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MAGAZINE

Air Force Fifty

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July 1997, Vol. 80, No. 7

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6 **Letters**

8 **Chart Page**

10 **Aerospace World**

19 **Senior Staff Changes**

20 **Index to Advertisers**

88 **This is AFA**

89 **Valor**

90 **Verbatim**

92 **Books**

94 **State Contacts**

96 **AFA/AEF National Report**

101 **Unit Reunions**

104 **Pieces of History**

About the cover: USAF Thunderbirds show off their diamond formation in a demonstration of precision flying for spectators during Air Force Fifty at Nellis AFB, Nev. Feature starts on p. 22. Photo © Erik Simonsen.

5 **Editorial: Mixed Signals From the Quadrennial Review**
By John T. Correll
There is a mismatch between the strategy and the implementing actions of the QDR.

22 **Air Force Fifty**
Eighty-one foreign air chiefs, five national aerobatic teams, and nearly half a million people joined the Air Force and AFA for this historic week in Las Vegas.

40 **Airpower: Past, Present, and Future**
By John A. Tirpak
Former President Bush leads a blue-ribbon lineup of speakers at AFA's International Airpower Symposium.

46 **Raptor 01**
By John A. Tirpak
On April 9, the Air Force unveiled the most sophisticated warplane ever built.

52 **Stressed Systems**
By Peter Grier
Today's high operations tempo has led to a set of aircraft, personnel, and equipment with special problems.

56 **The Year the Air Force Was Born**
Here are some of the events that defined 1947.

66 **Keeping Pilots in the Cockpits**
By Suzann Chapman
Lagging pilot retention poses a threat to combat readiness.

70 **The Push to Open FEHBP**
By Suzann Chapman
Military associations say the Federal Employees Health Benefits Program is a needed option for retirees. The Pentagon disagrees—and says there are other considerations.

74 **The Chief's Reading List**
By Walter J. Boyne
Here are the 34 books the Chief of Staff is recommending to Air Force leaders.

46

78 **Gallery of South Asian Airpower**
By John W. R. Taylor and Kenneth Munson
A catalog of aircraft in use by nations of south Asia.

56

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1997 F-22 Pilot/Maintenance Training Devices

sensors

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1960 F-101, F-102, & F-106 IRST
1960 F-106 MA-1 Fire Control System
1974 B-52 Infrared System
1983 US ASARS-2 Radar
1987 F-15E APG-70
1989 B-2 AN/APQ-181
1990 F-22 CIP
1991 MH-60G Infrared System

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Editorial

By John T. Correll, Editor in Chief

Mixed Signals From the Quadrennial Review

THE Quadrennial Defense Review is billed as "a fundamental and comprehensive examination of America's defense needs from 1997 to 2015." The Pentagon labored over it for months before releasing the comprehensive report in May. If Congress goes along with it, the QDR will become the "overall strategic planning document" for the Department of Defense.

Three elements are said to define the "essence" of the QDR strategy: shaping the strategic environment to advance US interests, maintaining a capability to respond to the full spectrum of threats, and preparing for the threats and dangers of an uncertain future.

The QDR keeps some major provisions of the previous strategy—notably the requirement to win two major theater wars nearly simultaneously—but it puts more emphasis than previous strategies did on "smaller scale contingencies" and military operations other than war. At the same time, the QDR calls for stiff reductions in force levels, infrastructure, and programs, particularly in aircraft programs.

Among those seeing a gap between the strategy and the force projections is Rep. Floyd D. Spence (R–S. C.), chairman of the House National Security Committee, who says "the QDR will have our forces transiting from 'doing more with less' to 'doing *even* more with *even* less.' "

The report says that we will always defend vital US interests and will selectively defend interests that are important but not vital. It says that while smaller-scale contingencies will be the most frequent use of forces over the next 20 years, the capability to defeat aggression in two theaters is "essential to the credibility of our overall national security strategy." (An early QDR draft said that major theater wars "will remain the ultimate test of the US military—one in which it must always succeed." The line was inexplicably dropped in the final version.) No "global peer competitor" is likely to emerge between now and 2015, but "it is reasonable to assume that more than one aspiring regional power will have both the desire and the means to challenge US interests militarily."

In the QDR, the Defense Department recognizes for the first time that a prime operational requirement in theater war is to halt an enemy invasion force rapidly, short of its objective, and perhaps heading off a long and costly campaign to evict the enemy from captured territory. The "halt" phase of regional conflict is almost completely a mission for airpower. The ground forces, who have little or no part in it, disparage its importance.

There is a mismatch between the strategy and the implementing actions of the QDR.

The QDR further anticipates that a revolution in military affairs "will fundamentally change the way US forces fight." The components of this revolution are generally understood to be information technology and precision strike, capabilities that are concentrated in air and space forces.

All of this would suggest emphasis on airpower and spacepower. In fact, it is airpower that is cut most under the QDR, with the Air Force taking the deepest cuts of all. Active-duty ground forces of the Army and the Marine Corps survive the restructuring intact. So do all 12 of the Navy's carriers.

The Air Force gives up one active-duty fighter wing, replacing it with a general purpose reserve component wing created by converting force structure from Air National Guard air defense squadrons. The Air Force also absorbs 43 percent of the total active-duty force cuts for all services and takes substantial reductions in the numbers of F-22 fighters and Joint STARS surveillance and targeting aircraft to be procured.

The Air Force concurs in these reductions and says it can get the job done with the reduced force. Even so, there is a mismatch between the QDR strategy and the implementing actions that sends, at best, mixed signals about the direction ordained.

Claims to the contrary notwithstanding, the QDR process was budget-driven. That does not mean strategic considerations got short shrift, but the financial perspective was pivotal.

Several years ago, the Department of Defense announced that, to modernize the force, procurement funding would rise to about $60 billion by Fiscal Year 2001. Since then, unfortunately, each yearly defense program has had to postpone the previous year's plan to begin increasing procurement spending. The QDR report cites a "chronic migration of funds," attributable to unprogrammed operations, unexpected requirements, and savings that failed to materialize.

The QDR says there is virtually no chance that the defense budget will be increased. Thus, if the force continues at present levels, there is little hope that procurement funding can rise above $50 billion a year. With the internal realignments specified by the QDR, $60 billion a year is possible.

Maybe. If Congress balks at the proposed infrastructure reductions, such as proposed base closures, assumptions about cost reductions and procurement funding may fall by the wayside.

If the savings do work out, it would be good to see them applied to bringing the force projections into better alignment with the strategy and to a stronger priority on defense of our vital interests in the conflicts that are most consequential.

As it stands, the QDR is less a measure of what the nation needs than it is of what the Pentagon believes the nation is willing to pay for. ■

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Letters

Forty Years' War

How you could have an article entitled "The Forty Years' War" *[April 1997, p. 28]* without a single word or picture about the part played by the B-36 bombers and crews is completely beyond me.

For about 10 years, from 1948 until 1958, the largest and best airplane I ever flew in 33 years of service with the Army Air Corps and US Air Force was the "big stick" that kept the Soviets at bay for that portion of the so-called Cold War. We stood alert duty with the Mk. 6 atom bomb in the bomb bay and later with the huge, 42,000-pound Mk. 17 hydrogen bomb. We flew countless simulated combat missions and made thousands of practice runs on radar bomb scoring sites all over the country. Each crew had an assigned target in the Soviet Union that we studied until we could have flown the mission in our sleep. . . .

Col. Clarence L. Carson,
USAF (Ret.)
Fort Worth, Tex.

Having served as a pilot during the period 1954 through 1981, I found "The Forty Years' War" very interesting. However, one aircraft that played a major role from the early 1950s until the mid-1960s was totally left out—the KC-97 tanker.

For many years, the KC-97 was the workhorse refueler for Strategic Air Command. Prior to the introduction of the intercontinental ballistic missile, the KC-97 was stationed all over the free world, either on a permanent basis or on a 90-day TDY rotation. For every SAC bomber on 24-hour alert, there was at least one KC-97 on alert for that bomber. The KC-97 was one of the mainstays of SAC's deterrent force.

The KC-135 jet tanker finally took over the refueling role for USAF. The KC-97s were either converted into cargo aircraft or transferred to the Air National Guard.

Col. R. Jerry Ellis,
USAF (Ret.)
Corpus Christi, Tex.

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

Air War in Korea

Just to set the record straight, I was the one who took the picture of Capt. Joseph C. McConnell, Jr., used on the cover of the March 1997 issue.

Gil Lowder, who is credited with this photo, and I were both pilots in the 39th Fighter-Interceptor Squadron, 51st Fighter-Interceptor Wing, K-13, Suwon, South Korea. Gil and I are old friends. . . . Actually, Gil is the guy in the picture wearing the yellow hat in the immediate foreground.

Ronald Wilson
Templeton, Calif.

Congratulations on the article in the March issue covering the air war in Korea *[p. 26]*. The most notable advances in technology compared to World War II were the operations of jet-powered aircraft and helicopters.

In your description of the C-124 Globemaster, known as "Old Shaky," it was accurate as to some of the Douglas transport's key features. However, in hauling cargo and troops across the Pacific from Travis AFB, Calif., with standard loads of 25,000 to 30,000 pounds, en route refueling stops were made at Hickam AFB, Hawaii, and either Wake Island or Midway. Tachikawa AB, Japan, which had only a 5,200-foot runway, was the primary base for operations to and from Korea. If the aircraft were ferried empty, under good weather conditions, it would still require at

least one refueling stop, either in Alaska or Hawaii, on a westbound transpacific flight.

With the advent of military jet transports, such as the C-135 and C-141, Yokota AB, Japan, with its longer runways, became the primary destination in Japan, and frequently aircraft were routed to Korea from Hawaii or Alaska.

Lt. Col. David B. Mautner, USAF (Ret.)
Henderson, Nev.

The caption to the photo of the burning C-54 in "The Air War in Korea" should have noted that the Skymaster was a Far East Air Forces airlifter, not a Military Air Transport Service aircraft as stated. It belonged to the 6th Troop Carrier Squadron, Tachikawa AB, Japan, and it is burning at Suwon AB, not Kimpo AB. . . .

Maj. H. R. Dunlop, USAF (Ret.)
King William, Va.

South Texas Roots

"South Texas Roots" *[April 1997, p. 46]* refreshed some of the memories that have remained vaguely in my mind from early childhood. I particularly appreciated the picture of the six flyers on p. 49. . . .

Charles Lindbergh and Lt. Claire L. Chennault were identified in the article. Another member of the group, to the left of Chennault, is his good friend and my father, Lt. Wendell H. Brookley. My father was director of Flight Training at the time. This same picture appeared in the December 9, 1928, New York *Times* with the banner, "Where the Lone Eagle First Took Flight." . . .

The man on my father's left is Lt. Robert W. Harper. Later, as a lieutenant general, he was commander of Air Training Command from 1948 to 1954. The two men on the right are Capt. L. R. Knight and Maj. Charles B. Oldfield.

According to my mother, Lindbergh had difficulty getting through flight school, not because of any problem with his ability to fly but due to wanting to do it his way rather than the military way. Obviously, it didn't harm his future a bit. . . .

William Q. Brookley
Melbourne, Fla.

"South Texas Roots" was excellent but had one major omission. Nowhere did the author mention Duncan Field, immediately adjacent to Kelly, which in 1942 was one of the leading maintenance depots in Air Service Command and a prime training center for engineering officers and test pilots for the many air depots and maintenance squadrons to be located around the world during World War II. . . .

In December 1996, my wife and I spent one week at Kelly Field. In the room was a directory that described the history of Kelly Field with the same omission. . . . I was going to call this fact to someone's attention, but it was Christmas week and the proper people were not present. About 300 feet from our Kelly quarters was a building with the name "Duncan Field" in the concrete in the doorway!

Lt. Col. Roy J. Bierman, AFRES (Ret.)
Bella Vista, Ark.

San Antonio Aviation Cadet Center did not close in April 1944. I was in aviation cadet preflight from April to July 1944. I left SAACC in September for navigation school at Selman Field, La. I don't know when SAACC closed, but there were lots of cadets there when I left.

Lt. Col. Donald W. Campbell, USAF (Ret.)
Seal Beach, Calif.

Gallery of Classics

Your "Gallery of Classics" *[February 1997, p. 45]* brought many memories. However, all the P-61 Black Widows I worked on had dorsal gun turrets, not ventral.

Louis P. Pushkarsky
Trenton, Mo.

I am sure I will not be the only ex–Air Force pilot who will write to correct the letter in the May 1997 issue *["Classical Gas," p. 8]* from William R. Timmons, Jr., in which he wrote, "I also saw the AT-9 at Enid, Okla., while on a cross-country flight. The AT-9 had balsa wings, and a bad hailstorm would cause a good deal of damage. . . ."

In fact, the AT-9 was an all-metal airplane. I believe Timmons has it mixed up with the Cessna "Bamboo Bomber" aircraft—AT-8, AT-17, and UC-78, which were primarily wood.

I flew AT-9s with Aviation Student Class 42-F at Mather Field, Calif., in the summer of 1942. Most of us thought it a good airplane, and I never heard of any structural problems. It had an unearned reputation as a "hot" airplane, but we all learned there were much "hotter" ones coming up later.

The only remaining Curtiss AT-9 that I know of can be seen at the US Air Force Museum at Wright-Patterson AFB, Ohio.

Lt. Col. John J. Hoye, USAF (Ret.)
Lewiston, Idaho

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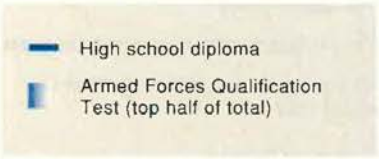
The Chart Page

By Tamar A. Mehuron, Associate Editor

Spotlight on Recruiting

Each year, the armed forces must recruit close to 200,000 new enlisted members for active duty and another 150,000 for the Reserve and Guard. The Defense Department prizes recruits with high school diplomas. Historically, 80 percent of these recruits complete an initial three-year enlistment, while those who don't graduate fulfill their commitment only about half the time.

Throughout the 1990s, 95 percent or more of all recruits had a high school diploma at the time of enlistment, as shown. Moreover, they showed strong aptitude in math and verbal skills—well above DoD's requirement for 60 percent of recruits to score in the top half of the Armed Forces Qualification Test.



Enlisted Recruit Quantity (Accessions)

Service	FY 1996 objectives	FY 1996 actual	FY 1997 planned	FY 1998 planned
Army	73,400	73,400	89,700	84,000
Navy	48,200	48,200	56,700	53,800
Marine Corps	33,500	33,500	35,300	36,400
Air Force	30,900	30,900	30,200	30,400
Total	186,000	186,000	211,900	204,600

In Fiscal 1996, each service met its numerical goal, as shown. Yet the services face the challenge of higher goals, without a major increase in recruitment resources. From 1995 through 1997, recruiting funding stayed more or less flat while the work load grew by 20 percent.

Quality of Reserve/Guard Recruits (FY 1995 non–prior service)

Service	Percent high school graduates	Percent above-average aptitude
Army National Guard	82%	56%
Army Reserve	95%	74%
Naval Reserve	100%	82%
Marine Corps Reserve	98%	78%
Air National Guard	93%	73%
Air Force Reserve	94%	77%
Total	90%	66%

The Reserve and Guard have enjoyed success in attracting high school graduates, achieving a rate of more than 90 percent in 1995. Continued reliance on reserve units for contingency missions, coupled with the decline in active-duty personnel who eventually enter the reserves, will place greater emphasis on recruiting first-time enlistees.

Source: "Annual Report to the Pres dent and the Congress," April 1997, Secretary of Defense William S. Cohen.

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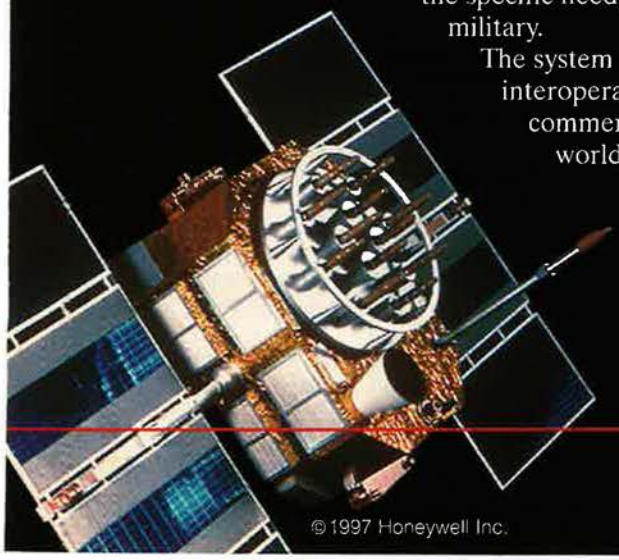

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Aerospace World

By Suzann Chapman, Associate Editor

Defense Scrutiny Grinds On

Defense Secretary William S. Cohen told reporters May 14 that he had formed a Task Force on Defense Reform to recommend additional ways to streamline Defense Department operations. The task force is an outgrowth of the six-month-long Quadrennial Defense Review, released May 19. *[See "Snapshot of the QDR," p. 17.]*

Cohen said the QDR didn't have time to take a thorough look at "significant reforms" in management structure.

What's now needed, he said, is "to focus a good deal more analysis and effort" on the Office of the Secretary of Defense, its field agencies, and the military departments. "Essentially [OSD] has been growing like Topsy," he reported.

The Secretary did note that the Pentagon had made progress in recent years through computerization and other practices, such as buying off-the-shelf technology. These steps had created more efficient operations, he said, but he emphasized the need to accomplish "much more" in the way of reform. "There's a great deal of redundancy in much of what we do," he claimed.

Cohen said he expected to have the task force report its findings by November 30.

Panel Members Named

The Defense Secretary initially named seven business and defense experts to the task force, stating that they would work with DoD Comptroller John J. Hamre, who was slated to succeed John P. White as deputy secretary of Defense.

- Michael J. Bayer, business–government relations consultant and former official in the Energy and Commerce departments.
- David Chu, director of RAND's Washington, D.C., office and former assistant secretary of defense, Program Analysis and Evaluation.
- Rhett Dawson, president, Information Technology Industry Council.
- James Locher, former assistant secretary of defense for Special Operations and Low-Intensity Conflict.

Staff photo by Guy Aceto

Defense Secretary William S. Cohen addresses visitors at the Joint Services Open House at Andrews AFB, Md., in May, shortly before introducing the Quadrennial Defense Review. **[See "Snapshot of the QDR," p. 17.]**

- Arnold Punaro, senior vice president of Corporate Development at Science Applications International Corp. and former staff director of the Senate Armed Services Committee.
- G. Kim Wincup, a program director at SAIC and former assistant secretary of the Air Force for Acquisition and former assistant secretary of the Army for Manpower and Reserve Affairs.
- Dov Zakheim, corporate vice president and director of the Center for Policy Planning, System Planning Corp., chief executive officer of SPC International, and former deputy under secretary of defense for Planning and Resources.

Cohen indicated he might add more members. The task force will collaborate with corporate leaders and the National Defense Panel working on an independent assessment of the US military.

C-17 Christened *Bob Hope*

In a ceremony April 22 at the McDonnell Douglas facility in Long Beach, Calif., the Air Force dedicated the thirty-second C-17 Globemaster III to entertainer Bob Hope. The 94-year-old comedian, who attended the dedication with his wife, Dolores, is the first individual for whom a new airlifter has been named.

Hope, who began his show business career in vaudeville and continued through 60 years of radio, film, and television, entertained American troops around the world for more than 50 years.

In naming the aircraft for Hope during the Air Force's fiftieth anniversary, Air Force Secretary Sheila E. Widnall said that she couldn't think of a better tribute.

"We thought we'd give you, in a sense, an airplane—an airplane which, like you, will go visit troops in some of the least enviable locations on the planet. After all, the folks crawling through mud and jungles don't really expect to see this plane any more than they expected to see you—but the plane, like you, will show up," she said.

The aircraft will be assigned to the 437th Airlift Wing, Charleston AFB, S. C.

USAF Forms Single Lab

Air Force Materiel Command announced in April that it had consolidated its lab operations in a single Air Force laboratory—the Air Force Research Laboratory. The move came as part of the Air Force response to an ongoing Congressional initiative to consolidate defense labs and test centers.

AFMC plans initially to retain its four existing labs at their current locations but place them and the Air Force Office of Scientific Research under one commander.

Current research labs are Armstrong Laboratory, Brooks AFB, Tex.; Phillips Laboratory, Kirtland AFB, N.M.; Rome Laboratory, Rome, N.Y.; and Wright Laboratory, Wright-Patterson AFB, Ohio. The Air Force Office of Scientific Research is located at Bolling AFB, D.C.

Maj. Gen. Richard R. Paul, formerly AFMC director of Science and Technology, will command the new research lab. The AFMC Science and Technology staff will provide the core laboratory staff, augmented by personnel from the four existing labs.

AFMC officials expect the move to reduce manpower but stated it was too early to estimate how many or where positions would be cut. As part of an earlier streamlining move, the Air Force consolidated its lab structure from 14 independent facilities to four superlabs in 1991. The service is also under a Congressional mandate to cut 35 percent of its lab manpower by 2001.

Fuel Flow Problem Downed HC-130P

The accident investigation report released April 24, on the crash of an Air Force Reserve Command HC-130P that claimed 10 lives, revealed that the aircraft's engines ceased to operate for lack of fuel flow.

Col. Larry L. Landtroop, the lead accident investigator, stated that there was not enough evidence to determine why the fuel stopped flowing to the engines.

Portions of the aircraft wreckage, including the cockpit voice recorder, flight data recorder, and one engine, were recovered from the ocean floor in more than 5,100 feet of water by the Navy's Deep Submergence Unit.

The HC-130P, carrying a 10-person crew and one passenger, was en route to NAS North Island, Calif., from Portland IAP, Ore., on November 22 on a routine overwater navigation training mission when the aircraft crashed into the Pacific about 60 miles off the coast of northern California. *[See*

The Departure of Kelly Flinn

Kelly J. Flinn, the Air Force's first female bomber pilot, officially left Minot AFB, N.D., and the Air Force on May 29. The former first lieutenant had received notice on May 22 that USAF had denied her request for resignation with an honorable discharge in lieu of court-martial. Instead she received a general discharge.

The former B-52 copilot was charged with adultery, fraternization, lying to investigators, and disobeying a direct order. Air Force Secretary Sheila E. Widnall had forestalled Flinn's May 20 court-martial by taking up a review of her request for resignation in what had become a politically charged case.

USAF Chief of Staff Gen. Ronald R. Fogleman, responding to Sen. Tom Harkin (D-Iowa) during a hearing on the Air Force budget on May 21, reminded Senators that Congress had established the Uniform Code of Military Justice. He emphasized, "This is not an issue of adultery. This is an issue about an officer who is entrusted to fly nuclear weapons who disobeyed an order, who lied. That's what this is about."

From the beginning, the Flinn case was headline news. Her supporters, including some members of Congress, keyed on the adultery issue, with many labeling the military as being out of touch with reality and with some even claiming gender discrimination. Senate Majority Leader Trent Lott (R-Miss.) claimed Flinn was being singled out and should receive an honorable discharge. Many female lawmakers took the position that the military unfairly targeted women.

However, the numbers do not support that argument. Last year alone, the Air Force court-martialed 60 men and seven women on charges including adultery.

In the view of the Air Force and its backers in Congress, Flinn's supporters overlooked the most serious offense—disobeying an order.

The 26-year-old former lieutenant, a US Air Force Academy graduate and most distinguished graduate of her B-52 training class, seemed destined to set new standards of achievement for women in the military. However, Flinn made some serious mistakes for a military officer. The one that attracted most national attention was her affair with the husband of an Air Force enlisted woman.

To make matters worse, Flinn lied to investigators about the affair and refused a lawful written order to stop seeing the man. In addition, she had previously had a brief affair with an Air Force enlisted man.

Flinn arrived at Minot in October 1995. In July 1996, she began an affair with Marc Zigo, the base's civilian soccer coach, who was married to Amn. Gayla A. Zigo. (Marc Zigo later said he lied when he told Flinn he was legally separated from his wife and had filed for divorce.)

Meanwhile, Zigo's wife found a love letter from Flinn and confronted Zigo, who told her Flinn was stalking him. A noncommissioned officer talked with Flinn on behalf of Gayla Zigo.

In November, the service began its investigation of Flinn's relationship with Zigo, which had come to light during another unrelated investigation. At that point—according to Flinn, who thought Zigo intended to marry her after his divorce—she and Zigo agreed not to tell investigators about their affair. Unknown to Flinn, Zigo instead gave them a written statement with complete details. At about the same time, Gayla Zigo accused Marc Zigo of involvement with a third woman and told him to move out. She filed for divorce. Zigo moved in with Flinn after he supposedly attempted suicide and said he couldn't live without Flinn.

In December, Flinn's squadron commander issued Flinn a written order to stay away from Marc Zigo. Flinn chose to ignore the order. She told the New York *Times* she had decided to try to salvage her relationship with Zigo.

In January, the Air Force filed its charges against Flinn. Investigators showed her the file of statements made by Zigo. Flinn then asked the Air Force for help to remove Zigo from her home. In February, Lt. Gen. Phillip J. Ford, 8th Air Force commander, Barksdale AFB, La., referred the case to court-martial.

On May 20, as Widnall delayed the trial to review Flinn's request for resignation, she also considered a letter from Gayla Zigo asking for the maximum punishment.

Approving resignation in lieu of court-martial is not unusual. The Air Force approved 10 of 23 requests in 1994, 10 of 49 in 1995, and seven of 38 in 1996. However, the service did not grant an honorable discharge in any of those cases.

A general discharge carries no criminal sanctions but does levy a punishment. In this case, Flinn must repay the Air Force for the last year of her service obligation (valued at about $19,000), may not enter the Air Force reserves, and will not be eligible to receive any veterans' benefits.

Photo by Cary Cutrell, Robins AFB, Ga.

Generations came together at the opening of a new 5,000-square-foot exhibit at the Robins AFB, Ga., Museum of Aviation, dedicated to America's black aviators. Above, Tuskegee Airman Lt. Col. Charles Dryden, USAF (Ret.), autographs young Quintin Banks's shirt, while B-1B pilot Maj. Lenue Gilchrist, Jr., assists.

"Reserve Crash Claims 10," February 1997 "Aerospace World," p. 13.]

All 11 Reservists on board were assigned to the 939th Rescue Wing at Portland. The Coast Guard rescued one injured crew member.

Multiaircraft Simulation Revamps Training

USAF's Armstrong Laboratory has demonstrated that it can link simulators for a variety of aircraft or other weapons at different locations to produce a "virtual battlefield" experience.

Armstrong's aircrew training research division, based at the former Williams AFB, Ariz., demonstrated its distributed mission training concept at the USAF–Air Force Association's Air Force Fifty celebration in Las Vegas in April. They linked flight simulators for four F-16s, two A-10s, and a C-130 to conduct a virtual airdrop mission over hostile territory—the first time the unit had tested a composite wing training scenario.

For the exhibit, eight simulators were crammed into one room. However, division officials stated they can use existing phone lines and defense computer networks to link simulators used by multiple aircrews at locations around the world. They have ever used the system to hook up with Army tank simulators.

Officials believe the system, once fielded, will greatly enhance training. According to Maj. Reid Reasor, an Armstrong program manager, it is "still a couple of years away from where we want it. We want it to smell, act, and respond like a real jet. If it doesn't, then pilots won't accept it. . . . We're really close, though."

Tricare's HMO to Reach GSUs

Pentagon health officials believe the Department of Defense, by early 1998, will have extended full Tricare benefits to some 165,000 personnel in geographically separated units within the continental United States. Tricare is DoD's new managed healthcare program.

The change will allow certain active-duty members, such as recruiters, and their families to enroll in Tricare Prime instead of being forced to rely on the higher-cost Tricare Standard.

