate acting Air Force Secretary F. Whitten Peters to fill the service's top civilian post.

Peters has been undersecretary of the Air Force and acting Secretary since November 1997.

The White House previously nominated Daryl L. Jones, but he was rejected by the Senate July 22, 1998, because members of the Senate Armed Services Committee felt Jones had misled them about some aspects of his Air Force Reserve career.

The next likely contender, Charles B. Curtis, a former deputy secretary of energy, withdrew his name before the Administration formally announced his nomination. Curtis, now a Washington lawyer, cited concerns that his confirmation might focus on lax security at DoE labs rather than the post of Air Force Secretary.

#### Rocket Mishaps Spark USAF Probe

The acting Air Force Secretary, F. Whitten Peters, has ordered a broad-

area review of service space launch capabilities in the wake of a series of spectacular failures which have wasted billions of dollars.

The probe will look at causes and then recommend any necessary changes in procedures and operations to ensure the United States maintains its critical access to space. Other government and private launch agencies will be involved.

"The objective would be to look across all of the launch failures and look at the process," said Keith R.

Hall, assistant secretary of the Air Force for space and director of the National Reconnaissance Office, on May 3.

A string of dud Titan IV launches was the immediate cause of the Air Force review. The Air Force depends on the Titan IV to launch its highest-value satellites—yet the booster suffered three failures in a row.

Last August, a Titan IVA failed seconds after launch while carrying a \$1 billion NRO spy satellite. In early April, a Titan IVB with an inertial upper stage stranded a Defense Support Program early warning satellite in a useless orbit. Then on April 30, a Titan IVB with a Centaur upper stage placed a Milstar military communications satellite in the wrong orbit after the Centaur malfunctioned.

The Air Force has declared the \$800 million Milstar a total loss and boosted it into a higher orbit, burned off its remaining fuel, and turned off all its functions—to make it a less dangerous piece of space junk.

In addition to the Titan losses, a Boeing Delta III second stage shut down abruptly after the rocket's launch May 4, stranding a commercial payload.

#### Satellite Network Safe—For Now

The loss of three military satellites does not cripple US space capabilities in the short term, said officials.

They say that the existing satellite network is more than capable of han-



USAF photo by SrA. Gary Guese

Operation Northern Watch enforcement of the no-fly zone in Iraq above the 36th parallel continued even as Operation Allied Force did. F-16 crew chiefs from the 77th Fighter Squadron, Shaw AFB, S.C., were among those deployed to Incirlik AB, Turkey. The unit flew more than 200 ONW sorties between mid-April and June.

## USAF, Civil Air Patrol Clash on Control

WASHINGTON, June 1—The dispute between the Air Force and its civilian auxiliary, the Civil Air Patrol, has escalated to Congress. Each side has won a preliminary round, but the final outcome is far from settled.

The rift grew out of a 1996 Air Force audit, which the service says found significant problems in CAP financial management and accountability, flying safety, professionalism, and standards of conduct. CAP says that internal reviews and audits have revealed "only minor discrepancies" and that the Air Force is trying to "take over" CAP, which is "a private, nonprofit corporation."

The Air Force got strong backing from the Senate Armed Services Committee. Its May 14 markup of the defense authorization bill would have empowered the Secretary of the Air Force to appoint a new national board of directors for CAP and establish the regulations that govern its operation.

At present, the CAP board consists of 67 members, only one of which is an Air Force representative. The other 66 are all CAP officials, either elected or appointed by other CAP officials on the board.

The Senate authorization bill prescribed that a majority of members on the new board be active or retired general officers or other people from the Air Force. A minority of members would be appointed from the Civil Air Patrol. The senior active duty member was designated to be chairman of the board. The report accompanying the authorization bill cited "a number of allegations raised regarding the inappropriate use of appropriated funds by the CAP's corporate leadership."

The bill would also have created an executive director, a safety officer, and an inspector general to be appointed by the board and reporting directly to the Secretary through the board. The language in the bill was drafted by the Air Force.

However, the Air Force and the Armed Services Committee were stopped in their tracks for almost a year by an amendment to the authorization bill that passed the Senate by voice vote on May 27. That amendment, sponsored by Sens. Wayne Allard (R-Colo.) and Tom Harkin (D-Iowa), said: "It is the sense of Congress that no major change to the governance structure of the Civil Air Patrol should be mandated by Congress until a review of potential improvements in the management and oversight of Civil Air Patrol operations is conducted."

The amendment called for studies by the General Accounting Office and the Inspector General of the Department of Defense, due to the Congressional defense committees by Feb. 15, 2000.

In a press release May 15, CAP headquarters at Maxwell AFB, Ala., said that if the Armed Services Committee bill were to pass, the Civil Air Patrol "will cease to exist in its present form. In the legislative language written by the Air Force, many of the civilian paid staff and all of the volunteer leadership would be replaced by active duty Air Force officers. All private assets of the private corporation would be seized and placed under control of the US Air Force." The news release also said the Armed Services Committee's action was the result of "biased, erroneous, and misleading reports generated by Air Force leadership."

A House version of the Senate bill was introduced May 17 by Rep. Lindsey Graham (R-S.C.). It was referred to the Armed Services and Judiciary Committees.

James Wolffe, special assistant to the Secretary of the Air Force, said in an Air Force News service report May 12 that "the bottom line is that there's \$30 million of taxpayers' money involved and a lot of CAP-owned airplanes flying with the Air Force name. We have to have the level of

accountability that goes along with the use of millions of federal dollars."

While some CAP activities are paid for by member dues, the organization this year received \$28.3 million in appropriated funds through the Air Force, which also is ultimately responsible for safety within the organization and liable for damages and deaths caused by flying accidents.

Prior to 1995, CAP headquarters was staffed by Air Force personnel. A reorganization ordered by Congress put CAP employees in charge, assisted by about 25 Air Force advisors and liaison people. Also in 1995, Sen. John McCain (R-Ariz.) led an effort to remove Civil Air Patrol funding from the Air Force budget and move CAP to the Department of Transportation or some other federal agency. Among those opposing that idea, which was subsequently defeated, were the Air Force, CAP, and the Air Force Association.

The 1996 audit set off a series of increasingly tense exchanges between the Air Force and CAP. In April of this year, an Air Force special project team visited CAP headquarters and reported continuing problems. Among other things, it said that CAP wings cannot account for large portions of their supplies and equipment. In one wing, 77 percent of the inventory was missing. In another wing, 70 percent was missing.

The Air Force proposed two big changes. It wanted CAP to implement standard federal fiscal management controls—and it wanted a new board of directors.

On April 24, after eight hours of deliberation, the CAP board voted to accept the Air Force's proposal on financial controls, but said this provision would not go into effect until Fiscal 2001. The board offered to "negotiate in good faith to develop a permanent organizational mechanism" to resolve its differences with the Air Force, adding that "the mechanism to accomplish this will be in addition to the existing CAP governance structure."

The Air Force found that unacceptable and sent the Armed Services Committee the legislative proposal that was incorporated in the authorization bill.

Brig. Gen. James C. Bobick, the CAP national commander, wrote to all members of the Civil Air Patrol asking them to contact their representatives in Congress in opposing this legislation which "would impose top-down control, from the Secretary of the Air Force, essentially making CAP a subordinate unit of the Air Force."

Bobick expressed "concerns about the Air Force's real agenda in taking over a private, nonprofit corporation" and suggested that once in control, the Air Force would "eliminate more than half of our aircraft." He said that "the Air Force has publicly supported growth in the cadet program but has denied the funding of the growth."

An Air Force spokesman, Maj. Chester R. Curtis, said the allegation about eliminating aircraft was "false" and that in the matter of funding, the Air Force passes on to CAP the total amount appropriated by Congress for that organization.

The Air Force emphasizes that its difficulties are with the headquarters—the Civil Air Patrol corporation—rather than with the volunteer CAP membership or the field activities.

The Civil Air Patrol was chartered by Congress in 1946 as a private, nonprofit corporation. In 1948, Congress made CAP a civilian auxiliary of the Air Force. The organization has about 34,500 senior members and 25,800 cadet members. Both categories of members wear Air Force uniforms with CAP insignia and markings. The CAP fleet consists of 530 aircraft. In Fiscal 1998, its volunteers flew 3,153 search and rescue missions and were credited with saving 116 lives.

—John T. Correll

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## Butler's Ruminations

During the 1991 Persian Gulf War, Gen. George Lee Butler headed Strategic Air Command and had responsibility for much of the nation's nuclear deterrent force. In an interview with the *Los Angeles Times*, published May 23, he had this to say:

"I was the planner and had to think through the question of, 'What if Saddam [Hussein] has a so-called weapon of mass destruction?' ...

"If he'd employed chemicals, there is no circumstance I can imagine under which the United States should or would have replied with a nuclear weapon, or biological, for that matter. Those are terrible weapons, but we've faced chemical weapons for years. And biological weapons, when you look at them from a battlefield perspective, which I've done much of my years as a planner, they're pretty difficult to even think about how you use them without threatening yourself as much as anybody else.

"And as far as a nuke is concerned, my sense was that, even if he'd had a nuclear weapon, I cannot imagine he would have employed it except in extremis, which means that we were going to occupy his country and either kill him or put him on trial as a war criminal.

"In which case, I suspect, where he would have employed the weapon, presuming it actually worked, would not have been against us or Saudi Arabia but probably in Israel. In which case there is nothing we could have done to stop that; it would have been an extraordinary catastrophe.

"But in terms of using a nuclear weapon in retaliation, the political and military and economic consequences or obstacles were just overwhelming."

ding demands for communications, navigation, missile warning, intelligence, and other missions, at least for the near future.

But future capabilities might be in doubt unless space access can be resumed in a relatively short period of time.

The Air Force has already postponed two launches as it struggles to see if there is a systemic cause of the failures. A Titan IVB scheduled for launch May 9 from Vandenberg AFB, Calif., with an NRO classified satellite, was initially put off indefinitely. It was successfully launched May 22, carrying its payload to the proper orbit; however, the booster did not need an upper stage for this payload.

"I think we have a crisis, but I also think we've got our best minds on this," Deputy Defense Secretary John J. Hamre said.

### Titan IV Launches NRO Satellite

A Titan IVB successfully launched an NRO satellite into orbit May 22, breaking a string of failures that prompted a White House assessment of US space boosters.

The Titan IVB lifted off at 2:36 a.m. from Vandenberg's Space Launch Complex 4 East. The payload and booster separated as planned, 9 minutes, 24.5 seconds into the flight.

Unlike the previous Titan IV launches, this booster did not employ an upper stage.

Five days earlier, President Clinton ordered an assessment of space launch vehicles. This came after a

Titan IVA blew up Aug. 12, just seconds after launch. Twice in April, Titan IVs had successful launches from Florida, only to have the upper stages fail, placing the payloads into useless orbits.

A Delta rocket also failed in April, resulting in the loss of a satellite.

### USAF Units Pass Y2K Evaluations

The Air Force reported May 25 that the 91st Space Wing, Minot AFB, N.D., sailed through a recent test of its vulnerability to "the millennium bug."



A Cobra Gold '99 civil action program brought medical service to a Thai village. Preparing prescriptions are (l-r) SMSgt. Kevin Chouinard, 3rd Aerospace Medical Sq., Elmendorf AFB, Alaska; Maj. William Sames, 105th Medical Det., Ft. Lewis, Wash.; and Petty Officer 1st Class Daren Verhulst, Naval Hospital, 29 Palms, Calif.

USAF photo by SrA. Diane S. Robinson



Keesler was chosen as the single site for the complete basewide, end-to-end systems test for several reasons, including the fact that it is USAF's computer technical training center.

Air Mobility Command and Pacific Air Forces also report success in the first stages of testing their mission-critical systems.

### Air Force Names 20th B-2 Indiana

On May 22 at Grissom ARB, Ind., the Air Force put Indiana's name on the newest B-2 stealth bomber.

"There was an overwhelming show of grassroots support" for the Indiana name, said Gen. Richard E. Hawley, commander of Air Combat Command, who served as master of ceremonies for the event.

After a thunderous flyover by another B-2 dipping out of low-hanging clouds, B-2 crew members patiently signed autographs for a long line of just-as-patient visitors.

*Spirit of Indiana* flew back to White-

man AFB, Mo., after the ceremony, its active duty career under way.

### Senate Rejects Closure of More Bases

For the third year in a row, the Pentagon appears likely to fail in its effort to win Congressional approval for more base closures.

This time the issue did not even make it out of the Senate Armed Services Committee. On May 13, while drawing up the Fiscal 2000 defense authorization bill, the panel defeated a proposal by Sen. Carl Levin (D) of Michigan for a single round of closures by a vote of 11-9.

Earlier, an amendment that would have approved two base shuttering rounds, proffered by Sen. John McCain (R) of Arizona, lost by an even larger margin. McCain, a longtime proponent of the need to cut infrastructure to produce modernization resources, stormed out of the closed meeting in frustration.

## Outsourcing Looms as Growth Area

The Air Force will contract out many more support and service jobs in the immediate future, Brig. Gen. Richard B. Bundy, USAF's director of manpower, organization, and quality, told an Air Force Association conference May 18.

This push for increased outsourcing could improve quality while saving the service upwards of \$4 billion by 2005, he said.

Pressure for more outsourcing in the US military comes from many directions. The Defense Science Board and General Accounting Office are among the organizations which have weighed in with the conclusion that DoD's infrastructure is too heavy and that the private sector might be able to carry some of the load.

The dollar dilemma for the Air Force is a stark one. Money is limited, and the choice is whether to keep paying for the upkeep and maintenance on an outdated base structure or free up as many resources as possible for modernization and readiness.

The goal in turning support and service roles over to contractors will be to free the uniformed service to focus on what it does best—warfighting. Competition for the work should also lead to lower costs, freeing up billions.

Full privatization of some services will be part of this trend. Privatization, in this sense, means the government will transfer control of land, a power plant, or other asset, to a private company. "The goal will be to get out of the business, as long as ... it makes economic sense and there is no readiness impact," said Bundy.

The Air Force plans to privatize 444 utility systems by 2003, for instance. Officials have already committed \$80 million in up-front money to fund this changeover.

Family housing is an obvious privatization candidate. Four such projects are already under way, involving 420 units at Lackland AFB, Texas, 670 units at Robins AFB, Ga., and two US Air Forces in Europe build/lease projects that will contain over 1,000 units.

For areas where the service wants to maintain more control, competitive sourcing will allow the government to transfer a particular function while keeping official ownership.

The Air Force plans to have 54,000 competitive sourcing candidates identified by 2003. Targets will be nonmilitary functions that are nonetheless essential to the warfighting effort, such as some aircraft maintenance, hospital maintenance, traffic management, and food services.

Taken together, privatization and competitive source contracts accounted for 13.5 percent of Air Force resources in Fiscal 1997, according to Bundy. That will rise to 20.5 percent in Fiscal 2005. The trend should result in an 8 percent cut in Air Force personnel, said Bundy.

"We are reducing the number of people, but not through [the] massive reductions of the past," Bundy reported.

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The House is even less friendly to base closing efforts than the Senate. Representatives are still smarting over what they perceive as the Clinton Administration's politicization of the last base closing round. Clinton officials improperly tried to keep jobs at maintenance depots in vote-rich California, many Republicans charge.

The Senate action was something of a personal setback for Defense Secretary William S. Cohen. A former senator from Maine, Cohen lobbied his colleagues hard in an attempt to get them to agree to shed some infrastructure in the name of new weapon purchases. He had hoped they would revive the independent base closure commission process which picked nearly 100 facilities for shuttering in the late 1980s and early 1990s.

The issue could still come up for debate on the floor of the House or Senate later in the year, but without the backing of the key Senate panel its passage seems remote.

### Retired Generals Seek More Joint STARS

Senior retired officers have banded together to press the Pentagon to keep buying the Air Force's E-8 Joint

USAF photo by TSgt. Lance Cheung



**On temporary duty to Armed Forces Korean Network's "Eagle-FM," Amn. April Lawrence is on the air from Osan AB, South Korea, far from home, Chattanooga, Tenn. The staff broadcaster is stationed at Kunsan AB, South Korea.**

Surveillance Target Attack Radar System aircraft.

"Both the Air Force Association and the Association of the United States Army believe that the scaled-back buy of 13 Joint STARS falls dangerously short when measured by the current requirements of our national military strategy," wrote AFA Executive Director retired USAF Gen. John A. Shaud and AUSA President retired Army Gen. Gordon R. Sullivan in an April 29 letter to Secretary of Defense William S. Cohen.

Other retired officers who have signed similar missives to the Pentagon chief include retired Gen. Ronald R. Fogleman (former Air Force Chief of Staff); USAF Gen. Charles A. Horner (the Desert Storm air boss and former commander in chief, US Space Command); and Army Gen. Gary Luck (former commander of allied forces in Korea).

When the Joint STARS program began in the early 1980s, the Air Force originally planned to buy 30 of the farseeing radar airplanes. Budget constraints reduced that plan to 19 by earlier this decade. In 1997, the Quadrennial Defense Review concluded that the US only needed 13 Joint STARS since NATO was planning to buy six for general Alliance use.

But the NATO buy has yet to materialize. US Allies have balked at the cost of the Joint STARS purchase, saying the airplane costs too much to buy and operate.

Thus the retired officers—as well as a number of other experts outside the services—think the US should resume its purchase of the aircraft, which have shown their value in conflicts from Kuwait to Kosovo.

Air Force officials have said they would like to have more Joint STARS, but other programs are currently higher on their funding priority list.

"We urge the Clinton Administration to rethink plans to halt Joint STARS production at a number below what is required to meet our

warfighters' needs," wrote Gens. Fogleman, Horner, and others, in their Cohen letter.

The plea to keep the production line open may receive a sympathetic reception in Congress.

Lawmakers last year approved advance procurement funds for a 14th Joint STARS airplane. The House Armed Services Committee, for its part, is recommending this year that Congress fully fund the 14th aircraft, as the Air Force has requested. The House panel would then go further and provide advance procurement for a 15th in 2001 rather than shut down the Joint STARS production line for good at this time.

### UAVs Get Strong House Support

Unmanned Aerial Vehicles did well in a Fiscal 2000 Intelligence authorization bill passed by the House on May 13. Lawmakers approved the addition of \$25 million to the Global Hawk High Endurance UAV budget. The Predator UAV received \$20 million more than the Administration had originally requested.

The Predator has logged more than 11,000 hours over 3.5 years on support missions in the Balkans, noted a House Intelligence Committee report. "A solid Predator production base must be continued," it concluded.

The \$20 million add-on would give the Predator a total budget of \$58 million. The extra money would go for two more UAVs, laser designator kits, and increased communications ability.



**Veterans and re-enactors in World War II uniforms dedicated a newly restored locomotive in Wilmington, Del. Locomotive 58 was built in 1907 and served in WWII as one of many trains transporting equipment and recruits. Restored to honor veterans, it now displays emblems of all the services.**

USAF photo by SSgt. Angela Stafford

## Congressional News: Defense Bills Advance

Many members of Congress say they are concerned about the frayed state of the United States military—and they are moving to do something about it.

The big annual defense bills now proceeding through the Senate and House would both add over \$8 billion to the Clinton Administration's Fiscal 2000 request for Department of Defense and Department of Energy national security funds.

If the bills passed in their current form, the Pentagon would receive a 2.2 percent real increase in funds, compared to the Fiscal 1999 level. The national security line in the budget would come in at \$288.8 billion.

Moreover, the emergency supplemental spending bill which passed Congress this spring contains \$1.8 billion to pay for increases in military pay and pensions for Fiscal 2000. That means the total increase over what the Administration asked for is likely to surpass \$10 billion.

Such hikes are vital steps "in enhancing military readiness, modernizing our forces, and improving the quality of life for our servicemen and -women and their families," said Sen. John Warner (R-Va.), chairman of the Senate Armed Services Committee.

Warner's panel approved its defense authorization draft May 14. The House Armed Services Committee voted out its companion measure May 19.

Both bills call for a 4.8 military pay raise, effective Jan. 1, 2000. Both call for armed services salaries to at least keep pace with rising inflation.

Both would allow members of the armed forces greater choice in choosing retirement options. Service personnel who opt to stay in the current Redux retirement system would be eligible for a one-time \$30,000 bonus after 15 years. Personnel who pass up the bonus would be allowed to change to the so-called High-3 retirement option, which provides a more generous pension.

Senate and House panel members both voted to add significant sums to readiness accounts. The Senate Armed Services Committee voted an additional \$1.2 billion spread over general readiness, for instance. The House

added \$534 million to increase stocks of precision guided bombs and long-range missiles.

Important Air Force procurement programs would face little change under either bill. The F-22 would receive its full \$3 billion budget request in both panels' plans. Members of Congress remain worried about the concurrent nature of the program, under which procurement begins before development is finished, however. It appears likely that some form of certification request, under which the Pentagon would have to vow in writing that test goals were being met and cost caps seemed reachable, will become law.

"The committee is concerned by significant increases in F-22 budget and is disturbed by the prospect of higher costs and increased program risks," concluded the House Armed Services Committee bill report.

Both chambers increase money for F-16 modifications and fully fund the Airborne Laser program. The JSF faces no cuts; however, the House says it "continues to believe in the importance of alternate engine development for the JSF fleet" and allocates an extra \$265.4 million accordingly.

The B-2 also looks like it will get more money, since both bills would plus-up the Administration's stealth bomber request with cash for add-ons. The House bill adds \$152 million, which would bring the total funds for B-2 modernization to \$353.8 million. "The additional funds will be used to further reduce the aircraft's radar cross section and to integrate Link 16 [data links] ... into the aircraft," said the committee report.

For its part, the Senate Armed Services panel called for a new national emphasis on emerging threats such as biochemical terrorism. Among other things, it called for the creation of 17 new National Guard Rapid Assessment and Initial Detection teams, which would respond to domestic attacks involving weapons of mass destruction. The Clinton Administration had proposed formation of three such teams.

"We must prepare now for nontraditional threats to our national security," said Warner.

The bill added \$25 million to the \$71 million Global Hawk request. Much of this money represents a shift in endurance UAV funds from the now-canceled DarkStar stealthy UAV project.

The committee report urged resumption of Global Hawk testing, which has been interrupted due to a test vehicle crash.

The overall intelligence budget figure is classified but is thought to be around \$30 billion.

### Guardian Challenge Honors Best in Space Command

Air Force Space Command on May 5 announced the winners of Guardian Challenge '99 following three days of competition at Vandenberg AFB, Calif.

The Blanchard Trophy for best missile operations went to the 341st Space Wing, Malmstrom AFB, Mont.

The Aldridge Trophy for best space operations was won by the 50th Space Wing, Schriever AFB, Colo.

The Schriever Trophy—awarded to the wing with the best spacelift team—

ended up with the home team, the 30th Space Wing at Vandenberg.

In other awards, the 21st Space Wing, Peterson AFB, Colo., was named best security forces team; and the 91st Space Wing, Minot AFB, N.D., took the honors for best missile communications team.

### Thunderbirds Resume Demonstrations

The US Air Force Thunderbirds aerial demonstration squadron resumed flight training during the second week in May following a decision by service officials to postpone team exhibitions from April 28 to May 29. The team got the OK to resume its demonstration schedule June 2.

The month-long pause came in the wake of an incident that occurred during an April 25 air show at Patrick AFB, Fla. Two Thunderbird F-16s made contact with each other during a four-ship diamond formation take-off. Both airplanes landed safely with only minor damage, and neither pilot was injured.

Following a thorough review, Brig. Gen. William W. Lay II, commander of the 57th Wing, the parent organization for the Thunderbirds, decided to recall a former, experienced Thunderbird pilot to replace Capt. Russell Mack, one of the pilots involved in the mishap.

Maj. Mark R. Arlinghaus, a soloist for the Thunderbirds in 1997 and 1998, returned to fill the right-wing position on the team.

### F-22 Under Flight Restrictions

The Air Force has limited the flight maneuvers of its two test F-22s at Edwards AFB, Calif., in late April until contractor Lockheed Martin can strengthen their aft fuselage.

Static tests revealed that two panels in the forward part of the F-22's tail boom assembly might buckle before design load limits are reached. As a result, officials restricted F-22 pilots from putting more than 50 percent of load-limit stress on the aircraft.

That means they are not allowed to

perform such maneuvers as sharp turns and rolls.

Air Force and contractor spokesman reported the problem was a minor one and would not affect the overall cost of the F-22 program. The repair will involve installation of 80 stiffeners on the two flight-test aircraft and those in assembly. Lot 1 production F-22s will have thicker panel walls to repair the defect.

Lockheed Martin reportedly discovered the problem. Company officials expected to make the repairs by mid-summer.

**Tinker Assists in Tornado Recovery**

After a tornado ripped through the vicinity of Tinker AFB, Okla., on May 3, more than 350 personnel from the base leapt into action to assist local residents whose lives and property were devastated by the powerful storm.

Within minutes of the passage of the funnel cloud, Reservists from Air Force Reserve Command's 507th Air Refueling Wing had pulled a unit KC-

135 out of its hangar to make room for survivors. Volunteers began to set up food lines and more than 300 cots.

Tinker personnel joined with local fire and police in search and rescue efforts. SrA. Scott Branscum of the 970th Airborne Air Control Squadron stopped by a housing complex for the elderly near his own home shortly after the disaster. He heard screams from a woman buried under 5 feet of rubble after a wall had collapsed on top of her.

"But by some miracle her walker, which had fallen on top of her, saved the woman. It formed a brace and kept everything from crushing her," said Branscum.

The base itself suffered minor losses, considering the scale of the damage in surrounding neighborhoods. Four Tinker buildings—three stables and a running-track bathroom—were destroyed.

**President Signs Emergency Funds Bill**

President Clinton on May 21 signed

the Fiscal 1999 Emergency Supplemental Appropriations Act, critical to relieving pressures on the armed services.

The bill includes more than \$10 billion in new budget authority for the Department of Defense for costs resulting from ongoing contingency operations in Southwest Asia and Kosovo, as well as other urgent high-priority military readiness matters.

These include \$1.8 billion for a 4.4 percent military pay raise and retirement reform.

**Shelton Nominated for Second Term**

President Clinton nominated Gen. Henry H. "Hugh" Shelton to serve a second term as Chairman of the Joint Chiefs of Staff.

The nomination was announced May 20.

"It has been an honor to serve as the principal military advisor to the President and Secretary of Defense for the past 20 months," said Shelton. "I appreciate their confidence in my ability to continue that service

**Meanwhile, Back in Bosnia ...**

The Dayton accord of late 1995 brought a fragile peace to war-torn Bosnia. By this October, the cost to the US military of maintaining that peace will soar to \$8.5 billion [Fig. 1], with no letup in sight.

The Clinton Administration disclosed costs of the operation on May 12 in a summary report required by Congress.

In the first three post-Dayton years, Washington's peacekeeping costs came to \$6.7 billion. The White House projects that

expenditures in Fiscal 1999 will hit \$1.8 billion [Fig. 2].

Deliberate Forge maintains the no-fly zone over Bosnia; Joint Forge and IFOR entail troops carrying out Dayton mandates; Provide Promise was a humanitarian airlift and airdrop; and Sharp Guard enforced a UN embargo against Yugoslavia.

**Fig. 2 The 1999 Breakout**

Category	Cost
USAF personnel	\$33,000,000
Army personnel	\$292,100,000
Navy personnel	\$9,700,000
Marine personnel	\$2,700,000
Navy Reserve personnel	\$2,200,000
<b>Total personnel</b>	<b>\$339,700,000</b>
USAF O&M	\$191,100,000
Army O&M	\$1,041,500,000
Navy O&M	\$71,600,000
Marine O&M	\$2,200,000
Defense-wide O&M	\$91,500,000
Defense health program	\$12,700,000
Navy Reserve O&M	\$100,000
<b>Total O&amp;M</b>	<b>\$1,410,700,000</b>
<b>Total personnel and O&amp;M</b>	<b>\$1,750,400,000</b>

**Fig. 1 Pentagon Costs**

Mission	Fiscal 1996	Fiscal 1997	Fiscal 1998	Fiscal 1999	Total
Sharp Guard	\$9,300,000	\$0	\$0	\$0	\$9,300,000
Provide Promise	\$21,700,000	\$0	\$0	\$0	\$21,700,000
Implementation Force	\$2,231,700,000	\$2,087,500,000	\$0	\$0	\$4,319,200,000
Joint Forge	\$0	\$0	\$1,792,300,000	\$1,589,100,000	\$3,381,400,000
Deliberate Forge	\$225,900,000	\$183,300,000	\$159,400,000	\$161,300,000	\$729,900,000
Other	\$0	\$10,000,000	\$500,000	\$0	\$10,500,000
<b>Total</b>	<b>\$2,488,600,000</b>	<b>\$2,280,800,000</b>	<b>\$1,952,200,000</b>	<b>\$1,750,400,000</b>	<b>\$8,472,000,000</b>

to our country for another term as Chairman of the Joint Chiefs of Staff."

Shelton succeeded Gen. John M. Shalikashvili, also an Army officer, in the post.

### News Notes

■ The electronic countermeasures system of the B-1B Lancer worked remarkably well when it was targeted precisely by SA-6 surface-to-air missiles on the first night of

airstrikes over Yugoslavia, according to Gen. John P. Jumper, commander of US Air Forces in Europe. The aircraft's AN/ALQ-161A defensive avionics suite had problems when first installed and its full po-

## Who's Affected by Air Force Stop-Loss?

The following Air Force Specialty Codes are covered under the Stop-Loss order that the Air Force issued May 26:

### Officer AFSCs:

fully qualified or awarded AFSC or aero rating (including all UAV operators). Where an officer is multiqualified, practical utility will determine Stop-Loss applicability:

**11XX** (pilots, except "slick" C-130 pilots [11AXX] not assigned to AETC undergraduate flying training instructor duty, EA-6B, and OSA [C-9, C-12, C-20, C-21, VC-25, C-32, C-37, C-135, and C-137])

**12XX** (navigators, except "slick" C-130 navigators [12AXC] not assigned to AETC undergraduate flying training instructor duty, EA-6B, and OSA [VC-25, C-32, C-135, and C-137])

**13BX** (air battle managers)

**13MX** (air traffic control)

**14NX** (intelligence)

**15WX** (weather)

**21AX** (aircraft maintenance-munitions)

**21GX** (logistics plans)

**21LX** (logistician: only lieutenant colonels with core AFSC of 21AX or 21GX)

**33SX** (communications and information)

**71SX** (Office of Special Investigations)

### Enlisted Control AFSCs:

Unless specifically identified, all prefixes and suffixes to the AFSCs listed below apply, except "slick" C-130 flight engineers (1A1XX) and "slick" C-130 loadmasters (1A2XX)

**1A0XX** (in-flight refueling)

**1A000** (chief enlisted manager in-flight refueling)

**1A1X1B** and **1A1X1C** (flight engineer)

**1A100** (chief enlisted manager flight engineer)

**1A2XX** (aircraft loadmaster)

**1A200** (chief enlisted manager loadmaster)

**1A3XX** (airborne communications system, except those assigned to C-9, C-20, VC-25, C-32, C-135, or C-137)

**1A300** (chief enlisted manager airborne communication system)

**1A4X1** and **1A4X1D** (airborne battle management systems)

**1A400** (chief enlisted manager airborne battle management systems)

**1A5XX** (airborne missions systems)

**1A500** (chief enlisted manager airborne missions systems)

**1CXXX** (command control systems operations)

**1NOX1** (intelligence applications)

**1N000** (chief enlisted manager intelligence applications)

**1N1X1** (imagery analysis)

**1N2X1** (signals intelligence production)

**1N200** (chief enlisted manager signals intelligence production)

**1N3X0** (cryptological linguist)

**1N3X3A, 1N3X3D, 1N3X3E, 1N3X3K, 1N3X3L, and 1N3X3M** (Slavic cryptolinguist)

**1N4X1** (signals intelligence analysis)

**1N5X1** (electronic signals intelligence exploitation)

**1N500** (chief enlisted manager electronic signals intelligence)

**1N6X1** (electronic systems security assessment)

**1N600** (chief enlisted manager electronic systems security)

**1TOX1** (survival, evasion, resistance, and escape training)

**1T1X1** (life support)

**1T100** (chief enlisted manager life support)

**1T2X1** (pararescue)

**1T200** (chief enlisted manager pararescue)

**1W0X1A** (weather)

**1W000** (chief enlisted manager weather)

**1W0X1A** (forecaster)

**2A0X1** (avionics test station and components)

**2A1X1** (avionics sensors maintenance)

**2A1X2** (avionics guidance and control systems)

**2A1X3** (communications and navigation systems)

**2A1X4** (airborne surveillance radar systems)

**2A1X7** and **X2A1X7** (electronic warfare systems)

**2A3X1** (F-15/F-111 avionic systems)

**2A3X2** (F-16 avionic systems)

**2A3X3** (tactical aircraft maintenance)

**2A4X1** (aircraft guidance and control systems)

**2A4X2** (aircraft communication and navigation systems)

**2A4X3** (aircraft command, control, and communications and navigation systems)

**2A5X1** (aerospace maintenance)

**2A5X2** (helicopter maintenance)

**2A5X3** (bomber avionics systems)

**2A6X1** (aerospace propulsion, except senior master sergeant)

**2A6X2** (aerospace ground equipment, except senior master sergeant)

**2A6X3** (aircrew egress systems)

**2A6X4** (aircraft fuel systems)

**2A6X5** (aircraft hydraulic systems)

**2A6X6** (aircraft electrical and environmental systems)

**2A7X1** (aircraft metals technology)

**2A7X2** (nondestructive inspection)

**2A7X3** (aircraft structural maintenance)

**2A7X4** (survival equipment)

**2E1X1** (satellite and wideband communications equipment)

**2P0X1** (precision measurement equipment laboratory)

**2R0X1** (maintenance data systems analysis)

**2R1X1** (maintenance scheduling)

**2T2XX** (air transportation)

**2W0X1** (munitions systems)

**2W1X1, K2W1X1, Q2W1X1, and X2W1X1** (aircraft armament systems)

**3C0X1** (communications/computer systems operations)

**3C0X2** (communications/computer systems programmer)

**3C1X2** (electromagnetic spectrum management)

**3C2X1** (communications/computer systems control, except senior master sergeant)

**3P0X1** (security forces)

**5R0X1** (chaplain service support, except senior and chief master sergeant)

**7S0X1** (OSI)

**7S000** (chief enlisted manager OSI)

**8S100** (sensor operator)

**9S100** (applied geophysics)

tential was not reached for a number of years.

■ On April 22 the Air Force took delivery of its 49th Boeing C-17 Globemaster III at a ceremony in Long Beach, Calif. The aircraft marked the 37th consecutive C-17 delivered ahead of schedule.

■ It used to be Bergstrom AFB, Texas. Now it is Austin-Bergstrom IAP. Acting Air Force Secretary F. Whitten Peters recently made one of the first takeoffs from the new Lyndon B. Johnson Memorial Runway at the Austin air hub. The area expects to have 16,000 new jobs associated with the former military base, which was transferred to civilian use via a 1991 base closing commission decision.

■ The Jan. 20 crash of an Air National Guard OA-10 Thunderbolt near Syracuse, N.Y., was caused when the pilot accidentally placed the flight control switch into manual reversion flight control mode, according to an accident report released April 30. The pilot ejected safely in the incident.

■ The Jan. 28 midair collision of two F-15Cs from Eglin AFB, Fla., was caused when one of the pilots misperceived the direction of the other and did not realize they were on a collision course, according to an accident report released May 3.

■ On June 1, re-enrollment into the military's medical system became easier when the process became automatic. Unless they specifically decline, Tricare Prime enrollees are now continued into the next year.

■ The Air Force men's volleyball team won the 1999 Armed Forces Championships, held at Lackland AFB, Texas, May 2-7. The team won the double round-robin tournament with a 5-1 record, losing only to Navy in the first round.

■ The commander of the 60th Air Mobility Wing at Travis AFB, Calif., and his wife have been named the best wing commander and spouse team in the service. Brig. Gen. Steven A. Roser and his wife, Linda, won the annual Gen. and Mrs. Jerome F. O'Malley Award because of their efforts to provide a quality workplace

and lifestyle for troops while supporting community projects, said the Air Force.

■ The crew of an AC-130H Spectre gunship from the 16th Special Operations Squadron, Hurlburt Field, Fla., helped rescue a stranded pleasure boat in the Gulf of Mexico on April 19. Pilot Lt. Col. Andy Hamilton spotted the reflection from a signaling mirror aimed by the boat's occupants and then helped direct a Coast Guard cutter to the scene.

■ On Dec. 1, the grade of chief master sergeant will be 40 years old. To commemorate the event, active and retired chiefs at Barksdale AFB, La., are sponsoring a dinner at the enlisted club on the anniversary date. All chiefs who were on the original promotion lists of Dec. 1, 1959, are invited.

■ The Air Force got its first look at its latest combat search and rescue helicopter when Sikorsky Aircraft unveiled an upgraded HH-60G Pave Hawk at its Stratford, Conn., facility recently. The Block 152 upgrade is the craft's most significant modifica-

## Senior Staff Changes

**RETIREMENTS:** Gen. Richard E. **Hawley**, Lt. Gen. Joseph J. **Redden**.

**CHANGES:** Lt. Gen. Maxwell C. **Bailey**, from Cmdr., 21st AF, AMC, McGuire AFB, N.J., to Cmdr., AFSOC, Hurlburt Field, Fla. ... Lt. Gen. William J. **Begert**, from Vice Cmdr., USAF, Ramstein AB, Germany, to Asst. Vice Cmdr., USAF, Pentagon ... Maj. Gen. (sel.) Robert F. **Behler**, from Dir., C<sup>4</sup>, USSTRATCOM, Offutt AFB, Neb., to C/S, Allied Forces North Europe, NATO, Stavanger, Norway ... Maj. Gen. Roger A. **Brady**, from Dir., P&P, USAF, Ramstein AB, Germany, to Dir., Log., AMC, Scott AFB, Ill.

Brig. Gen. Kevin P. **Chilton**, from Dep. Dir., Ops., AFSPC, Peterson AFB, Colo., to Cmdr., 9th Recon Wg., ACC, Beale AFB, Calif. ... Brig. Gen. (sel.) Trudy H. **Clark**, from Commandant, Squadron Officer School, AU, AETC, Maxwell AFB, Ala., to Dir., C<sup>4</sup> Sys., USSTRATCOM, Offutt AFB, Neb. ... Brig. Gen. Richard L. **Comer**, from DASD, Policy & Missions, ASD, Spec. Ops./Low Intensity Conflict, Pentagon, to Dep. Commanding Gen., USSOCOM, Ft. Bragg, N.C.

Brig. Gen. (sel.) Paul M. **Hankins**, from Chief, AF Colonel Matters Office, Pentagon, to Dep., LL, Pentagon ... Maj. Gen. Wilfred **Hessert**, from Dep. IG, OSAF, Pentagon, to Mil. Advisor to the Chairman, RFPB, Pentagon ... Lt. Gen. (sel.) Paul V. **Hester**, from Dir., LL, OSAF, Pentagon, to Cmdr., 5th AF, PACAF, Yokota AB, Japan ... Lt. Gen. (sel.) Charles R. **Holland**, from Cmdr., AFSOC, Hurlburt Field, Fla., to Vice Cmdr., USAF, Ramstein AB, Germany

Maj. Gen. John D. **Hopper Jr.**, from Dir., Ops., AMC, Scott AFB, Ill., to Cmdr., 21st AF, AMC, McGuire AFB, N.J. ... Brig. Gen. Charles L. **Johnson II**, from Dir., Log., AMC, Scott AFB, Ill., to Dir., Plans, AMC, Scott AFB, Ill. ... Maj. Gen. (sel.) Stephen R.

