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F-22 RAPTOR

LOCKHEED MARTIN • BOEING
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September 2002, Vol. 85, No. 9

AIR FORCE MAGAZINE

JOURNAL OF THE AIR FORCE ASSOCIATION

About the cover: F-22s out of Edwards AFB, Calif. Lockheed Martin photo by Judson Brohmer. See "The F-22 on the Line," p. 36.

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Editorial

By Robert S. Dudney, Editor in Chief

Strait Talk

BEFORE the 1973 Mideast War, Israel picked up many warning signs, but it didn't act on them. According to *The Yom Kippur War* by the London *Sunday Times,* Israel was convinced that, because it had clear military superiority, the Arabs wouldn't attack. The book said, "Thinking ... on this point was so rigid, ... it even had a name: 'The Concept.' "

That concept went down in flames on Oct. 6, 1973, when Egyptian and Syrian forces invaded.

Something like "The Concept" may be at work in American defense planning. It gives heavy attention to the immediate Global War on Terror (Iraq is included) and to far-term Transformation of US forces for post–2015 wars. The danger of medium-term conventional conflict does not get equal rhetorical emphasis.

A prime case is the Chinese military threat to Taiwan. The prevailing view is that China lacks enough lift to invade. Moreover, its troops are poorly trained. Logistics are sketchy. Weapons are ancient (wits refer to the 2.4-million-man People's Liberation Army as the world's largest military museum). Therefore—so the theory goes—China, aware of its shortcomings, probably won't challenge US power in the Taiwan Strait for at least a decade.

This belief suffered heavy damage in two hefty new reports, the 56-page "Military Power of the People's Republic of China" by DOD and the 209-page "Report to Congress of the US–China Security Review Commission," a panel chartered by Congress. Both were released in July.

Taken together, the studies show that China is busy developing "force multipliers" to enable it to swiftly conquer Taiwan, if it chooses, and thwart a US response. They note that, among other things, China now has:

- A new doctrine of pre-emption and surprise for war with Taiwan.
- Some 350 accurate short-range ballistic missiles posing a grave threat to Taiwan's air defenses and command centers.
- Cyber-war systems to attack and disrupt Taiwan's military and civilian communications.
- A growing fleet of advanced Russian–designed Su-27 fighters to reduce Taiwan's air advantage over the strait.
- Improved air transport for special operations commandos.

China's evident goal would be to knock out Taiwan before the US could intervene. With the US in mind, China has embarked on "Three Attacks and Three Defenses" air defense training. It envisions coordinated attacks on stealth aircraft, cruise missiles, and helicopters and defense against precision strikes, electronic warfare, and air surveillance.

The need to modernize US forces has not gone away.

Moreover, China may have acquired high-energy laser equipment for zapping satellites and systems for mass cyber-attacks on US forces. China has acquired Russian–built Sunburn anti-ship missiles capable, it is said, of threatening an aircraft carrier.

Richard L. Russell, a National Defense University professor, conducted what he calls a "devil's advocate" analysis of the cross-strait balance. His conclusion, as reported in *Parameters* last fall: "The Chinese could use strategic surprise to compensate for shortcomings in military capabilities."

The commission was blunter: "China's leaders believe that the United States, although technologically superior in almost every area of military power, can be defeated."

No one claims war with China is inevitable. However, Beijing's moves have stirred profound anxieties. Such a war would place immense demands on US conventional forces, especially Air Force airpower and Navy sea power.

Bush Administration leaders would do well to ponder that fact as they make key budget and force-planning decisions in months ahead.

From the start, the Administration assumed the services could accept more risk and divert funds to Transformation. After the Sept. 11 terror attacks, here-and-now readiness moved front and center. Neither effort is optional. However, they do compete with efforts to modernize, recapitalize, and man a force suffering from a decade of neglect.

This is particularly dangerous when it affects air and space power, always in high demand. USAF's aircraft fleet is growing older, less reliable, and expensive to maintain. Its front-line fighter, the F-15, was introduced in 1974. Bombers, tankers, and special-purpose aircraft all are aged. The US can't further postpone the replacement of such worn-out equipment.

The Pentagon is in the throes of yet another review of the need for the planned fleet of 339 F-22 fighters. The real requirement is for more than 750 Raptors. When it comes to manpower, the story is much the same. Recent analyses show the Air Force may need to add as many as 40,000 troops to fill out the force. The Pentagon is thinking more like zero.

The real problem is a lack of resources. Even factoring in the recent Bush increases, defense spending accounts for 3.3 percent of Gross Domestic Product. The figure as recently as 1994 was four percent and much higher during the Cold War.

As the China case shows, the US military's main missions have not gone away. The danger of big, regional clashes of conventional forces will be around for a while, and the US needs first-class forces to fight them.

It is past time to stop redefining problems, talking about "skipping a generation" of weapons, and trying to stretch overworked forces to cover expanding needs. The Administration should face up to the requirement and provide the resources to meet it. It's the only concept that makes sense. ■

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Letters

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The Case for the F-22

Mr. Dudney does a good job summarizing the Air Force case for the F-22 in [the editorial] "The B-2 Syndrome Rides Again" in July *[p. 4]* which has two main themes: The F-22 is the best way to attain air superiority, and new threats will make the F-15 obsolete in the near future. I found myself disagreeing with both of these themes.

The F-22 was spawned when the Warsaw Pact drove our military strategy. Since we could not hope to compete on force size, we needed a qualitative edge to prevail had the Warsaw Pact ever decided to implement their war plans. It is a tribute to our military services that the Warsaw Pact never quite had the confidence to try.

To gain air superiority, you need quantity as well. F-22 fleet size keeps getting cut because each airplane is costly. We can buy more [Joint Strike Fighters] for the same money. Does the incremental cost of the F-22 over the JSF provide value for the money? Apparently, Congress is somewhat skeptical.

Mr. Dudney states that the "F-15 simply will not be able to operate past 2010 and survive against new air-to-air fighters and advanced surface-to-air missiles." We can all dream up alarmist scenarios and threats. However, we need to base our funding decisions to some extent on probable enemy capability. I, personally, cannot see a likely scenario over the next eight years that our F-15/AWACS team cannot handle. And 20 years out? Who knows?

Rather than invest funds in assets to meet extreme scenarios, other parts of the Air Force have shortfalls right now that impact our combat capability in any scenario. We have undercapitalized our tanker, airlifter, and intelligence platform fleets for years, and we need to update them now. In an extreme scenario where the F-22 shines, the current shortfall of these support aircraft could reduce our combat capability more than the F-22's presence would raise it.

It is common to justify specific weapons systems with complementary scenarios and threat models. If you want to justify existing weapons, minimize the threat. If you want to promote new weapons designs, maximize the threat in convenient details. The trouble with rubber scenarios is that people start to believe them and forget that many scenarios and threat models are, at heart, marketing ploys. Bad scenarios lead to bad strategy and poor allocation of our limited funding.

The F-22 is a marvelous design that advanced many technologies and scared Warsaw Pact planners. The Air Force did a marvelous job conceiving, designing, and funding the program. The F-22 will live on in the JSF configuration. It is time for the fighter community that rules the Air Force to step back, swallow their pride, give the trash haulers some respect, and use the F-22 funds to buy desperately needed support aircraft.

Alan W. Withers
Renton, Wash.

The described capabilities of the F-22 reflect a terrific fighter for the Air Force, and I am all for this aircraft. What does bother me are the reductions in the production quantity. The actions lead me to a question that may be appropriate, i.e., has the Air Force provided a well defined, substantiated, and really viable threat?

The reduction from 750 F-22s to 339 F-22s, in my opinion, is due to additional factors other than just the budget. The reduction could be attributed to "higher priority needs" also defined as real threats by DOD officials and of course members of Congress.

I recognize that threat analysis delves into the classified realm. However, there are some possible threats that the F-22 may encounter. Examples: the MiG-29, which is a record-setting Russian fighter known to have exceeded SR-71 altitudes; and the SU series of Russian fighters, e.g., the -27 -30, -35, and the thrust vectoring -37, that are considered as new generations of fighter aircraft.

An immediate conclusion would be these are formidable threats to the F-22. But then some questions may evolve: What are the expected combat capabilities of these aircraft? What are the quantities of production, and to which countries will they be sold or deployed? When will they be operationally deployed?

Giving credence to out-and-out budget cuts, would it be too far out to conclude as various threats have been defined, refined, etc., the quantities of F-22s [have been] adjusted?

Quoting a sentence in the editorial: "Without the F-22, the Air Force will gradually lose its ability to dominate the skies." Someone is bound to ask what specifics will stop the Air Force dominance of the skies without the F-22.

Richard R. Cadena
Dallas

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In Defense of Fighters

I have read your magazine on and off for 30-plus years and have always enjoyed the lively debates over priorities and policies contained within your articles and letters to the editor. The very fact that an organization fosters a free exchange of ideas indicates that the organization is vibrant and healthy.

It must have been in that spirit that AFA published such a blatant piece of propaganda, "In Defense of Fighters," by Rebecca Grant in the July issue *[p. 40]*. Too bad it was just a lot of "fighter mafia" drivel.

If I understand Ms. Grant correctly, those of us who disagree with the USAF priority placed on fighters and the F-22 program just don't get it. Ms. Grant implies that those who disagree just can't get over the fact that fighter pilots run the Air Force and that they couldn't possibly have any bias when setting their funding priorities. She then makes reference to a book written *by* a fighter pilot *for* fighter pilots.

I'm supposed to take as fact anything that [Brig. Gen. R. Michael] Worden wrote in that highly acclaimed tome of his, *The Rise of the Fighter Generals*, when in actuality it is nothing more than an obvious self-serving piece of fiction.

After insulting the 99 percent of the Air Force that aren't fighter pilots, she tries to win support of fighters and the F-22 program by saying that there is no problem with range in little combat jets at all (it's just a case of bad perception on our part). It's a fact that little jets with single seats and single engines have all the combat range and payload of [a] minivan!

To wave off this sad reality by saying all combat aircraft rely on tanker support is just sidestepping an uncomfortable issue that proponents of fighters can't deal with. Another one is payload—she doesn't even address that one.

If "tactical" airpower can bring to bear so much devastation, why was the USAF and Navy [tactical] contribution so minimal compared to the heavy bombers in Kosovo? Likewise, how many Navy carriers were in the waters around Afghanistan? Four out of 12? If correct, that means it took about a third of *all* the mighty tactical airpower of the Navy to do *half* of what a dozen USAF strategic bombers accomplished.

She further states that "technological superiority is the fighter's first and foremost contribution." Incredible! (It must be the reason why to this day we haven't made a *true* all weather, day or night combat capable fighter.)

As for stealth, someone needs to inform Ms. Grant that the F-117's sole mission is that of a medium-level bomber. It's called a "fighter" simply due to its little size and short range. Give me a break.

She even reverses herself when she says that only fighters go in harm's way. Does she really believe that only heavy bombers need "significant" standoff ranges to strike targets in heavily defended airspace? For her to say "hostile airspace is fighter territory" is pure baloney. That is no more a rational thought than if I were to argue that USAF could fulfill all its combat roles and missions with an inventory solely consisting of just B-2 strategic stealth bombers.

In wrapping up her argument, she re-emphasizes the true mission of fighters—*air dominance*. Her statement, "In every air campaign, opening the skies for friendly operations is the foundation of all that comes after," is pure historical myth. It may be a desired goal, but the lack of it has *never* kept the bomber, recce, tanker, or transport people from doing their jobs from Day 1 of any war.

The trouble with terms like "dominance," "supremacy," and "superiority" is that they all sound the same, and I expect only eggheaded academics who write doctrine can truly explain what the difference is. No matter how many times they split that hair, these buzzwords have always been meant to justify air-to-air dogfighting. Dogfighting, or maneuvering to engage an enemy with gun cannons, is obsolete. The problem with the people who love dogfighting is that they forget how long it has been since a USAF fighter actually had to do it.

Put in perspective, air warfare is 87 years old. The last time anyone in the Air Force got a kill using guns was probably 1972 when air warfare was just 55 and USAF itself was 23 years young. Times are different from 1970, and technology has [created] vastly improved air-to-air missiles and radar—not to mention the air-to-air laser. Yet the proponents of the F-22 cling to their outdated (and out of context) lessons from an air campaign fought during the Vietnam War. They constantly rehash the arguments made for building the F-15.

Unless we get into another major war, does anyone really think we will face a credible air-to-air threat? Throughout the history of air warfare, it has been anti-aircraft artillery and smaller caliber ground fire that has killed most of our fighter and bomber aircrews (a lesson we all seem to forget). During the past 30 years, it has been predominantly SAMs that have downed US aircraft at medium to high altitude. In the future it could be energy weapons—but [it is] hardly likely [it will be] enemy fighters.

If "opening the skies" means negating the threat from an enemy's integrated air defense system, then air superiority fighters hardly begin to achieve this goal. In the 1980s, the presence of later generation SAMs in east Europe actually denied the air superiority airplanes the very airspace that they boasted they would dominate.

In reality, absent an air-to-air threat, single role air superiority fighters just take up air and ramp space. Loyalty to and pride in the aircraft we flew and the mission we trained for is a commendable thing—unless it clouds our vision and our ability to change with advances in technology.

Let me just say to Ms. Grant that back in the days of the hostile takeover and Total Quality Management, we in the ranks were told to rethink our paradigm of the Air Force or run the risk of becoming obsolete. Since then, I believe the only people who did NOT change their paradigm were the air-to-air crowd. To their discredit, they still believe the primary mission of the Air Force is air-to-air combat.

In fact, that mission plays a supporting role if it is needed at all. If the guys who write doctrine could understand that the primary combat mission of the Air Force is bombs on

target (using whatever technology mix to get the job done), then we wouldn't be subjected to articles such as Ms. Grant's.

Lt. Col. Tim Trusk,
USAF (Ret.)
Kansas City, Mo.

■ *Many thanks to Colonel Trusk for taking time to read and comment on my article. Yes, joint forces really do need air dominance, and fighters provide the lion's share of it. The new F-22 and F-35 will incorporate stealth, improved combat ranges, internal bomb bays, and eye-watering avionics.*

There was a lot of work for fighters over the last decade from Desert Storm to Operation Enduring Freedom; and it was the fighter force that rushed to defend America's skies after Sept. 11th. We'll be glad of first-rate fighters for a long time to come.— REBECCA GRANT

Need More Than a Band-Aid

As a line officer and one who is directly affected by these decisions, I respectfully submit that Secretary [Donald H.] Rumsfeld is way off base on his ideas of not increasing the force. *[See "Editorial: Hyperextension," August, p. 2.]*

I do think the Air Force could do better in the manpower management area and allocations of folks to certain career fields, but that currently would be no more than a Band-Aid.

I have spent six of the last nine months away from home, deployed to various locations in the Persian Gulf and will deploy again for the Christmas holiday to the Mideast. To try and put it into perspective, I am an operations support squadron staff officer, not even a line guy in an operational squadron.

We have squandered our manning opportunities and are leaving a hollow force. Low-density, high-demand assets like the U-2, AWACS, Rivet Joint, and F-16CJ [crews] are feeling the brunt and are on the verge of breaking. In the U-2 community, we are doing this on the backs of our maintainers who are the youngest on average that I have ever seen. Their motivation and devotion to duty are unflagging, but their experience level is not high enough.

We cannot maintain this pace without something giving. We are still seeing people leave at an alarming rate, [even] with the economy in the reduced state it is in. This should be sending [USAF leaders] screaming.

The Reserve and Guard are even starting to raise their voices, and many people I know in those components are leaving, as they cannot take the pace of operations, either. I saw [in] an article that [DOD] wants to introduce a measure that would build another type of reserve component with more active duty time required, something in between the active duty and reserve. I do not know the particulars, but that seems a waste to me. We cannot even do our basic missions right now without Guard and Reserve assistance, and that is dead wrong.

We have overcut and need to rebuild. We can, however, rebuild smarter and shape the force for the future.

We can continue to argue about the need for technology vs. people. I can tell you, though, that every time an airman, soldier, sailor, or Marine who is spending more than 180 days a year away from his family [hears or reads about this argument], he is disenchanted. We tell people time

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and time again that they are our most valuable assets, but that is not what they see in actions from senior leadership.

People are and always will be the decisive element in warfare and defense. In World War II, we did not win on the beaches of Normandy because our guns were better or our planes were more numerous. We won because we had people who believed in what we were doing and knew that the alternative was a lot worse.

A German officer was asked, after a town was taken in western France, if he thought American tanks were better than German equipment, and he stated, "Nein, I just ran out of anti-tank rockets and your soldiers just kept coming." It was people, and still will be people, armed with the world's best technology who win wars. Thanks for your insightful editorial.

Maj. Dennis Davoren
Beale AFB, Calif.

Northern Watch

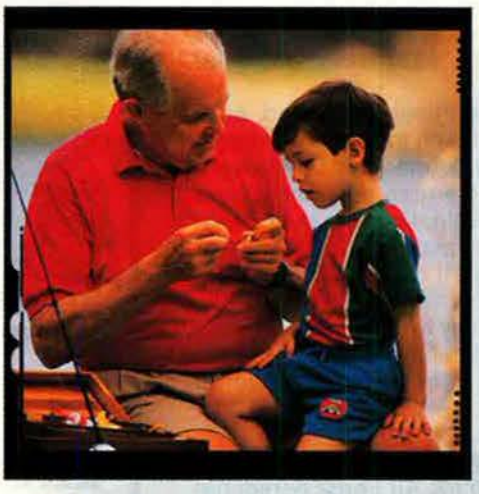
Hats off to the Air Force personnel flying and maintaining Operations Northern and Southern Watch. Their professionalism, dedication, and courage are of the highest order. *[See "The Highs and Lows of Northern Watch," August, p. 50.]*

Having said that, however, the continued maintenance of these two operations without an overlying national policy which they support is the greatest proof now existing of the emptiness of American national [defense] and foreign policy. When they were initially set up following Operation Desert Storm, both operations were part of a broad allied policy to restrain Saddam and hopefully foster his overthrow. The military flights interfaced with ground inspections to prevent chemical and nuclear weaponeering.

That all fell apart about 1998 with the expulsion of the inspection teams and the collapse of the international allied support. The air ops remained as a veiled threat to move Saddam back to accepting the inspections.

For years now, through two separate Administrations, we and the Brits have been boring costly holes in the sky (you tell me how many $800,000 coordinated sorties we've flown). We have put our aircrews in harm's way with only "Twinkie" (a good old Vietnam term for putting life on the line while your own side limits your reactive capabilities) responses allowed due to restricted rules of engagement.

Lord knows what this has done to the retention rate or how many fami-



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Letters

lies it's destroyed or is helping to destroy. And though I appreciate your attempts to paint the deployment bases as well as you can, they remain "somewheres east of Suez, where the best is like the worst," as Kipling said.

We are conducting these costly and sustained air operations despite the fact that the overall policy which they were once part of has fallen away and nothing further has replaced it. In essence we are maintaining a declining level of military intimidation that of itself leads nowhere except to continuation of the same for eternity. Unable to withdraw without acknowledging that the whole previous policy has failed, we are, as in Vietnam, continuing it through the next election or the one after that, so that no one in D.C. looks bad or stupid.

Only a [wealthy] nation could maintain such an empty use of valued military assets for so long, at such cost, for so little real purpose.

Bill Barry
Huntsville, Ala.

Hill and Chennault

What a wonderful ovation to a real hero in the July issue of *Air Force* Magazine! *[See "Tex," p. 81.]*

Have you ever wondered just how the battles in the South Pacific might have ended if people like [Claire L.] Chennault, [David L.] Hill, and [T.C.] Gentry were not there? It could have ended up sooner than it did, with the Japanese ahead, if Chennault didn't take them on and keep that million or so military occupied.

It is most interesting that both Chennault and Hill were refused [flight training initially by the] Army Air Forces, but both did eventually get their wings and showed the world what aviation in wartime really is.

Remember, [Joseph W.] Stilwell would not accept a ride back for his men when he lost the battle in Burma. Caleb Haynes and Bob Scott were there and ready to fly them back, but Stilwell said he "walked in and would walk out"—and this at the expense of the Army Air Forces [which had] to drop them food and other supplies daily as they walked out.

The commendation for Hill was late, but it was a most deserved one. Congratulations on noting it.

Joseph C. Elia
Reno, Nev.

The article mentions the 23rd Fighter Group receiving P-51As. The P-51A had an Allison engine and a three-blade prop. Beginning with the P-51B, they had the Rolls-Royce–Packard engine and a four-blade prop. Beginning with the P-51D they had a bubble canopy. Hence the plane pictured on p. 85 has to be a P-51B or -C.

Louis P. Pushkarsky
Trenton, Mo.

■ *The article on Tex Hill should have said the 23rd Fighter Group received P-51Bs.—THE EDITORS*

Stop-Loss

"Stop-Loss" was a well-written article *[July, p. 52]*, and it pointed out that the Air Force was suffering far more Stop-Loss retentions than any of the other services. The article mentioned that the program was "the biggest for the Air Force since the all-volunteer force began 30 years ago."

That is correct. However, there was one forced retention program between World War II and the current effort of which I am totally familiar, because it affected my future life.