Initially, the first regions to implement Tricare placed distance limitations on those who could enroll in Tricare Prime, the health maintenance organization–type option. Instead, those individuals had to rely on Tricare Standard, the fee-for-service option.

Last year, DoD began a test of expanded coverage in Region 11 (Oregon, Washington, and northern Idaho), the first to begin Tricare operation. The region originally had limited participation in Tricare Prime to those living within about one hour of a military treatment facility.

As other regions have set up their contracts, they have extended the Prime option to cover more beneficiaries no matter where they live. For example, Region 6 (most of Texas, Oklahoma, Arkansas, and Louisiana) added major metropolitan areas with significant DoD populations. Other regions have required justification for not making Prime available to everyone. The last three regions to open will stipulate Prime coverage for all eligible beneficiaries.

However, Air Force Col. Jerome P. Luby, DoD director of Tricare Operations and Policy, pointed out that it is sometimes difficult to create these kinds of contractual relationships—particularly in small, rural towns that have never heard of managed care. "We worked through most of those problems in Region 11, but extending Prime will differ in every region," said Luby.

Mongoose Recovers Millions

A little-known, but increasingly effective, program has stopped the outflow of more than $6 million in retiree and annuitant pay disbursed each year to dead or ineligible people.

"Operation Mongoose," as the program is called, currently is investigating other questionable payments totaling more than $11 million.

DoD Comptroller Hamre, who initiated the program in June 1994, mentioned this operation, as well as other financial reform efforts, during Congressional testimony in May.

Operation Mongoose was designed to detect and to stop fraudulent and erroneous payments to vendors or active-duty, retired, or civilian personnel. Using sophisticated computer technology to run complex matches, the Defense Finance and Accounting Service and Defense Manpower Data Center can identify anomalies that may indicate fraud. The DoD Inspector General then investigates the case.

In addition, Mongoose has enabled the Pentagon to help some retirees and annuitants resolve pay issues and receive thousands of dollars to which they were entitled.

According to DFAS Director Richard F. Keevey, Operation Mongoose may be an "after the fact" process to detect fraud, but another of the program's goals is to reduce the vulnerability of the Pentagon's computer network to intrusion.

Privatized Housing, 10 Years Later

In Massachusetts, privatized housing for military members is not just a concept but a reality. As the Pentagon begins to develop new initiatives to privatize its military housing, a 10-year-old effort at Hanscom AFB, Mass., seems to offer some valuable experience.

USAF Shifts Force Structure

The Air Force announced in April and May force-structure changes that will affect operations in 29 states during Fiscal 1998. Officials made the changes, listed below by state, to meet mission and efficiency adjustments, as well as Congressional requirements.

Alaska. The 517th Airlift Squadron at Elmendorf AFB will gain six C-130H aircraft from Yokota AB, Japan, and increase its military personnel positions by 278.

Alabama. The Air Force Doctrine Center will move from Langley AFB, Va., to Maxwell AFB, resulting in an increase of 55 military and four civilian positions at Maxwell.

Arizona. Davis-Monthan AFB will lose four A-10 and six OA-10 aircraft, which will move to other A/OA-10 units worldwide for backup or attrition reserve, as needed, and lose 96 military positions. Davis-Monthan will gain 21 military positions for the 612th Air Intelligence Squadron. Luke AFB will lose six F-16C aircraft and 88 military positions. Luke will also place 11 F-16C/D aircraft in attrition reserve.

Arkansas. Little Rock AFB will lose two C-130E aircraft and 75 military positions. The base will also redesignate 14 C-130s from combat support to training status, resulting in a loss of 70 military positions.

California. The 13th Intelligence Squadron at Beale AFB will gain six military positions. The 146th Airlift Wing (ANG) at Channel Islands ANGB will lose four C-130E aircraft with a loss of 11 full-time military, 125 drill, and 20 civilian positions. Air Force Reserve Command's 4th Air Force will move from McClellan AFB to March ARB, which will gain 76 civilian positions. The Defense Commissary Agency will establish one of its regional headquarters at McClellan AFB, bringing in 145 civilian positions. The 20th Airlift Squadron at Travis AFB retires its last nine C-141Bs, completing a previously announced change and resulting in a loss of 396 military and 44 civilian positions. The same action reduces the 349th Air Mobility Wing (AFRC) by 292 drill and 51 civilian positions. At Vandenberg AFB, the Air Force has extended the Peacekeeper ICBM follow-on test and evaluation program for another year. Vandenberg will lose 109 civilian positions due to the Federal Work Force Restructuring Act of 1994.

Colorado. The 140th Wing (ANG) at Buckley ANGB will retire its remaining two T-43As, with a loss of 22 military and 50 drill positions. The 821st Space Group (ANG) at Buckley will gain 52 military positions. Falcon AFB will activate the Space Battle Lab, increasing base strength by 23 military positions. Under the 1994 FWRA, Falcon will lose 54 civilian positions. The 302d Airlift Wing (AFRC) at Peterson AFB will lose two C-130H aircraft. Peterson will lose 91 civilian positions under the 1994 FWRA.

Florida. The 33d Fighter Wing at Eglin AFB will lose six F-16C/D aircraft, leading to inactivation of one of its fighter squadrons and loss of 253 military positions. The base will establish the Unmanned Aerial Vehicle Battle Lab, including 22 military and three civilian positions. Special operations squadrons at Hurlburt Field will lose one MH-53J and three MH-60G helicopters, resulting in a total loss of 104 military positions. Hurlburt will activate the Battle Management Battle Lab, including 22 military and three civilian positions. Patrick AFB will lose 102 civilian positions under the 1994 FWRA.

Georgia. The 52d Airlift Squadron will deactivate at Moody AFB, decreasing base aircraft by eight C-130Es and military positions by 425. The 41st and 71st Rescue Squadrons will move from Patrick AFB to Moody, giving Moody an additional 714 military and 19 civilian positions. The 41st will also gain two more HH-60 helicopters and 40 military positions. Robins AFB will gain four B-1B bombers and 113 additional military positions when the base receives its fourth E-8C Joint STARS.

Idaho. By taking over the electronic combat mission of the 366th Range Squadron, Mountain Home AFB, the Idaho ANG gains 132 full-time military positions. Mountain Home also gains one civilian and 24 military positions for the new Air Expeditionary Force Battle Lab.

Illinois. Scott AFB will gain 66 military and 20 civilian positions, based on USAF's consolidation of air mobility forces under Air Mobility Command. However, the base will lose 132 military and 57 civilian positions when Air Weather Service consolidates with the USAF Global Weather Center at Offutt AFB, Neb.

Kentucky. The 123d Airlift Wing (ANG) at Louisville IAP will lose four C-130H aircraft and 11 military, 125 drill, and 20 civilian positions.

Louisiana. Under the 1994 FWRA, Barksdale AFB will lose 51 civilian positions.

Maryland. The Air Force Office of Special Investigations at Bolling AFB, D.C., will move to Andrews AFB, providing an increase of 119 military and 25 civilian positions at Andrews. However, Andrews will lose 49 civilian positions under the 1994 FWRA.

Mississippi. AFRC's 403d Wing at Keesler AFB will transition from the WC-130H to the WC-130J. Keesler will also host consolidated communications training courses for the Army, Marine Corps, and Air Force, increasing the base's military positions by 71.

Nebraska. Offutt AFB gains two RC-135W Rivet Joint aircraft, along with 77 military positions. Formation of the Air Force Weather Agency brings 120 military and 48 civilian positions. Transfer of the airborne command post mission to the Navy results in retirement of two EC-135 aircraft in 1998 and the remainder in 1999. That move and other actions will cut 222 military and 84 civilian positions from the base.

Nevada. At Nellis AFB, six F-16C/D fighters used by the Thunderbirds will change from training to combat-coded aircraft. The 422d Test Squadron will lose four F-16C/Ds and one F-15C/D, including a reduction of 50 military positions. The 66th Rescue Squadron will gain 127 military positions for the combat search-and-rescue mission. The base will also activate the 11th Reconnaissance Squadron, gaining 246 military positions. It will lose 77 civilian positions under the 1994 FWRA.

New Jersey. USAF's Special Operations Low Level mission will transfer to McGuire AFB, with 53 military positions, from Charleston AFB, S.C.

New Mexico. When the 27th Fighter Wing at Cannon AFB retires the EF-111 fleet, the base will lose 746 military and 12 civilian positions. Kirtland AFB will inactivate the Air Force Security Policy Agency, with a loss of 49 military and 15 civilian positions. Under the 1994 FWRA, Holloman AFB will lose 57 civilian positions.

North Carolina. ANG's 145th Airlift Wing at Charlotte/Douglas IAP, will lose four C-130H aircraft, with a decrease of 11 full-time military, 125 drill, and 20 civilian positions. Seymour Johnson AFB will drop 57 civilian positions under the 1994 FWRA.

Ohio. Several actions at Wright-Patterson AFB result in a loss of 94 military and 362 civilian positions. AFMC took the heaviest cuts, losing 77 military and 277 civilian positions.

Pennsylvania. The 193d Special Operations Wing (ANG) at Harrisburg IAP will convert one EC-130E aircraft to backup status. The 913th Airlift Wing (AFRC) at Willow Grove ARS will lose two C-130E aircraft, with a decrease of 72 drill and 13 civilian positions.

South Carolina. The 437th Airlift Wing at Charleston AFB will gain 200 military and 16 civilian positions along with six new C-17s. The wing will also retire four C-141B airlifters, taking a reduction of 149 military and 16 civilian positions. The same aircraft changes will affect AFRC's 315th Airlift Wing, resulting in an overall increase of 75 drill and 20 civilian positions. The loss of the Special Operations Low Level mission will decrease Charleston's manpower by 53 military positions.

South Dakota. Reactivation of the 77th Bomb Squadron, Ellsworth AFB, and return of four B-1B bombers from attrition reserve will result in an increase of 369 military positions.

Tennessee. ANG's 118th Airlift Wing at Nashville Metropolitan Airport will lose four C-130H aircraft, with a loss of 11 full-time military, 125 drill, and 20 civilian positions.

Virginia. The 30th Intelligence Squadron at Langley AFB will gain 53 military positions. As a result of the Air Force Doctrine Center move, the base will lose 10 military and four civilian positions. It will also lose 61 civilian positions under the 1994 FWRA.

Washington. At Fairchild AFB, the Defense Meteorological Satellite Program will move to the Department of Commerce, with a loss of one civilian and 32 military positions. The 62d Airlift Wing at McChord AFB will begin to retire its C-141B aircraft, resulting in a decrease of 171 military and 13 civilian positions. As part of the C-141B retirements, the 446th Airlift Wing (AFRC) will lose 107 drill and 14 civilian positions.

West Virginia. ANG's 167th Airlift Wing at Eastern West Virginia Regional Airport/Shepherd Field will lose four C-130H aircraft and 11 full-time military, 125 drill, and 20 civilian positions.

Wisconsin. AFRC's 440th Airlift Wing at General Mitchell IAP/ARS will drop two C-130H aircraft.

Wyoming. Under the 1994 FWRA, Francis E. Warren AFB will lose 56 civilian positions.

Photo by Paul Kennedy

Actor Harrison Ford finds his seat for the next performance of the Thunderbirds during events at Andrews AFB, Md., in May. Crew Chief SSgt. Thomas Muse was there with a helping hand before the orientation flight for the well-known actor, who portrays the President in the upcoming movie "Air Force One."

In 1986, Hanscom officials began a build-to-lease project to eliminate quickly a shortage of 163 housing units. The Claremont Development Corp. began construction in the spring and delivered the keys to the first townhouse-style single-family homes in March 1987. All 163 units, known as Patriot Village, were completed by November 1987.

Under the 1986 build-to-lease agreement, which committed the government to a 20-year lease, the contractor had to secure his own financing and build on or near Hanscom AFB.

At the end of 20 years, the Air Force can purchase the village at fair market value, continue the lease another 10 years, or turn the site over to Claremont.

Today, base officials state that a life-cycle economic comparison shows the village to be more cost-effective, when all construction and maintenance costs are considered, than it would have been under the standard military construction program. According to Claremont officials, the company considers the project a good investment and would be pleased to begin work on another.

Village residents also seem happy, citing spaciousness and fast maintenance service by the contractor. One noncommissioned officer who has lived in other Air Force base housing stated he and his family consider it "the best house we've had in 16 years" and declined to move when he was promoted to master sergeant.

FAA Clears Alaska Airspace Makeover

The Air Force received final approval from the Federal Aviation Administration on April 22 on its plan to modify the military airspace operating areas in Alaska.

The approval culminated four years of work begun by Gen. Joseph W. Ralston, then 11th Air Force commander and now vice chairman of the Joint Chiefs of Staff. Ralston invited Alaskans to take an active role in the modification process.

Many of the state's residents accepted the offer and worked with the Air Force, creating what is now viewed as a model for civil-military airspace partnerships, according to Alaskan Command officials.

Working with Alaskan residents and special interest groups, Air Force officials were able to alter USAF plans to avoid potential problems, such as interfering with migratory caribou herds, which still provide subsistence for some native Alaskan tribes.

According to Lt. Col. Bob Siter, a charter member of the airspace initiative team, interaction with residents and civic leaders made the approval possible. "We made over 30 significant modifications and mitigations to our major flying exercise and routine readiness training programs, based on our positive interaction with the people of Alaska," he said.

More Eyes on Gulf War Illnesses

The Pentagon announced May 1 that Defense Secretary Cohen had asked former Sen. Warren B. Rudman to conduct an outside review of DoD findings on Persian Gulf War illnesses issues.

In a letter to Rudman, Cohen stated that the Pentagon team working on the issues is "making steady and significant progress in [its] efforts to reconstruct events and to understand the factors that may have harmed the health of Gulf War veterans." He also cited the more than 80 research projects under way.

Noting that the results of these investigations will soon be available, Cohen called on Rudman to make "whatever recommendations you believe appropriate, based on the findings of the investigations."

Congressional News

QDR Sparks Panic Over Bases

Striking terror into communities around the country, Defense Secretary William S. Cohen said May 19 that the Pentagon's Quadrennial Defense Review found a need for at least two more rounds of base closures. Not surprisingly, the topic consumed much of the initial Congressional hearings devoted to the QDR.

For some Congressmen, it provided a fresh opportunity to vent frustrations over the last base realignment and closure process. Many have complained for the past two years that President Bill Clinton politicized the 1995 BRAC process when he pushed for privatization of two Air Force depots rather than outright closure, as the BRAC commission had recommended.

Others questioned whether such closures or privatizations actually save money and doubted the wisdom of the Pentagon's new request to end the 60-40 rule, which dictates that 60 percent of DoD's depot maintenance work must occur in government depots and no more than 40 percent in private industry.

Throughout their testimony, Cohen and the service chiefs maintained that the military must trim excess infrastructure to pay for modernization. In their eyes, it's either cut support tail or combat teeth.

The numbers are clear, they said. Since 1989, force levels dropped 33 percent and procurement funding about 67 percent. In that same period, infrastructure came down 26 percent worldwide and only 21 percent in the continental US.

Despite the numbers, one lawmaker after another hammered at the defense leaders with vows to oppose new base closures unless "politics" could be eliminated. To many, Clinton engaged in rank vote-buying when he decided to privatize the functions of the Air Force's air logistics centers at Kelly AFB, Tex., and McClellan AFB, Calif., rather than close them.

Sen. John McCain (R-Ariz.), who stated his support for additional BRAC rounds, complained that there is a perception, whether real or not, that the last round was politicized. Even so, Cohen repeatedly insisted—as has the Air Force—that the BRAC commission left the option open to either close the depots at Kelly and McClellan or privatize their functions.

But Cohen stressed that if Congress disagrees "with giving a commission this kind of discretion, then you can always restrict it in the future."

The Defense Secretary also responded to several Congressmen who complained that "privatization in place" was not the same as privatization. He noted that the Air Force was now engaged in public/private competitions at both facilities.

When asked how the Pentagon could expect Congress to make a decision on future BRAC actions when the actual savings from the first four rounds were unknown, Cohen replied that although the costs "were underestimated in the past," the Pentagon has learned from the previous rounds and can make better assessments.

The Pentagon now expects to save about $5 billion annually from the first four BRAC rounds. Cohen estimated each new round would produce about $1.4 billion per year after paying out initial costs.

Wanted: More Flexibility

During a subsequent QDR hearing, Sen. Charles S. Robb (D-Va.) asked the service chiefs to suggest possible changes Congress could carry out to make their jobs easier. Three stated they would like more flexibility to move forces around to become more efficient.

Gen. Ronald R. Fogleman, the Air Force Chief of Staff, said USAF, early in the drawdown, changed the complement of a fighter squadron from 24 to 18 aircraft, leaving the force spread out over more bases. He said that made sense at the time because of forces returning from overseas.

"Today it no longer makes sense," he said, noting that he would like to shift aircraft around again to produce 24-aircraft squadrons. Legal constraints prevent him from doing so, however. "If I had the latitude to go do that, we save big bucks and we save manpower," said the General.

The service chiefs were tackled on the National Defense Panel (NDP) analysis of the QDR. The panel of outside defense experts, in its critique of the QDR, said assumptions about savings from the two BRAC rounds, privatization, and other infrastructure reforms are tenuous and place the Pentagon's modernization plan at risk.

Fogleman replied that the NDP probably made "a valid assessment, but we're certainly well aware of that." He added that he thought the services would be "more or less successful on all or some of them." However, he stated that the greater risk to the QDR strategy and forces "is the long-term viability of the defense spending at the level that we have it." ■

Additionally, he asked Rudman to "pay attention to the cooperation between the Department of Defense and the intelligence community and suggest ways to improve the provision, handling, and use of intelligence information during battle." The intelligence community, including the Central Intelligence Agency and DoD assets, has come under fire for failure to provide information it had possessed about chemical weapons in Iraq during the Gulf War.

The Great Flood

In the recent historic flooding that inundated the towns of Grand Forks, N.D., and East Grand Forks, Minn., Air Force and other DoD personnel—active-duty, National Guard, and civilian—responded in force.

Even before the Red River began its dramatic rise and overflow, airmen at Grand Forks AFB, N.D., 17 miles west of the city of Grand Forks, began establishing what became known as "Sandbag Central." The base eventually set up 24-hour sandbag filling operations, as well as housing, food, medical care, water, and more to benefit the more than 60,000 people displaced by the flood.

Help also came from other Air Mobility Command units around the country. AMC and public health-service medical teams, AMC civil engineering troops, and AMC chaplains, along with supplies, power generators, and communications gear, were ferried in by USAF aircraft. Various Guard, Grand Forks AFB, and Coast Guard units flew more than 100 helicopter missions to evacuate nearly 1,700 flood victims.

Grand Forks AFB sheltered and fed more than 3,000 civilian evacuees. Some 700 displaced base families (1,200 people) found shelter with other Air Force members who lived on base. Base medical personnel helped evacuate about 300 hospital patients from the city to the base hospital and arranged immediate medical airlift for 50 critical-care patients to Minneapolis. Grand Forks AFB became the area's medical management center.

And base civil engineers had to find alternate sources of water, since base water normally came from the city. Instead, Grand Forks AFB wound up supplying approximately 1.2 million gallons of water per day to the city.

USAF Bombers Ace Mine-Laying

The Air Force's B-1B bomber added a new capability to its repertoire, and the venerable B-52 once again proved its worth as the two long-range aircraft supported the Navy with underwater mine-laying.

In April, B-1Bs from Ellsworth AFB, S.D., dropped Navy Mk. 62 Quick Strike underwater mines to test the sweptwing bomber's capability in a role once performed primarily by B-52s. The Navy wanted to use the B-1Bs because of their large payload capability, compared to Navy aircraft.

A few days later in a US-NATO aerial mining exercise named Blue Harrier '97, two Barksdale AFB, La., B-52s proved they could still get the job done. In fact, they were the only two aircraft participating in the mine-laying that were able to make it through rough weather to the target over the North Sea.

The B-52 crews flew 9,000 miles with two aerial refuelings on the 23-hour mission.

National Memorial Honors Six SPs

The names of six Air Force Security Police officers killed in the line of duty were added to the National Law

Snapshot of the QDR

The US must maintain its capability to fight two major theater wars at about the same time or risk losing its status as a superpower, according to the report on the Quadrennial Defense Review submitted to Congress on May 19 by Defense Secretary William S. Cohen.

The QDR proposed cuts to the Air Force's F-22 fighter and E-8 Joint Surveillance and Target Attack Radar System aircraft programs and the reduction of active fighter wings from 13 to 12, among other moves.

The QDR, Cohen wrote, determined that, if the US were to "forego" the two-wars-at-once capability, others would perceive the US to be backing away from its commitments, "weakening the web of alliances and coalitions on which we rely to protect our interests abroad." Such a move would threaten "our standing as a global power, the security partner of choice, and as the leader of the international community."

However, Cohen suggested the two-conflict strategy could be credibly maintained while trimming force structure and personnel of the armed forces by another five percent.

The cuts, if approved by Congress, would take large chunks out of tactical aviation programs, eliminate several dozen ships and submarines, reduce the size of the Army reserve forces, seek two more rounds of base closings, produce more "outsourcing" of support functions, and seek greater contracting efficiencies.

The QDR was the first major strategy and forces assessment since the 1993 Bottom-Up Review. The QDR cuts an additional 60,000 active and 29,000 reserve troops. The force would fall to 1.36 million in 2003.

The new strategy that emerged from the QDR can be summed up as "shape, respond, and prepare," Cohen said. The future military, he argued, would be able to help shape events and world attitudes to US preferences, respond to current and near-term threats, and prepare for future threats by investing in modernization and the "revolution in military affairs." The strategy, he said, "strikes a balance" between dealing with near-term threats and the need to modernize forces for the long-term.

Cohen's QDR would cut production of the Air Force's F-22 fighter by nearly a quarter, reducing the total run from 438 to 399 to fill out three, rather than the previously planned four, air-superiority wings. Moreover, the fighter would be bought at a slower pace than now planned. The Joint STARS fleet, once set at 19 operational aircraft, would shrink to only 13 airplanes, and further production of B-2 bombers would be forsaken.

The QDR proposed no reductions in development and production of the Air Force's C-17 airlifter and space systems.

USAF would shift one of its 13 active fighter wings to reserve status, raising the number in Air Force Reserve Command and the Air National Guard to eight. Together with outsourcing initiatives, the measures would trim 27,000 active-duty blue-suiters from the rolls.

The Army would keep 10 active divisions but streamline headquarters and support units with a loss of 15,000 soldiers. Some reserve combat units would be shifted to support missions, since they are no longer needed to provide "strategic depth."

The Navy would keep 12 carrier battle groups (11 active and one training) and 12 amphibious ready groups but give up 15 more major surface combatants and two more attack submarines than had been planned. If the Joint Strike Fighter arrives on time in 2008, the Navy would trim its planned buy of 1,000 F/A-18E/Fs to 548 and buy more of the stealthy JSF instead. If the JSF is delayed, the maximum F/A-18E/F buy would still be only 785 airplanes.

The Marine Corps would see "modest" cuts in troops and hardware. The QDR called for trimming 65 units from the Marines' purchase of 425 MV-22 aircraft, but actual introduction of the tiltrotors into service would be accelerated.

Cohen insisted the QDR had not been driven by the enthusiasm to balance the federal budget by 2002 but recognized "financial realities" with which the Pentagon would have to live. Ignoring those realities has led to "unrealistic expectations," program turbulence, and waste in the past, Cohen said.

The QDR forecast no emerging "peer competitor" to the US over the next 15 to 20 years, allowing the taking of "some risk" now to invest in future capabilities, he said.

QDR Force Structure Changes

Major Force Elements		FY 1997 (BUR)	FY 2003 (BUR)	FY 2003 (QDR)
USAF:	Heavy bombers	202	187	187
	Fighter wings, active	13	13	12
	Fighter wings, reserve	7	7	8
	Air defense squadrons, reserve	10	6	4
ARMY:	Divisions, active	10	10	10
	Divisions, reserve	8	8	8
	Armored cavalry regiments, active	2	2	2
	Enhanced separate brigades, reserve	15	15	15
NAVY:	Aircraft carriers, active	11	11	11
	Aircraft carriers, reserve	1	1	1
	Air wings, active	10	10	10
	Air wings, reserve	1	1	1
	Amphibious ready groups	12	12	12
	Attack submarines	73	52	50
	Surface combatants	128	131	116
USMC:	Expeditionary force, active	3	3	3
	Expeditionary force, reserve	1	1	1

Source: DoD

QDR End-Strength Reductions

Service	Active	Reserve	Civilian	Total
USAF	26,900	700	18,300	45,900
ARMY	15,000	20,000*	33,700	68,700
NAVY	18,000	4,100	8,400	30,500
USMC	1,800	4,200	400	6,400
Total	61,700	29,000	60,800	151,500

*Additional cuts of up to 25,000 after 2000.

USAF photo by 1st Lt. T. Patrick Hudson

With his retirement in May, MSgt. Mike Gordey became the final active-duty mariner in the Air Force. Gordey commanded a missile retriever boat used to recover drones for the 82d Aerial Targets Squadron at Tyndall AFB, Fla., a service now performed by Seaward Services, Inc.

Enforcement Officers Memorial in ceremonies May 12 in Washington, D.C.:

- TSgt. Thomas L. Campbell was shot by a 16-year-old boy stealing a bicycle at Maxwell AFB, Ala., on March 26, 1978.
- Civilian SP Robert R. Dover was killed March 18, 1979, at Kelly AFB, Tex., when a car ran through his guard post.
- SrA. Robert Scott Gray was fatally stabbed while trying to apprehend trespassers on Clark AB, the Philippines, on February 6, 1978.
- A1C Roy Lee Hursey was killed March 27, 1963, at Eielson AFB, Alaska, when an aircraft struck his guard gate.
- Sgt. Stacy Edward Levay, a commissary security clerk at Andersen AFB, Guam, was killed January 1, 1992, while trying to stop a robbery.
- SrA. Timothy Royce Riggs, assigned to Whiteman AFB, Mo., was electrocuted after touching his car, which had come into contact with a damaged power line after he stopped to render assistance at an accident on December 11, 1991.