**Lorenz**, from Cmdr., 34th Tng. Wg., USAFA, Colo., to Dir., P&P, USAF, Ramstein AB, Germany ... Maj. Gen. Larry W. **Northington**, from Dep. Dir., LL, OSAF, Pentagon, to Dep. Asst. Secy., Budget, Asst. SECAF (Financial Mgmt. & Comptroller), Pentagon ... Brig. Gen. Thomas A. **O'Riordan**, from Vice Cmdr., Ogden ALC, AFMC, Hill AFB, Utah, to Dep. Dir., Ops., USSTRATCOM, Offutt AFB, Neb. ... Brig. Gen. (sel.) Lorraine K. **Potter**, from Command Chaplain, AETC, Randolph AFB, Texas, to Dep. Chief of the Chaplain Service, Bolling AFB, D.C. ... Maj. Gen. (sel.) Earnest O. **Robbins II**, from Civil Engineer, ACC, Langley AFB, Va., to Civil Engineer, DCS, Instl. & Log., USAF, Arlington, Va.

Brig. Gen. (sel.) James P. **Totsch**, from Associate Dir., Log. Resources, DCS, Instl. & Log., USAF, Pentagon, to Vice Cmdr., Ogden ALC, AFMC, Hill AFB, Utah ... Brig. Gen. (sel.) Mark A. **Welsh III**, from Cmdr., CADRE, AETC, Maxwell AFB, Ala., to Cmdr., 34th Tng. Wg., USAFA, Colo. ... Maj. Gen. George N. **Williams**, from Dir., P&P, AMC, Scott AFB, Ill., to Dir., Ops., AMC, Scott AFB, Ill.

**COMMAND CHIEF MASTER SERGEANT RETIREMENT:** CMSAF Eric W. **Benken**.

**CCMS CHANGE:** CCMSgt. Frederick J. **Finch**, to CMSAF, USAF, Pentagon.

**SENIOR EXECUTIVE SERVICE RETIREMENT:** Michael H. **Nock**.

**SES CHANGES:** Christopher L. **Blake**, to Dir., Engineering, ASC, Wright-Patterson AFB, Ohio ... Alan B. **Goldstain**, to Exec. Dir., AEDC, Arnold AFB, Tenn. ... Willard H. **Mitchell**, to Dep. Under SECAF (Intl. Affairs), Pentagon ... J. Daniel **Stewart**, to Exec. Dir., AFMC, Wright-Patterson AFB, Ohio.

## Remember Pearl Harbor

In a surprise move, the Senate voted May 25 to exonerate two US military commanders who played key roles in the Pearl Harbor debacle Dec. 7, 1941.

The two were Navy Adm. Husband Kimmel and Army Gen. Walter Short. They were the two senior commanders of US military forces in the Pacific at the time of the raid.

Both had been accused of dereliction of duty.

The Senate, by a vote of 52-47, approved an effort by Sen. William V. Roth Jr. (R-Del.) to restore the reputations of the two men.

The vote followed a heated debate between members of the Senate's small band of World War II veterans. The move was in the form of an amendment to the defense authorization bill.

Here are the views of Roth, the main proponent, and Sen. John Warner (R-Va.), the primary opponent:

**Roth:** "For 58 years, two distinguished commanders, Admiral Kimmel and General Short, have been unjustly scapegoated for the Japanese attack on Pearl Harbor. Numerous studies have made it unambiguously clear that Short and Kimmel were denied vital intelligence that was available in Washington. Investigations by military boards found Kimmel and Short had properly disposed their forces in light of the intelligence and resources they had available.

"Investigations found the failure of their superiors to properly manage intelligence and to fulfill command responsibilities contributed significantly, if not predominantly, to the disaster. Yet, they alone remain singled out for responsibility.

"This amendment calls upon the President to correct this injustice by advancing them on the retired list, as was done for all their peers."

**Warner:** "We vigorously oppose this amendment. Right here on this desk is perhaps the most dramatic reason not to grant the request. This [a document] represents a hearing held by a joint committee of the Senate and House of the Congress of the United States in 1946.

"They had before them live witnesses, all of the documents, and it is clear from this and their findings that these two officers were then and remain today accused of serious errors in judgment which contributed to perhaps the greatest disaster in this century against the people of the United States of America.

"There are absolutely no new facts beyond those deduced in this record brought out by my distinguished good friend, the senior senator from Delaware. For that reason, we oppose it."



**These were two of the P-40 fighters destroyed at Wheeler Field in Hawaii during the Japanese attack Dec. 7, 1941. On May 25, the Senate voted to exonerate the two senior US commanders in the Pacific who had been accused of dereliction of duty—the debate was heated.**

tion to date and includes an enhanced communication and navigation system and electronic warfare suite.

■ Reservists can no longer become "honorary retirees," under recently issued Department of Defense regulations. In the past, Reservists who did not complete 20 years of active

service because of medical or other reasons could qualify for such status, which entitled them to join the open mess and wear their uniform at official functions.

■ The Air Force won the 1999 Armed Forces Triathlon, held at Camp Pendleton, Calif., May 5-9. The vic-

tory by the three-man, five-woman team ended a two-year Navy winning streak.

■ The Nov. 19 crash of an F-16CJ from the 55th Fighter Squadron at Shaw AFB, S.C., was caused by failure of the AC generator assembly and faulty logic within the digital engine control, according to an accident report released May 11. These glitches caused a momentary shutoff of fuel to the engine and a rapid loss of power.

■ On May 12, Lt. Col. Rich Vanderburgh became the first USAF pilot to log more than 1,000 hours in the B-2. He has been with the program since June 1991 and currently serves as chief of safety for the 509th Bomb Wing, Whiteman AFB, Mo.

■ Three Air Force captains are going to get a chance to study overseas following their selection as Olmsted Scholar finalists. Capt. Leonard J. Kosinski, 344th Air Refueling Squadron, McConnell AFB, Kan., will spend two years in a program of advanced college courses in Japan. Capt. Dagvin R.M. Anderson, 91st Air Refueling Squadron, MacDill AFB, Fla., will undertake a similar effort in the Czech Republic. Capt. Stacy L. Yike, Air Force Element of Space/Technology, will spend her two years of study in Portugal. ■

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# Washington Watch

By John A. Tirpak, Senior Editor

## Victory in Kosovo

In late May, NATO shifted gears in Operation Allied Force. The air campaign soon saw the results of the stronger commitment.

WASHINGTON, D.C., JUNE 10, 1999



After pursuing a desultory, two-month bombing campaign against Yugoslavia's forces and facilities, NATO officials suddenly seemed bent on making up for lost time. The first phase of Operation Allied Force was tentative; air attacks were limited, objectives vague, and results unimpressive. However, as the war headed into summer, NATO shifted gears. Operations intensified dramatically. By June 9—Day 78 of the war—Belgrade was beaten and folded its cards, acceding to NATO terms.

The change stemmed from several factors. The weather had cleared, NATO had expanded its armada, and Belgrade had inflamed the situation in Kosovo. By late May, a change in NATO's outlook was evident. The reluctance of many Allies to mount a committed air campaign against Slobodan Milosevic crumbled in light of the Serb dictator's obvious plan to ride out the assault.

Intensification had another source: Mounting calls for ground operations, which NATO as a whole wished to avoid. Some in Congress and a key ally, Britain, called on President Clinton to at least prepare for ground action. However, Clinton replied that he believed the [air] campaign was working and that NATO ought to stick with its air-only strategy.

The war lasted just more than 11 weeks. Going into the 10th week, NATO forces had flown more than 27,000 sorties, of which more than 7,000 were attack sorties. The remainder were support missions flown by airlifters, tankers, surveillance and

reconnaissance aircraft, and other specialized systems.

With those 7,000 strike sorties, most of which entailed use of precision weapons, Allied aircraft had gone after military and quasi-military economic targets. In both categories, the American military had carried the greatest burden, having contributed 3,600 bombing missions (52 percent of NATO's total) and roughly 14,000 support sorties (70 percent) of the total.

The destruction was widespread and produced the desired effect. On June 3, Belgrade agreed to a NATO peace plan. The sudden capitulation was followed by a week of fitful talks on details of the plan. Finally, on June 9, Yugoslavia signed the accord and began withdrawing forces from Kosovo.

NATO had demanded that Yugoslavia (1) halt the ethnic-cleansing campaign against ethnic Albanian Kosovars, (2) pull Serb troops and police from Kosovo, (3) permit deployment in Kosovo of a NATO-led peacekeeping force, (4) allow the expelled Kosovars to return to their homes, and (5) resume participation in efforts to reach a political solution in Kosovo.

### "Kill This Army"

Lt. Gen. Michael C. Short, USAF, the operational commander of the Allied air campaign, said in the May 24 *Washington Post* that if the bombing continued "for two more months," or into late July, "we will either kill this army in Kosovo or send it on the run."

Gen. John P. Jumper, commander of US Air Forces in Europe, told reporters in the Pentagon on May 14 that air supremacy over Yugoslavia had been achieved. "That means we can go anywhere we want to in the country anytime we want to," he said.

Jumper said that the Alliance campaign was highly effective, as measured against its mandate. "Airpower alone is capable of rendering [Milosevic's] military ineffective, and that's what our charter is, that's what our task is, and that's what we're going to do," he asserted.

Pentagon officials said the air attack was supplemented by cyber attacks on Serbian computers and Serbian financial holdings outside the country. These were staged in order to make it hard to buy fuel, but they declined any details on who was conducting the attacks or whether any successes had been achieved.

Meanwhile, NATO nations had agreed to start assembling a KFOR, or Kosovo Force, to guarantee safety in the province after Serbian capitulation. Alliance approval for a force of 50,000 troops on the borders of Kosovo was given, but NATO steadfastly refused to call it an invasion force, even hypothetically. Serb troops, apparently expecting an invasion, continued to dig in on the Albania-Macedonia-Kosovo border.

Complicating the situation was the indictment of Milosevic and a handful of key Serb leaders by the International War Crimes Tribunal on May 27. Some predicted it would harden Milosevic's defiance and deter him from seeking a negotiated end to the war. Others saw it as a lever to force a settlement, in that Milosevic likely could only avoid a war crimes trial by emerging from the crisis still in power with a credible army to protect him.

NATO spokesman Jamie Shea said that nothing had changed with respect either to NATO's demands or to the way it intended to prosecute the air campaign as a result of the indictments. "President Milosevic must accept [NATO's] five conditions," he said. "Indicted war criminals must be brought to trial."

Shea's military counterpart, Maj. Gen. Walter Jertz, noted that intelligence reports indicated "strong evidence" that in central Kosovo ethnic-cleansing operations were still being conducted in late May.

### Threefold Increase

On June 3, NATO aircraft committed to the air campaign numbered 1,045—or more than double the number with which it began the attacks March 24. Of the total aircraft, some 720 were contributed by US armed

services and 325 or so by European Allies or Canada.

NATO was still building toward an objective of 1,259 aircraft—including 982 US airplanes—established May 13 by US Army Gen. Wesley K. Clark, Supreme Allied Commander Europe, but had already exceeded the goal of 277 non-US Allied airplanes.

With the larger fleet, NATO commanders began to hit Serb assets with strikes from virtually all sides. Attacks originated in Italy and the Aegean Sea to the west and south, Germany and Hungary to the north, and Turkey to the east. USAF heavy bombers continued long-range attacks from bases in Britain and Missouri. Though not yet deployed in battle, the US Army's AH-64 Apache helicopters in Albania posed a threat from the south.

"NATO is encircling Yugoslavia and attacking from all directions," Defense Secretary William S. Cohen told reporters. He added that the deployment of more strike aircraft to new bases in the area "will make it possible to attack more targets more often and more effectively."

NATO officials said the strategy aimed to force a damaged and diminished Serbian air defense system to try to cover a much greater area, rendering it less effective. Previously, the Serb air defense system could focus on a set-piece air assault chiefly from the westward approaches to the Balkans.

Jumper also noted that the broader range of "ingress and egress routes" made NATO strikes and tactics "as unpredictable as possible," while also making it easier to "deconflict" the enormous amount of air traffic over the area.

By the end of May, the Alliance every day was averaging roughly 1,000 sorties of all types, with about 700 of these being combat missions, strike as well as support. According to Shea, NATO's spokesman, the bombing to that point had claimed more than 550 "major" pieces of Yugoslavian military equipment and more than 100 Yugoslavian aircraft.

#### **And Now, "Reachback"**

Jumper told reporters that front-line NATO forces were capitalizing on "reachback"—that is, using highly sophisticated in-theater communications equipment to acquire vital data from analysts based in the US. For example, forward forces were able to gain near-instantaneous access to imagery from U-2 reconnaissance airplanes and pilotless drones. Imagery collected by such platforms

was being relayed back to Beale AFB, Calif., and other sites for interpretation; targets were then selected and passed forward to combat airplanes in the vicinity.

As a result, NATO was able to "get ordnance on the target within minutes ... of location time."

"Between first detection imagery and bombs on target, we try to get that process down to minutes so we can root out these guys ... who are actually organizing and carrying out the killing" of ethnic Albanians in Kosovo, Jumper asserted. "These things are processes that have been perfected—and in many cases invented—during the course of this battle."

On May 27, Rear Adm. Thomas R. Wilson, director of intelligence for the Joint Chiefs of Staff, cataloged the target destruction. In a session with reporters, Wilson described Serb forces in Kosovo as having been reduced about 25 percent. He described the forces as being more vulnerable to attack, both because of better suppression of Serb air defenses—permitting lower Allied flights and more accurate targeting of individual vehicles—and their reduced mobility, brought on by widespread damage to Serb petroleum stocks and other means of supporting fielded armored forces.

More than half of Yugoslavia's petroleum, oil, and lubricant storage for the military had now been destroyed, Wilson asserted, and Serbia's entire refining capability had been wiped out. Nearly half of the nation's joint military-civilian fuel storage sites had been struck.

Interdiction of import facilities on the Danube River, an oil embargo, and other means of drying up the gas supply had driven the price of gasoline to \$20 a gallon in some parts of Serbia, he said.

Maj. Gen. Charles F. Wald, the Pentagon's principal military briefer on the operation, noted that recent gun-camera footage of NATO attacks on Serb fuel tanks showed fewer secondaries, indicating that the tanks had been emptied.

According to Wilson, the campaign destroyed about 79 percent of Yugoslavia's MiG-29s, more than 30 percent of its MiG-21s, two-thirds of its SA-2 SAMs, and almost 80 percent of the SA-3s. Though the figures had not changed much since estimates given weeks before, Wilson said they included only verifiable Serb losses and that actual damage was likely higher. For example, the count of destroyed equipment didn't include those airplanes

that might have been hidden in bombed aircraft shelters.

In any event, Serb fighter challenges to NATO aircraft became almost nonexistent by the 10th week of the air campaign, probably because all known primary and reserve airfields were being bombed regularly, with on-site fuel destroyed and runways badly cratered and taking longer to repair, Wilson noted.

#### **Forced to Choose**

Yugoslav broadcast capabilities—television and AM and FM radio—were down 35 percent, Wilson asserted, and countrywide power generation, which had been attacked with "soft kill" weapons earlier in the conflict, were being destroyed. Power was turned off in as much as 80 percent of Serbia at a time. The tactic forced Milosevic to choose between providing fuel and generators to his military or to vital civilian services such as hospitals and water supplies.

Half of the ammunition facilities in Serbia had been attacked and damaged, Wilson said, and the ability to build man-portable air defense systems had been severely damaged. The MANPADS, as they are known, were impossible to detect and destroy individually. "[They] probably always will be a threat [to Allied aircraft]," Wilson noted.

The air war had put out of commission about half of the roads between Serbia and Kosovo. All bridges spanning the Danube River in Kosovo had been dropped, and rail lines were 100 percent out of action. Moreover, in addition to military-specific command-and-control headquarters, at least two of Milosevic's five homes had been struck as C<sup>2</sup> sites.

Jumper said that Serb forces had fired more than 600 Surface-to-Air Missiles at NATO airplanes by mid-May and that they had been fired at night in search of high-value assets such as the B-2 or F-117 stealth aircraft. During the daytime, the SAMs were hidden. That was to change, however. By the end of May, Serb tactics had shifted to mass, volley-style firings in daylight, using only optical guidance.

Wilson said Serbia, as of May 27, still had "about one-half of their strategic SAMs remaining," NATO having destroyed about 11 out of 14 SA-3 sites and some SA-6s.

Serbian forces—whether out of fear of Allied HARM anti-radar missiles or mechanical difficulty—were "unable to achieve a complete transition to an engagement sequence," Wilson said. Large volleys of SAMs were being fired at Allied strike pack-

ages in late May, but Wald noted that they were optically guided and hadn't brought down any NATO airplanes. He pointed out that the large salvos corresponded to larger NATO strike packages in raids on Serb forces.

**Two Down—Only**

On May 26, 33 SAMs were fired at NATO strike aircraft, and although one came close enough for the pilot to be shaken by the blast, no airplanes were lost. After 65 days of operations, NATO had lost to enemy fire only two aircraft—an F-117 and an F-16—with no casualties.

Wald noted that Serbia possessed about 2,200 SAMs at the start of Operation Allied Force. He reported, however, that there was no way to know precisely how many had been destroyed in storage beyond those fired without effect.

Jumper also noted that Serb forces were using both shoulder-fired missiles and anti-aircraft artillery against individual munitions as they approached targets.

Kosovar anti-Serb military and paramilitary units were also gaining strength even as the Serbs were bogging down, Wilson said, and the airstrikes had helped in that "the playing field is somewhat more level."

Wilson added, "There's still plenty of targets left [for NATO airplanes to strike]," particularly among ground forces. At the 10-week point, Serb armored vehicles and artillery pieces were being destroyed at a rate of a half-dozen a day, but Wilson could not quantify Serb casualties.

"The Serbs have been very careful in protecting information about casualties, ... although we have received some reports ... [that] the casualties are far higher than they expected," he said.

The air campaign by June had settled into a two-track approach: destruction of Serb forces and enabling installations in Kosovo and attack of strategic targets within Serbia itself, which attacks were intended to diminish the will to resist of both Milosevic and the Serb population.

Much public attention was focused on NATO's mistakes: the striking of civilians in columns believed to be Serb convoys, in hospitals, and, most notably, the bombing of the Chinese Embassy in Belgrade on May 7. In the latter event, B-2 bombers dropped at least three Joint Direct Attack Munitions that scored direct hits on the compound. The incident, chalked

up to a series of errors by the CIA and the National Imagery and Mapping Agency, apparently resulted from the embassy's new location not being updated in databases or on maps being used by NATO fliers, the Pentagon explained. The strike was followed by a two-week halt in bombing Belgrade, as maps and databases were checked and targeting procedures tightened.

NATO pointed out that the Serbs had adopted a tactic of holding Kosovar hostages near targets of military significance, both in plain view and hidden. Those in plain view were intended to ward off attacks; those hidden were, if killed, to be displayed later as an example of

to spare after breaking out under the clouds.

A number of newspapers reported that NATO's Clark had issued an unprecedented order at the outset of the conflict that there be no Allied casualties in the conflict—and that commanders were to avoid losses at all costs. Short denied that Clark had given him any such order. However, he acknowledged that zero losses was a major goal.

As civilians were hit more frequently, however, Short relaxed initial rules of engagement which required pilots to stay above 15,000 feet. Lower altitudes—NATO would not say how low pilots were allowed to go—made for more accurate tar-

**Fig. 1** Cumulative Sorties, as of May 27

Contributor	Strike	%	Support	%	Total	%
US services	3,600	52	14,150	70	17,750	65
Other NATO	3,350	48	6,150	30	9,500	35
Total	6,950	—	20,300	—	27,250	—

DoD reported June 9 that total sorties had topped 34,000.

**Fig. 2** NATO Aircraft Force, as of June 2

Type	US	Non-US	Total
Fighter, bomber	311	239	550
Support aircraft	270	63	333
Reconnaissance	34	23	57
Helicopters	105	0	105
Total	720	325	1,045

Twelve European Allies and Canada provided forces.

NATO's reckless bombing of civilians. Both human-shield tactics were cited as violations of international norms by the International War Crimes Tribunal.

**Most Accurate in History**

Despite the accidents, Jertz said May 27 that Allied Force remains "the most accurate air campaign in history."

Jumper noted that pilots in cockpits had to guide their munitions while watching the target on a four-inch-wide cockpit TV screen, not the 20-inch monitor on which gun-camera footage is later reviewed. The munitions had to be guided while the pilots flew their airplanes, avoiding ground fire, often with only seconds

get identification and the use of shorter-range munitions and also increased the effectiveness of some 40 A-10 attack and forward air control airplanes employed over Kosovo. The A-10s are equipped as tank killers, mounting a 30 mm cannon designed to cheaply rip up armored vehicles at close range.

"We are going lower than 15,000 feet," Jumper said, "and we're doing it in a calculated and prudent way." He said commanders were relying on aircrew judgment in dropping to within range of enemy weapons.

"They know how to deal with these situations," he said. "We are not up there at some ridiculous altitude trying to parse the difference between a good guy and a bad guy."

The Pentagon also acknowledged in mid-May that it had been using AC-130 gunships almost from the outset of the war, chiefly against re-ventments and dug-in artillery, but hadn't mentioned them previously because of their vulnerability to anti-aircraft fire.

"[The AC-130] will be used against the right target ... in the right environment. ... It doesn't move that fast," Wald said, commenting on its vulnerability. The gunships' firepower proved useful against Serb forces on the borders of Kosovo.

On the home front, the conflict in Kosovo had spotlighted the level of US war preparedness and the Clinton Administration's defense policies that had shaped the force in the Balkans.

On May 27, the Senate adopted a provision requiring the President, through the Department of Defense, to justify the many open-ended commitments the US has made in the 1990s, with regard to no-fly zones, peacekeeping operations, and humanitarian operations. The measure would require the President to list the commitments in order of priority to make clear which forces would be shifted in the event of a more pressing emergency.

### Strategy According to Hamre

The move was sparked by testimony of Deputy Secretary of Defense John J. Hamre, the Pentagon's No. 2 official, who said most of the country and Congress misunderstand the nation's strategy of being able to fight two "nearly simultaneous" Major Theater Wars.

"We have never said [US forces] can fight two wars simultaneously," Hamre told the Senate Appropriations Committee on April 27, but rather that the US military was configured to win one war while holding off an aggressor in another theater long enough to be able to get forces there. He acknowledged that the level of effort being employed in the Balkans, for the US, is equivalent to an MTW's worth of air assets.

Defense officials have said that the deliberations for the size of the force didn't take into account the many Smaller-Scale Contingencies with which the post-Cold War military would have to contend. With several SSCs under way, the Air Force was strapped to provide airpower for Allied Force and still have adequate reserves for a second MTW.

"We have a smaller force and we have more missions, and so we are, in fact, ... wearing out systems, [and] we're wearing out people," Cohen

told the Senate Appropriations Defense Subcommittee on May 11.

Of the pattern of multiple SSCs with no later disengagement, Cohen said, "We're either going to have to have fewer missions or more people, but we cannot continue the kind of pace that we have. ... We've got to find a way to either increase the size of our forces or decrease the number of our missions."

As if to underline the point, the Air Force acknowledged that it would have to re-tool its Expeditionary Aerospace Force concept, which was intended to streamline deployments to Smaller-Scale Contingencies and give more warning of deployments to service members. Acting Air Force Secretary F. Whitten Peters admitted that individual Air Expeditionary Forces would need more airplanes than expected and that, in any event, there would need to be time to regroup the Air Force after the Balkans conflict before changing over to the EAF structure.

USAF officials said they had expected an SSC to require an Air Expeditionary Force of about 150 aircraft, but the conflict in Yugoslavia had already pulled in more than 700 airplanes. Such a force was equivalent to five AEFs, and the Air Force

Air Staff officials said that, with the conflict over, USAF would need a recovery period in which to rest exhausted crews, catch up on depot maintenance, restock spare parts and munitions, and, likely, buy new airplanes to replace those being worn out at a much faster rate than anticipated due to the Yugoslavian conflict.

For example, F-16s, which usually fly training sorties lasting under two hours, were routinely flying five-hour-plus combat missions in the Balkans.

The shortage of Air Force personnel across the board was highlighted by USAF's invocation of a Stop-Loss order, which prevented service members in certain specialties from being discharged while the conflict was under way. The order, from Peters, affected 40 percent of USAF skill specialties, or over 120,000 persons, but specifically applied to about 6,000 persons who had requested retirement or separation since December 1998 and had planned to leave after June 15.

The Stop-Loss order was to stay in effect "as long as the Presidential reserve call-up is in effect," Bacon told reporters at the Pentagon. The covered specialties included

Fig. 3 Serbian Air Defense

System	Missiles Fired
Radar-guided SA-6	266
Radar-guided SA-3	175
IR man-portable	106
Unidentified	126
Total	673

On June 2, DoD said *observed* firings totaled nearly 700.

had only planned to establish a total of 10.

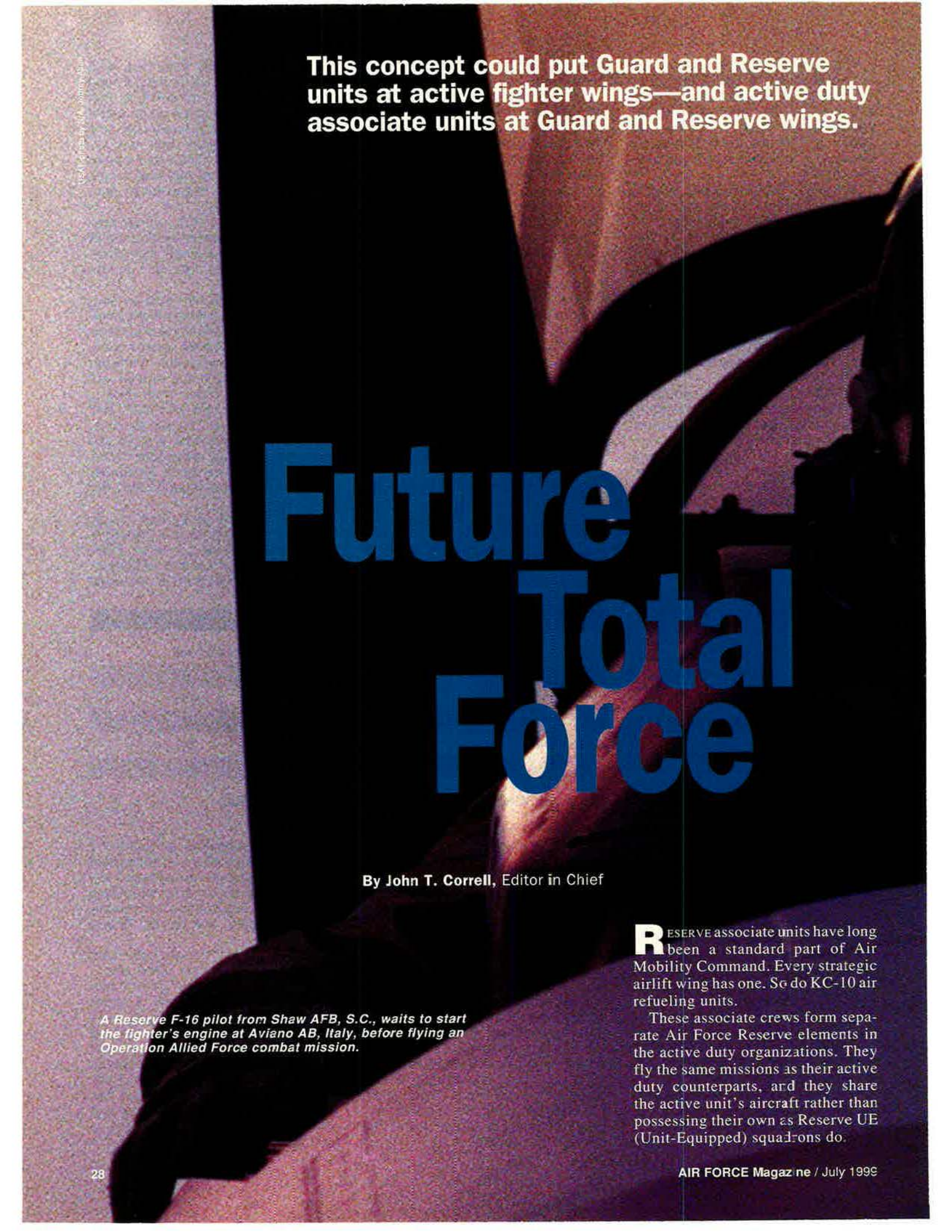
Because of the Balkan War, the Air Force might have to forgo plans to stand up the EAF structure in October, one EAF planner said.

Another hint of how stretched the situation had become was found in Iraq, where Operation Northern Watch was virtually shut down during April. Jumper acknowledged that airplanes were drawn from Northern Watch units to beef up Allied Force in a hurry, and Incirlik AB, Turkey, "was the easiest place to get them."

"When it was appropriate, we replaced them," he said, "and [they] are back [at] work. We don't see any great enemy advantage from that break in the action."

most pilots, navigators, air battle and air traffic controllers, intelligence analysts, weather forecasters, aircraft maintenance and munitions specialists, logisticians, communications officers, and others, Bacon reported.

Bacon added, "People have said many times—General Wald and I have said, Secretary Cohen has said—that this is a Major Theater War for the Air Force. Probably more than a third of the Air Force frontline fighters are involved in this right now ... [and] a large number of support airplanes as well. So, the burden has fallen primarily on the Air Force, and they're the service that will have to call up the most reservists." ■

A dramatic, low-angle photograph of an F-16 fighter jet. The aircraft is silhouetted against a bright, hazy sky, likely at dawn or dusk. The focus is on the cockpit area and the front fuselage. The overall mood is one of anticipation and readiness.

This concept could put Guard and Reserve units at active fighter wings—and active duty associate units at Guard and Reserve wings.


# Future Total Force

By John T. Correll, Editor in Chief

*A Reserve F-16 pilot from Shaw AFB, S.C., waits to start the fighter's engine at Aviano AB, Italy, before flying an Operation Allied Force combat mission.*

**R**ESERVE associate units have long been a standard part of Air Mobility Command. Every strategic airlift wing has one. So do KC-10 air refueling units.

These associate crews form separate Air Force Reserve elements in the active duty organizations. They fly the same missions as their active duty counterparts, and they share the active unit's aircraft rather than possessing their own as Reserve UE (Unit-Equipped) squadrons do.



More than a third of the total crew force for airlifters and tankers comes from the associate units.

When he was Chief of Staff, Gen. Ronald R. Fogleman ordered up an experiment to see whether associate units might also work with fighters. That program, called the Fighter Reserve Associate Test, placed a small group of Reservists inside an active duty fighter squadron to determine if that would improve experience levels and reduce manning shortfalls during crisis or conflict.

That experiment is now in its second year at Shaw AFB, S.C., where an associate unit of 14 Air Force Reservists is assigned to the 78th Fighter Squadron. The Reserve pilots, all of them seasoned veterans, provide the squadron with much-welcomed depth in experienced pilots.

When active duty crews went to Southwest Asia last fall, Reserve crews went, too. And this April, when F-16CJ fighters from Shaw were sent to Aviano AB, Italy, for operations in Kosovo, pilots from the associate unit were among those who deployed.

The Fighter Reserve Associate Test at Shaw may be a harbinger of things to come.

An ongoing study called "Future

Total Force," currently making the rounds of the Air Staff, has raised the possibility of regularly assigning elements of the Air Reserve Components (the Air National Guard and Air Force Reserve) to active duty fighter wings—as well as putting active duty associate units in Guard and Reserve wings.

"At the conceptual level, there is agreement that we're moving in the right direction," said Maj. Gen. Norton A. Schwartz, Air Force director of strategic planning. There is less consensus about specific initiatives, he said, although the general reaction has been "positive."

There are several reasons why the Air Force is considering these unusual variations in the force mix. Among the motives are what Schwartz described as "top-down imperatives," in which the Office of the Secretary of Defense and the Joint Staff have urged all of the services to make better use of their reserve components.

Another factor is the success of several force mix experiments, including the one at Shaw. "It became apparent that there was promise in doing things outside the norm," Schwartz said.

The possibilities were also expanded by the adoption last year by

the Air Force of the Expeditionary Aerospace Force concept, under which units will know well in advance the times during which they will be on tap for contingency deployments. Making the deployment schedules more predictable will bring greater participation in contingency operations within reach of the Air National Guard and the Air Force Reserve.

### The Issue Catches Fire

But what really lit the fires on Future Total Force was the pilot crisis.

The active duty Air Force will be short almost 1,400 pilots by the end of this year, with the shortfall soon expected to reach 2,000. If present trends continue, active duty fighter wings face a situation in which they will be unable to fill their cockpits. Barring some miracle in pilot retention, there will be no way to solve that problem with pilots coming along in the active duty system.

The pilot shortage—which is driven both by internal factors and by the lure of flying for the airlines—occurs at a time when a strategy of Global Engagement has pushed the peacetime operating tempo to an all-time high.

The Air Force has too few pilots chasing too many contingency deployments. That hurts retention, which leads to even fewer pilots staying in service to help carry the optempo. It is a downward spiral that feeds on itself.

Pilots with between six and eight years of service are of special concern. They are approaching the end of their active duty service commitment, after which they will be eligible to separate.

They are the largest concentration of pilots in the force, with an average of more than 1,100 pilots in each year group. The ranks coming along behind them, those with between one and five years of service, are much thinner by comparison, with an average of only about 500 pilots in each year group.

The unfortunate prospect is that many of the pilots from the sixth through the eighth year groups will get out and be lost to the Air Force. The Air Reserve Components are not in a position to pick them up. ARC units are fully manned with pilots and already have many qualified applicants for every cockpit that becomes available.

Because of the continuing losses, the ratio of experienced to inexperienced pilots in the active duty force has dropped to about 40-to-60. That is far below the desired level, which should be around 55-to-45, Schwartz said.

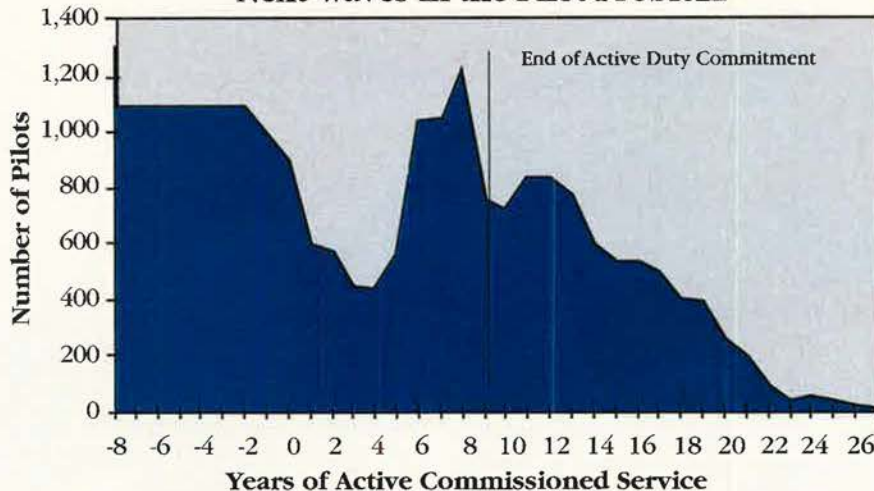
The diminishing experience level has several consequences, including the so-called "pilot absorption" problem—the difficulty in absorbing new pilots when the experience ratio in the force gets too low.

New pilots take about two years to reach the "experienced" level. During that time, experienced pilots must fly with them on training sorties. Inexperienced wingmen in F-16s, for example, need to fly 134 sorties a year, whereas experienced F-16 pilots need only 112 sorties a year to maintain readiness.

When the experience ratio gets low, the experienced pilots must fly more training sorties than they need themselves in order to accompany the younger pilots. In effect, the extra sorties by the veteran pilots are wasted. Among other consequences, the squadron cannot fly its training program within the regular allocation of flying hours.

Air Force has increased produc-

## Next Waves in the Pilot Problem



*The Air Force is concerned about potential losses as pilots reach the end of their active duty service commitment. Those with six to eight years of service are the largest concentration of pilots in the force, and they are nearing their eligibility to separate. The damage could be even more devastating when the next year groups coming along—and representing a pilot shortage—reach the separation point, because even moderate losses would be hard felt. The Air Force has increased the output of undergraduate pilot training to 1,100 per year, but it will take a long time to rebuild the pilot force from the bottom up.*

tion from Undergraduate Pilot Training. However, it will take a long time to replenish the ranks that way. And as the new pilots join their units, the experience ratio will fall further still.

### Active-ARC Symbiosis

Several years ago, when some of today's problems were starting to loom on the horizon, a group of Air Staff planners began thinking whether some solutions might be found in different combinations of active and ARC resources.

They realized that the active and ARC forces often have counterbalancing strengths and weaknesses. For example, while the experience ratio for active pilots is presently low at 40 percent, the ratio in the ARC is high, at about 80 percent. And even as the active duty force is scrambling for enough pilots to fill its cockpits, the ARC might be able to attract and hold more of the pilots departing the active force—if there were cockpits somewhere to offer them.

The planners further noted that active duty fighter pilots average 86 days at TDY (Temporary Duty) locations a year, and that 38 of those days are on contingency deployments. The average ARC pilot gets paid for about 100 days a year. Half of that time is on TDY, but only two days a year are on contingency deployments. Most of the ARC pilot's TDY flying is for exercises.

Among the leading issues in the Air Staff inquiry were these:

- Keeping more of the pilots—in either the active or reserve components—as they reach eligibility to leave service.
- Absorbing the imbalance of inexperienced pilots who are coming along in the active duty force.
- Spreading peacetime contingency deployments across the Total Force.

### New Options

The Air Staff project led to the program now known as Future Total Force. It is being worked by the National Defense Review Planning Staff (AF/XPXQ) and presents a "range of options for an FTF Fighter Unit as a keystone for our Aerospace Expeditionary Force."

It adapts and expands on the Reserve associate concept and combines fighter units in nontraditional ways. A hybrid active duty wing might have two active duty squadrons with ARC associate units—and one ARC squadron with an active associate unit. Hybrid ARC fighter wings might have active associate units.

"When you put the ARC crew members in the active wing, they come in with the experience ratio that the active wing is already hurting for," said retired Maj. Gen. Charles D. Link, who laid some of the early ground-



work for the concept before he left the Air Force in 1997. "When you put the less experienced active pilots in the ARC unit, you are contributing to a healthy experience ratio. It solves problems going both ways."

The prevailing practice is to man active and ARC units with the same aircrew ratio—1.25 pilots per aircraft. In reality, ARC units, more of whose pilots are experienced and who therefore require fewer annual sorties to maintain proficiency, could probably be manned at a 1.5 or higher ratio.

The effect of a high experience ratio in the ARC is to create what the Future Total Force team calls "virtual cockpits." A squadron of experienced pilots can get their proficiency sorties flown with fewer aircraft, producing a net dividend of cockpits not used.

"One potential, short-term solution to the departure of experienced pilots in active flying units may be to increase crew ratios or overman selected Guard and Reserve units," Schwartz said. "This would provide ARC unit spaces with which to 'capture' experienced pilots leaving active duty. What's happened, typically, is that the reserves attract about a third of the pilots who leave active duty. If you can push that to 50 percent or more, that's a substantial combat resource retained in the Air Force family.

"Under an FTF construct, on the other hand, we could exploit the pool of experienced pilots in the ARC to balance unit experience levels across the force. We can absorb some of the pilots graduating from ramped-up active duty pilot training over the next few years and carefully integrate them into selected Guard and Reserve units for experiencing.