I had enlisted for a three-year tour in September 1949, and as I remember, about early 1952, all enlisted personnel had a year tacked onto their enlistments. Seems that the Air Force was afraid they'd need us during the Korean War before replacements could be trained and ready.

We called it "The Truman Year," since President Truman had signed the extension. The Air Force converted some of us to dedicated career status as a result of the extension, however, and I stayed for 27 years.

Lt. Col. Ivan L. McKinney,
USAF (Ret.)
Bossier City, La.

Corrections

In the August issue, "Aerospace World: Rumsfeld's 'Bow Wave' Chart on the Army's Top Investment Programs," on p. 19, the Excalibur is a family of precision munitions for howitzers.

Also in August, "Space Almanac," p. 31, the director of national security space integration is Maj. Gen. C. Robert Kehler.

Then: Gaining the edge in aerial reconnaissance photography

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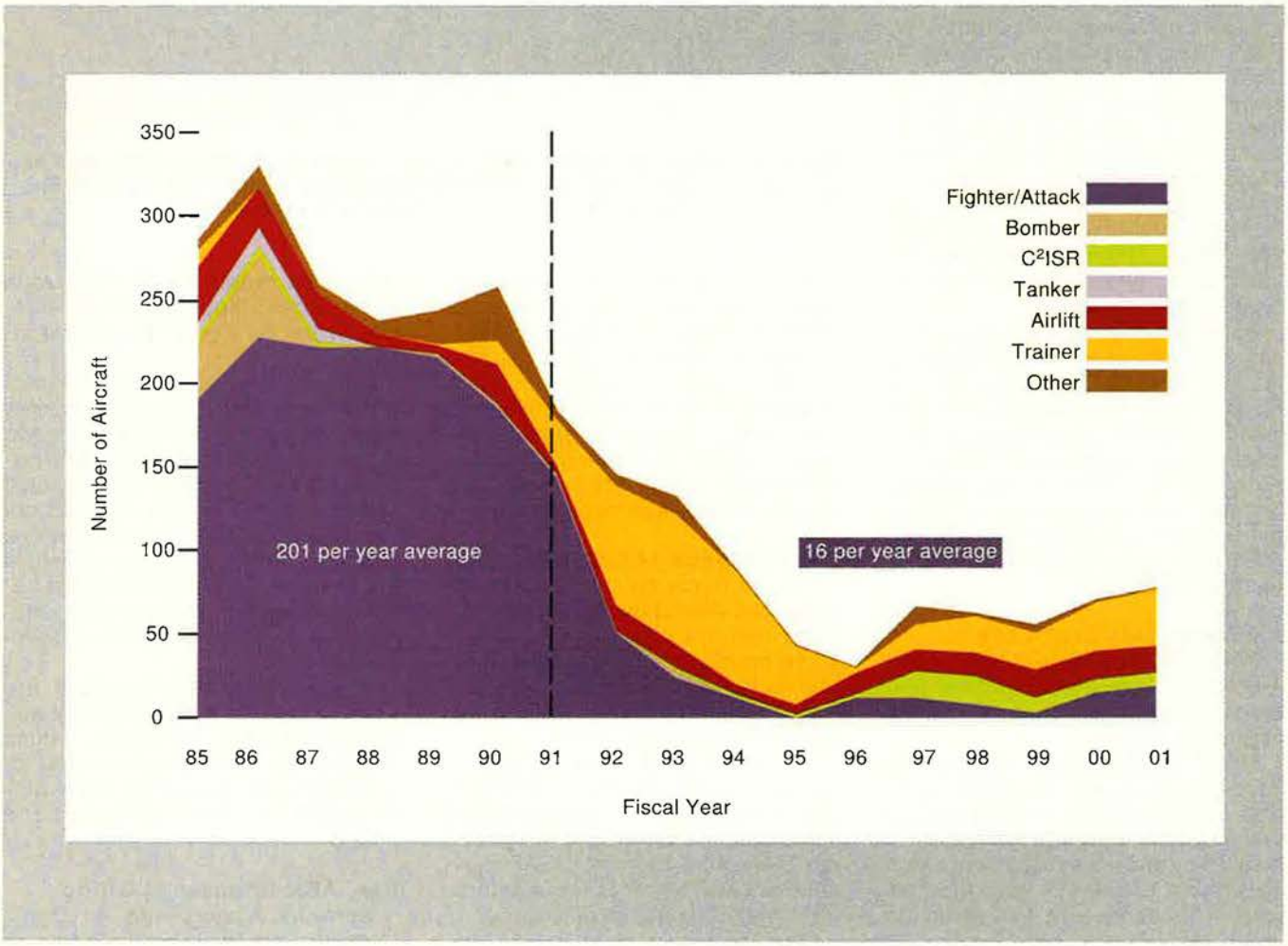
The Chart Page

By Tamar A. Mehuron, Associate Editor

How USAF's Fighter Force Got Old

A decade ago, purchases of fighter/attack aircraft plunged dramatically and have stayed low ever since, depriving the fleet of needed replacements. As a result, fighter aircraft average age has soared. In the period 1985–91, the Air Force bought 201 fighter and attack aircraft per year, on average. As can be seen, the end of the Cold War, together with Clinton Administration defense policies, brought radical change. Fighter procurement during the past decade—1992 through 2001—averaged only 16 aircraft per year. In 1995, USAF bought none at all. The severity of the overall decline in aircraft procurement was masked somewhat by large purchases of trainer aircraft. Those noncombat systems accounted for 49 percent of all purchases.



Source: USAF

Aerospace World

By Suzann Chapman, Managing Editor

10 Killed in MC-130H Crash

A USAF MC-130H Combat Talon cargo aircraft crashed into a mountainside Aug. 7 about 15 miles south of San Juan, Puerto Rico. All 10 military personnel on board were killed, according to US Southern Command.

The special operations aircraft went down in heavy fog and rain during a nighttime training flight from NAS Roosevelt Roads in Puerto Rico to Borinquen Air National Guard Base on the west coast of Puerto Rico.

On Aug. 10, Air Force officials released the names of personnel killed. They were Majs. Michael J. Akos, aircraft commander, and Gregory W. Fritz, navigator; Capts. Christel A. Chavez, pilot, and Panuk P. Soomsawasdi, special tactics liaison officer; 1st Lt. Nathanial D. Buckley, electronic weapons officer; TSgts. Christopher A. Matero and Martin A. Tracy, both combat controllers, and Robert S. Johnson, flight engineer; and SSgts. Robert J. McGuire Jr., loadmaster, and Shane H. Kimmett, direct support operator.

Akos, Buckley, Chavez, Fritz, Johnson, and McGuire were assigned to the 16th Special Operations Wing at Hurlburt Field, Fla. Soomsawasdi was with SOUTHCOM and based at Roosevelt Roads. Matero and Tracy were Kentucky Air National Guardsmen. Kimmett was assigned to Air Intelligence Agency, based in San Antonio.

Officials said a board would investigate the accident.

Air Force Ends Stop-Loss

The Air Force on Aug. 5 announced it would release the last officer and enlisted specialties from Stop-Loss beginning Sept. 1.

USAF implemented a servicewide Stop-Loss program last year shortly after the September terrorist attacks in the US. The program prevented all active duty and reserve members from separating or retiring from the service. The service re-evaluated its manpower needs every 60 days and adjusted the program three times, gradually drawing down the number of career fields affected.

USAF photo

Coolest Fighter on Earth. *USAF recently put the F-22 through three months of weather testing at the 46th Test Wing's McKinley Climatic Lab, Eglin AFB, Fla. The lab is the world's largest environmental testing chamber.*

The last review removed restrictions in late June from all but three officer and eight enlisted specialties.

In relieving Stop-Loss for the final 11 specialties, Air Force Secretary James G. Roche said the service had "arrived at a new steady state," making it possible for service leaders to honor their pledge not to "hold onto anyone longer than necessary."

USAF Extends 14,000 Reservists

The Air Force announced Aug. 16 that it will extend the mobilization of more than 14,000 Guard and Reserve members into a second year. The reservists are needed, said officials, to handle continuing requirements in the war on terror.

The majority of those 14,000 reservists are working in security forces, one of the service's most stressed career fields. Officials said they have not been able to meet USAF's expanded security forces requirements from within the active duty force.

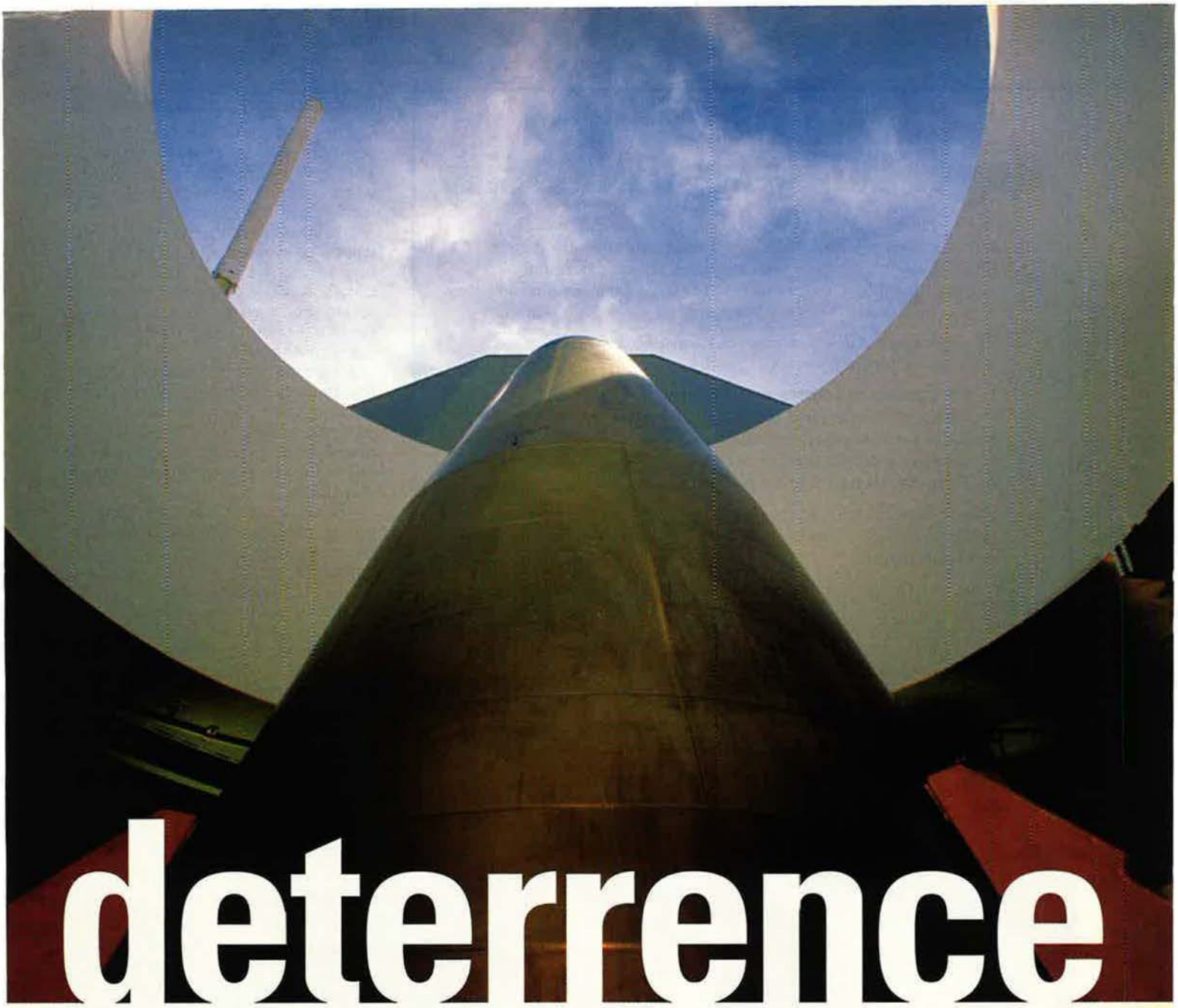
Nearly 67 percent of the Air National Guard and Air Force Reserve Command members who are having their tours extended are filling security forces requirements, said John C. Truesdell, deputy assistant secretary of the Air Force for reserve affairs.

Among several initiatives the service is working on to alleviate stressed career fields, Truesdell said, are two legislative proposals specifically targeting security forces. The first would enable the Air Force to contract out certain administrative security forces functions, while the second would allow some currently restricted reserve categories to be used for national-level security forces requirements.

The two bills, said Truesdell, are not a cure-all. If approved, they will, along with other initiatives, reduce the number of reservists needed for a second year and return some predictability to their schedules, he added.

Nav, ABM Bonuses In Offing

Some navigators and Air Battle Managers may be in line for retention bonuses as part of the Fiscal 2003 defense budget authorization legislation, according to USAF officials.



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The new bonuses would target specific groups of navigators and ABMs who are critical to USAF's warfighting capability, said Maj. Carlos Ortiz at the Pentagon.

"Nearly half of the navigator force will be retirement eligible in the next five years," he said. "The navigator bonus will be targeted primarily to retain the more senior navigators in the Air Force past their traditional retirement points."

Air Battle Managers are a critical, low-density, high-demand resource, making their retention equally important, said Ortiz. "The ABM career field is undermanned and has seen significant operations tempo increases."

Specific ABM systems that the bonus program will target are airborne warning and control, joint surveillance target and control, and ground tactical air control.

Details about the bonus program will be released within the next several months, said Ortiz.

USAF Changes Officer Promotion System

Service officials have made two significant promotion board changes—one impacts all officers, the other will

increase promotion opportunities for officers meeting Oct. 3 promotion boards to major.

The first change, which took effect last month, removed mention of race, ethnicity, or gender in the officer selection briefs provided to promotion boards. This change, said officials, was made to ensure fairness and equity for all officers.

The second change raised the promotion rate to major from 90 percent to 95 percent.

During the armed forces drawdown of the 1990s, Air Force promotion rates to major hovered around 80 percent. In 1997, the service returned the rate for majors to its predrawdown level of 90 percent.

Officials said the improvement in promotion opportunity should enable the Air Force to adjust its long-term force strength and reach its goals for field grade officers.

V-22 Takes Heavy Hits

Top defense officials continued to express reservations about the troubled V-22 Osprey tilt-rotor aircraft, saying even if it passes its flight tests it might not survive the money wars.

When asked about the V-22 in early August, Defense Secretary Donald H. Rumsfeld told reporters that decisions on programs under review will be based on more than any one program itself. The V-22 is one of several programs DOD is reviewing prior to making Fiscal 2004 budget decisions this fall.

While Rumsfeld's comment was equivocal, Pentagon acquisition head Edward C. Aldridge left no doubt that he has little faith in Osprey's chances. He told reporters Aug. 8 that he had "real problems with the airplane."

The hybrid aircraft only returned to flight testing in May after being grounded since December 2000, following a second fatal crash that same year. An earlier fatal crash occurred in 1992.

Each of the services has maintained they need the aircraft, with USAF hoping it will replace aging special operations helicopters. The Marine Corps plans to buy 360 Ospreys, and the Navy and the Air Force plan to buy 50 each.

A special V-22 review panel, convened after the third fatal crash, concluded that flaws found in the aircraft could be overcome with design modifications. Last year the Pentagon approved changes to hydraulics lines, poorly designed engine nacelles, and defective flight software.

At that time, Aldridge said the only way to prove the case for the V-22 was to get the aircraft back into flight

USAF Undertakes Two Critical Personnel Reviews

Top Air Force leaders recently stated publicly that the answer to managing the service's increasingly high workload is not necessarily to add more troops. The real answer, they say, is to change how the service employs its personnel, both military and civilian.

Earlier this year each of the services had been calling for increases to their end strengths to handle the larger workloads brought on by the war on terror. However, Defense Secretary Donald H. Rumsfeld said that first the services must consider whether current personnel could be better employed.

"This is a great debate," Secretary of the Air Force James G. Roche said in late July. "It's our view that just adding people without changing how you do things consumes a lot of resources."

To help better understand its personnel requirements, the Air Force launched two reviews: the Core Competency Review and, more recently, the Personnel Tempo Survey.

The Air Force had already begun looking at its Aerospace Expeditionary Force deployments with the goal of spreading the requirements for deployments more evenly throughout the force. As part of that undertaking, the service identified its six most critically stressed career fields. (See "Aerospace World: Building Aerospace Expeditionary Forces for the Long Haul," August, p. 14.)

After zeroing in on the critically stressed fields, USAF conducted what it termed the Core Competency Review. The review identified tasks in nonstressed career fields that did not have to be performed by a blue-suiter. If a task could be done by either a federal civilian or a contractor, then the Air Force could shift the blue-suit authorization to one of its stressed career fields.

The CCR also examined what work could shift from federal employees to contractors. However, officials insist the review was not simply an outsourcing endeavor.

"This review is not an A-76 study," said Col. John Vrba, chief of Air Force competitive sourcing and privatization. "We aren't automatically going to convert military or federal employee positions to contract positions."

Vrba emphasized that there are no conversion quotas. "We simply are trying to take military or federal employees out of missions that they don't need to be doing and put those same people into jobs that do require military forces or federal employees."

The CCR has already identified some 2,500 active duty positions that could be converted from military to civilian. It also found 1,000 traditional reserve positions that could be converted to full-time reserve positions.

Meanwhile a companion study, the Personnel Tempo Survey, is shifting into high gear. It is designed to measure workloads in the majority of USAF career fields. The goal again is to be able to realign personnel authorizations between less-stressed and more-stressed career fields.

The Air Force Manpower and Innovation Agency tested the survey in June by looking at five career fields at Langley AFB, Va. The agency was to review another 20 fields at five installations before presenting preliminary findings to Air Force leadership this month.

The service plans to review all major career fields, working through wing manpower offices throughout the Air Force. "Every major command will be involved, with each wing responsible for 15 to 20 career fields to limit the data collection impact," said Col. William C. Bennett, USAF chief of requirements and utilization.

"Basically, we'll have work center supervisors track and report total work center man-hours worked each week," he said.

Bennett emphasized that perstempo increases are not limited to those personnel who are deployed. In many cases, he said, the people most severely affected are those left behind to accomplish the day-to-day mission with fewer people. "They're working longer hours to get the job done."

The perstempo survey will also be used to track where the break point is between man-hours worked and retention levels.

However, neither review is expected to provide immediate relief.

For instance, Vrba estimated that changes based on the CCR would not begin to be seen in the critically stressed career fields before Fiscal 2004.

The reason is the length of time needed to get new personnel trained. It takes nine months to one year to make significant changes to the training pipeline, said Vrba.

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USAF Names Top 12 Airmen for 2002

On July 23, the Air Force announced its selection of this year's 12 Outstanding Airmen of the Year. The airmen, who will receive formal recognition at the Air Force Association National Convention in Washington, D.C., this month, are:

SMSgt. Edy D. Agee, 39th Supply Squadron, Incirlik AB, Turkey

MSgt. Bruce W. Dixon, 24th Special Tactics Squadron, Pope AFB, N.C.

MSgt. Timothy K. Garland, 752nd Computer Systems Squadron, Tinker AFB, Okla.

MSgt. Taru K. Taylor, Ogden Air Logistics Center, Hill AFB, Utah

TSgt. Caesar Kellum, Southeast Air Defense Sector, Tyndall AFB, Fla.

TSgt. Rhonda K. Miller, 324th Intelligence Squadron, Hickam AFB, Hawaii

SSgt. Terrence F. Carraway, 315th Security Forces Squadron, Charleston AFB, S.C.

SSgt. Michael A. Holland, 12 SFS, Randolph AFB, Tex.

SSgt. Brian P. Sharman, 437th Civil Engineer Squadron, Charleston

SSgt. Alan T. Yoshida, 23rd STS, Hurlburt Field, Fla.

SrA. Brian M. Hamilton, 611th Air Control Squadron, Elmendorf AFB, Alaska

SrA. Claudia V. Van Hassel, 460th Medical Squadron, Buckley AFB, Colo.

test. He also said there was no alternative for the Osprey.

In talking with reporters last month he said there is now a study under way to examine helicopter alternatives in lieu of the V-22 tilt-rotor.

AFOSI Recovers Laptops

USAF announced Aug. 12 that agents of the Air Force Office of Special Investigations tracked down two laptop computers reported missing from Central Command headquarters at MacDill AFB, Fla. The computers were recovered Aug. 9, just a week after they were declared missing.

OSI agents recovered the computers, which officials said contained highly sensitive information, at the home of a military member in the MacDill area. The individual was taken into custody, but officials would not release his identity until formal charges could be filed.

There was no indication that the suspect was connected to the leak of classified war plans to the *New York Times* in July, but a probe of that incident led to the discovery of the missing computers.

The Air Force sent 46 additional OSI agents to bolster the five normally assigned to MacDill to speed the missing laptop investigation. The agents quickly began interviewing everyone with access to the area where the computers had been kept. "That was a very, very long list of people," said Special Agent Jeffrey Vent.

As the interviews and investigation progressed, Vent said, the suspect's name surfaced, marking him as one of their "persons of interest." The suspect himself came up for interview about halfway through the access list.