News Notes

- USAF Vice Chief of Staff Gen. Thomas S. Moorman, Jr., will retire on August 1. Lt. Gen. (Gen. selectee) Ralph E. Eberhart, commander of US Forces Japan, and commander, 5th Air Force, Yokota AB, Japan, was nominated to replace him.
- Lt. Gen. (Gen. selectee) Richard B. Myers, currently assistant to the Chairman of the Joint Chiefs of Staff, has been nominated to replace Gen. John G. Lorber, who retires August 1 as commander of Pacific Air Forces, Hickam AFB, Hawaii.
- 1st Lt. Joseph C. Thomas, 347th Wing, Moody AFB, Ga., ejected safely before his F-16 crashed on April 21 in an unpopulated area about seven miles southwest of Pearson, Ga., while he was en route from Moody to a training range.
- 1st Lt. Paul Murray, with the 27th Fighter Wing, Cannon AFB, N.M., ejected safely from his F-16 before it crashed during a routine training mission on May 12 about five miles north of Vaughn, N.M.
- The Navy and the US Fish and Wildlife Service dedicated the island of Midway as a National Wildlife Refuge on April 3. Located about 1,250 miles northwest of Honolulu, Hawaii, and best known for the Battle of Midway during World War II, the island has been under Navy jurisdiction since 1903. After being closed for more than 50 years, Midway is now open to the public.
- US and North Korean negotiators agreed in May to conduct three joint recovery operations to search for remains of Americans buried in North Korea and to begin joint archival investigations this year.
- USAF navigator Lt. Col. Marcelyn A. Atwood made history March 21 when she became the first woman to command a training squadron, at NAS Pensacola, Fla., and the first Air Force officer to command a Navy squadron.
- The R-model U-2 reconnaissance aircraft flew its last operational mission from Istres AB, France, on February 21 when Maj. Domenick Eanniello, 99th Reconnaissance Squadron, Beale AFB, Calif., flew *Dragonlady* in support of Operation Deliberate Guard. Beale's four overseas detachments now fly the U-2S with a lighter, more fuel-efficient engine that allows the aircraft to fly higher and farther.
- Lt. Col. Stephen T. Washington, Cannon AFB, N.M., and SMSgt. Richard E. Hauck, Kadena AB, Japan, received the 1996 Gen. Lew Allen, Jr., Trophy, the top award in Air Force maintenance, for their work in generating aircraft.
- Air Force Special Operations Command, Hurlburt Field, Fla., won the service's top three safety awards for 1996.
- The Air Reserve Personnel Center, Denver, Colo., made the best use of its human resources to win the Air Force Association's 1997 Verne Orr Award.
- Hurlburt Field received the National Restaurant Association's 1997 John L. Hennessy, Jr., trophy for the single-facility category.
- The Ballistic Missile Defense Organization formed a joint program office for the national missile defense program on April 1. The new JPO is responsible for design, development, and demonstration of an NMD system, if an analysis of the ballistic missile threat to the US conducted at the end of its development phase determines an NMD is needed. It could be operational in 2003, according to a DoD release.
- Robert Q. Fugate, a physicist at Phillips Laboratory's Starfire Optical Range, Kirtland AFB, N.M., received a decoration for Exceptional Civilian Service for demonstrating the concept of laser adaptive optics—a key element of the Air Force's Attack Laser aircraft program—to compensate for atmospheric turbulence. The accomplishment is akin to Nobel Prize–level research, said Maj. Gen. Richard R. Paul, commander of the service's new Air Force Research Laboratory.
- Reservists from the 916th Air Refueling Wing, Seymour Johnson AFB, N.C., dedicated one of their KC-135E aircraft to the Tuskegee Airmen in May. The refueler's nose now displays a portrait of legendary Tuskegee Airman Lt. Gen. Benjamin O. Davis and a P-51 Mustang with the words "Lonely Eagles" and "Tuskegee Airmen" on opposite sides.
- Lackland AFB, Tex., became USAF's first repeat winner of the

Senior Staff Changes

RETIREMENTS: B/G Richard T. **Banholzer,** M/G Lee A. **Downer,** M/G George B. **Harrison,** B/G Howard J. **Ingersoll,** L/G Ervin J. **Rokke,** B/G Thomas J. **Scanlan,** Jr.

PROMOTIONS: To be **Lieutenant General:** Stewart E. **Cranston.**
To be **ANG Brigadier General:** Tommy L. **Daniels.**

CHANGES: Col. (B/G selectee) Frank J. Anderson, Jr., from Dir., Contracting, ASC, AFMC, Wright-Patterson AFB, Ohio, to Dep. Ass't Sec'y (Contracting), Ass't Sec'y of the Air Force for Acquisition, Hq. USAF, Washington, D. C, replacing B/G Timothy P. Malishenko . . . **Col. (B/G selectee) Barry W. Barksdale,** from Cmdr., 355th Wing, ACC, Davis-Monthan AFB, Ariz., to Cmdr., 37th Training Wing, AETC, Lackland AFB, Tex., replacing B/G Robert J. Courter, Jr. . . . **B/G Robert J. Courter, Jr.,** from Cmdr., 37th Training Wing, AETC, Lackland AFB, Tex., to Dir., Plans, Hq. AFMC, Wright-Patterson AFB, Ohio, replacing M/G Michael C. Kostelnik . . . **M/G (L/G selectee) Stewart E. Cranston,** from Cmdr., AFDTC, AFMC, Eglin AFB, Fla., to Vice Cmdr., Hq. AFMC, Wright-Patterson AFB, Ohio, replacing L/G Lawrence P. Farrell, Jr.

M/G Thomas J. Keck, from Dir., Strategy, P&P, J-5, Hq. USSOUTHCOM, Quarry Heights, Panama, to Vice Cmdr., 12th AF, ACC, and Vice Cmdr., USSOUTHCOM Air Forces, USSOUTHCOM, and AF Component Vice Cmdr., USSTRATCOM, Davis-Monthan AFB, Ariz., replacing retiring M/G Nels Running . . . **Col. (B/G selectee) Christopher A. Kelly,** from Cmdr., 100th ARW, USAFE, RAF Mildenhall, UK, to Cmdr., 97th AMW, AETC, Altus AFB, Okla., replacing B/G (M/G selectee) David R. Love . . . **B/G (M/G selectee) Rodney P. Kelly,** from Dir., Plans, J-5, Hq. NORAD, Peterson AFB, Colo., to Dir., Ops., J-3, Hq. USSPACECOM, Peterson AFB, Colo., replacing retired B/G Thomas J. Scanlan, Jr. . . . **M/G Timothy A. Kinnan,** from Dep. Cmdr., 5th ATAF, Allied Air Forces Southern Europe, NATO, Vicenza, Italy, to Commandant, Air War College, AU, AETC, Maxwell AFB, Ala., replacing retiring M/G Donald B. Smith.

Col. (B/G selectee) Jeffrey B. Kohler, from Sr. US Rep., Allied Air Forces Central Europe, Ramstein AB, Germany, to Cmdr., 100th ARW, USAFE, RAF Mildenhall, UK, replacing Col. (B/G selectee) Christopher A. Kelly . . . **M/G Michael C. Kostelnik,** from Dir., Plans, Hq. AFMC, Wright-Patterson AFB, Ohio, to Cmdr., AFDTC, AFMC, Eglin AFB, Fla., replacing M/G (L/G selectee) Stewart E. Cranston . . . **B/G (M/G selectee) David R. Love,** from Cmdr., 97th AMW, AETC, Altus AFB, Okla., to Dep. Cmdr., 6th ATAF, Allied Air Forces Southern Europe, NATO, Izmir AS, Turkey, replacing M/G William S. Hinton, Jr. . . . **B/G Timothy P. Malishenko,** from Dep. Ass't Sec'y (Contracting), Ass't Sec'y of the Air Force for Acquisition, Hq. USAF, Washington, D. C., to Dep. Dir., Acquisition, and Cmdr., Defense Contract Mgmt. Command, DLA, Fort Belvoir, Va., replacing retiring M/G Robert W. Drewes.

Col. (B/G selectee) Richard A. Mentemeyer, from Exec. Officer to CINC, USTRANSCOM, and Cmdr., Hq. AMC, Scott AFB, Ill., to Cmdr., 12th FTW, AETC, Randolph AFB, Tex., replacing B/G Garry R. Trexler . . . **Col. (B/G selectee) Paul D. Nielsen,** from Command Dir., Cheyenne Mountain Ops. Ctr., NORAD/USSPACECOM, Cheyenne Mountain AS, Colo., to Dir., Plans, J-5, Hq. NORAD, Peterson AFB, Colo., replacing B/G (M/G selectee) Rodney P. Kelly . . . **B/G Timothy A. Peppe,** from Dep. Cmdr., 16th AF, USAFE, and Dir., Combined Air Ops. Ctr., 5th ATAF, Allied Air Forces Southern Europe, NATO, Vicenza, Italy, to Cmdr., 31st FW, USAFE, Aviano AB, Italy, replacing B/G Charles F. Wald . . . **M/G Richard H. Roellig,** from Dir., Contracting, Hq. AFMC, Wright-Patterson AFB, Ohio, to Cmdr., Ogden ALC, AFMC, Hill AFB, Utah, replacing retiring M/G Stephen P. Condon.

B/G Garry R. Trexler, from Cmdr., 12th FTW, AETC, Randolph AFB, Tex., to Dep. Cmdr., 5th ATAF, Allied Air Forces Southern Europe, NATO, Vicenza, Italy, replacing M/G Timothy A. Kinnan . . . **Col. (B/G selectee) Scott P. Van Cleef,** from Dep. Dir., Jt. Matters, DCS/Air and Space Ops., Hq. USAF, Washington, D. C., to Dep. Cmdr., 16th AF, USAFE, and Dir., Combined Air Ops. Ctr., 5th ATAF, Allied Air Forces Southern Europe, NATO, Vicenza, Italy, replacing B/G Timothy A. Peppe . . . **B/G Charles F. Wald,** from Cmdr., 31st FW, USAFE, Aviano AB, Italy, to Spec. Ass't to C/S, USAF, for National Defense Review, Hq. USAF, Washington, D. C., replacing retiring M/G Charles D. Link . . . **Col. (B/G selectee) Craig P. Weston,** from Prgm. Dir., SBIRS, Office of the Ass't Sec'y of the Air Force for Acquisition, Los Angeles AFB, Calif., to PEO, C^3, AFPEO, Ass't Sec'y of the Air Force for Acquisition, Hq. USAF, Washington, D. C.

SENIOR EXECUTIVE SERVICE (SES) RETIREMENTS: James J. **Mattice,** Walter A. **Willson.**

SES CHANGES: Rita C. Sagalyn, to Sr. Scientist, Space Experiments, Phillips Lab Geophysics Directorate, AFMC, Hanscom AFB, Mass. . . . **Earl J. Scott,** to Ass't Auditor General (Financial and Support Audits), Air Force Audit Agency Financial and Support Audit Directorate, March ARB, Calif. . . . **Frank P. Weber,** to Dep. Dir. for Log. and Business Ops., J-3/J-4, Hq. USTRANSCOM, Scott AFB, Ill. ■

Commander in Chief's Installation Excellence Award by earning it in 1996 and 1997.

■ Capt. Ron Brown, 613th Air Intelligence Flight, Andersen AFB, Guam, is the second Air Force member in a row to win the National Operations Security Individual Achievement Award. He won the award while with the 35th Fighter Wing, Misawa AB, Japan.

■ SSgt. Alfredo R. Guerrero, a law enforcement specialist at Edwards AFB, Calif., received the Non-Commissioned Officers Association's 1997 Vanguard Award for the Air Force for his "heroic actions and lifesaving measures" following the bombing at Khobar Towers in Dhahran, Saudi Arabia, on June 25, 1996.

■ After nearly 19 years in storage in the Arizona desert, the McDonnell Douglas YC-15 transport aircraft flew in April for the first time since 1978. It was developed as a possible follow-on to the turboprop C-130, but many technologies originally demonstrated on the YC-15, including its short-field landing capability, were later used on USAF's new C-17 airlifter. McDonnell Douglas has leased the YC-15 back from the Air Force as a test-bed for advanced technologies for the C-17 and potentially for future airlift aircraft.

■ A B-1B from the 28th Bomb Squadron, Dyess AFB, Tex., became the first B-1B to reach the 4,000 flying-hours milestone on April 24. B-1B tail number 860132, *Oh Hard Luck,* took off with 3,999.5 hours, passing over the runway as it reached 4,000. The unit designated the bomber as its lead aircraft because of its reliability.

■ A McDonnell Douglas Delta II on May 5 successfully boosted five Iridium satellites into orbit from Vandenberg AFB, Calif.

■ SSgt. Todd Vangen, a radar approach controller at Ellsworth AFB, S.D., received the Gen. Gordon E. Blake Aircraft Save Award April 30 for saving a student pilot last year when her single-engine Piper Cherokee lost all power. A licensed pilot, Vangen was able to talk her through the necessary steps to restart the engine. He was assigned to Grand Forks AFB at the time.

■ MSgt. Jerry Sutton, Keesler AFB, Miss., earned the Secretary of Defense Productivity Excellence Award for his concept for a training program for the E-3 Airborne Warning and Control System aircraft. The concept's workstation is also reconfigurable for the EC-130 Airborne Battlefield Command and Control Center and E-8 Joint Surveillance and Target Attack Radar System aircraft.

■ Lt. Col. Ivette Falto-Heck, Los

USAF Celebrates 50

The Marietta/Cobb Museum of Art in Marietta, Ga., is featuring an exhibit of Air Force art that runs through August 23.

Air Force Services Agency is supervising the creation of a patchwork quilt to commemorate Air Force heritage. AFSA has asked each base to embroider a 14-inch square of fabric illustrating the installation's mission. AFSA hopes to produce the finished quilt by December, when it would go on tour before going on permanent display at the US Air Force Museum in Dayton, Ohio.

During the turnover of Albrook AFS, Panama, to the government of Panama on September 30, a special program will include commemoration of the Air Force anniversary.

50 Years Ago in *Air Force* Magazine

July 1947

On the cover: The aircraft is identified as a Republic "P-82" Thunderjet—a mistake, for which the magazine was later taken to task. It's the P-84, of course, going into service with the Army Air Forces at Bangor, Me. It had recently set a new American speed record at 617.8 mph.

■ The magazine reprints a speech to Congress by Sen. R. Owen Brewster (R-Me.), who points to diminished funding and falling aircraft production and says the US is becoming a "third-rate airpower."

■ For the first time since the war, the Aviation Cadet program is reactivated and opens to civilians. In July, the first 500 cadets begin the 52-week course leading to a commission and a pilot's rating in the AAF. A second class of 500 will enter training in October.

■ Howard Hughes, demonstrating a "spectacular use of wood," puts his huge flying boat—which would be known to history as the *Spruce Goose*—through testing at Long Beach, Calif. The enormous airplane is constructed almost entirely of wood.

■ AAF planners calculate a requirement for a 70-group Air Force with 400,000 personnel. *Air Force* Magazine says the budget provides for no more than 55 groups and perhaps 350,000 people. (By the end of the year, personnel strength will drop to 305,000.)

■ Col. Hubert A. "Hub" Zemke, liaison between the AAF and the Russian Air Force, tells AFA members at the Alabama State Convention that "we have no problem with Russian people, but with their government."

■ Former WASPs, organized as the Order of Fifinella, begin compiling a directory of all who served as Women's Airforce Service Pilots.

Angeles AFB, Calif., and TSgt. Jose J. Hernandez, Tyndall AFB, Fla., won 1997 National Image Inc. Meritorious Service Awards for the Air Force, based on their efforts to increase opportunities for Hispanics in the military and in their communities.

■ The 2d Bomb Wing, Barksdale AFB, La., won the Omaha Trophy as the best aircraft unit in US Strategic Command for 1996—for the second time in the last three years.

■ Five Air Force Space Command teams won "best of the best" honors during Guardian Challenge. They were 1st Space Operations Squadron, Falcon AFB, Colo.; 320th Missile Squadron, Francis E. Warren AFB, Wyo.; 5th Space Launch Squadron, Patrick AFB, Fla.; 821st Space Group, Buckley ANGB, Colo.; and 20th Space Surveillance Squadron, Eglin AFB, Fla.

■ PACAF's 3d Wing from Elmendorf AFB, Alaska, won honors at Readiness Challenge VI, which pits civil engineers, services, chaplain services, and public affairs personnel in 25 events, held at Tyndall AFB, Fla.

Obituary

Gen. Robert D. Russ, former commander of Tactical Air Command, died of cancer on May 23 in Shalimar, Fla. He was 64. Russ retired from active duty in 1991, shortly after the Persian Gulf War. As the Gulf crisis unfolded in 1990–91, the Air Force delayed his retirement by several months to keep in place one of its most experienced commanders. As a result, Russ completed nearly six years as commander of TAC, which later merged with Strategic Air Command to form Air Combat Command. Russ entered the Air Force in 1955 through the Air Force Reserve Officers Training Corps program at Washington State University. Throughout his 36-year career, he flew F-84, F-100, F-101, and F-4 aircraft, flying 242 combat missions in the F-4 during the Vietnam War. ■

Index to Advertisers

Air Force Village Foundation	99
Alliant Techsystems	51
AT&T Communications	Cover III
Boeing Defense & Space Group	2–3
Breitling	77
Honeywell, Inc.	9
Hughes Aircraft Co.	4
Jostens	14
Lockheed Martin	Cover II
Messe Berlin GmbH/ILA '98	73
McDonnell Douglas Aerospace	45, Cover IV
Mitchell Lang Designs	103
Northrop Grumman	21
Tadiran Spectralink Ltd.	103

AFA Convention	95
AFA Member Supplies	103
AFA Relocation Assistance Program	100
AFA Symposium–Dayton	93
Video Biography on Legends of Airpower	102
Video on the History of USAF	16

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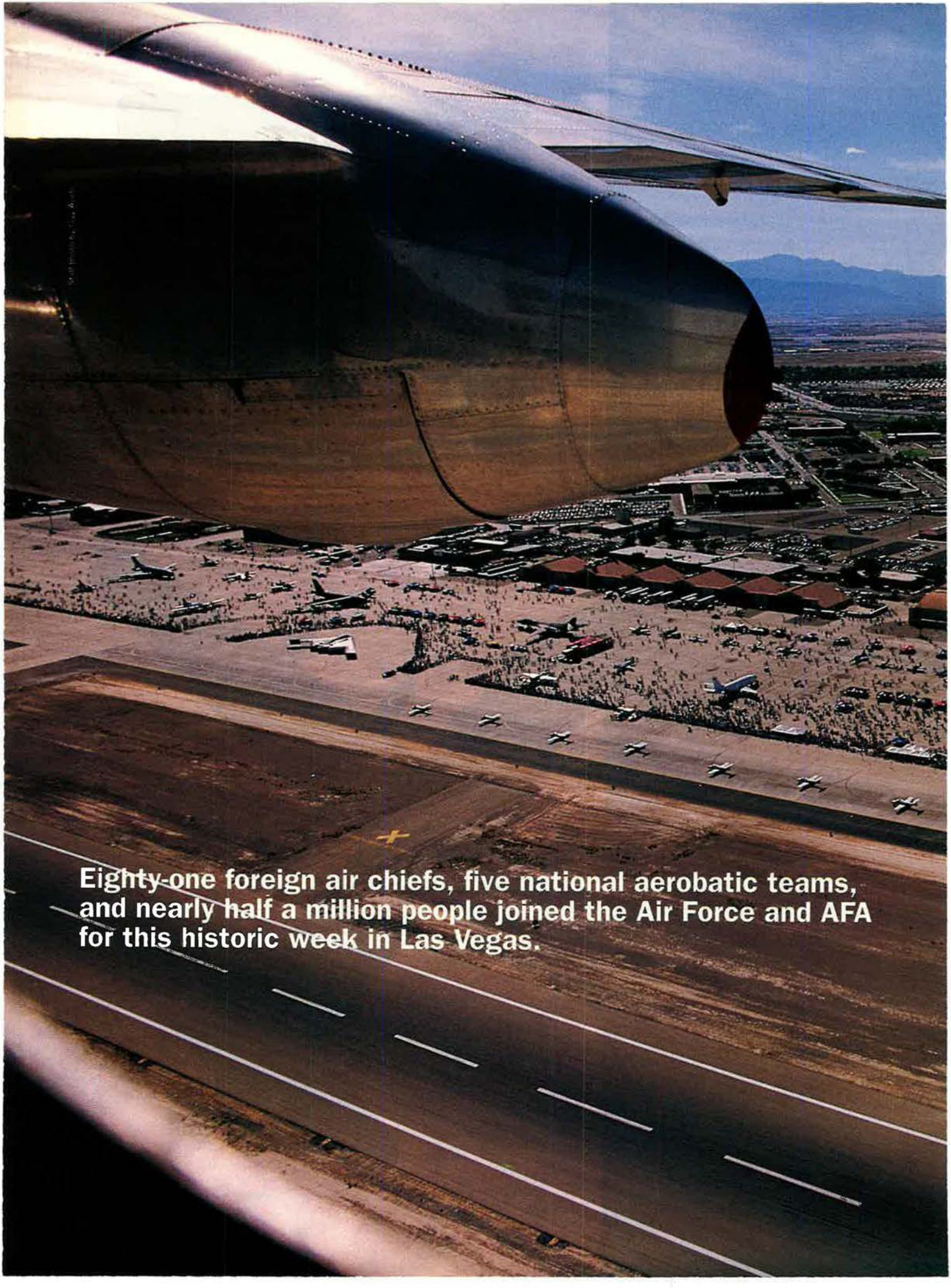
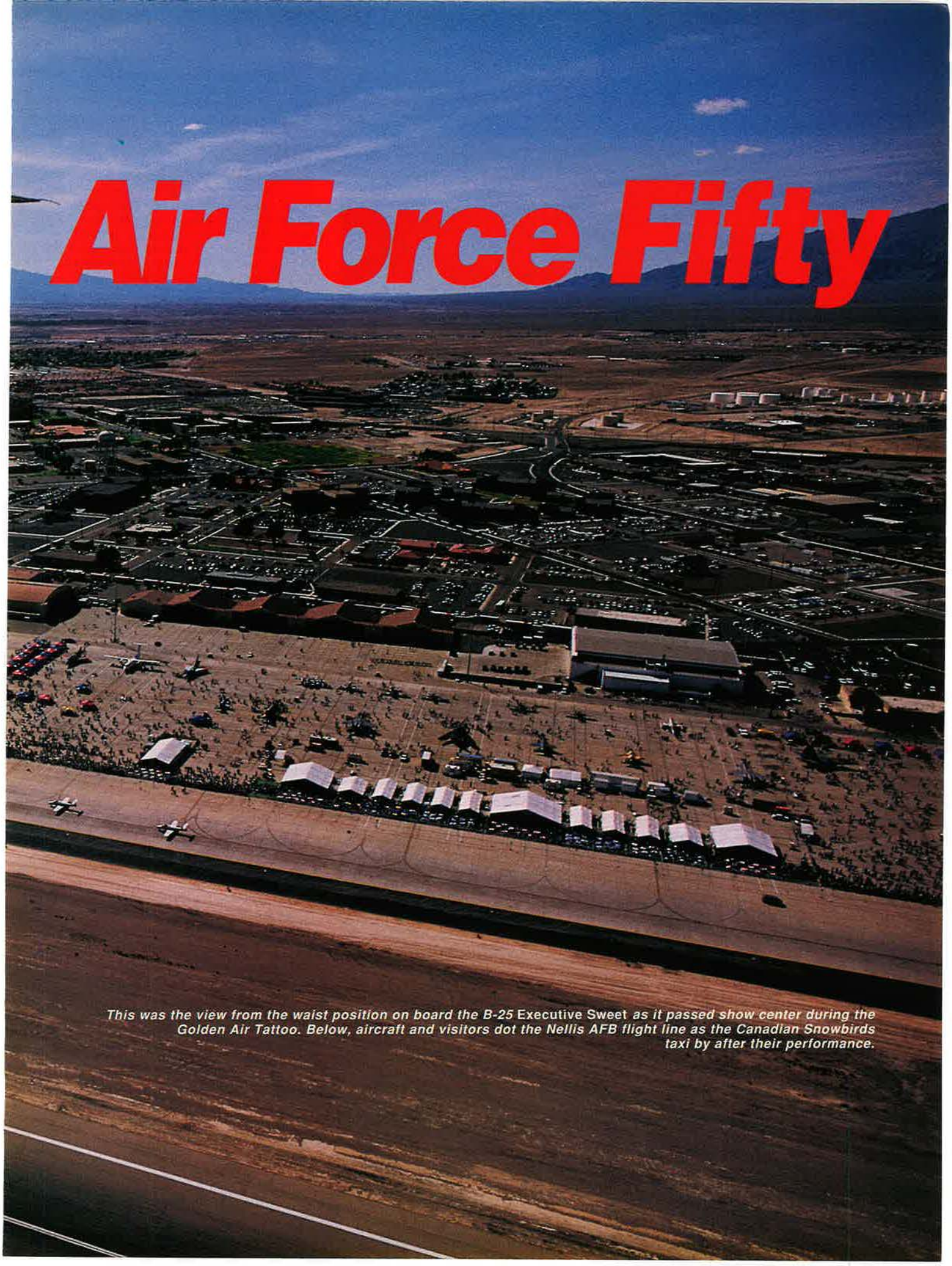


Eighty-one foreign air chiefs, five national aerobatic teams, and nearly half a million people joined the Air Force and AFA for this historic week in Las Vegas.

Air Force Fifty



This was the view from the waist position on board the B-25 Executive Sweet *as it passed show center during the Golden Air Tattoo. Below, aircraft and visitors dot the Nellis AFB flight line as the Canadian Snowbirds taxi by after their performance.*

Staff photo by Guy Aceto

Air Force Fifty week, April 22–26, in Las Vegas, Nev., celebrated the fiftieth anniversary of the US Air Force. Events included an International Airpower Symposium, sponsored by the Air Force Association, and a Global Air Chiefs Conference with the heads of 81 foreign air forces in attendance. Veterans from all eras of the Air Force past renewed acquaintances in "Reunion Alley" in the enormous AFA Technology Exposition hall. Among those on hand were seven former Secretaries of the Air Force, five former Chiefs of Staff, nine former Chief Master Sergeants of the Air Force, plus one former President and one former Secretary of Defense, and 16 members of Congress. At left, a P-40 Warhawk (piloted by former AFA National President O. R. "Ollie" Crawford) flies formation with an A-10 in the Golden Air Tattoo airshow held at Nellis that weekend.

The airshow at nearby Nellis AFB marked the first performance outside Japan of the Blue Impulse, the Japanese aerial demonstration team from Matsushima AB, Japan. At right, one of the Kawasaki T-4 trainers taxis past the crowd, as the airman in back waves an American flag. Four foreign aerobatic teams joined the USAF Thunderbirds (shown on the front cover) in etching their best wishes on the Air Force anniversary in the Nevada sky. Also part of the show were current and vintage aircraft, on static display and flying by in review, as well as demonstrations by Air Force fighter, bomber, airlifter, and helicopter crews.

Staff photo by Guy Aceto

Photo by Susan Kennedy

Las Vegas has been the setting for three major Air Force Association events: the World Congress of Flight in 1959, the Gathering of Eagles in 1986, and Air Force Fifty in 1997. There's more to the choice than the glitter, though—including the availability of the lodging and exposition facilities required for a program like Air Force Fifty. Another attraction was Nellis AFB, "Home of the Fighter Pilot," located eight miles away and ideally suited to hosting a major airshow.

Photo by Paul Kennedy

AFA National President Doyle E. Larson (center) greets visitors to the International Airpower Symposium. The keynote speaker was former President George Bush. He was followed by former British Prime Minister Margaret Thatcher (on videotape), futurist Alvin Toffler, Boeing Corp. Chairman and CEO Philip M. Condit, former Secretary of Defense William J. Perry, Secretary of the Air Force Sheila E. Widnall, USAF Chief of Staff Gen. Ronald R. Fogleman, and Gen. Howell M. Estes III, commander in chief of North American Aerospace Defense Command and US Space Command and commander, Air Force Space Command.

Staff photo by Guy Aceto

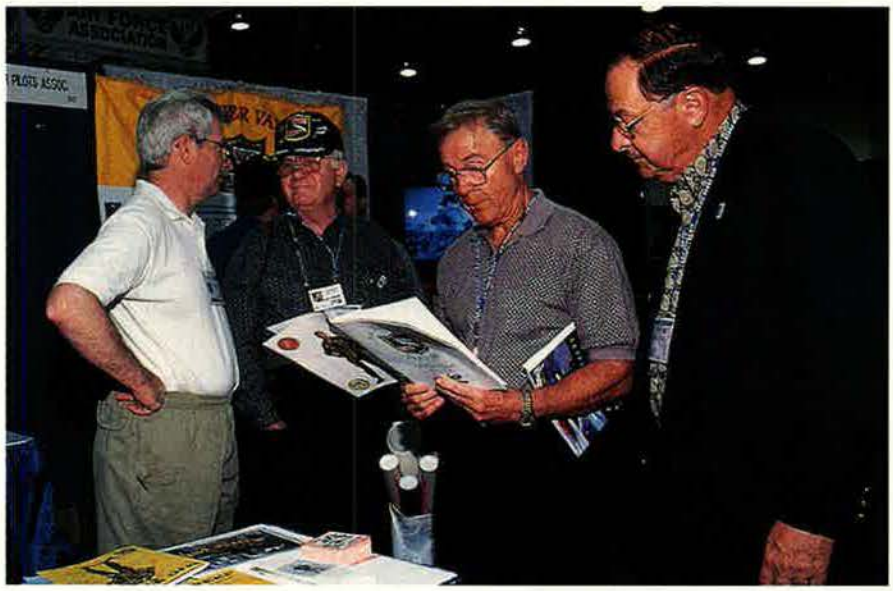
The AFA Technology Exposition took place in the Las Vegas Convention Center in an area equivalent to five football fields. All together, the aisles in the exposition hall stretched for two miles, and 17,570 people registered to see the displays. The bubble-shaped objects at right are F-16 simulators from Armstrong Laboratory, and beyond them is an Air National Guard C-26.