"Yet another potential model is an active associate arrangement where active aviators populate ARC UE units, much as traditional ARC associate personnel do with the active wing."

### Building Blocks

The basic building blocks of force structure are active duty, Air National Guard, and Air Force Reserve UE units. (Since the Air National Guard does not have any associate units, it is currently 100 percent Unit Equipped.)

A typical active duty fighter wing

has 72 aircraft and 96 pilots, counting squadron commanders and ops officers. An ARC fighter wing has 15 aircraft and 21 pilots—but a direct comparison is invalid. It takes several Guard or Reserve fighter wings to constitute a standard "fighter wing equivalent" in the force structure nomenclature.

The present force structure consists of 13 active duty fighter wing equivalents, plus six from the Air National Guard and one from the Air Force Reserve.

Another kind of building block—and the prototype for the new arrangements proposed—is the Reserve associate unit. Reserve associates account for large portions of the airlift and tanker crew force: nearly 50 percent of the aircrew capability in C-141s and C-5s, 43 percent in KC-10s, 32 percent in C-9s, and 36 percent in C-17s.

The test at Shaw adapts the associate concept to a fighter squadron. The Reservists there, led by Col. Tom King, are organized as Det. 1, Fighter Reserve Associate Test. They report operationally to the 78th Fighter Squadron but administratively they are part of Air Force Reserve Command's 10th Air Force.

The Shaw detachment has six pilots, seven maintenance people, and one administrative member. The pi-

lots, all of them experienced, fly regularly with the newer active duty pilots on training missions. They have also taken their turns on the contingency deployments.

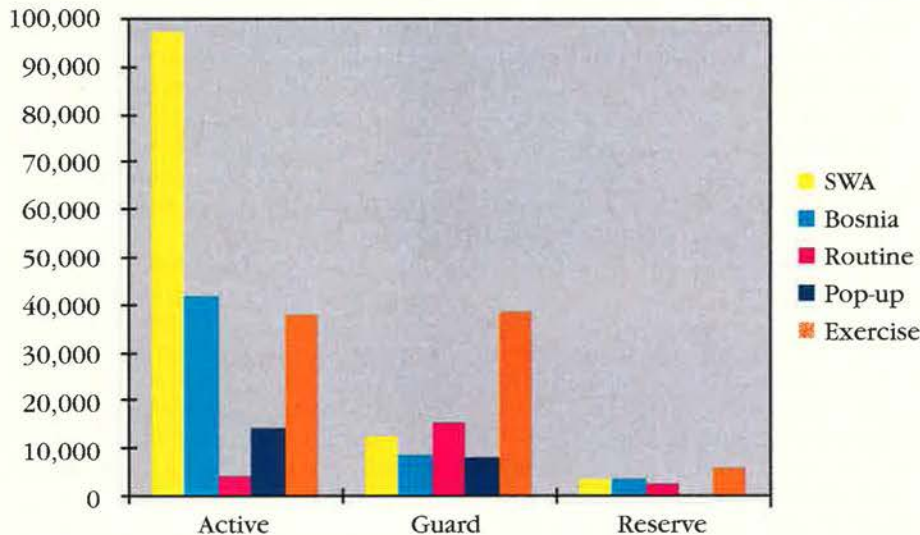
The next step, described by the Future Total Force package, would be an active duty fighter squadron with an ARC associate unit. After that would come the final kind of building block: a Guard or Reserve unit—either an ARC squadron that is part of an active duty wing or a hybrid ARC wing—with an active duty associate unit assigned to it.

For the past year or so, the Air Force has had analysts from the Betac Corp. running analyses of experimental force structures. Mindful that they are working in what could be a very controversial area, the analysts emphasize that both the baselines and the alternative units in the Future Total Force study are "notional."

Their purpose is to examine how various force structure combinations might work, not to lay down an exact organizational chart for fighter wings of the future. Planners also said there was no intention to alter the overall balance between active and ARC fighter wing equivalents in the force structure.

The baseline for the study (see "The FTF Concept" chart) was the combination of an enhanced active

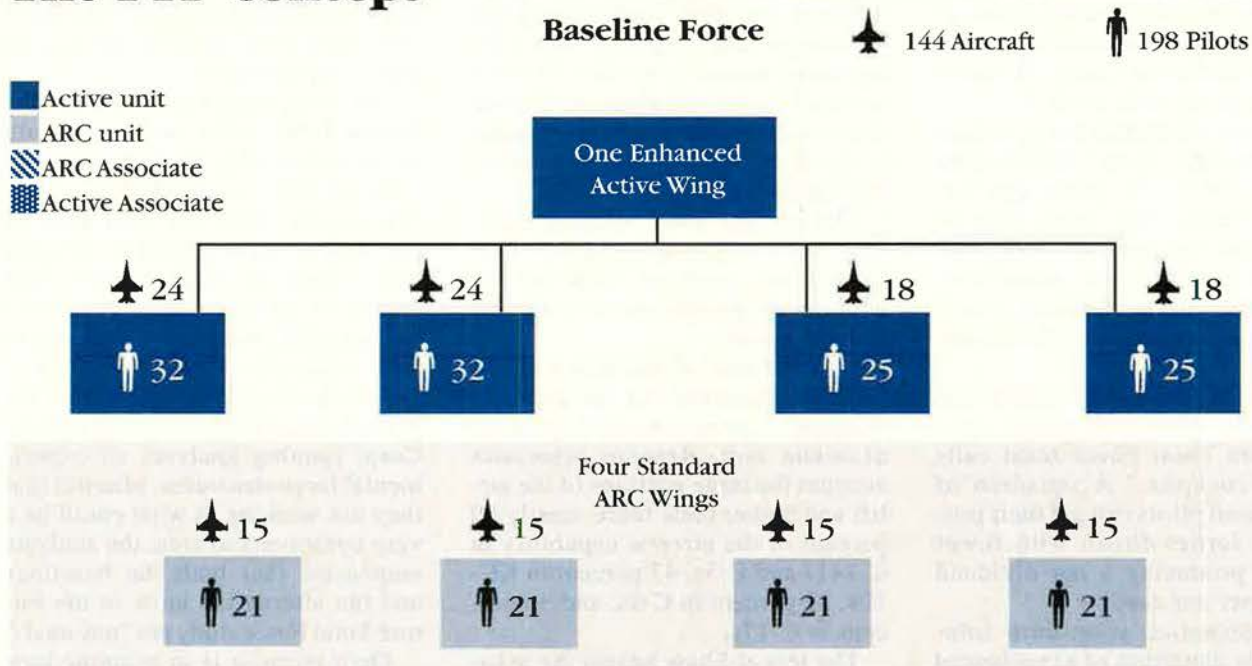
Aircraft Days Deployed



Note: Does not include airlift or tanker assets. Source: DFI database

*Air Reserve Component forces—especially Air Guard units—do a considerable amount of flying in Temporary Duty locations, but not much of it has been in support of contingency deployments. The Future Total Force study indicates that it is possible to shift some of the ARC capability now expended in exercises to contingency operations.*

# The FTF Concept



duty wing and four standard ARC wings. Together, the units in the baseline force have 144 aircraft and 198 pilots.

The analysis pitted that combination against other alternatives. Criteria included the number of pilots that would be available in wartime and for peacetime contingency deployments, the effect on pilot absorption, and relative cost.

The alternative that produced the best results, both in comparison to the baseline and to the other alternatives tested, is depicted on the chart. In this combination, both the active and ARC wings take on associate units from the other component, and the available force is 144 aircraft and 216 pilots.

There is a hybrid active wing, which has two active squadrons with ARC associate units and one ARC squadron with an active associate. There are four hybrid ARC wings. In these, the Guard and Reserve numbers are the same as before, but each hybrid ARC wing would add three aircraft and an active duty associate unit with six active duty pilots.

This alternative force produces more contingency deployment capability than the baseline force does—a total of 5,034 days per year com-

pared to 4,500, said Col. Ron Bath, whose Air Staff directorate is in charge of the project. Aircrew experience and workload are redistributed, and flight leaders and instructor pilots would fly fewer excess sorties.

Eighty percent of the pilots in the active associate units would be inexperienced. The Future Total Force arrangement would pair them up with the abundance of instructor pilots in the ARC units. Although cost was not a primary consideration in the study, the FTF alternative saves about \$834,000 a year in personnel costs and flying hours on aging fighter airframes.

Because the National Guard reports in peacetime to state governors, “legislative relief would be required if we go to the full recommendation on active associate units with Air Guard units,” Schwartz said. He did not anticipate difficulty in securing such relief if it becomes necessary.

### What Can the ARC Cover?

A key question is how much of the optempo can the ARC cover?

Future Total Force approaches that by considering the circumstances under which Guard and Reserve units

are best able to respond. Deployments most suited to the ARC are those in which there is long lead time (six months or more), and in which the operation is of short duration (six days or less), requiring a small force package (12 aircraft or less), and in which the scheduling is flexible.

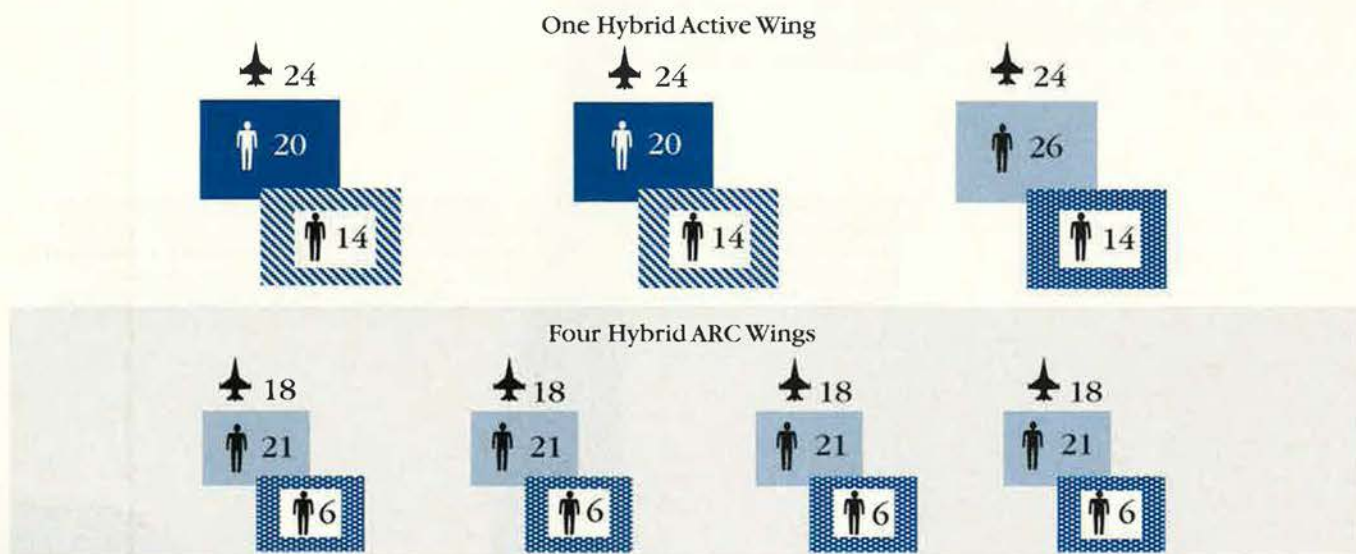
Analysis of fighter deployments between 1995 and 1997 found long lead time in more than 80 percent of the cases. More than 75 percent of the total deployments were long duration, which is a complication. On the other hand, almost 60 percent of the total fighter deployments were small force packages, which is a fit.

Retired Maj. Gen. Donald W. Shepperd, former director of the Air National Guard, has been working with the Future Total Force team to smooth the way for greater Air Reserve Component participation in deployments.

“Give the ARC a location,” Shepperd said. “Say, ‘We want you to cover this location for 90 days—or 180 days. Can you figure out how to rotate your people through, using 15-day tours?’ The answer is, ‘A piece of cake.’ It’s so much easier than what we’re doing today, it’s incredible. It will solve so many problems for the ARC by going to the

## Alternative Force

✈️ 144 Aircraft    👤 216 Pilots



Aerospace Expeditionary Force concept if we can solve some equipment problems.

“Another reason Guard and Reserve participation [in contingency deployments] has been low is that they don’t have the modern equipment to be interactive. They don’t have the Precision Guided Munitions. If you have Guard and Reserve guys in active units flying those PGMs, that means they are going to participate more.”

A stated assumption of the Future Total Force study is that “when substituted for active pilots, ARC pilots average 15 days per year in support of contingency deployments.”

Since average participation by ARC pilots today is two days a year for contingencies, that sounds like a big jump. What the planners have in mind, though, is making it easier for the ARC to allocate more of its total TDY flying time—which now averages 48 days per year per

pilot—to contingency operations rather than to exercises and other activities.

“We’re not asking for any more from the ARC,” Shepperd said. “We’re asking for different. The ARC tempo doesn’t increase, it just goes to different places. The AEF construct lets us schedule in advance.”

### Evolution in Total Force

Thus far, the Future Total Force study has dealt only with fighters, but further analysis is on the way. Eventually, the project will look at other types of Air Force flying units, as well as at space, support, and information operations.

The Air Force is well ahead of the other services in its application of the Total Force policy, under which active duty, Guard, and Reserve elements are to be combined and integrated for the best total effect. The Future Total Force project may point to even more possibilities.

“This is clearly a key theme for updating the Air Force vision and the Air Force future—a future where we no longer have to say, ‘Total Force,’” Bath said.

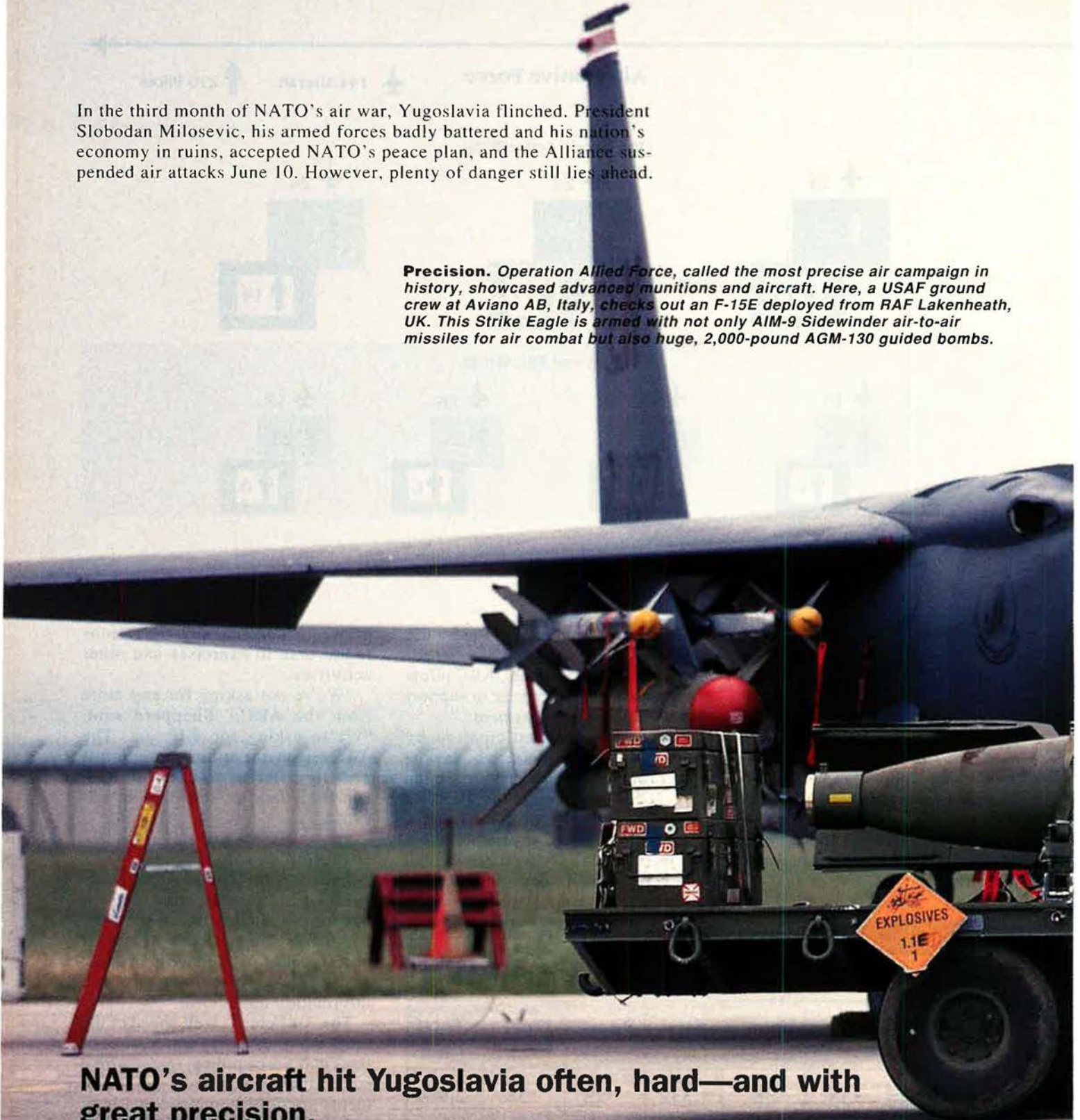
“We are the United States Air Force, and that says it all.” ■

Contingency Deployment Days Per Year						
	Baseline			FTF Alternative		
	Pilots	Days Each	Total Days	Pilots	Days Each	Total Days
Active Duty	114	38	4,332	78	38	2,964
ARC	84	2	168	138	15	2,070
Total	198		4,500	216		5,034

*In the Baseline Force, 198 pilots fly 4,500 days a year in support of contingency deployments. Nearly all of these deployments are by the active duty component. The FTF alternative makes it possible for ARC crews to take on more of the deployment workload. Furthermore, the alternative force can fly 5,034 days a year in deployments, a gain of almost 12 percent in total combined capability.*

In the third month of NATO's air war, Yugoslavia flinched. President Slobodan Milosevic, his armed forces badly battered and his nation's economy in ruins, accepted NATO's peace plan, and the Alliance suspended air attacks June 10. However, plenty of danger still lies ahead.

**Precision.** Operation Allied Force, called the most precise air campaign in history, showcased advanced munitions and aircraft. Here, a USAF ground crew at Aviano AB, Italy, checks out an F-15E deployed from RAF Lakenheath, UK. This Strike Eagle is armed with not only AIM-9 Sidewinder air-to-air missiles for air combat but also huge, 2,000-pound AGM-130 guided bombs.



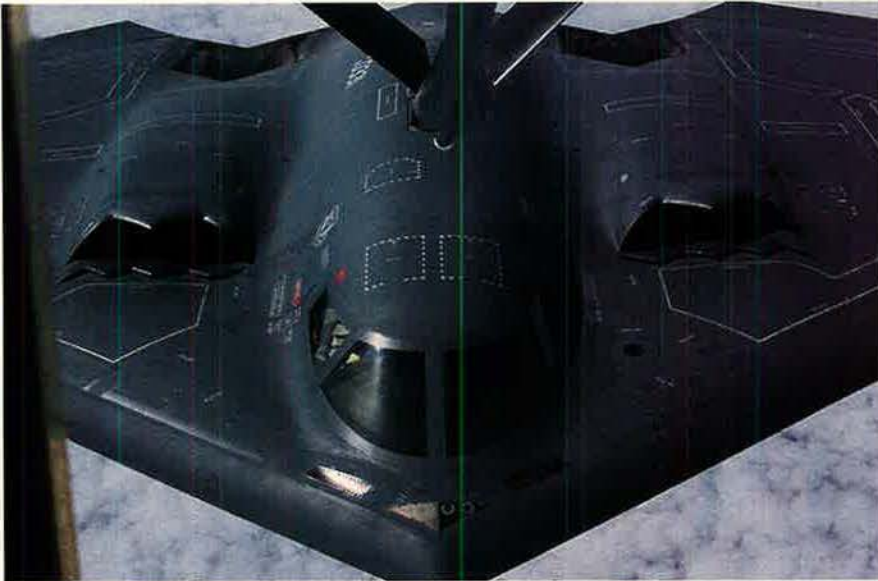
**NATO's aircraft hit Yugoslavia often, hard—and with great precision.**

# On Target in



Compiled by Guy Aceto, Art Director

# the Balkans



**Heavyweights.** Cast for a starring role was USAF's B-2 stealth bomber, the epitome of "global power." B-2s loaded with superaccurate Joint Direct Attack Munitions flew nonstop round-trip sorties between home base at Whiteman AFB, Mo., and targets in Serbia and Kosovo. The Air Force's other two bombers—the B-1B and B-52H—laid massive fire on Serb forces.

**We Deliver.** An Air Force C-17 transport from Altus AFB, Okla., taxis to a parking ramp after a May 3 landing at Rinas Airport in Tirana, Albania. C-17s delivered Army and Air Force equipment and personnel to Albania as part of a vast international refugee aid effort. USAF's giant C-5s and venerable C-141s flew numerous Balkan missions.



**Round the Clock.** USAF crews worked day and night to bring in the food, supplies, and equipment so desperately needed by uprooted and suffering Kosovar refugees.

**Dust Bowl.** A C-130 theater airlifter deployed from Altus, at right, kicks up a huge cloud of dust as it reverses power and comes to a stop on an Albanian airstrip. Below, an airman sends another Hercules on its way from Tirana, center of the effort to provide relief to hundreds of thousands of ethnic Albanians, such as the children pictured here.



USAF photos by SSgt. Angela Stafford



**Full Contact.** Though security was tight at every operational site, the troops did find time every now and then to mingle with the locals, especially children. Over the course of a year, the Serbian ethnic-cleansing campaign drove into exile some 800,000 ethnic-Albanian Kosovars, who poured into crowded, makeshift camps in Albania and Macedonia.





**Rituals.** F-16 pilots from the 78th Fighter Squadron, Shaw AFB, S.C., receive last-minute information before flying a mission. As the war heated up and the number of strike sorties grew, USAF's pilots got into a routine and relied on certain rituals and habits developed in years of training for the mission. For many airmen, however, it was the first taste of actual combat.

**Balkan CAP.** This is the view from the back seat of an F-16D tasked to take part in a Combat Air Patrol mission. The fighter and crew, from the 510th FS, Aviano, flew cover for strike and other aircraft.



**Hyper Viper.** US-designed F-16s played many different roles, and the single-engine fighter came to be seen as the workhorse of the war. The F-16 not only flew CAP and strike missions but it also conducted suppression of enemy air defense operations. Joining the USAF F-16s were those of Belgium, Denmark, the Netherlands, Norway, Portugal, and Turkey.

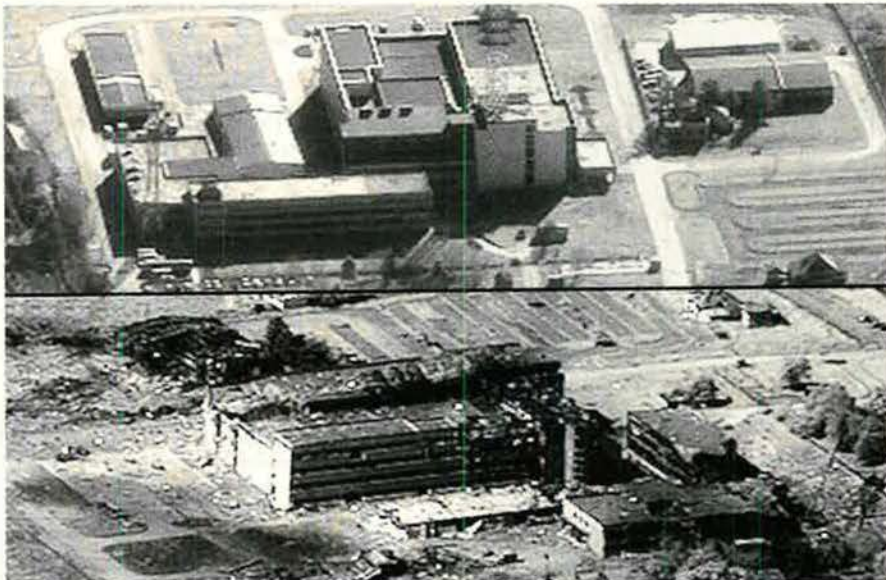




**Jolts From the 'Bolts.** With their A-10 Thunderbolt II in the background (at Aviano), A1C Jerry Herron (left) and SrA. Jason Chaffin, of the 81st FS, Spangdahlem AB, Germany, prepare to reload the 30 mm cannon with armor-piercing rounds. An A-10 taking off from Aviano (below left) displays its load of 500-pound bombs, AGM-65 Maverick weapons, and AIM-9 air-combat missiles. Below right, an A-10 crew chief from the 81st conducts a post-flight check. A-10s delivered a powerful blow to Yugoslavia's ground forces.



**Balkan Ears.** An Air Force RC-135 Rivet Joint electronic intelligence aircraft, deployed from the 55th Wing, Offutt AFB, Neb., to RAF Mildenhall, UK, approaches the refueling boom of a KC-135R tanker during a night refueling sortie. Both aircraft played critically important roles in the war.



**Now, the BDA.** The photo at left shows prestrike and poststrike conditions of the Serb radio relay and TV broadcast site at Novi Sad. Below, the photo demonstrates the devastation of the Ponikve Airfield in Serbia by multiple bombs; they have cut the runway and taxiways several times.

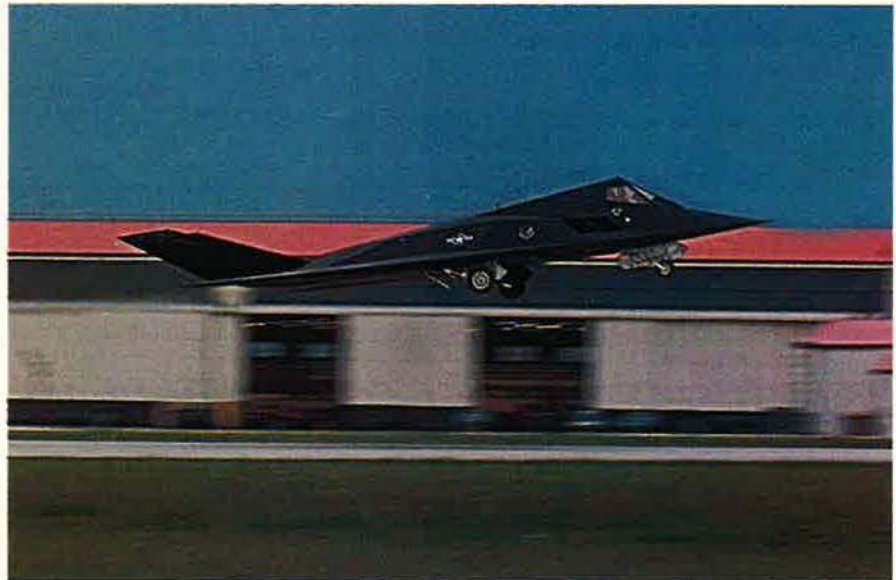


**Home in the Mud.** USAF SSgt. Doug Austin, a member of the 786th Security Forces Contingency Response Team from Sembach, Germany, slogs through the mud at Rinas. No matter where the troops go, they bring homey touches such as the "street sign," left, or a makeshift basketball backboard for pickup games, above.



**On-Call Airlift.** TSgt. Greg Bloomquist, a loadmaster with the 22nd Airlift Squadron, Travis AFB, Calif., calls out directions to others at RAF Fairford, UK. Bloomquist's C-5 transport brought in personnel to support B-1B operations from the British base. Air National Guard and Air Force Reserve personnel had a big hand in the success of Allied Force.

**Ghost of the Balkans.** In Desert Storm, the Saudis called it "the Ghost," and the F-117 proved to be every bit as effective in the Balkan conflict. Serbia downed one Night-hawk on March 27 but evidently never came close to replicating that feat as the F-117 carried out some of the most difficult and dangerous bombing runs of the war.



USAF photo by SrA. Mitch Fuqua



**End Game.** An F-16 pilot from the 510th FS, just returned from a May 14 bombing mission, waits to get out of his jet. By the time Milosevic folded his cards, NATO had flown more than 34,000 sorties, of which more than 7,000 were strike missions. The Serbian military and strategic areas had been struck by more than 20,000 bombs. ■

# Verbatim Special: The Balkan War

For a fuller version see [www.afa.org/magazine](http://www.afa.org/magazine)

"It gets under my skin when people say airpower is not working because Milosevic hasn't caved yet. Airpower is doing exactly what we're asking [of it]. The question is, is the strategy working? We made a conscious decision to adopt a strategy which restricts us to airpower alone, and everybody should understand that it will take a lot longer for airpower to be effective under those circumstances."—**Gen. Richard Hawley, commander of Air Combat Command, press remarks, April 29.**

"As Jesse Jackson would say, give peace a chance here."—**Sen. Trent Lott, majority leader, CNN, May 2.**

"[The US and NATO] must seize this moment to take the step to dramatic diplomacy from bloody, protracted war. ... We have the power to bomb. We should have the strength to negotiate. If we take the position of demonization, there is no reason ever to negotiate. We demonize Milosevic. They demonize President Clinton. The cycle of demonization must stop."—**Jesse Jackson, remarks to reporters at Andrews AFB, Md., May 3.**

"My father gave the order to send B-52s—planes that did not have the precision guided munitions that so impress us all today. He gave the order to send them to bomb the city where his oldest son was held a prisoner of war. That is a pretty hard thing for a father to do. ... He knew that leaders were expected to make hard choices in war. Would that the President had half that regard for the responsibilities of his office."—**Sen. John McCain, Senate floor speech, May 4.**

"This is a game with as many innings as we want, and I think [Milosevic] is running out of baseballs."—**Maj. Gen. Charles Wald, Washington Post, May 4.**

"Not having ground troops in place in the region permitted Milosevic not only to accelerate his ethnic cleansing, but it precluded him from having to arrange Serbian defensive forces

differently, to protect both northern and southern borders. So it was foolish of President Clinton to rule out a ground option, but it's a good example of a political leader perceiving political imperatives in a way that hamstring military success."—**Retired Air Force Maj. Gen. Charles Link, National Journal, May 8.**

"I sense there's some war by committee and trial and error going on in this operation. I subscribe, rather, to the strategy of giving it your best shot from the get-go."—**Gen. Charles Horner, Desert Storm air boss, NJ, May 8.**

"On the MTW capability, Major Theater War capability: As you know, we have always tried to structure our forces in a way that we could handle two nearly simultaneously. We have never been structured to handle three. What we have now in Kosovo is roughly a Major Theater War under way. ... That means that we're at three MTWs rather than just two. And so, we didn't plan for this."—**Defense Secretary William Cohen, Senate Appropriations Committee, May 11.**

"Airpower alone has never been decisive. In Vietnam, for example, the Air Force dropped some 6 million tons of bombs, almost triple the tonnage dropped in World War II, without breaking the North Vietnamese will to resist."—**Retired Army Col. Harry Summers, Washington Times, May 12.**

"Airmen would have liked to have gone after that target set on the first night and sent a clear signal that we were taking the gloves off from the very beginning, that we were not going to incrementalize, that we're not going to try a little bit of this and see how you like it and try a little bit of that and see how you like it."—**Maj. Gen. Michael Short, head of NATO air operations, New York Times, May 13.**

"Airpower alone is capable of rendering [the Yugoslav] military ineffective, and that's what our charter is, that's what our task is, and that's

what we're going to do."—**Gen. John Jumper, commander of US Air Forces in Europe, press remarks at Pentagon, May 14.**

"This air war is different than any we have ever fought. There is a feeling of frustration among the Air Force about the way it's going, but I say, 'Tough. Grow up. That's life.' We aren't in charge. The politicians are in charge because there are other, larger considerations."—**USAF Col. Phillip Meilinger, Naval War College professor, WP, May 16.**

"I remember him [National Security Advisor Sandy Berger] saying once, 'Are we going to bomb Kosovo? Can I explain that to Congress? They'll kill us.'"—**A senior Administration official, a colleague of Berger's in setting national security policy, WP, May 16.**

"We are at our maximum advantage in an air campaign. We have a 100-to-1 power ratio over Milosevic. We hit him every day, and every day we hit him harder, and the cost to us has been, thank God, relatively minor. [If Clinton had pressed for a ground war in Kosovo], we would have been paralyzed by a debate in NATO, and paralyzed, in my judgment, by a debate in this country by what was, at that point, a hypothetical, distant option."—**Berger, WP, May 16.**

"Where [the Powell Doctrine] needs to be updated is on the question of whether or not military force can be used for more limited purposes than the decimation of the enemy. It cannot mean that we have no choices between nothing and everything."—**Berger, WP, May 16.**

"The truth is bitter. The truth is sad, but the truth is we are right to choose force in the Balkans."—**Daniel Cohn-Bendit, prominent German Green Party leader, WP, May 16.**

"I don't believe you can win wars by tossing bombs around like popcorn."—**Sen. Diane Feinstein, WT, May 16.**

"We've let them [NATO's European members] play Tom Sawyer with us too long. They let us paint their fence."—**Rep. Barney Frank, Army Times, May 17.**

"I would have argued for a campaign that, if it couldn't include ground troops, then don't take away also the threat of ground troops."—**Retired Army Gen. Colin Powell, a former JCS Chairman, National Press Club address, May 17.**

"They [Army AH-64 Apache attack helicopters] are like the old Alfa Romeo sports cars. High performance but also high maintenance—and high risk."—**A "NATO official," Los Angeles Times, May 17.**

"The vast bulk of this military operation is being carried out by US forces, although Kosovo is a very long way from Kansas. Their commitment and leadership is something for which President Clinton should be praised, rather than the sneers he receives from the right in this country [Britain]."—**British Prime Minister Tony Blair, NYT, May 18.**

"I ... always said that we intend to see our objectives achieved and that we have not, and will not, take any [military] option off the table."—**President Clinton, press remarks, May 18.**

"I don't think that we or our Allies should take any options off the table, and that has been my position from the beginning—that we ought to stay with the strategy that we have and work it through to the end."—**Clinton, press remarks, May 18.**

"The end of the war must be sought through dialogue, not military victory."—**Italian Prime Minister Massimo D'Alema, press remarks in Brussels, May 18.**

"[Germany] rejects the sending of ground forces. That is the German position, the German position supported unanimously by the members of the German parliament."—**German Chancellor Gerhard Schroeder, NATO press conference, May 19.**

"The first lesson when dealing with the Balkans is not to send mixed signals. We don't believe it makes sense to change our strategy just at the moment when there is some light at the end of the tunnel."—**Michael Steiner, chief foreign policy advisor to German chancellor, WP, May 20.**

"When the Apaches were two weeks

late in getting to Albania, it was clear the Army was scraping the bottom of the barrel. Those birds are stiffed [sic] up and polished for a public relations war. The only thing they're good for is cannibalization."—**A "retired Army officer," Wall Street Journal, May 20.**

"Tell me, is Kosovo really such a big conflict that it required that all the power of NATO—which now commands two-thirds of the world's military forces—should be aimed at it?"—**Former Soviet President Mikhail Gorbachev, WP, May 20.**

"Milosevic will get only what he has earned, which is the contempt of humankind. He and his cronies will remain subject to indictment by the War Crimes Tribunal."—**Secretary of State Madeleine Albright, USA Today, May 21.**

"We are constrained by our Allies. Will the public support this? Will the European public support this? I don't know if the war is calibrated, but the rhetoric is calibrated. It's a constant challenge to articulate what the US interest is, why we're doing this, both in terms of NATO Allies and simple right-and-wrong questions. We look at this on a daily basis."—**White House spokesman Joe Lockhart, NYT, May 22.**

"I just don't think Bill Clinton wanted to have a major ground war on his watch."—**Powell, NYT, May 22.**

"They [Administration policy-makers] believe that Somalia demonstrates conclusively that you cannot have any casualties. They take this as a matter of faith."—**Ivo Daalder, former National Security Council staff member in Clinton Administration, NYT, May 22.**

"As an airman, I'd have done this a whole lot differently than I was allowed to do. We could have done this differently. We should have done this differently."—**Short, Miami Herald, May 22.**

"Airpower is very seductive to American leaders, because it combines our love of technology with our distaste for the bestial aspects of land warfare. You do it nice and cleanly. Nobody gets their feet muddy. A pilot flies over at 15,000 feet, kills only those people that need to be killed, flies home, and has a cold beer with a beautiful lady. This is not a new concept."—**Rich Dunn, a retired US Army colonel and now analyst with the Center for National Security Studies, NYT, May 22.**

"I don't have a good feel for knowing how close they are to breaking, but I'll tell you that, if we do this for two more months, we will either kill this army in Kosovo or send it on the run."—**Short, WP, May 24.**

"Bombing ... is oppression. If the bombing is done with the notion that our own blood is not to be shed, it is obscene."—**Norman Mailer, WP op-ed article, May 24.**

"Quite frankly, these little boo-boos, where you're hitting a KLA headquarters, where you're killing innocent citizens, I think is hurting the image of the military, which is unfair."—**Lott, AP, May 24.**

"For Clinton himself, it [Allied Force] is an anti-war movement's sort of war. Out of one side of his mouth, he says that he fights in behalf of a 'moral imperative.' Out of the other side, he says, 'Hell no, we won't go!'"—**Peter Collier, National Review, May 24.**

"I had adequate opportunity to make my views known and to raise all the issues I wanted to raise. I had concerns about whether airpower would do it [defeat Serbian forces] by itself. [Others] felt that air [power] might do it."—**Gen. Dennis Reimer, US Army chief of staff, AP, May 26.**

"As one who came away from the Vietnam War with at least the expectation that we now knew what not to do, it is astonishing to see this return to feckless incrementalism, the absence of coherent policy, and a void of political leadership. Maybe you had to be there."—**Robert McFarlane, Reagan national security advisor, 1983-85, LAT op-ed article, May 26.**

"I think it was Napoleon who said, 'If you want to fight a war, make sure it's against a coalition.'"—**Reimer, NYT, May 27.**

"The world has never in this decade been so close as now to the brink of nuclear war."—**Russian negotiator Viktor Chernomyrdin, WP op-ed article, May 27.**

"The [NATO] decision to attack the entire nation has been counterproductive, and our destruction of civilian life has now become senseless and excessively brutal."—**Jimmy Carter, NYT, May 27.**

"The President made the sine qua non of American involvement that there would be no casualties, but that's misguided. Polls and past experience sug-

gest the American people would accept 25 to 50 deaths. ... There's nothing wrong with conducting wars by polls. You just have to ask the right questions."—**former Clinton advisor Dick Morris, WP, May 27.**

"[When Serb air defense operators refused to turn on their radars], that's when we realized that nobody wanted to eat a HARM missile for Slobodan Milosevic."—**Short, WP, May 28.**

"This is the equivalent of [an] MTW, an air campaign, at least, so it's a major campaign on the part of the Air Force."—**Cohen, DoD briefing, May 28.**

"I think this has been a good learning experience for NATO itself."—**Cohen, DoD briefing, May 28.**

"Milosevic is a sinking ship. If you were around him in Belgrade, I'm not sure you'd hitch your star to a sinking ship, to mix a metaphor."—**Berger, NYT, May 29.**

"I would say the air campaign is working. We've always said there are theoretical limits to an air campaign, and all military analysts have pointed this out. But every operation has to be approached with the unique circumstances in which it's conducted and for its own specific political purposes."—**US Army Gen. Wesley Clark, Supreme Allied Commander Europe, WP, May 30.**

"The catastrophic effects of NATO's air war against Serbia have subverted the Clinton Administration's declared humanitarian intentions."—**Katrina vanden Heuvel, editor of The Nation, WP op-ed, May 31.**

"When the peacekeeping force goes in there, the overwhelming majority of people will be European. ... When the reconstruction begins, the overwhelming amount of investment will be European."—**Clinton, remarks at Arlington Cemetery, May 31.**

"Nothing has been more disturbing to conservative Kosovo hawks than the identity of their allies. To be supporting a foreign policy backed by Christopher Dodd; to be seated in a cheering section next to David Bonior; to find oneself applauded by Ted Kennedy. ... It is truly enough to cause us to rethink."—**Elliott Abrams, assistant secretary of state in Reagan Administration, NR, May 31.**

"A welfare mother has to account

for every dime, but the sky's the limit with the Pentagon."—**Rep. Jim McGovern, WSJ, June 2.**

"Our policy is not to coordinate with the KLA. ... We are not operating in coordination with the KLA. We are not serving as their air force."—**Cohen, press remarks, June 2.**

"I don't see any difference in the behavior of NATO and of Hitler. ... NATO wants to erect its own order in the world, and it needs Yugoslavia simply as an example."—**Alexander Solzhenitsyn, remarks to reporters in Moscow, AP, June 2.**

"We have no clue how many precious targets Milosevic has or when he'll fold."—**A "top NATO airman," WP, June 3.**

"You can make it very painful for the enemy, but, as well as the Air Force performed in Desert Storm, it was the Army that rolled across the border. You can't win wars solely through airpower."—**Maj. Gene Roles, EC-130 ABCCC operations officer, NYT, June 3.**

"I don't think there's anybody among the Chiefs saying, 'By God, if we don't invade Kosovo, it will be a travesty.'"—**A defense "official," NYT, June 3.**

"Federal government [of Yugoslavia] has adopted a peace proposal by the envoys of the Russian Federation and the European Union, since it guarantees the sovereignty and territorial integrity of the Federal Republic of Yugoslavia, disables a terrorist and separatist activity, and halts the aggression on our country, the suffering of the civilians, and demolishing of the national treasure. Federal government estimates to be of especial importance that the decision is being transferred to the United Nations, on the basis of the UN Charter."—**Dispatch from Tanjug, the official Yugoslavia news agency, June 3.**

"No matter where we are today, we're there because of the steady, professional, and strong application of airpower over the last 10 weeks. That is what has produced the reported progress out of Belgrade."—**Bacon, DoD briefing, June 3.**

"We must have clarity that the Serbian leadership has fully accepted these conditions and intends to fully implement them."—**Clinton, White House statement, June 3.**

"We have been in touch with various members of the Kosovar Albanian community, including the KLA. ... It is our expectation that they will demilitarize, ... on the basis of the Rambouillet agreements."—**Albright, news briefing, June 3.**

"We don't want this to simply be an exercise in paper promises. There must be performance."—**Cohen, remarks to reporters, June 3.**

"The main thing is that we have managed to bring the Balkan [peace] process into the UN legal plane."—**Chernomyrdin, Tanjug, June 3.**

"Slobodan Milosevic is Yugoslavia's legitimate president. This is the choice of the Yugoslav people, and we all shall deal with him."—**Chernomyrdin, Tanjug, June 3.**

"That [removal of Milosevic from office] is not part of the terms that NATO set out in the beginning. That question is left open."—**Clinton, ABC's "Good Morning America," June 4.**

"The only acceptable deal with Slobodan Milosevic is one that offers him safety in exile in exchange for his agreement to step down and hand power to Serbian democrats. Milosevic must be driven from power—vertically or horizontally."—**Sen. Jesse Helms, chairman of the Senate Foreign Relations Committee, NYT, June 4.**

"When we look back on this conflict, the air war may be considered the easy part. It is going to be much harder to get these people to forget the violence and live in peace."—**A "senior NATO military officer," WP, June 4.**

"We [the Allies] have taken ownership of the Balkan problem. I kind of imagine Milosevic smiling and saying, 'We tried to deal with the Kosovars and the KLA; now let NATO try.'"—**John J. Mearsheimer, University of Chicago professor, NYT, June 4.**

"The war has ended."—**Col. Gen. Svetozar Marjanovic, Yugoslav negotiator, to reporters after June 9 signing of NATO peace terms.**

"A few moments ago I instructed Gen. Wesley Clark to suspend NATO's air operations against Yugoslavia."—**NATO Secretary General Javier Solana, announcement in Brussels, June 10.** ■

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By John L. Frisbee, Contributing Editor

## The Loneliness of Command

Experts called the mission impossible. One man, with the courage of his convictions, knew it could be done.