During his interview, the suspect confessed and told the OSI agents where the laptops could be found. He also told them why he took the computers, but officials said his motive could only be released after it is revealed during court proceedings.

Court Says Instructions Deficient

A US Federal Appeals Court ruled that instructions the Air Force issued to its Reduction-in-Force boards in the mid–1990s were constitutionally deficient.

The ruling is based on a class action lawsuit filed by 623 former officers and two other lawsuits.

Air Force officials said, in an Aug. 12 release, that the court still must decide if any individuals were harmed by the defect in the memorandum of instructions. The lawsuits claim that RIF board members were instructed to apply different treatment based on race and gender.

The memo was five pages long, with the contested language contained in one paragraph.

USAF officials said that, at the time it was issued, the language was believed to be lawful and fair, but since that time constitutional interpretation has evolved through various court decisions.

Instructions to present-day boards have "changed substantially since that time, and current selection board processes are not affected by this issue," said Mary L. Walker, Air Force general counsel.

The service used the challenged language in all officer RIF, early retirement, promotion, regular Air Force, and selective continuation boards from July 1990 to May 1998.

When the lawsuits were initially brought before the US Court of Federal Claims, the court agreed with the Air Force. The service had argued that the instructions taken as a whole treated individuals neutrally.

The appeals court reversed that ruling in a 2–1 decision.

U-2s Get Upgrade

The Air Force's high-flying U-2 reconnaissance aircraft are getting the latest technology, taking the aircraft from Block 0 to Block 10. The $1.4 billion project is to be completed within the next two years.

The upgrade involves airframe, sensor, and data link improvements.

U-2s in the Block 10 configuration will collect better imagery more quickly, according to Maj. Peter Lewis, chief of tactics for the 9th Operations Group at Beale AFB, Calif., home of the U-2 fleet.

The new systems are very complicated, said Lewis, so pilots and maintainers began acquainting themselves with the upgrades last year to ensure the U-2 team could sustain ongoing worldwide operations with the new system.

Aldridge Signs Crusader Termination Memo

On July 26, Pentagon acquisition chief Edward C. Aldridge signed a memorandum to the Army officially directing "an orderly termination of the Crusader program." The formal demise followed months of crusading by advocates, including several key lawmakers and the Army, to save the cannon.

The Army had only recently sent Congress a report that said canceling Crusader and shifting its money to other technologies would be more costly than simply continuing with it.

Aldridge told reporters Aug. 8 that he was skeptical of the analysis in the Army report. "I think the courses of action in that study were biased very heavily toward Crusader and not balanced and proper and consistent across all the options."

Specifically, he said, the report did not add the cost of pursuing Future Combat System capabilities as part of course of action No. 1, which was the Crusader option. Those costs should have been included across all four courses of action, he said.

If FCS costs had been added, "the cost of all the results turn in about the same," said Aldridge.

The Crusader funds—some $32 million—were shifted to FCS technologies under development by the same contractor that was working on the Crusader. Congress approved the reprogramming action.

B-1B Drawdown Moves Forward

The Air Force plan announced last year to reduce the number of B-1B bombers in active service by 30 and consolidate those that remain at two locations is running smoothly, according to an Aug. 12 announcement.

The three losing units at McConnell AFB, Kan., Mountain Home AFB, Idaho, and Robins AFB, Ga., ceased B-1B operations earlier this summer. Their B-1Bs have gone to either Dyess AFB, Tex., or Ellsworth AFB, S.D.

Dyess also picked up Det. 1 of the USAF Weapons School and Det. 2 of the 53rd Test and Evaluation Group, which were both stationed at Ellsworth. The Texas base will now be the center for all B-1B aircrew training.

The older bombers at Dyess will be sent either to storage or to be used for static displays. "All the '83 models are going, and that's true for most of the '84s," said Col. Mike Moeller, 7th Operations Group commander. Dyess will then have a standardized fleet, with the lowest flight hours on them, he added.

USAF expects to save nearly a billion dollars from the drawdown and consolidation. That money will go toward upgrades for the 60 B-1Bs remaining in active service.

The next major upgrade, dubbed Block E, will integrate the Wind-Corrected Munitions Dispenser, the Joint Standoff Weapon, and the Joint Air-to-Surface Standoff Missile with the B-1Bs. It will also provide new avionics computers.

USAF Changes Tarnak Farms Disciplinary Authority

Air Combat Command announced Aug. 16 that it was transferring disciplinary authority for the April 17 friendly fire incident at Tarnak Farms Range in Afghanistan that left four Canadian soldiers dead and eight others injured. The new authority is the commander of 8th Air Force, Lt. Gen. Bruce Carlson.

Carlson is to consider the fate of two USAF F-16 pilots who were found to be at fault in the incident by a

Photo by Jim Haseltine

ANG pilots at McConnell AFB, Kan., fly one of the last of their B-1Bs to the bomber's new home. A KC-135 tanker paces it. The McConnell ANG unit is switching to KC-135s. (See "B-1B Drawdown Moves Forward," on this page.)

DOD Seeks Next Generation Tricare Contracts

On Aug. 1, the Defense Department announced it was taking bids for a new multibillion dollar health care delivery package to serve its 8.7 million Tricare beneficiaries. DOD plans to reduce the current seven managed care support contracts to just three with the next generation of contracts.

The three new contracts will cover north, south, and western regions instead of the current 11 stateside regions. The basic benefit structure—Tricare Prime, Extra, Standard, and Plus—will remain the same, according to the Tricare Management Activity.

Consolidation of the contracts is intended to improve portability for beneficiaries and simplify the administration of Tricare. Having fewer contracts should also improve TMA's responsiveness, according to the agency.

The three regional contracts will each provide for integrated health care delivery and administrative services.

Additionally, under the next generation contract structure, TMA said it plans to separate certain elements to enable contractors to "focus on their core competencies." Those separate elements include:

- The Tricare Dual Eligible Fiscal Intermediary Contract designed to handle claims processing and customer service functions for Medicare–eligible beneficiaries.
- Two pharmacy contracts, of which the first will provide a national mail-order pharmacy program, and the second will integrate all national retail pharmacy services.
- A marketing–education contract to create a national suite of Tricare products that will have a uniform message.
- Local support contracts that will enable military treatment facility commanders to contract for services beyond the national contracts.

TMA is also looking for a new Tricare Retiree Dental Program contract. The current contract, administered by Delta Dental Plan of California, ends Jan. 31, 2003.

Officials said once TMA awards each new contract, there will be a 10-month transition period before full implementation. They had no estimate on when TMA would announce the new contract awards.

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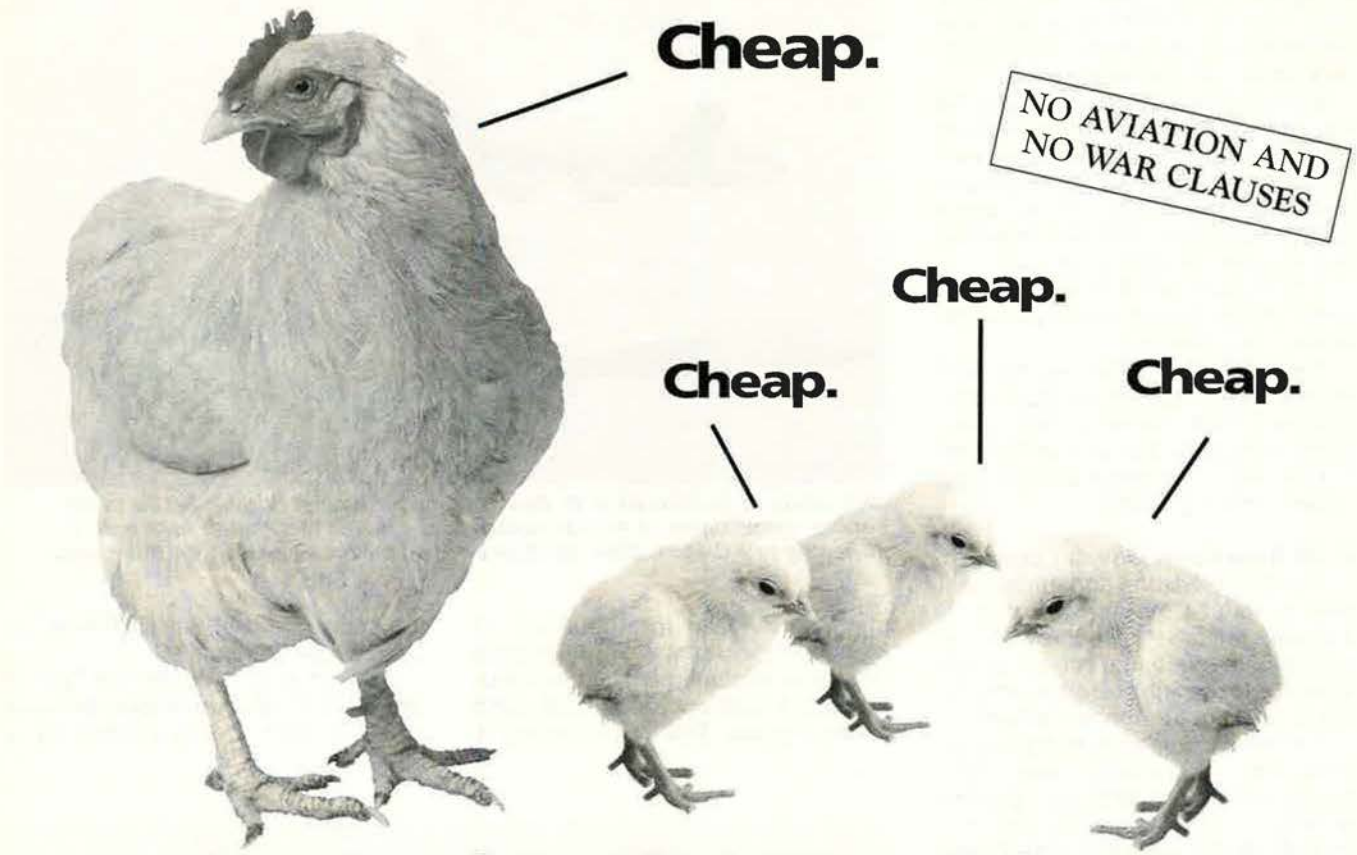

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coalition investigation board and a separate Canadian board. The findings of both boards were released June 28, and their reports were turned over to the Air Force for further action. (See "Aerospace World: Pilots Blamed in Canadian Deaths," August, p. 16.)

Gen. Hal M. Hornburg, ACC commander, transferred authority over the incident from Lt. Gen. T. Michael Moseley, according to an ACC release, namely to prevent the perception of a conflict of interest. Moseley, in his role as commander of coalition air forces in Afghanistan, exercised command over the F-16 pilots.

House Committee To Boost GI Bill

The House Veterans Affairs Committee wants to return the Montgomery GI Bill to its World War II–era status to improve its potential as a military recruiting tool. Darryl Kehrer, a committee staffer, said recent improvements to the bill are just not enough.

Kehrer, speaking at a DOD conference in New Orleans July 31, said Congress had increased benefits by 46 percent over the last two years. The monthly allowance will increase to $900 in October 2002 and to $985 the following year.

Yet, Kehrer said, the allowance would have to be $1,409 for an individual to attend a public, four-year institution as a commuter student.

He quoted Rep. Christopher H. Smith (R–N.J.), committee chairman, as saying, "If the original GI Bill is our most successful program ever, why should 'ever' not include the here and now?"

Kehrer said the committee is working to return to the old system, in which tuition and the cost of books were paid directly to colleges and the veteran received a monthly allowance to cover expenses.

"We talk about the all-volunteer force, but we all know what it is," he said. "It's an all-recruited force."

DOD Gives Up Bandwidth

The Department of Defense and other federal agencies transferred 45 MHz of radio bandwidth frequencies to the private sector July 23. It was a much anticipated move.

The Pentagon for several years has been fighting to retain sufficient bandwidth for its growing information technology needs. At the same time, the commercial telecommunications industry demand has skyrocketed. (See "The Battle for Bandwidth," October 1999, p. 54.)

In fact, according to the Commerce Department, US wireless use, measured in minutes, is increasing 75 percent each year. Consequently, Commerce Department officials said they developed a plan, called the 3rd Generation Viability Assessment, that reallocates bandwidth without jeopardizing DOD missions. DOD officials agreed with their assessment.

The transfer of these frequencies, all in the 1710–1755 MHz range, will not impair DOD missions, said Steven Price, deputy assistant secretary of defense for spectrum, space, sensors, and command, control, and communications policy. However, he said the move will require some changes to certain military systems.

Price also emphasized that, under the 3G plan, the Pentagon will have access to more bandwidth, if needed.

DOD has until December 2008 to relocate its affected systems to other bandwidths.

Say Good-bye to Mystery Meat

Combat rations have gone upscale, according to Gerry Darsch, the Pentagon's director of combat feeding.

Old standbys such as chicken à la king have been eliminated. New Meals Ready to Eat include Yankee pot roast with vegetables, Thai chicken, seafood jambalaya, and beef enchiladas.

Darsch said his program has a new philosophy: warrior selected; warrior

Tanker Wars Continue

Dueling continues on the issue of how to address the problem of USAF's aging aerial refueling aircraft. Key lawmakers are poles apart, as are Administration officials.

On Aug. 8, Rep. Norman D. Dicks (D–Wash.) sent a letter to Office of Management and Budget head Mitchell E. Daniels Jr., taking exception to OMB's position against leasing Boeing 767 aircraft to be used as tankers. He said OMB had concerned itself more with accounting technicalities than the real issue.

"I believe that the fundamental issue is that the Administration's unrealistically low defense procurement budgets have precluded the services from addressing urgent requirements such as tanker replacements," wrote Dicks.

OMB, as well as the Congressional Budget Office, concluded that the cost of leasing 767s modified as tankers would be higher than buying new aircraft outright. The OMB even suggested that the Air Force should simply re-engine its older tankers. (See "Aerospace World: The Washington Tanker Wars," July, p. 15.)

Daniels at OMB also told Dicks that the Air Force has not formally identified new tankers as a priority.

To that, Dicks replied, "The budget topline for military procurement has been set so low that the actual picture of what the services require is seriously distorted."

For their part, Air Force leaders have repeatedly said since surfacing the lease proposal last fall that they would prefer to buy new tankers outright if the budget permitted that option.

Service leaders also said that they realized last year, shortly after Operations Enduring Freedom and Noble Eagle started, that the 43-year-old tankers would not last as long as they had expected. And re-engining the aircraft would do nothing to solve the airframe corrosion and fatigue-crack problems.

Air Force Secretary James G. Roche told Congress earlier this year that the KC-135s are costing the service more than it can afford to maintain. "Something is wrong if one-fifth of our 135 fleet has to be in major depot at any one time."

On the opposite side of the issue, Sen. John McCain (R–Ariz.) wrote on July 30 to both OMB's Daniels and Defense Secretary Donald H. Rumsfeld, "I am concerned that the impact of these provisions has not been adequately scrutinized and the full cost to taxpayers has not been sufficiently considered."

Roche has stated repeatedly that the Air Force would not undertake a lease arrangement for the 767s unless it made good business sense.

The Secretary's Plan A for tankers is to work a new-tanker purchase into the Fiscal 2004 budget. Plan B is to lease, but the Air Force is examining all options, including replacing some engines and contracting for commercial aerial refueling services.

The bottom line, say USAF officials, is that the service cannot wait until the budget for 2008, which was its pre–war on terror forecast date for buying new tankers, to find a solution for its aging tanker fleet problem.

tested; warrior approved. For example, he said that approach led to development of a pocket sandwich, which was on the warfighters' top 10 wish list for MREs.

Simple? Not really. The sandwich could not be frozen like most grocery store pocket sandwiches. Darsch got his best food specialists to develop a pocket sandwich that tastes like one that goes from freezer to microwave, but instead of being frozen, has a room-temperature shelf life of three years. The first three developed were pepperoni, Italian, and barbecued chicken. They are working on a barbecued beef pocket and a cheese and bacon breakfast croissant.

The pocket sandwich is the foundation for the new First Strike Ration, said Darsch. The FSR, designed for the first 96 hours of a conflict, weighs 53 percent less than three MREs, which weigh 4.5 pounds.

General Jumper's Reading List

Gen. John P. Jumper, Air Force Chief of Staff, released a new reading list for the force on July 22. The single list of recommended books is intended for all members, whether officer, enlisted, or civilian, unlike the rank-tiered list that had been in use since 1996.

His rationale for making it rank neutral: "It's useful for the generals to know what the young troops are reading and vice versa."

Jumper said he intends to make it "a dynamic list with additions and substitutions from time to time" so it will remain relevant in "our constantly changing times and challenges."

He also said the list was "a manageable size"—14 books—and encouraged members to read further on their own. The Jumper list of 14 books is broken into four categories:

Category I: History of the Air Force from its beginning through its major transformations as an institution

The Wild Blue: The Men and Boys Who Flew the B-24s Over Germany by Stephen Ambrose

Beyond the Wild Blue: A History of the United States Air Force, 1947–1997 by Walter J. Boyne

The Transformation of American Air Power by Benjamin S. Lambeth

Winged Victory: The Army Air Forces in World War II by Geoffrey Perret

George C. Marshall: Organizer of Victory, 1943–1945 by Forrest C. Pogue

Category II: Insight into ongoing conflicts and the frictions that can produce conflicts in the future

Bin Laden: The Man Who Declared War on America by Yossef Bodansky

The Clash of Civilizations and the Remaking of World Order by Samuel P. Huntington

War at the Top of the World: The Struggle for Afghanistan, Kashmir, and Tibet by Eric S. Margolis

Tournament of Shadows: The Great Game and the Race for Empire in Central Asia by Karl E. Meyer and Shareen Blair Brysac

The Prize: The Epic Quest for Oil, Money, and Power by Daniel Yergin

Category III: Organization, leadership, and success stories holding lessons for the present and future

The Five Pillars of TQM (Guidelines for Organizational Greatness) by Bill Creech

American Generalship: Character Is Everything: The Art of Command by Edgar F. Puryear

Category IV: Lessons emerging from recent conflicts—and the preparation for them

Every Man a Tiger by Tom Clancy with Chuck Horner

Prodigal Soldiers by James Kitfield

For a brief summary of each selection: www.af.mil/lib/csafbook/index.shtml.

AFMC Extends YES

Air Force Materiel Command has extended its Year of the Engineer and Scientist initiative through 2003, command officials announced Aug. 2. They say it's too early to forecast results from the first year, but they want to ensure there is continued emphasis on the shortage of scientists and engineers in the Air Force.

The service has 13,300 military and civilian scientist and engineer authorizations. It is currently short of that number by some 2,700, or 20 percent. Within AFMC, which employs most of USAF's scientists and engineers, up to 70 percent of its entire civilian workforce will be retirement eligible within the next five to seven years.

The problem stems from the military drawdown and civilian hiring freezes of the 1990s. In the civilian workforce, that left a disproportionate age distribution.

To focus attention on the issue, AFMC started the YES initiative, which focuses on three areas: training and development, workforce size and mix, and motivation.

"We're currently working initiatives and legislation in all these areas," said James Papa, AFMC engineering and technical management director. Without a turnaround in the situation, though, Papa said the service is "going to be taking on more and more risk of our development programs failing without proper oversight from our own organic workforce."