Photo by Paul Kennedy

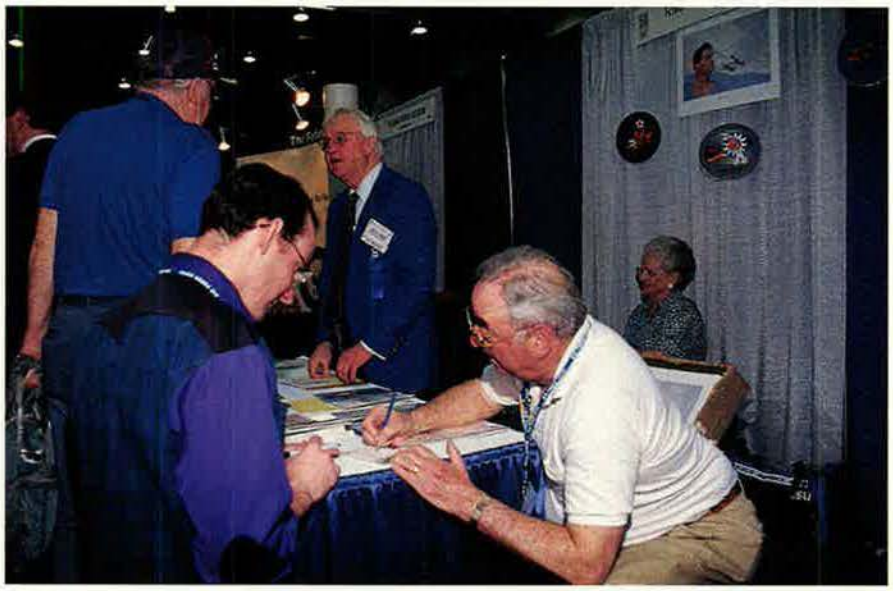
Air Force Fifty was an occasion for meeting old friends and for making new ones. Here, a member of the Russian delegation meets retired Col. Bernard F. Fisher, one of eight Air Force Medal of Honor recipients in attendance. Approximately 160 military-related organizations held reunions or meetings in conjunction with Air Force Fifty.

One of the most popular attractions in the exhibit hall was Reunion Alley, where 80 affinity groups operated booths. Dozens of World War II units and pilot training classes held reunions.

The Red River Valley Fighter Pilots Association gathered at the "River Rats" booth at right. The group was formed in 1967 by the airmen who flew combat missions over North Vietnam. River Rats numbered 1,097 members at Air Force Fifty—the most of any of the reunion groups that participated.

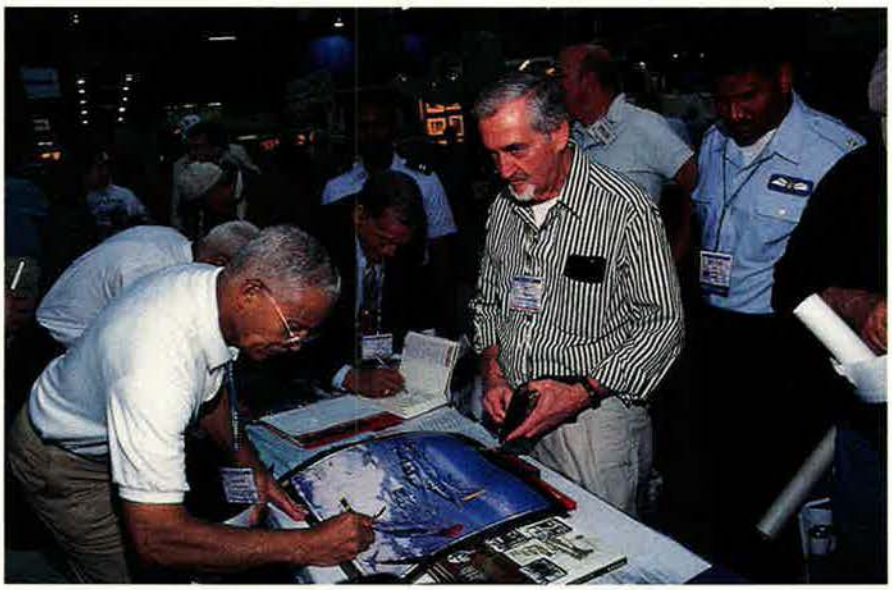


Photos by Paul Kennedy



Visitor action was brisk at the 14th Air Force Association table (left) and at Reunion Alley booths run by such groups as the Air Force Memorial Foundation, Air Force Sergeants Association, Air University Foundation, and Vietnam Veterans of America. Also attending the celebration were several foreign groups, such as the Italian Air Force Association, New Zealand Wings Reunion Group, and the Royal Air Force Benevolent Fund. In addition, 80 groups came to Las Vegas for Air Force Fifty but did not operate booths in the exhibit hall.

Col. Charles E. McGee, USAF (Ret.), of AFA's Thomas W. Anthony (Md.) Chapter, autographs a poster at the Tuskegee Airmen booth in Reunion Alley. About 40 Tuskegee Airmen were present for Air Force Fifty. McGee is presently first vice president of Tuskegee Airmen, Inc.



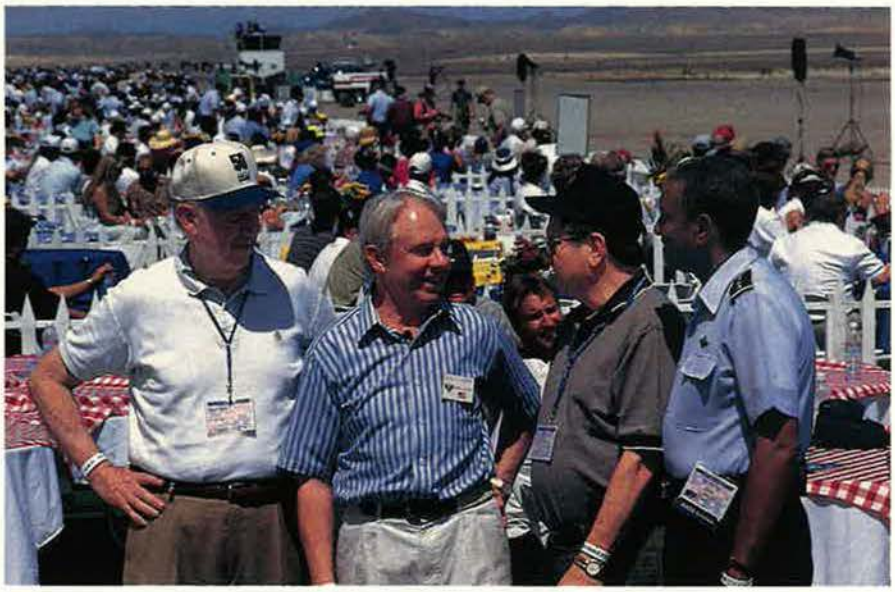


Photo by Paul Kennedy

Cooperation between USAF and AFA made this event possible. On the Nellis flight line at the airshow are (left to right) AFA Executive Director John A. Shaud, AFA National President Doyle E. Larson, National Director Jack C. Price, and Gen. Lloyd W. Newton, commander of Air Education and Training Command. Before assuming his present duties this spring, General Newton was USAF assistant vice chief of staff and in charge of preparations and plans for the Golden Air Tattoo and the Global Air Chiefs Conference.

Staff photo by Guy Aceto

Esquadrilha da Fumaça, the Brazilian "Smoke Squadron," thrilled crowds with tail slides and tight formation flying. Formed in 1952, the team now flies the EMB-312 T-27 Tucano trainer, painted in red, black, and white.

More than 100 aircraft types were represented at Air Force Fifty. They included classic warbirds that were on static display as well as in flybys: the A-26, B-17, C-121, and F-86. Active-duty aircraft included the A-10, B-1, C-17, E-3, F-117, MH-53J, and SR-71.

Photo by Paul Kennedy

The biggest crowds of the week flocked to the Golden Air Tattoo open house and airshow at Nellis. Friday's airshow attracted a crowd of 160,000. The next day, 300,000 attended. Even those with plenty of flying experience—such as former USAF Chief of Staff Gen. Merrill A. McPeak, USAF (Ret.), at right—were impressed by the show in the sky. Public address announcer Larry Strain of Fort Worth, Tex., told the crowd that this was the "premier airshow" of his experience, which encompasses 20 years of announcing airshows.

Staff photos by Guy Aceto

A pair of World War II aces flies P-51 Mustangs in the markings of the aircraft they flew during the war: Chuck Yeager in Glamorous Glen III *and his squadron mate, Clarence E. "Bud" Anderson, Jr., in* Old Crow. *At one point in the Golden Air Tattoo, Yeager led a five-ship formation of Mustangs in a flyby. Visitors to the show saw an extraordinary number of vintage Air Force aircraft in flight. Some foreign aircraft, notably a MiG-15 and a British Spitfire, flew as well.*

Passing in front of a rare F-86 representing the Korean War is an F-4 from the 20th Fighter Squadron, Holloman AFB, N. M., painted in Vietnam War–era camouflage. Richard S. "Steve" Ritchie, USAF's only pilot ace from that war, flew the aircraft for the crowd during the two-day airshow.

At left: A C-121 "Connie" gleaming in the sunlight was open to visitors for reminiscing or seeing the rare bird for the first time. More than 100 current and vintage aircraft were on static display on the ramp where the crowd could see them up close.

Photos by Paul Kennedy

The view above is from the nose position of the B-25 Executive Sweet *as it runs down the airshow line. A B-2 bomber on the ground is neatly framed near the center of the photo. At right, in the cockpit of* Executive Sweet, *the pilot and copilot carefully check their position. A full view of the grand old Mitchell, with the Sunrise Mountains in the background, is at bottom right.*

Staff photo by Guy Aceto

Photo by Paul Kennedy

Maj. Dunning Idle (left), in modern aviator's garb, and Capt. Gene Wall, dressed in the work clothes of a 1947 test pilot, talked with the pilot's pilot, Chuck Yeager. The retired brigadier general attended the unveiling of the Air Force Flight Test Center's exhibit that contained a full-size reproduction of his Bell X-1 Glamorous Glennis *(in background, upper right), in which he broke the sound barrier on October 14, 1947.*

Staff photo by Guy Aceto

Gen. Richard E. Hawley, Air Combat Command commander, talks with Kent Kresa, Northrop Grumman Corp. chairman, president, and chief executive officer. Senior commanders from the USAF major commands and industry leaders were on hand for most of the week's events, including the Global Air Chiefs Conference and the International Airpower Symposium.

Staff photo by Guy Aceto

At the exhibition, industry and military organizations had spectacular exhibits showing off aerospace capabilities. Armstrong Lab had an integrated setup of simulators in which they demonstrated joint operations with four F-16s, a C-130, and two A-10s. At right is Elaine Stebelton in an A-10 simulator, coached by Maj. Milt Lutton from Davis-Monthan AFB, Ariz.

Staff photos by Guy Aceto

A view from the rafters shows just one section of the many exhibitors in the convention center, packed with displays—from major defense contractors to reunion groups to USAF major commands. At right, a member of the Global Air Chiefs Conference group visits Air Force Special Operations Command's exhibit and talks to TSgt. Kenneth A. Knutson from the 23d Special Tactics Squadron at Hurlburt Field, Fla.

Below right is an engine from the GE exhibit. The size of the exhibit hall permitted manufacturers to bring in full-size items instead of the usual trade show models.

Photo by Paul Kennedy

Embodying USAF's fiftieth-anniversary motto, "Golden Legacy, Boundless Future," some of the legendary Doolittle Raiders gather round to check out a computerized interpretation of their story in the exposition hall. The Doolittle Raiders took off from a carrier and bombed Tokyo April 18, 1942. Twenty-one members of the unit were present in Las Vegas for Air Force Fifty.

Photo by Paul Kennedy

Exhibitors were kept busy by throngs of people attending the exposition. At government, industry, and organizational booths, visitors collected pins, posters, and other items as souvenirs of Air Force Fifty.

Staff photo by Guy Aceto

At right, Tony Nargi, a marketing manager, explains the important features of the new T-6 Joint Primary Aircraft Training System trainer to Capt. Gilbert E. Petrina, Jr., USAF, a B-52 instructor pilot from the 96th Bomb Squadron, Barksdale AFB, La. Petrina is also an AFA National Director and the Ark-La-Tex (La.) Chapter president.

Photos by Paul Kennedy

Flying high above the registration area for the exposition is a wooden replica of a B-17 bomber, provided by Robert Henderson, sculptor of the B-17 Flying Fortress Memorial to be dedicated at the Air Force Academy Honor Court in Colorado Springs, Colo., August 22. The memorial will be a bronze, one-sixth-scale model atop a three-ton, polished granite base.

At the Global Air Chiefs Conference, the presentations and most of the discussions were conducted in English, but a team of interpreters provided simultaneous translations into Spanish, French, Russian, Chinese, and Arabic. The air chiefs and senior distinguished visitors were provided with wireless headsets. Gestures helped. At left, Gen. Ahmet Corekci, Commander, Turkish Air Force, makes his point in chatting with a fellow flyer.

During a break in the proceedings, General Fogleman discusses the conference with Gen. Col. Peter S. Deynekin (left, back to camera), Commander in Chief of the Russian Air Force. The Russian air chief became an unscheduled speaker at the International Airpower Symposium when General Fogleman called him from his seat to address the audience.

Staff photo by Guy Aceto

For the benefit of those in the back of the hall, images of the speakers at the Global Air Chiefs Conference were projected onto a large screen. At the podium above is Lt. Gen. Bernhard A. C. Droste, Commander in Chief of the Royal Netherlands Air Force.

The most lasting benefit of the Global Air Chiefs Conference was probably the chance it gave to those participating to meet and talk with each other. At right, Maj. Gen. Norodom Vatvani, Chief of the Royal Cambodian Air Force (left), engages Brig. Gen. Ahmad Abidin, Commanding General, Royal Brunei Air Force (right), in conversation.

The variety of hats on a table at a reception was a reminder that this was the largest gathering ever of global air chiefs.

Photo by Paul Kennedy

Staff photo by Guy Aceto

Photo © Erik Simonsen

The Chilean Air Force's Escuadrilla de Alta Acrobacia "Los Halcones" ("The Falcons") did their aerial exhibition in German-built Extra 300 aircraft. Their crisp maneuvers and seemingly uncontrollable spins in the small, nimble airplanes highlighted their world-class aerobatics. Since their formation in 1981, Los Halcones have performed more than 600 exhibitions.

Staff photo by Guy Aceto

A virtual history of the Air Force flew by during the airshow. Demonstrations of military airpower history began with World War I fighters recreating a dogfight over France. Visitors also saw in flight aircraft from World War II, Korea, and Vietnam, as well as modern aircraft, including the stealthy F-117A fighter and B-2 bomber. At left is a rare B-24J recreating a World War II bomb run on Ploesti, Romania.

Photo by Susan Kennedy

In addition to the airshow and the speeches, Air Force Fifty was replete with pageantry and color, as seen here with the flags of the visiting nations in the opening ceremonies for the Golden Air Tattoo.

Staff photos by Guy Aceto

Before the show, the Snowbirds of the Canadian Forces gave Air Force Magazine *an opportunity to see what a tight formation looks like from the inside. At top is the view that Capt. Brock Andrew sees from his spot in the number seven airplane. In the background is Valley of Fire State Park near Lake Mead. At right, after a formation change, number nine, Capt. Jean Guilbaut, banks left and shows the two pods that contain the diesel fuel that, when released into the jet's exhaust, forms the smoke. At bottom, Andrew waves to the crowd after a performance. The Snowbirds, established in the 1930s and based at 15 Wing Moose Jaw, Saskatchewan, Canada, fly the CT-114 Tutor jet trainer in a nine-plane, diamond formation that made them famous. It brings them as close as possible—tight, graceful, and powerful. They move as a single unit, even taking off and landing in this formation. Moving nine airplanes together through aerobatic turns and loops is some of the most difficult flying there is.*

Photo © Erik Simonsen

The Japanese Blue Impulse began performing in 1960 in F-86Fs. Today, the team flies the Kawasaki T-4 intermediate trainer and combat support aircraft. Its round-shaped airframe led to the nickname "dolphin." The aircraft is highly maneuverable in turns and loops.

Young or old, they all took advantage of this once-in-a-lifetime opportunity to get an up-close look at Air Force aircraft, equipment, technology, and people. School groups, like the one at right, spent hours touring aircraft, talking to crew members, and collecting autographs from just about anyone in uniform.

Photo by Paul Kennedy

Photo by Paul Kennedy

The good flying weather that helped make the Golden Air Tattoo spectacular meant relentless desert sunshine on the ramp at Nellis. Here, visitors take advantage of every inch of shadow cast by a B-1 bomber on static display.

Photo © Erik Simonsen

Even in such talented company, the home team wowed the crowd every day. Since 1953, the US Air Force Demonstration Squadron, the Thunderbirds, have impressed airshow visitors with their precision maneuvers in high-performance aircraft. The pilots perform about 30 maneuvers in a demonstration that takes more than an hour. Above is their four-aircraft diamond signature formation. At right is Thunderbird number six, Capt. (Maj. selectee) Mark R. Arlinghaus, acknowledging the cheers from an admiring crowd.

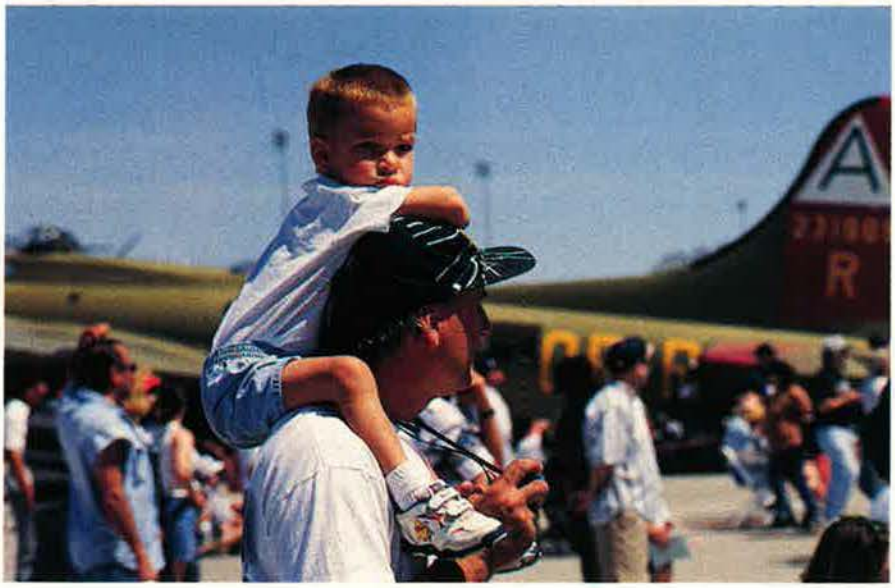
More than 287 million people in all 50 states and in 59 foreign countries have seen the Thunderbirds in more than 3,400 aerial demonstrations. Since their inception, the Thunderbirds have performed in a variety of aircraft: first the F-84, then the F-100, the F-4, the T-38, and since 1983, the F-16.

Staff photos by Guy Aceto

Unique to the airshow at Nellis was the span of history, experience, and technology represented by the airplanes. Sharing space on the same flight line, leading-edge aircraft that will take USAF into the twenty-first century sat next to classic warbirds: The beak-like nose of the B-2 Spirit at right presents a far different profile from that of the B-17 Flying Fortress beyond it—dramatically demonstrating the scope of the Golden Air Tattoo.

Staff photo by Guy Aceto

Photo by Paul Kennedy



Youngsters at the Golden Air Tattoo fully enjoyed the sights and sounds, to say nothing of the food offered by vendors all along the show line. For some, a visit to such a display of airpower just might head them in the direction of an Air Force career.

From beginning to end, Air Force Fifty was a week to remember. At right, striding across the ramp in World War II garb, is Wilbur R. Richardson, a former B-17 crew member and retired teacher who now does restoration work for the Chino Air Museum in California. ■

Photo by Paul Kennedy

Former President Bush leads a blue-ribbon lineup of speakers at AFA's International Airpower Symposium.

Airpower: *Past, Present, and Future*

By John A. Tirpak, Senior Editor

Photo by Paul Kennedy

Former President George Bush, shown here with Air Force Secretary Sheila Widnall, was among the dignitaries who expressed admiration and appreciation for the achievements of the US Air Force at AFA's airpower symposium.

President Bush

Former President George Bush gave the keynote address at the Air Force Fifty celebration, held in April in Las Vegas, Nev., using it to express appreciation to Persian Gulf War veterans who achieved such a rapid and decisive victory in that conflict.

Bush said that being commander in chief "at what I believe was perhaps the Air Force's finest hour in its 50 years" was among his "greatest privileges" in office. The recipe for success in the Gulf, he said, was a clearly defined mission, coalition-building, and readiness.

Bush said he resolved early in the crisis to work hard for a peaceful, diplomatic solution but if that failed to stand back and "let the military do the fighting . . . free of undue influence from the politicians."

Heavy investment in defense long before the crisis helped carry the day in Operation Desert Storm, Bush said. He described readiness of the armed forces as "in total disarray" in 1981, at the start of the Reagan buildup, but only nine years later, "the 'smart' weapons, which had not distinguished themselves

in Vietnam, were now at their sophisticated best," and the US possessed "weaponry on the cutting edge of technology."

Confessing to some skepticism that airpower could indeed deliver a preemptive knockout, Bush said he would never forget "the relief I felt as our pilots and weapons lived up to their promise. The skill of our coalition pilots and the amazing accuracy with which those weapons performed spared an awful lot of civilian life."

He told the Gulf War vets in attendance, "Thanks to your determination and skill, we owned the sky from the start," a fact "crucial . . . to our ultimate victory."

Bush observed that the Air Force's capabilities "showcased" in the war "will, in the future, help to deter war, for don't lose sight of the fact that the credibility of our fighting forces achieved new heights around the world. . . . Few were left doubting the will or the capability of the United States."

In the absence of a Cold War, "our policy priorities have shifted to getting our domestic and economic house in order. That is fine, but it should not be done at the expense of our military strength and preparedness."

Photo by Paul Kennedy

William Perry, who was Secretary of Defense from 1994 to 1997, recalled USAF's key role in the Gulf War victory and said that the strategy of overmatching potential enemies should be continued.

Prime Minister Thatcher

Margaret H. Thatcher, Britain's Prime Minister during the Reagan and Bush years, echoed Bush's warnings against the rising threat of weapons of mass destruction. She emphasized that USAF had a "vital" role to play in countering this menace, especially in defense against the threat of ballistic missiles.

"The Gulf War was a vivid reminder that evil will always be with us and that dictators will not suddenly become an extinct species," Thatcher warned. "Your effectiveness wields enormous influence on world events."

She credited USAF's "strength and foresight," as well as "astonishing" technological achievements during the Cold War, as major factors in the collapse of Soviet Communism but said that "now, your role extends beyond the bounds of the Cold War world."

The technological advances of the past half-century, she said, "have transformed the scope of military operations" around the world. "No part of the globe is now beyond the reach of the power and precision of the United States Air Force."

In wishing a "joyous birthday" to USAF, Thatcher expressed her pride in the "great Anglo-American alliance, the greatest force for liberty the world has ever known," and offered that "My generation will never forget the courage and selflessness of young Americans who risked—and in many cases gave—their lives that liberty should prevail."

Though the youngest of the US armed services, the Air Force has "already established a great tradition," Thatcher said.

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Appearing at the symposium via video, former British Prime Minister Margaret Thatcher (here, in a file photo) noted, "No part of the globe is beyond the reach of the power and precision of the United States Air Force."

Secretary Perry

William J. Perry, the "father of stealth," told attendees that "battlefield dominance," achieved for the first time in the Gulf War, is worth a heavy investment because it pays major dividends—shorter wars and dramatically lower casualties.

"We liked it, and we want to keep it," said the former Defense Secretary.

Perry, when serving as the Pentagon's research and engineering chief in the Carter Administration, perceived the value of stealth and cruise

Photo by Paul Kennedy

Chief to chief: Former Commander in Chief George Bush shakes hands with USAF Chief of Staff Gen. Ronald Fogleman, as Gen. Merrill McPeak, USAF (Ret.), Chief of Staff from 1990 to 1994, looks on.

missile research and laid the groundwork for today's high-technology weaponry.

The decisiveness of the Gulf War victory was a benefit of the "offset" strategy of the Cold War, Perry explained. Rather than "bankrupt" the US by trying to match the Soviet Union one-for-one in airplanes, tanks, and troops, the US adopted a strategy of offsetting Moscow's numerical advantage with more sophisticated systems.

The strategy of overmatching potential enemies is one that should be continued, he said, because adversaries will think twice about aggression if they know that the consequences will be swift and devastating.

Perry said the nation has made a smooth and successful transition from the strategy of "containment" of a single nation—the USSR—to one of more generalized "preventive defense."

Through the Cooperative Threat Reduction program, the US has helped its former enemies destroy 4,000 nuclear warheads and 800 launchers "previously aimed at targets in the United States," Perry noted. Three nations with formidable nuclear arsenals have become "nonnuclear" under the program, he observed, asserting that the money directed into such efforts paid back "enormous dividends" in a "real reduction" of the nuclear threat to the US. It is a program that deserves continued funding, given its success, he said.

Perry noted that, in the old days, defense investments spurred commercial breakthroughs, but changes in the economy have reversed that situation, and today "the military must now rest on the shoulders of the commercial world."

It will be necessary, he said, for the military to make greater use of off-the-shelf commercial products if it hopes to afford high technology and stay "in sync" with the pace of technological progress, which far outstrips the ability of the defense bureaucracy to keep up.

Secretary Widnall

From the beginning, the Air Force has embraced new technology and evolved to adapt to new conditions, opportunities, and requirements and is on the verge of doing so again, said USAF's civilian leader, Dr. Sheila E. Widnall

"We have been an institution in transformation pretty much continually throughout our existence," said the Secretary of the Air Force. Such a heritage, she added, will serve USAF well as it moves "into a new era: the era of the 'space and air force' of the next century."

Important changes are often imperceptible, Widnall continued, and almost without realizing it, the service has built itself into a force "in which our spacebased capabilities are integral to every operation we conduct." These systems are "the glue that holds our joint team together" and affords the "information dominance and global awareness that we have come to take for granted."

Remove the navigation, communication, weather, and intelligence satellites from the Air Force picture, and virtually all other capabilities would "collapse," she said. Space-based systems are "pumping the blood of information through the body of our combat forces."

Their importance will grow in the years to come, Widnall continued, as satellites pipe up-to-the-minute information directly to the cockpits of fighter planes and the sensors on weapons, well after the mission is under way. Soon, such a scenario will be "routine," she said.

In fact, the Air Force is on its way to becoming "one enormous network of sensors, command centers, and shooters," she said. "Already, we are nearing the ability to find, fix, track, and target from space anything of consequence on the face of the Earth" and soon will be able to do so in "near–real time."

Once that happens, "the face of warfare will be forever changed," with consequences likely not even imaginable today.