**M**ANY a heroic deed has been done in the heat of battle, when adrenaline flows and there is no time to count the cost. Another, seldom recognized, kind of valor lies in deliberate, measured decisions made for high stakes, without the support of superiors or subordinates, and with the cost of failure almost incalculable. Such is the loneliness of command.

Brig. Gen. (later Maj. Gen.) Haywood S. "Possum" Hansell Jr., newly appointed commander of XXI Bomber Command and a former Eighth Air Force bombardment leader, flew the first B-29 into Isley Field, Saipan, in early October 1944. XXI Bomber Command was the major element of Twentieth Air Force, headed by Gen. H.H. "Hap" Arnold and reporting directly to the Joint Chiefs of Staff. Arnold had insisted on that arrangement to avoid having the AAF's B-29 force parceled out to theater commanders and thus diverted from the strategic campaign, as had happened in Europe.

Primary targets assigned to XXI Bomber Command were Japanese aircraft and engine factories in order to win air superiority, pave the way for destruction of the enemy's war economy, and, it was hoped by airmen, defeat Japan without a bloody invasion. Hitting those targets required precision daylight bombing conducted in large, high-altitude formations.

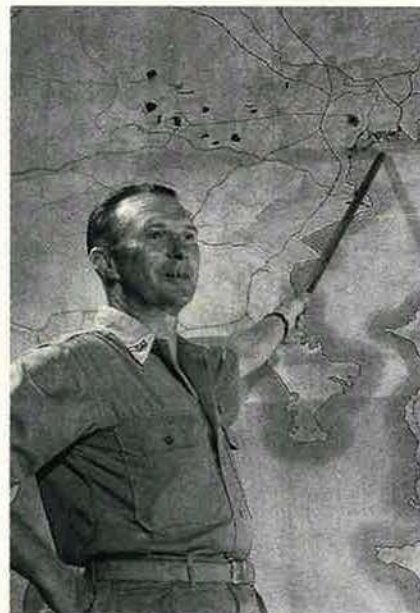
The operational problems confronting Possum Hansell were enormous. Only one of the two fields on Saipan was ready, and only marginally. The B-29 bases at Tinian and Guam were not yet completed. The B-29 was still having engine problems. Hansell's crews averaged fewer than 100 hours of experience in the Superfort and fewer than 12 hours of formation

time. The bombers, designed for a takeoff weight of 120,000 pounds, would be lifting off, heavy with fuel, at 140,000 pounds. They would fly for the first time in large formations, which eats up fuel, and would be operating at the extreme limit of their range. Iwo Jima had not been taken, so there would be no fighter escort and no emergency landing field between Japan and Saipan.

Despite all this, Hansell was determined to fulfill the AAF's promise to the JCS that the B-29 assault on Japan would begin in November against the top-priority targets that demanded precision daylight bombing. He was also determined to lead the first strike, San Antonio 1, since many 73rd Bomb Wing crews did not share his conviction—based on tests he had run while chief of staff of Twentieth Air Force—that B-29s in formation had enough range to do the job.

Arnold reviewed the plan of attack and immediately ordered Hansell, who was privy to JCS strategic plans and who knew that the Japanese code had been broken, to stay on the ground. Arnold also advised Hansell that his experts in Washington said the mission couldn't be flown as planned and that unescorted B-29s would be sitting ducks for Japanese fighters. Arnold did not cancel the mission, nor would he approve it. He left the decision to Hansell. Then, the 73rd Bomb Wing commander, who subsequently led the mission, advised Hansell in writing that he shared Arnold's view. He recommended substituting night sorties against urban area targets, flown by individual airplanes or small formations.

If Hansell cleared the mission in spite of these warnings and was wrong, he would be putting at risk 90 percent of the B-29 force then in the Pacific, more than 1,000 lives, the strategic air campaign against Japan as then envisioned, and perhaps the future of the Air Force as an independent service. His own distinguished career would end in dis-



*Brig. Gen. "Possum" Hansell conducts a XXI Bomber Command briefing for a Saipan to Tokyo mission.*

grace. He made the decision to go.

On Nov. 24, 1944, 111 B-29s roared down Isley Field's one runway for a formation attack on targets in the Tokyo area. Eighty-eight hit either primary or secondary targets, 23 turned back safely because of fuel or mechanical problems, and one B-29 was lost in combat and one to unknown causes.

From that day on, the B-29 assault on Japan gathered momentum, leading to Japan's surrender without invasion on Aug. 10, 1945. Before the surrender, the strategic air campaign had shifted emphasis from daylight precision attacks to night area bombing, but for reasons not associated with B-29 capabilities or the desirability of precision bombing.

Valor has many faces, among them Brig. Gen. Haywood S. Hansell's lonely, courageous decision to launch the strike that was the beginning of the end of World War II—and the final vindication of strategic air warfare. ■

*First appeared in July 1983 issue.*



Department of Defense

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## If Only It Were This Easy



*The driver of this Ninth Air Force bulldozer had a much easier time destroying this Luftwaffe "fighter" at Cherbourg, France, than did the Allied forces. Both sides practiced many forms of deception in World War II. Among the most famous efforts was the Normandy invasion deception. It included radio and radar subterfuge and dummy gliders and landing craft—all to convince the Germans that*

*the main assault would take place against Pas de Calais. In Kosovo, the art of deception continued as Serb forces moved equipment and command centers into underground bunkers, dodged airstrikes, and hid in the woods.*

**Its problems compounded by the Balkan War, ACC faces a period of "significant retrenchment."**

# Hawley's **WARNING**

By Otto Kreisher

**N**ATO's Balkan War had been under way just a month, but Gen. Richard E. Hawley, head of Air Combat Command, already had conducted a damage assessment—on his own forces.

"We are going to be in desperate need in my command for a significant retrenchment in commitments, for a significant period of time" after the war, he told reporters April 29. This stand-down would be needed "to restore the health of the units, allow them to get back to basic training, get their basic skills upgraded, [and] upgrade all the new people who have come out of the training pipeline during the course of this operation."

He said, "We have a real problem facing us three, four, five months down the road in the readiness of the stateside units."

Operation Allied Force had only aggravated a bad situation. On March 22—two days before the war opened—Hawley went before a Congressional committee to discuss readiness. He told lawmakers that ACC had managed to halt a year-long slide in readiness, but ACC preparedness remained "too low." He expected recent budget increases to pay off in more spare parts and trained technicians. However, he warned, the improvements had yet to appear and were endangered by continued high operational tempo.

In fact, the physical and financial demands of intense optempo, compounded by the air war, increased USAF's materiel and personnel shortages. These problems could handicap implementation of the Expeditionary Aerospace Force concept, which USAF embraced as a way to relieve the operational crunch on the force.

Hawley delivered these and other warnings not long before his July 1 retirement. There is no doubt he knew that his words would generate discomfort in some quarters. He was one of the first top officers to issue public warnings about eroding combat readiness, and he had no regrets about it. "I don't think I've been an alarmist," said Hawley. "I think I've just been telling it the way it is."

## **Stuck at Low Level**

According to Hawley, Air Combat Command had hit its low point in readiness in the first quarter of Fiscal 1998. The average mission capable rate for the ACC fighter force sagged to 74 percent. The typical fill rate in a spares kit fell to about 60 percent, Hawley said.

That represented a drop from an 85 percent mission capable rate among the fighters only two years earlier, according to the official statement Hawley presented to the House Armed Services Committee for his March 22 testimony.

"That's where we've been ever since," he told reporters.

The bomber force had suffered a 10-percentage-point drop, plummeting from about 75 percent in Fiscal 1996 to about 65 percent mission capable rate in early Fiscal 1998, his charts showed. But the rates were worse among certain specific bomber units, with nearly half of the B-1B Lancers at Ellsworth AFB, S.D., not mission capable, he said.

Hawley's data also showed alarming jumps during that same period in the percentage of aircraft down for maintenance or awaiting spare parts and in the number of times parts were taken from some aircraft to keep others flying.

The cannibalization rate for fighters had gone from about 13 events per 100 sorties in Fiscal 1996 to 16.9 in Fiscal 1998 and from 48 to 68.6 for every 100 flights in the bomber force, the graphs showed.

"Spare parts shortages translate to increased work, more frustration, and reduced sortie generation," he said in his testimony.

Although Hawley said he expected that some of the Air Force's readiness problems would be relieved as Fiscal 1998 and Fiscal 1999 funding produced more spare parts, he noted that readiness was affected by other factors that were harder to resolve.

One of these factors was the experience level of personnel within the

## ACC in Brief

Air Combat Command, headquartered at Langley AFB, Va., is USAF's largest major command. It is the main provider of air combat forces to US unified commands. ACC operates fighter, bomber, reconnaissance, battle-management, rescue, and theater airlift aircraft, plus command, control, communications, and intelligence systems. ACC organizes, trains, equips, and maintains combat-ready forces.

ACC comprises approximately 91,000 active duty people. Some 63,700 Air National Guard and Air Force Reservists are gained by ACC in time of need. ACC has 1,021 active duty aircraft as well as 763 ANG and Air Force Reserve Command aircraft.

Approximately 7,746 airmen have been deployed to the Southwest Asia theater of operations and another undetermined number to Europe for Operation Allied Force.

Air Force generally and his command specifically.

"We have a very low-experience force," said Hawley, "particularly in Air Combat Command" because the forward deployed units get priority in personnel as well as spare parts.

The lower skill levels among maintenance personnel aggravate the problems caused by the high cannibalization rates because "you run a much higher risk of breaking the part" in the process of moving from one aircraft to another, he explained.

In his Congressional testimony, Hawley explained that lower reten-

tion means a shortage of five-level maintenance personnel, the journeymen technicians who "should constitute the bulk of the workforce."

That means too much of the maintenance work is being done by younger three-level personnel, who require more supervision and take longer to do a job, he said.

And some specialties actually are undermanned because of declining re-enlistment rates and turbulence in training programs caused by the force reductions earlier in the decade, Hawley said.

Some of the worst undermanning

conditions are found among F-15 and F-16 crew chiefs, F-15 and F-16 avionics technicians, air traffic control specialists, command-and-control systems personnel, and security forces, he said.

## Negative Incentive

Pilot retention also remains a problem. Although the bonus take rate had increased slightly in early 1999, from about 28 percent to 37 percent, it still was far below Air Force goals and was pointing toward a 2,000-pilot shortage by 2002, Hawley told Congress.

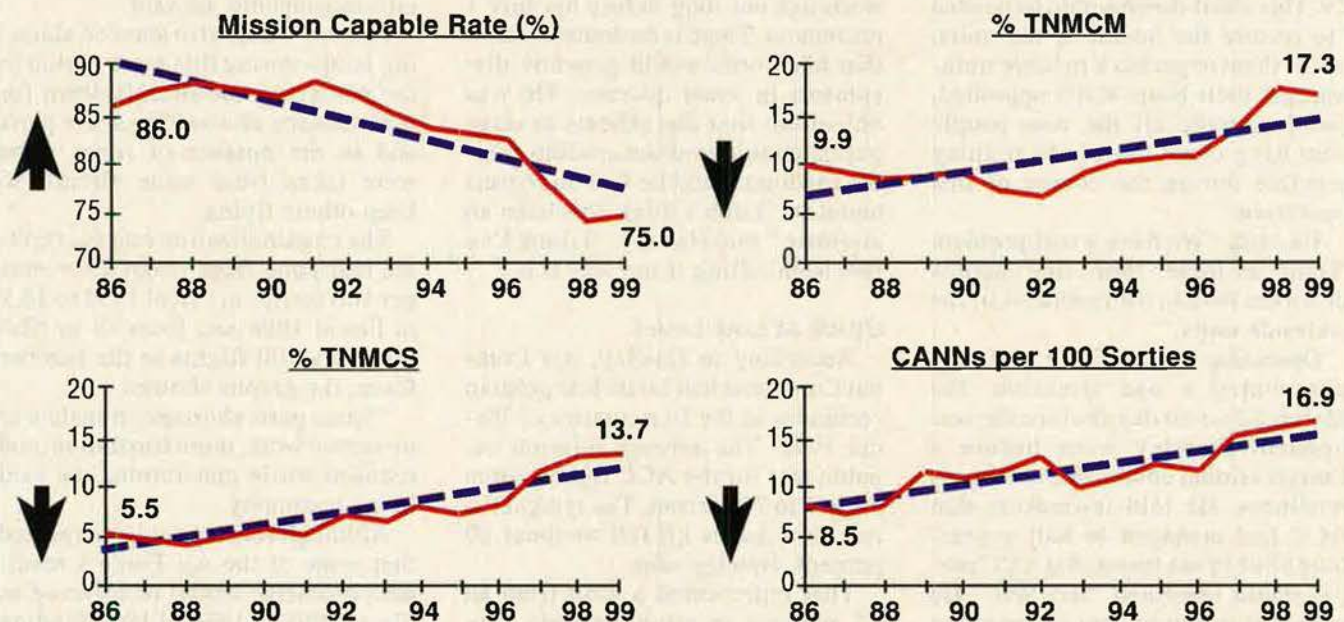
The general called the pilot bonus system a negative incentive for a career in the Air Force because the extra pay peaks at mid-career and then "drops precipitously" in the officer's later years, when his or her children are reaching college age.

And "many pilots see the bonus as an attempt to bribe them to serve their country," Hawley said in his House testimony.

"This is simply the wrong way to compensate people for serving the nation," he said.

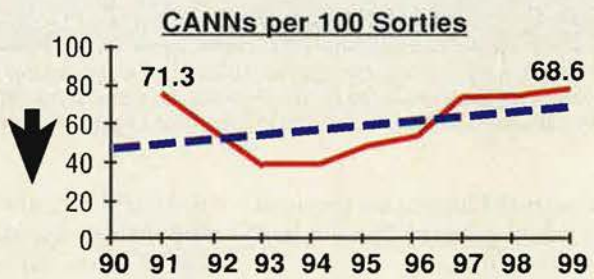
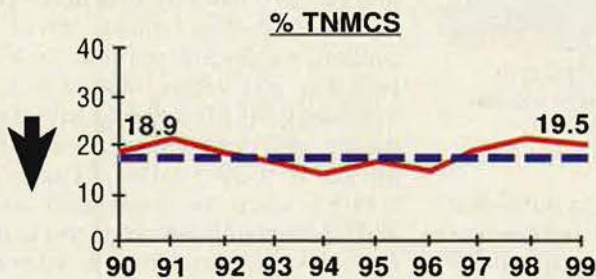
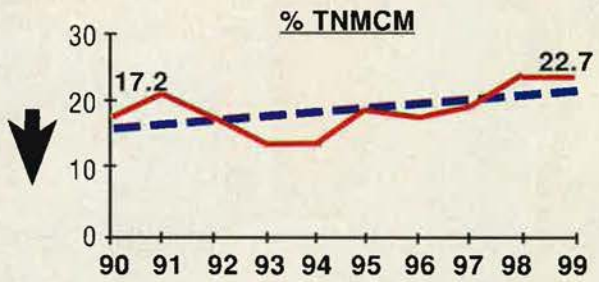
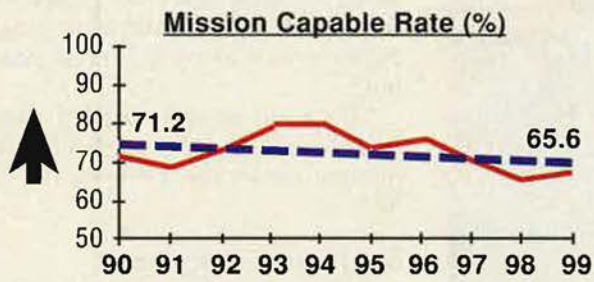
The high operational tempo and

## Operational Fighter Trends FY86-FY99/1



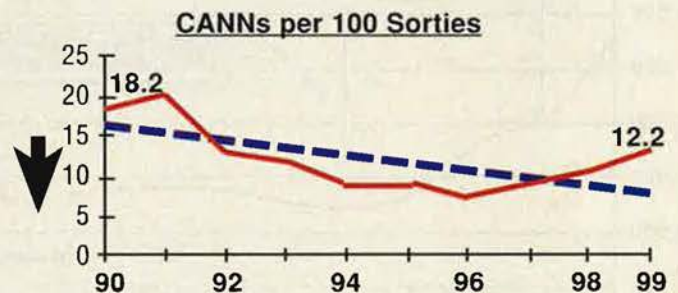
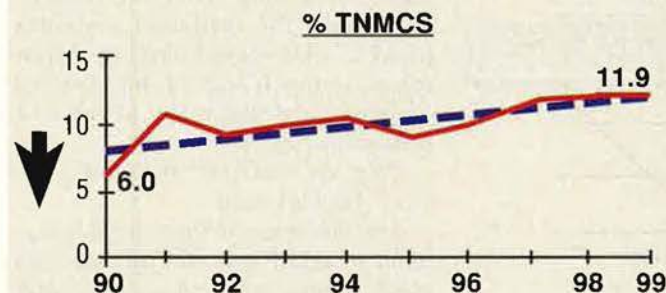
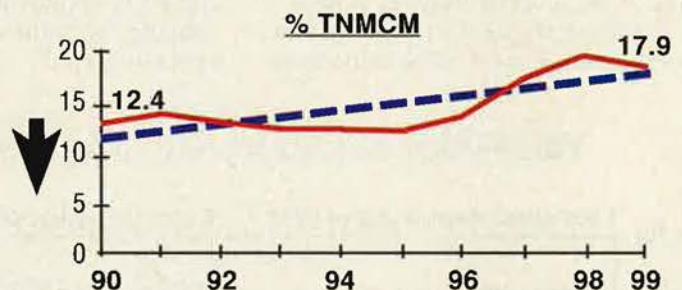
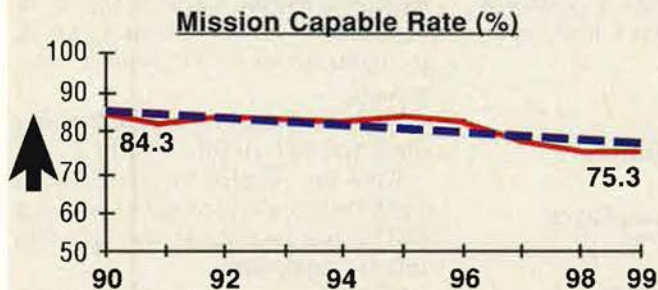
On March 22, Hawley presented the charts on these pages to a Congressional panel. The mission capable rate for fighters (upper left) had dropped to 74 percent in early Fiscal 1998 and remained essentially flat. Trends were negative for "total not mission capable supply" (lower left), "total not mission capable maintenance" (upper right), and "cannibalizations per 100 sorties" (lower right). The Balkan War aggravated the situation.

## Bomber Trends FY90–FY99/1



ACC's bomber readiness hit a low of about 65 percent mission capable early in Fiscal 1998, marking a 10-percentage-point drop in just two years. In the first quarter of Fiscal 1999, bomber readiness turned up slightly, to 65.6 percent, but ACC expects the war to wipe out this gain and increase the problems.

## ACC Special Mission Aircraft FY90–FY99



Readiness problems also afflict special mission aircraft such as E-3 AWACS, E-8 Joint STARS, RC-135 Rivet Joint, and U-2 reconnaissance aircraft. The mission capable rate has dropped 9 percentage points in the 1990s, while materiel and maintenance problems have grown dramatically.



At Aviano AB, Italy, during Operation Allied Force, SSgt. Rob Krol of the 31st Maintenance Squadron works on an F-16 main wheel. With USAF fighter aircraft averaging 20 years of age, maintainers face less predictable problems.

time away from families are the main reasons pilots give for leaving, not low pay, he said.

Hawley also told the committee that increasing initial pilot training programs is not a solution, because that does not provide the experienced fliers needed to lead flights and sections.

“There are no quick fixes to replacing experienced pilots,” he said.

Another aggravating factor in the readiness decline is the increasing age of the aircraft, Hawley noted.

“We are flying the oldest fleet of airplanes that the Air Force has ever

operated,” he said. Hawley noted that the average age of USAF fighters has hit 20 years. The average age of the B-52 is nearly twice that number.

“Old airplanes break in new ways,” said the ACC commander. “When an airplane is new, you’ve got a very predictable pattern of breakage. But the older it gets, the less predictable it gets. They find new parts that begin to wear out, and then you get into lead-time problems because—holy cow—we’ve got a new set of things that are breaking on this 20-year-old airplane, and you don’t have contracts in place.”

The Air Force has no plans to buy new fighters of the current generation, except for a few attrition reserve F-16s. For that reason, the average age of the fleet will continue to go up until the F-22 enters the force in about 2004 and Joint Strike Fighters start arriving several years later.

“We need to sustain [the] older systems while keeping our major modernization programs on track,” he said.

### Unpleasant Surprises

Hawley noted that, as airplanes get old, they tend to do surprising things. “We had one this past year in the F-15 fleet where, all of a sudden, we discovered that we had fuel that was being trapped in the underbelly of the airplane and corroding the main spine of the airplane,” Hawley recalled. “That was a shock when we discovered that, and it required some significant corrective action that took a lot of airplanes out of service for a significant period of time. I predict we will have similar surprises as these fleets continue to age. ... It takes some of your resilience away.”

Hawley noted that it becomes more difficult every year to keep replacement parts on hand. Accident rates also can go up among older aircraft because of failures in flight, he said. Increased engine failures appear to be a factor in the recent jump in accidents involving F-15s and F-16s, he said.

Said Hawley, “Life gets tougher when you put all this together.”

Then the conflict in the Balkans made things even tougher, Hawley said in his late April session with defense reporters.

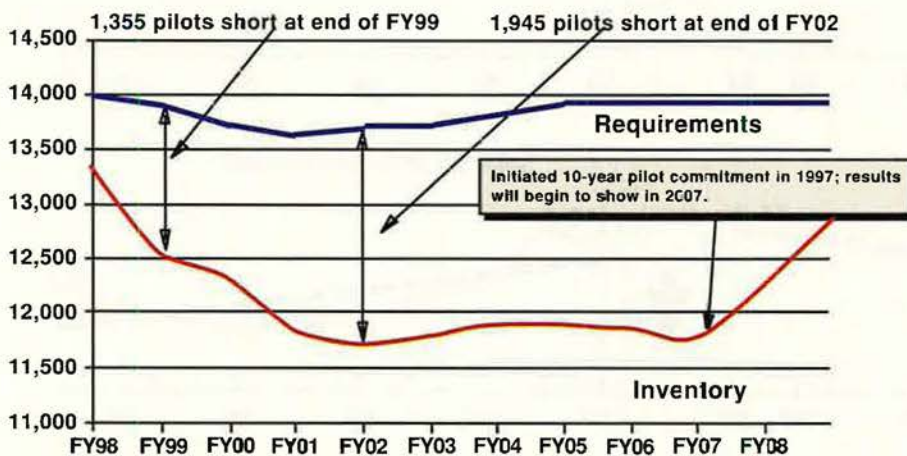
NATO’s effort to stop the Serbian ethnic-cleansing drive in Kosovo aggravated the readiness problems of ACC’s US-based units by draining away much of the limited stores of spare parts and many of the best trained personnel, he said.

“We are noticing the strain today,” Hawley said.

And he warned that the deployment of additional aircraft that the NATO commander requested in early May would increase those strains.

Hawley said, “The forward deployed forces [ACC units dispatched to Europe, Asia, and the Persian Gulf] are in pretty good shape, ... [with]

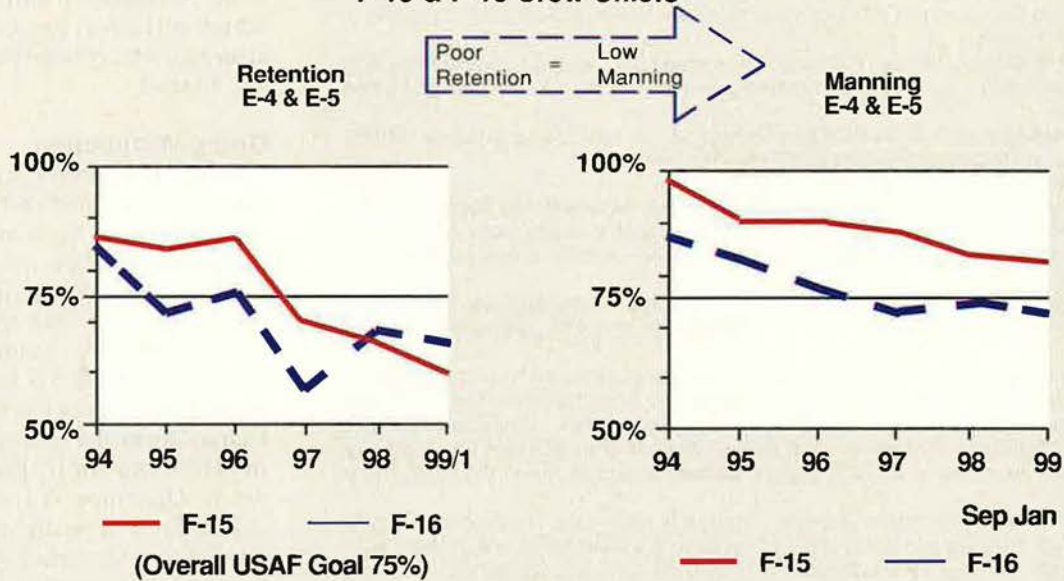
### Total Pilot Inventory vs. Requirement



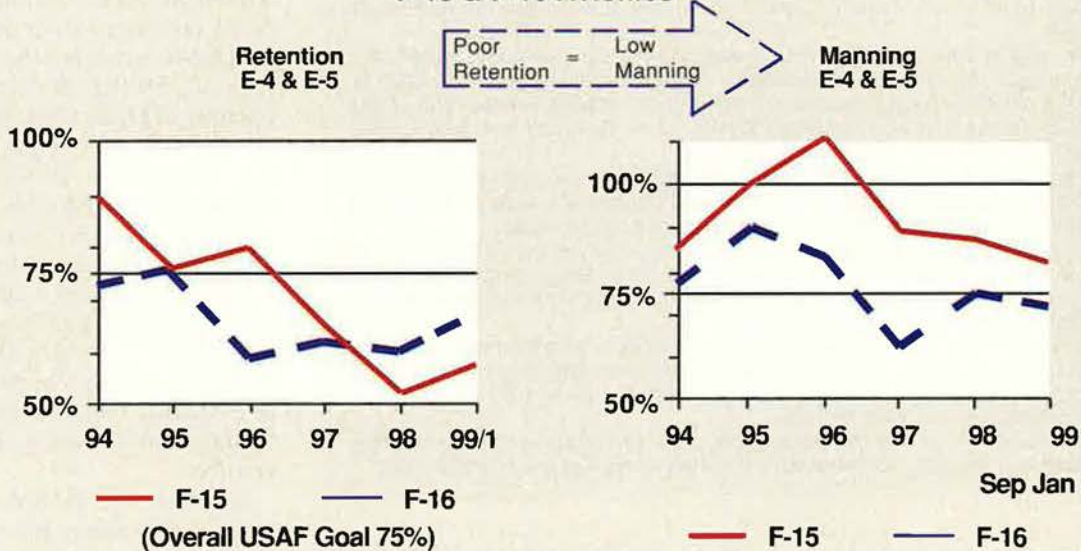
Low pilot retention remains a major readiness problem. The Air Force is headed toward a 2,000-pilot shortage by 2002. The situation is not expected to improve appreciably before 2007, when the force should see the effects of the new 10-year pilot commitment instituted in 1997.



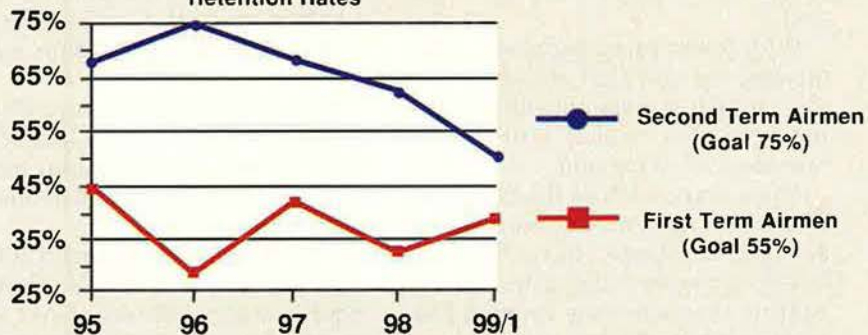
### Air Combat Command F-15 & F-16 Crew Chiefs



### Air Combat Command F-15 & F-16 Avionics



### Air Combat Command Security Forces Retention Rates



Hawley said lower retention created a shortage of journeymen technicians who "should constitute the bulk of the workforce," and too much maintenance is being done by younger personnel. Some specialties are undermanned. The worst undermanning conditions are found among F-15 and F-16 crew chiefs, F-15 and F-16 avionics technicians, and security forces.

## Cohen's Choice: Cut Deployments or Add Forces

The United States needs a larger military force if it wants to continue operations at the 1990s pace.

Defense Secretary William S. Cohen delivered that message in mid-May, first at the Senate Appropriations Committee hearing and then at a Pentagon news conference.

He warned that prolonged bombing of Yugoslavia had the potential to deflate the morale of US pilots and other service members.

From Cohen's May 11 committee testimony:

"We simply cannot carry out the missions that we have with the budget that we have; there is a mismatch. We have more to do and less to do it with, and so that is starting to show in wear and tear—wear and tear on people, wear and tear on equipment. ...

"We have a situation where we have a smaller force and we have more missions, and so we are, in fact, ... wearing out systems, we're wearing out people. ...

"Gen. [Hugh] Shelton [Chairman of the Joint Chiefs of Staff] has talked about the need to relook how the current end strength is structured so that we can put more people into ... high-demand jobs where we have ... fewer people. But it is a real challenge that we have to watch. We're either going to have to have fewer missions or more people, but we cannot continue the kind of pace that we have. ...

"Wherever our people are currently engaged in rather serious operations, you will find that they are most satisfied when they are doing that which they were trained to do. ... But if we do it too long, if we do it at such a sustained rate, then the morale will drop off eventually, and it will then reinforce what has been taking place. ...

"[The troops will conclude,] 'We can do better on the outside. Life will be easier. I'll be home weekends or evenings with my wife or husband, and I'll have a better quality of life with my family.' That's the real danger that we face, that we've got to find a way to either increase the size of our forces or decrease the number of our missions. ...

"We have always tried to structure our forces in a way that we could handle two [Major Theater Wars] nearly simultaneously. We have never been structured to handle three. What we have now in Kosovo is roughly a Major Theater War under way. ... That means that we're at three MTWs rather than just two. And so, we didn't plan for this.

"We would have to make a number of adjustments should we ever have another two erupt nearly simultaneously, which we don't believe will happen but could, theoretically. We would have to make a number of changes then. ...

"It has been challenging; it has been very difficult on all of our personnel. And that, again, brings us back to the issue. ... We have fewer people but more missions. And we have got to make adjustments to bring that back into balance."

From Cohen's May 12 press conference:

"Morale is very high. It's very high in Aviano, Ramstein, wherever our pilots and crews are operating. What I indicated to the Senate yesterday was that, while it's high today, if it goes for lengthy periods of time, unless there is some rotation, that can have an impact upon that morale. ...

"We intend to continue this campaign as long as necessary, and we will rotate the crews as is necessary to make sure that that morale stays at a high rate."

very good mission capable rates in almost all those systems, but that is because we give them a lot of priority." He explained that forward units get the most experienced people, full spares kits, and extra aircrews.

As a result, however, "the forces left behind in the United States ... are seeing a decline in readiness," said Hawley. He added, "I expect that will become more aggravated the longer this operation continues, because we are obviously obligated to fully support those forces that are actively engaged on a day-to-day basis."

Today, the ACC commander must attempt to maintain deployed forces at 85 to 90 percent mission capable

but is drawing upon a pool of fighters in which only 75 percent of the fighters are mission capable aircraft. The operational requirement forces "a corresponding [readiness] decline in the forces left in the states," he said.

With fewer spare parts and technicians, the units left at home have more trouble maintaining their training schedules, which also erodes readiness, Hawley said.

Some units, such as the E-8 Joint STARS surveillance and battle management airplanes, have been so heavily committed during the Kosovo conflict that new crew training had stopped altogether, he said.

In fact, all units remaining in the

US "will be undermanned, underexperienced, and they will be flying a very modest training schedule, which will affect the readiness of the aircrews who remain behind," Hawley warned.

## Going Winchester

In his discussion with reporters, Hawley confirmed that, after bombing Yugoslavia for a month, the Air Force had run short of two of its best precision guided munitions.

One of these was the AGM-86C Conventional Air Launched Cruise Missile. USAF B-52s had fired many of the CALCMs in December against Iraq in Operation Desert Fox and then in March and April against Yugoslavia in Operation Allied Force. The expenditure of weapons had left the Air Force "at a point where [it had] to be very judicious in [the] use of CALCMs," Hawley reported.

Hawley would not give numbers, but a report released by the House Armed Services Committee in late April said there were only about 80 CALCMs left from the total inventory of 250 that existed before the opening of Desert Fox. He noted that the Air Force has signed a contract for conversion of 95 of the old nuclear-armed ALCMs to the conventional versions, but those would not be available until this fall.

Hawley disclosed that the other precision weapon in short supply was the GBU-31/32 Joint Direct Attack Munition, which was dropped by the B-2 stealth bomber with, he said, "great results" during the Yugoslav conflict.

Because the JDAM was a new weapon that was in low-rate production when the conflict over Kosovo started, "we didn't have a very robust inventory," Hawley said.

Although production was being accelerated, Hawley warned that it would be "really touch and go as to whether we will go winchester on [run out of] JDAMs before we get the next delivery."

In his House testimony, Hawley also complained about a lack of precision munitions for training his aircrews, a situation caused by insufficient funding.

"The rules of engagement [for the types of missions being flown in operations such as Kosovo] give us no margin for error putting bombs and missiles on target," he testified. "That

means we have to be very good the first time out, but we don't have enough training munitions to give our aircrews the practice they need to be that good."

The erosion of combat capabilities among the augmenting air combat forces and the depletion of the best all-weather precision strike weapons in the battle for Kosovo also would make it difficult for ACC to have provided everything regional commanders might have needed if a war had erupted in the Persian Gulf or Korea, Hawley warned.

With more than 800 US aircraft already committed by early May, the conflict over Kosovo, "is—certainly from an air perspective—this is a Major Theater War," he said.

### Bad News for the CINCs

Hawley maintained that, because significant Air Force capabilities already had been deployed to the Persian Gulf and in Asia, he was "not that uncomfortable with [ACC's] ability to support either [the regional commander in chief for Iraq or for Korea], if one of those should heat up." However, he added, "I'd be hard pressed to give them everything they would probably ask for. There would be some compromises."

Hawley said the Air Force also could have problems activating the Expeditionary Aerospace Force on schedule because units expected to form the first two Air Expeditionary Forces in October could be tied up in the Kosovo operation.

The ACC staff at Langley AFB, Va., he said, was "working hard to make sure we can deploy the AEF concept on the first of October," he said. He went on, "I think we will. We just won't be able to fulfill all of the promises that we've made to the force on the first of October. That is going to take a little longer."