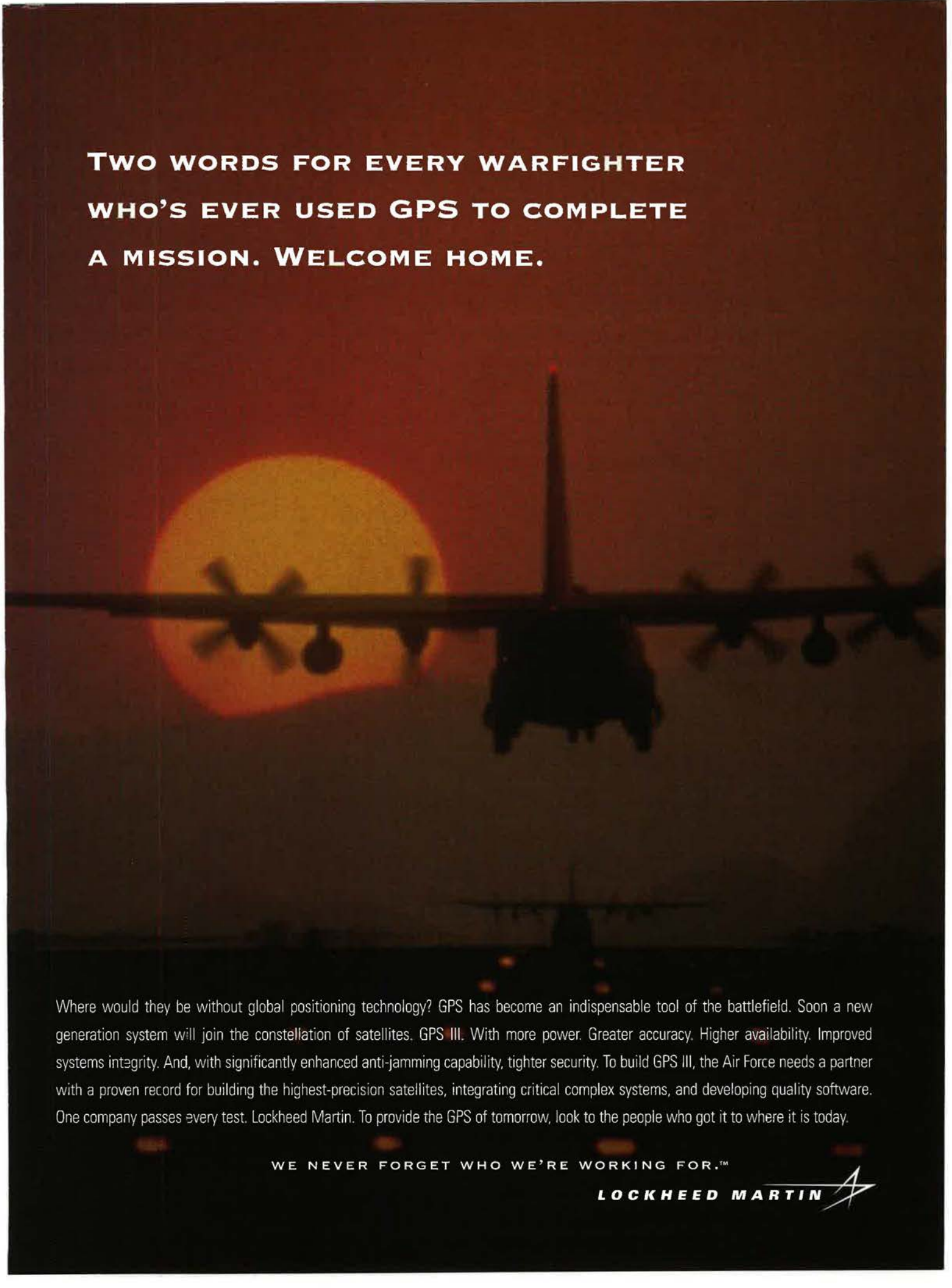
White House Creates Global Image Office

President Bush plans to have a permanent Office of Global Communications set up by this fall. The office will coordinate and promote the Administration's foreign policy message and the US image abroad.

The office was initially established months ago as a temporary measure to rebut erroneous Taliban reports about the war in Afghanistan.

White House spokesman Ari Fleischer said the new office will work "very closely" with the State Department's Office of Public Diplomacy, but he emphasized it would not supplant State as the lead in public diplomacy around the world.

Depending on the issue, Fleischer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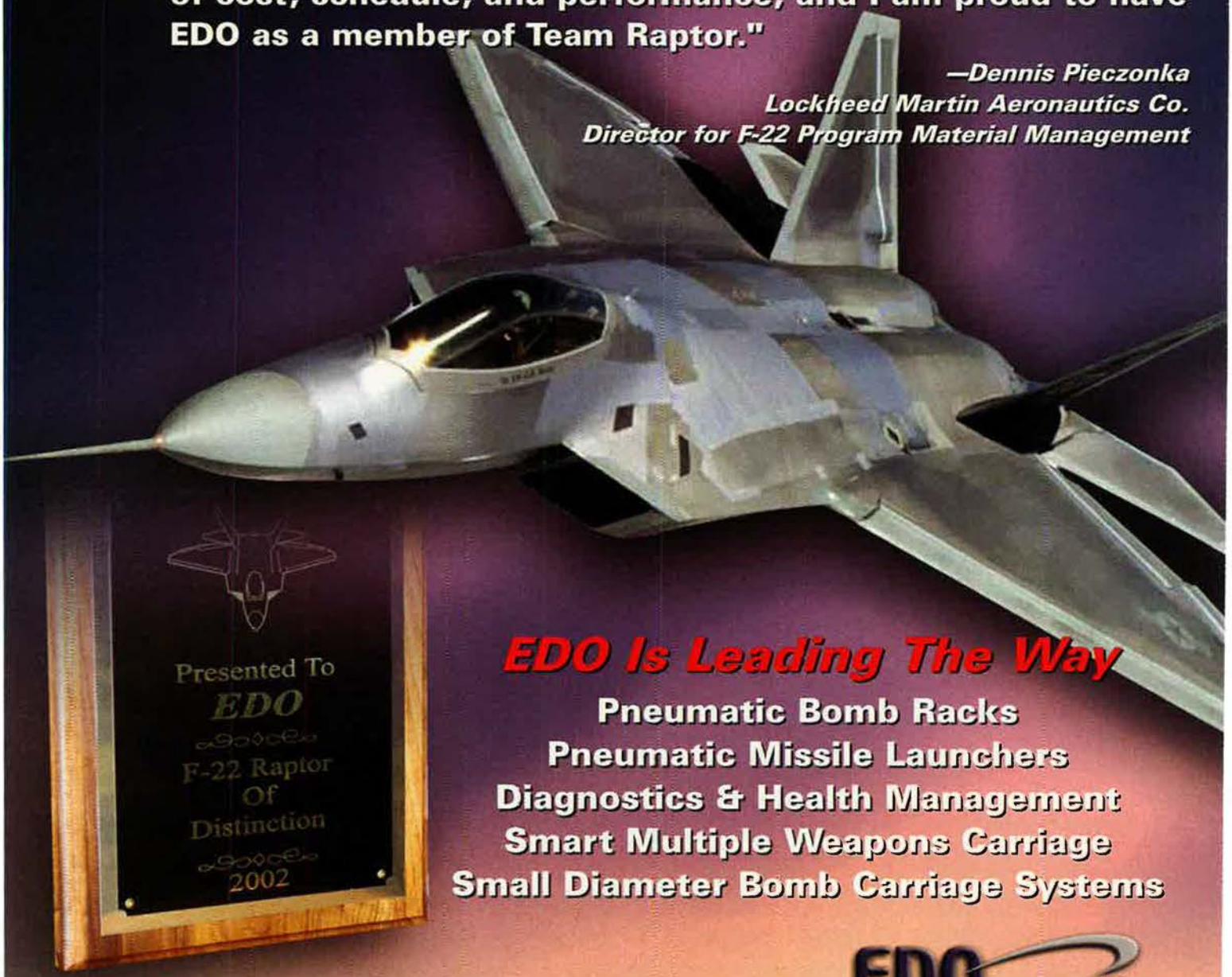

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said, the Global Communications Office will work with different agencies "to share the truth about America and American values with other nations in the world."

C-130s To Get LAIRCM System

On Aug. 9 Northrop Grumman announced it had received a contract to equip Air Mobility Command C-130s with the company's Large Aircraft Infrared Countermeasures System to protect the transports from heat-seeking missiles.

The two-year LAIRCM development contract includes production options for installation of the system on seven C-130s.

LAIRCM is a laser-based version of Northrop Grumman's lamp-based Directional Infrared Countermeasures System. The company has been installing DIRCM, called Nemesis, on 59 US Special Operations Command C-130s.

USAF Launches City–Base

The Air Force joined with the city of San Antonio July 22 to launch the Brooks City–Base, a new concept in reducing federal government infrastructure costs.

The venture, which USAF officials said is the first of its kind, makes Air Force units tenants on land the service used to own—Brooks AFB, Tex. The base and its facilities will now be maintained by San Antonio.

Gen. Lester L. Lyles, commander of Air Force Materiel Command, passed ceremonial keys to San Antonio Mayor Ed Garza and Brooks Development Authority Chairman Howard Peak to mark the transfer of property. The authority is now the new owner.

Brooks is expected to become a technology and business center that will attract major revenue-producing operations, such as a proposed federal vaccine facility.

AFMC's 311th Human Systems Wing, now the major tenant, conducts leading edge research to integrate the human element into warfighting systems.

Reserve Health Benefits Improve

The Air Force announced July 26 a change that improves transitional health care benefits for Air National Guard and Air Force Reserve Command personnel mobilized for the war on terror.

Personnel with more than six years total active federal service and who were mobilized for more than 30 days now are eligible for 120 days of health care following their mobilization. The change is retroactive to Jan. 1, 2002.

USAF photo

The Airborne Laser, an extensively modified Boeing 747-400F, takes off July 21 from McConnell AFB, Kan., for its first flight. The aircraft flew over western Kansas for one hour and 22 minutes. After getting a regulation paint job, the aircraft will go to Edwards AFB, Calif., where the laser will be installed. The YAL-1A will be the first directed-energy combat aircraft.

Senior Staff Changes

RETIREMENTS: Maj. Gen. Everett G. **Odgers,** Maj. Gen. Gerald F. **Perryman Jr.,** Maj. Gen. Charles J. **Wax.**

NOMINATIONS: To be **Major General:** Peter U. **Sutton.** To be **Brigadier General:** Mark R. **Zamzow.**

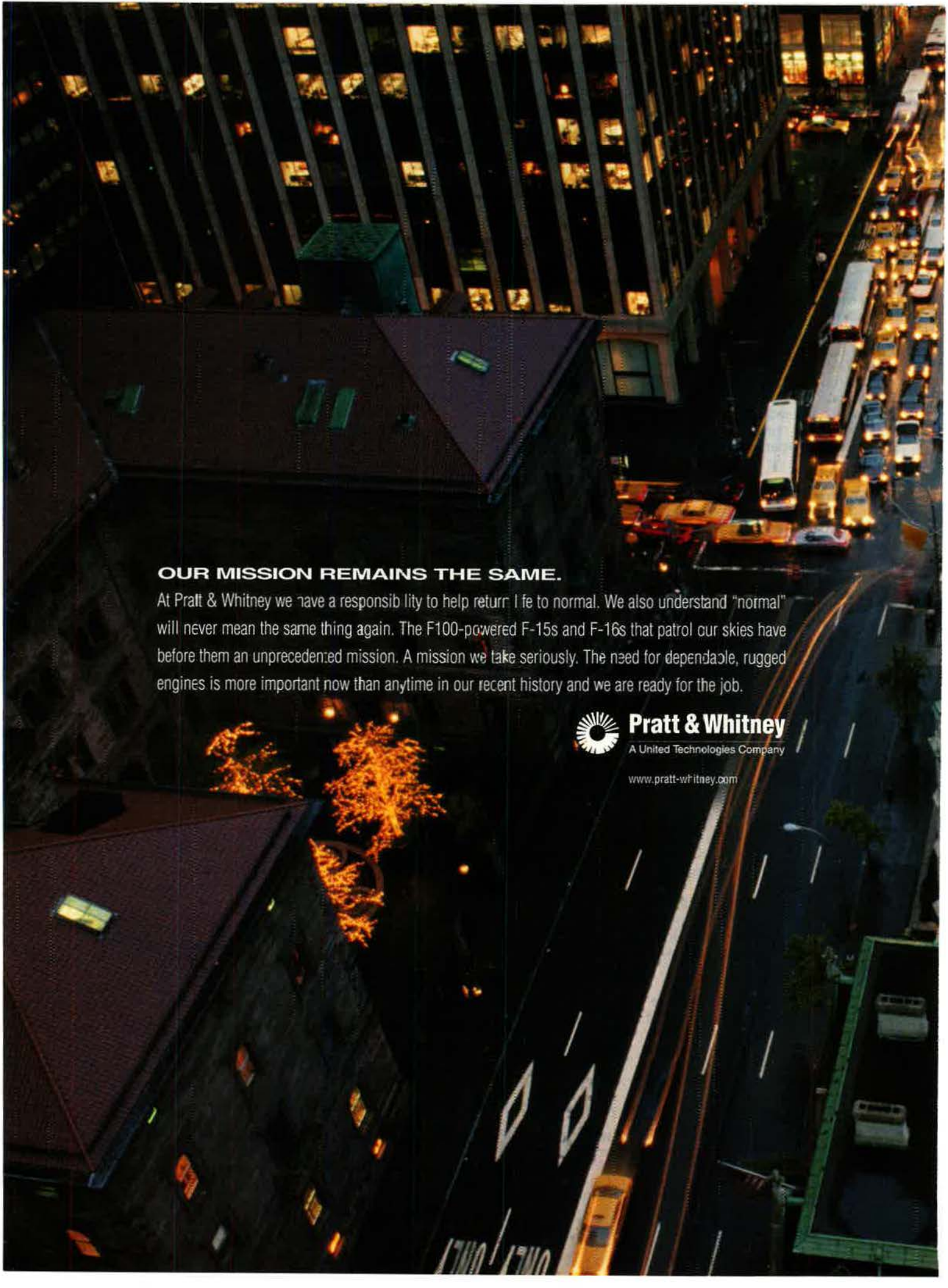
PROMOTIONS: To **Lieutenant General:** Robert R. **Dierker.** To **Brigadier General:** Charles J. **Dunlap Jr.,** Michael N. **Madrid.**

CHANGES: Brig. Gen. William P. **Ard,** from Dir., Manpower & Orgn., DCS, P&P, USAF, Pentagon, to Dir., Manpower & Orgn., DCS, Personnel, USAF, Pentagon ... Brig. Gen. Bradley S. **Baker,** from Dep. Dir., Strat. Planning, DCS, P&P, USAF, Pentagon, to Cmdr., 60th AMW, AMC, Travis AFB, Calif. ... Lt. Gen. Robert R. **Dierker,** from Asst. C/S, Ops. Div., SHAPE, NATO, Casteau, Belgium, to Dep. Cmdr., PACOM, Camp H.M. Smith, Hawaii ... Brig. Gen. Dan R. **Goodrich,** from Spec. Asst., DCS, Warfighting Integration, USAF, Pentagon, to Dir., C⁴ISR Integration, DCS, Warfighting Integration, USAF, Pentagon ... Maj. Gen. (sel.) Donald J. **Hoffman,** from Cmdr., 31st FW and 31st AEW, Aviano AB, Italy, to Spec. Asst. to Cmdr., ACC, Langley AFB, Va. ... Brig. Gen. (sel.) Richard Y. **Newton III,** from Dep. Dir., Developing Aerospace Leaders Prgm. Office, DCS, Personnel, USAF, Pentagon, to Dir., Mil. Personnel Data Sys. Prgm. Mgmt. Office, DCS, Personnel, USAF, Pentagon ... Brig. Gen. (sel.) Eric J. **Rosborg,** from Cmdr., 47th FTW, AETC, Laughlin AFB, Tex., to Cmdr., 4th FW, ACC, Seymour Johnson AFB, N.C. ... Maj. Gen. John M. **Speigel,** from Dir., Personnel Force Mgmt., DCS, Personnel, USAF, Pentagon, to Dir., Policy & Prgms., DCS, Personnel, USAF, Pentagon ... Maj. Gen. (sel.) Peter U. **Sutton,** from Dir., Personnel Force Dev., DCS, Personnel, USAF, Pentagon, to Dir., Learning and Force Dev., DCS, Personnel, USAF, Pentagon ... Lt. Gen. Charles F. **Wald,** from DCS, Air & Space Ops., USAF, Pentagon, to Dep. Cmdr., EUCOM, Vaihingen, Germany.

COMMAND CHIEF MASTER SERGEANT CHANGES: CMSgt. Jonathan E. Hake to CCMS, 11th Wing, Bolling AFB, D.C. ... CMSgt. David W. **Popp,** to CCMS, PACAF, Hickam AFB, Hawaii.

SENIOR EXECUTIVE SERVICE RETIREMENT: Robert A. **Frye.**

SES CHANGES: David A. **Franke,** to Dir., Acquisition Excellence, AFMC, Wright–Patterson AFB, Ohio ... William A. **Kelly,** to Dir., Strat. Plans & Future Systems, DCS, Personnel, USAF, Pentagon ... Barbara Jo **White–Olson,** to Associate Dep. Asst. Secy. (Cost & Economics), Office of the Asst. SECAF (Financial Mgmt. & Comptroller), Pentagon. ▪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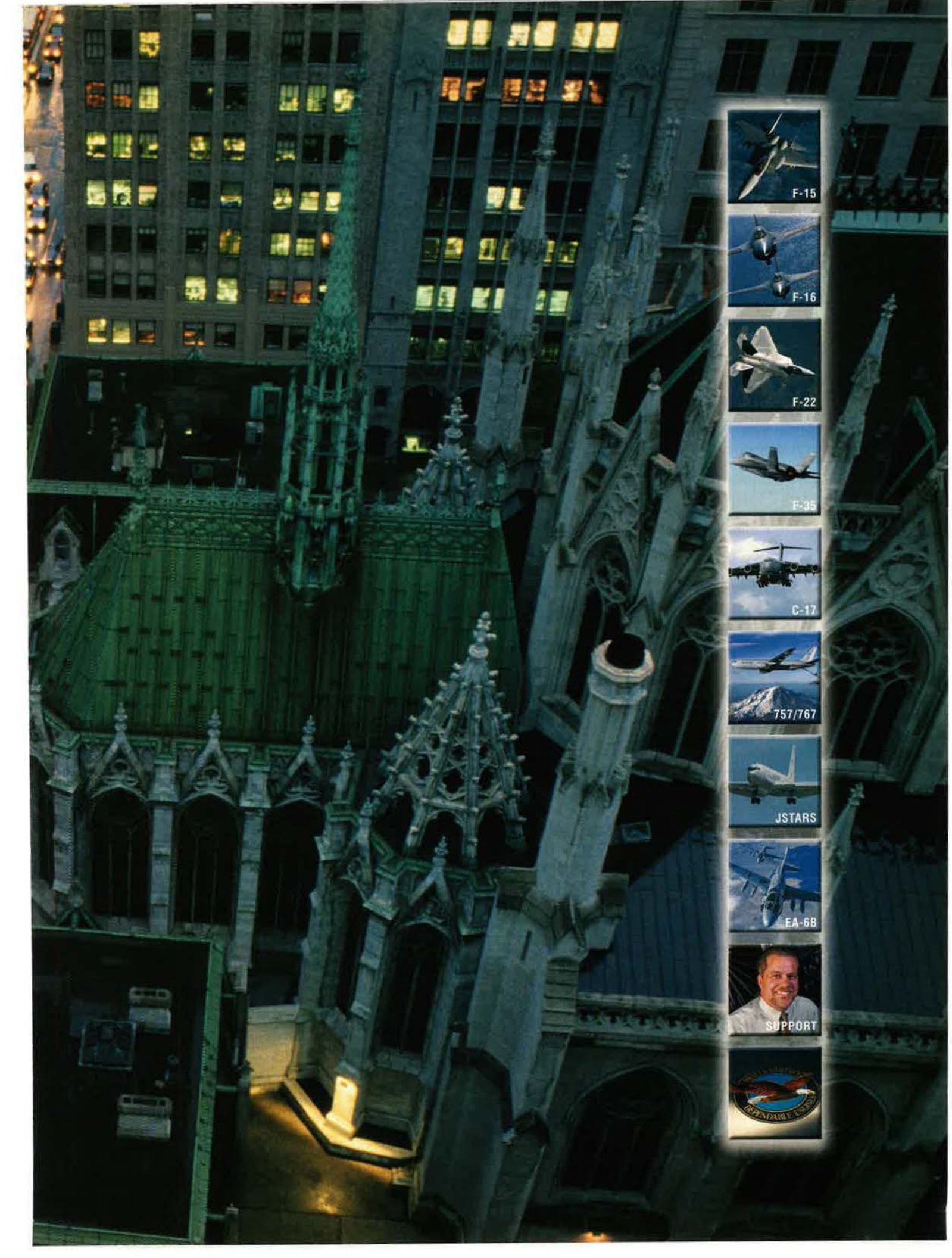
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F-22
F-35
C-17
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SUPPORT

Officials said eligibility is based on information contained in the Defense Enrollment Eligibility Reporting System. Each reservist needs to ensure DEERS information is correct.

"That's paramount because all of your benefits are contingent on the information in DEERS," said Col. Kathleen Woody, DOD's director of reserve affairs medical readiness and programs.

The Defense Manpower Data Center is sending a letter to reservists who are eligible—that is, those whose DEERS data show they supported Operations Enduring Freedom or Noble Eagle.

News Notes

■ An Air Force HH-60 medical evacuation helicopter crashed immediately after takeoff in Afghanistan Aug. 13. The six airmen on board were treated for minor injuries.

■ Boeing announced Aug. 15 it had received a $9.7 billion follow-on procurement contract for an additional 60 C-17 airlifters. Since 1991, Boeing has delivered 89 of the 120 C-17s initially ordered by the Air Force.

■ F-22 test pilot Lt. Col. Chris Short at Edwards AFB, Calif., fired an AIM-9 Sidewinder missile from Raptor 4003 during a test mission July 25. It marked the new fighter's first supersonic missile separation.

■ On July 19, NATO appointed Marine Corps Gen. James L. Jones Jr. to succeed USAF Gen. Joseph W. Ralston as supreme allied commander Europe. President Bush also nominated Jones to succeed Ralston as commander of European Command.

■ The Bush Administration will first send a diplomatic note to Iraq in response to Iraq's offer to let a team search for missing Navy pilot Lt. Cmdr. Michael S. Speicher, according to the *Washington Times.* The intent is to determine Iraq's sincerity, since the search offer came with conditions.