General Fogleman

Gen. Ronald R. Fogleman, the USAF Chief of Staff, said the gathering of global air chiefs, 81 of whom conferred in conjunction with Air Force Fifty, had succeeded "far beyond" expectations.

The point of the conference, he said, was to make and renew the interpersonal relationships among the air chiefs, "because, in the end, everything happens because of people-to-people relationships." Being familiar with each others' counterparts, Fogleman said, can help cut through the red tape in a crisis when minutes count. He cited such personal diplomacy as instrumental in obtaining Switzerland's permission to fly through its airspace to maintain relief flights to Bosnia-Hercegovina and in securing Kenya's assistance in staging relief missions to Somalia and Rwanda.

Fellow airmen "made the case for us" in those circumstances, the General added.

"Many of our successes" in the last decade "were quietly worked" on a personal basis, Fogleman said, and while the benefits of such contacts are hard to quantify immedi-

ately, the payoff in the long run should be substantial.

Another benefit of the conference was to provide the assembled air chiefs with a chance to see US aerospace hardware up close and make contact with industry representatives.

"Our number one export in this country is aerospace products," Fogleman said, noting that some of the air chiefs are also the heads of national airlines or civil aeronautics boards in their own countries and in a position to make or influence infrastructure decisions.

Fogleman said he expects that unmanned aerial vehicles will begin to pick up additional missions in reconnaissance, surveillance, and intelligence but that "probably the next area that we will see UAVs move into will be the radio relay business."

Long-loiter UAVs will be able to perform the same tasks as such aircraft as the EC-130, freeing crews to work in command posts and reducing the need for support personnel. Beyond the radio relay task, Fogleman next sees UAVs adopting part of the defense-suppression mission. The emergence of fighter-attack UAVs is "out there" about 25 years into the future, he predicted.

Photo by Paul Kennedy

The head of the Russian air force, Gen. Col. Peter Deynekin, goes over a few lines with his escort and interpreter, Capt. Lev Barats. In his remarks, the General spoke of camaraderie between the US and Russian air services.

General Deynekin

The head of the Russian air force, Gen. Col. Peter S. Deynekin, emphasized the emergence of a new camaraderie between US and Russian air services, once deadly enemies. He also won extended applause from the attendees when he congratulated the Air Force for having "liberated itself from the command of the Army" in 1947 and obtaining the right to "flourish independently."

The Russian air chief harked back to Russo-American cooperation in World War II and expressed the "heartfelt" thanks of Russia for American lend-lease assistance, when Washington sent P-39 Airacobras to help equip Russian air forces.

He dramatized the double turnaround in relations since then by recalling a hostile—though nonviolent—encounter between a Soviet Tu-95 "Bear" bomber, flown by him as a young captain, and an intercepting F-4 Phantom II fighter, flown by then-Maj. Merrill A. McPeak, later to become USAF Chief of Staff.

"We once again met in the American skies in May of 1992," said the Russian General, "now-General McPeak in an F-16 and myself in a B-1B. But this flight was different. This was a flight of friends and not enemies. And where once pilots flew wing-to-wing, the astronauts now fly shoulder-to-shoulder in space," aboard the Russian Mir space station.

Photo by Paul Kennedy

Gen. Howell Estes III, head of US Space Command and NORAD, warned the symposium audience that the US must "prepare, as a nation, to deal with threats to our civil and military systems in space."

General Estes

Gen. Howell M. Estes III, the nation's top officer for space, opened his remarks with a pointed request that any such gathering in the future be entitled "International Air- *and Space*power Symposium" to recognize the medium's growing importance.

He is commander in chief of US Space Command and North American Aerospace Defense Command and commander of Air Force Space Command.

Estes enumerated the many facets of current and planned responsibilities of Space Command, from providing intelligence, targeting, and navigational aids for combat aircraft, to pursuing a new expendable launch vehicle, to orchestrating a future the-

Toffler's Future

Futurist Alvin Toffler shook up symposium attendees with a forecast of how the Air Force will have to configure itself to deal with the future.

The Air Force will soon find itself "in a world in which unmanned flight, nonlethal weaponry, and, above all, instantly available satellite intelligence, fused with human . . . and open-source intelligence, all become vitally important to maintaining peace. . . . It is a world in which spacebased sensors do a far better job of locating weapons of mass destruction, . . . a world in which airborne lasers can detonate enemy or rogue missiles before they do any damage."

The world, Toffler said, is in the throes of profound changes "that go far deeper than just the end of the Cold War" and will radically affect how wars are fought and how security is measured in the coming decades.

According to Toffler, the world is no longer following the "rules" of international relations that have held for 300 years. It is impossible for any nation—especially the US—to "restructure its military, to maintain an appropriate industrial base, let alone imagine the next 50 years of airpower, if its model of global relations and its theories of conflict are obsolete," said Toffler. He added, "We believe they are."

In Toffler's view, the agrarian-, machine-, and information-based economies and cultures of the world are now in constant collision, as evidenced by conflicts involving everything from religious fundamentalism to cyberwar.

To cope, the Air Force will have to rely increasingly on information- and intelligence-collection systems—not necessarily for use in precision targeting but to assist in what he called "antiwar" operations. These would be aimed at nipping conflict in the bud before it became uncontrollably destructive.

"The lesson of history," he said, "is that massive change doesn't happen without massive conflict, and our task is to prevent that conflict from reaching another level of violence." He went on, "In such a world, anticipatory, preventive, 'antiwar' action becomes a survival necessity."

Failure to take this approach is to invite attack from opponents up and down the scale of wealth, each of whom would have access to weapons of mass destruction and the means to "crash" major parts of the US communications system.

The future military will need to consist of "smaller, faster, smarter, instantly reconfigurable forces capable of pinpoint action with minimal bloodshed," said Toffler, "a world of Sun Tzu technology in which the best victories are those that come without combat and in which information superiority can prevent or even win wars before they begin."

ater and strategic ballistic missile defense.

He predicted that air traffic control operations will move into space and that an orbital radar system will be developed to provide "a real-time picture of things moving on and just above the Earth." Despite the expense of the venture, he said, "I believe it is only a matter of time . . . and money" before it appears.

Estes explained how the Defense Department is pursuing the next generation of expendable launch vehicles while NASA is developing the next reusable launch vehicle to replace the space shuttle, with cooperation between the two agencies.

Regarding heavy launch, Estes said the US will "easily" achieve the required 25 to 50 percent reduction in the cost of launch. In fact, he believes the savings will be "greater than 50 percent."

He went on to predict that by 2025, "we'll be routinely operating spaceplanes," given the state of technology today.

Noting that space control is one of the core competencies assigned to Space Command, Estes said, "We are going to have to prepare, as a nation, to deal with threats to our civil and military systems in space. Without question, we are going to be challenged at some point in the future." Given the $100 billion worth of US military and commercial satellites on orbit, and the national dependence on their functioning properly and without interruption, space as a place has become "a national security interest, as other economic investments we have made around the world have been." Inevitably, an enemy will attempt to strike at US satellites, Estes asserted.

Philip Condit

Representing industry at the symposium was Philip M. Condit, chairman and chief executive officer of Boeing. Condit praised the Air Force and AFA as being successful because of a willingness to gamble and to try radically new things.

"You . . . embody courage and commitment and vision," he said. "You have often been pioneers. You are willing to take risks. You are willing to learn, and you have been willing to lead the way."

Condit noted several episodes of quantum jumps in the progress of aviation, brought on by an unwillingness to settle for slow improvement.

Within three years of the end of World War II, said Condit, Boeing engineers translated German war research on sweptwing aircraft into the Air Force B-47 bomber. With thin wings swept back 35° and engines mounted under the wings in pods, the B-47 "was a radical departure from traditional aircraft design."

The following year, Boeing managers went to Wright Field in Dayton, Ohio, to submit a straightwing, propeller-driven design for a new, very-long-range bomber for Strategic Air Command. The design was rejected by the bomber program head, Col. Pete Warden. Warden, said Condit, "was convinced that the time for change had arrived and that Boeing should build a sweptwing bomber and not a turboprop."

Retreating to a hotel room on a Thursday, a team of seven Boeing designers and managers did some calculations. Using some locally bought balsa wood and knives, they prepared a prototype model of what would later become the B-52 bomber. The following Monday, they submitted the design and won approval to build the airplane, still in service 45 years after first flight.

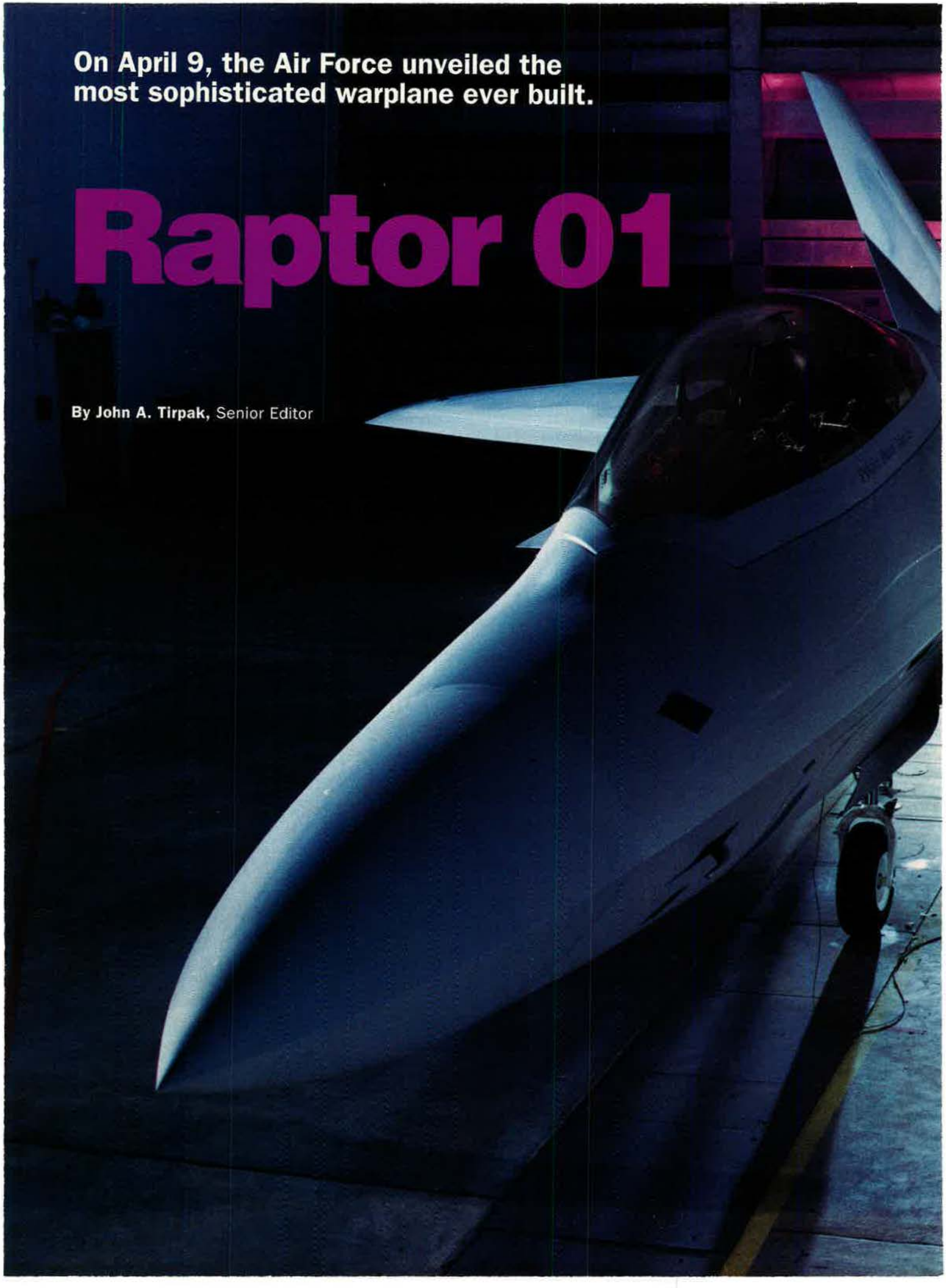
"From that five-day effort in a hotel room in Dayton, airpower changed dramatically," Condit asserted. He chalked up the achievement to the designers' knowledge and willingness to listen and learn. Condit said he believes "we are at one of those same points in history today," where a dramatic technological leap is in the offing.

"Imagine . . . what it really means to be able to take data from satellites, from aircraft, to merge them to form a vivid picture . . . of everything that is going on," said the Boeing executive. "Think about how that changes the fundamental view of warfare and potential warfare . . . I believe we can and will revolutionize the command and control of future battlespace." ■

On April 9, the Air Force unveiled the most sophisticated warplane ever built.

Raptor 01

By **John A. Tirpak,** Senior Editor



F-22 Team photo

With stealth, integrated avionics, supercruise, and other features, the F-22 will be the most potent fighter in the world. Bret Luedke, at left, is the second Lockheed Martin Aeronautical Systems F-22 test pilot.

With theatrical smoke and lasers zapping overhead, the Air Force and Lockheed Martin Corp. officially rolled out F-22 number one, *Spirit of America*. President Clinton, in a statement released simultaneously with the rollout, called it the "catalyst for a revolution in airpower."

The April 9 event in Marietta, Ga., featured thousands of guests, including current and former company and service officials, plant workers, most of the Georgia Congressional delegation, and media representatives. All crushed forward to get a better look at the airplane that USAF is counting on to guarantee American air supremacy through the first half of the twenty-first century.

The Raptor, as the F-22 has been officially dubbed, is not especially futuristic on the outside. With its new mottled-gray "ghost" paint job, the F-22 looks like a more angular version of the F-15C Eagle it was designed to replace.

Looks are deceiving, however. The F-22's sophistication lies in the precise way those angles were calculated to make the airplane stealthy, in the powerful and advanced Pratt & Whitney F119 engines fitted inside, and in an avionics suite that seems to verge on consciousness. No one disputes that the F-22, with a well-trained pilot in the cockpit, will be an unbeatable fighter when it reaches operational service, and its planned improvements should make it unequaled into the foreseeable future.

"This is not a business where you want to be second-best or equal," Gen. Ronald R. Fogleman, Air Force Chief of Staff, told reporters at the rollout. "You've got to dominate" in the air-to-air arena, he said, in order to ensure the safety of US fighting men and women on the surface. The F-22 contributes to overall military power by making the job of the other military services "possible . . . with fewer losses, fewer casualties, less ground given up to an enemy," Fogleman asserted.

America's Fighter

He added, "This is not an airplane that is being bought for the United States Air Force. This is an airplane that is being bought for the nation." Money spent on the F-22, he said, is "an investment in the preservation of the most precious treasure that we have in this country, which [is] the young men and women who serve in all our military services."

F-22 Team photo

The ultimate advanced tactical fighter, the first production F-22,* Spirit of America, *was unveiled in a dramatic rollout ceremony hosted by the contractor team in April. It's the first new USAF fighter in 20 years.

Lockheed Martin Aeronautics President James A. "Micky" Blackwell contended that the sleek new fighter is so superior to any competing design that "the first thing the F-22 will kill is the enemy's appetite for war."

The assembled fans of the F-22 had a lot to be excited about.

It had taken nearly 16 years to reach the point of rollout (Lockheed Martin and the Air Force scheduled its first flight for mid-1997). The Air Force in 1981 had identified a requirement for an F-15 follow-on, the Advanced Tactical Fighter. Four years later, it modified the requirement to demand an even stealthier design.

Lockheed discarded its first ATF concept in 1987 as "technically and competitively unacceptable," then came back to win the competition with the F-22 in 1991. Since the end of the Cold War, Congress has tinkered with F-22 funding often enough that USAF has had to restructure the program several times.

Out of this programmatic turmoil, however, has come an indisputably awesome airplane.

The F-22 is the first fighter anywhere to boast a combination of high agility and a high degree of stealthiness. It is the first operational Air Force airplane that will employ thrust vectoring. It is the first airplane in the world that will cruise at high supersonic speeds without afterburner, a capability known as "supercruise."

These features, when combined with an avionics suite that can integrate sensor data and present it in an easily understandable format with minimal "housekeeping" by the pilot, have made the F-22 into the aircraft that fighter pilots have been asking for since the jet age began.

The Air Force envisions the F-22 flying into combat and remaining undetected as it ranges deep into enemy territory. Aided by satellites, Airborne Warning and Control System aircraft, unmanned reconnaissance vehicles, and a host of other sensors, the F-22 pilot will have a "god's-eye" view of the battlespace without having to emit any electromagnetic energy of its own. Once enemy aircraft are detected, the F-22 can illuminate beyond-visual-range targets with a radar possessing "frequency agility"—able to hop rapidly from one radar frequency to another. All the enemy will see are brief flashes in the electromagnetic spectrum, too few and too brief to track the F-22 or bring weapons to bear on it.

The motto of the program, echoed by Air Force Secretary Sheila E. Widnall, is "first look, first shot, first kill."

Ground-Attack Built In

While stealthiness is extremely valuable in a dogfight, it is absolutely critical in the ground-attack role, and "the very first F-22 produced will have an inherent air-to-ground capability," Fogleman said. The F-22 needs to be stealthy in order to survive against increasingly sophisticated surface-to-air missiles that protect important ground targets around the world, regardless of whether competing fighters ever materialize.

Both in the air-to-air and air-to-ground mode, supercruise ability sharply narrows the window within which an enemy can see, target, and shoot at the F-22. The combination of stealth and speed means that by the time the F-22 is detected, it will usually be too late to attempt to engage it.

While the F-15C also had ground-attack capability from the beginning, Fogleman observed that it was gradually removed in order to make more room for the computer capacity needed to keep the F-15 effective as an air-to-air weapon. "That's not a problem with the F-22," he said, noting that the F-22 has so much on-board computing power that it can swing between strike and dogfight missions virtually with the flip of a switch.

Fogleman noted that the F-22's inherent speed and stealth attributes would make it a natural in the role of defense suppression and other missions, but he declined to speculate on whether the Air Force might, in the future, argue for a larger buy to fill such roles. He noted, though, that the F-117 and F-15E will need to be replaced "around 2025 to 2030."

In fact, said Lockheed Martin's Marty Broadwell, "there's room for 200 percent growth" in the F-22's avionics bays, so there's little chance the airplane won't be able to keep up with new missions. Broadwell briefed reporters on the airplane's avionics system.

The Raptor has a self-diagnostic system that can identify and trace 98 percent of all faults in the airplane to a specific line-replaceable module, Broadwell asserted, making the task of finding and fixing problems far easier and less time-consuming than is the case with the F-15. The F-22 program set forth a goal of achieving a 100 percent improvement in aircraft reliability and maintainability relative to the F-15, and it appears that Lockheed Martin will meet that goal easily.

So reliant is the F-22 on its computers that fully one-quarter of its flyaway cost of $70.9 million (in 1997 dollars) is devoted to avionics. Triple-redundant flight controls mean that, even with heavy combat damage, the F-22 can still fly home.

USAF is looking at adding an infrared search-and-track system to the F-22 in the future, which will help it detect enemy stealth aircraft, should the need arise. This is not part of the baseline program and would incur an additional cost.

Additionally, the Air Force has been contemplating improvements in satellite uplinks and Global Positioning System receivers, as well as an added "side array" electronically steered radar antenna on each side of the airplane, just above the air intakes. Such an improvement would dramatically expand the range of the F-22's "vision."

USAF is considering the installation of a helmet-mounted sight/missile steering system, along with the integration of more types of air-to-surface weapons. The first version

F-22 Team photo

The F-22's angles were precisely calculated to make it stealthy. Whether or not competing fighters are developed, the Raptor needs stealthiness to survive against increasingly sophisticated surface-to-air missiles.

F-22 Team photo

Before its "ghost" paint job, the different colors on the aircraft reveal the various materials—such as titanium, aluminum, and composites—that make up the F-22. Its bulkheads are the largest forged aluminum pieces made.

From Rollout to Final Delivery

F-22 program milestone dates have been changed many times over the years. Here was the plan at the time of the rollout:

April 9, 1997: First F-22 unveiled in ceremonies at Lockheed Martin Aeronautical Systems in Marietta, Ga.

Mid-1997: Lockheed Martin flies the first F-22.

October 1997: The first F-22 goes to the Air Force Flight Test Center at Edwards AFB, Calif., for full testing.

Mid-1999: Award of Lot 1 contract (low-rate initial production) for two aircraft to be delivered in 2001–02.

Mid-1999: First flight of an F-22 with a full avionics suite.

Early 2000: Award of Lot 2 contract for six F-22s to be delivered in 2002.

Early 2001: Award of Lot 3 contract for 12 F-22s to be delivered in 2003.

Early 2002: Award of Lot 4 contract for 20 F-22s to be delivered in 2003–04.

Early 2003: Award of Lot 5 contract for 30 F-22s to be delivered in 2004–05.

Early 2004: Start of high-rate production with award of Lot 6 contract for 48 F-22s to be delivered in 2005–06.

Late 2004: Initial operational capability.

2013: Delivery of the 438th (last planned) production F-22.

The Quadrennial Defense Review recommended a reduction of 12 F-22s in the low-rate initial production phase. If approved by Congress, LRIP lot amounts would change. The QDR also suggested a peak production rate of 36 aircraft per year.

of the F-22 will have the capability for only the 1,000-pound version of the Joint Direct Attack Munition.

Don't Look for These

However, the F-22 will lack three "gee whiz" features once thought likely to show up on the aircraft. One is voice-activated and "fingers on glass" controls, which were technically feasible but "the pilots just didn't want them," according to Lt. Col. Scott Anderson of Air Combat Command. Another is a plug-in, flight-planning interface, which allows hands-off flying most of the way to a ground target. These are present in the F-117 stealth fighter and B-2 stealth bomber. The F-22 also will not have a so-called "panic button," which a disoriented flyer could hit to have an autopilot restore the airplane to wings-level flight.

However, the combination of mechanical and electronic advances will enable the F-22 to go from a cold start to taxi in less than 30 seconds, with only three steps necessary to ready the airplane for flight.

More than 25 percent of the F-22's weight—principally wings, control surfaces, and leading edges—is made of advanced composite materials, while 25 to 30 percent of the airplane's weight is titanium—mostly in the aft section—needed to withstand the extreme stress and temperatures the F-22 will experience. The rest of the airplane is chiefly aluminum, including bulkheads that are the largest forged aluminum pieces ever made.

Designers of the F-22 wanted pilots to be free to maneuver almost without limitations, and the combination of the avionics system, structural strength of the airplane, and thrust-vectoring nozzles makes this possible. The F-22 has no angle-of-attack limitations, meaning the pilot can maneuver even beyond a stall, and computerized load limiters will allow the pilot to push the airplane to its limits without fear of overspeeding any of the control surfaces.

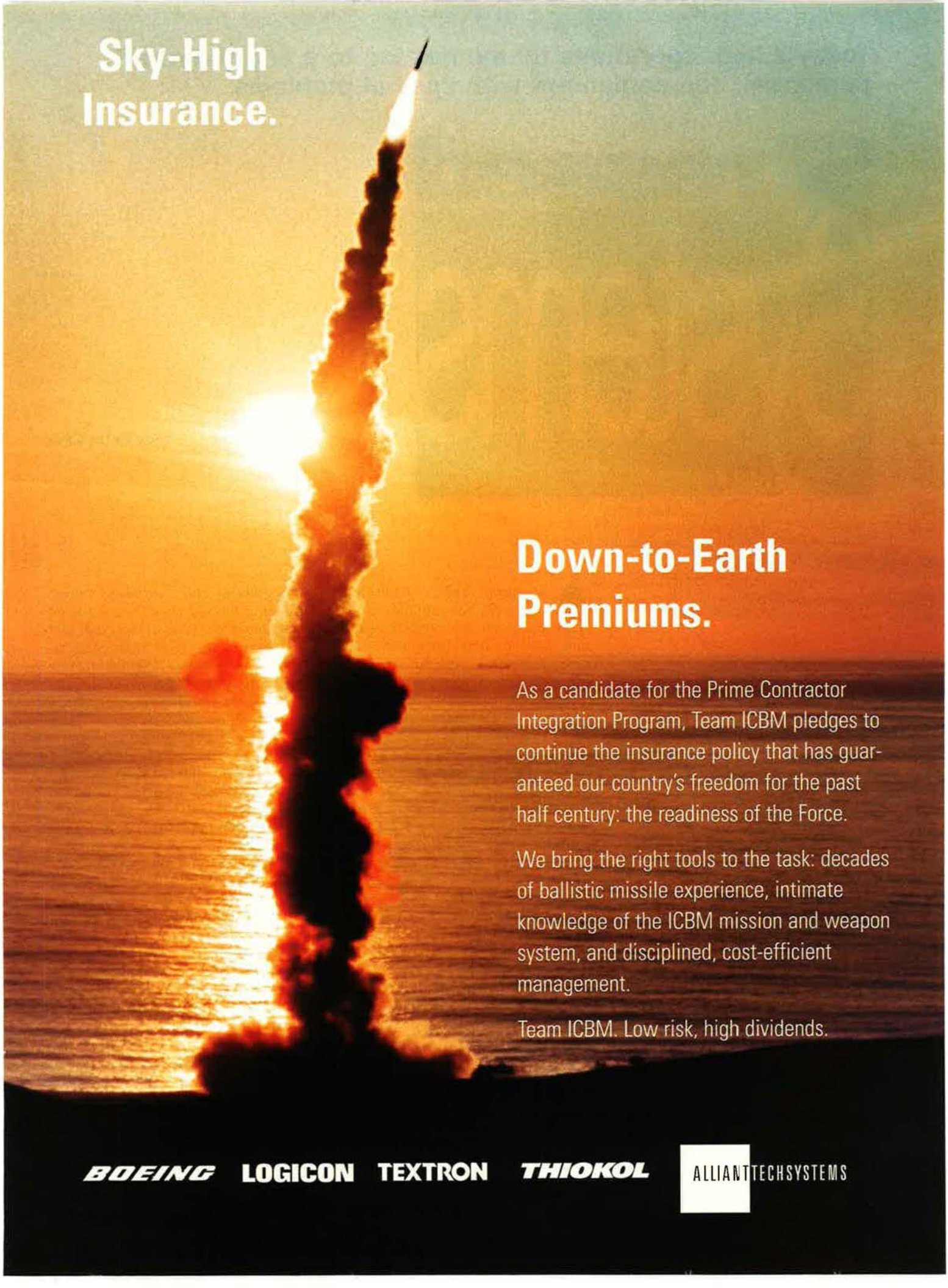
The airplane that rolled out in April is one of three "basic" F-22s, consisting of airplane and engines without combat avionics. These aircraft will be used to explore flight characteristics, flutter, loads, propulsion, and envelope expansion. Another six aircraft in the flight test program will be avionics test-beds. The course of the F-22 program will differ from that of the B-2 program, in which each test airplane was dedicated to a single area of development. The six F-22 avionics test-beds will be "interchangeable" to prevent schedule problems should one or two airplanes develop faults. The test program is expected to take five years and require about 2,700 flights, lasting a cumulative 7,800 hours.

The first squadron of F-22s is slated to be operational in 2005, with 32 airplanes. For several years, the approved Air Force plan called for production to continue until 2013, with the last of a total of 438 Raptors to roll off the assembly line in that year. In the Quadrennial Defense Review earlier this year, however, the Pentagon recommended a cutback to 339 of the fighters. Congress will have to grapple with the issue for months to come.

Cost Controversy

The unveiling took place at a time when controversy about cost swirled around the aircraft program. Fogleman argued that "high-end" cost estimates for how expensive the F-22 *might* get ignore the cost savings accruing from new technologies being applied to its manufacture. He noted, for example, that original estimates at how many man-hours it would take to apply the F-22's special stealth coatings ran as high as 35,000 hours, but "as a result of the robotics we have put in place . . . we can coat the airplane with less than 1,000 man-hours," resulting in "huge savings" in touch-labor costs. As the F-22 makers advance on the learning curve, he said, the cost could be further reduced.