Hawley told reporters that the Air Force was trying to relieve operational pressure on some of its low-density, high-demand aircraft, which included most intelligence, surveillance, reconnaissance, command-and-control, and search and rescue units.

He said the planned delivery of two more RC-135W Rivet Joint elec-



Photo by Gert Krumhout

**A load crew at Aviano loads a PGM on an F-15E during Operation Allied Force. Forward deployed units have the most experienced personnel, full spares kits, and extra aircrew, but forces in the US are declining in readiness.**

tronic surveillance aircraft late this year would help with a force that "has been overcommitted for years."

He urged an increase in HC-130s, the refueling tanker for the combat search and rescue force and said he hoped the Global Hawk strategic UAV development would succeed because it could complement the U-2s, which also are overcommitted.

In his Congressional testimony, Hawley attributed some of what he called the chronic overtasking of Air Force units to the Goldwater-Nichols defense reforms. The 1980s-era legislation reduced the service chiefs' ability to control deployment rates. "The result is a tendency for the geographic CINCs and their components to place unconstrained demands on scarce resources," he said.

The regional commanders in chief cannot balance their demands against the needs of other regions, and the services' force providers, such as ACC, are prevented by Goldwater-Nichols from making those trade-offs, Hawley told the committee.

"Too many of our warriors are leaving the force, often because they are overtasked," Hawley warned Congress. "The result of this exodus," said Hawley, "is inexperienced and undermanned units."

With those words, Hawley became the first serving senior officer to

publicly criticize the Congressionally mandated reforms, which remain popular with the committees that originated them and which enjoy virtual sacred-cow status in the Office of the Secretary of Defense.

Talking with reporters, Hawley said Air Force leaders today are doing a better job than before in drawing on forces worldwide to meet different regional demands. That means Pacific Air Forces units can help carry some of the burden in the Persian Gulf to reduce the strain on ACC, he said. That is done by agreeing within the Air Force on the distribution of the loads and then going to US Atlantic Command, which has ultimate control over most domestic-based forces, to negotiate those allocations with the other regional commanders.

Yet moving forces around to cover gaps is not a solution, Hawley suggested to reporters. He said, "I would argue we cannot continue to accumulate contingencies. At some point you've got to figure out how to get out of something." He noted that US forces have been in Korea for nearly 50 years, have been dealing with Iraq for 10 years, and now has "a significant operation in Europe," the struggle over the Balkans.

"You just can't keep forces tied down forever in every one of those contingencies if you are going to continue to accumulate them," said Hawley. "New ones come in, you've got to get rid of some old ones." ■

*Otto Kreisher is the national security reporter for Copley News Service, based in Washington, D.C. His most recent articles for Air Force Magazine, "Next Steps in Information Warfare," appeared in the June 1999 issue.*

**EC-130Es of the 42nd ACCS play a pivotal role in the course of an air war.**

# The Eyes of the Battlespace

Photography by Dean Garner

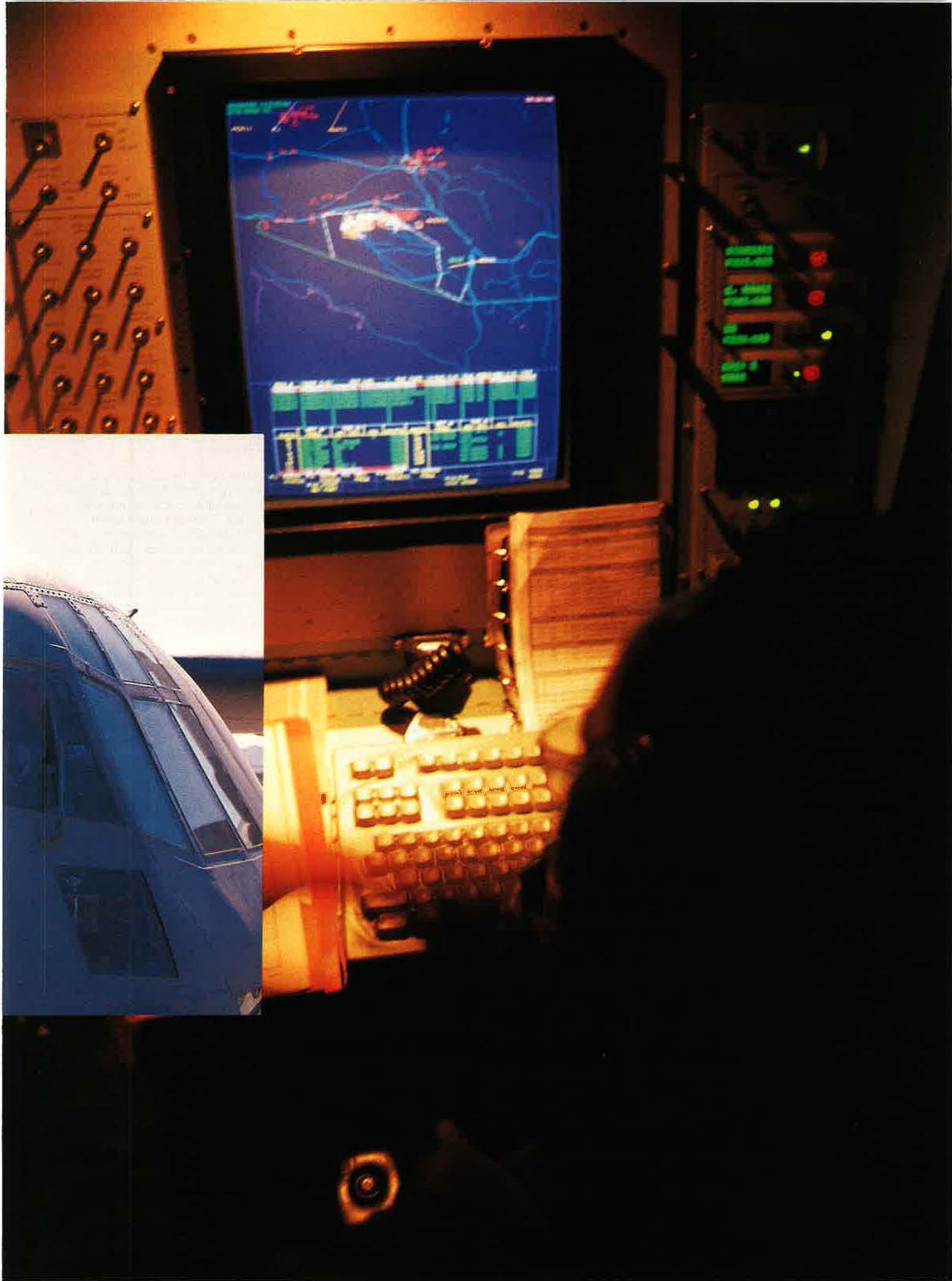
*The EC-130E Airborne Battlefield Command and Control Center may well be the most heavily worked system in today's Air Force. Its aircrews provide a link between air and ground force commanders, orchestrating the integration of air assets with ground forces to achieve specific objectives.*

*As fighting flared in Vietnam in the 1960s, the US saw a need for an aircraft to coordinate air and ground fire there. USAF wanted a reliable low-flying craft with superior communications, capable of loitering for long periods and directing fire against enemy ground forces. Ten C-130Es were modified to C-130E-II configuration, and some were deployed to South Vietnam in fall 1965.*

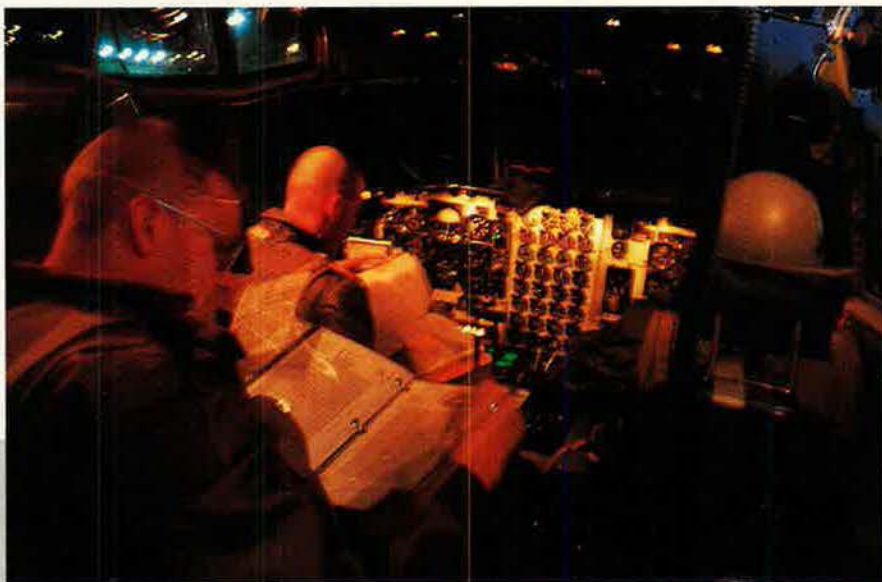
*One was destroyed in Vietnam, while the remaining nine were redesignated EC-130Es in 1977. The EC-130Es are now operated by the 42nd Airborne Command and Control Squadron—the only unit of its kind. Based at Davis-Monthan AFB, Ariz., it is truly an on-call force, playing a role in every Balkan operation of the 1990s. In Operation Allied Force, the ABCCC controlled the entry and departure of the attack airplanes and had a big role in deconflicting the flight paths of hundreds of airplanes traversing the Balkans.*



**Above, flight deck crew verifies that everything is in order for the next sortie. The ABCCC aircraft not only have a full flight crew but also a complement of up to 15 battle staff personnel who work in a specially designed capsule (right)—the USC-48 ABCCC III—that fits into the aircraft's cargo area. The battle staff includes operations, intelligence, and communications personnel.**



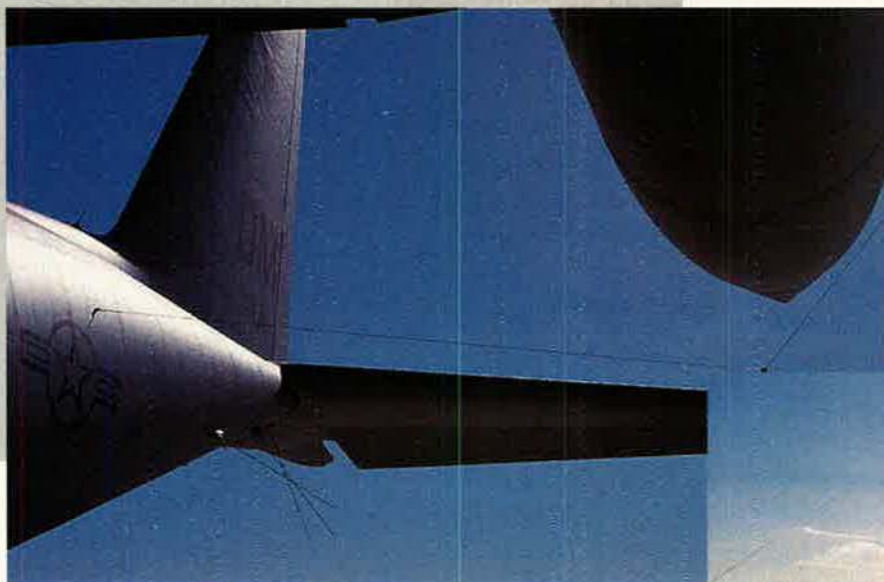
*ABCCC workstations (below) glow and hum away inside the capsule. At right, the flight deck crew reviews the checklist, preparing for a new sortie. USAF has only a few ABCCCs.*



*The ABCCC capsule is 40 feet long and weighs about 20,000 pounds. The capsule does not change the stability and control characteristics of the aircraft. It can be loaded onto an aircraft in about three hours and off-loaded in two. Generally, the aircraft deploys with the capsule installed. Maintenance crews perform preventive maintenance checks with the capsule in place. The ABCCC is cooled by large*

*air-conditioning units throughout long 12-hour missions.*

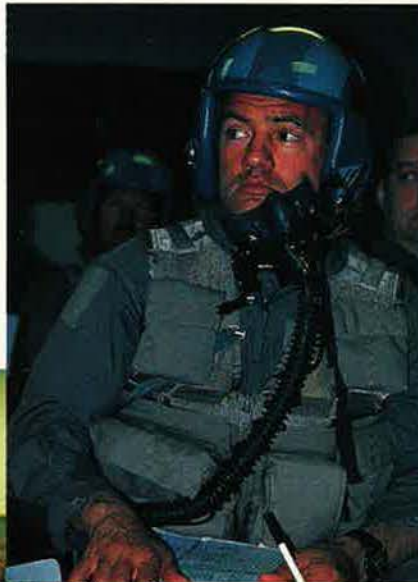
*The capsule contains 23 radios, a secure teletype, automatic radio relay capability, satellite communications, and modems. The advanced Joint Tactical Information Distribution System (JTIDS) on board each aircraft receives data transmitted by E-3 AWACS aircraft and other systems, enabling the crew to see a real-time picture of air operations over a battlefield. An onboard recording system tapes conversations on the intercom and all radios, providing after-action reviewers a complete and accurate mission history.*



*The EC-130E's extensive and sophisticated external antennas (above and right) to accommodate the vast number of radios in the capsule make for an impressive sight.*



*The standard mission briefings can sometimes contain a jolt. For example, as Maj. Alan Cordeiro (right) and others listen intently to the briefer, they get word that they are the target of a gas attack. Everyone in the room dives for the floor (below) and takes proper defensive steps. It's all part of a quarterly operational readiness exercise.*



*Below, a crew member caught in the "attack" tugs on his pair of gloves to complete his hastily donned mission-oriented protective posture gear.*



*To ensure a highly realistic exercise, the squadron's planners recruit troops to be the "bad guys" who will try to get past the flight line security forces. At left are some who didn't succeed, having been detained in their chem gear while an ABCCC aircraft waits for takeoff.*

Photos by Dean Garner



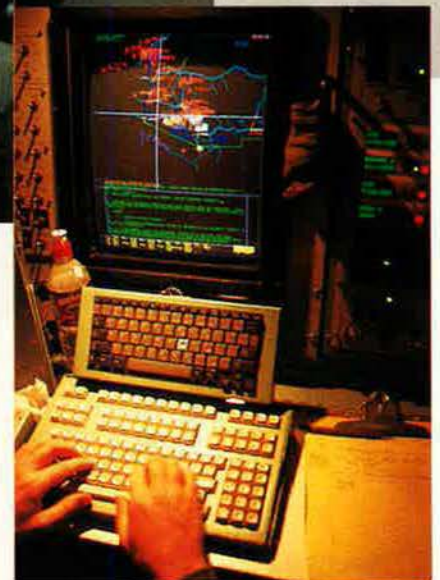
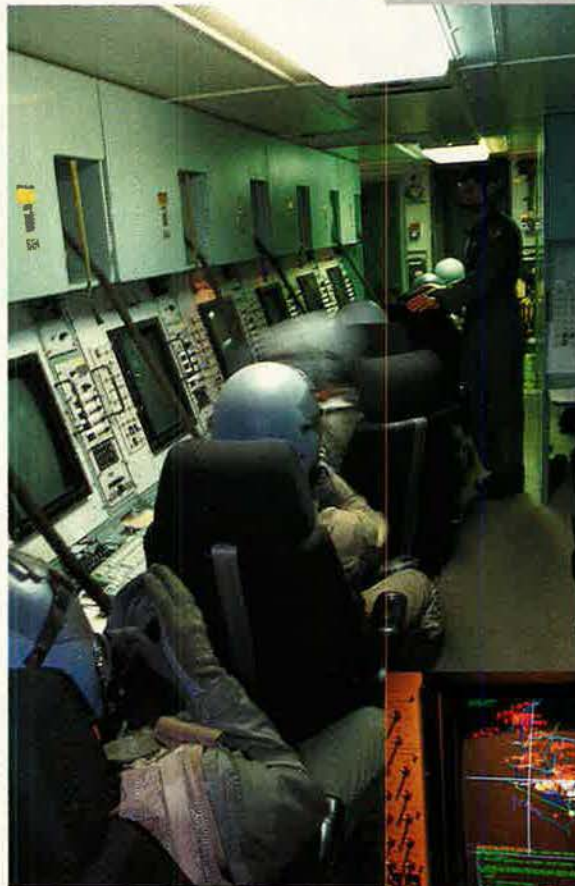
An "all clear" sounds, and the crew continues to prepare the aircraft for the training sortie. Visible at the left is one of the EC-130E's trademark inlets for the two huge air-conditioners that help keep the tons of electrical equipment operating in the ABCCC capsule. The flight crew proceeds through the checklists, and battle staff members take their stations in the capsule.

Within the capsule are oversize tactical situation display monitors (right), providing a clear picture of all pertinent information on the battlefield. In another part of the aircraft resides the communications section, which provides all communications for the battle staff. The liaison section can include up to six members from the airborne command element or ground liaison officer section, depending on the mission type.

The monitors display information called up from the tactical database that is updated with the daily air tasking order and other data. The monitors also display large-scale vector maps of the battlefield, with pertinent overlays of friendly and enemy troop and vehicle positions.

Much of the data pouring in from various external sources come from the JTIDS. The broadcast intelligence system provides near real-time information on various threats in and around the battlefield, including SAM sites and theater ballistic missile launches. All these data are then analyzed by various sections and quickly displayed on the situation display monitors for operators to view and assess.

The ABCCC team must absorb mountains of data continuously, then accurately process and disseminate it as quickly as possible. Each battle staff member is highly skilled at his or her job and must undergo rigorous training to maintain effectiveness.







*The EC-130E airframe dates from the early 1960s. Despite their advanced age, the aircraft remain on the cutting edge of technology, thanks to constant system upgrades. In addition, ABCCCs have an unblemished safety record. The unit is small, and everyone knows everyone else, so repairs can be made swiftly. Squadron leaders, moreover, emphasize safety. "The attitude of the people is not to take anything for granted," said Lt. Col. Ernest Jones, 42nd ACCS commander.*

*Because of its extremely high operations tempo, the squadron's cadre of top-notch maintenance personnel must be ever vigilant to ensure that the vintage EC-130E aircraft stay mission-ready at all times. Since 1993 regular rotations of the squadron personnel and aircraft have been deployed to Aviano AB, Italy. Members at first operated out of tents and hardened aircraft shelters, but in the last few years, squadron operations have moved into prefabricated buildings.*

*Regarding training at home, Lt. Col. Ernest Jones, 42nd ACCS commander, said, "We have improved our position a lot." By that, he meant that the squadron is turning to civilians formerly assigned to the 42nd. These contractors train the new members, freeing active duty personnel to carry on with the actual deployments. "Most Air Force personnel will move in two or three years," noted Jones. "The civilians will be here for a lot longer. Now I can take my warfighters and send them to war, rather than having them here training."*



*The aircraft may be old, but no one doubts that the Air Force has a continuing need for the capabilities provided by the EC-130E aircraft of the 42nd. ■*



# Roadman on Tricare

By Peter Grier

**A**s USAF's top uniformed health care officer, Lt. Gen. Charles H. Roadman II, the Air Force surgeon general, has lots to worry about. The job-related item that concerns him the most, he explained, is not directly related to Tricare medical program payments, contracts, or procedures. It is polarization—the gulf of mistrust that now has opened between his office and dissatisfied Tricare patients.

It's a split that was symbolized for him by a recent letter from a retired colonel, who held that "having a bad system that's improving doesn't make it a good system."

That's not an assumption with which Roadman agrees. He sees Tricare, for all its implementation problems, as a sound military health care system that will be the shape of military medicine for years to come.

"All of my working life, I have worn a uniform," said the general in an interview in his office at Bolling AFB, D.C. "The military and its retirees are the people I feel responsible for. And so, as we see rancor and angst, that just bothers me down to my core."

The surgeon general points out that the entire nation is moving toward managed care to head off health costs that could otherwise hit \$2.1 trillion by 2007. If anything, Tricare is a model for, and reflection of, the health care networks that now cover more and more American civilians.

Switching military medicine to managed care has turned out to be a huge and complex undertaking. The task has not been easy, Roadman acknowledged, but he urges every-

**The Air Force surgeon general sees the military program as a model for—and a reflection of—managed care systems in the private sector.**

one to put the problems in context. Kaiser Permanente has been honing managed care in the civilian world for 50 years, he noted. Tricare has been transforming the military for five.

### “Good” and “Valid” Concept

“The fact of the matter is we began with a good concept,” said Roadman. “The concept is still valid. We have lots of things that we’ve got to do.”

A number of things have already been done. Roadman said that some of the Tricare issues raised by the Air Force Association and other groups have now been rectified.

One such issue concerns portability. In the past, some Tricare beneficiaries have complained of difficulties switching from one region to another. The system was not seamless: Moving from a region administered by one contractor to one run by another required starting paperwork all over again.

Contract changes mean that is no longer the case, said Roadman.

“In fact [Tricare enrollment] is now portable,” he said. “You no longer have to disenroll and re-enroll.”

The related problem of split enrollment has also been solved, according to the Air Force’s top uniformed doctor. Having immediate family in another Tricare region—for example, a child attending college away from home—is supposed to no longer result in the need for them to re-enroll.

Similarly, AFA’s position against multiple co-payments by Tricare enrollees has been adopted by DoD.

“We listen to the associations, as we listen to the patients,” said Roadman. “Unfortunately, we can’t turn it on a dime, because there are large contractual federal acquisition regulations [involved].”

The issue of CHAMPUS Maximum Allowable Charges (CMACs) illustrates how complex and interwoven perceived Tricare problems can become.

Some critics complain that CMACs, the reimbursement rates to health care providers for providing specific medical procedures or units of care, have been too low. The federal government’s huge Medicare program pays more, say critics, and low CMAC rates are a big reason why

## “Death by Anecdotes”

Individual stories about trouble with Tricare are legion—from two-star generals who can’t get their Tricare enrollment cards after four phone calls, to base commanders who are referred to out-of-network providers and incur surprise point of service costs and airmen who wait days to get a pediatrician’s appointment for a child.

Lt. Gen. Charles Roadman said he does not want to minimize what such individuals may have gone through. Real people incur these problems, he said. “If we mess that up through incompetence, that should not happen,” he said. “That’s a legitimate hit on our system, and I know we’re working like crazy to solve it.”

However, Roadman also talked of what he calls “death by anecdotes,” in which individual horror stories overshadow the overall progress of the system.

“You’ve got to [include] a denominator,” he said. In other words, a story about the pullout of a provider group from Tricare should include the figure that turnover throughout the system is between 3.5 and 6 percent, comparable to that in the civilian managed care world.

“What I’m saying is, ‘Put [things] into context.’ That is incredibly important,” he said.

private doctors do not accept Tricare patients or drop out of the system.

In fact, out of about 6,000 different procedure codes, only about 70 were different from Medicare, said Roadman. Some of those codes were in pediatrics, an area of medicine that Medicare does not have. And there was a regional difference in CMAC rates because from county to county there are different reimbursement rates even under Medicare.

All CMAC rates are now equal to or greater than their Medicare equivalents, said Roadman.

In some areas of the country, managed care contractors have negotiated fees with providers that are lower than the Medicare rate. These negotiated fees vary based on the market and willingness of health groups to discount their fees.

“The fact of the matter is, all these things are tools of managed care to begin to control the cost,” said Roadman.

Tricare has been effective at controlling costs, particularly in areas

where it has large numbers of enrollees in the HMO-like Tricare Prime option, said Roadman. He points to a recent Center for Naval Analyses study which came to just such a conclusion.

### It Saves You Money

“Tricare Prime has not only decreased the cost for the government, but it has decreased the cost for people—out-of-pocket cost. It has improved the access and increased the quality,” said Roadman, citing CNA’s conclusions.

Critics have charged that Tricare has immense turnover in providers in its systems due to CMAC rates and late payments. Roadman said that, judging from the statistics, that is not strictly the case.

The average turnover in a civilian health care network is about 5 percent a year, he said. In the 12 Tricare regions, turnover runs from 3.5 to 6 percent.

When providers pull out of Tricare, it makes headlines and gives benefi-

ciaries the feeling that their health care options are evaporating. The fact that such developments cause inconvenience to patients distresses him, said Roadman.

"Do we have turnover?" he said. "More than I want. Have we had turnover that I am distraught about? Absolutely not."

All this does not mean that real problems do not remain.

Claims processing has been quite a challenge for the Tricare system, said Roadman. Problems with claims are one of the top complaints of system beneficiaries. In addition, the cost of Tricare claims crunching remains high—about five times as much, per claim, as that of Medicare.

The difference between Tricare and Medicare is that Tricare claims processing has military specifications, to use a weapons procurement analogy.

"What you're trading off is complexity for decreased fraud," said Roadman.

The Tricare claims form is too complicated and will be simplified over the next year. But it is unlikely to become as simple as Medicare because it needs to retain some fraud protection.

The standard for Tricare claims processing is 75 percent clearance within 21 days. The system is doing well against this measure, said Roadman. TriWest Healthcare Alliance, for instance, has over 90 percent clearance within 21 days.

Given the number of claims involved, however, the 10 or 20 percent of claims that do not make the standard represent hundreds of upset patients and thousands of extra phone calls, said Roadman.

### Claims Submissions at Fault

Often, said the surgeon general, Tricare officials discover that a delay in claims processing is related to the quality of the claim submitted. If a form is incomplete or contains a wrong ID number or other problem, it can take a long time to settle.

"Now, as the claims process is simplified, what's going to happen is, by policy, we're no longer going to accept non-clean claims," said Roadman. "What that means is there will be a reject rate that will probably go up, but those that are in fact clean will be paid much quicker."

Such a change will occur as more and more providers accept electronic billing, as opposed to paper forms mailed in.

That will be the 21st century way to handle claims processing, according to the surgeon general. However, moving in that direction is not entirely under Tricare's control. It will be part and parcel of national health care reforms.

In the end, said Roadman, he would never say he is aiming low when it comes to claims processing, but he's realistic. "I don't think we will ever get down to the Medicare cost [per claim] and as simple a form as Medicare."

Another of the main complaints of Tricare beneficiaries: poor access to health care. DoD does need to improve access, say military health officials. However, they claim that the record in this area is better than many Tricare participants may realize.

With the number of Military Treatment Facilities down about 35 percent since the late 1980s, there are fewer beds and waiting rooms for patients to squeeze into, pointed out Roadman.

However, a recent General Accounting Office audit found that Tricare met its standard for urgent care within 24 hours about 85 percent of the time. The standard for routine care within seven days was met about 95 percent of the time, according to the GAO.

"Does that mean we're where we need to be?" Roadman asked rhetorically. "Nope, it doesn't. Clearly, I want to meet the standard every time."

Military Treatment Facilities do not meet access standards as well as private facilities that are part of Tricare, according to Roadman. This is because Tricare Prime patients compete with space-available retiree care and other priorities in MTFs. Military facilities also need to improve their efficiency, he said, by increasing support staff so that doctors can focus on providing medical care.

The goal is to have a ratio of 3.5 support staff for each Primary Care Manager. That will break down into one nurse, two administrators, and four medical technicians for every two PCMs.

Right now the ratio is more like one support staffer for each doctor.

"That's a real problem for us—the

amount of administration that's being done by a lot of our providers," said Roadman. "It decreases their efficiency. It decreases the access."

Still, while Tricare has room for improvement in the area of access, it is comparable to the civilian health system record, in the view of Roadman.

### As Good as It Gets

"If you think you get better access than that in the civil sector, you need to get on the phone again and check the color of the grass on the outside," said Roadman.

Similarly, preauthorization is a problem for Tricare, but not unduly so, according to the surgeon general.

Preauthorization requirements can be contractual. In Tricare Region 1, for instance, once a patient receives a specialist referral from a PCM, there is a standard three-day cycle before the referral is authorized. According to Tricare officials, such waits exist not to delay action, per se, but to ensure the medical necessity of the referral and to make sure the PCM is included in the decision.

The purpose of such routines "is to build a bottleneck so that you can get control of continuity of care, cost of health care, and to ensure that the doctor that takes care of you knows what's going on with you," said Roadman.

### Flight Medicine for All

The role of the PCM is a crucial one. As a flight surgeon, Roadman found nothing more frustrating than to have patients complain that they were not getting better and then find out that they were being seen by eight different providers, each without knowledge of the other, who were all prescribing different treatments.

The Tricare goal is for each PCM to be responsible for no more than 1,500 patients.

Continuity of care will enable prevention-oriented treatments to really pay off. "What I'm describing is flight medicine—flight medicine for everybody is the model I would use," said Roadman.

The surgeon general worries quite a bit about the situation of personnel at geographically separated units—recruiters, ROTC instructors, and others who are assigned to areas where there are no MTFs and no Tricare Prime system. Such person-

## The Civilian Options

The Air Force has an obligation to take care of the health needs of its retirees, said Lt. Gen. Charles Roadman. Toward that end, it is carefully watching a number of Congressionally mandated test programs, from FEHBP-65 to Medicare Subvention.

Under FEHBP-65, military retirees in selected locations are being allowed to take part in the big Federal Employees Health Benefits Program, which covers non-military government workers. Under Medicare Subvention, retirees 65 and over are being allowed to use their Medicare benefits to pay for health care in the Military Treatment Facilities they have grown used to.

When it comes to methods of handling over-65 health care, Roadman is for diversity. "I think we all see that there needs to be a mosaic," said Roadman. "One answer doesn't fit everybody." He noted, "I still do not believe that every retiree should be eligible for FEHBP-65."

The reason for that, he said, stems from the need to maintain war readiness skills. If over-65 retirees no longer come in to military facilities for treatment, said Roadman, military doctors will be left with only generally healthy 19- to 25-year-olds to care for.

"We maintain our war readiness skills based on people that are sick, and that is generally the elderly population," said Roadman.

It will be important to determine what percentage of eligible retirees actually opt for the FEHBP-65 experiment, according to the surgeon general. Many may find it more expensive than they had anticipated. It is quickly growing more expensive, too, with its premium cost having increased some 19 percent over the last two years.

With over 350 options to choose from, the federal program is also far more confusing than the three-level Tricare, said the general.

He remarked, "Everyone says, 'This is confusing. You've given me three choices.' ... Well, let's go take 350 different HMOs, each of them providing a different benefit. Now that's really confusing."

In the end, money could be a problem, for an expanded FEHBP-65 program and for Medicare Subvention and other test programs.

"If all of those [become permanent] there is going to be a funding implication to that in order to maintain our direct care facilities," said Roadman.

nel inevitably incur increased health care costs.

One of the things the Air Force is trying to do to help is to establish a central office to manage their claims. That will not be up and running, for those on active duty, until this October. It will be another year beyond that before it can handle claims from the families of active duty members.

"It's not nearly at the rate it should happen," said Roadman. "It's a rec-

ognized problem [and] we ought to be able to solve it quicker."

Funding is an area where military health officials have continued worries. Right now, the budget looks good through 2001. A Defense De-

partment and Air Force infusion of \$194 million helped put USAF's health programs back up above the "executable" line for its programs.

But increased workload means increased costs. And workload is unpredictable. The reserve call-up for the Kosovo crisis shows how fast things can change.

"We are mobilizing people to take care of our warfighters in Europe," said Roadman.

Some of the growing pains that Tricare has experienced should be seen against the context of the national struggle over health care policy, according to the Air Force surgeon general.

### Through the Flak Trap?

The United States does not have universal access to health care. Tricare is struggling to hold down costs while providing high-quality care to its enrollees and figuring out how to care for military retirees—who, by the way, were promised free medicine for life. This is a microcosm of what's going on in the civilian world, said Roadman, though "it's against a much larger backdrop."

The Air Force surgeon general said he does not want to be drawn into a debate about critics' perceptions of the Tricare system. Such arguments are "steam that doesn't get to the turbine," in his phrase. "I would want us to be seen as working people's problems to solve what it is they need," said Roadman. "That's the bottom line."

He said that managed care has been vilified virtually everywhere, from newspaper articles to popular movies. There is still resistance to the concept from payers, patients, and providers, according to Roadman. However, he claimed, it's the only game in town. It is where the Air Force is headed.

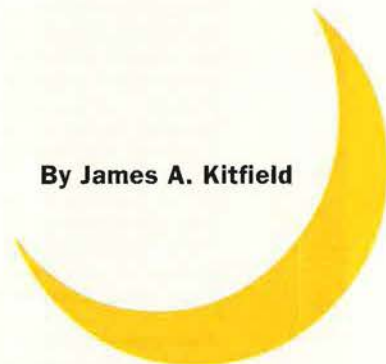
He said, "I think we're about 90 percent through the flak trap. The idea of turning around and flying through the 90 percent of the flak trap going back is not appealing. It is time to throttle forward and fly through the rest of the 10 percent." ■

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*Peter Grier, the Washington bureau chief of the Christian Science Monitor, is a longtime defense correspondent and regular contributor to Air Force Magazine. His most recent article, "Tricare Goes Nationwide," appeared in the June 1999 issue.*

**Nobody knows what will happen when Y2K sweeps east across Chinese and Russian nuclear facilities.**

By James A. Kitfield



# **THE MIDNIGHT CROSSING**

**E**XPERTS refer to the long-anticipated moment as the “midnight crossing.” It will arrive in the western Pacific at the stroke of midnight—local time—on Dec. 31, 1999. Inhabitants of the small Pacific islands will officially become the first humans to enter the 21st century. Their computers will come along with them into the Year 2000, also known as Y2K.

When the midnight crossing occurs, senior US officials will be intently staring at screens in a Year 2000 Operations Center that will be up and running in Washington, D.C. The Aleutian Islands in far western Alaska will be among the first to experience Y2K computer problems, if they exist. The problem then will work its way westward from the international date line.

At the Operations Center, Ameri-

can officials will be especially interested in how the Y2K phenomenon affects the first two industrialized nations to feel its full impact—Japan and Australia. What happens when modern, computer-reliant nations such as those cross into the new millennium? The answer will give an early indication of exactly how Jan. 1, 2000, will go down in the history books.

Computer technicians have known for years that the Y2K problem is buried in millions of lines of software code that use two digits to represent four-digit years. That will lead some software around the world to read “00” not as 2000, but 1900, and possibly cause computers to crash or issue false data. No one knows for sure what will happen.

While the US government and the Pentagon have worked aggressively

in recent years to fix the Y2K problem—at a cost to DoD of roughly \$2.5 billion, including \$1.16 billion to the US Air Force—the very connectivity that is the hallmark of the information age makes predicting the cumulative impact of the problem all but impossible.

### **“I Wake Up in a Cold Sweat”**

Deputy defense secretary John J. Hamre, the Pentagon’s point man on the Y2K problem, referred to uncertainty in a press interview. “Probably one out of five days I wake up in a cold sweat, thinking [Y2K] is much bigger than we think,” said Hamre, “and then the other four days, I think maybe we really are on top of it. Everything is so interconnected, it’s very hard to know with any precision that we’ve got it fixed.”

In a report dated Feb. 24, 1999, the Senate Special Committee on the Year 2000 Technology Problem delivered an even more sobering assessment of the likely impact of Y2K on the nation’s social and economic fabric. The inability of computers to recognize dates starting on Jan. 1, 2000, is a “worldwide collective crisis,” the report concluded. A letter to colleagues released with the report stated, “The Y2K problem is undoubtedly one of the most important issues we will face this year.”

Because Y2K could have far-reaching implications for weapons, communications, and infrastructure systems, Air Force officials began working the problem early and seriously.

“We are such a finely tuned Air Force that computer technology affects everything we do,” Brig. Gen. Gary A. Ambrose, director of the Air Force Year 2000 Implementation Office, told Air Force News in February. “There are computer chips and computer codes in everything from your wristwatch to your radar. So, there’s potential for Y2K to affect lots and lots of things.”

Ambrose believes the Air Force is on top of the problem. The reality, he said, is that there will be some Y2K failures, but he expects them to be minor and transient.

“Most will probably last no longer than a few minutes,” he said, “but we don’t envision any catastrophic failures.”

The Operations Center, as presently planned, will be a multiagency

command-and-control organization operated under the auspices of the Federal Emergency Management Agency. As arranged and practiced, OC managers will attempt to immediately establish Y2K’s impact on communications and electricity grids in Japan and Australia.

The biggest fear is that, even in modernized nations that have been working diligently to lessen the impact of Y2K, a cascading effect will occur. In the worst-case scenario, even systems that have been meticulously tested as Y2K compliant rapidly will be infected with the Y2K bug as a result of their connection to noncompliant systems through the Internet or other networks. Further, they, in turn, will contaminate others.

### **The Digital Snowball**

The result could be a digital snowball that wipes out whole sectors of the infrastructure on which modern societies have been built, from major communications and transportation nodes to entire power grids.

In the words of the Senate Y2K panel’s report: “The interdependent nature of technology systems makes the severity of possible disruptions difficult to predict. Adding to the confusion, there are still very few overall Year 2000 technology compliance assessments of infrastructure or industry sectors. Consequently, the fundamental questions of risk and personal preparedness cannot be answered at this time.”

A potential cascading effect has raised particular concerns for China, the world’s most populous nation. It will be the first nuclear-weapon state to face the danger of a large-scale, catastrophic computer failure as a result of Y2K-related glitches.

In a nightmare scenario, screens go totally blank at China’s nuclear command-and-control facilities. US officials have been working to prevent that by cooperating with their Chinese counterparts to share early warning data between the two countries’ nuclear command-and-control organizations. Because of the relatively small size of China’s nuclear forces and its reliance on manual procedures rather than computer generated commands, US officials are relatively confident that no major incident involving China’s nuclear weapons will actually occur.

Still, officials are concerned by the fact that 90 percent of the software in use on Chinese computers is pirated, meaning Chinese technicians are unable to call manufacturers for help and have not received software updates from producers on how to address the Y2K problem.

The US Embassy in Beijing, for instance, concluded earlier this year that “many old computer systems, running half-forgotten program languages and complex systems configurations, increase Chinese exposure to the Year 2000 bug.”

At a Senate Armed Services Committee hearing in February, Gen. John A. Gordon, USAF, CIA deputy director, emphasized that gaps in information make it hard to assess the scope of damage in foreign countries such as China. There is little doubt, however, that developing countries will encounter the greatest threats of disruptions in nuclear reactors, interference with military systems, and loss of power.

“[China] will probably experience failures in key sectors such as telecommunications, electric power, and banking,” said Gordon.

Foreign embassies in China are taking the Y2K threat seriously; some reportedly plan to evacuate embassy staff members and their families from the country in the months leading up to the midnight crossing.

Of all the Y2K nightmare scenarios, none are more plausible or troubling than those that revolve around Russia.

Russia is the world’s largest nuclear warehouse. It has more than 22,000 nuclear weapons scattered through 90 sites, 65 Soviet-made nuclear reactors, 715 tons of fissile material (enough plutonium and uranium for 40,000 nuclear weapons), and tens of thousands of nuclear scientists who have not been paid regularly in years.

### **Russia’s Underlying Problem**

Today, the vast nuclear enterprise rests on a foundation that already has been rocked by a decade of political and economic upheavals. Despite the fact that the US has spent \$400 million per year since 1993 to help Russia dismantle nuclear weapons and secure poorly guarded nuclear materials, US officials estimate that only about 25 percent of Russian nuclear materials are under suf-

ficiently strong lock-and-key. Any social upheavals in Russia as a result of Y2K could put those stockpiles at serious risk.

CIA intelligence reports have also indicated that critical electronic devices and computers that control Russian nuclear weapons frequently switch to combat mode for no evident reason. On numerous occasions in recent years, operations at Russia's nuclear weapons centers have been disrupted by thieves trying to steal critical communications cables for their copper content. Given its already shaky condition, some fear that Y2K problems could send the equivalent of a digital shock wave through the Russian nuclear complex.