■ The forgotten man—Charles Taylor—of the Wright brothers' historic first powered, manned flight will be honored with a memorial to be built at Wright State University in Dayton, Ohio. Taylor was a design engineer, machinist, and mechanic for the Wrights. The Aviation Maintenance Career Commission worked with the university to develop the memorial. The ground breaking is set for May 24, 2003.

■ The Air Force named MSgt. Steven R. Keck, now assigned to the 364th Training Squadron, Sheppard AFB, Tex., as its top first sergeant for 2002. He was assigned to the 18th Security Forces Squadron, Kadena AB, Japan.

■ Boeing received a $460 million contract in early August to further development of the X-45 Unmanned Combat Air Vehicle, a joint DARPA–Air Force program. The money will go to upgrade the X-45A experimental version that first flew in May.

■ On Aug. 5, the 89th Airlift Wing, Andrews AFB, Md., named the ambulift vehicle, used for loading and unloading handicapped passengers, after Air Force Cross recipient CMSgt. Jon D. Harston.

■ Air Education and Training Command received its first newly modified T-38C, a T-38A equipped with improved avionics and support systems. More than 500 older T-38s will be modified. This first one went to Columbus AFB, Miss.

■ USAF grounded an F-117 stealth fighter pilot who, on July 16, accidently dropped three dummy bombs, one of which crashed into a house in Monahans, Tex. A mother and her two children were home, but no one was injured.

■ USAF selected TSgt. Christopher J. Culbreth, 15th Civil Engineer Squadron, Hickam AFB, Hawaii, for the 2002 American Legion Spirit of Service award.

■ SrA. Raymond L. Crowell, 18th Security Forces Squadron, Kadena AB, Japan, received the 2002 USO and Air Force Sergeants Association Spirit of Hope award.

■ The Air Force grounded its Global Hawk Unmanned Aerial Vehicle in mid–July, pending the outcome of an investigation into the second crash of one of the UAVs in Afghanistan. The new UAV is still under test at Edwards AFB, Calif., although it was rushed into service for Operation Enduring Freedom.

■ Northrop Grumman announced July 23 that it will produce a company-funded Global Hawk advanced technology demonstrator. It plans to use the demonstrator to rapidly prototype and evaluate innovative new

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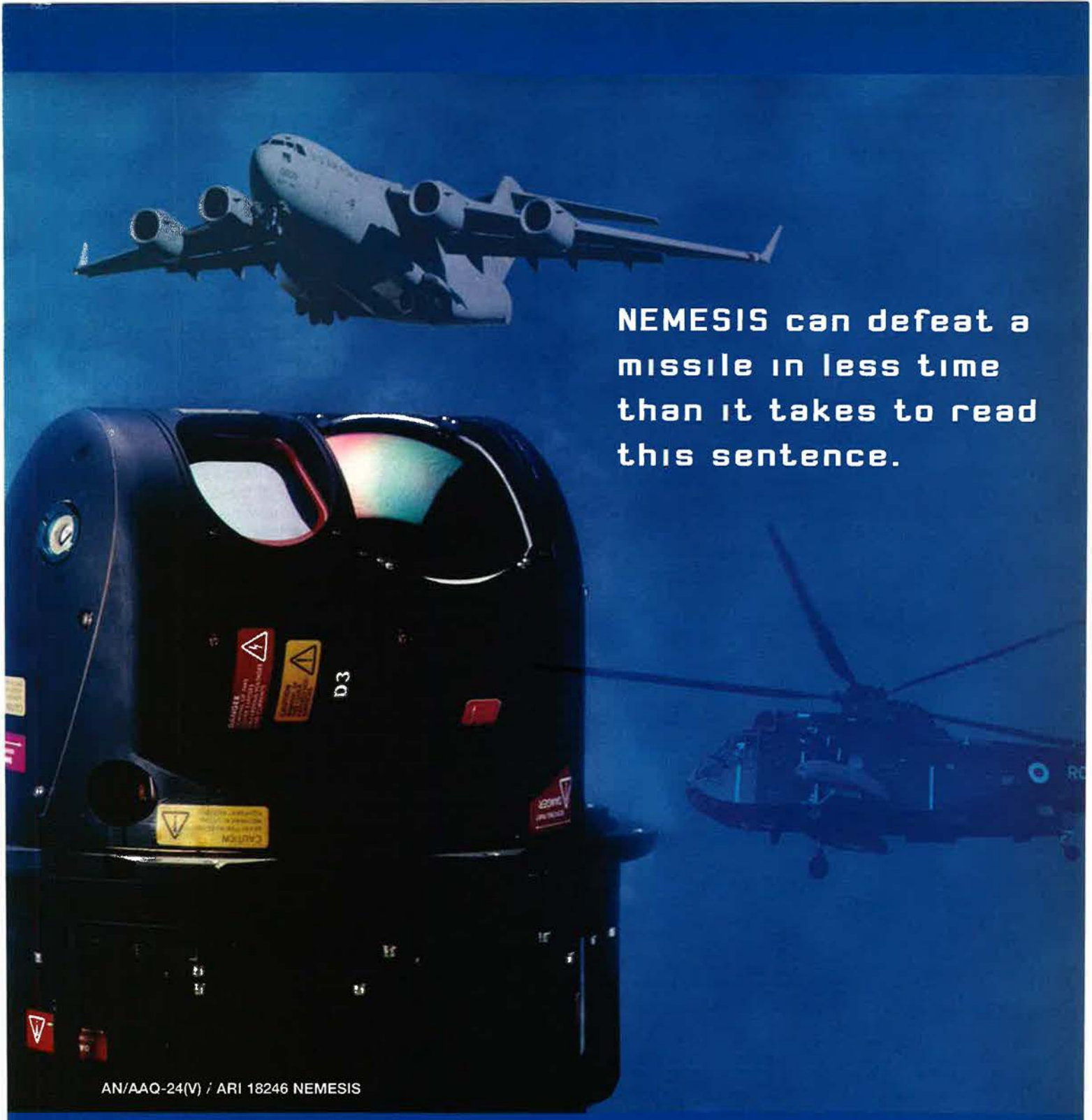

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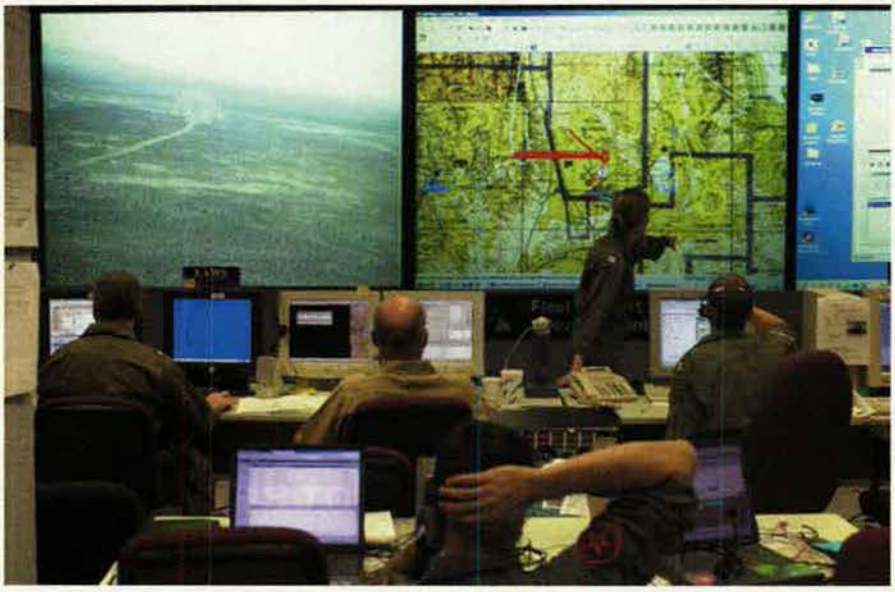


Inside the integrated battlespace arena at Michelson Lab at China Lake, Calif., on July 30 warfighters check screens showing a real-time picture of theater air assets and a live feed from a Predator UAV—all for Millennium Challenge 2002.

capabilities and employment concepts.

■ The Tricare national mail-order pharmacy contractor has changed its name from Merck–Medco to Medco Health.

■ On July 12, Gen. Donald G. Cook approved initial operational capability for the new Joint Primary Aircraft Training System, which includes the T-6A Texan II aircraft. The last piece of the system was the training integration management system, a computer network. Moody AFB, Ga., began operating at full student pilot production capacity in mid–July.

■ On Aug. 8, the Air Force commissioned as a second lieutenant an 18-year-old University of Arizona graduate it dubbed a "girl genius"—Joyce Lippe. At age 15, she began looking for financial assistance to get her through medical school and met Air Force recruiter TSgt. Malcolm Hawkins.

■ Maj. Gen. Paul D. Nielsen, Air Force Research Lab commander, received the 2002 American Institute of Aeronautics and Astronautics Hap Arnold Award for Excellence in Aeronautical Program Management.

■ The Air Force presented its Heroism Award to SSgt. Tyree Bacon, an Air Force Reserve Command firefighter with the 514th Civil Engineer Squadron, McGuire AFB, N.J., for his actions following the Sept. 11 terrorist attacks on the World Trade Center. He is a New York Supreme Court officer in Manhattan in civilian life.

■ Remains believed to be those of 2nd Lt. William Lewis Jr., a World War II P-51 pilot, have been recovered in Germany. Lewis, who was a member of Eighth Air Force's 55th Fighter Group, was shot down Sept. 11, 1944.

■ Lt. Col. Wanda L.P. Smith and 1st Lt. Rojan J. Quarles were among 30 women professionals who received 2002 Women of Color in Government and Defense Awards July 19. Smith is deputy director of resource management at the Defense Threat Reduction Agency, Ft. Belvoir, Va. Quarles is a space surveillance engineer at Kirtland AFB, N.M.

■ The Alaska Air National Guard's 210th Rescue Squadron on July 10 launched an HC-130 with four pararescuemen to assist a critically ill seaman aboard a Panamanian ship about 1,000 miles out at sea. The PJs jumped into the ocean, then boarded the ship. The 210th RS also sent two HH-60 helicopters the next day to pick up the airmen and take the seaman to a hospital.

■ USAF announced July 16 it has a new badge that will recognize commanders. The Air Force command insignia will be awarded to squadron, group, wing, and equivalent organization commanders in the ranks of major through colonel.

■ According to a July 30 DOD release, the Pentagon estimates that some 31,000 legal resident aliens are serving in the US military. Following a Presidential executive order, those aliens no longer have a mandatory wait period before they can apply for US citizenship. ■

Housing Privatization Moves Forward

Last year, the Bush Administration moved the deadline for revitalizing DOD's substandard housing from 2010 to 2007. The Air Force has about 46,000 houses, or nearly half of its total of 103,000, that must be revitalized or rebuilt within that timeline.

Faced with such a massive housing upgrade, the Air Force turned to privatization to speed the process.

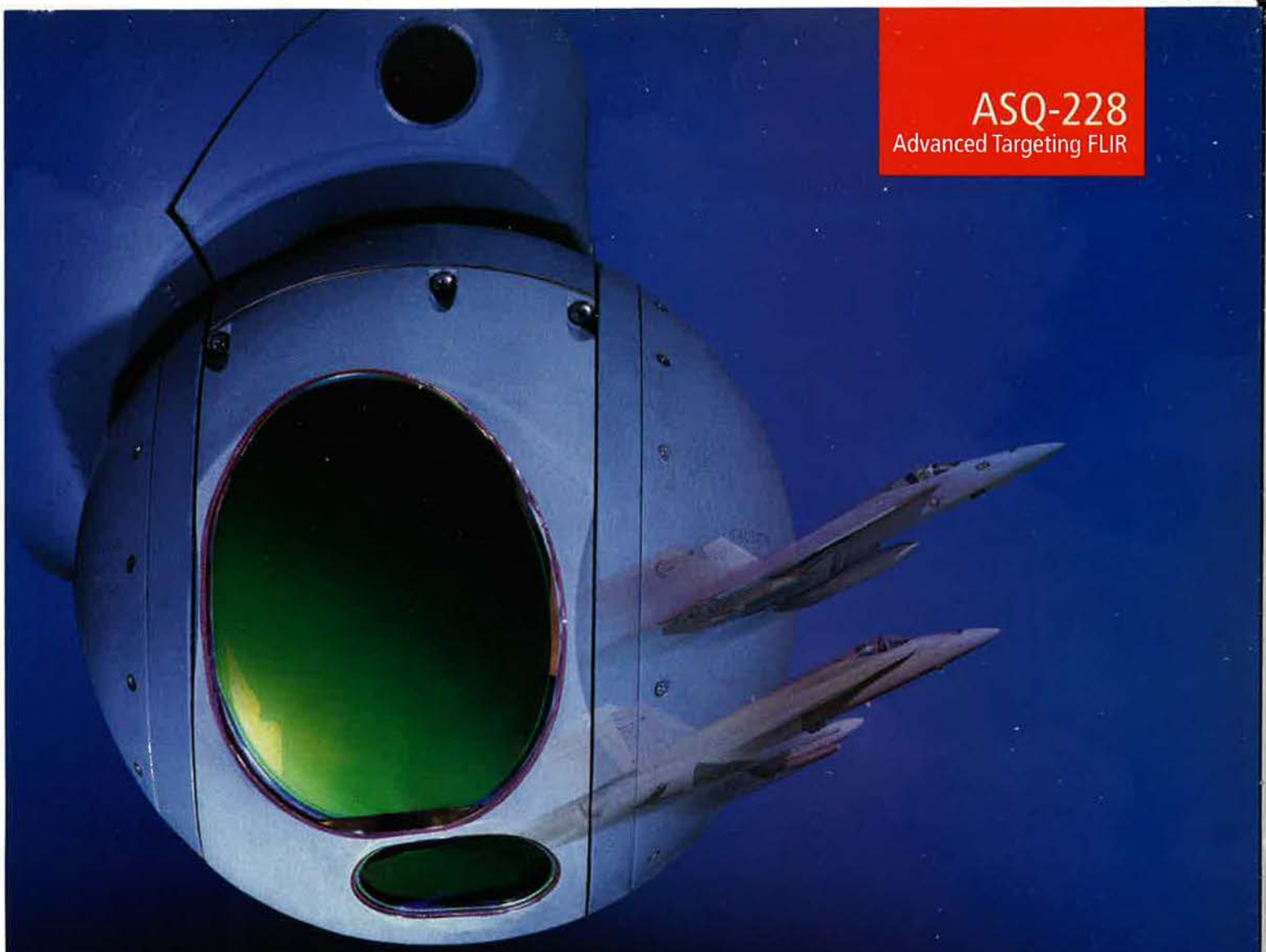
It basically came down to a money issue, said Binks Franklin, chief of Air Force housing program management. "We can't secure $100 million to $150 million to redo the housing at each base," he said.

Consequently, the Air Force decided to look to private developers. The service has awarded housing privatization contracts at four locations—Lackland and Dyess AFBs, Tex., Robins AFB, Ga., and Elmendorf AFB, Alaska. The contracts cover a total of 2,320 units.

The private developers agree to revitalize or rebuild the houses; in turn they get ownership for 50 years. The developers are paid monthly rent equivalent to each occupant's basic allowance for housing.

Air Force officials said privatization revitalizes housing more quickly and less expensively than the service could manage by traditional methods. "At Lackland, it would have taken $50 million," said Col. Jim Holland, chief of Air Force housing. "Using privatization, it cost us $6.8 million, so we wound up saving more than $43 million instantaneously."

The service is working on contracts for another 6,134 houses at Kirtland AFB, N.M., Little Rock AFB, Ark., Hickam AFB, Hawaii, Patrick AFB, Fla., and Wright–Patterson AFB, Ohio. Concept development is under way for 6,049 units at Altus AFB, Okla., Dover AFB, Del., Hill AFB, Utah, Lackland AFB, Tex., and Offutt AFB, Neb. Another 13,827 houses at 15 bases will enter the process before Fiscal 2004.



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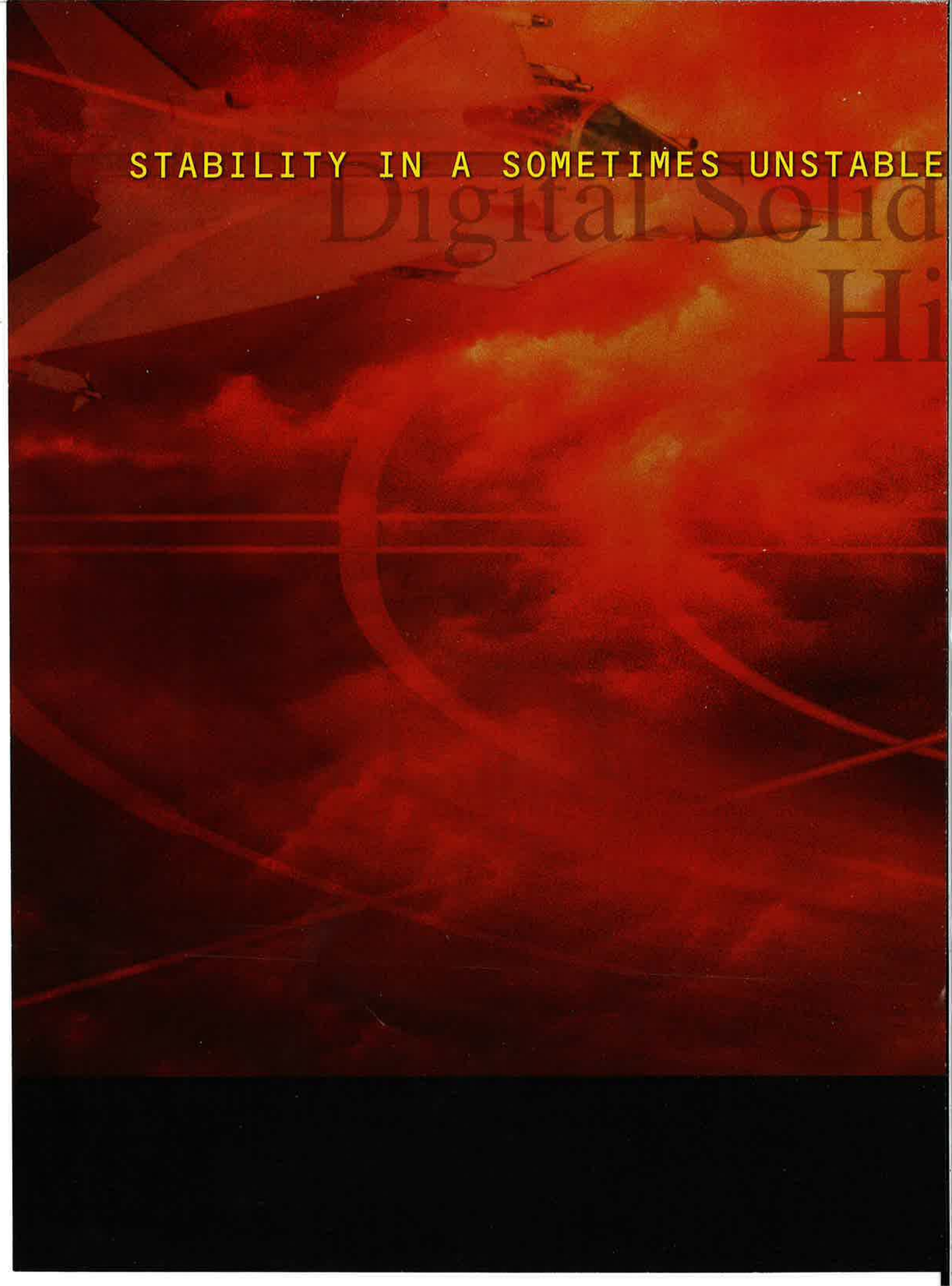
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The F-22 On the

By John A. Tirpak, Executive Editor

LAST spring, Defense Secretary Donald H. Rumsfeld set September as the month in which he would take up the issue of the F-22 fighter. His plans called for him to review whether the Air Force still had a solid need for the stealthy airplane, ought to increase or decrease the planned purchase of 339 aircraft, and should consider developing variants for other missions.

Rumsfeld already said he expected the F-22 to see squadron service. The real issue, he pointed out, was how many of the new fighters actually are needed. Rumsfeld reportedly told members of the Pentagon leadership that he hoped to use this review to finally settle the numbers issue, which was at the heart of the long-running F-22 debate.

A senior Air Force team prepared all summer to present the service's best F-22 arguments to Undersecretary of De-

Line

Lockheed Martin photo by Judson Brohmer

fense Edward C. Aldridge, DOD's acquisition chief. Aldridge, in turn, was to brief Rumsfeld in time for the Pentagon leader to consider all of the material before making any final decisions about the Fiscal 2004 budget in the fall.

Rumsfeld set the F-22 review in motion in May with the classified Defense Planning Guidance, a document that gives the military services a set of priorities to follow in crafting the budget for the coming fiscal year (that is, 2004). Rumsfeld directed the Air Force to consider whether it still needs all 339 planned F-22s; the impact on operations of buying only 180 of the fighters; the benefits of buying more than 339 aircraft; and the possibilities inherent in a long-range strike variant, tentatively called the FB-22. He sought a range of options.