Acknowledging that $71 million "is a lot of money," the Chief of Staff pointed out that the cost measures up well when weighed against the cost of American lives. The fact that US ground troops have not been attacked by enemy aircraft in more than 45 years "did not happen just by luck," said Fogleman. "Somebody has got to pay attention to it. Somebody has got to go develop the airplane. Somebody has got to make the investment." ■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Today's high operations tempo has led to a set of aircraft, personnel, and equipment with special problems.

Stressed Systems

By Peter Grier

Air Force leaders have long known that the demands of contingency operations around the globe may well be damaging unit readiness. Now they are trying to figure out exactly where their worst personnel and operations tempo problems are—and what the affected units think should be done about them.

Officials of the Air Force Studies and Analyses Agency (AFSAA) conducted a two-year look at the problem. The resulting "Stressed Systems Study" examined a wide range of hard-pressed squadrons and systems, from F-16s at Aviano AB, Italy, to the E-8 Joint Surveillance and Target Attack Radar System crews at Robins AFB, Ga.

The report concluded that Air Force personnel are more than willing to step up and fulfill mission obligations in the name of national security, but the pace of those obligations is taking a serious toll.

"Everyone understood why they were in the Air Force, and they were eager to do what they are called upon to do," said Maj. Robert A. Nuanes, study analyst at AFSAA. "What bothered them was doing things they didn't see any value in."

Officials hope that the Stressed Systems Study's personnel tempo (perstempo) and operations tempo (optempo) research will at least send hard-pressed airmen the message that someone is aware of their predicament. Said Nuanes, "What we're trying to do is show that we know pain is out there and that we're trying to do something about it."

The causes of optempo and perstempo pain are well documented. Ever since the fall of the Berlin Wall in late 1989, the number of contingency operations has skyrocketed. In 1988–89, the Air Force averaged 3,500 personnel deployed temporarily for Military Operations Other Than War. During 1995–96, the figure was 13,500, as actions in Bosnia-Hercegovina and southwest Asia kept service taskings high.

Meanwhile, Air Force end strength has declined by a little more than one-third since 1986. Forward-based forces have been slashed by two-thirds since 1989.

The Overworked Five

As a result, Air Force officials have not succeeded in meeting their self-set goal of no more than 120 days of annual temporary duty (TDY) for every service member and weapon system. According to data compiled by the Stressed Systems research-

ers, four weapons and one career field exceeded this threshold in Fiscal 1996:

- RC-135J (151 days of TDY)
- U-2 (149 days)
- HC-130 (144 days)
- A/OA-10 (133 days)
- Combat Control Teams (160 days)

In addition, researchers identified several career fields that were significantly stressed yet still were operating within guidelines. These fields included special operations, airlift support, and linguists.

By some measures, the TDY record has been improving. In Fiscal 1994, 13 weapon systems surpassed the 120-day TDY optempo limit, as opposed to the current four.

However, other measures hint at a continuing problem. The number of systems exceeding 100 days TDY is up by 50 percent over the last two years.

Air Force officials have already taken a number of steps intended to head off the adverse effects on morale caused by long periods of high operations rates. Two years ago, an Air Combat Command scheduling conference produced a global plan that now helps the service spread the burden of deployments among as many units as possible.

Photo by Ted Carlson

RC-135 crews had a temporary duty rate of 151 days per year in 1996, down slightly from 1995's whopping 163 days but still too high.

Case Study in Pain I: RC-135 Rivet Joint Crews

Period	Requirement, Crew Days/ TDY Per Year	Number of Mission-Ready Crews	Personnel Tempo
Pre–Desert Storm	2,200	19	116 days
Notional USAF limit	2,280	19	120 days
Fiscal Year 1994	2,888	19	152 days
Fiscal Year 1995	3,097	19	163 days
Fiscal Year 1996	2,869	19	151 days

After Operation Desert Storm, the perstempo of RC-135 Rivet Joint crews climbed steadily, rising 30 percent by the mid-1990s. Perstempo punched through the 120-day ceiling because, even as mission requirements grew, the number of mission-ready crews stayed the same. To bring perstempo back into line, USAF would have to field at least 26 mission-ready crews.

Source: Air Force Studies and Analyses Agency

Assistance from outside the Air Force has also helped ease the work load. Reserve units, such Navy assets as EA-6Bs, and NATO Airborne Warning and Control System (AWACS) aircraft have all substituted for high-demand Air Force units in recent months.

Yet in some cases, the only possible solution was turning down the requested deployments. The Air Force has asked for—and received—such relief for some of its E-3 AWACS and RC-135 Rivet Joint crews, as well as Airborne Battlefield Command and Control Center teams.

"All had their taskings reduced to allow them to recapture training lost due to contingency operations," according to one unclassified Air Force paper on optempo issues.

Air Force officials have begun collecting more detailed individual TDY information in an attempt to better understand the complex stresses and strains produced by continual contingency operations. A new TDY History File system, which collects data directly from travel vouchers, began operation on January 1. The goal of the new approach: provide commanders a more comprehensive look at unit health and well-being.

Disturbing Data

The Air Force launched its comprehensive Stressed Systems Study in July 1995. Its first phase constituted a snapshot look at the state of RC-135 Rivet Joint aircraft and several other low-density/high-demand (LD/HD) systems. Even without in-depth probing, researchers turned up disturbing data.

Consider the report's analysis of the Rivet Joint force structure. Before Operation Desert Storm, the typical mission requirement for these crucial electronic surveillance aircraft was 2,200 crew days per year. With 19 mission-ready crews (out of an authorized 22 crew slots), perstempo for the Air Force's 10 Rivet Joints was typically 116 days per year.

In other words, the tempo was high but within service guidelines.

However, since Desert Storm, the demand for RC-135 capabilities has skyrocketed. For 1995, their mission requirement was 3,097 crew days. Crew manning, however, stayed the same, resulting in a perstempo rate of 163 days TDY per year in

1995. The Air Force would have had to stand up 26 full, mission-ready crews to have enough on hand to reduce the system's perstempo to the 120-day Air Force target.

It would be a mistake to automatically equate these high perstempo rates with exhausted personnel ready to bolt for the private sector. Work load effects are more complicated than that, according to Air Force researchers. "High operations tempo is not necessarily a bad thing," observed Nuanes. "People want a certain level of optempo."

Most USAF personnel are mission-oriented, after all. High requirement levels allow them to spend lots of time doing what they train to do, as opposed to sitting around in garrison, waiting and running exercises in an attempt to keep their edge.

The big problems really begin when excessive work loads continue over a long period of time. "Where perstempo begins to wear out the carpet is after three or four years in a row," said Nuanes. "Eventually, that turns into a conversation around the kitchen table."

One proof of this is that the Stressed Systems Study found little direct correlation between high operations rates and separation from the service. Instead, the rate of resignations spikes some years farther down the road.

"What we've been finding is that separation rates are a lagging indicator of stress," said Nuanes.

Phase II of the Stressed Systems Study began in February 1996 and was finished early this year. This phase examined 22 more Air Force weapons and programs, including the A/OA-10, the HC-130, the unmanned aerial vehicle, and Ground Tactical Air Control Systems. Researchers visited units around the world (at least one for each system) and gathered commander assessments of 33 key indicators of personnel stress and 11 indicators of equipment stress.

The 50th Airlift Squadron, located at Little Rock AFB, Ark., presents a good case study of the Stressed Systems Study findings. Their C-130Hs are relatively new, and thus their equipment stress ratings were low. Personnel ratings were somewhat worse—and indicative of what researchers found throughout the Air Force.

Photo by Randy Jolly

Having new equipment, such as this C-130H, solves some problems but causes others—in some cases, the newer the equipment, the higher the demand for it.

Case Study in Pain II: 50th Airlift Squadron, Little Rock AFB, Ark.

Indicator of Personnel Stress

Average operations TDY (days per year)	136
Highest TDY Air Force Specialty Codes in ops	140
Selection rate for Squacron Officer School	30%
Major exercises per year	9+
Manning for critical maintenance positions	83%
Training waivers for aircrews (average)	7%
Manning of critical operations (navigator) positions	82%
Taking leave in desired period	77%
Working on Christmas Day	65%

The 50th AS is a C-130H unit. Data are for Fiscal 1996. In each case, the figure cited is considered a "red-light" indicator for personnel stress, meaning it varies significantly from the Air Force goal.

Yellow Light, Red Light

With 14 assigned aircraft and 405 authorized personnel, the 50th AS has a full two crews for each available plane. The average workweek for operations personnel was thus 48.5 hours in 1996, according to report data. That counts as a "yellow-light" indicator—neither as good as the target 40- to 45-hour "green" level nor as bad as the 55-hours-plus level that qualifies as a "red" light.

However, work hours do not necessarily reflect the real rate of TDY—and the average number of days on TDY for 50th AS operations members was 136 days, well past service guidelines and into the Stressed Systems red zone.

Some operations specialties had rates well above the average. Unit navigators, for instance, averaged 140 days of TDY last year. Undermanning was one likely culprit for overworked specialists. The 50th AS had only 82 percent of the navigators it needed last year, for instance.

Staff photo by Guy Aceto

An F-16 returns to Aviano AB, Italy, after a training mission, but such missions are rare for deployed units. To get sufficient training time, some units had to forgo real-world deployments.

Loadmasters were manned at 86 percent of requirement.

Major exercises contributed greatly to the squadron's personnel stress. Air Force personnel officials judged that taking part in two to three such exercises annually would rate "green" as far as the Stressed Systems Study was concerned. The 50th AS, however, participated in more than nine. Training was not necessarily enhanced by this pace of operations, either. Seven percent of the unit's aircrew personnel were issued training waivers in 1996, earning the squadron a red rating for this stress category.

Not all indicators for the 50th AS showed up poorly. The average experience level for both officers and enlisted personnel remained good, for example. Separation rates remained low, with only two percent of officers and nine percent of enlisted personnel leaving the Air Force in 1996. No father had to miss a child's birth due to the TDY schedule.

Quality of life in the squadron definitely had shortcomings. Consider several small but irritating problems:

- 77 percent of the squadron had trouble taking leave during their desired time periods.
- 65 percent of personnel worked on Christmas Day, and 69 percent worked on New Year's Day.

The fact that the 50th AS has a new model C-130 turned out to be a mixed blessing for the unit, those who conducted the study point out. On the one hand, equipment indicators were green across the board, from cannibalization rate to availability of depot support. On the other hand, their C-130Hs were much in demand and were called on "to do desert rotations [in the Persian Gulf region] that others weren't," said Nuanes.

Stressed Out

In the context of the Stressed Systems Study, the Little Rock airlift unit was about average. Others showed a much higher level of personnel problems. The 30th Intelligence Squadron, based at Langley AFB, Va., was the most stressed "non-trigger-puller" unit. Its members focus on linkage work with U-2s, which are themselves hard-used systems. For "shooters," the most stressed unit was the 81st Fighter Squadron at Spangdahlem AB, Germany. The 81st is an A-10 unit, and its aircraft played key roles in a number of 1996 contingency operations.

Other highly stressed units included the 23d Fighter Squadron from Spangdahlem and the 34th FS from Hill AFB, Utah, both flying F-16s.

For more typical units, problems mirrored the 50th AS experience. Almost every unit surveyed had some operations specialists who exceeded the 120-day TDY benchmark in 1996. Many frequently had to work on Thanksgiving or Christmas. The average duty week for operational crews seldom earned a green rating.

Unsurprisingly, considering the structure and work load of today's Air Force, "optempo and TDY rates have gone up for the majority" of units, said Nuanes.

Stressed Systems Study researchers also surveyed units for their proposed solutions to stress problems. Some of the input they received might fall under the category of "unlikely to happen." These include such solutions as increases in aircraft and crews.

Even so, officials thought this part of their exercise was useful. If nothing else, it indicated that the Air Force is at least thinking about ways it might ease personnel stress problems. And some of the top-rated solutions were eminently sensible, such as "fill critical specialties," "balance taskings with holidays, training, and maintenance requirements," and "establish a 30-day TDY freeze for new fathers."

Stressed Systems Study researchers generally believe that the best strategy for reducing stress would be to combine three approaches: limit taskings as much as possible, provide more internal resources, and provide new quality-of-life programs.

Ironically, boosting the number of crews and aircraft for some units might not actually lower optempo, according to study findings. Some units would have to travel more if they had more strength.

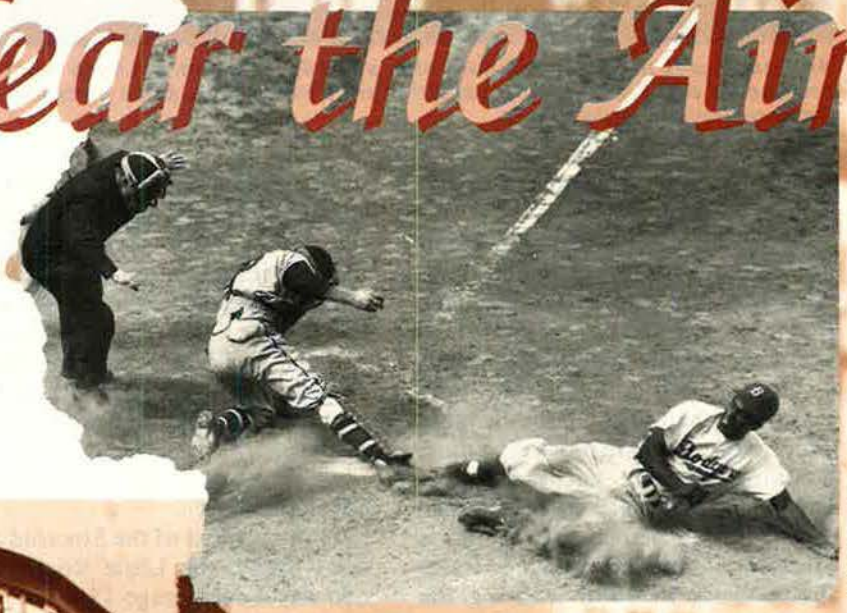
Researchers are hoping for a third phase of the Stressed Systems Study that would build on their research with more detailed evaluations, such as TDY rates by Air Force Specialty Code. "We don't want to spread the word that optempo is a bad thing," said Nuanes. "What we're trying to emphasize is that we're very interested in the high level of optempo and perstempo that's out there in the field. The world is changing, and we're trying to get smarter on managing resources." ■

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, "Readiness at the Edge," appeared in the June 1997 issue.*

Here are some of the events that defined 1947.

The Year the Air

In 1947, the US was poised to take on post-war leadership of the free world. It was also the year Jackie Robinson (right and below) broke the major league baseball color barrier. Chuck Yeager broke the sound barrier in a Bell X-1 (shown at right under the belly of a B-29). The House Un-American Activities Committee held hearings on Communist influence in Hollywood, drawing a protest from stars (l–r) June Havoc, Humphrey Bogart, and Lauren Bacall.



UPI/Corbis-Bettman

UPI/Corbis-Bettman

Present at the swearing in of Stuart Symington (left) as the first Secretary of the Air Force were (l–r) Army Secretary Kenneth C. Royall, Secretary of Defense James V. Forrestal, Chief Justice Fred Vinson (administering the oath), and Navy Secretary John Sullivan. Background photo: Immigrants to the US gaze at New York City's skyline.

Background photo: Hulton Getty

Force Was Born

THE NATION

UPI Corbis-Bettman

January 21: The White House announces that the War and Navy Departments have agreed to merge the armed forces and create a separate Air Force. President Harry S. Truman calls it "an admirable compromise."

February 18: Congress of Industrial Organizations accepts invitation from American Federation of Labor to discuss a merger, a move that eventually results in the AFL-CIO.

February: Blizzard of 1947 drops 25.8 inches of snow on New York City in 20 hours.

April 9–23: Congress of Racial Equality sponsors interstate bus ride to test 1946 Supreme Court ruling that black passengers could not be forced to ride in back.

April 10: Jackie Robinson, 28, breaks color line and joins the Brooklyn Dodgers, becoming the first black baseball player in the major leagues in modern times. Robinson later is voted Rookie of the Year.

April 10: Manix Earthquake, 6.4 on the Richter Scale, rocks southern California.

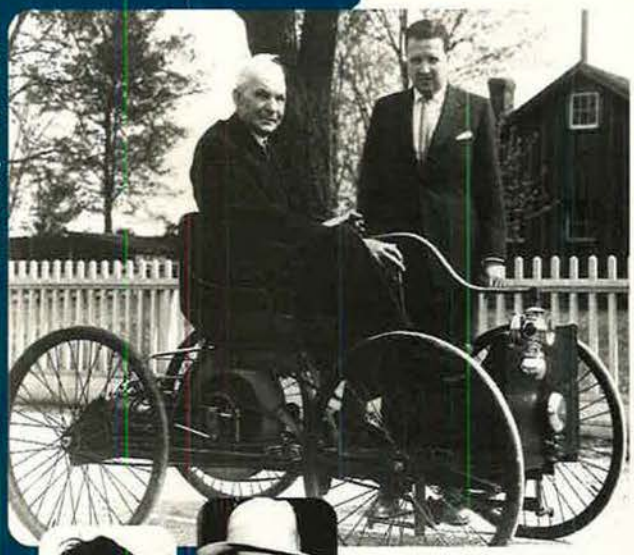
June 23: Congress, overriding the veto of President Truman, enacts the Taft-Hartley Act restricting union activity, a serious defeat for organized labor.

June 30: At the end of Fiscal 1947, US possesses only 13 atomic weapons, having demobilized and permitted its arsenal to dwindle.

September 18: Federal government formally establishes the Air Force and the Central Intelligence Agency.

October 20: The House Un-American Activities Committee begins hearings on Communist influence in Hollywood. Nineteen Hollywood personalities are subpoenaed to testify about knowledge of possible Communist activities.

Photos this page UPI/Corbis-Bettman



Top to bottom, fascinating figures from 1947: industrialist Henry Ford (and grandson Henry Ford II), gangster Al Capone, author Jack Kerouac, Indian leader Mohandas Gandhi, and newlyweds Elizabeth Windsor and Philip Mountbatten.

THE WORLD

March 12: President Truman announces a program of economic and military aid to Greece and Turkey to fend off Soviet-backed revolts. US willingness to assist such embattled nations later becomes known as the Truman Doctrine.

April 1947: Daily German food intake falls to about 1,000 calories, one-third less than the minimum for sustaining life. Workers collapse at their jobs for lack of food.

June 5: In a speech at Harvard, Secretary of State George C. Marshall launches aid program, later to be called the Marshall Plan, through which US eventually provides a total of $13 billion to revive Western Europe.

July 1947: George Kennan, in a famous *Foreign Affairs* article written under the pseudonym "X," proposes a policy of "containment" toward the Soviet Union.

August 15: India, led by Mohandas Gandhi, and Pakistan gain independence from Britain. India becomes the world's largest democracy; Pakistan becomes the world's largest Muslim nation.

Fall 1947: Soviet spy Klaus Fuchs begins providing to Soviet intelligence agent Col. Alexander Feklisov, his case officer, a theoretical outline for creating a hydrogen bomb, plus initial drafts for its development at the stage that then prevailed in Britain and America.

November 29: UN General Assembly votes for partition of Palestine and preservation of unified Jerusalem under UN administration. Zionist representatives reluctantly accept, but Palestine and the Arab nations do not, and war breaks out within months.

Late December 1947: *Time*'s 1947 Man of the Year is George C. Marshall.

1947 BIRTHS

January 19: Dolly Parton, singer.
January 31: Nolan Ryan, pitcher, all-time strikeout leader.
February 4: Dan Quayle, former US Vice President.
March 19: Glenn Close, actress.
March 25: Reginald Dwight (Elton John), musician.
April 12: David Letterman, TV talk show host.
April 16: Lew Alcindor (Kareem Abdul-Jabbar), basketball great.
June 19: Salman Rushdie, author.
July 2: Luci Baines Johnson, Presidential daughter.
July 9: O. J. Simpson, football star, defendant of the century.
July 30: Arnold Schwarzenegger, actor, muscle man.
August 14: Danielle Steel, author.
September 21: Stephen King, author.
October 26: Hillary Rodham, lawyer, First Lady.
December 17: Johnny Bench, baseball Hall of Famer.
December 18: Steven Spielberg, director/producer.

DEATHS

January 25: Al Capone, gangster, suffering from syphilis and mentally incapacitated, dies of a combination of stroke and pneumonia at his home on Palm Island near Miami.
April 7: Henry Ford, automobile giant.
August 21: Sen. Theodore G. "The Man" Bilbo of Mississippi, one of the twentieth century's most notorious segregationists.
September 20: Fiorello La Guardia, former World War I US Air Service pilot, New York Congressman, and mayor of New York City.

LITTLE NOTED AT THE TIME

Flatbush National Bank in New York comes up with first known universal third-party credit card.

Term "flying saucer" used to describe unidentified flying objects reported in Washington state.

Object crashes in the desert on July 2 outside Roswell, N. M. First announcement by military is that a flying saucer has crashed, but it is later determined that it had been a weather balloon.

John D. Rockefeller, Jr., donates land on New York City's East River for the United Nations headquarters building.

Ajax cleanser introduced to US consumers.

Abraham Levitt and his two sons, William and Alfred, break ground on Long Island, N. Y., for development called Levittown. The Levitts eventually mass-produce 17,400 affordable homes in the opening shot of the postwar suburban housing boom.

Gibson markets first Les Paul electric guitar, which would become standard equipment for rock musicians.

Col. William Hendricks founds the Marine Corps Reserve Toys for Tots program in Los Angeles, collecting some 5,000 toys during a two-week campaign before Christmas.

QUOTES

Secretary of State George C. Marshall

"I'm very much afraid that we're going to be given a pair of eyebrow tweezers with which to hunt elephants. . . . A second-best defense is only as good as a second-best poker hand."—Lt. Gen. Ira C. Eaker, AAF deputy commander, speaking to the Wings Club in New York in early 1947 about military unpreparedness.

"I never could be drafted."—George C. Marshall, forty-ninth Secretary of State, definitively ruling out any possibility that he might be talked into a 1948 Presidential bid.

"In some sort of crude sense, which no vulgarity, no humor, no overstatement can quite extinguish, the physicists have known sin, and this is a knowledge they cannot lose."—J. Robert Oppenheimer, leader of the US World War II atomic bomb effort, claiming the Manhattan Project team members felt both proud of their scientific achievement and appalled by the destructive force they had unleashed.

UPI/Corbis-Bettman

Happy trails for "Hap" Arnold, in retirement at his ranch (above). In 1947, land was donated for a United Nations headquarters in New York City; groundbreaking (above right) began in 1948.

1947 PASSAGES

Elizabeth Windsor, daughter of King George VI and Queen Elizabeth of England, marries Philip Mountbatten.

Sugar rationing, initiated at the start of World War II, comes to an end.

The last trolley car in New York City retires as diesel buses enter service.

Jack Kerouac and Neal Cassady take the first of the many cross-country trips that provide grist for Kerouac's *On the Road*, classic novel of the beat era.

Barbara Walker of Memphis, Tenn., Miss America 1947, receives her crown while wearing a swimsuit—the last honoree to do so.

Cuban secret police in Havana arrest Charles "Lucky" Luciano, the former New York vice overlord and Mafia murderer, shortly after he leaves his luxurious home in the Miramar residential area.

US Patent Office issues patent on Norden bombsight to inventor Carl L. Norden—17 years after his first application was filed.

AAF designator "P" for "pursuit" was changed to "F" for "fighter."

Gen. Henry H. "Hap" Arnold is retired, living on a 40-acre ranch, "El Rancho Feliz," near Sonoma, Calif.

GREAT DISCOVERIES

Bedouin shepherd searching for a stray goat in caves on the northwest coast of the Dead Sea stumbles upon jars containing ancient Hebrew and Aramaic texts. The Dead Sea Scrolls become the most sensational archaeological find of the century.

Edwin Colbert and a team from the American Museum of Natural History make a spectacular find at Ghost Ranch, N. M.—more than a dozen complete skeletons of Coelophysis, a previously little-known Triassic dinosaur.

Bell Labs physicists invent the transistor, which will radically transform global electronics and communications. Later, Nobel Prize goes to physicists William Shockley, John Bardeen, and Walter Brattain.

Dennis Gabor, a Hungarian engineer working in England, invents holography.

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Counterclockwise: The Dead Sea Scrolls were found in 1947. Radio airs first 30-minute episodes of "Sky King" (here portrayed by actor Grant Kirby with actress Gloria Winters in a later TV version). Groundbreaking took place for Levittown (shown in 1949). Schoolchildren pledge allegiance at a rural school, and a local newspaper notes a curious event in Roswell, N. M.

Kosti Ruohomaa from Black Star

ANNUAL SALARIES

Average auto worker in 1997 dollars $20,410 (now $39,540).
Average teacher in 1997 dollars $19,450 (now $37,850).
President Truman in 1997 dollars $552,570 (now $200,000).
Chairman of General Motors in 1997 dollars $1.7 million (now $3.3 million).
Member of Congress in 1997 dollars $92,090 (now $133,600).
Starting mail carrier in 1997 dollars $15,470 (now $26,060).
Average Social Security payment in 1997 dollars $2,640 (now $8,640).
Masters Golf Tournament winner in 1997 dollars $18,420 (now $450,000).

WHAT THINGS COST

A pair of blue jeans in 1997 dollars $22 (now $40).
Annual Harvard tuition in 1997 dollars $3,870 (now $19,770).
Compton's Encyclopedia in 1997 dollars $700 (now $50 on CD-ROM).
Washing machine in 1997 dollars $1,770 (now $380).
Automatic clothes dryer in 1997 dollars $1,620 (now $270).
Refrigerator in 1997 dollars $1,470 (now $700).
Black-and-white TV in 1997 dollars $3,280 (now $300 for color).
Computer in 1997 dollars $3.7 million (now $2,500).
Pair of stockings in 1997 dollars $74 (now $4).
Day in intensive care hospital unit in 1997 dollars $260 (now $2,300).
Round of golf at Pebble Beach in 1997 dollars $15 (now $225).
One gallon of milk, one loaf of bread, a dozen eggs, a pound of butter, and a pound of ground beef in 1997 dollars $23 (now $8).
Pack of Camel cigarettes in 1997 dollars $1.50 (now $2.90).
Fifth of Jim Beam in 1997 dollars $37 (now $11).
Median home in 1997 dollars $49,330 (now $131,500).

1947 VITAL STATISTICS

US population 144.1 million (now 267.6 million).
Percent of work force in unions 33.7 (now 14.9 percent).
Percent of population 25 and over with high school degree 33 (now 80 percent).
Percent of population 25 and over with college degree 5 (now 22 percent).
Percent of homes with TV 9 (now 98 percent).
Number of US farms 5.9 million (now 2.1 million).
Number of grocery stores 529,000 (now 128,000).
Median family income in 1997 dollars $19,700 (now $41,910).
Federal budget in 1997 dollars $254 billion (now $1.6 trillion).
Federal budget surplus in 1997 dollars $29 billion (now $164 billion deficit).
Top Social Security tax for employees in 1997 dollars $220 (now $4,710).

Roswell Daily Record

RECORD PHONES
Business Office 2288
News Department 2287

ROSWELL, NEW MEXICO, TUESDAY, JULY 8, 1947

Claims Army Is Slacking Courts Martial

Indiana Senator Lays Protest Before Patterson

RAAF Captures Flying Saucer On Ranch in Roswell Region

House Passes Tax Slash by Large Margin

Defeat Amendment By Demos to Remove Many from Rolls

Security Council Paves Way to Talks On Arms Reductions

No Details of Flying Disk Are Revealed

Roswell Hardware Man and Wife Report Disk Seen

Ex-King Carol Weds Mme. Lupescu

ellites

www.sierra-vista.com/Roswell/

Background photo: UPI/Corbis-Bettman

Photos this page UPI/Corbis-Bettman except where noted

Lucent Technologies/Bell Labs Innovations

Top to bottom: Christian Dior's "New Look," Joe DiMaggio, Bell Labs' first transistor, scene from "Miracle on 34th Street," and Kentucky Derby winner "Jet Pilot."