By far the greatest concern is that Y2K could cause a malfunction in Russia's already dangerously eroded early warning network and command-and-control system, leading to an accidental or mistaken launch command. As an indication of just how fragile that early warning system is already, experts point back to the events of Jan. 25, 1995.

On that day, a Russian radar warning system detected a rocket launch somewhere off Norway. A ballistic missile launched from a US submarine in those waters could hit Moscow within 15 minutes, so the watchers sent the alert message up the command chain all the way to Russian President Boris Yeltsin, who for the first time in an emergency activated the "nuclear briefcase" carried by Russian leaders.

Russian radar installations reported evidence of the devastating first-strike attack Moscow had long feared. Officials reportedly stood ready to invoke Russia's doctrine of "launch on warning" in a defensive response to the perceived attack.

The unidentified "missile" turned out to be a US weather probe launched by the Norwegians, who had notified the Russian authorities weeks earlier. Somehow, the Russian bureaucracy had failed to get the message to the Strategic Rocket Forces. Few doubt that Y2K could potentially lead to false data readings of far greater proportions.

Sergei Fradkov, a former Soviet satellite technician now working in the US, was recently quoted as saying, "Russia is extremely vulnerable to the Year 2000 problem. If the date ... shifts to '0' for a brief moment, ...

that fools the system into thinking there is a high probability of an attack in progress." US authorities said that the default response for failure in the Russian command-and-control system is not to launch but to freeze up the system. For that reason, officials say they are not overly anxious about the danger of a Y2K-induced inadvertent missile launch.

### Unanticipated Problems

Nobody is relaxed, however. In a Pentagon press briefing, Hamre said, "My sense is that Russia is not as fully aware of the extent that [Y2K] is a problem. They don't seem to have the same level of urgency that we've had over it. ... They've got a lot of other pretty serious problems. So I think therein lies our nervousness about it." He added, "They have come to this much later. The country is going through some fairly profound changes. ... Undoubtedly, they're going to have problems that they don't anticipate right now."

US officials are also disappointed that Russia, so far, has rejected their idea to establish joint command centers and trade personnel from their nuclear forces to prevent misunderstandings. Part of the problem is the anti-Western sentiment that had been building in Russia as a result of that country's domestic economic collapse and NATO's bombing of Yugoslavia.

The Russians repeatedly have rebuffed American efforts to provide help on the Y2K front. The most critical project was the proposed exchange of key personnel from each nation's missile forces, an idea that the US offered to fully finance. Privately, many US officials suspect the Russians are simply too concerned about the shoddy state of their nuclear command-and-control system to allow US officers to view it up close.

In April, the BBC reported, "The Russian Federation Defense Ministry has abandoned cooperation with military personnel from the United States and other NATO countries in resolving the Y2K problem. The Russian military are evidently not very keen on showing how outdated their computer systems are. Then an excuse for the refusal appeared—the bombing of Yugoslavia."

Even if the Russian early warning or missile-launch systems function

properly, other problems could crop up.

US officials are very concerned that a computer failure in Russia's interconnected power grid could cascade through the entire nuclear system and lead to a massive power outage. Such an event could easily end in catastrophe at one of the 65 Soviet-made nuclear reactors.

Those concerns are heightened by reports that nuclear scientists and technicians at two of Russia's closed nuclear cities—Arzamas-16 and Chelyabinsk-70—staged walkouts last year because they had not been paid in nearly 10 months. An undermanned and unmotivated nuclear workforce raises the possibility that a power outage at a nuclear reactor could lead to a catastrophe through human error.

Moreover, there are worries that the diesel generators designed to provide backup power at nuclear reactors in the event of a main power outage could fail as a result of problems within embedded chips. One audit of the Seabrook nuclear reactor in New Hampshire, conducted by the US Nuclear Regulatory Commission, revealed that a single nuclear power plant had 1,304 separate software items and embedded chips affected by the Y2K bug. No one believes that the Russian counterpart to the NRC has been as thorough in alerting Russian technicians to the vulnerability.

### Facing the Russian Winter

Without steady electric current, the cooling systems in Russia's nuclear reactors could fail. Even if many of the reactors were successfully shut down, that would leave millions of people facing a Russian winter without heat.

Far more worrisome is the prospect of meltdowns at one or more of the 65 Soviet-made nuclear reactors. An NRC report on the issue noted that, in a worst-case scenario, a total loss of power could result in problems tracking the reactor facility's status and make recovery all but impossible.

Even if handled well, loss of power and cooling at the numerous waste pools where atomic fuel rods are kept could cause the water to boil away and permit the release, into the local atmosphere, of lethal levels of radioactivity. Recently loaded rods—



those placed in the waste pools within the past two years—could begin to melt down within 48 hours of a loss of power.

The jitters were put succinctly by an intelligence source quoted in *The Times* of London: "Russia's nuclear industry is in desperate straits. Throw in Y2K and you could have a giant Chernobyl on your hands."

The White House recently expressed its most pessimistic assessment to date about anticipated Year 2000 computer failures at Russian-designed nuclear plants in nine countries.

That outlook was contained in the latest study presented by John Koskinen, the Clinton Administration's top Y2K expert. In Koskinen's view, one of his greatest international concerns is how to ensure the safe operation of the 65 Soviet-built nuclear plants, including one in eastern Russia near Alaska. Koskinen, who heads the President's Council on Year 2000 Conversion, said those plants are in countries "with major economic problems," and US experts know little about how the Russian equipment will react to the date rollover.

The problem is somewhat different in advanced Western countries, particularly the US. The danger is not so much the total failure of a computer as a result of Y2K; rather, the real problem is that an unnoticed glitch will cause a system to produce erroneous data.

Here's one example: Because military and civilian aircraft have become so reliant on the Global Positioning System for precise navigation, defense officials have exercised a scenario that had the entire GPS system crashing off line. In the case of erroneous data, however, the GPS system might seem to be working fine. A computer ground station—which uses dates to synchronize the signals from satellites and to maintain satellite uplinks—could inadvertently send false information and allow aircraft to stray perilously close to one another.

Hamre testified last year, "Frankly, I think we'll be lucky if on Jan. 1, 2000, the system just doesn't come on, because then we'll know we have a problem. Our bigger fear is going to be that the system seems to work fine but the data is unreliable. That's a far worse problem."

Pentagon officials contend that

DoD will have fully tested 100 percent of its "mission critical" systems for Y2K compliance by the end of the year.

Not all are entirely comforted by that claim, however.

Take, for example, a study released Feb. 22 by Business Executives for National Security, a nonprofit advocacy group based in Washington, D.C. The report found much to cheer in the Pentagon's handling of the Y2K problem, but it warned that computer and software executives with direct experience in ensuring Y2K compliance were advising great caution.

### "Avoid Rosy Scenarios"

"We found that the private sector is far ahead of government in terms of addressing the Y2K challenge," noted retired Air Force Lt. Gen. Thomas G. McInerney, BENS president. "That was no surprise, but we also found that most companies and business leaders believe that unanticipated problems will emerge. That's an important message for the Pentagon: Avoid rosy scenarios."

Hamre concedes that he also has a specific worry: that all of the Pentagon systems, ultimately, will depend on the smooth functioning of the civilian infrastructure.

Marvin Langston, DoD's deputy chief information officer, draws an analogy to a ship's captain steering around an iceberg when all he can see is the tip poking out above the surface.

"The Defense Department is like a large ship headed toward an iceberg," said Langston. "We have successfully changed course to avoid the tip, but we must continue our efforts to ensure we miss the submerged portion."

Hamre was blunter. "If Ma Bell or Bell Atlantic's system fails on Year 2000, we're also going to have mission failure, and I don't have any control over that," he said. "This is going to have implications for American society and the world that we can't even comprehend."

What really aggravates US officials is their inability to predict whether Y2K will turn into a minor disruption that mocks the dire predictions or whether it might prove to be a disaster of near biblical proportions, a digital locust swarm.

For instance, many technology

experts have warned of the vulnerability of the Japanese banking sector. If Japanese banks crash as a result of the millennium bug, the shock could lead to a selling panic in Asia that dwarfs the Asian economic flu of the past few years. Oil refineries in Saudi Arabia and Venezuela have also been cited for their vulnerability, raising concerns about the availability of oil. Power outages could condemn countless millions of Chinese and Russians in brutal winters without power or heat and raise the prospect of a major catastrophe in the world's network of over 400 nuclear reactors.

In the US, major telephone and communications systems are expected to operate without major disruptions, and no one anticipates that airplanes will fall out of the sky. Even so, some experts predict the eruption of regional blackouts and warn that the 911 system could crash in many communities.

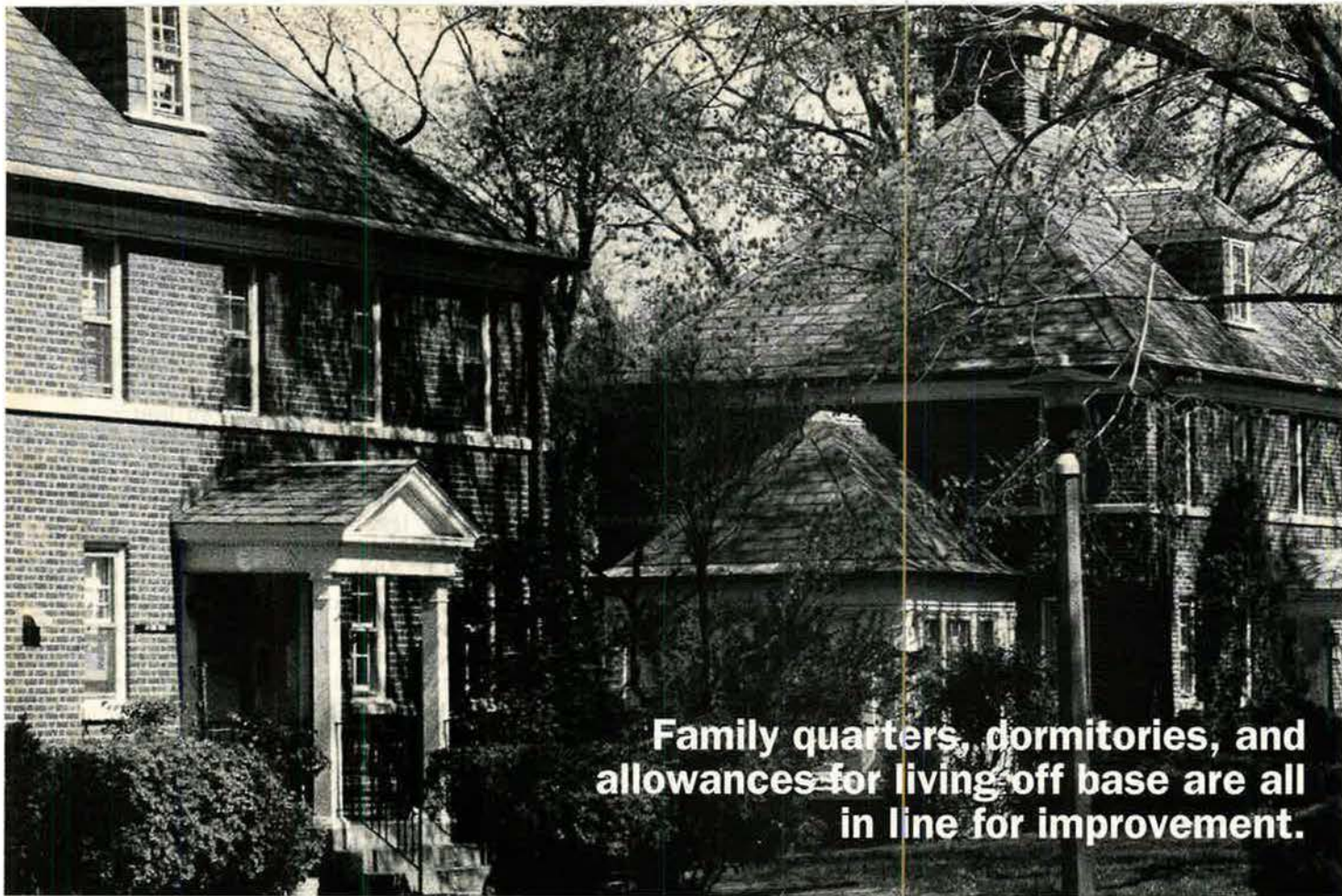
The ability of the US military to respond to domestic disturbances could be hindered by breakdowns in communication and power systems outside of military control. Experts have also warned that the US health care industry is especially unprepared, and many small-town hospitals and doctors offices could be paralyzed by the Y2K bug.

One day into the new millennium, everyone will know whether the Y2K problem was grossly hyped or undersold. One who is eager to find out is Sen. Robert Bennett (R-Utah), the chairman of the Senate Special Committee on the Year 2000 Technology Problem.

"When people say to me, 'Is the world going to come to an end?' I say, 'I don't know,'" Bennett remarked. "I don't know whether this will be a bump in the road—that's the most optimistic assessment of what we've got, a fairly serious bump in the road—or whether this will, in fact, trigger a major worldwide recession with absolutely devastating economic consequences in some parts of the world." ■

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**Family quarters, dormitories, and allowances for living off base are all in line for improvement.**

# To Fix Air Force Housing

By Bruce D. Callander

**I**f the Pentagon had not adopted major changes in its housing policies, some future Air Force Chief of Staff could have taken office just as the service was starting to renovate the family quarters he had occupied as a captain.

Col. Emmitt G. Smith, chief of USAF's Housing Division, uses that admittedly far-fetched illustration to underscore the importance of DoD's new approaches to the housing problem.

Smith noted that the Air Force owns about 110,000 housing units. As of this year, he added, the average unit is roughly 35 years old. Further, he said, approximately 61,000 units require significant renovation or replacement to bring them in line with accepted living standards.

"To fix those units using traditional military construction funds would cost the Air Force around \$7 billion and, at our current funding level, it would take about 26 years or so," Smith explained. "And that doesn't even address renovating the other 40,000 units that will continue to age over that period."

To speed up improvements in the housing picture, not only on base but

also in the civilian community, the service has launched three major initiatives.

First, the Air Force will not only contract out the construction and renovation of family quarters but give civilian developers ownership of units and responsibility for maintaining them. This privatization, officials say, will magnify the buying power of the services' scarce construction and maintenance funds to bring quarters up to par in about one-third the time and at a fraction of the cost of traditional approaches. This has been tried before, not always with positive results, but USAF is determined to make it work.

The second effort aims at helping service families who do not use family quarters and have relied on a hodgepodge of allowances to meet housing costs in communities. A single Basic Allowance for Housing (BAH) now is geared to actual housing in the continental United States. One Overseas Housing Allowance (OHA) will cover members abroad.

The third initiative is a three-phased dormitory master plan, designed to put most enlisted members into private rooms, eliminate single-

housing shortages, and replace older dorms all within the next 10 years.

### **Under New Ownership**

The latest privatization effort has been slow to get off the ground. It began in Fiscal 1996, but the services have so far initiated only four major projects, including one at Lackland AFB, Texas. Meanwhile, the services have been assessing their housing needs and developing a variety of ways to solve them. The effort now is gaining momentum, officials say.

Smith said, "We're laying out a strategy for the Air Force to fix those 61,000 inadequate homes by the year 2010. We've been developing a family housing master plan to incorporate a balanced approach of traditional military construction and privatization."

He said the effort aims to get the utmost leverage from housing and Operations and Maintenance (O&M) funds to reduce the 26-year period required for traditional military construction funding levels.

Last fall, Air Force teams assessed housing at virtually every base, considered alternative ways of fixing the quarters, and developed a cost estimate. Last winter, they briefed the Air Force leadership and went back to major commands with revised plans. Later this summer, housing officials will go back to senior leaders with a more definitive plan.

Meanwhile, some upgrading already is under way. Smith said that, from Fiscal 1988 through Fiscal 1998, USAF either renovated or replaced about 28,500 homes. Last year, it awarded its first privatization project for 420 units at Lackland. USAF has two projects under way overseas—one at Aviano AB, Italy, for 530 units and another at RAF Lakenheath, UK, for 518 units.

For Fiscal 2000, plans call for the Air Force to replace 1,180 homes at 15 bases and make improvements to another 1,334 at 13 bases. Additionally, USAF is seeking another \$205 million in military family O&M funds for 2000 to place more emphasis on maintenance of the facilities.

The Air Force's strategy is to stretch its building and maintenance dollars by getting private investors to assume more of the up-front construction costs and to be responsible for the upkeep of the quarters.

Privatization, in the sense of the government working with civilian developers, is not entirely new to the services. Under the 1949 Wherry Program, more than 83,000 homes were built on or near installations by private contractors using private financing with the government guaranteeing the rent. Another 15,000 units were built by private contractors on government land under the 1955 Capehart Program, with the sponsoring services taking over the FHA mortgages and the responsibility for O&M.

Then, in 1962, Secretary of Defense Robert S. McNamara centralized housing management and funding under DoD and pressed for increased use of appropriated funds over private financing for construction. Twenty years later, however, the services regained responsibility for housing programs and Congress approved several new third-party financing plans.

One program (called Section 801) had the services signing 20-year lease/purchase deals with developers. Another (Section 802) required them to guarantee 97 percent occupancy or subsidize payments. A third (Title 10) let the services lease government lands to builders with no rental guarantees and service members lease the quarters from the developers.

### **A Different Tack**

None of these recent privatization efforts bore much fruit, largely because they demanded an overly large commitment from the services, and developers saw little prospect of profiting from their investments.

Col. David A. Sweat, chief of USAF's Competitive Sourcing and Privatization Division, said the new privatization approach is different in a number of respects. For example, it allows existing government housing to pass into private hands.

Congressional legislation enacted in 1996 authorized the transfer of military family housing to private ownership, Sweat said, and that includes the operation, maintenance, and management of the housing. "At Lackland, we are leasing the land, and the units will be owned by the developer," said Sweat.

Often, added the colonel, developers may decide that the existing housing they have inherited is hopeless and start over from scratch.

Currently, the Air Force has 10 housing privatization initiatives in various stages. The approaches are all different, Sweat said. At Lackland, the Air Force conveyed part of the housing, but the developer will replace those units and build some other new ones, too. At Dyess AFB, Texas, USAF is looking for a deficit reduction with all brand-new units, about 402 of them for junior enlisted people. At Robins AFB, Ga., the proposal is to tear down and replace 370 units and renovate 300, for a total of 670 units.

"It all depends on the condition and where they are," said Sweat. "Generally, we would put an option in there and say, 'If you want to tear down and replace the units in lieu of renovation, we will consider that as an enhancement to the deal and look at it from that perspective.'"

The real advantage of privatized housing, according to Sweat, can be seen in the Lackland case.

"When we started out, we were going to build 149 units and we had \$17 million of authority to do that," he said. "When we ended up, we now have a project for 420 units and the government contribution is \$6.3 million. So, we are getting roughly \$42 million worth of construction now, vs. having to schedule it in increments over the next maybe 10 years to get all the military construction authority. That is an 8-to-1 leverage of our available dollars to get our people into quality housing."

Compared to earlier days, USAF will underwrite less construction and maintenance, officials said. The onus will be on developers to make the projects profitable. Air Force housing offices still will refer members to the housing, but it will be up to the developers to make the quarters attractive enough to attract paying customers.

### **Disaster Insurance**

Officials concede, however, some projects will need more than the assured renters to attract civilian builders. After four rounds of base closings, some developers may be concerned that they could be stuck with units they can't fill because the host base has disappeared.

Officials say there is no way to predict whether another round of closings will happen or what bases it could affect, but the Air Force does



*This photo, from the late 1960s or early 1970s, shows enlisted barracks at MacDill AFB, Fla. USAF now plans to put most enlisted members in private rooms.*

have ways to sweeten the contract deals for nervous developers.

"There are many authorities available to us, depending on the project," said Sweat. "We could offer loan guarantees in areas where there is little demand for additional rental housing in the local economy. At a location such as Patrick AFB, Fla., you may not need any guarantee. It's near a beach, the climate's nice, and the economy is booming, so there is a high demand for housing. In Mountain Home, Idaho, however, you might have to offer a loan guarantee because there is not a secondary market to absorb the housing if we got a base closure or reduction."

Under past housing programs, the Air Force also promised developers that, if less than a given percentage of quarters were occupied, it would make up the difference in lost rents. Under the new program, the approach is different.

"We do not guarantee the actual rent," said Sweat, "but, if a house is vacant for 90 days and the occupancy rate is below 95 percent, we will allow the developer to go to another category of renters. He would go first to single military members and then to Guard and Reserve personnel. After that, he could go to DoD civilians, then to contractor personnel that work on the base, and finally to the civilian populace.

"If he did rent to a person who is not a military member, however, we would limit that to a one-year lease

and charge a fair market rent, which is generally higher."

It is unlikely that the Air Force will face a lack of applicants for base housing. Even when base housing is in poor condition, waiting lists exist.

"There are many reasons families want to live on base, rather than off base," said Smith, "but one of the primary ones is economics. If you live on base now, there is no out-of-pocket expense. The member forfeits his Basic Allowance for Housing and then he gets a house, [and] his utilities are paid. Often the family can get by with just one vehicle. If you are a lower-ranking individual, either officer or enlisted, that can be a significant factor.

"So, the attractiveness of privatized housing is that our troops will give up their Basic Allowance for Housing just as they would if they were living in government-owned housing. So nothing would be coming out of their pockets. With off-base right now, you are looking at about a 20 percent out-of-pocket expense."

### The Single Life

While the Air Force is counting on privatization to be the long-range answer to its family housing problems, it already is touting its new approach to enlisted quarters as a resounding success.

The solution, officials say, is the "1+1" dorm, a unit in which each airman has a private room and shares a bath and kitchenette with one other.

"The No. 1 concern voiced by our unaccompanied airmen in dormitories in some surveys has been privacy," said Smith. "So we have endorsed the DoD initiative to move to the 1+1 standard."

From Fiscal 1996 through Fiscal 1999, the Air Force invested almost \$1 billion in construction and renovation.

This has allowed the Air Force to achieve the first objective of its three-part investment strategy—to eliminate all central-latrine dormitories for permanent party personnel. Once the Fiscal 1999 projects are completed, the Air Force no longer will have central-latrine dorms for permanent party personnel. It will retain some for basic trainees.

According to Smith, the Air Force will also move to eliminate its room deficit and renovate or replace its very worst dorms. It expects to achieve success in both areas in 10 years.

Like the master plan for family housing, however, the one for dormitories is subject to revision.

"It's a living document," said Smith. "The Air Force is changing, the latest change being the move toward expeditionary forces. We're also seeing competitive sourcing, where sometimes a function will be contracted out. Then we lose the GIs assigned to that organization and our requirement for room space goes down."

Against such possibilities, the 1999 version of the dorm plan will try to anticipate force change and project requirements several years in the future.

### The Allowances

While the services have been re-vamping their approaches to housing both married and single members, they also have been reworking their systems for paying quarters allowances in an effort to match them more closely to local housing prices.

In January 1998, Congress approved a new BAH. It combined the old quarters allowance with the cumbersome Variable Housing Allowance that the services have used in areas with higher living costs.

The aim now is to gear allowances to the actual prices of housing rather than to what members reported paying under the VHA system. The Air Force is using Runzheimer Interna-

tional, a private research group, to develop the local housing data.

"They use a combination of methods," said Maj. Justo Rivera, chief of USAF's pay and allowances policy. "HUD [the Department of Housing and Urban Development] supplies figures and Runzheimer goes out and makes actual surveys. They contact local realtors, check newspaper ads, and do on-site surveys.

"They look not only at rental costs but at utilities and things such as homeowner's insurance. The allowance is geographically based and varies by grade and dependency status. We believe it is more responsive to the increase of housing costs than the previous system."

Many members eventually will see sizable increases in their housing payments. Since the BAH system is being phased in over a six-year period, however, the raises will come in modest increments.

At the same time, members in areas where USAF finds they were being overpaid under VHA will not suffer immediate cuts. A rate-protection provision of BAH allows them to collect the higher of the two allowances for their areas unless they are demoted, reassigned, or have a change in dependency status.

One virtue of the new program, officials say, is that it will eliminate what has become known as the "death spiral." Under the old VHA system, some members chose to move into inadequate housing to save money. Then, when they reported their expenses on VHA surveys, their allowances were reduced. Because the BAH system bases rates on costs in an area rather than expenditures, this should not happen in future.

Like the old system, however, the new one still will not cover all the costs of housing. At best, officials say, it will make the out-of-pocket costs (known as the "absorption rate") more nearly equal across the force.

"The aim is that everyone in the same grade and dependency status will have about the same expenses after the transition period is over," said Rivera. "A technical sergeant assigned to the D.C. area will pay the same out-of-pocket amount as a tech sergeant in San Antonio or any other location in the US."

Officials concede that members probably will face some out-of-pocket costs for housing for the fore-



**USAF's housing units average 35 years old—which has prompted a renewed focus on privatization of family housing and a reworking of the BAH.**

seeable future, but they hope eventually to bring them down as well.

The Air Force's most recent housing survey showed that, on average, members were paying about 20 percent more than their allowances for quarters. Congress has pegged the reasonable difference at 15 percent.

"Through the transition period," said Rivera, "you will have some locations where the housing costs will be higher and some where the members will be closer to the Congressionally intended 15 percent, but I believe that, overall, it is a more effective system and it is more reactive again to the high cost of housing. When the transition is over, however, we hope to find ways of reducing the absorption rate to 15 percent for everybody. That's one initiative we're looking at right now."

The Air Force's quality-of-life surveys have found that much of the housing that USAF members could afford was too far from bases, poorly maintained, or in undesirable neighborhoods. The BAH surveys try to avoid such locations.

Rivera said that the Runzheimer consultants look at where members live now and at the housing of civilians with comparable salaries. They also look at quality-of-life elements such as crime rates and school op-

portunities and try to eliminate those sectors that people have avoided.

While much of the Air Force's attention has been focused on improving the housing picture in the continental US, parallel efforts are under way overseas.

USAF surveyed its 26,000 family units in non-CONUS regions and found many need renovation or replacement. Under present authority, however, privatization is not an option outside of the US, and the Air Force must use traditional construction funds and O&M funds to improve the situation.

Many overseas dorms also need attention but, here, the concern is not only for privacy but for better force protection. Air Force policy generally is to require only single enlisted troops in grades E-1 through E-4 on base, but incidents such as the bombing of Khobar Towers in Saudi Arabia have prompted USAF to bring higher grades on base as well. This increases the need for quarters.

The services also have adopted a single OHA to bring payments more in line with actual costs for rent and utilities. As in the US, changes in overseas allowances will mean lower stipends for some families. The overall aim is to make payments equitable and realistic. ■

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*Bruce D. Callander, a regular contributor to Air Force Magazine, served tours of active duty during World War II and the Korean War. In 1952, he joined Air Force Times, serving as editor from 1972 to 1986. His most recent story for Air Force Magazine, "First Class," appeared in the June 1999 issue.*

**Fifty years ago, Congress shifted power from the services to the Office of the Secretary of Defense.**

# The Quiet Coup



# of 1949

By Herman S. Wolk



*Amendments to the 1947 National Security Act eventually resulted in a highly centralized national defense bureaucracy.*



*The drive to amend the 1947 National Security Act came during struggles with a limited defense budget, rising international tensions, and debates over roles and missions of the Air Force and Navy. In a moment of celebration amidst these events, (l-r) retired Lt. Gen. Jimmy Doolittle—then AFA president—Lt. Gen. Hoyt Vandenberg, Maj. Gen. Lauris Norstad, and Stuart Symington, soon to become the first Secretary of the Air Force, watched President Truman sign the August 1947 proclamation of Air Force Day.*

**T**HE passage of the National Security Act of 1947 was a landmark in the organization of America's military establishment. However, it was a series of little-known 1949 amendments to the act that decisively shaped the character and organization of the military for the next half century.

August 1999 marks the 50th anniversary of the creation of those amendments, which took power from the military services and vested it in the Office of the Secretary of Defense. Moreover, the amendments started a series of legislative initiatives in the 1950s which subsequently turned America's defense establishment into a massive, highly centralized bureaucracy.

The drive to amend the National Security Act of 1947 occurred in the wake of James V. Forrestal's first stormy months as Secretary of Defense, months which were distinguished by a bitter roles-and-missions struggle between the Air Force and the Navy. During the contentious years 1946-47, with the debate over national security legislation raging, Forrestal succeeded in achieving the Navy's goal of making the Secretary of Defense a coordinator rather than a true administrator.

The 1947 act gave the United States Air Force its long-sought independence, but it failed to give the Defense Secretary sufficient authority over the National Military Establishment. The fledgling Air Force had fought for more authority for the Sec-

retary because it believed he would be ineffectual without it. Moreover, USAF judged that a strong Secretary would support its claim to the strategic atomic bombing mission.

### Third, Third, Third

Two factors caused tempers to flare. First, the Truman Administration was determined to hold the defense budget to about \$13 billion a year, a relatively low amount. Second, Forrestal believed that sustaining a "balanced" force of land, air, and sea components required the US to split the tight budget into three nearly equal portions. This intensified the roles-and-missions struggle. The Navy thought it was in danger of losing its air arm to the Air Force. The Air Force was convinced that the Navy was attempting to build a strategic air force of its own.

This rancorous battle was played out in the context of deepening Cold War tensions. The Soviet Union had set up puppet governments in Eastern and Central Europe, prompting former British Prime Minister Winston Churchill's famous 1946 comment that an "Iron Curtain" had fallen across the European continent. And in June 1948, provocative Soviet moves forced the Western Allies to mount the Berlin Airlift to keep the city free and functioning.

Thus, international tensions took center stage. Even so, the first Secretary of the Air Force, Stuart Symington, had been perturbed from the start that Forrestal had simply moved his staff from the Navy De-

partment into the Office of the Secretary of Defense. In a letter to Forrestal, Symington charged, "Nobody who ever served a day in the Air Force was a member of your permanent top staff."

Another criticism came from Air Force Reserve Brig. Gen. W. Barton Leach, the Harvard Law School faculty member who, in 1949, would organize the case for the Air Force during the Congressional B-36 investigation. Leach noted:

"These [OSD] civilian officials are not prejudiced against the Air Force, nor are they unwilling to learn. But an instinctive understanding of Air Force problems is not in their blood; they do not naturally seek the association of Air Force people; and when the chips are down it too often happens that the Air Force gets the short end of these very important decisions that are controlled by the staff of the Secretary of Defense. ... For the most part, OSD has been staffed with able men. But ability is not enough. A Supreme Court comprising the nine ablest lawyers in the country would not be acceptable if it turned out that all nine came from Wall Street firms."

Symington had thought all along that the 1947 act should only be the first step in reorganizing the nation's military, and he thought that there would ultimately be a price to pay for having a Secretary of Defense who was merely a coordinator rather than a strong administrator. In the summer of 1948, he informed Clark Clifford, Truman's assistant, that "it



is now my considered opinion that the present National Security Act must be changed in order to work.”

Forrestal thought that he could operate effectively as a coordinator. However, he now found himself unable to deal with interservice disagreements over allocation of resources and the assignment of responsibility for numerous programs. He lacked decision-making authority and had badly misjudged the intensely divisive character of the issues. On top of this, he and his staff found themselves overwhelmed by the sheer magnitude of the work before them.

### “Dead Cats”

In a moment of grim humor, Forrestal predicted, “This office will probably be the greatest cemetery for dead cats in history.” The official OSD history concludes that “one of the most painful experiences of Forrestal’s public career was reluctantly concluding that the statute he had done so much to engineer contained serious defects.”

In early 1949, Gen. Dwight D. Eisenhower (USA, Ret.) noted that Forrestal was “obviously most unhappy.” Eisenhower said, “At one time, he accepted unequivocally and supported vigorously the Navy ‘party line,’ given him by the admirals.” Now, Eisenhower judged, Forrestal trusted the Army’s leadership more than the Navy’s.

As early as February 1948, Forrestal expressed serious reservations about the National Security Act. In a report to Truman, he indicated a need for a deputy and emphasized the debilitating effects of interservice rivalry.

Forrestal also tried to act through former President Hoover’s Commission on Reorganization of the Executive Branch, of which he was a member. In May 1948, he arranged for close friend Ferdinand Eberstadt to head the commission’s National Security Task Force. Symington informed Eberstadt in October 1948 that “we have had a year of unification directed toward obtaining ‘more security for less money’ and are more convinced than ever of the importance of putting more authority in the hands of the civilian head of the National Military Establishment, the Secretary of Defense, and also streamlining and concentrating the military authority under him.”

Forrestal told Eberstadt’s group that the truly enormous workload was swamping OSD’s ability to cope. In December, in his first annual report, Forrestal recommended appointment of an undersecretary of defense and augmentation of the Joint Staff. Moreover, he called for removing the service secretaries from the National Security Council. Finally, he asked that his office be given more authority; specifically, he asked Congress to drop the word “general” in describing the nature of his control over the three military departments.

Gen. Carl A. “Tooe” Spaatz, the first Chief of Staff of the Air Force, contended that the National Security Act needed fixing to enable the Defense Secretary to be “in control of the Department of National Defense and the component parts thereof.”

Spaatz argued, “The safeguards placed by law to protect an individual service are an anachronism that dates from the days of sailing vessels. Any attempt to temporize with this situation by further adherence to outworn and overworked traditions will not only pyramid the costs of our national defense establishment but will be disastrous in the event of war.”

Spaatz believed that Forrestal was, in fact, overburdened. The remedy, he maintained, would be to provide the Secretary with assistant secretaries. The right of appeal of the service secretaries to the President

and the Bureau of the Budget should be abolished, he went on. Moreover, Spaatz argued that the Pentagon leader should have a military chief of staff as a top advisor and that the Joint Chiefs of Staff should be abolished along with the service secretaries. The military heads of the services would be designated as commanders, and the Secretary of Defense would serve as the only military representative on the National Security Council.

### Vandenberg and Norstad Weigh In

Spaatz was succeeded in April 1948 by Gen. Hoyt S. Vandenberg. Several months later, in June 1948, the new Air Force leader testified before the Eberstadt group, which had been chartered to determine how to make the defense establishment more efficient. Vandenberg, like others, emphasized that Forrestal possessed neither sufficient authority nor adequate staff. Lt. Gen. Lauris Norstad, USAF deputy chief of staff for operations, agreed with Vandenberg and noted that the Secretary of Defense simply did not have the staff to properly discharge his duties.

Norstad said, “The Secretary needs high-caliber assistant secretaries who are important all-around-capable people, not just experts along narrow lines.” Norstad also proposed a military staff for the Secretary, one that would be headed by “a top military man who would sit on the JCS



*Vandenberg, being sworn in here as USAF Chief of Staff in 1948, was among those who believed Defense Secretary James Forrestal (at far left) needed more authority and a more effective Joint Chiefs of Staff.*

and carry its decisions to the Secretary of Defense."

Moreover, according to Norstad, the right of appeal of the department secretaries up to the President—over the head of the Secretary of Defense—"should be struck out since it tends to destroy the Secretary's authority."

Both Vandenberg and Norstad favored abolishing the position of the President's chief of staff (held during the war by Adm. William D. Leahy) in favor of giving the Secretary a top military person to resolve differences between the services.

With a weak Secretary and an ineffective JCS, it was difficult to break deadlocks within the Joint Chiefs. The Chief of Staff charged, "The Joint Chiefs of Staff is not effective as a top-level military authority. The reason is that this body does not have at its head an officer who has the authority and responsibility of decision—and can arrive at decisions only by unanimous vote—which is another way of saying that each service has an absolute veto power such as exists in the Security Council of the UN. No other agency of American government is expected to exercise authority under the handicap of such a system."

Vandenberg noted that the Joint Chiefs were under substantial pressure to reach agreement—"some agreement, any agreement." He did not believe this approach to be sound. "The country," he said, "is entitled

to expect from its military leaders right decisions in the national interest, not merely agreements which represent the best deal that can be made among the three armed services."

#### "Man on Horseback"

Meanwhile Navy leaders continued to emphasize that they feared excessive power in the hands of the Secretary of Defense, claiming it could produce the much-feared "man on horseback" style of leadership. John J. McCloy, president of the World Bank and advisor to Eberstadt, noted that the man on horseback argument usually was advanced by "those who themselves seek unfettered power."

McCloy asserted, "I doubt whether we need fear the man in uniform in this regard any more than the man or men in civilian clothes to whom we have given far greater authority."

As to the argument that change should proceed gradually, McCloy told Eberstadt that "the condition of the world today demands that our military establishment be put in order right away."

In its final report to the Hoover Commission, Eberstadt's task force recommended strengthening the Defense Secretary's authority, increasing his staff, and appointing a full Chairman of the Joint Chiefs of Staff. Truman got behind the drive to revise the National Security Act, and the commission in early 1949 went

on record in support of placing more power in the Office of the Secretary of Defense.

Within the Administration, there were voices—some of them in the Bureau of the Budget—that called for Congress to go much further in the direction of downgrading the military services, but they did not prevail.

Meanwhile, Forrestal had begun suffering deep mental distress of a clinical nature. He had resigned under pressure in March 1949 and was replaced by Louis A. Johnson, a former assistant secretary of war and fund-raiser for Truman's 1948 campaign. Forrestal had wanted to remain at his post for a few more months, but Truman asked for his resignation, having become aware that Forrestal had turned increasingly indecisive and appeared to be racked with tension and fatigue.

Forrestal, in fact, was suffering a mental breakdown. Some maintain that he was victimized by the combination of holding an office with great responsibility and insufficient authority.

After relinquishing his post, Forrestal entered Bethesda Naval Hospital, where, on May 22, 1949, he plunged to his death from the hospital's 16th floor.

Johnson strongly supported the Administration position on amending the National Security Act, as did the Army and the Air Force. The Navy and Marine Corps remained reluctant, however, with Gen. Clifton B. Cates, the Marine commandant, arguing that the legislation would confer "entirely too much power" on the Secretary of Defense.

In the summer of 1949, during hearings on the amendments, Johnson clashed with Rep. Carl Vinson, the powerful Georgia Democrat who chaired the House Armed Services Committee. Vinson emphasized that, in his opinion, the position of the Secretary was sufficiently strong already. Johnson retorted: "I think the security of the nation can't be adequately protected without having this additional authority. I think secondly that it is going to cost the defense establishment more than our economy can bear unless we have this law."

Vinson attempted to delay the legislation by suspending hearings—his committee was gearing up to in-



USAF and the Army supported amending the National Security Act, but the Navy and Marine Corps were reluctant. Army Chief of Staff Gen. Omar Bradley (right) and the CNO Adm. Louis Denfeld joined Vandenberg for this photo.

investigate procurement of the B-36 bomber—but Truman reacted by transmitting his plan (Reorganization Plan No. 8) to Congress first. It passed both houses, and Truman signed it into law Aug. 10, 1949.

### Total Authority

The National Security Act Amendments of 1949 converted the National Military Establishment into the Department of Defense, making it an executive—or cabinet level—department and downgraded the services from executive to military departments. In addition, the Secretary of Defense gained total “direction, authority, and control” over the entire department and became the “principal assistant to the President in all matters relating to the Department of Defense.”

Although the service secretaries would still administer their respective departments, they would be under the complete direction and control of the Secretary of Defense. Departmental secretaries also lost their previous statutory right to make recommendations directly to the President or the budget director. However, the secretaries could make recommendations to Congress. Also importantly, the secretaries would no longer be allowed to represent their departments on the National Security Council.

The undersecretary of defense was given the rank of a true deputy secretary with the authority, when required, to act for the Secretary of Defense. The three special assistants to the Secretary were elevated to assistant secretaries.