Lockheed Martin photo by Kevin Robertson

F-22 testing has produced few surprises. Some have been pleasant: The aircraft has proved stealthier than originally expected. Software has always been a challenge and has slowed flight test, but the pace is stepping up.

Under the Gun

Other major systems will be reviewed, too. The Army must again justify its Comanche scout and attack helicopter and indirect fire systems. The Navy must verify its need for both a next-generation aircraft carrier and V-22 tilt-rotor transport, and the Air Force must explain why it should pursue a space based radar system. The Army's Crusader artillery system, also to have been reviewed, has already been canceled.

"We welcome this opportunity to make the case for the F-22," Air Force Secretary James G. Roche said at the time the study was launched. "We believe we have a good case to make."

Pentagon officials made it clear that the review is a tightening not only of operational concepts but also of the DOD purse strings. Rumsfeld wants to find a way to free $10 billion to $12 billion to pay for new transformational technologies and systems, the war against terrorism, and unexpected needs.

The Air Force says it regards Rumsfeld's attention to the program as an opportunity to restore to the program aircraft cut by previous administrations. It also hopes to flesh out the Aerospace Expeditionary Force structure, which seeks to provide 10 equal packages of airpower for the ever-increasing demands of nonstop overseas contingencies.

In addition to ordering the system reviews, the DPG increased the responsibilities of all the services. The Pentagon added the East Asian littoral to its previous list of "critical areas" (Europe, Northeast Asia, and Southwest Asia) in which there is a demand for US forward presence. The Defense Department is also said to be considering adding a fifth critical area—the Indian Ocean littoral stretching as far south as Madagascar.

Greater geographic responsibilities suggest that the US military will need more people and equipment. In covering today's requirements, the existing force already is stretched to the breaking point.

The Air Force case for more F-22s rests on three separate but interrelated facts.

First, the current fleet of F-15 air superiority fighters simply is wearing out and must be replaced. Second, the Air Force requires a transformational aircraft, one that is capable of surviving modern air defenses and defeating any new-generation adversary fighter. Third, the Air Force must have enough F-22s to go around. It cannot afford to create another low-density, high-demand system.

Lockheed Martin photo by Derk Blanset

Onboard diagnostics will help reduce the number of people and amount of gear needed to deploy the F-22 in the field. The Raptor will not need kid-glove handling: Its stealth surfaces are designed to be maintained on the ramp.

"We're taking a very thorough approach," said Maj. Gen. Daniel P. Leaf, USAF director of operational requirements and one of four senior officers heading the Air Force's F-22 presentation for the DPG review.

Joining Leaf in the review are Maj. Gen. Ronald J. Bath, USAF director of strategic planning; Maj. Gen. John D.W. Corley, USAF director of global power programs; and Maj. Gen. David A. Deptula, Air Combat Command director of plans and programs. Leaf commanded a combat expeditionary air wing in Operation Allied Force. Corley led the lessons-learned analysis following that conflict. Deptula helped develop the concept of parallel warfare and headed last year's Quadrennial Defense Review effort for USAF. Bath was Deptula's deputy in that effort.

Lockheed Martin photo

An F-15 forms up with its F-22 successor. In the 30 years since the introduction of the F-15, aeronautical science has come up with stealth, supercruise, and sensor fusion—all embodied in the F-22.

Gaining Access

Leaf said that the Air Force, when it makes presentations to Aldridge and Rumsfeld, will highlight the service's new Global Strike Task Force concept of operations, which casts the F-22 in a starring role. The GSTF calls for rapidly hitting anti-access targets such as advanced air defense systems, ballistic missile launch sites, weapons of mass destruction, and other capabilities that could threaten US allies in the region or prevent the US from entering the area in force.

The F-22, because of its all-aspect stealth and ability to cruise at supersonic speeds without afterburner, can rapidly strike such targets without first needing to roll back enemy air defenses, Leaf said. Such a capability will be crucial in holding together future political coalitions and securing allied support in a given region.

No other aircraft will be able to get past intense air defense systems and advanced fighters alike on Day 1 of a future war, Leaf said. No target will be inaccessible to the F-22, and its speed and stealth confront the enemy with an "unsolvable problem," he added.

Rumsfeld's key advisors emphasized that, in determining service funding levels, innovative concepts of operation will be given a degree of consideration equal to or even greater than the introduction of some remarkable new technology.

Leaf observed that the current planned total buy of 339 F-22s is a budget-driven number, arrived at in the 1997 QDR carried out during the Clinton Administration.

"It's been reduced over the years due to ... fiscal constraints," Leaf said. Planned production, which started at 750 in the late 1980s, has, over time, slipped to 648, then 438, and then 339. The cutbacks were initially justified as a response to the demise of the Soviet Union but have proven more troublesome as the tempo of Air Force operations has only gained momentum in the ensuing decade.

"We know that if we wanted to have a full F-22 squadron in each of 10 Air Expeditionary Forces ... that would take somewhere around 380," Leaf said.

He explained the number this way: The 10 squadrons of 24 aircraft would add up to 240 fighters. Another 140 F-22s would be needed to maintain a schoolhouse for F-22 pilots, to accommodate aircraft in depot maintenance and test, and to have some spares for attrition.

"If we wanted to get the capability of two [squadrons] per AEF, that would take ... somewhere in the vicinity of 750," he asserted.

However, Leaf observed that "fiscal constraints are real constraints, too. That's why we're trying to do better math and analysis."

That analysis will try to arrive at a sensible number based on many factors. Those include the desire to equally equip all 10 AEFs, the superiority of the F-22's capabilities when compared to the F-15 it replaces, new concepts of operations, new air-to-air and surface-to-air threats, and the desire to maintain the fighter force at a reasonably low average age.

Fighting Old Age

A senior Air Force official noted that the service would like to get the average age of the fighter inventory back to the old benchmark of 12 years. The current average age of about 20 years is requiring an inordinate amount of funds for maintenance, repair, and spare parts, while also hurting mission capability.

Getting to that average age will be difficult. Assume that the Air Force buys about 110 of the new F-35 Joint Strike Fighters every year starting in 2010. It would have to buy 762 F-22s before that year if it is to get the fleet average age to 12.2 years by 2020. A buy of 339 F-22s would only get the fighter fleet average age to 17.9 years. When the introduction of F-35s ends, average age would again start to climb.

Deptula noted that the 1997 QDR conceded that an expanded buy of "two wings' worth of F-22s ought to be in the offering" to replace the F-117 and F-15E attack aircraft when they age out of the force around 2020. That would translate to about 180 more F-22s on top of the bare-bones 339 force now in view.

The F-22's speed in attacking

Artist's concept by Erik Simonsen

The Air Force is considering a bomber variant of the F-22, called the FB-22. It would have much larger wings and a vastly increased ground-attack payload, while retaining the stealth, speed, and avionics of the Raptor. Lockheed Martin believes the two types could be 80 percent common, slashing development costs.

ground targets—at first with the 1,000-pound Joint Direct Attack Munition and later with the equally powerful 250-pound Small Diameter Bomb—is what makes it of prime interest to the Air Force now, according to Gen. John P. Jumper, USAF Chief of Staff.

Speaking with reporters in Washington, D.C., in May, Jumper said, "The air-to-air piece is probably less than half of what we are going to count on the F-22 to do." Its main mission will be striking those anti-access threats that would otherwise keep the US military at bay. When the Small Diameter Bomb comes along, the expectation is that F-22 will be able to carry eight of them, allowing it to accomplish the same destruction on one sortie as four F-117s during the 1991 Gulf War—but at far greater speed.

The F-22's supercruise capability has not been given the respect it deserves and is not well-understood, Deptula observed. Far from being a flashy stunt, the new capability allows the F-22 to respond as fast as a current fighter but from distances much farther away from a target.

This feature will allow F-22s to be stationed beyond the range of enemy ballistic missiles in the opening days of a future conflict. When positioned closer to the enemy, the F-22 will dramatically "shrink adversary threat envelopes," meaning that its stealth and speed will give enemy air defenses too short a time to detect it, track it, and fire at it, Deptula observed.

"That's what supercruise gives you," he said.

Greater Demands

The 339 F-22 benchmark figure was based not only on a desire for defense savings but also on the two–Major Theater War force-sizing concept. The two–MTW concept has been abandoned by the Bush Administration, which replaced it with a more complex formula requiring the military to deal a decisive defeat to two enemies at once, preserving the option to force a regime change, or occupation, of one of them.

In many ways, this new capabilities-based strategy is more demanding than the old strategy, suggesting again that a larger fleet is required to meet the mission.

In developing the Air Force's contribution to QDR 2001, Deptula said, he tried hard to get the Pentagon to stop thinking in terms of wings of F-22s. Because the Air Force several years ago restructured itself into an expeditionary force of 10 AEFs, the term is really no longer a useful way to think about how aircraft deploy for war and peacetime contingencies.

Instead, Deptula argued that F-22s should be considered in terms of numbers required per AEF.

One-to-one replacement with F-22s of today's F-15C, F-15E, and F-117 fighters would lead to the need for 2.5 squadrons of F-22s per AEF, Deptula calculated. However, he added, a force of 339 F-22s would provide only nine-tenths of a squadron per AEF. It would take 762 Raptors to provide two squadrons per AEF. To get to the desired 2.5 squadrons per AEF, said Deptula, the Air Force would need 953 of the new fighters.

That's where what Leaf calls "three-dimensional math" comes in.

"We know we need some number of airplanes just to fill out the rotational base [of the AEFs]," Leaf said, "but it's not just that. You need some number of airplanes, in certain scenarios, to fill out the combat air patrol, the number you have to have airborne, just to have presence and a persistence." He means that these aircraft would not at that particular time be available for ground attack.

USAF has not yet been able to quantify, for force-sizing purposes, exactly "how much better" the F-22 is when compared to the F-15 it replaces, Leaf noted. Such knowledge will not be available until the service has experience with actual operations. It's therefore premature to try to develop a formula on how many F-15s equals one F-22, Leaf explained, even though the analysis that goes to Rumsfeld will attempt to answer some of those questions.

"Nonstarter"

A buy of only 180 F-22s—leaving what some call a "silver bullet" force—would impose what one senior USAF official called an "unacceptable operating tempo" on both the aircraft and the pilots who fly them.

"They [the pilots] will vote with their feet when they find they are in the box to be deployed more than six

months of every year," the official said. Moreover, he noted, "the airplanes will be breaking left and right because we will just be flying the wings off of them." If the pattern of deployments established over the last decade is indeed a new norm, he went on, then a level of 180 F-22s "is a nonstarter."

Jumper, in a letter to the troops published in July, said, "One aspect of the post–September environment is the reality that we are no longer experiencing surge operations; rather, we are faced with a new, higher standard of operations tempo. And while our operational rhythm will fluctuate with world events, it is unlikely we will return to a pre–September level."

Jumper urged the troops to remain flexible in the months to come as the ramifications of the new level of operations is sorted out.

The DPG guidance also asked the Air Force to consider the possibilities of a variant of the F-22 that might be called the FB-22—a dedicated attack platform that would capitalize on the F-22's speed, stealth, and maturity of design to deliver a greater number of bombs over greater distances without resorting to a costly new development program.

The instruction had more to do with the Pentagon's new emphasis on long-range strike capabilities than it did with the F-22 per se, one defense official said. The Pentagon has been pressured to buy more B-2 bombers or a follow-on system, which is considered a financially prohibitive move. DOD, therefore, is now looking at other measures that could expand US long-range strike capabilities until a new generation of technologies—possibly hypersonics—comes along in 2010 or so.

The FB-22 is an "internally funded study of ... the growth possibilities of the F-22," said Bob Rearden, F-22 program office general manager at Lockheed Martin, the F-22 prime contractor. "We are not under contract to do anything."

Lockheed Martin photo

F-22 Production

F-22 production is under way. More than 30 airplanes or major assemblies already are in the pipeline. Below is the production plan—arrayed by fiscal year and lot number. Deliveries lag funding by up to two calendar years. Initial operational capability with 24 fighters is expected in 2005.

Year	Lot	Funded	Cumulative
2001	1	10	10
2002	2	13	23
2003	3	23	46
2004	4	27	73
2005	5	32	105
2006	6	40	145
2007	7	56	201
2008	8	56	257
2009	9	56	313
2010	10	18	339

Rearden described the conceptual FB-22 as being about four feet longer than the "vanilla" F-22. It would also have a larger, thicker delta wing. The configuration provides more weapons-carrying space in the fuselage, more lifting area, and more fuel tankage in the wings for longer range. In the FB-22, the side weapons bays would be eliminated to increase the internal volume of the "belly" weapons bays. As a result, the FB-22 would be able to carry "probably about 30" Small Diameter Bombs, Rearden said, adding that it could conceivably carry 70 SDBs.

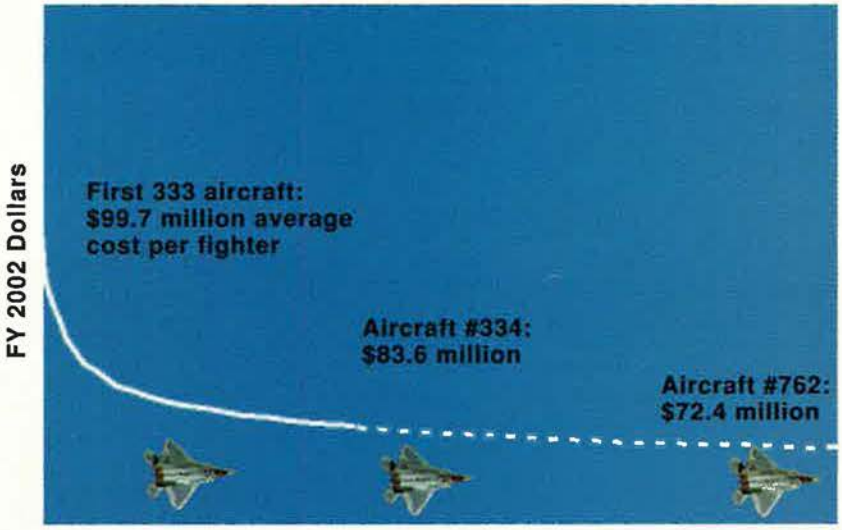
Two new internal weapons bays for self-defense AIM-120 Advanced Medium-Range Air-to-Air Missiles would occupy stations under the vertical stabilizers. Overall, Rearden said, the airplane would be "about 80 percent common" to the F-22.

Because the aircraft would be a bomb carrier and not a dogfighter, the F-22 thrust-vectoring nozzles would be eliminated to reduce cost. Similarly, the engines, now optimized for supercruise, would be re-tuned for a more fuel-efficient subsonic flight regime. The FB-22 would still be able to dash at supersonic speed "100 miles in, 100 miles out," Rearden said.

Lockheed also envisions the airplane would be a two-seater.

"When you get into 12- and 14-hour missions ... you may want to put a second person on board,"

Flyaway Cost



As with any mass-produced product, the F-22's price drops as more are built and the learning curve flattens. If the total buy is doubled, the F-22 unit cost will be on a rough par with that of the F-15 and F/A-18E/F.

Lockheed Martin photo

No more guesswork or interpreting multiple cues from buzzers, raster displays, and the radio. The F-22 cockpit—a product of sensor fusion and pilot experience—will make the pilot far more effective.

Rearden observed, although the company has also drawn the aircraft in a single-seat configuration.

The Air Force has shown some interest in the concept, but it has gone no further than a few briefings, Rearden noted.

Air Force officials said the FB-22 is being considered separately from the basic F-22 mission. They do not expect that a portion of the current planned production of the baseline airplane will be set aside for FB-22s.

For Electronic War

The concept of an EA-22—a variant configured for electronic attack—also surfaced in the last year. If built, this airplane would replace the EA-6B Prowler starting in 2011. Leaf said such a variant was considered in a recent analysis of alternatives as to how to conduct the overall airborne electronic attack mission.

On the EA-22, weapons bay doors would be replaced by special door-size apertures or antennas. However, while a prospective EA-22 is attractive because of its tremendous onboard electrical generating capacity and processing power—as well as commonality with the F-22—Pentagon officials said it ranked among the most expensive options for fulfilling the electronic attack mission and was not among the preferred solutions.

While the final buy of F-22s is being debated, the practical development of the aircraft is heading toward an initial operational capability at Langley AFB, Va., in 2005.

Brig. Gen. William J. Jabour, USAF's program executive officer for bombers and fighters and himself a former F-22 program manager, said the Raptor is making substantial progress in testing and should make its planned in-service dates. The Air Force, however, should not rush the process, he said.

To be declared operational, the F-22 must pass an Initial Operational Test and Evaluation. It is currently slated to begin that process next spring, but Jabour acknowledged the date likely will slip because of delays in the delivery of the F-22's software.

"Right now, we're saying that IOT&E is going to start in April '03, but there's a lot of risk to that date," Jabour said. Even if it slips, though, "what's key is that the Air Force made a conscious decision that this is an event-based program," he pointed out. "We are not going to enter IOT&E until we're ready to pass IOT&E, because a failed IOT&E is worse than a late IOT&E."

There are reserve funds sufficient to cover the slip, but if it lasts much longer than now expected, the Air Force would have to provide additional funds, Jabour noted.

Delays in the program have to do mainly with software and more rapidly clearing the flight envelope. Jabour likened the software problems to those seen when a personal computer freezes up and will not run an application. Valuable test sortie time sometimes is lost because the pilot has to reboot a system. Flight controls are governed by separate software and are not affected, Jabour asserted.

The problem—software instability in the sensor fusion package—has been mostly fixed in the laboratory, but new updated software has not yet been released to the test fleet, Jabour said.

Problems Resolved

Other F-22 problems that have

Lockheed Martin photo by Kevin Robertson

Buying too few F-22s will create a serious problem—it will be chronically insufficient for the mission. Where some see a silver bullet force, others see a critical asset that will be low density, high demand from the start.

made headlines—a brake overheating issue and wing vortex that threatened to damage the vertical stabilizers—have been largely resolved, Jabour said.

"We are gathering more data" on the stabilizer issue, but a fix involving a beefed up rudder actuator and some strengthening of some of the ribs in the rudder should do the trick, he said. The change will not affect the mold line of the airplane—its external shape—nor will it affect the F-22's stealthiness.

The brake issue has been looked at, and the aircraft has been cleared for hot-pit refueling—meaning that ground crews are allowed to refuel the airplane when the brakes are still hot, and this is not considered especially dangerous.

An F-22 a few months ago showed its mettle when it absorbed a bird strike, Jabour noted. On takeoff from Lockheed Martin's Marietta, Ga., plant, he said, the aircraft collided with a "nine-pound bird," but the pilot reported that he could feel "no change in engine performance" and landed merely as a precaution.

The Air Force's F-22 cost predictions, made at last year's low-rate initial production decision point, are holding up, Jabour said. USAF and DOD estimators had a spirited disagreement about how many aircraft could be produced for the amount of money DOD was willing to make available. DOD estimators said 295; USAF said 331. (Eight already had been procured.)

So far, said Jabour, "we're tracking to the Air Force's prediction." He went on, "For Lot 2, the [DOD] prediction was that we could afford 11 airplanes. We signed that contract with Lockheed for 13 airplanes. ... We bought more airplanes than [DOD] thought we could."

The Air Force has invested considerable sums to improve F-22's "producibility," Jabour said, and USAF predicts it will gain an 18-to-1 return. So far, it looks like those numbers will be correct, assuming the full 339 aircraft fleet is built. "We've invested money to reduce the cost of the individual jets," he said. "We're on track to get 339."

Rearden said such improvements include streamlining the production line. As one example, he noted that F-22s will ride along a track through the factory, eliminating the use of a crane to "move the line ... every time an airplane goes out the door." Shifting all the airplanes on the line to the next station is now expected to take just two hours.

Lockheed Martin photo by Judson Brohmer

The Air Force is convinced the F-22 will be a thoroughbred, adaptable to many missions and setting the air combat benchmark for 30 years or more. It is also the one system on which all US war plans depend.

In another example, Rearden noted that all the power cables, hydraulics, cooling hoses, and other umbilicals that usually have to be connected to an airplane in assembly will now flow from a single "vault" in the floor beneath each station, reducing accidents and disconnections and saving time as the line moves.

The F-22's software problems coincided with a brain drain that hit the aerospace industry in the late 1990s, when the dot-com fever lured away many talented software engineers with stock options and other compensation, Rearden noted. In the wake of the dot-com crash, he now has all the software engineers he needs, but the effect of the turbulence is still felt.

A 44-day production strike at Lockheed Martin also affected the program. The reduced time resulted in slowing the numbers of aircraft available for test, thus slowing the rate at which the Air Force can burn down the required flight test points, Jabour said.