SPORTS

New York Yankees, led by Joe DiMaggio, defeat Brooklyn Dodgers in a seven-game World Series. DiMaggio, the "Yankee Clipper," also becomes American League Most Valuable Player—his third time to win the award.

Chicago Cardinals win the NFL championship, defeating the Philadelphia Eagles 28-21.

Jimmy Demaret shoots a seven-under-par 281 to win the Masters tournament, defeating both Byron Nelson and Ben Hogan.

"Jet Pilot" wins the seventy-third running of Kentucky Derby.

Ted Williams wins Major League batting title with a .343 average.

Mildred "Babe" Didrickson Zaharias, former Olympic gold medalist, dominates women's golf.

Joe Louis outpoints "Jersey Joe" Walcott to retain the heavyweight boxing title.

Notre Dame repeats as college football national champion.

Notre Dame quarterback Johnny Lujack wins Heisman Trophy.

Maynard team of Williamsport, Pa., defeats team from Lock Haven, Pa., 16-7, to win the first Little League World Series.

RADIO-TV

For the first time, television covers the World Series and, again for the first time, uses a zoom lens.

ABC radio begins airing twice-weekly, 30-minute program, "Sky King," featuring "America's Favorite Flying Cowboy," plus sidekicks Penny and Clipper.

Philco Radio House with Bing Crosby becomes the first taped-and-delayed broadcast of a radio program.

TV show debuts: "Meet the Press" and "Howdy Doody."

MUSIC IN 1947

Mahalia Jackson, 34-year-old gospel singer, records "Move On Up a Little Higher," one of the first gospel songs to sell a million records.

Singer Roy Brown records "Good Rocking Tonight," what some consider the first rock-and-roll song, on the Deluxe label.

"Smoke! Smoke! Smoke! (That Cigarette)," recorded by Tex Williams, becomes first million-seller for Capitol Records. (A heavy smoker, Williams later dies of cancer.)

Decca releases nine Al Jolson records, which include such songs as "Alexander's Ragtime Band" (with Bing Crosby), "I'm Sitting on Top of the World," "For Me and My Gal," "Waiting for the Robert E. Lee," "By the Light of the Silvery Moon," "When the Red, Red, Robin Comes Bob, Bob, Bobbin' Along," and "Toot, Toot, Tootsie!"

"Zip-a-Dee-Doo-Dah" (from "Song of the South"), by Allie Wrubel and Ray Gilbert, wins the Academy Award for Best Song.

CINEMA, ARTS, LETTERS, FASHION

"Out of the Past," one of the greatest films noir, stars Robert Mitchum and Jane Greer.

Popular films: "The Bishop's Wife," "Body and Soul," "Crossfire," "Gentleman's Agreement," "Miracle on 34th Street," and "Odd Man Out."

Movie musicals: "It Happened in Brooklyn," "The Perils of Pauline," "Down to Earth," and "Song of Love."

Broadway opening of "A Streetcar Named Desire," by Tennessee Williams, directed by Elia Kazan. Marlon Brando stars as Stanley Kowalski.

"Gentleman's Agreement" wins Academy Award for Best Picture. Stars Gregory Peck, director Elia Kazan, producer Darryl F. Zanuck.

Jackson Pollock introduces abstract expressionism.

Robert Penn Warren's *All the King's Men* wins Pulitzer in fiction category.

James A. Michener's *Tales of the South Pacific* is published and wins Pulitzer the following year.

In the Netherlands, Otto Frank publishes a book called *Het Achterhuis (Secret Annex)*, a collection of the writings of his late daughter, Annelies Marie Frank. Book later becomes famous as *The Diary of a Young Girl*, by Anne Frank.

Christian Dior opens what becomes France's most famous fashion house and creates an international fashion sensation with his "New Look." The full-skirted dresses and cinched waist reflected the return of women to the roles of wife, mother, and homemaker after the rigors of the war. According to Dior, he aimed to counteract the wartime style in which women "looked and dressed like Amazons."

Stars of the stage and screen (clockwise): Rita Hayworth and Orson Wells en route to film "The Lady From Shanghai" (completed in 1947, released in 1948); Greta Garbo (in hat), who along with the Air Force celebrated a September 18 birthday; and Marlon Brando, Kim Hunter, and Jessica Tandy in "A Streetcar Named Desire," which opened on Broadway in 1947.

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GETTING THERE

Pan American Airways offers a ticket for a flight around the world for $1,700 (about $12,000 in 1997 dollars).

Flight from Kansas City, Mo., to Paris costs $674 ($4,770 in 1997 dollars).

Major US civilian airlines include Northwest, Braniff, United, American, Eastern, TWA, Pan American Airways, and Chicago and Southern Air Lines.

Packard autos offer the first power seats and windows.

Enzo Ferrari of Italy produces the first automobile that bears his name.

A new Chevrolet retails for $1,220 ($8,990 in 1997 dollars).

A gallon of gas cost 23 cents ($1.70 in 1997 dollars).

LIFE AT HOME

15.8 million households (about 40 percent) lack complete indoor plumbing.

9.3 percent of households are made up of persons living alone (today, 25 percent).

55 percent of householders own their homes (today, 64 percent).

22 percent of households are officially deemed "crowded" or "severely crowded" (today, seven percent).

Nearly a quarter of all households have no flush toilet—either public sewer or septic tank.

Two-thirds of all households are heated with kerosene, coal, or wood fuels (today, 16.5 percent). Only 0.7 percent of households use electricity for heating.

Black Star

MEN AND WOMEN

Percent of women 25 years and older in the work force 29.9 (58.7 percent now).

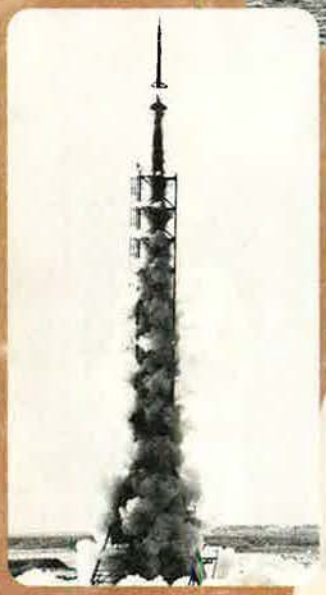
Average age of US women at marriage 20.5 years (24.5 now).

Average age of US men at marriage 23.7 (26.9 now).

Percent of adult men (15 and older) who are married 67.5 (59.1 percent now).

Percent of adult women who are married 65.8 (56.2 percent now).

Divorces total about 483,000 nationwide (about 1.2 million now). The rate of divorce is 3.4 per 1,000 persons (now 4.7).



First flights in 1947 (starting clockwise at left): the Aerobee, Spruce Goose, YB-49 flying wing, XP-86 sweptwing jet, and XB-45. In the background photo, President Harry Truman proclaimed August 1 as "Air Force Day" with (l–r) Air Force Association National President Jimmy Doolittle, Lt. Gen. Hoyt S. Vandenberg, Maj. Gen. Lauris Norstad, and Assistant Secretary of War Symington present.

AERONAUTICAL FEATS

March 17: North American XB-45, USAAF's first multiengine jet bomber, flies for the first time at Muroc Dry Lake, Calif.

September 21: USAF C-54 with a preset, push-button control flies from Newfoundland to an airport near London with a complete crew on board serving as observers only. This first transatlantic, robotic flight covered 2,400 miles.

October 1: North American XP-86 Sabre flies for the first time at Muroc Dry Lake, Calif.

October 14: USAF Capt. Chuck Yeager becomes the first person to fly faster than the speed of sound.

October 21: First flight of Northrop's YB-49 flying wing, the distant ancestor of the B-2.

November 2: Howard Hughes's *Spruce Goose* makes first and only flight, over Long Beach harbor.

November 24: Air Force makes first successful launch of an Aerobee rocket, which achieves altitude of 190,000 feet over White Sands Proving Ground, N. M.

December 17: Prototype Boeing B-47 Stratojet bomber makes first flight at Seattle.

December 30: First flight of jet-powered Soviet MiG-15 fighter.

INSIDE USAF

Pay charts (see below). In 1947, generals, lieutenant generals, and major generals make $8,800 a year. Brigadiers make $6,600 a year.

The Air Force R&D request for 1947 is $230.5 million. Congress actually appropriated $78.8 million.

The AAF restarts the Aviation Cadet program, which had been suspended since the war.

AAF strength falls to postwar low of 303,614 on May 1. Gen. Carl A. "Tooey" Spaatz says rapid demobilization has left AAF without a single squadron immediately capable of combat with wartime efficiency.

Percent of USAF aircraft kept in combat readiness falls to about 18 percent.

At the end of 1947, Strategic Air Command has 319 B-29s, 230 F-51s, and 120 F-80s. ■

USAAF Aircraft Inventory June 30, 1947

Type	Number
Very heavy bombers	2,983
Heavy bombers	657
Medium bombers	1,474
Light bombers	1,678
Fighters	6,427
Reconnaissance	636
Transports	3,796
Trainers	6,047
Liaison aircraft	1,390
Total	25,088

USAF Monthly Officer Base Pay, 1947

Grade	<3 years	3 years	6 years	9 years	12 years	15 years	18 years	21 years	24 years	27 years	30 years
O-8, 9, and 10	$733.33	$733.33	$733.33	$733.33	$733.33	$733.33	$733.33	$733.33	$733.33	$733.33	$733.33
O-7	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00
O-6	366.67	385.00	403.33	421.67	440.00	458.33	476.67	495.00	513.33	531.67	550.00
O-5	320.83	336.88	352.92	368.98	385.00	401.04	417.08	433.13	449.17	465.21	550.00
O-4	275.00	288.75	302.50	316.25	330.00	343.75	357.50	371.25	449.17	465.21	481.25
O-3	230.00	241.50	253.00	264.50	276.00	287.50	357.50	371.25	385.00	398.75	412.50
O-2	200.00	210.00	220.00	230.00	240.00	250.00	299.00	310.50	322.00	333.50	345.00
O-1	180.00	189.00	220.00	230.00	240.00	250.00	260.00	270.00	280.00	290.00	300.00

USAF Monthly Enlisted Base Pay, 1947

Grade	<3 years	3 years	6 years	9 years	12 years	15 years	18 years	21 years	24 years	27 years	30 years
MSgt.	$165.00	$173.25	$181.50	$189.75	$198.00	$206.25	$214.50	$222.75	$231.00	$239.25	$247.50
TSgt.	135.00	141.75	148.50	155.25	162.00	168.75	175.50	182.25	189.00	195.75	202.50
SSgt.	115.00	120.75	126.50	132.25	138.00	143.75	149.50	155.25	161.00	166.75	172.50
Cpl.	90.00	94.50	99.00	103.50	108.00	112.50	117.00	121.50	126.00	130.50	135.00
PFC	80.00	84.00	88.00	92.00	96.00	100.00	104.00	108.00	112.00	116.00	120.00
Pvt.	75.00	78.75	82.50	86.25	90.00	93.75	97.50	101.25	105.00	108.75	112.50

Lagging pilot retention poses a threat to combat readiness.

Keeping Pilots in the Cockpits

By Suzann Chapman, Associate Editor

THE Air Force today is facing mounting losses of pilots. USAF personnel officials predict that, by next year, it will fall short of its required numbers, and the shortage will then begin to increase on a major scale. Already, the service suffers spot shortages of pilots for fighters and MC-130 aircraft.

Navigator losses also are increasing. The Air Force expects to maintain sufficient numbers by continuing to return older officers to flying duties, though officials admit that limits career broadening and adversely affects morale. However, in 2003 the Air Force starts to run out of options there, too.

Even though enlisted retention is high, the Air Force continues to carefully monitor retention levels across all parts of the force. Problems have emerged in certain hard-to-maintain enlisted career fields, such as pararescue and combat controller specialties.

As a result of these and other trends, the Air Force is shifting its personnel focus well into the future to anticipate, and then act to prevent, serious problems, according to Brig. Gen. John F. Regni, the Air Force's director of Military Personnel Policy.

"As the force gets smaller, we're going to have less flexibility," said the General. "We want to be able to anticipate retention patterns before they become a crisis."

Even as the service wrestles with modernization and readiness difficulties and with new cuts in force structure, the pilot retention problem has emerged as an urgent concern—the center of USAF's personnel problems.

Figure 1: **Cumulative Continuation Rate**

FY	Rate
1989	36%
1990	37%
1991	35%
1992	34%
1993	61%
1994	82%
1995	86%
1996	77%

Staff photo by Guy Acelo

Gen. Ronald R. Fogleman, the USAF Chief of Staff, told the Senate Armed Services Committee in February that the Air Force and the other services are suffering the first stages of a major pilot drain. Fogleman said that losses are driven by the pace of Air Force operations today, erosion of compensation, and lucrative private-sector opportunities.

Bad News

Lt. Gen. Michael D. McGinty, USAF deputy chief of staff for Personnel, told Congress that the leading indicators "spell bad news" for rated retention. He noted that drops in retention for both pilots and navigators had occurred, but he emphasized that the immediate worry is pilot retention. If low pilot retention persists, he warned, it will "directly affect the readiness of our combat units."

So worrisome has the situation become that it prompted a pilot retention "summit" last April among senior USAF leaders, who gathered to discuss and assess recent pilot complaints—specifically, high operations tempo and reduced quality of life. Attendees at the summit focused on potential measures they hope will ease the concerns of the pilots and, at the same time, possibly have a positive effect throughout the force.

Figure 2: **Pilot Bonus Take Rate**

FY	Eligibles	Takers	Rate
1989	5,512	3,719	67.5%
1990	1,773	665	37.5%
1991	1,665	658	39.5%
1992	1,169	803	68.7%
1993	1,021	806	78.9%
1994	718	584	81.3%
1995	434	332	76.5%
1996	802	469	58.5%

Officials said that, to gauge the state of pilot retention, the Air Force consults four key indicators.

- Cumulative continuation rate, which measures how many pilots in the service at their sixth year are still on board at their eleventh year. Here, the news is bad. In one year—from the end of Fiscal Year 1995 to the end of Fiscal 1996—the indicator dropped by nine percentage points. *[See Figure 1.]* Worse, official Air Force projections forecast continued decline.
- Aviator Continuation Pay acceptance rate, which reflects how many pilots who have completed an initial eight-year active-duty service commitment (ADSC) are willing to accept a new five-year commitment by signing up for the pilot bonus. This figure—called the "take rate"—dropped 18 percentage points over the same one-year period. *[See Figure 2.]* Of this year's eligible pilots, the Air Force expects to get positive responses from only 43 percent, down from 59 percent last year. That's if things pick up over the next few months; at present, the take rate is only 39 percent.
- Separation requests from pilots who are free of their ADSC. This year, according to Regni, "more eligible pilots who can leave are, in fact, putting in their papers and leaving." Compared to the same period last year, pilot separations are up 51 percent. *[See Figure 3, next page.]* This result was predictable; 90 percent of those who decline the pilot bonus request a separation within two years.

■ Aggressiveness of civilian airline hiring. This has seen a resurgence in recent years and is viewed as a major factor contributing to low pilot retention rates. "There's not only a constant demand, but there's an increasing demand to hire pilots," said Regni. In 1996, the number of airline hires was up 40 percent, to about 12,000 pilots. Airline analysts expect hiring to continue at a rate of about 10,000 per year through 2003.

Figure 3: **Pilots Applying for Separation**

FY	Eligibles	Takers	Rate
1989	5,668	1,442	25%
1990	4,536	1,512	33%
1991	4,361	1,759	40%
1992	3,944	1,734	44%
1993	2,738	930	34%
1994	2,285	423	19%
1995	1,609	359	22%
1996	1,805	479	27%

According to Air Force projections, hiring by the major airlines alone will be sufficient to absorb all military pilots leaving service through 2003.

It is this last problem that seems to cause the greatest concern in the Air Force. A direct inverse relationship exists between airline hires and pilot retention, and it is expressed in the cumulative continuation rate, said Regni, who explained that there is a 21-month delay between a particular event in airline hiring and the effect felt in the active-duty pilot force.

For example, he said, the number of airline hires in 1977 went up—rising from 1,000 to 4,000—and shortly thereafter pilot retention dropped to a record low of 25 percent.

"We worked very hard in this era to work pilot retention to turn that around," he said, "but probably the largest influence . . . was when the airlines deregulated. There were a lot of furloughs, the airlines stopped hiring. . . . Not so curiously, our retention went to pretty high levels."

A Darker Outlook

Unfortunately, current indicators forecast a long period of high airline hiring rates. "If these projections are true, then we have a different challenge in front of us, as we had in the late 1970s," said Regni.

One factor spurring airline hiring is the large number of commercial pilots who are approaching FAA's mandatory pilot retirement age of 60. Those facing their sixtieth birthday in the next year number about 1,400. That figure only covers the 13 major airlines. The number of mandatory retirements is expected to continue at the rate of 1,500 to 1,600 through 2005 and then jump to about 2,000 per year through 2008.

The airlines must replace these pilots while hiring others to cover expansion of service.

Regni noted a change in the airlines themselves. In the past, he said, military pilots were attracted almost exclusively to the major airlines. Today, however, the United States has 55 regional airlines with new glass-cockpit jets, so "there will be an affinity," and many military pilots will go on to fill jobs in the regional carriers.

The airline demand is so high that it far exceeds the number of military pilots completing their undergraduate pilot training commitment. "They could hire every military pilot completing their ADSC from UPT and there [would still be] a great demand for pilots," stated Regni. *[See Figure 4.]*

Although increased airline hiring is a major problem, it apparently is not the primary reason many Air Force pilots are choosing to leave the service. According to a recent survey of pilots who did not take the pilot bonus in Fiscal 1997, only 15 percent cited the lure of the airlines as the top reason for departing. *[See Figure 5, p. 69.]*

That distinction belongs to the view that a major deterioration in the quality of military life has occurred. What is most frustrating for pilots and their families is the high operations tempo and the large amount of time spent away from home. The survey revealed that 30 percent ranked high operations tempo as the number one factor in not taking the pilot bonus. And the second leading reason—quality of life, at 17 percent—derives from family problems created by the high operations tempo.

Thus, 47 percent—nearly half of those preparing to leave the Air Force—cite these factors as the critical determinant, said Regni.

"The [high operations] tempo is something that's new and something that's going to be with us for a long time," he said. "As an average, our folks are deployed four times as much as they were [during the Cold War].

Figure 4: **Military Pilot Losses vs. Airline Hiring**

FY	Total USAF Losses	Military Losses	Major Airline Hires
1996	610	986	2,123
1997	1,581	2,265	3,000
1998	1,581	2,274	2,628
1999	1,468	1,981	2,997
2000	974	1,547	3,215
2001	749	1,208	4,052
2002	533	879	4,430
2003	480	901	3,895

That's just a fact of life—the Air Force is an expeditionary force."

Potential Cures

At the pilot retention summit, Air Force leaders did not seek a single solution but instead launched several initiatives focused on the critical pilot retention problem. In fixing this problem, they reasoned, they will be able to help the entire Air Force population cope with the operations tempo.

One initiative calls for the Air Force to work with the Joint Staff to develop smaller force packages for contingency responses. The service hopes to be able to reduce the number of aircraft that must be deployed and thus reduce the number of personnel that need to go overseas in any given situation.

In addition, the major commands are looking for methods to cut their training requirements, which generate a lot of flying hours and add to the operations tempo burden.

Involvement in today's real-world contingencies usually requires lots of patrol flying, which does nothing to sustain combat flying skills. Especially in fighter units, pilots returning from contingency assignments immediately embark on a catch-up flying training program. At the summit, Air Force leaders decided to postpone such intensive training operations for returning units until members first had gone through a stand-down period.

Regni outlined the new routine for a typical squadron that had been deployed for six weeks. "When that squadron goes back to its base, those aircraft won't fly for at least one week—which will allow people to go back to their families, take a breath, catch up," he said. He added that the stand-downs will apply not just to flying units but also to other units and individuals who have been tapped for contingencies—a USAF-wide solution for operations tempo pressure.

The Air Force expects these stand-downs to decrease readiness ratings. That is a given, according to Regni. He said that, overall, the leadership thinks that the stand-downs "will have a positive effect."

The Air Force Inspector General also is considering whether and how the service might use contingencies as a way to evaluate operational readiness. They could be used for this purpose in the place of generating additional flying hours to prepare for, and then conduct, an operational readiness inspection.

The Air Force also plans to adopt the Navy's successful ombudsman program. The Navy created a cadre of spouse ombudsmen—the senior ombudsman has direct access to the unit commander—to help family members of deployed personnel. They ensure that, if a family encounters any kind of barrier to receiving necessary assistance, they could turn to the ombudsman.

Figure 5: **Why Pilots Decline the Bonus**

Reason	Percentage
Optempo too high	30
Quality-of-life factors	17
To fly for airlines	15
Commitment too long	13
Assignment process	9
Can't continue flying	8
Personnel policies	4
Poor career potential	4

Devaluation

The Air Force has asked Congress to increase the special pay for aviators to their former value, which has been eroded by inflation. Since 1990, for example, the Aviation Career Incentive Pay and Aviator Continuation Pay have fallen by about 35 percent.

The Air Force's long-term plan calls for doing more than catching up with inflation, however. The service would like to revamp totally the entire aircrew special pay program.

Regni said, "We think it's time for [the Office of the Secretary of Defense] to do an all-service review—come up with a total aviation compensation program—something that would replace all these different pays we have now and come out with one." The goal, he said, would be to "link it to career progression."

Today, when a pilot has enough years and flying hours to move from pilot rating to senior pilot rating, or from senior pilot rating to command pilot rating, there is no monetary incentive to make the change. Air Force leaders think the compensation ought to be linked to progression for pilots and other aircrew members. However, Regni acknowledged that the initiative will be difficult to attain, since each service must find the money to fund the move.

In the drive to keep pilots in the cockpit, USAF also has reduced its requirements for pilots to fill staff positions by 20 percent. This step works to the benefit of flyers who prefer to stay in aircraft rather than take on career-enhancing assignments. However, the move bears close watching and means that special instructions must be given to promotion boards.

Because the critical shortages are in the company-grade ranks, the Air Force must place field-grade pilots in line flying positions again—instead of the normal progression to a staff job at the Pentagon or a major command. In effect, until the crisis has passed, pilots definitely will spend more time in airplanes. Thus, the Air Force must make sure that its promotion boards understand that filling line flying positions outweighs the normal demands of career progression.

The Air Force already does this for navigators, Regni explained. The Air Force Secretary's instructions to a promotion board point out that board members "will see records for majors and lieutenant colonels who are doing line navigator duties because they are meeting very important needs of the Air Force."

Additionally, the Air Force has increased its quotas for undergraduate pilot training. This year, UPT expects to graduate 664 pilots, ramping up to 1,100 in 2000, meaning that it would meet its goal one year earlier than planned.

The Air Force still offers its pilots the opportunity to fly the most technologically superior aircraft in the world. It still has the camaraderie in its flying squadrons that pilots do not find with commercial airlines—there, pilots often don't know who they'll crew with until they show up for the flight.

USAF's worry, however, is that those benefits might not be enough when put up against the lure of money and at least some family stability. ■

Military associations say the Federal Employees Health Benefits Program is a needed option for retirees. The Pentagon disagrees—and says there are other considerations.

The Push to Open FEHBP

By Suzann Chapman, Associate Editor

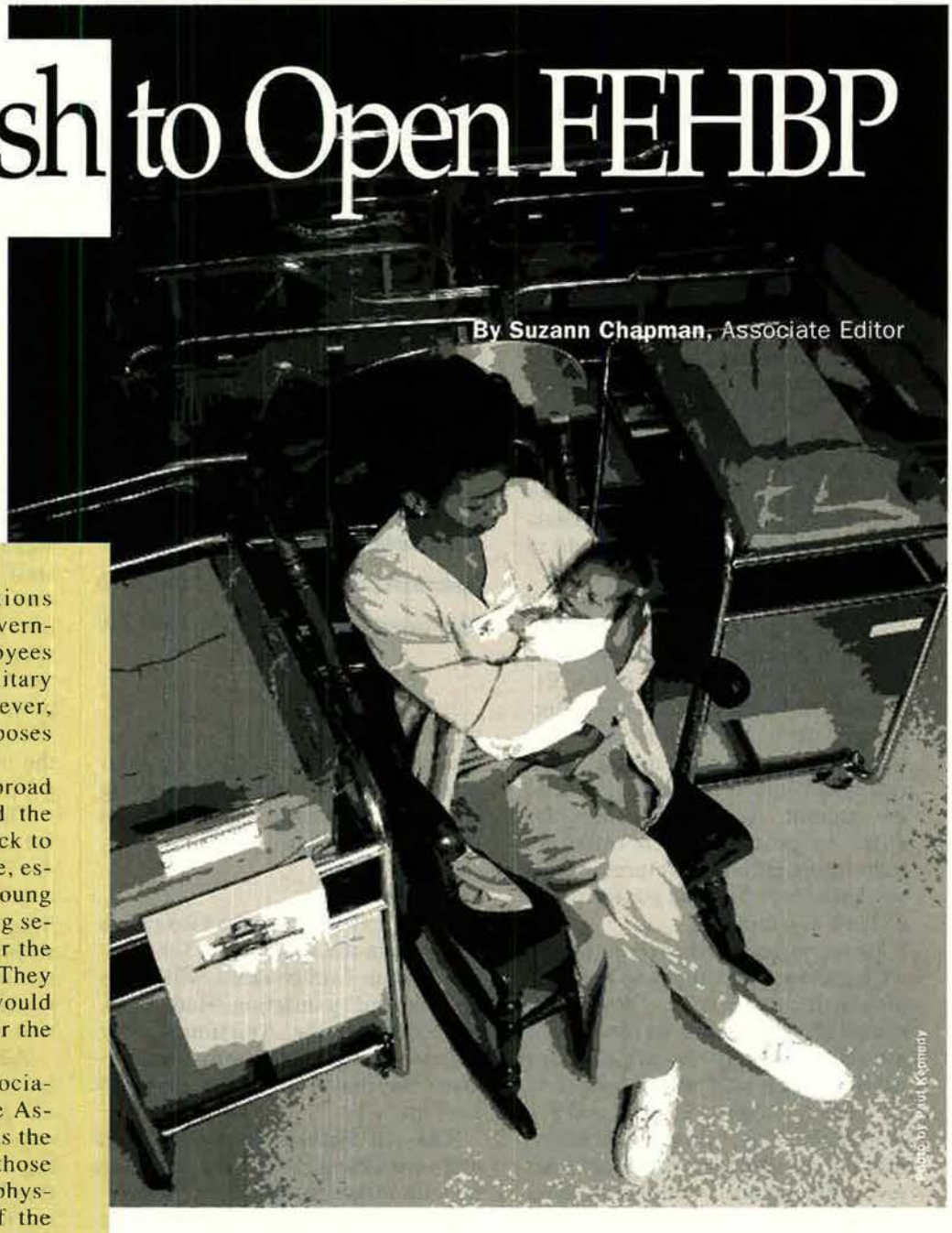


Photo by Paul Kennedy

MANY military associations would like to see the government open up its Federal Employees Health Benefits Program to military retirees and their families. However, the Department of Defense opposes any move to FEHBP.

Pentagon officials say that a broad switch to FEHBP would lead the military health-care system back to a "troop clinic" type of practice, essentially treating only healthy young people in peacetime and causing severe negative consequences for the medical readiness of the force. They also claim the FEHBP option would prove to be more expensive for the average military beneficiary.