Several changes were made in the composition of the Joint Chiefs of Staff. Leahy’s position of chief of staff to the President, a holdover post from World War II, was abolished and Congress authorized the appointment of a full-time Chairman of the Joint Chiefs. The JCS Chairman would hold rank senior to all other officers and advise the President and the Secretary of Defense. However, Truman’s recommendation to allow the JCS a joint staff of indeterminate number was rejected. Con-



*Symington thought the 1947 act should only be the first step in reorganizing the US military. Passage of amendments to the act didn't resolve issues between the services but did bring stability to the defense establishment.*

gress agreed only to increase the staff from 100 to 210.

The 1949 amendments also gave the Secretary more control over the Munitions Board and Research and Development Board.

### “Crybabies in the Niches”

This 1949 legislation marked a critical turning point in US military organization away from decentralization toward a highly centralized national defense bureaucracy. “We finally succeeded,” Truman noted, “in getting a unification act that will enable us to have unification, and as soon as we get the crybabies in the niches where they belong, we will have no more trouble.”

At the time, many interpreted the President’s comment as a slap at Navy and Marine leaders who had opposed unification and remained unreconstructed.

The Air Force and the Army understood that Forrestal’s concept of the Secretary as coordinator had failed and resulted in confusion if not chaos in the defense establishment. The Secretary, bereft of requisite authority, could not make decisions.

Just ahead lay stunning events that would test the new defense setup. Truman announced on Sept.

23, 1949, that the Soviet Union had detonated an atomic device; the American monopoly was broken, with great emotional and political effect in the US. Symington became increasingly disturbed at what he viewed as the Administration’s inaction in the wake of the Soviet atomic explosion.

“It is the psychological tendency of humans,” he wrote to Johnson, “to become used to danger. So far as this reduces the effects of fear, it is good. So far as it leads to discounting danger and failing to provide against it, it can lead to disaster.”

Frustrated by his inability to convince the Administration to build up the Air Force, Symington resigned to take the helm at the National Security Resources Board, just two months prior to the onset of the Korean War in June 1950.

The passage of the amendments did not resolve deep-seated issues between the services. However, the outbreak of war in Korea led to a great expansion of the defense budget and relief from the funding pressure that had stoked interservice rivalry.

The 1949 amendments brought a measure of stability to the defense establishment. The structure has always been imperfect. Today, the challenge to US leadership is to keep the military establishment fine-tuned in a period in which the US has undertaken vast new international responsibilities. ■

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*Herman S. Walk is senior historian in the Air Force History Support Office. He is the author of The Struggle for Air Force Independence, 1943–1941 (1997) and a co-author of Winged Shield, Winged Sword: A History of the United States Air Force (1997). His most recent article for Air Force Magazine, “When the Color Line Ended,” appeared in the July 1998 issue.*

# The Race for the

**I**N World War I, Germany's high-flying zeppelins gave the Allies a shock. They posed a new bombing threat and generated the need to be able to fly and fight at great altitudes. The giant airships would glide to their targets at 20,000 feet, a level at which few airplanes—and even fewer pilots—could operate well. By war's end, it became only too clear that military aviators would have to go far higher than anyone had ever expected.

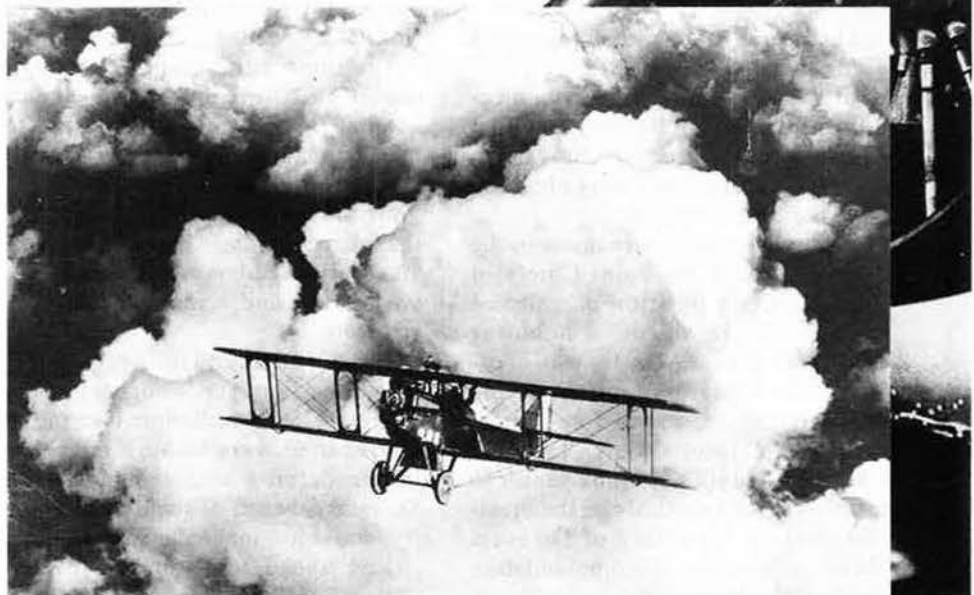
In the postwar race to high altitude, the US at first set the pace. Its pilots and aircraft produced world records almost at will, with little serious foreign competition. The path was blazed by the likes of Army Maj. Rudolph Schroeder, who reached 33,113 feet in 1920, and Army Lt. John A. Macready, who soared to 34,449 feet in 1921. [See "Pioneers at High Altitude," April 1991, p. 88.] The US capped a decade of success when, in 1930, Navy Lt. Apollo Soucek set a new world mark of 43,166 feet.

However, that would prove to be the last US record for some time. Shortly after Soucek's accomplishment, the US abandoned its high-altitude work. The Great Depression brought harsh austerity, and aeronautic experimentation withered. Except for the landmark work of Wiley Post [see box, p. 85], the decade-long race for the stratosphere was a European show.

Actually, the future had been pre-imagined in 1929. Germany's Willi Neuenhofen set a short-lived world altitude record in a single-engined Junkers W 34, though Soucek soon shattered that mark.

## Europe's Assault Begins

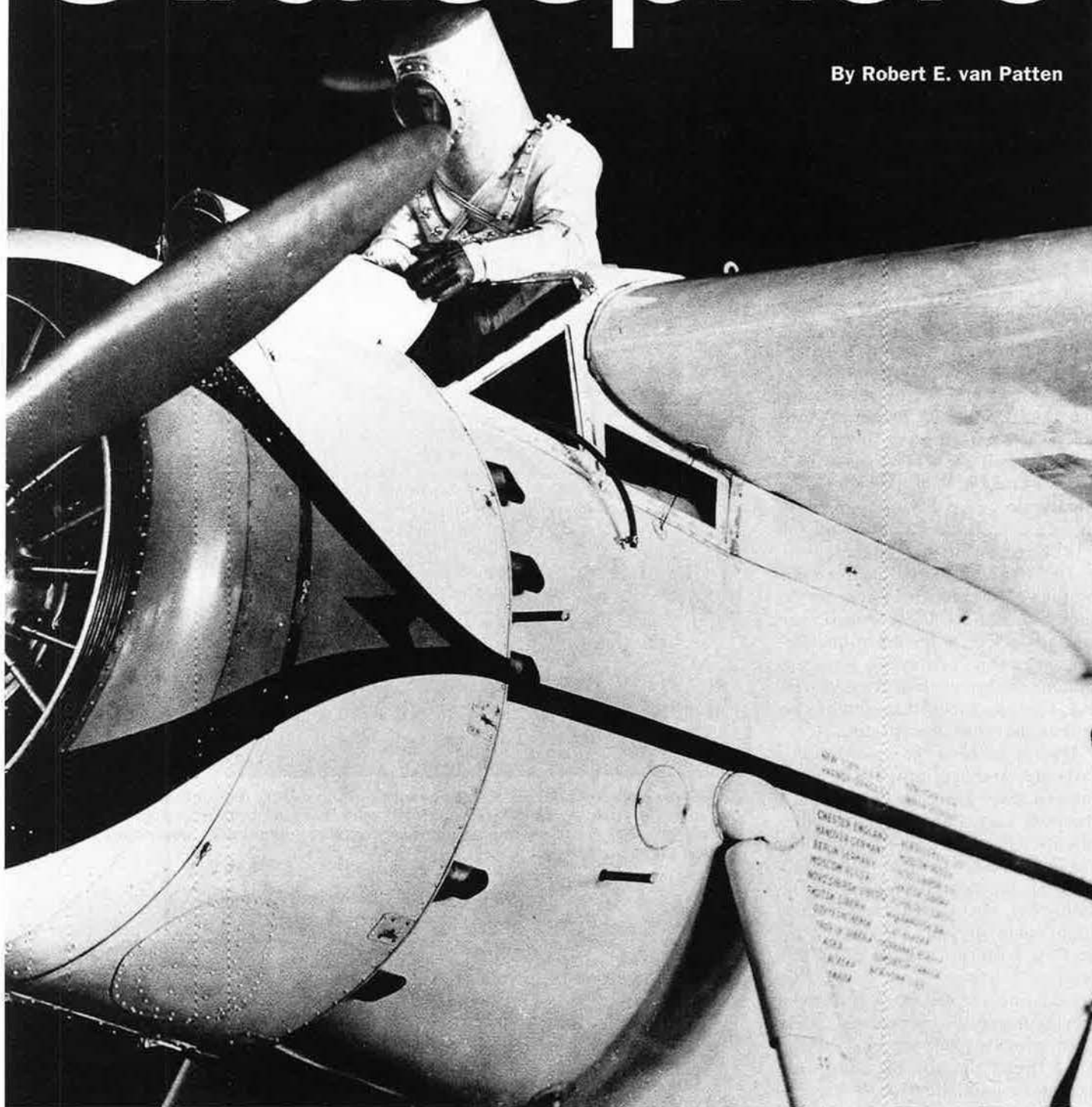
By spring 1932, the European surge was about to begin. Rumors swirled about a secret Royal Air Force as-



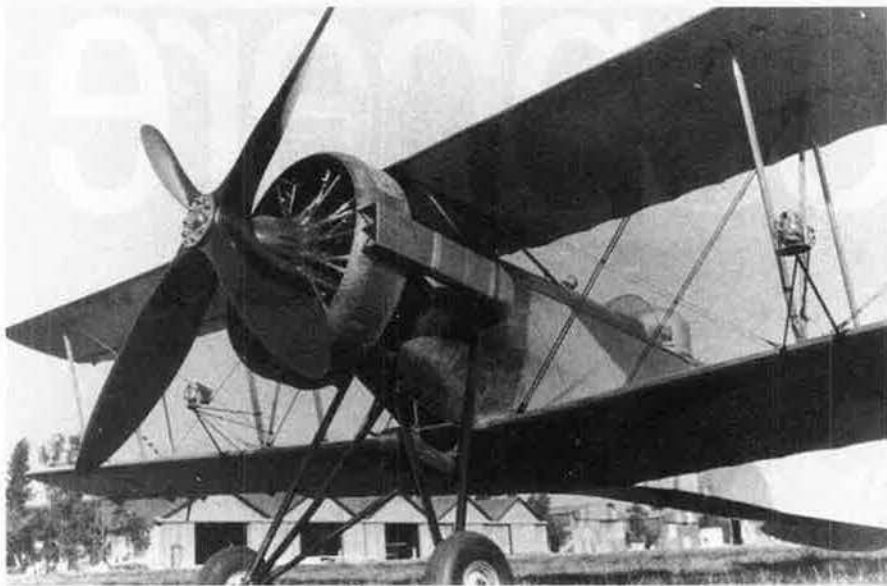
World War I underscored the need to fly higher, leading Maj. Rudolph Schroeder and Lt. John Macready to altitudes in a LePere biplane (above) that set new records. Reaching for even higher altitudes soon spurred development of pressure suits, such as the one Wiley Post (above, right) helped develop in the 1930s.

# Stratosphere

By Robert E. van Patten



**Between the wars, airmen ran enormous risks to take piston-powered airplanes above 50,000 feet.**



sault on Soucek's record. Cyril F. Uwins, Bristol Aircraft's chief test pilot, already had made several unsuccessful attempts to better Soucek's mark, all of them flown in an open-cockpit Vickers Vespa VII biplane. And on Sept. 16, 1932, he finally succeeded. Flying from Filton in England, Uwins notched up the altitude record to 43,976 feet.

The British aviator used a continuous-flow oxygen system modified to provide 100 percent oxygen at rates selected by the pilot. Because the flow of oxygen was continuous, however, half was wasted, thus limiting use of this kind of system to short duration flights.

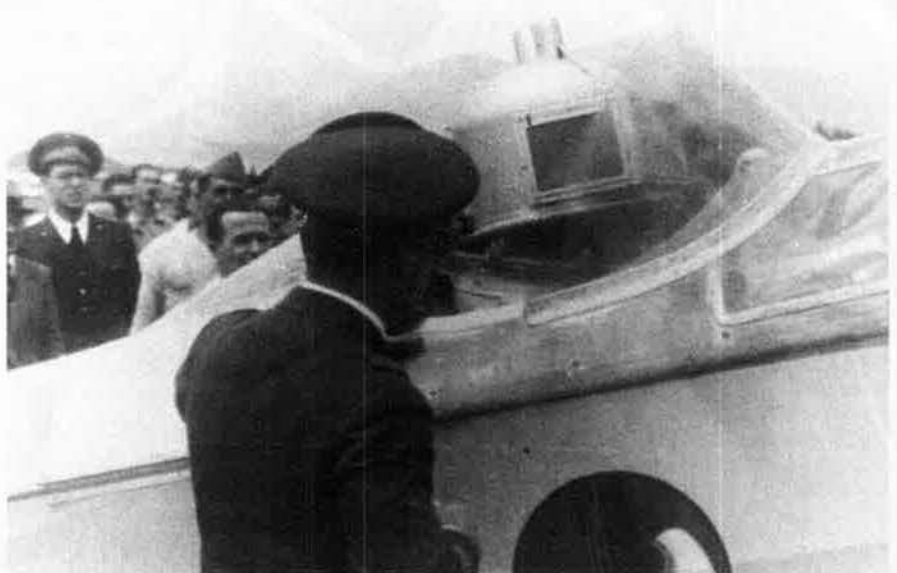
Uwins' hold on the record didn't last long. Another European, Frenchman Gustave Lemoine, surpassed it the next year. Lemoine, flying in a modified Potez 50 aircraft, got within range of the Uwins record in 1932, but success did not come until the following year. Lemoine's record flight came on Sept. 28, 1933, when he flew up to an altitude of 44,808 feet.

Lemoine's Potez 50 was derived from a military design that was widely known for its speed records. For the 1933 flight, the aircraft underwent extensive modifications—for example, the upper wing was extended seven feet. Power came from a modified Gnome Rhone engine with a three-bladed propeller optimized for high altitude. Single-stage supercharging enabled the engine to develop 800 hp at 13,120 feet.

In his personal account of the

flight, Lemoine emphasized that his cockpit was not pressurized; he was protected from the cold only by his windshield and by an electrically heated flying suit. His face was shielded by two items: a chamois balaclava worn under his fleece-lined leather flying helmet and his oronasal oxygen mask.

Lemoine started using oxygen at 10,000 feet and, at 33,000 feet, he started using a high flow of oxygen. To survive for more than a short time at his peak altitude, he must have been using some form of positive-pressure breathing system. Lemoine, in fact, had conducted a great deal of experimentation in an altitude chamber in order to develop and refine his oxygen equipment.



*The Europeans set several altitude records in the 1930s, two of them in a Caproni 161 flown by Lt. Col. Mario Pezzi, who reached more than 50,000 feet. In both photos, Pezzi wears an aluminum pressure helmet with electrically heated glass ports.*

### The First Pressure Suit

The idea for a pressure suit was outlined in 1920 by the renowned British physiologist John Scott Haldane.

Haldane noted that flight above 40,000 feet would require enclosing the pilot in an airtight suit, one which would be able to maintain a proper pressure no matter what the ambient atmospheric pressure.

Haldane's idea came to the attention of an American balloonist, Mark Ridge, who corresponded with its author on the construction of such a suit.

Haldane passed the letter to Robert Davis at the firm Siebe Gorman, which adapted one of its self-contained sea diving suits for the purpose. It was tested at a pressure altitude of 90,000 feet, and it performed perfectly.

No detailed records exist, but this test almost certainly was carried out without a human subject in the suit.



### Wiley Post Sets a Standard

In the 1930s, famous American aviator Wiley Post convinced the Army Air Corps and B.F. Goodrich Co. to lend support to his effort to develop a full pressure suit.

Post wanted to use the altitude chambers at Aeromedical Laboratory at Wright Field, Ohio, to develop a rubber suit that would enable him to operate in an atmosphere of about 12 pounds per square inch absolute. This is equivalent to between 5,000 and 6,000 feet.

Post went on to state that he anticipated flying at altitudes at which the ambient pressure would be as low as five pounds per square inch absolute—equivalent to nearly 30,000 feet.

On Sept. 5, 1934, Post flew his aircraft comfortably at an altitude of 40,000 feet. During this flight, his full pressure suit maintained his suited environment at a pressure altitude of 5,500 feet.

On Dec. 7, 1934, everything was finally ready for Post to attempt to set a new world altitude record. The existing mark—47,352 feet—had been set eight months earlier by Renato Donati.

Post apparently reached an altitude of more than 50,000 feet. Unfortunately, however, he was denied the record because the two mechanical barographs (pressure/altitude recording devices) installed in the aircraft did not agree within the narrow margin prescribed for validation of an altitude claim.

In any case Post's use of liquid oxygen and a fully mobile pressure suit set a benchmark for all subsequent pressure suits, including space suits.

Soon afterward, he died in an aircraft crash with a famous passenger, humorist Will Rogers.

It is clear that Lemoine well understood the hazards of flight above 40,000 feet. As an aid to pilot survival, the Potez 50 had a safety system incorporated in the joystick; it required the pilot to maintain a grip on the stick. If he lost consciousness, the system would put the aircraft in a controlled descent automatically and increase oxygen flow. Lemoine's flight produced the conviction in the French aeromedical community that sustained operations at altitudes above 36,000 feet would require either pressure suits or pressurized cabins, or both.

### Italy Steps Up

Before long, Italian military aviation entered the high-altitude competition. The Regia Aeronautica (the pre-World War II Royal Italian Air Force) had produced many fine aircraft and pilots, but it had never seriously pushed for records.

That all changed April 11, 1934. On that day, Italy claimed a new world altitude record of 47,352 feet. Cmdr. Renato Donati established the new mark while flying his specially modified Caproni 113 AQ biplane. This was an aircraft with very-high-aspect ratio wings, using a large four-

bladed propeller and a supercharged British Bristol Pegasus engine.

Donati, suffering from hypoxia and frostbite, had to be helped from the open cockpit of the Caproni after his landing at Montecelio, Italy, airport. The media, in the wake of Donati's ordeal, noted the necessity for improved high-altitude life support equipment, especially pressure suits.

Meanwhile, in Soviet Russia, significant advances in high-altitude flying flowed from the exploits of the Polikarpov TsKB-3 version of the I-15 biplane. On Nov. 22, 1935, pilot Vladimir K. Kokkinaki flew the Polikarpov prototype to a record of 47,806 feet. However, the Soviet Union did not belong to the Fédération Aéronautique Internationale, the official keeper and arbiter of world aviation records, and the FAI never recognized this claim.

Contemporary reports of the flight make it clear that Kokkinaki's aircraft was an unpressurized, open-cockpit machine and that he had an oxygen apparatus specifically designed for high altitude, featuring a special oxygen mask. Nevertheless, Kokkinaki is quoted as having said, "Though my oxygen apparatus worked perfectly, it is not enough for the stratosphere. A single breath makes one realize this. Every movement requires great effort."

To lighten his aircraft, Kokkinaki took off with his fuel tanks only half-full. With full tanks, he might have attained an even higher record altitude. However, the pilot's head-to-foot fur flying suit could not have protected him from the biting cold at higher altitudes. That, coupled with the lack of positive-pressure breathing, probably would have been lethal.

In 1935, Junkers engineers developed yet another high-altitude research aircraft, designated Ju-EF 61. The designation EF probably was a special one used for purposes of secrecy. It is probable that the initials EF stand for the German phrase Entwurf Flugzeug (experimental aircraft).

The EF 61 was powered by two 950 hp Daimler-Benz 600 engines. An unusual feature was the two-place, full transparency cockpit forming the nose of the plane. The cockpit was in the shape of a cylinder which transitioned into a gently rounded bullet-nosed shape. This cockpit module was fastened to the remainder of the airframe by spherical rod end

ball-joints, which isolated any airframe stresses from the pressurized structure.

Two of these aircraft were built, one of which was destroyed in flight in September 1937. No data survives from testing on the other, which crashed in December 1937.

### Flight of Georges Détré

On Aug. 14, 1936, the world witnessed the last record high-altitude flight in which the pilot didn't wear a pressurized suit. The flier was Georges Détré, who flew the same Potez 50 used by Lemoine in his earlier record flight.

The aircraft, redesignated the Potez 506, was further modified by Détré. It had a different propeller and the absolute minimum of landing gear. At the outset Détré considered the use of a pressure suit, but he found that the one supplied for him was unbearably hot and therefore unusable.

Preparations were filled with difficulties. For example, the new propeller, nearly 10 feet in diameter, caused dangerous vibrations at cer-

tain airspeeds and altitudes. Only by chance did Détré discover the cause of the problem: In extreme cold, one of the blades began rotating in its hub, altering the pitch of that blade and causing unbalanced thrust.

A real threat to any attempt to fly the Potez 506 was its near-uncontrollability at low altitudes and normal temperatures. This flaw stemmed from slack in the wire cables operating the control surfaces. The cables needed slack to be able to withstand thermal contraction caused by the bitter cold

## Last Word in Propeller-Driven Records?

On March 31, 1995, Einar K. Enevoldson, a former NASA test pilot, flew the Burkhart Grob Strato 2C research aircraft to an unofficial world record for manned, piston-engine aircraft.

The altitude was 60,867 feet. Enevoldson's flight bettered Pezzi's 1938 record by some 4,000 feet.

The development of the 2C was underwritten by the German Federal Ministry of Research and Technology. Grob is well-known for building high-technology, high-performance sailplanes, and the 2C reflects that background. In layout, it is a monoplane of very-high-aspect ratio, resembling that of a U-2.

of high altitudes. The built-in time lag in aircraft control nearly resulted in several crashes.

Détré made his record attempt on Aug. 14, 1936. Wearing only the high-altitude clothing of that period and using the same dual-regulator oxygen system used by Lemoine, he reached a height of 48,698 feet.

Détré was lucky to have survived his unpressurized exposure at this altitude. He lost consciousness repeatedly, found himself overwhelmed with euphoria, and suffered a splitting headache of almost disabling intensity. After 20 minutes of deep gasping and zero gain in altitude, he descended with the new record.

He held it less than two months.

Earlier in 1936, RAF Squadron Leader S.R.D. Swain had presided over an escalation of high-altitude technology. Swain was given a full pressure suit and flew a closed-cockpit, low-wing Bristol monoplane with dual-intercooled superchargers, the second of which cut in at an altitude of about 30,000 feet. The lack of pressure independent joints made this suit very rigid; it was tailored to fit the pilot only in a sitting position. The suit's rigidity nearly cost Swain his life.

On the morning of Sept. 28, 1936, Swain took off from Farnborough, UK, in his big experimental Bristol 138A aircraft, a low-wing monoplane made entirely of wood and powered by a special version of the erstwhile Pegasus engine. Swain wore a full pressure suit which featured a closed circuit rebreather designed by the Instrument Department at the Royal Aircraft Establishment at Farnborough.

Swain's suit had two major parts which enclosed the head, trunk, arms, and legs; they were sealed together with an airtight joint at the waist. The breathing gas was oxygen, conveyed to the helmet by hose. The



### The XC-35

In 1935, the US Army Air Corps suddenly mandated a crash program to develop an aircraft with a pressurized cabin. This new turn of events may have stemmed from concern about the pace of activities abroad.

The result was a Lockheed twin-engine, low-wing monoplane, a variant of the Electra transport, called the XC-35, which had a pressurized cabin. Pressurization was accomplished mainly by reducing all windows to slits and plastering every crack and crevice with soft, sticky neoprene rubber tape.

The XC-35 aircraft was delivered to Wright Field, Ohio, in spring 1937, and, despite the slapdash approach to construction, it proved to be capable of maintaining cabin pressure at the level of 12,000 feet.



exhalation was then sent through a scrubber and put back into the suit atmosphere. Contemporary reports of this flight indicate that the closed cockpit was not pressurized.

Swain was struck by the awesome visibility from his high-altitude vantage point. At 45,000 feet and about 10 miles north of Brighton, he could see the entire coastline of England from Margate (on the Thames River estuary) southwestward to Land's End at the tip of Cornwall.

When Swain decided to descend, he throttled back into a glide. Sometime later in the flight, Swain experienced air-hunger and, assuming that he was running out of oxygen, slashed an opening in the double-layer Celastoid faceplate of his helmet with an emergency knife kept in cockpit. He didn't begin to feel normal until he had descended to 14,000 feet.

Swain was airborne for 3 hours and 20 minutes. When it was over, he had set a new altitude record of 49,944 feet.

The mark stood up for only a bit more than seven months.

On May 8, 1937, Lt. Col. Mario Pezzi of the Regia flew a Caproni 161, a variant of the type 113 used by Donati, to a new record of 51,361 feet. This aircraft, like its predecessor, was a very-high-aspect ratio biplane built mostly of wood. On this flight the big Caproni was equipped with the more powerful Piaggio XI R.C. 72 engine, an air-cooled double row radial with 14 cylinders, developing about 1800 hp at sea level. This engine swung a massive fixed-pitch four-bladed propeller.

At the time of his flight, Pezzi was commandant of the Italian High Altitude School, one of a number of special schools operated by the Regia Aeronautica. Also at that time, the students at this school were routinely flying daily at altitudes above 40,000 feet.

Like the English aviators, the Italians were fully aware that high-altitude flying had entered an arena in which some form of pressurization, either suit or cabin, had become a



**USAF Maj. Robert White (center) brought altitude records into the jet age 37 years ago this month, reaching 314,750 feet—marking the first spaceflight in a manned aircraft.**

necessity. Pezzi wore a special airtight, electrically heated pressure suit made of rubber and fabric reinforced with an alloy metal cuirass. The suit incorporated a very large aluminum pressure helmet which had electrically heated glass ports. Oxygen tubes fastened to the helmet provided breathing gas and pressurization. Contemporary accounts state that this pressure suit was sufficiently flexible to permit Pezzi to use his parachute in an emergency.

Pezzi's record survived for just under two months.

On June 30, 1937, Pezzi lost the title to RAF Lt. M.J. Adam, who hit a new record altitude of 53,937 feet. The Bristol 138A monoplane again was pressed into service. Adam also used the same pressure suit used by Swain.

According to an authoritative account, Adam received a severe jolt at maximum altitude. The top of the cockpit canopy split open with a bang loud enough to be heard above the engine noise and through the pressure helmet. This explosion was attributed to the high-pressure differential between the cabin and the ambient pressure at nearly 54,000 feet.

Shortly after his record-setting flight, Adam died in a crash near Cove. Apparently the RAF high-altitude program died with him, because the world's altitude record for piston-engine airplanes passed, once and for all (more or less), to the Italians in 1938.

Pezzi was a man not easily discouraged by setbacks. He returned to the high-altitude arena almost immediately after the shattering of his record by Adam. This time the Caproni 161 was superseded by the higher performance Caproni 161bis, also a biplane. On Oct. 22, 1938, Pezzi once again claimed the high-altitude laurels, setting a new record at 56,046 feet.

The jet age brought new altitude records. On July 17, 1962, Air Force Maj. Robert M. White, in a North American X-15 launched from a carrier aircraft, reached 314,750 feet, the first spaceflight in a manned aircraft. However, Pezzi's record for manned, piston-engine aircraft has stood for more than 60 years. In 1995, Einar K. Enevoldson flew a Grob Strato 2C to an unofficial record of 60,867 feet.

By the outbreak of World War II on Sept. 1, 1939, the world's aviation technology could support air combat at altitudes above 40,000 feet. Both the Allies and the Axis made good use of their capabilities, establishing the fact that, in war, the high ground definitely was the place to be. ■

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*Robert E. van Patten is assistant clinical professor at Wright State University School of Medicine, Dayton, Ohio. Until 1989, he was chief of the Acceleration Effects Branch of the Biodynamics and Bioengineering Division of Armstrong Aerospace Medical Research Laboratory. He is a consultant in aerospace medicine, life sciences, and accident reconstruction. His most recent article for Air Force Magazine, "Before the Flying Tigers," appeared in the June 1999 issue.*

# AFA / AEF National Report

By Frances McKenney, Assistant Managing Editor

## AFA's Online Community Debuts

The Air Force Association's Online Community—for members only—opened for business May 10. It is the latest step in the development of AFA's comprehensive web site.

Located in the Members Only section of the AFA web page—at [www.afa.org](http://www.afa.org)—the online community offers several main sections:

- An Online Directory, where AFA members can search for other members and update membership records. (Members may opt out of the directory by contacting the AFA Customer Service Department at 800-727-3337.)

- AFA Marketplace, offering secure online shopping with more than 40 merchants, some of whom offer discounts to AFA members and patrons. Participating companies include Amazon.com, jcrew, Omaha Steaks, eToys, and Uniglobe Travel.

- Career Center Services, with job and resume postings and career counseling.

- Message boards.

- Permanent e-mail registration, so an AFA member can set up an e-mail address with an AFA domain name (@member.afa.org) that will remain the same, though the member might change Internet service providers.

- Yellow and white pages search engines that will look for nonmembers as well as members.

- Calendar of that month's AFA events.

- An administrative section for such member services as changing passwords.

Two other sections are still under construction:

- PlanetAll, a popular online organizer for managing addresses, calendars, and contacts.

- Chat rooms offering guest lecturers and distance learning, as well as real-time chat with other AFA members.

AFA's web page debuted in September 1995 at the national convention. The Members Only section was up and running for the convention two years later. All of its content has now been folded into the AFA Online Community.



USAF photo by A1C Cindy Huston

*Chapter President Pat Condon presented \$1,000 from the Northern Utah Chapter to CMSgt. Theresa Love, 388th Fighter Wing command chief master sergeant and other wing personnel at Hill AFB, Utah. The donation will help the wing's morale and welfare projects. One of them is the "Diamond One" van in back, which provides refreshments to flight line personnel.*

Another service being added to AFA's home page is USA Democracy, located under a "Contact Congress" button. It allows AFA members to track legislation, register their opinions on bills coming up for votes, and e-mail their Congressional representatives.

The continued growth of the web site is part of the association's drive to add value to AFA membership.

### "Volunteer State" Convention

The Gen. Bruce K. Holloway Chapter hosted the Tennessee State Convention in early May in Knoxville, Tenn., with Maj. Gen. John H. Campbell, vice director of the Defense Information Systems Agency in Arlington, Va., as guest speaker for the awards banquet.

Campbell discussed the Expeditionary Aerospace Force implementation, recruiting and retention, and pilot retention.

He also spoke briefly on USAF activities in Operation Allied Force and his experiences as commander of the 31st Fighter Wing, Aviano AB,

Italy (from August 1993 to May 1995).

Campbell then joined William E. Freeman Jr., state president, in presenting awards. Dan F. Callahan III, president of the Maj. Gen. Dan F. Callahan Chapter, was honored as the state's Member of the Year, recognizing his leadership and role as mentor to AFA members.

Holloway Chapter member Herbert W. "Bill" Powley received the state Teacher of the Year award. His AFJROTC program at Unicoi High School in Erwin, Tenn., also received the award for Outstanding AFJROTC program.

Several other awards were presented, including one to SSgt. Christopher Murphy, 332nd Recruiting Squadron, Chattanooga, Tenn., as top Air Force recruiter for the central and east Tennessee regions. The award recognizes his reaching 183% of his recruiting goal. SSgt. Irwin Jones, 345th Recruiting Squadron, took home the award for the state's western region, where as top USAF recruiter, he had signed up 19 enlistees in a six-month period.



Holloway Chapter President Joseph E. Sutter and Russell L. Tucker were formally presented with a 1998 Exceptional Service Award and Medal of Merit, respectively.

During the business portion of the state convention, the next day, the following were re-elected to state office: Freeman, president; Nancy I. Blanchard from the Callahan Chapter, vice president; James C. Kasperbauer of the **Everett R. Cook Chapter**, treasurer; and George A. Vitzthum, Holloway Chapter, secretary.

#### Space Corridor in Alabama

He came close to canceling his appearance because of the flu, but Rep. Robert E. "Bud" Cramer Jr. (D-Ala.) made it to the Alabama State Convention in May. His keynote address covered plans to develop a space industry corridor from Tennessee to the southern flank of Alabama.

The **Tennessee Valley Chapter**, now headed by a new chapter president, Greg Schumann, hosted the gathering at the Space and Rocket Center of the Marriott Hotel in Huntsville, Ala.

During awards presentations, the **Montgomery Chapter** received the Outstanding Chapter in the State award, and its president, Frederick A. Zehrer III was honored with the Outstanding Member of the Year award. A special Alabama AFA State Proclamation went to Francis J. "Pat" Kramer Jr., **Mobile Chapter** president, for chapter leadership.

Auburn University received the award for Outstanding AFROTC Unit of the Year, and Jess Lanier High School in Bessemer, Ala., was selected as the state's top AFJROTC unit.

Alabama's new AFA officers are: Austin S. Landry, **Birmingham Chapter**, president; Kramer, first vice president; Donald C. Brown, **Montgomery Chapter**, second vice president; and Bertha D. Woolfolk and William M. Voigt, both of the Birmingham Chapter, secretary and treasurer, respectively.

#### In California

The **C. Farinha Gold Rush Chap-**

## AFA Conventions

July 9-10  
July 16-18  
July 17

July 17-18  
July 23-25  
July 30-31  
July 30-31  
July 30-31

Aug. 6-7  
Aug. 7-8  
Aug. 14  
Aug. 20-21  
Aug. 21  
Aug. 21  
Aug. 27-28  
Sept. 11  
Sept. 13-15

**Oklahoma State Convention**, Tinker AFB, Okla.  
**Pennsylvania State Convention**, Treose, Pa.  
**Minnesota-So. Dakota-No. Dakota State Convention**, Minneapolis, Minn.  
**Virginia State Convention**, Arlington/Alexandria, Va.  
**Texas State Convention**, McAllen, Texas  
**Florida State Convention**, Daytona Beach, Fla.  
**North Carolina State Convention**, Fayetteville, N.C.  
**Washington-Oregon State Convention**, McChord AFB, Wash.  
**Michigan State Convention**, Mount Pleasant, Mich.  
**Missouri State Convention**, Branson, Mo.  
**Georgia State Convention**, Warner Robins, Ga.  
**Colorado State Convention**, Colorado Springs, Colo.  
**Illinois State Convention**, Galesburg, Ill.  
**Indiana State Convention**, Indianapolis, Ind.  
**Arkansas State Convention**, Fayetteville, Ark.  
**Delaware State Convention**, Dover AFB, Del.  
**AFA National Convention**, Washington, D.C.

ter hosted the California State Convention in Sacramento, Calif., in May, kicking off three days of events with an evening reception for early arrivals at the McClellan Aviation Museum at McClellan AFB.

On the first full day of activities, delegates and guests participated in a golf tournament, luncheon, and guided tour of the state capitol building. That evening, they attended a dinner theater on a riverboat.

James H. Estep of the **Fresno Chapter** was elected state president during the Saturday business meeting. Re-elected as state officers were Rich Taubinger, chairman of the board, and Richard L. Jones, treasurer, both from the Farinha Chapter, and Edwin W. Lewis Jr., secretary, from the **Tennessee Ernie Ford Chapter**.

In another highlight of the meeting, Michael A. Goldware presented information on a Congressional Medal of Honor Memorial planned for the Riverside National Cemetery in Riverside, Calif. The memorial will be the first in the nation to honor every Medal of Honor recipient by name. Dedication is set for Nov. 5, 1999.

Brig. Gen. Michael P. Wiedemer, commander of the Sacramento Air

Logistics Center at McClellan AFB, was guest speaker for the awards luncheon and spoke about helping the base transition to civilian uses as it heads toward closing, scheduled for July 2001.

More than 100 awards were presented at this luncheon and at the evening's awards banquet, where Lt. Gen. John B. Sams Jr., was guest speaker. He is the commander of 15th Air Force at Travis AFB, Calif. Following his speech on the challenges facing today's Air Force and Air Mobility Command, he received the state's AFA Person of the Year award, presented by outgoing State President Paul A. Maye.

Charles E. Whited of the **Gen. B.A. Schriever Los Angeles Chapter** received the state's AFA Member of the Year award. Kathryn G. Chapman of the **San Diego Chapter** was presented with the Chairman's Award. The Golden Bear Award, recognizing a long-standing member who exemplifies the AFA tradition, went to Melanie Habener from the **Robert H. Goddard Chapter**.

#### Perspectives on the Tuskegee Airmen

"I want to express my appreciation to you for having a program on the



*Tuskegee Airmen and their wives joined Robert Cutler, central west Florida vice president, at a Gen. Nathan F. Twining Chapter meeting. Standing l-r: Jean Esquerre and Cutler. Seated l-r: Clifford Marie Bohler, Henry Bohler, Bernice Downing, and Alvin Downing.*

Tuskegee Airmen," wrote retired Gen. Benjamin O. Davis Jr. to the **Gen. Nathan F. Twining (Fla.) Chapter**. "As the first commander of this group of heroic American patriots, I am especially proud that the Tuskegee Airmen were instrumental in defining today's United States Air Force."

Davis sent his greetings to the Twining Chapter, acknowledging the March meeting, where the group saluted the nation's first African-American combat pilots.

Special guests at the gathering included Tuskegee Airmen Henry C.L. Bohler, who had been assigned to the 99th Fighter Squadron; Jean R. Esquerre, who was with the 619th Bomb Squadron; and Alvin J. Downing, 613th Army Air Force Band.

Aviation writers Lynn M. Homan and Thomas Reilly spoke to the guests about the research they carried out in writing *The Tuskegee Airmen*. The book, published last year, provides the history and firsthand accounts of the group.

During the question and answer period, Robert F. Cutler, central west Florida area vice president, added a personal note on the importance of the Tuskegee Airmen's role in World War II.

Cutler is a veteran of a 460th Bomb Group operations squadron, and he pointed out that the 99th Fighter Squadron pilots had probably escorted B-24s from his group back to their base at Spinazzola, Italy. He was stationed there from January 1944 to May 1945.

#### Lab Work

**Golden Gate (Calif.) Chapter** President Manuel O. Calderone and chapter member George U. Sakaldasis helped carry out ROTC Day at the Lawrence Livermore and Sandia National Laboratories in Livermore, Calif., in April.

The event brought more than 50 ROTC cadets and midshipmen from several California universities to Livermore and Sandia for briefings on the work of the two labs, located across the street from each other. Sakaldasis is the assistant associate director for military affairs at Lawrence Livermore, and as host for ROTC Day he delivered one of the informational briefings.

Edith A. Magerkurth, AFA's aerospace education vice president in California and a **Maj. Gen. Charles I. Bennett Jr. Chapter** member; Col. Wolfgang E.K. Gesch, AFROTC commander, Maxwell AFB, Ala., and a **Montgomery (Ala.) Chapter** member; and Calderone accompanied the students during their tour of the labs.

They visited several research areas, including the National Ignition Facility, a laser facility, and the Human Genome Project.

In addition, the visitors learned about the Military Academic Research Associates program, offering work-study internships to undergraduate and graduate students in science and technology programs that support the National Stockpile Stewardship Program.