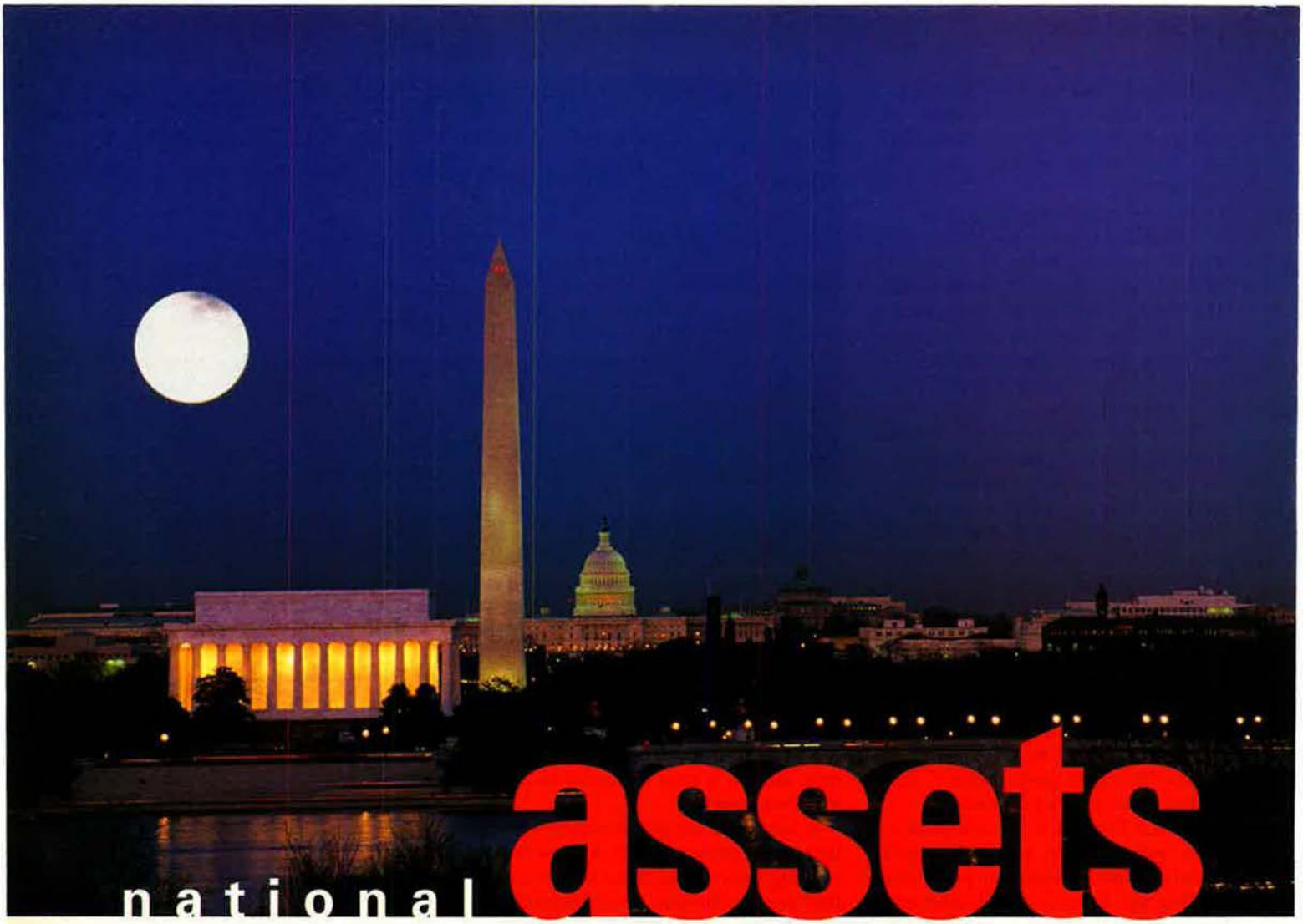
The Rumsfeld review is likely to have heavy input from Stephen A. Cambone, the Pentagon's new program analysis and evaluation chief and a Rumsfeld confidante. Cambone explained to reporters in Washington in June that the big-ticket systems review is "not a budget-cutting drill" and that good answers are what are being sought. The Air Force, he said, is welcome to ask for more F-22s or to suggest shifting the aircraft's mission emphasis.

"There's nothing that is prohibited from being presented," Cambone noted.

However, he pointed out that the money available is not infinite. After taking out personnel costs, the cost of the war, and other earmarked projects, "the total dollars left out of the budget of $379 billion which was requested is not substantial. ... If you want to make changes in the programs and you want to start new programs, then something has to give."

Still, Cambone demonstrated he's acutely aware of the pressures facing the Air Force as it mulls the future of the F-22.

"The Air Force has an increasing age problem in its aircraft that has to be addressed," Cambone said. "JSF [the F-35] doesn't come on for them until after the turn of the decade. The F-22 is here now. It has characteristics and capabilities that other aircraft simply do not have. So you put all that in the mix and ... start weighing the risks, and people make their arguments and ... then a decision is taken, and the budget is done, and the Secretary recommends, the President decides, and away we go." ■



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Verbatim

By John T. Correll, Contributing Editor

It Sells in Washington ...

"The Pentagon junta pretends that the devastation of Afghanistan by our high-flying Air Force has been a great victory (no one mentions that the Afghans were not an American enemy—it was like destroying Palermo in order to eliminate the Mafia). In any case, we may never know what, if anything, was won or lost (other than much of the Bill of Rights)."***—Gore Vidal in* Perpetual War for Perpetual Peace, *which made the* Washington Post *best-sellers list in May and June.***

... Where Taste Is Strange

"Gore Vidal is the master essayist of our age."**—Washington Post, *quoted in news release from Thunder's Mouth Press touting* Perpetual War for Perpetual Peace, *April 2002.***

Ted Turner's Philosophy of Terror

"The Palestinians are fighting with human suicide bombers—that's all they have. The Israelis ... they've got one of the most powerful military machines in the world. The Palestinians have nothing. So who are the terrorists? I would make a case that both sides are involved in terrorism."***—Ted Turner, vice chairman of AOL Time Warner and founder of CNN, quoted in London's* Guardian Unlimited, *June 17.***

Relax

"The Dirt on Dirty Bombs: They're Not That Bad."***—Headline in* Long Island Newsday, *June 19.***

They Saw Fecklessness

"Prince Turki ... said the Saudi monarchy had long believed [Saddam] Hussein could be ousted with an internal coup, US air support, and diplomatic measures to keep neighbors such as Iran and Turkey out of the fray. But he said the kingdom lost faith in US efforts to oust Mr. Hussein after a failed coup attempt in 1996 and an inconclusive series of US and British air strikes in 1998. As early as 1999, Prince Turki said, King Fahd refused point-blank to discuss Iraq when US Secretary of State Madeleine Albright asked him about it. 'He was expressing his total disbelief that America was serious that they would do something to get rid of Saddam Hussein,' he said. 'From 1991 [onward], we were talking with the Americans on ways of getting rid of Saddam Hussein, always making propositions to them which we received from inside [Iraq ... but we got] no response, only more talk about gathering intelligence, about identifying potential leaders, etc.' "***—July 29* Wall Street Journal *article, based on interview with Prince Turki al-Faisal, who for nearly 30 years was the chief of Saudi foreign intelligence.***

More Noble Than Defense

"Proposals for the swift creation of a new Department of Homeland Security have given fresh energy to the idea of a Cabinet-level Department of Peace. And why not? If we have Cabinet-level departments organized around fighting wars across the globe and fighting terrorism at home, why not have a department organized around the idea of promoting, seeking, and creating peace?"**—Honolulu Advertiser, *June 16.***

We're at War?

"Everyday life has pretty much returned to being everyday life. The inconvenience the everyday citizen experiences, the expectations of sacrifice, are clearly minimal. To the extent there's a war on, it's a war in which the American people are not engaged."***—Andrew Bacevich, defense commentator and Boston University faculty member,* USA Today, *June 18.***

Terror Is Technique

"Terrorism is a technique, a tactic. You can't wage war on a technique."***—Zbigniew Brzezinski, national security advisor in the Carter Administration, Newhouse News Service, June 19.***

Diversity at Sea

"The Navy has the hardest transformation challenge of all, because it is really four services—submariners, aviators, surface warriors, and Marines—masquerading as a single military department."***—Loren Thompson, Lexington Institute analyst,* Defense News, *July 1–7.***

Spread It Around

"It would be a good idea if we knew before it happened any Defense Department–related entity that plans to build or lease within 100 miles of Washington, D.C. ... Concentration of Defense Department activities in a single area is probably not a smart idea."***—Secretary of Defense Donald H. Rumsfeld, interview with* Washington Times, *June 27.***

The Last Are First

"The last ones in with both a service and a school are, in the modern age, the first ones in during wartime."**—The Power and the Glory: An Illustrated History of the United States Military, *April 29, on USAF and the Air Force Academy.***

Doctrine and Tyranny

"The Bush doctrine, which he announced at a Republican fund-raiser last weekend, is that the United States will take 'pre-emptive' action against states and groups that could pose a threat to us. This is the first example in history of a democratic nation conferring on itself the right to attack those nations it may perceive itself to be threatened by. Tyrannies have often done such things, but that is what makes them tyrannies. ... 'Pre-emptive' warfare is a risky concept because it puts you in the business of causing a conflict that otherwise might not occur."***—James O. Goldsborough,* San Diego Union-Tribune, *June 20.***

JFK Said No

"A pre-emptive strike is usually sold to the President as a 'surgical' air strike; there is no such thing. So many bombings are required that widespread devastation, chaos, and war unavoidably follow. The trouble with a pre-emptive strike doctrine is that it pre-empts the President's own choices. Yes, Kennedy 'thought about' a pre-emptive strike; but he forcefully rejected it, as would any thoughtful American President or citizen."***—Ted Sorenson, counsel to President Kennedy,* New York Times, *July 1, on the claim that JFK considered pre-emptive strike against Soviet missiles in Cuba.***

After the attacks, USAF took a leading role in the terror war and changed the way it operates.

BLACK SEPTEMBER 11

By Adam J. Hebert

On Sept. 10, 2001, Defense Secretary Donald H. Rumsfeld noted in a speech that the US military was still using a planning process designed to deal with a Soviet–style challenge—a predictable, slowly evolving military threat that emerges over a period of years and changes incrementally.

The system, therefore, was ineffective for dealing with the rapidly changing threats that had come to characterize the post–Cold War world, said the Pentagon chief, adding, "Our foes are more subtle and implacable today."

The iron cage of bureaucracy prevented DOD from adapting to evolving threats "with the speed and agility that today's world demands," he said in his speech. Streamlining Pentagon operations thus was "a matter of national security." The world had become a place where threats "arise from multiple sources, most of which are difficult to anticipate and many of which are impossible even to know today," he added.

The next day was Sept. 11.

In a shocking attack, 19 al Qaeda terrorists hijacked four US civil airliners loaded with fuel for cross-country flights and slammed them into the World Trade Center towers, the Pentagon, and after a passenger revolt, an empty patch of Pennsylvania countryside, killing 3,000 all told.

On that day, the US was forced to confront the sort of invisible and unpredictable threat Rumsfeld had warned about and deal with an entirely new kind of enemy and battle.

The Air Force is playing a leading role in the response to this new security challenge, providing the aircraft and per-

AP photo

USAF photo by Lt. Col. William Ramsay

Massachusetts ANG F-15s were the first to scramble when the FAA on Sept. 11 notified NORAD that something was wrong. Here, an F-15 flies CAP over New York City for Operation Noble Eagle.

sonnel for Combat Air Patrols to secure US skies against further airline hijackings while also supplying bombers and airlift that were central to the war on terrorism in Afghanistan halfway around the globe. USAF bombers dropped most of the weapons on Taliban and al Qaeda targets in Afghanistan during Operation Enduring Freedom.

An oft-repeated phrase in the days after Sept. 11 was that "nothing will ever be the same." This is not entirely true, of course, but the Air Force has seen major, long-term changes to the way it goes about its business.

Two-Front War

For starters, the service is now at war on two fronts—against terrorism worldwide (Enduring Freedom) and to ensure air sovereignty in the United States (Operation Noble Eagle). Both of these missions are expected to continue indefinitely.

After the collapse of the Soviet threat, the Air Force perhaps understandably had grown complacent about securing United States airspace. The United States at the height of the Cold War was ringed by air bases with fighters on strip alert, meaning jets were ready to scramble on a moment's notice to intercept incoming Soviet bombers.

As the Soviet bomber threat faded into the background, the number of bases on alert was repeatedly scaled back, until only seven remained in September 2001. It was an F-15 unit from the Massachusetts Air National Guard that scrambled to New York when word came from the Federal Aviation Administration that something was wrong. Similarly, it was a Guard unit based at Langley AFB, Va., that raced to Washington, D.C.

Lacking lead time, neither group of fighters was able to reach the hijacked airliners before they struck their targets.

Now, the Air Force has once again increased the number of bases on alert. Although nonstop Combat Air Patrols have ceased, CAPs are still flown on a random basis over New York City, Washington, D.C., and other prominent areas.

The concept of air sovereignty is viewed differently now. Shortly after the attacks, Maj. Gen. Paul A. Weaver Jr., the now retired director of the Air National Guard, said scaling back alert bases in the 1990s had been noncontroversial. The threat was seen to have dried up, and keeping fighters and crews ready to scramble is expensive. Similarly, North American Aerospace Defense Command officials said the policy was for NORAD to monitor external threats approaching the nation while FAA watched internal activity.

On Sept. 11, this disconnect between military and civil radar coverage worked to the advantage of the terrorist hijackers. Because US airliners were considered friendly by origin, NORAD depended upon FAA notification that something was wrong that morning.

Now, cooperation between the two sides has increased dramatically, the government is taking an interagency approach to radar improvements, and DOD is leading a task force charged with determining the best way to create a common air picture for both civil and military needs.

No More Troops

Although Congress has made additional money available to pay for homeland security initiatives and the material costs of the war on terrorism, Rumsfeld has indicated no additional personnel will be forthcoming. Consequently, the dual strains of war in Afghanistan and the homeland air defense mission have affected many units as mission requirements increased.

The Air National Guard unit responsible for securing air sovereignty over the northeast US flew nonstop Combat Air Patrols for months without significant external help. The New Jersey ANG's 177th Fighter Wing drew heavily on mobilized Guardsmen to meet its needs.

Over time, mission taskings began to wear heavily on certain USAF career fields such as pilots, maintainers, and command post operators. Officials at the 177th FW said most Guardsmen have taken a wait-and-see attitude toward their lives because it is unclear when the part-timers will be demobilized and sent back to their civilian careers.

The New Jersey F-16 pilots acutely felt the demands of the new security environment. These pilots had to not only defend US airspace but also suffered a long-term training backlog. The homeland defense mission pre-empted months of flying normally devoted to training for conventional combat missions. According to New Jersey ANG officials, the wing is still expected to prepare for a possible deployment to Saudi Arabia when its normal turn comes up in the Aerospace Expeditionary Force cycle next year.

The New Jersey Guard's 24/7 CAPs ended last spring, but Atlantic City Airport has now been designated a strip alert base—meaning a minimum of two (and sometimes six) pilots and fighters are kept ready to scramble.

Continued on p. 51

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Continued from p. 48

Further, the base has been instructed to continue normal operations, meaning its crews are attempting to catch up on training missed after Sept. 11 to prepare for their possible AEF deployment.

Planners know the competing demands can be a problem. Maj. Gen. Timothy A. Peppe, USAF's special assistant for AEFs, said "things have gotten to a point" in certain instances "where training back home has been hindered" by other wartime obligations.

Col. Mike Cosby, 177th FW commander, said the New Jersey Guard was given the northeast air defense mission for good reason. For starters, the base has a history with the air defense mission—Atlantic City Airport was an alert base until 1998, when the Guard unit was redesignated a general-purpose unit with an air-to-ground mission. Atlantic City is also centrally located to likely terrorist targets.

"There are four major metropolitan areas that this base services," Cosby said, noting that Washington, D.C., Baltimore, Philadelphia, and New York City are all a short flight from the New Jersey base, as is Wilmington, Del., which gets occasional CAP protection because of the city's oil port.

USMC photo by Cpl. Jason Ingersoll

American Airlines Flight 77 hit the Pentagon at 9:38 a.m on Sept. 11. This photo shows the impact site where, at 10:10 a.m., part of the five-sided building collapsed.

The Squeeze

The 177th FW is leaning on many formerly part-time Guardsmen to meet its staffing needs. Because of that, Cosby said, the base is seeking additional manpower—"100, 125 additional folks full time." These individuals—primarily aircraft maintainers—would be used to support the extra tempo of maintaining random CAPs, sitting on alert, and maintaining enough training sorties. Cosby said the Noble Eagle mission in six months burned up an entire year's worth of planned flying hours. Not included in that total were all of the base's "regular" flying missions.

The strip alert aircraft require maintenance and support teams independent from those needed for regular-duty F-16s, said MSgt. Marty Schellhas, a 177th FW crew chief. Operating around the clock to support both strip alerts and regular training operations, maintenance teams now have fewer people per team but more work. Maintenance has managed to keep its teams properly staffed with the correct experience levels, Schellhas said, but "it's been tough. ... We could always use more help."

The Noble Eagle mission also began to wear on the pilots. CAP flights are not like combat training, and pilots are trying to make up for lost time.

"It's hard to stay focused—by your fifth or sixth hour, you become pretty weary" on a CAP, said Lt. Col. Randall King, 177th FW assistant operations director.

The fire has also been turned up overseas. Although many in government were keenly aware of the threat Osama bin Laden posed to US interests—owing to his suspected involvement in the bombing of the Navy destroyer *Cole*—a global war on terrorism was hardly expected a year ago.

USAF photo by MSgt. Don Taggart

A fully armed F-16C from the 177th Fighter Wing of the New Jersey ANG returns from a patrol. The unit's 24/7 operations ended in the spring, but it still has to maintain strip alerts with pilots, maintainers, and aircraft on call.

What the Loggies Did

Likewise, military strategists knew Afghanistan's ruling Taliban faction harbored and supported al Qaeda terrorists, but a war in that country wasn't in the plans. When the time came to take the fight to the terrorists, the Air Force basically had to

improvise. The service was suddenly responsible for moving tons of equipment to Central Asia.

"We made it up for Afghanistan as we went along," said Lt. Gen. Michael E. Zettler, USAF's deputy chief of staff for installations and logistics.

There was ample "opportunity for failure" in preparing for the operations, he said, because everything was needed at that time in South Asia. Afghanistan, landlocked and distant from the US network of bases concentrated in Europe, brought bomber capabilities to the forefront.

Early in the conflict, some fighter missions were flown from bases in the Persian Gulf region, but the distances involved made bomber operations much more efficient. As was the case over Kosovo in 1999, B-2s flew from Missouri, while the lack of air defenses in Afghanistan made it attractive to use B-1B and B-52 bombers to attack from Diego Garcia in the Indian Ocean.

Navy fighters operating from big-deck carriers in the Indian Ocean generated most of the Enduring Freedom sorties, but Air Force bombers dropped most of the ordnance and did the most damage. According to Air Force officials, heavy bombers flew about 10 percent of the early combat missions over Afghanistan, but hit more than 70 percent of the aim points. The bombers delivered more than 80 percent of US ordnance dropped in the first days of the conflict.

The logistical challenges involved in fighting a war in Afghanistan have certainly caught the attention of senior defense planners. The regional warfighting commanders and Air Force Secretary James G. Roche are studying options for new contingency bases in the Asia–Pacific region so that DOD doesn't have to start from scratch the next time a battle must be fought in an isolated location.

More bases are also needed because of the vast distances to cover in the region. Otherwise, shorter-range aircraft might not be used to their full potential.

The Air Force's role in Enduring Freedom gradually receded into the background, but the service remains deeply committed to the war. As of July, USAF had 9,900 airmen deployed to the Afghanistan region in support of Enduring Freedom.

The Air Force had not anticipated

THE FIRST 12 HOURS

What follows is a chronology of events on Sept. 11. Eastern Daylight Time is used throughout.

8:40 a.m.	FAA notifies NORAD's North East Air Defense Sector of problem with American Airlines Flight 11 (Boston–Los Angeles).
8:43 a.m.	FAA notifies NEADS of problem on United Airlines Flight 175 (Boston–Los Angeles).
8:45 a.m.	First hijacked aircraft, AA Flight 11 crashes into north tower of World Trade Center.
8:46 a.m.	Fighter scramble order given at Otis ANGB, Mass.
8:52 a.m.	Two F-15 fighters airborne.
9:03 a.m.	Second hijacked aircraft, UA Flight 175 slams into WTC south tower.
9:24 a.m.	FAA notifies NEADS of problem on AA Flight 77 (Washington Dulles–Los Angeles) and UA Flight 93 (Newark–San Francisco).
9:24 a.m.	Fighter scramble order given at Langley AFB, Va.
9:30 a.m.	Two F-16 fighters airborne.
9:30 a.m.	In Florida, President Bush says events of the morning are result of an "apparent terrorist attack."
9:38 a.m.	Third hijacked aircraft, AA Flight 77 hits Pentagon, setting it ablaze.
9:40 a.m.	FAA halts US flight operations, orders aircraft to land.
9:45 a.m.	White House workers evacuate the building.
9:57 a.m.	Bush departs Florida for Barksdale AFB, La.
10:00 a.m.	WTC south tower collapses.
10:03 a.m.	Fourth hijacked aircraft, UA Flight 93 on a heading to Washington, D.C., crashes in Pennsylvania.
10:10 a.m.	Part of Pentagon collapses.
10:24 a.m.	FAA diverts all inbound trans–Atlantic flights to Canada.
10:28 a.m.	WTC north tower collapses.
10:45 a.m.	US evacuates all federal buildings in Washington, D.C.
11:02 a.m.	Mayor Rudolph Giuliani orders evacuation of New York City, south of Canal Street.
12:15 p.m.	The INS imposes highest state of alert on borders.
1:04 p.m.	Bush, at Barksdale, addresses nation, puts military on worldwide alert.
1:48 p.m.	Bush departs Barksdale for Offutt AFB, Neb.
2:30 p.m.	FAA bans commercial air traffic until further notice.
4:30 p.m.	Bush departs Offutt for Andrews AFB, Md.
5:20 p.m.	WTC Building 7 collapses.
6:40 p.m.	Rumsfeld holds news conference, says DOD is functioning.
6:54 p.m.	Bush arrives at White House.
8:30 p.m.	Bush addresses the nation, declares US will pursue those who planned and executed the attacks and nations harboring them.