However, most military associations—including the Air Force Association—now view FEHBP as the most reasonable alternative for those military retirees who have been physically and legally shut out of the military health-care system. The Pentagon, so far, has simply not provided a solution that will cover all of its older retirees and their families.

During most of the Cold War, the active-duty force outnumbered military retirees. Many retired near military bases and enjoyed relatively easy access to military health care at the base hospital. Even after they entered the Medicare rolls at age 65, retirees could still usually receive space-available care at the base hos-

Coming Events

July 11–12, **Iowa State Convention,** Des Moines, Iowa; July 18–19, **Kansas State Convention,** McConnell AFB, Kan.; July 18–20, **Alabama State Convention,** Birmingham, Ala.; July 18–20, **Texas State Convention,** Fort Worth, Tex.; July 18–20, **Virginia State Convention,** Alexandria, Va.; July 25–26, **Georgia State Convention,** Robins AFB, Ga.; July 25–26, **Mississippi State Convention,** Biloxi, Miss.; July 25–27, **Florida State Convention,** Panama City, Fla.; July 25–27, **Pennsylvania State Convention,** Pittsburgh, Pa.; August 1–2, **Colorado State Convention,** Colorado Springs, Colo.; August 8–9, **Michigan State Convention,** Alpena, Mich.; August 14–17, **California State Convention,** Riverside, Calif.; August 15–16, **Oklahoma State Convention,** Oklahoma City, Okla.; August 16, **Connecticut State Convention,** East Hartford, Conn.; August 16, **Indiana State Convention,** Indianapolis, Ind.; September 5–6, **Oregon and Washington State Convention,** Tacoma, Wash.; September 6, **Delaware State Convention,** Dover, Del.; September 15–17, **AFA National Convention and Aerospace Technology Exposition,** Washington, D. C.

Scott, and Executive Director John A. Shaud joined USAF leaders Lt. Gen. Joseph J. Redden, Air University commander; Brig. Gen. Brian A. Arnold, commandant of Air Force Officer Accession and Training Schools; and Alfred G. Hansen, chairman of the board of the Arnold Air Society, as distinguished guests at the convention's workshops, briefings, and other events.

Gen. Lloyd W. Newton, Air Education and Training Command commander, was keynote speaker for the military banquet, and Brig. Gen. (Maj. Gen. selectee) Susan L. Pamerleau, Air Force Personnel Center commander, was speaker at an AFA luncheon during the convention.

Commemorating Lindbergh

Irwin Hansen, president of the **Nassau Mitchel (N. Y.) Chapter,** served as New York co-chairman of Friendship Flight '97, a commemoration of Charles A. Lindbergh's May 20–21, 1927, flight from Long Island, N. Y., to Paris, France.

In a single-engine Cessna 210, Bill Signs, a businessman and pilot from Dallas, Tex., followed the path of Lindbergh's 5,289-mile journey, beginning in San Diego, Calif., on May 10 at the exact minute that *Spirit of St. Louis* took off 70 years ago. As Lindbergh did, Signs stopped in St. Louis, Mo., May 12. He then went on to Republic Airport in East Farmingdale, N. Y.—Roosevelt Airfield, which Lindbergh used, no longer exists—before flying nonstop to Paris. At each stop, he took part in activities to highlight aviation history for local schoolchildren.

Chapter members attended Friendship Flight '97 events at the State University of New York at Farmingdale on the weekend before Signs began the flight over the Atlantic. They also invited Visions of Exploration students from Hicksville Middle School, in Hicksville, N. Y., to the SUNY activities.

Presidential Visit

When the **Concho (Tex.) Chapter** learned that AFA President Doyle Larson and his wife, Lois, would be visiting their daughters and grandchildren in San Angelo, Tex., they recognized the opportunity to raise AFA's profile in the area and began scheduling him for several events.

First on the agenda was a tour of Goodfellow AFB, where Larson had been stationed as a first lieutenant in 1958. Col. Kelvin R. Coppock, 17th Training Wing commander, escorted

Larson and invited several commanders on the base to join them at a luncheon.

Community Partner Richard Easingwood's restaurant hosted a reception and dinner that evening for a small group of guests. Larson spoke about the Visions of Exploration program, sponsored by *USA Today* and AEF to foster an interest in math and science in grade school students. He not only agreed to sponsor the program in a local school, but his message inspired Easingwood and fellow Community Partners Allan Ford, Patrick J. Herendeen, and Kenley Dolliver to become sponsors. The chapter now has sponsors for the minimum of five classrooms needed to start a Visions program and have begun meeting with school officials in San Angelo.

Jackson Smith, chapter vice president for Communications, took the Larsons on a tour of San Angelo the next morning, leading them through every highlight in town, from a restored fort to a water lily collection. That afternoon, Larson inspected three local ROTC programs in San Angelo: Det. 847 at Angelo State University and the JROTC units at Central and Lake View High Schools.

Who's on First?

First out of the starting blocks, Louisiana held the earliest AFA State Convention of 1997. Hosted by the **Ark-La-Tex Chapter** at Barksdale AFB, the March event attracted 350 people for its banquet. The multiservice gathering of members from AFA as well as The Retired Officers Association, Veterans of Foreign Wars, Military Affairs Council, and state legislators celebrated USAF's fiftieth anniversary.

In a convention high point, Gene Smith, AFA Chairman of the Board, presented Kyle W. Cathcart of Benton High School, in Benton, La., with the Louisiana AFJROTC Cadet of the Year award.

Farther south in the state, Louisiana State University's Arnold Air Society named Michael F. Cammarosano, state president and **Maj. Gen. Oris B. Johnson Chapter** member, an honorary member. The Capt. Frank S. Hagen Squadron from AFROTC Det. 310 noted that Cammarosano has been a "father and friend" to the unit, helping them raise funds, arranging projects, taking them out to dinner, and ensuring that they are able to attend local AFA meetings and the National Convention.

In South Carolina

The **Strom Thurmond Chapter** hosted the South Carolina State Convention in Clemson, S. C., in May.

Lt. Gen. Joseph J. Redden, Air University commander, was the keynote speaker at the convention's awards luncheon. His speech covered force structure and budget issues, and he urged AFA members to let their representatives on Capitol Hill know how AFA stands on topics that affect the Air Force.

State President James D. Wray also called a presentation on AFA policies by Kenneth A. Goss, National Defense Issues director, "the best briefing we've had." Wray said the audience became involved in a lively dialogue with Goss and were particularly interested in the issues of Medicare gap coverage, entitlements, and retention problems and initiatives.

Special guests at the convention included National Directors James E. "Red" Smith and Dr. Dan Callahan.

More Chapter News

Recognizing the silver anniversary of the 135-member **Leigh Wade (Va.) Chapter,** the city of Colonial Heights proclaimed April 30, 1997, as Leigh Wade AFA Day. Maj. Gen. Leigh Wade was the pilot of *Boston,* one of five airplanes that embarked on the first round-the-world flight on April 6, 1924. Chapter charter members who celebrated the anniversary at a dinner at the Officers' and Civilians Club at Fort Lee, Va., were Glen E. Thompson, chapter president, George A. Aguirre, Arlie G. Andrews, Andrew H. Heath, William F. Morgan, and James O. Tyler.

Rep. Kay Granger (R-Tex.) was keynote speaker for the **Fort Worth (Tex.) Chapter's** "Evening in Fort Worth" formal dinner and dance. The first-term Congresswoman has been a longtime supporter of AFA and the defense companies located in the area, so the chapter was especially pleased to welcome her. The event raised more than $2,000 for scholarships and aerospace education programs. The chapter received the Outstanding Visions of Exploration Award in 1996. In the 1996–97 school year, the chapter has sponsored 56 classrooms, its greatest number so far.

Air Force JROTC cadet Crystal Upton recently received the Mike Jenne AFJROTC Award and Scholarship from the **Anchorage (Alaska) Chapter.** Upton is in the top 10 percent of her senior class at West High School in Anchorage. The $500 scholarship is named for a former chapter president. Current Chapter President Floyd E. Gori made the award presentation at the Anchorage JROTC Awards Banquet in April.

The **Thomas W. Anthony (Md.) Chapter** held its Citizen of Distinction Recognition Dinner in April at the Andrews AFB Officers' Club. Ruby B. DeMesme, deputy assistant secretary of the Air Force for Force Management and Personnel, was keynote speaker for the evening. Fourteen active-duty and retired service members and civilians received AFA Citations, including SMSgt. Norman A. Marous, Fred Allen, and Kim Johnson, honored for community service, and Michelle Curtin, who was named the chapter's Teacher of the Year and a nominee for AFA's Christa McAuliffe Memorial Award.

The **Central Oklahoma (Gerrity) Chapter** hosted an appreciation breakfast for their Community Partners at the Tinker AFB Officers' Club in April. Organized by Rhonda M. Trent, chapter vice president for Membership, the guests of honor included Steven E. Moore and Mike Davis, president and vice president of Oklahoma Gas and Electric Co., respectively. Maj. Gen. Charles H. Perez, commander of the Oklahoma City Air Logistics Center at Tinker, welcomed them to the breakfast. The Community Partners later toured the industrial shops and KC-135 programmed depot maintenance line in the ALC and the Navy's Strategic Communications Wing 1 facility.

Have AFA/AEF News?

Contributions to "AFA/AEF National Report" should be sent to *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. ■

Unit Reunions

Air Force Photo Mapping Ass'n. October 8–12, 1997, at the Treasure Bay Hotel in Biloxi, Miss. **Contact:** Dick Sliz, 4820 Kendall Ave., Gulfport, MS 39507. Phone or fax: (601) 864-0142.

Airlift/Tanker Ass'n. October 23–26, 1997, at the Marriott Anaheim in Anaheim, Calif. **Contact:** Col. Thomas P. Williams, USAF (Ret.), P. O. Box 15538, Little Rock, AR 72231-5538. Phone: (501) 758-6885.

Airways and Air Communications Service, Air Force Communications Service, and Air Force Communications Command. September 25–28, 1997, in Lexington, Ky. **Contact:** Ted Carlson, P. O. Box 177, Stickney, SD 57375. Phone: (605) 732-4476.

Bergstrom Field, Tex., military personnel, including the 89th Troop Carrier Group, 24th, 25th, 26th, 30th, and 31st Troop Carrier Squadrons, 1942–45 (World War II). September 17–20, 1997, at the Hilton Hotel in Milwaukee, Wis. **Contact:** Wayne Taylor, 5015 S. W. 20th Terr., Topeka, KS 66604-3576. Phone: (913) 272-2584.

Blackjacks Ass'n, 53d Troop Carrier Squadron. September 4–6, 1997, in Sacramento, Calif. **Contact:** Hobart E. Carter, 161 Southcreek Cir., Folsom, CA 95630-1510. Phone: (916) 989-3804. Fax: (916) 988-9806.

George Field, Ill., military personnel (World War II). September 11–13, 1997. **Contacts:** George Field Ass'n, P. O. Box 301, Lawrenceville, IL 62439-0301. Phone: (618) 943-2307 (Allie DeLoriea) or (812) 383-4771 (Merton Wheeler).

Moroccan Reunion Ass'n. September 25–27, 1997, in Tucson, Ariz. **Contacts:** Bob Bradshaw, P. O. Box 13362, Omaha, NE 68113-0362. Phone: (402) 291-3321 or (210) 545-4181 (Rita A. Lincoln).

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.

National World War II Glider Pilots Ass'n. September 11–14, 1997, in Memphis, Tenn. **Contact:** Charles J. Giallanza, 3881 Stone Mountain Fwy., Suite 2, Snellville, GA 30278. Phone: (770) 972-7100.

Nha Trang AB, Vietnam, personnel. October 10–12, 1997, in Nashville, Tenn. **Contact:** Charles R. Timms, 615 Chickasaw Dr., Westminster, SC 29693. Phone: (864) 972-2020.

Supreme Headquarters Allied Expeditionary Force and European Theater of Operations, US Army Veterans Ass'n (World War II). October 10–13, 1997, at the Embassy Suites Hotel Country Club Plaza in Kansas City, Mo., and Eisenhower Center in Abilene, Kan. **Contacts:** Alan F. Reeves, 2301 Broadway St., San Francisco, CA 94115. Phone or fax: (415) 921-8322. Don Thriffiley, 7340 Dundee St., New Orleans, LA 70126. Phone or fax: (504) 241-3065. William C. Lahman, 2230 S. Overlook Rd., Cleveland Heights, OH 44106. Phone: (216) 721-0921. Fax: (216) 229-0921.

Tuskegee Airmen. August 11–17, 1997, at The Westin Hotel Indianapolis in Indianapolis, Ind. **Contact:** Tuskegee Airmen, Inc., 1501 Lee Hwy., Arlington, VA 22209-1198. Phone: (703) 522-8590 or (703) 522-8589.

2d Aerial Port Squadron, Sewart AFB, Tenn. September 26–28, 1997, in Murfreesboro, Tenn. **Contact:** Richard E. Vaught, 2399 Old Plank Rd., Newburgh, IN 47630. Phone: (812) 853-5679.

4th Fighter-Interceptor Wing (Korean War). September 17–19, 1997, in Raleigh, N. C. **Contact:** Tom Moneypenny, 192 Hilbish Ave., Akron, OH 44312. Phone: (330) 784-0607.

5th Air Force (World War II and Korea). September 17–21, 1997, in Dayton, Ohio. Units include the 314th Composite Wing and Hq. squadron, 5th Bomber Command, 5th Station Hospital, 80th Service Group, and 405th Signal Co. **Contacts:** Louis J. Buddo, Box 270362, St. Louis, MO 63127 (314th Composite Wing and 5th Bomber Command). Jeff H. Seabock, 210 29th Ave. N. W., Hickory, NC 28601. Phone: (407) 324-6464 (5th Station Hospital). Virgil Staples, 725 16th St., West Des Moines, IA 50265-3430. Phone: (515) 225-8454 (80th Service Group). Phil Treacy, 2230 Petersburg Ave., Eastpointe, MI 48021-2682. Phone: (810) 775-5238 (405th Signal Co.).

10th Reconnaissance Group/Tactical Reconnaissance Wing, 1st Tactical Reconnaissance Squadron, 112th Tactical Squadron, 117th Wing and Group, 12th Air Force (1951–56). August 8–

10, 1997, at the Best Western North Plaza Inn in Dayton, Ohio. **Contacts:** Dave Doggett, 519 Towne House Lane, Richardson, TX 75081. Phone: (972) 680-8161. Orv Knarr, 8517 Brookridge Rd., Downers Grove, IL 60516. Phone: (630) 985-3198.

20th Bomb Squadron. October 3–5, 1997, at the Officers' Club at Barksdale AFB, La. **Contact:** Frank Rogers, 2426 Melrose Pl., Bossier City, LA 71111. Phone: (318) 747-4985.

21st Weather Squadron, 40th Mobile Communication Squadron (World War II). September 1997, in Cape Cod, Mass. **Contact:** Irv Kirch, 34 Hoss Rd., Indianapolis, IN 46217. Phone: (317) 786-6858.

34th Bomb Group, 8th Air Force. September 25–29, 1997, at the Red Lion Inn in Omaha, Neb. **Contact:** Robert H. Wright, 411 Parkovash Ave., South Bend, IN 46617-1029. Phone: (219) 232-4287.

Pilot Class 44-K. September 11–14, 1997, at the Colorado Springs Marriott in Colorado Springs, Colo. **Contact:** William H. Gibson, P. O. Box 1500, #205, Corona Del Mar, CA 92625. Phone: (714) 721-4190.

Pilot Class 45-A (Enid AAF, Okla.). October 7–9, 1997, in Fort Walton Beach, Fla. **Contact:** G. L. Waters, 218 Miracle Strip Pkwy. S. W., Unit O, Fort Walton Beach, FL 32548. Phone: (904) 243-7871.

46th Fighter-Interceptor Squadron (1952–58), Dover AFB, Del. September 12–15, 1997, at the Radisson Hotel Denver South in Englewood, Colo. **Contact:** George W. Peckham, 8415 S. Pebble Creek Way, #101, Highlands Ranch, CO 80126-3259. Phone: (303) 741-1421.

47th Bomb Group Ass'n. September 25–28, 1997, in Bloomington, Minn. **Contact:** Costa Chalas, 64 Trapelo Rd., Belmont, MA 02178. Phone: (617) 484-5620. Fax: (617) 484-3309.

47th Fighter Squadron, assigned to the 917th Wing (AFRC), Barksdale AFB, La. September 11–13, 1997, in Bossier City, La. **Contact:** Lt. Col. Rick Volden, Office of Public Affairs, 917th Wing, AFRC, 1000 Davis Ave. E., Bldg. 6803, Room 229, Barksdale AFB, LA 71110-2287. Phone: (318) 456-9129.

Pilot Class 50-G. September 11–14, 1997, in Seattle, Wash. **Contact:** Art Klein, P. O. Box 262, Medina, WA 98039. Phone: (206) 455-1132.

64th Troop Carrier Group. September 1997, in Minneapolis, Minn. **Contact:** Vern Montgomery, 6744 Carlsen Ave., Indianapolis, IN 46214. Phone: (317) 241-5264.

65th Troop Carrier Squadron. July 30–August 3, 1997, in Chillicothe, Ohio. **Contact:** Bob Early, 621 Cherokee Rd., Chillicothe, OH 45601. Phone: (614) 774-4909.

Undergraduate Pilot Training Class 68-B (Laughlin AFB, Tex.). September 19–21, 1997, in Las Vegas, Nev. **Contact:** J. Michael Vairo, 4509 Ocean Valley Lane, San Diego, CA 92130. Phone: (619) 259-1536.

78th Troop Carrier Squadron, 435th Troop Carrier Group (World War II). October 29–November 1, 1997, at the Holiday Inn International Drive Resort in Orlando, Fla. **Contact:** Fred Kopatz, Jr., 4315 Naneen Dr., Louisville, KY 40216. Phone: (502) 367-8106.

93d Troop Carrier Squadron, 439th Troop Carrier Group (World War II). September 9–14, 1997, at the Holiday Inn Greentree Central in Pittsburgh, Pa. **Contact:** Thomas L. Morris, 456 St. George's Ct., Satellite Beach, FL 32937. Phone: (407) 773-6960.

95th Bomb Group, 8th Air Force. August 25–30, 1997, at the Marriott Hotel Portland in Portland, Ore. **Contact:** Frank R. Coleman, 9 Marlette Dr., Carson City, NV 89703.

111th Tactical Reconnaissance Squadron (World War II). September 11–14, 1997, at the Shoney's Inn (Music Valley) in Nashville, Tenn. **Contact:** Roy D. Simmons, Jr., 3730 Edgewater Dr., Nashville, TN 37217-4620. Phone: (615) 366-1191.

149th Fighter Wing, including the 182d Fighter Squadron (Tex. ANG). October 3–4, 1997, in San Antonio, Tex. **Contact:** Lt. Joy Haun, Public Affairs, 149th Fighter Wing, 107 Hensley St., Kelly AFB, TX 78241-5542. Phone: (210) 977-3567 or (210) 977-3562. Fax: (210) 977-3231.

312th Bomb Group (World War II). October 9–12, 1997, at the Henlopen Hotel in Rehoboth Beach, Del. **Contact:** Paul M. Stickel, 1136 Gray Ave., Greenville, OH 45331-1127. Phone: (937) 548-5767.

317th Troop Carrier Group, 41st Troop Carrier Squadron (World War II). October 9–11, 1997, in Louisville, Ky. **Contacts:** Joe Leslie, 1942 Trevilian Way, Louisville, KY 40205-2157. Phone: (502) 458-8063. Earl F. Clinton, 8030 Harrison

Dr., Lawrence, IN 46226-2027. Phone: (317) 542-0755.

381st Bomb Group. September 3–7, 1997, in Baltimore, Md. **Contact:** Art Sherman, 1260 Main St., New Park, PA 17352-9376. Phone: (717) 382-4710.

404th Fighter Group. September 11–14, 1997, at the Holiday Inn Golden Gateway in San Francisco, Calif. **Contact:** Joe Warren, 3410 St. Mary's Rd., Lafayette, CA 94549. Phone: (510) 283-0146.

416th Night Fighter Squadron. September 11–15, 1997, in Scottsdale, Ariz. **Contact:** Richard L. Hoover, P. O. Box 5666, Carefree, AZ 85377-5666. Phone: (602) 585-0734

450th Bomb Group. September 25–28, 1997, at the Omni San Antonio Hotel in San Antonio, Tex. **Contact:** Doid K. Raab, 5695 Ireland Rd. N. E., Lancaster, OH 43130. Phone: (614) 536-7635.

454th Bomb Squadron, 323d Bomb Group, 9th Air Force (World War II). September 24–28, 1997, at the Regency Plaza Hotel in San Diego, Calif. **Contact:** Joseph R. Havrilla, 1208 Margaret St., Munhall, PA 15120-2048. Phone: (412) 461-6373.

455th Bomb Group Ass'n, 15th Air Force (World War II). September 24–27, 1997, in Miamisburg, Ohio. **Contact:** Col. Louie O. Hansen, USAF (Ret.), P. O. Box 286, Spencer, IA 51301-0286. Phone: (712) 262-7237.

455th Bomb Squadron, 323d Bomb Group, 9th Air Force (World War II). September 17–21, 1997, in New Orleans, La. **Contact:** Ed Christiansen, 1712 Apple St., Metairie, LA 70001.

458th Air Service Squadron, 318th Service Group (World War II). October 16–18, 1997, in Arlington, Tex. **Contact:** Alfred B. Hudson, 1017 Athenian Dr., Gastonia, NC 28052. Phone: (704) 864-6506.

484th Bomb Group. September 10–14, 1997, in Falls Church, Va. **Contacts:** Bud Markel, 1122 Ysabel St., Redondo Beach, CA 90277. Phone: (310) 316-3330. Bud Pressel, 436 Hunting Park Lane, York, PA 17402. Phone: (717) 757-1218.

485th Fighter Squadron, 370th Fighter Group, 9th Air Force. September 25–27, 1997, in Las Cruces, N. M. **Contact:** E. Scott Goldsborough, 964 Rainbow Ridge St., Las Cruces, NM 88005. Phone: (505) 524-4317.

490th Bomb Squadron, 10th and 14th Air Forces, CBI (World War II). September 11–13, 1997, at the Holiday Inn Garden of the Gods in Colorado Springs, Colo. **Contacts:** Victor Kadanka, P. O. Box 24, Tow, TX 79672. Joe Barrett, 1-5 Willow Way, Reading, PA 19606.

530th Fighter Squadron, 311th Fighter Group, CBI (World War II). September 28–October 1, 1997, at the Inn of the Hills River Resort in Kerrville, Tex. **Contact:** F. H. Wilbourne, 4118 Keagy Rd., Salem, VA 24153. Phone: (540) 387-0562.

551st Airborne Early Warning and Control Wing. September 18–20, 1997, in Plymouth, Mass. **Contact:** Joanna Dasilva, P. O. Box 226, East Wareham, MA 02538. Phone: (508) 295-2030.

Seeking personnel assigned to the **1198th Operations Evaluation and Training Squadron,** Norton AFB, Calif., to compile a reunion roster. **Contact:** Robert L. Gonterman, 4311 Cavelle Ave., Louisville, KY 40213. Phone: (502) 366-2124. ■

Pieces of History

Photography by Paul Kennedy

Operation Vittles

Memorabilia courtesy Dover AFB Museum, Dover AFB, Del.

USAF took the lead in resolving one of the first showdowns of the Cold War when on June 26, 1948—only nine months after the air arm became a separate service—it launched Operation Vittles to overcome the Berlin blockade. More than 189,000 flights took place during the 15-month-long Berlin Airlift, which brought more than 2.3 million tons of food, fuel, and supplies to the beleaguered German city. Today, the Dover AFB Museum in Delaware houses the sole remaining C-54M veteran of that famous mission and displays it stocked with a sampling of supplies—from coal to chocolate—that helped Berlin survive the Soviet blockade.

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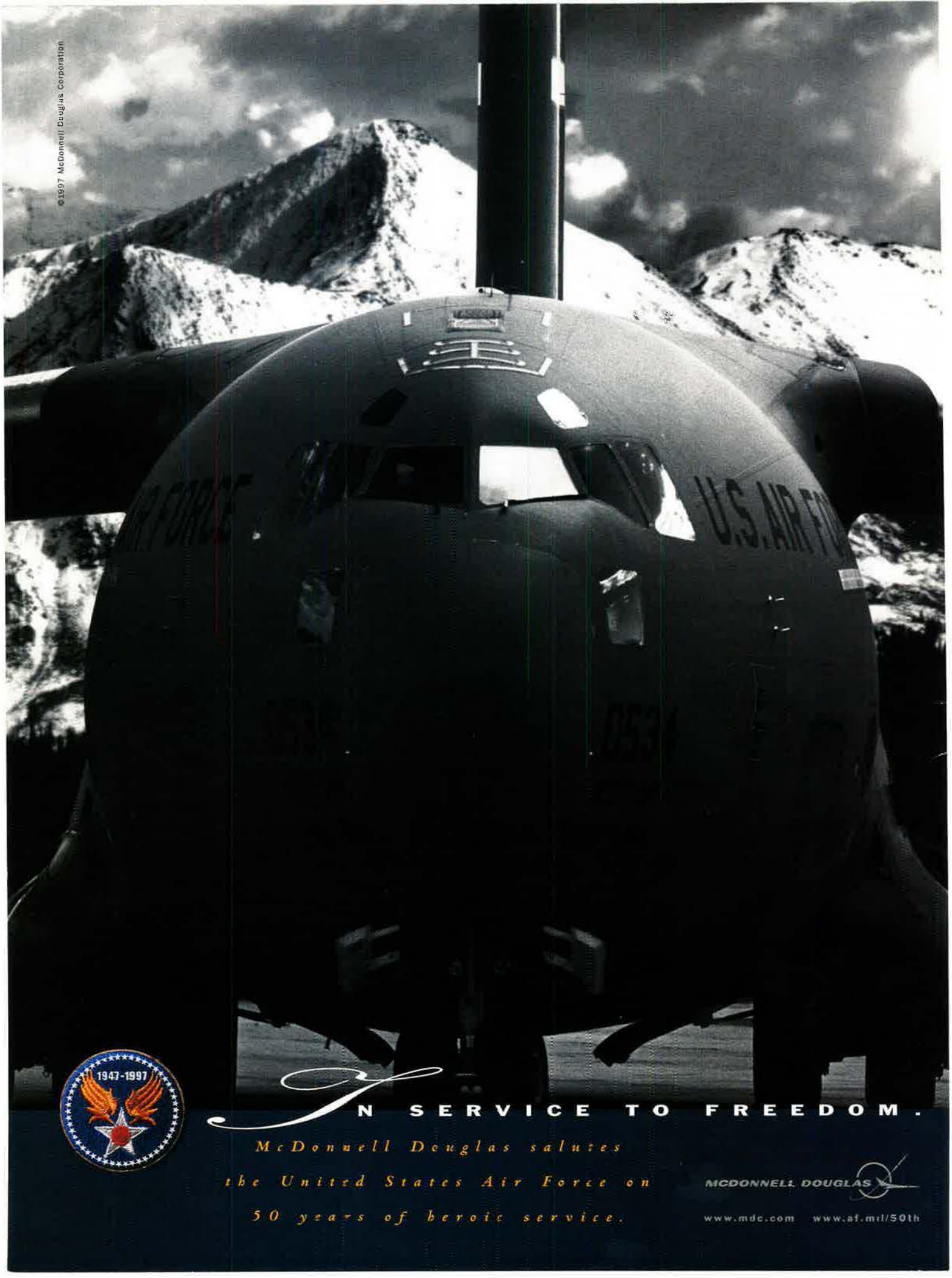
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