To develop interest in the program,

Calderone has acted as a liaison between ROTC units at several state universities and the MARA program, which is funded by the Department of Energy. The former Livermore engineer has worked with chapter member Col. Thomas C. Adang, at the University of California, Berkeley, and **Gen. B.A. Schriever Los Angeles Chapter** member Lt. Col. Edward D. Phelan of Loyola Marymount University in Los Angeles.

#### Breakfast in Mid-America

Representatives from eight companies attended the annual Community Partners Breakfast, hosted by the **Central Oklahoma (Gerrity) Chapter** in March.

The guests, who represented a broad cross section of businesses ranging from a local utility company to regional and national companies and affiliates, gathered at the Tinker AFB Officers' Club and listened to remarks from chapter member Col. Micheal J. Fassler, vice commander of the 72nd Air Base Wing at Tinker, and Col. Kenton H. Holmes, chapter president.

Rhonda Trent, the chapter's Community Partners vice president, presented Community Partner membership plaques to company representatives. She also spoke about Visions of Exploration, a *USA Today*-AEF program that encourages elementary school students in math and science studies. Her remarks prompted two businesses to back the program. The chapter now sponsors 12 Visions classrooms.

After breakfast, the group headed for the flight line, where Maj. Sean Mercadante of the 963rd Airborne Air Control Squadron guided them through an Airborne Warning and Control System aircraft of the 552nd Air Control Wing.

According to Trent, the community business leaders were impressed by the AWACS, its mission, and crew members.

#### Q&A

Maj. Gen. Charles R. Holland, commander of Air Force Special Operations Command at Hurlburt Field, Fla., spoke at a question and answer session hosted by the **Newport Blue & Gold (R.I.) Chapter** at the Ft. Adams Community Center in Newport, R.I., in March.

Holland, who was in town to speak to a Naval Warfare College class on Special Operations Forces, spoke to the AFA audience about the increase in SOF capabilities. The attendees—

mainly Air Force students attending the NWC—asked questions about the future of SOF and wanted to know if Holland recommended an expansion of the special ops forces.

Joining Col. David T. Buckwalter, Blue & Gold Chapter president, and other attendees at the informal gathering were Eugene M. D'Andrea, Rhode Island state president, and Wayne R. Mrozinski, **Metro Rhode Island Chapter** president.

### Flying In

An AFA booth set up at the annual Wings and Wheels Airfare at Daytona Beach, Fla., in March brought in three new chapter members and a Community Partner for the **Brig. Gen. James R. McCarthy Chapter**.

The event was co-chaired by David R. Cummock, Florida state president, and Marguerite H. Cummock, chapter president. Area Vice President James W. Councill manned the AFA booth.

Christopher Skow, Damien Griffin, Melissa E. Esch, and William J. Kelly, Arnold Air Society members from Embry-Riddle Aeronautical University at Daytona Beach, served as color guards and also helped with airshow duties. Later, Cummock and another pilot gave the cadets orientation flights in SIAI-Marchetti 260s, to let them experience a formation takeoff, maneuvering in close formation, mild formation aerobatics, and a 360-degree overhead military landing pattern.

The event was held at Spruce Creek, Fla., a fly-in community of more than 800 families, where pilots park their aircraft at their homes, located on taxiways that lead to an air strip.

### A Day With the CAF

**Phoenix Sky Harbor (Ariz.) Chapter** members and guests spent a Wednesday in April at the Confederate Air Force Arizona Wing Museum at Falcon Field in Mesa, Ariz.

The museum and hangar facility opened that day exclusively for the 55 chapter visitors. The guests viewed museum displays and looked at aircraft at the hangar, including an He-111 Heinkel bomber.

Chapter President Hector F. Evans Jr. said as a "special treat," the B-17G *Sentimental Journey* flew several passes above Falcon Field and taxied up to the hangar entrance.

The Flying Fortress, whose nose art features Betty Grable in her famous looking-over-her-shoulder swimsuit pose, is displayed from fall to spring at the site. It spends the summers serving as a flying museum,

flying to an average of 60 stops across the US. The bomber was built in 1944 and served in the Pacific. After the war, it became an air-sea rescue airplane at Eglin Field, Fla. In 1959, it headed to storage at Davis-Monthan AFB, Ariz. A California company later put it into service as a firefighter, dropping chemicals on forest fires. The CAF Arizona Wing received the bomber in 1978 and restored it to its World War II configuration.

After touring the CAF facilities, the chapter members dined at a Falcon Field restaurant called Anzio Landing.

Following dinner, ANG Maj. Sandra Lopez, 161st Refueling Wing (ANG), Sky Harbor IAP, Ariz., presented a briefing on the Air National Guard and the wing's mission. According to Evans, the wing recently mobilized personnel and aircraft in support of Operation Allied Force.

### At the Ranch

The **Blue Ridge (N.C.) Chapter** held its spring meeting at a small resort and dude ranch called the Pisgah View Ranch in Candler, N.C.

A combined AFJROTC color guard from East Henderson High School in East Flat Rock, N.C., and Enka High School in Enka, N.C., opened the morning meeting with a presentation of the colors. The students, Ashley Albers, Matt Nichols, Jesse Barger, and David Doty, also spoke to the audience about their cadet activities. These range from helping at school open house events and holding fundraisers to serving as funeral details and handling parking and crowd con-

trol. Their aerospace science instructors are chapter members Herbert M. "Mick" Dove and William T. Stanley.

Chapter President William D. Duncan Jr. announced that the chapter will present a \$100 savings bond and an AFA Medal to the outstanding junior-year cadet in each AFJROTC unit that the chapter supports.

The chapter meeting was followed by the state executive committee meeting; thus special guests included Jack H. Steed, region vice president (Southeast Region), James E. "Red" Smith, national director, and Bobby G. Suggs, state president.

### On Display

With the dedication of a glass display case of personal items and art work commemorating the career of Maj. Gen. Oris B. Johnson, the AFA chapter in Baton Rouge, La., celebrated the culmination of a year-long effort to honor the native son for whom it is named.

The display is in the Hall of Heroes at the USS *Kidd* and Nautical Center of the Louisiana Naval War Memorial, located on the banks of the Mississippi River in downtown Baton Rouge.

The **Maj. Gen. Oris B. Johnson (La.) Chapter** organized the ceremony, involving several local groups, such as the Navy League and the American Legion. Chapter member Brett Kriger served as master of ceremonies. Ivan L. McKinney, national director; William F. Cocke, state president; and Michael F. Cammarosano, chapter president, spoke about Johnson. The retired general also deliv-



"Red" Smith, national director, Jack Steed, region vice president (Southeast Region), Bobby Suggs, state president, and William Duncan, Blue Ridge Chapter president (l-r) were in the front row at a recent chapter meeting that featured presentations by AFJROTC cadets.



*Retired Maj. Gen. Oris Johnson (center) was the center of attention when a display case commemorating his career was unveiled at the Hall of Heroes in Baton Rouge, La. On hand for the ceremony were (l-r) Michael Cammarosano, president of the Maj. Gen. Oris B. Johnson Chapter; Ivan McKinney, national director; Marleen Eddlemon, region vice president (South Central Region); and William Cocke, state president.*

ered a few remarks, reflecting on his military career and pride in serving his country.

Johnson received a plaque, marking his induction into the Hall of Heroes. AFROTC cadets from Louisiana State University then formed a sapper arch. The guests, who included Marleen E. Eddlemon, region vice president (South Central Region), walked under the arch as they headed into the hall for the display case's unveiling.

Born in Ashland, La., Johnson entered the Army Air Corps as an aviation cadet in 1940.

Before retiring in 1973, he was deputy chief of staff, logistics, at Aerospace Defense Command, Ent AFB, Colo. In his civilian career, Johnson was assistant chief administrative officer for Shreveport, La., and was later the undersecretary in the state department of public safety.

Earlier in the year, Chapter President Cammarosano received the first Mary Anne Thompson Award from the Silver Wings organization at its 51st annual conclave in Chicago.

The award recognizes outstanding support from an AFA member to Silver Wings. It is named for AFA National Director Thompson, who served as AFA national secretary from 1993 to 1996.

Karla A. Eger and Tessa H. Byrne, Silver Wings members from Louisi-

ana State University, received AEF \$1,000 scholarships at the conclave.

Silver Wings is a service organization affiliated with the Arnold Air Society, which receives sponsorship from AFA.

**More AFA/AEF News**

■ Representatives of eight AFA chapters in Indiana attended the state

quarterly meeting in March in Indianapolis. Kenneth A. Goss, AFA's director of government relations, was guest speaker for the gathering of more than 40 guests. His presentation covered how AFA helps represent the Air Force's interests on Capitol Hill. He also spoke about military topics such as the challenges of recruiting, the shrinking core of experienced NCOs, and benefits for military retirees.

■ Presentation of an AFA Citation and Medal to cadet Amy C. White kicked off the annual AFJROTC awards ceremony at a schoolwide assembly at Chapman High School in Inland, S.C., in April. Claire E. Brittain Jr. of the **Strom Thurmond (S.C.) Chapter** presented the award.

■ Oregon State President John Lee presented an AFA Award to cadet Stephanie Root, a junior at Oregon State University in Corvallis, Ore. The ceremony in May was part of a combined AFA and AFROTC Awards Dining-out, attended by nearly 300 guests. According to **Willamette Valley (Ore.) Chapter** President Col. Samuel E. Snider, Root has a 3.95 grade point average and is majoring in civil engineering and forestry.

**Have AFA/AEF News?**

Contributions to "AFA/AEF National Report" should be sent to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: afa-aef@afa.org. ■



*Ronald Fraass, president of the Maj. Gen. Edward R. Fry (Kan.) Chapter (left), and Col. David Burke, USAF (Ret.), presented AFJROTC cadet Trisha Jacobs with an AFA Citation at the annual awards ceremony at Highland Park High School in Topeka, Kan.*

**1st Tactical Depot Sq**, UK, including the 1st Tactical Spt. Sq and the 9th Aviation Depot Sq. Oct. 17-19, 2000, in Fort Walton Beach, FL. **Contact:** Fred Kloepfel, 4453 Huntington Cir., Niceville, FL 32578-2385 (850-729-2884) or Fred Chanatry, 3709 Big Sky Dr., Albuquerque, NM 87111 (505-292-7475).

**5th AF**, including 348th FG, 340th, 341st, 342nd, and 460th FSs. Sept. 23-26, 1999, at the Doubletree Guest Suites Tucson in Tucson, AZ. **Contact:** Tony Gibbons (314-561-3016) or Jim Woodward (520-744-2543).

**7th Photo Recon Gp**, Eighth AF, UK, including the 325th Wg., Mount Farm and Chalgrove, UK, personnel. Oct. 8-10, 1999, at The Menger Hotel in San Antonio. **Contact:** George Lawson, 4390 14th St. NE, St. Petersburg, FL 33703 (727-526-8480).

**8th Photo Recon Sq**, Fifth AF (WWII). Sept. 15-19, 1999, in Omaha, NE. **Contact:** Andy Kappel, 6406 Walnut St., Kansas City, MO 64113 (816-363-0261).

**15th Sq, 346th CTD**, Moorhead, MN (1944). Oct. 7-9, 1999, at Wright-Patterson Field, Ohio. **Contact:** George Pattison, 199 Reed Rd., Avella, PA 15312-2043 (724-948-3550).

**20th FG** and support units. Oct. 24-26, 1999, at the Marriott Riverfront in Savannah, GA. **Contact:** Chris Pannell, 7111 Rotherwood Dr., Knoxville, TN 37919 (423-588-0153).

**20th FW**, King's Cliffe, UK; Shaw AFB, SC; and RAFs Upper Heyford, Wethersfield, and Woodbridge, UK. Oct. 28-31, 1999, at The Menger Hotel in San Antonio. **Contact:** Dean Patterson, 7708 Westwind Dr., Fort Worth, TX 76179 (817-236-1317) (dpatt@flash.net).

**21st Ordnance Co/21st Supply and Service Co** (WWII-present). Sept. 10-12, 1999. **Contact:** Fred Flory, 1386 Dayton Pike, Germantown, OH 45327 (937-855-6202).

**27th FS**, including FIS, Pursuit, and TFS (WWII). Sept. 23-26, 1999, in Seattle. **Contact:** Dick Barnes, PO Box 25, Pawnee, IL 62558-0025 (217-625-4831).

**41st BG**, Seventh AF (WWII), including all squadrons. Oct. 8-11, 1999, at the Marriott Ontario Airport in Ontario, CA. **Contact:** K. Sitterley, 20449 Blue Mountain Dr., Walnut, CA 91789 (626-965-2129) or B. Zingery, PO Box 5930, College Station, TX 77844 (409-694-9584).

**43rd BG Assn (H)**, Fifth AF. Oct. 17-24, 1999, at the InnSuites Hotel & Resort in Tucson, AZ. **Contact:** James Thompson Jr., 7018 Calle Bellatrix, Tucson, AZ 85710 (520-747-9490).

**46th FIS**, Dover AFB, DE (1952-58). Sept. 12-14, 1999, at the Settle Inn in Branson, MO. **Contact:** George W. Peckham, 8415 S. Pebble Creek Way, #101, Highlands Ranch, CO 80126 (303-741-1421).

**48th FS**, FIS, and FTS. Sept. 23-26, 1999, at the Radisson Inn Cleveland Airport in North Olmsted, OH. **Contact:** Joe Onesty, 455 Galleon Way, Seal Beach, CA 90740-5937 (562-431-2901).

**55th SRW Assn**. Sept. 30-Oct. 2, 1999, at Harrah's Reno in Reno, NV. **Contact:** Don Gurney, PO Box 20519, Carson City, NV 89721-0519 (775-882-6392).

**55th TCS**, 375th TCG, "Tokyo Trolley." Sept. 30-Oct. 3, 1999, at the Welk Resort Center in Branson,

MO. **Contact:** Sherman Klingbiel, 17408 SE 111th Cir., Summerfield, FL 34491-6697 (352-307-7886).

**64th TCG AAF**. September 1999 in Portland, OR. **Contact:** Carl Looney, RR 1, Box 112-1, Chickasha, OK 73018(405-222-2275).

**65th TCS**. Aug. 4-8, 1999, in Branson, MO. **Contact:** Bud or Juanita Hawkey, 106 Union Dr., New Madison, OH 45346 (937-996-3851).

**68th FS** (WWII). Oct. 13-17, 1999, in Santa Barbara, CA. **Contact:** Stan Palmer, 769B Terni Ln., Santa Barbara, CA 93105-4431.

**70th AAFTC**, Carleton College, Northfield, MN. Aug. 6-8, 1999. **Contact:** Art Peterson, 509 Togstad Glen, Madison, WI 53711.

**94th BG**, Eighth AF. Oct. 4-10, 1999, at the Doubletree Guest Suites Seattle in Tukwila, WA. **Contact:** Wilbur Richardson, 1850 Fairway Dr. #98, Chino Hills, CA 91709-2268 (909-597-4474).

**97th BG**. Aug. 24-27, 1999, in Savannah, GA. **Contact:** Thomas Gulley, 216 Palm Dr., Tampa, FL 33613 (813-908-1132).

**317th TCG and 41st TCS**, Fifth AF (WWII). Oct. 14-17, 1999, in Colorado Springs, CO. **Contact:** Dick Korthals, 2880 Inspiration Dr., Colorado Springs, CO 80917-3303 (719-574-7774) (colocorky@msn.com or colocorky@compuserve.com).

**359th FG**, Eighth AF, East Wretham, UK. Oct. 7-10, 1999, in Fort Worth, TX. **Contact:** Leon J. Levitt, 4512 Vance Rd., Fort Worth, TX 76180-8160 (levitt1@flash.net).

**361st FG** (WWII). Oct. 28-31, 1999, at the Ramada Plaza Beach Resort in Fort Walton Beach, FL. **Contact:** Joe Kruzel (850-244-0220).

**368th FG**, Ninth AF (WWII). Aug. 26-29, 1999, at the Days Inn Lake Shore Drive in Chicago. **Contact:** Randolph Goulding, 2000 Clearview Ave. NE, Atlanta, GA 30340 (phone: 770-455-8555 or fax: 770-455-7391).

**381st BG Memorial Assn**. Oct. 13-17, 1999, in Houston. **Contact:** Joseph K. Waddell Jr., PO Box 6064, Madison, WI 53716-0054.

**389th BG**, Eighth AF (WWII). Sept. 10-12, 1999, in Dayton, OH. **Contact:** Barney Driscoll, 431 Pool Rd., Richards, TX 77873 (409-291-6253).

**390th Strategic Missile Wg**. Oct. 5-8, 1999, at the Excalibur Hotel Casino in Las Vegas. **Contact:** John Lasher, PO Box 17916, Tucson, AZ 85731 (520-886-3430) (suelasher@juno.com).

**433rd TCG**, 65th-70th TCS (South Pacific, WWII). Oct. 10-15, 1999, in Williamsburg, VA. **Contact:** Ted Casper, 4164 Inverrary Dr. 12-414, Lauderhill, FL 33319 (954-484-7230) (tedellie@aol.com).

**434th FS**, 479th FG. Sept. 22-26, 1999, in Hampton, VA. **Contact:** Phyllis Anderson, 2002 Birchwood Ave., Toledo, OH 43614 (419-382-1688).

**436th FS**, 479th FG, Eighth AF (WWII). Oct. 22-24, 1999, at the Days Inn Oceanfront in Cocoa Beach, FL. **Contact:** Jim Ward, 3610 Sawgrass Dr., Titusville, FL 32780 (407-383-1099).

**441st TCG**. Sept. 15-19, 1999, at the Marriott Hotel Dayton in Dayton, OH. **Contact:** Carl Belville, PO Box 506, Russells Point, OH 43348 (937-843-2221).

**455th BS**, 323rd BG, Ninth AF (WWII). Sept. 3-7, 1999, in Alexandria, VA. **Contact:** Jim Vining, 921 Ware St., Vienna, VA 22180.

**457th BG**, including attached units, Station 130, Glatton, UK (WWII). Oct. 10-14, 1999, in Gettysburg, PA. **Contact:** Homer L. Briggs, 811 N.W. B St., Bentonville, AR 72712 (phone: 501-273-3908 or fax: 501-271-9147).

**490th BG (H)**. Sept. 1-5, 1999, at the Renaissance Hotel in Springfield, IL. **Contact:** Rich Stratton, 100 Circle Dr., Springfield, IL 62703-4807 (217-529-1975).

**582nd Air Resupply Gp**, Molesworth, UK. Oct. 21-24, 1999, in Charleston, SC. **Contact:** Lawton Brown, PO Box 6061, West Palm Beach, FL 33405 (561-832-1605 or 561-434-2224).

**686th AC&W Sq**, Walker AFB, NM. July 9-11, 1999, in Nashville, TN. **Contact:** Dallas Roth, 3532 Bitler Rd., Fort Wayne, IN 46808 (219-484-4731) (roths@fwi.com).

**3080th ADG**, 11th AFDS. Oct. 16-20, 1999, in Scottsdale, AZ. **Contact:** John Bessler, 701 N. May St., Chandler, AZ 85226 (480-940-0682) (azjido@astec.asu.edu).

**China-Burma-India Hump Pilots Assn**. Sept. 8-12, 1999, in Irvine, CA. **Contact:** Jan Thies, PO Box 458, Poplar Bluff, MO 63902 (phone/fax: 573-785-2420) (jancbi@ims-1.com).

**Moroccan Reunion Assn**, all personnel stationed at Nouasser, Sidi Slimane, Rabat, and Benguerir ABs in Morocco. Sept. 22-24, 1999, in San Antonio. **Contact:** Robert Bradshaw, PO Box 13362, Omaha, NE 68113-0362 (402-291-3321).

**Newark AFB, OH, Aerospace Guidance and Metrology Center**. Aug. 21-22, 1999, in Newark, OH. **Contact:** E.T. Bodem, 5543 E. Eagle Dr., Port Clinton, OH 43452 (419-797-2249) (etb1@gte.net) or Yvonne Lorenz, 902 Terrace Dr., Heath, OH 43056 (740-522-4325) (yvie@juno.com).

**Roadrunners Internationale**, including all A-12 and U-2 program personnel. Oct. 4-7, 1999, at the Gold Coast Hotel & Casino in Las Vegas. **Contact:** Hank Meierdierck (702-876-5720) or P. Zobrist (702-642-5501).

Seeking all current and former personnel of the **35th FG/Wg** for a reunion in 2000. **Contact:** Rip Collins, 10039 Kemp Forest Dr., Houston, TX 77080 (713-462-4242) (maroon@hal-pc.org) or Aleck Holet, 190 Blaylock Mountain Rd., Cookeville, TN 38506 (931-839-3846) (holet@multipro.com).

Seeking contact with military or civilian personnel, or their dependents, who were stationed at **Etain AB, France**, at any time for a reunion in May 2000. **Contact:** Robert Espeland, 7305 NE Par Ln., Vancouver, WA 98662 (360-892-5249) (budfrog@pacifier.com).

Mail unit reunion notices well in advance of the event to "Unit Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information.

Seeking contact with US aviators who served alongside **RAF Coastal Command** forces in U-boat patrols during WWII. The Coastal Command and Maritime Air Assn. is working on a national memorial, possibly at the RAF Museum in London. **Contact:** Tony Spooner, Apt. 27 Danny, Hurstpierpoint, West Sussex, UK BN6 9BB.

For a book, seeking anyone who knew **Clerow "Flip" Wilson** when he was a member of the Air Force, 1950-54. **Contact:** Kathleen Fearn-Banks (800-484-9781, ext. 2714) (kfb@u.washington.edu).

Seeking contact with **A2C Bernard Larkin and A1C Charles Neal and his wife, A2C "Jimmy" Neal**, who were stationed at Travis AFB, CA, 1957-59, with the 5th Air Base Group. **Contact:** Robert E. Grenz, PO Box 219, Hayfork, CA 96041-0219.

For Hangar 25 Museum, seeking information and memorabilia from Air Force pilots who trained at **Webb AFB, TX**, in AT-11, T-33, T-37, or T-38 aircraft. Specifically interested in photos, log books, maps, gear, newspaper or magazine articles, or uniform paraphernalia. **Contact:** Carrol Jennings, PO Box 2925, Big Spring, TX 79721 (915-267-5201 or 915-264-2362).

Seeking contact with **Truman E. "Rocky" Wilson**, who enlisted around 1968 and whose wife was named Karen. **Contact:** Mike Loop (Loop@uab.edu).

Seeking contact with **Col. Gerald H. Clayton**, who was a member of Class 45-B USAAC and roomed with Thomas Firth. **Contact:** Thomas Firth Jr., 25805 N. Bolero Bend, Rio Verde, AZ 85263-7233 (tomfirth@earthlink.net).

Seeking former USAAF fighter pilot **Burton J. Hall**, who flew P-40s with Fifth AF in the Pacific during WWII. **Contact:** C.G. Jarrells, PO Box 340365, Dayton, OH 45434-0365.

Seeking contact with **Johnny Karvalinski** (or Carvalinski, Garwolinski, or Gawolinski), who was stationed at Parham, UK, around September 1945. He may have been a member of the 390th BG (H) or one of its units, working as a mechanic for bombers. **Contact:** Tom Skippings, 78 Ulverscroft Rd., East Dulwich, London, UK SE22 9HG (0181-516-1468).

Seeking any original American Volunteer Gp/ Flying Tigers **patches**. **Contact:** Michael Hampton, 28813 Raintree Ln., Saugus, CA 91350.

Seeking contact with **Ralph Shooter** of Gary, IN, who may have attended grade school at Holy Angel in 1926-27. **Contact:** Jerome Keilman (909-652-8156).

Seeking contact with anyone who has knowledge of the Japanese raid on **Broome, Australia**, on March 3, 1942. **Contact:** Arvon Staats, 4325 NW 60th St., Oklahoma City, OK 73112 (astaats@ionet.net).

To join the TAC Tankers Assn, seeking contact with USAF active duty and retired aircrew, maintenance, or support personnel who worked with tactical **KB-29 or KB-50** aerial refueling aircraft in USAFE, PACAF, or TAC. **Contact:** Nate Hill, 231 King St., Lancaster, OH 43130-3158 (740-653-3835) (nhill@greenapple.com) or Dan Weber (drweber@pacbell.net).

For a book, seeking contact with **33rd FG** and 58th, 59th, and 60th FS veterans who served in North Africa during WWII. **Contact:** Orr Kelly, 7758 Wisconsin Ave., Ste. 211, Bethesda, MD 20814 (orkelly@erols.com).

Seeking new or good condition "F-4G Wild Weasel in Desert Storm" **patch**. **Contact:** Dennis Frazier (760-599-0797) (denfra@pacbell.net).

Seeking contact with or information on **Lt. Robert Vehn**, who was stationed at Northfield, MN, and Yale University. **Contact:** Marvin E. Weber, 2500 First St., Alamogordo, NM 88310.

Seeking information on the **coordinates system** used by fighter groups in Ninth AF. **Contact:** Bill Capron, 7840 E. Madero Ave., Mesa, AZ 85208-5072 (480-984-7835) (capronp38@juno.com).

Seeking contact with **Maj. William Lund and MSgt. Jean Michel**, Sembach AB, Germany, 1974-78; **Lt. Col. James Collins and Maj. William Banks**, Blytheville AFB, AR, 1984-88; and **CMSgt. Payten Cawthorne**, Zweibrücken AB, Germany, 1971-74. **Contact:** Maurice Neal (nealmaurice@hotmail.com).

Seeking all personnel associated with **A-37** aircraft for membership in the A-37 Association. **Contact:** Oliver Maier, 306 Village West, San Marcus, TX 78666 (omaier@swt.edu).

Seeking contact with **WWII cadets' wives** who accompanied their husbands during training in the US. **Contact:** Margaret C. Ridler (MCR1839@aol.com).

Seeking a **book** on all USAF bases, CONUS and overseas, with pictures of assigned aircraft and runways, maps, and aerial photos. **Contact:** Lancel R. Forsythe, 3630 Brennan Blvd., Apt. 25C, Amarillo, TX 79121.

Seeking contact with or information on **SSgt. Paul Arhner and Anne Arhner**, stationed at

Wheelus AB, Tripoli, in the early 1960s. They lived in Bangor, Maine, in 1962, had three sons, and were friends of Peter and Betty Wetherly. **Contact:** Gail Holder, 204 Barry Ave., Bicester, Oxfordshire, UK OX6 8HB (home: 01869-601501) (work: 0171-420-7541) (mobile: 07771-506-916).

Seeking contact with or anyone who knew **MSgt. Charles Wilkinson, T/3s Orla Billiter, Delbert V. Berry, and Leonard Donnelly, 1st Lt. Raymond Cunningham, PFC Maximilian Torres, and Cpl. Dexter Cutler**, all of the 820th Medical Air Evacuation Sq, Fifth AAF, southwest Pacific, 1944-46. **Contact:** John V. Cantando, 1064 Admiral Pl., Elmira, NY 14901-1302.

If you need information on an individual, unit, or aircraft, or want to collect, donate, or trade USAF-related items, write to "Bulletin Board," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Items submitted by AFA members have first priority; others will run on a space-available basis. If an item has not run within six months, the sender should resubmit an updated version. Letters must be signed. Items or services for sale, or otherwise intended to bring in money, and photographs will not be used or returned.

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**F10 Windproof Lighter.** By Zippo. Brushed stainless steel. **\$13**

**F11 Golfer's Money Clip.** By Zippo. Brushed stainless steel with ballmarkers and greenskeeper. **\$13**

**F12 AFA Umbrella.** 60" in white and dark blue with AFA logo and fiberglass shaft. **\$25**

**F13 3" Decal.** Member or Life Member. Specify inside or outside window. **\$.15**

**F14 AFA Golf Balls.** Titanium Top Flight by Wilson with full color AFA logo. Sleeve of 3. **\$8.50**

**F15 Pewter Medal.** AFA logo. Suitable for plaques and decorative placement. 1.75" diameter. **\$5**



# AFA State Contacts



Following each state are 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 contact. (For more information on state and local AFA contacts, see [www.afa.org](http://www.afa.org))

**ALABAMA** (Birmingham, Huntsville, Mobile, Montgomery): **Roy A. Boudreaux**, P.O. Box 1190, Montgomery, AL 36101-1190 (phone 334-241-2739).

**ALASKA** (Anchorage, Fairbanks): **Steven R. Lundgren**, P.O. Box 71230, Fairbanks, AK 99707 (phone 907-459-3291).

**ARIZONA** (Green Valley, Phoenix, Prescott, Sedona, Sierra Vista, Sun City, Tucson): **Angelo Di Giovanni**, 973 Vuelta Del Yaba, Green Valley, AZ 85614 (phone 520-648-2921).

**ARKANSAS** (Fayetteville, Hot Springs, Little Rock): **John L. Burrow**, 352 Holliston Ave. #1, Fayetteville, AR 72701-4178 (phone 501-751-0251).

**CALIFORNIA** (Apple Valley, Bakersfield, Edwards AFB, Fairfield, Fresno, Los Angeles, Merced, Monterey, Orange County, Palm Springs, Pasadena, Riverside, Sacramento, San Diego, San Francisco, Sunnyvale, Vandenberg AFB, Yuba City): **Paul A. Maye**, 1225 Craig Dr., Lompoc, CA 93436 (phone 805-733-5102).

**COLORADO** (Colorado Springs, Denver, Fort Collins, Grand Junction, Pueblo): **Howard R. Vasina**, 1670 N. Newport Rd., Ste. 400, Colorado Springs, CO 80916-2700 (phone 719-591-1011).

**CONNECTICUT** (Brookfield, East Hartford, Middletown, Storrs, Stratford, Torrington, Waterbury, Westport, Windsor Locks): **Joseph R. Falcone**, 14 High Ridge Rd., Ellington, CT 06029 (phone 860-875-1068).

**DELAWARE** (Dover, New Castle County, Rehoboth Beach): **Stephanie M. Wright**, 5 Essex Dr., Bear, DE 19701-1602 (phone 302-834-1369).

**DISTRICT OF COLUMBIA** (Washington): **Rosemary Pacenta**, 1501 Lee Hwy., Arlington, VA 22209-1198 (phone 703-247-5820).

**FLORIDA** (Avon Park, Broward County, Daytona Beach, Fort Walton Beach, Gainesville, Homestead, Hurlburt Field, Jacksonville, Leesburg, Miami, New Port Richey, Orlando, Palm Harbor, Panama City, Patrick AFB, Spring Hill, Tallahassee, Tampa, Vero Beach, West Palm Beach): **David R. Cummock**, 2890 Borman Ct., Daytona Beach, FL 32124 (phone 904-760-7142).

**GEORGIA** (Atlanta, Peachtree City, Savannah, Valdosta, Warner Robins): **Zack E. Osborne**, 306 Lake Front Dr., Warner Robins, GA 31088 (phone 912-953-1460).

**GUAM** (Agana): **Thomas M. Churan**, P.O. Box 12861, Tamuning, GU 96931 (phone 671-653-0525).

**HAWAII** (Honolulu, Maui): **Norman R. Baker**, 1284 Auwaku St., Kailua, HI 96734-4103 (phone 808-545-4394).

**IDAHO** (Mountain Home, Twin Falls): **Chester A. Walborn**, P.O. Box 729, Mountain Home, ID 83647-1940 (phone 208-587-9757).

**ILLINOIS** (Belleville, Chicago, Moline, Rockford, Springfield-Decatur): **John D. Bailey**, 6339 Cotswold Ln., Cherry Valley, IL 61016-9379 (phone 815-874-8024).

**INDIANA** (Bloomington, Columbus, Fort Wayne, Grissom ARB, Indianapolis, Lafayette, Marion, Mentone, New Albany, Terre Haute): **James E. Fultz**, 3915 Baytree Ln., Bloomington, IN 47401-9754 (phone 812-333-8920).

**IOWA** (Des Moines, Marion, Sioux City, Waterloo):

**Donald E. Persinger**, 1725 2d Ave., South Sioux City, NE 68776 (phone 402-494-1017).

**KANSAS** (Garden City, Topeka, Wichita): **William S. Clifford**, 2070 Milford Ln., Garden City, KS 67846 (phone 316-275-4317).

**KENTUCKY** (Lexington, Louisville): **Daniel G. Wells**, 313 Springhill Rd., Danville, KY 40422-1041 (phone 606-253-4744).

**LOUISIANA** (Baton Rouge, New Orleans, Shreveport): **William F. Cocks**, 1505 Gentry Dr., Shreveport, LA 71105-5401 (phone 318-797-9703).

**MAINE** (Bangor, Caribou, North Berwick): **Peter M. Hurd**, P.O. Box 1005, Houlton, ME 04730-1005 (phone 207-532-2823).

**MARYLAND** (Andrews AFB, Baltimore, College Park, Rockville): **Edwina C. "Clare" Reid**, 8705 Crystal Rock Ln., Laurel, MD 20708-2431 (phone 301-314-3242).

**MASSACHUSETTS** (Bedford, Boston, East Longmeadow, Falmouth, Hanscom AFB, Taunton, Westfield, Worcester): **Thomas P. O'Mahoney**, 2 College Rd., Burlington, MA 01803-2708 (phone 617-221-7476).

**MICHIGAN** (Alpena, Battle Creek, East Lansing, Kalamazoo, Marquette, Mount Clemens, Oscoda, Traverse City, Southfield): **Terry L. Dankenbring**, 13749 Tallman Rd., Grand Ledge, MI 48837-9711 (phone 517-627-8030).

**MINNESOTA** (Duluth, Minneapolis-St. Paul): **Coleman Rader Jr.**, 6481 Glacier Ln. N., Maple Grove, MN 55311-4154 (phone 612-559-2500).

**MISSISSIPPI** (Biloxi, Columbus, Jackson): **Billy M. Boyd**, 107 N. Rosebud Ln., Starkville, MS 39759 (phone 601-434-2644).

**MISSOURI** (Kansas City, St. Louis, Springfield, Whiteman AFB): **Graham Burnley**, 112 Elk Run Dr., Eureka, MO 63025-1211 (phone 314-938-6113).

**MONTANA** (Bozeman, Great Falls): **William T. Rondeau Jr.**, 700 8th Ave., Apt. #3, Great Falls, MT 59405-2056 (phone 406-771-0979).

**NEBRASKA** (Lincoln, Omaha): **Densel K. Acheson**, 903 Lariat Cir., Papillion, NE 68128-3771 (phone 402-554-3793).

**NEVADA** (Las Vegas, Reno): **Albert S. "Sid" Dodd**, 1921 Dresden Ct., Henderson, NV 89014-3790 (phone 702-295-4953).

**NEW HAMPSHIRE** (Manchester, Portsmouth): **Terry K. Hardy**, 31 Bradstreet Ln., Eliot, ME 03903-1416 (phone 603-430-3122).

**NEW JERSEY** (Andover, Atlantic City, Camden, Chatham, Forked River, Ft. Monmouth, Jersey City, McGuire AFB, Newark, Old Bridge, Toms River, Trenton, Wallington, West Orange): **F.J. "Cy" LaManna**, 8 Elizabeth St., Caldwell, NJ 07007 (phone 973-423-0030).

**NEW MEXICO** (Alamogordo, Albuquerque, Clovis): **Charles G. Thomas**, 4908 Calle Del Cielo, Albuquerque, NM 87111-2912 (phone 505-845-3506).

**NEW YORK** (Albany, Binghamton, Buffalo, Rome, Jamestown, Nassau County, New York, Queens, Rochester, Staten Island, Syracuse, Westhampton Beach, White Plains): **Bonnie B. Callahan**, 6131 Meadowlakes Dr., East Amherst, NY 14051-2007 (phone 716-741-2846).

**NORTH CAROLINA** (Asheville, Charlotte, Fayette-

ville, Goldsboro, Kitty Hawk, Raleigh, Wilmington): **Bobby G. Suggs**, P.O. Box 53469, Fayetteville, NC 28305-3469 (phone 910-483-2221).

**NORTH DAKOTA** (Fargo, Grand Forks, Minot): **Gary H. Olson**, 725 Center Ave., Ste. 3, Moorhead, MN 56560 (phone 218-233-5130).

**OHIO** (Cincinnati, Cleveland, Columbus, Dayton, Mansfield, Youngstown): **J. Ray Lesniok**, 33182 Lakeshore Blvd., Eastlake, OH 44095-2702 (phone 440-951-6547).

**OKLAHOMA** (Altus, Enid, Oklahoma City, Tulsa): **William P. Bowden**, P.O. Box 620083, Oklahoma City, OK 73162-0083 (phone 405-722-6279).

**OREGON** (Eugene, Klamath Falls, Portland): **John Lee**, P.O. Box 3759, Salem, OR 97302 (phone 503-581-3682).

**PENNSYLVANIA** (Allentown, Altoona, Beaver Falls, Coraopolis, Drexel Hill, Harrisburg, Johnstown, Lewistown, Philadelphia, Pittsburgh, Scranton, Shiremanstown, Washington, Willow Grove, York): **Clair Smith**, 1509 Logan Ave., Tyrone, PA 16686-1725 (phone 814-684-3593).

**RHODE ISLAND** (Newport, Warwick): **Eugene M. D'Andrea**, P.O. Box 8674, Warwick, RI 02888 (phone 401-461-4559).

**SOUTH CAROLINA** (Charleston, Clemson, Columbia, Myrtle Beach, Sumter): **Guy R. Everson**, 9 McKay Rd., Honea Path, SC 29654 (phone 864-369-0891).

**SOUTH DAKOTA** (Rapid City, Sioux Falls): **Charles A. Nelson**, 1517 S. Minnesota Ave., Sioux Falls, SD 57105-1717 (phone 605-336-1988).

**TENNESSEE** (Chattanooga, Knoxville, Memphis, Nashville, Tullahoma): **William E. Freeman**, 2451 Stratfield Dr., Germantown, TN 38139-6620 (phone 901-755-1320).

**TEXAS** (Abilene, Amarillo, Austin, Big Spring, College Station, Commerce, Dallas, Del Rio, Denton, Fort Worth, Harlingen, Houston, Kerrville, Lubbock, San Angelo, San Antonio, Wichita Falls): **Henry C. Hill**, P.O. Box 10356, College Station, TX 77842-0356 (phone 409-821-0201).

**UTAH** (Clearfield, Ogden, Salt Lake City): **Craig E. Allen**, 5708 West 4350 South, Hooper, UT 84315 (phone 801-774-2766).

**VERMONT** (Burlington): **Erwin R. Waibel**, 1 Twin Brook Ct., South Burlington, VT 05403-7102 (phone 802-654-0198).

**VIRGINIA** (Alexandria, Charlottesville, Danville, Langley AFB, Lynchburg, McLean, Norfolk, Petersburg, Richmond, Roanoke, Winchester): **Thomas G. Shepherd**, HCR 61 Box 167, Capon Bridge, WV 26711-9711 (phone 540-888-4585).

**WASHINGTON** (Seattle, Spokane, Tacoma): **Fred Rosenfelder**, P.O. Box 59445, Renton, WA 98058-2445 (phone 206-662-7752).

**WEST VIRGINIA** (Charleston): **Samuel Rich**, P. O. Box 444, White Sulphur Springs, WV 24986 (phone 304-536-4131).

**WISCONSIN** (Madison, Milwaukee, General Mitchell IAP/ARS): **Kenneth W. Jacobi**, 6852 Beech Rd., Racine, WI 53402-1310 (phone 414-639-5544).

**WYOMING** (Cheyenne): **Irene G. Johnigan**, 503 Notre Dame Ct., Cheyenne, WY 82009 (phone 307-773-2137).





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