USAF fighter notification and response times from NORAD release.

USAF photo by SSgt. Shane Cuomo

USAF bombers, such as this B-1B, flew only about 10 percent of the sorties but dropped most of the ordnance in the early days of the war in Afghanistan.

sustained operations as large as Enduring Freedom and Noble Eagle when it created its system of rotating Aerospace Expeditionary Forces. Rather than abandon the system, however, the service has chosen to bolster its AEFs to support the new steady state of operations, according to Peppe, the AEF planner.

The most obvious change was the need to get more people into the AEF system so that more airmen would be available for deployment on the scheduled 90-day rotations. Peppe said that, as of July, some 175,000 airmen were postured for AEF deployments through Unit Type Codes, which link personnel to their mission. The goal, he said, is to have well over 200,000 people postured for AEF deployments.

"I don't think that's going to be a problem," Peppe said, given how 18,000 airmen had been added to the UTCs in the past month, and the goal is to have the entire Air Force headquarters staff available for AEF deployment if necessary. "Will they all go? No," Peppe said—but they should be available to fill needs.

Fixing the Holes

Also helping to fill holes in the AEF system will be the troops and equipment from two stand-alone Air Expeditionary Wings. The AEWs, based at Mountain Home AFB, Idaho, and Seymour Johnson AFB, N.C., were designed to back up the 10 permanent AEFs with additional assets as needed. However, the assets of these AEWs have not been used very much, Peppe said, while the AEFs are being run ragged. Thus, the Air Force in June began to integrate AEW forces into the AEFs.

High operational tempo generated by recent operations is placing an exceptional burden on high-demand career fields, and officials are now working to alleviate this strain. For example, Peppe said that some personnel were being deployed much longer than the standard 90-day cycle. "Some are staying for 135 days and a small percent will need to remain for up to 179 days," he said.

Peppe added in July that the preference is not to deploy anyone for more than 120 days. "That will be the stated goal," he said.

Reaching that goal, however, will require long-term solutions such as increased accessions into the stressed career fields, which include security forces, air traffic control, and crews for low-density, high-demand assets such as Airborne Warning and Control System aircraft.

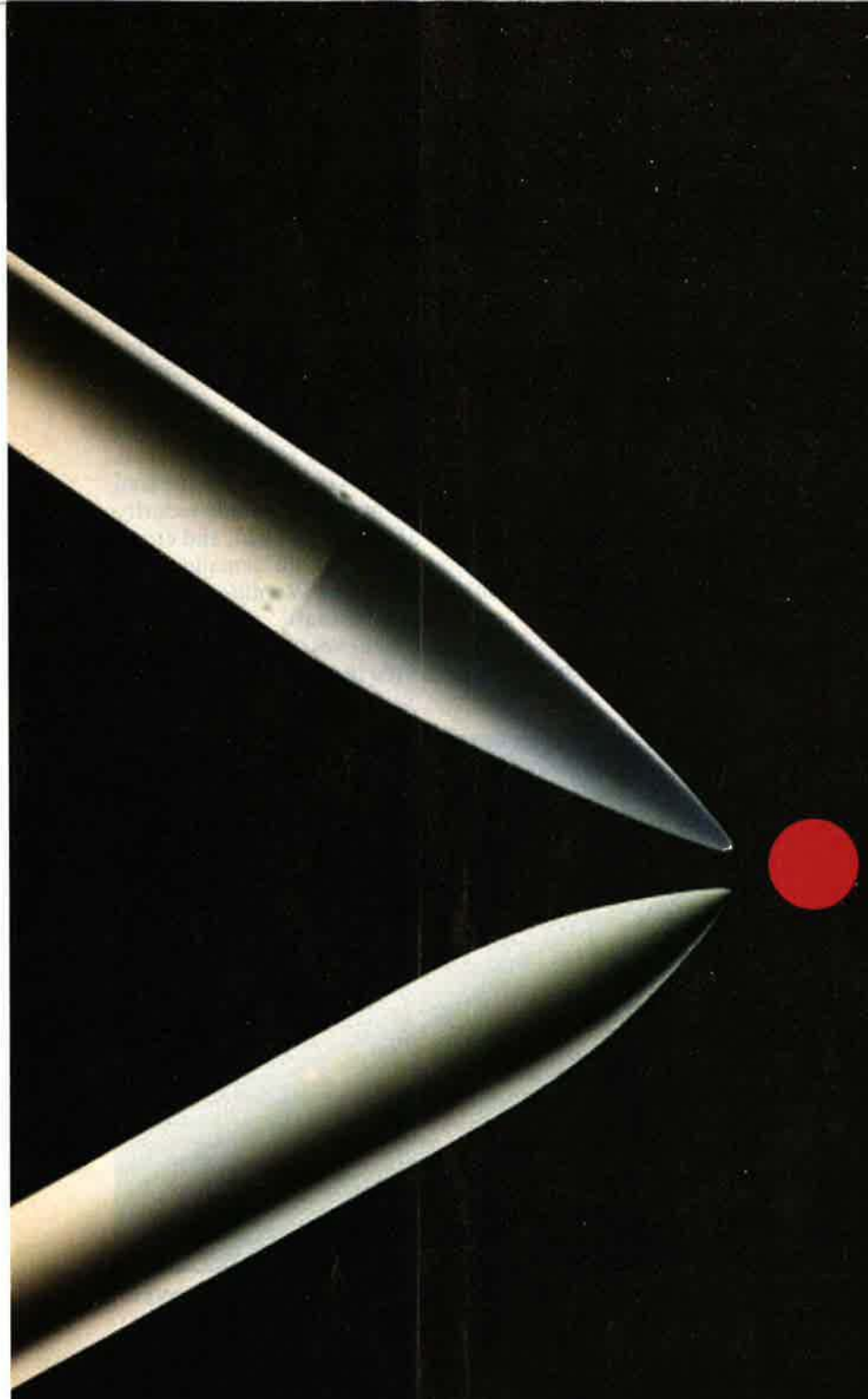
Peppe believes the AEF concept will survive the enormous pressures generated by the post-attack US response. He said USAF will stick with the 10–AEF force, though it did consider going up or down. The bottom line, he concluded, is that the Air Force is expeditionary, and in wartime the demands go up.

And so far, they haven't come down. ■

USAF photo by TSgt. Marvin Preston

USAF active duty and reserve members delivered millions of pounds of cargo to central Asia for Enduring Freedom. Here, a Wyoming ANG C-130H is unloaded in Afghanistan.

Adam J. Hebert is senior correspondent for InsideDefense.com, an Internet defense information site, and managing editor for Defense Information and Electronics Report, *a Washington, D.C.–based defense newsletter. His most recent article for* Air Force *Magazine, "The Responsive Force," appeared in the July 2002 issue.*



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LA ROCHEFOUCAULD

The Pentagon chief says the US and Russia no longer are enemies—a fact not yet grasped by many in both countries.

Rumsfeld and Russia

Donald H. Rumsfeld, Secretary of Defense, went before the Senate Foreign Relations Committee on July 17 to defend the Moscow Treaty, which commits the United States and Russia to dramatic reductions in their strategic nuclear arsenals. Below are excerpts of his remarks on that topic and on US–Russia relations more generally.

ABM Treaty Goes

"Far from causing a deep chill in relations, the US withdrawal from the ABM Treaty was greeted in Russia with something approximating a yawn. Indeed, President Putin declared the decision does not pose a threat to Russia, which of course it does not. Far from launching a new arms race, the US and Russia have both decided to move towards historic reductions in their deployed offensive nuclear arsenals, reductions to be codified in the Moscow Treaty."

Political Weather Change

"We're working together to reduce deployed offensive nuclear weapons, weapons that are a legacy of the past and which are no longer needed when Russia and the US are basing our relationship on one of increasing friendship and cooperation, rather than a fear of mutual annihilation."

Stuck in the Past

"Here in the US, there are some who would have preferred to see us continue the adversarial arms control negotiations of the Soviet era, where teams of lawyers drafted hundreds of pages of treaty text and each side worked to gain the upper hand, while focusing on ways to preserve a balance of nuclear terror. ... Similarly, in Russia today there are those who are stuck in the past, who look warily at American offers of greater cooperation and friendship, preferring to keep us at arm's length."

Two Onerous Legacies

"Russia and the United States entered this new century saddled with two legacies of the Cold War: the adversarial relationship to which we had both grown accustomed and ... the massive arsenals of weapons that we built up to destroy each other. In the past year, we have made progress in dealing with both."

Simplicity Itself

"What's remarkable is not simply the fact of these planned reductions, but how they have happened. After a careful review, President Bush simply announced his intention to cut our stocks of operationally deployed nuclear warheads. This was the result of the Nuclear Posture Review that we spent many months on. ... President Putin shortly thereafter did exactly the same thing. And when they met in Moscow, they recorded these unilaterally announced changes in a treaty that will survive their two presidencies."

Bypassing the Aficionados

"We did not engage in the lengthy adversarial negotiations in which the US kept thousands of weapons it did not need as a bargaining chip and Russia did the same. We did not establish standing negotiating teams in Geneva with armies of arms control aficionados ready to do battle over every colon and every comma. If we had done so, we would still be negotiating today."

Tale of Two Treaties

"The START Treaty between President Bush and Mikhail Gorbachev is 700 pages long and took nine years to negotiate. The Moscow Treaty was concluded in the summer, took some six months to negotiate, and it's three pages long."

Normal Countries

"We are working towards the day when the relationship between our two countries is such that no arms control treaties will be necessary. That's how normal countries deal with each other. The US and Great Britain both have nuclear weapons, yet we do not spend hundreds of hours negotiating with each other the fine details of mutual reductions on offensive weapons. We do not feel the need to preserve a balance of terror between us. We would like the relationship with Russia to move in that direction."

The Heart of the Matter

"We would have made these cuts regardless of what Russia did with its arsenal. We are making them not because we signed the treaty in Moscow, but because the fundamental transformation in the relationship with Russia means that we do not need so many deployed weapons."

Relaxed Verification

"We saw no need to include detailed verification measures in the treaty. First, there simply isn't any way on Earth to verify what Russia is doing with all their warheads and their weapons. Second, we don't need to. Neither side has an interest in evading the terms of the treaty since it simply codifies unilateral announced intentions and reductions, and it gives both sides broad flexibility in implementing those decisions. Third, we saw no benefit in creating a new forum for bitter debates over compliance and enforcement. Today, the last place in the world where US and Russian officials still sit across a table arguing with each other is in Geneva."

Reversibility Is Vital

"Similarly flawed, in my view, is the complaint that, because the Moscow Treaty does not contain a requirement to destroy warheads removed from the missiles and the bombers, the cuts are reversible and therefore they're not real. Put aside for a moment the fact that no previous arms control agreement—not SALT, not START, not the INF—has required the destruction of warheads, and no one offered objections to those treaties on the basis that they did not require the destruction of warheads. This charge is based, in my view, on a flawed premise: that irreversible reductions in nuclear weapons are possible. In point of fact, there is no such thing, in my view, as irreversible reductions in nuclear weapons. The knowledge of how to build nuclear weapons exists. There's no possibility that that knowledge is going to disappear from the face of the Earth. Every reduction is reversible given enough time and enough money."

The Russian Edge

"When it comes to building nuclear weapons, Russia has a distinct advantage over the United States. Today Russia can and does produce both nuclear weapons and strategic nuclear delivery vehicles. They have open, warm production lines. The US does not produce either ICBMs or nuclear warheads. It has been a decade since we have produced a nuclear weapon, and it would likely take us the better part of a decade to begin producing some capabilities again."

Remote Possibilities

"In the time it would take us to redeploy decommissioned nuclear warheads, Russia could easily produce a larger number of new ones. ... But the question is, why would we want to do so? Barring some unforeseen or dramatic change in the global security environment, like the sudden emergence of a hostile peer competitor on a par with the old Soviet Union, there's no reason why we would want to redeploy the warheads we are reducing."

Hedge Against Problems

"The reason to keep, rather than destroy, some of those decommissioned warheads is to have them available in the event of a problem with safety or reliability in our arsenal. Since we do not have an open production line, it would be in my view simply mindless for us to destroy all of those warheads and then not have them for the backup in the event that we run into safety or reliability problems."

Balance of Terror No More

"As enemies, we had an interest in each other's failure. As friends, we ought to have an interest in each other's success. As enemies we had an interest in keeping each other off balance. As friends, we have an interest in promoting stability. When Russia and the US were ad-

Strategic Nuclear Arms Control Agreements

	SALT I	SALT II
Deployed Warhead Limit	Limited missiles, not warheads	Limited missiles & bombers, not warheads
Deployed Delivery Vehicle Limit	US: 1,710 ICBMs & SLBMs USSR: 2,347 ICBMs & SLBMs	2,250
Status	Expired	Never entered into force
Date Signed	May 26, 1972	June 18, 1979
Date Entered into Force	Oct. 3, 1972	Not applicable
Implementation Deadline	Not applicable	Dec. 31, 1981
Expiration Date	Oct. 3, 1977	Dec. 31, 1985

SALT: Strategic Arms Limitation Talks. START: Strategic Arms Reduction Treaty. SORT: Strategic Offensive Reductions Treaty.

versaries, our principal focus was trying to maintain and freeze into place the balance of nuclear terror. With the recently completed Nuclear Posture Review, the US has declared that we are not interested in preserving that balance of terror with Russia."

New Adversaries Emerge

"We're working to transform our nuclear posture from one aimed at deterring the Soviet Union that no longer exists to one designed to deter new adversaries, adversaries who may not be discouraged from attacking us by the threat of US nuclear retaliation, just as the terrorists who struck us on September eleventh were certainly not deterred by the United States' massive nuclear arsenal."

Dissuading Competitors

"Some have asked why in the post–Cold War we need to maintain as many as 1,700 to 2,200 operationally deployed warheads. The fact that the Soviet threat has receded does not mean that we no longer need nuclear weapons. To the contrary, the US nuclear arsenal remains an important part of our deterrent strategy and helps us to dissuade the emergence of potential or would-be peer competitors by underscoring the futility of trying to sprint toward parity with us."

Seeking Flexibility

"[Critics] have asked why there's no reduction schedule in the treaty. The answer is quite simple: flexibility. Our approach to the Nuclear Posture Review was to recognize that we're entering a period of surprise and uncertainty when the sudden emergence of unexpected threats will be an increasingly common feature of our security environment. We were surprised on September eleventh, and let there be no doubt, we will be surprised again."

Heavy Penalties

"It is not only an uncertain world. It is world that, besides promising surprise and promising little or no warning, is a world that has weapons of mass destruction. So the penalty for not being able to cope with surprise or cope with little or no warning can be enormous. ... This problem is certainly more acute in an age when the spread of weapons of mass destruction into the hands of terrorist states and potentially terrorist networks means that our margin of error is significantly less than it had been. The cost of a mistake could be not thousands of lives, but tens of thousands of lives. Because of that smaller margin for error and the uncertainty of the future security environment, the US will need flexibility."

With or Without Russia

"If Russia ... decided against this treaty, ... the President would recommend that we go forward. He has made a judgment, at the conclusion of the Nuclear Posture Review, that we can go from many thousands down to 1,700 to 2,200 and still have the kind of capability that this country will need for deterrence and defense."

Time of Testing

"At the present time I'm told it would take us two to three years to [test] a nuclear weapon, and we've not produced a [new] nuclear weapon in at least a decade to my knowledge. And the interest would be in reducing that down from two to three years to one year to 18 months, the ability to [test] one."

Shorter-Range Nukes

"[Russian] theater nuclear weapons [are] a worry. The Russians unquestionably have many multiples of what we have, I mean thousands and thousands. And the fact that we have a gap in our knowledge as to what that number is, that is enormous. It tells you how little we know about what they have, what they look like, where they are located, what their security circumstance is."

Ring in the Night

"One of the worrisome things that could happen is the phone could ring and say, ... "We're sorry to tell you but we've got a safety problem or a reliability problem with your currently deployed weapons." And having warheads that are available that could replace some of those questionable, potentially unsafe, potentially unreliable weapons, it seems to me is a responsibility of the President."

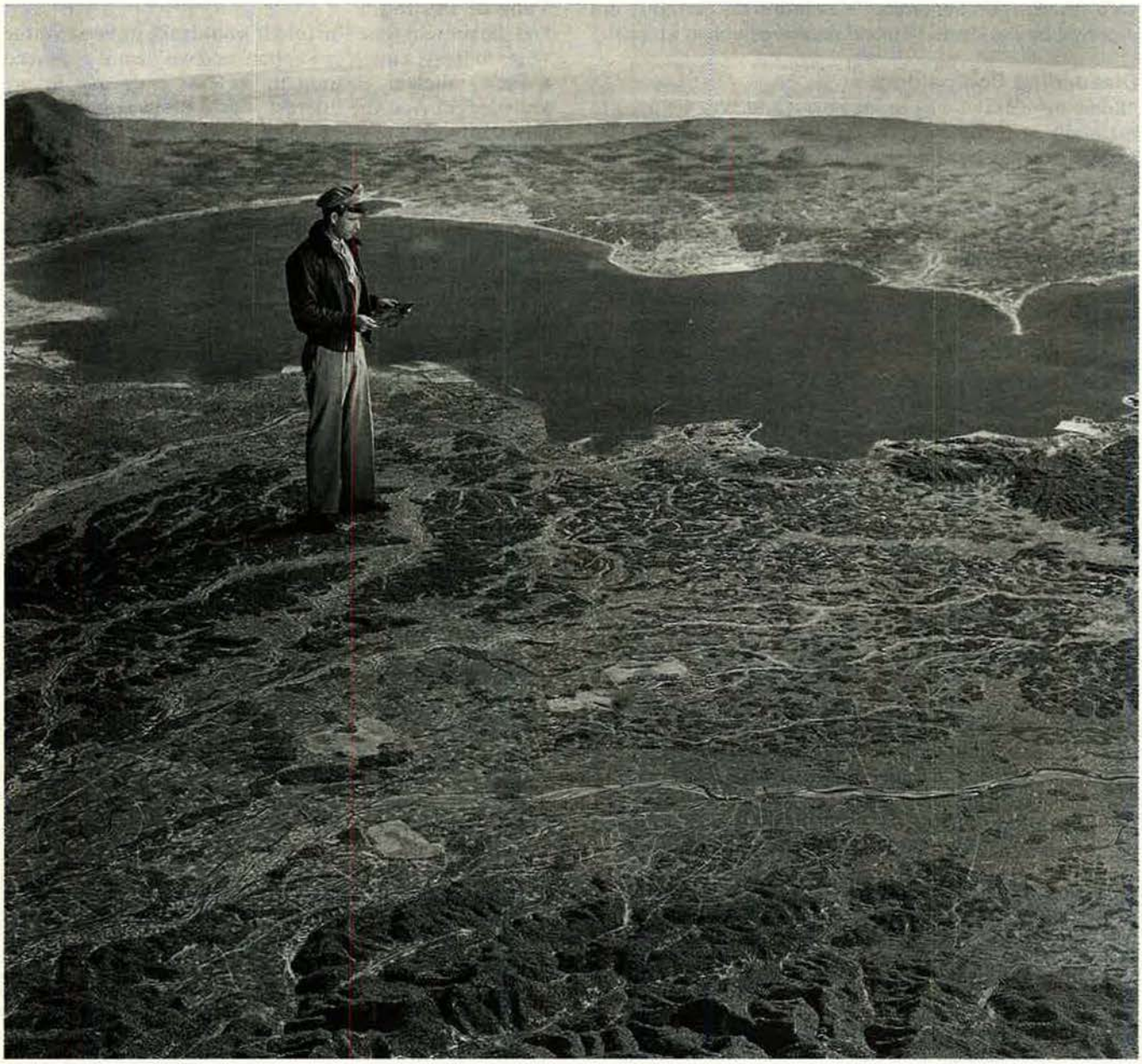
Weakness Is Provocative

"There's no question in my mind but that weakness is provocative, and if we were to go down to some very low level, some country might decide that that is an area of weakness, an asymmetry that they can take advantage of. And we do not want to create that interest on anybody's part. ... As low as 1,700 to 2,200 sounds from where we've been, it is still ... a nontrivial number." ■

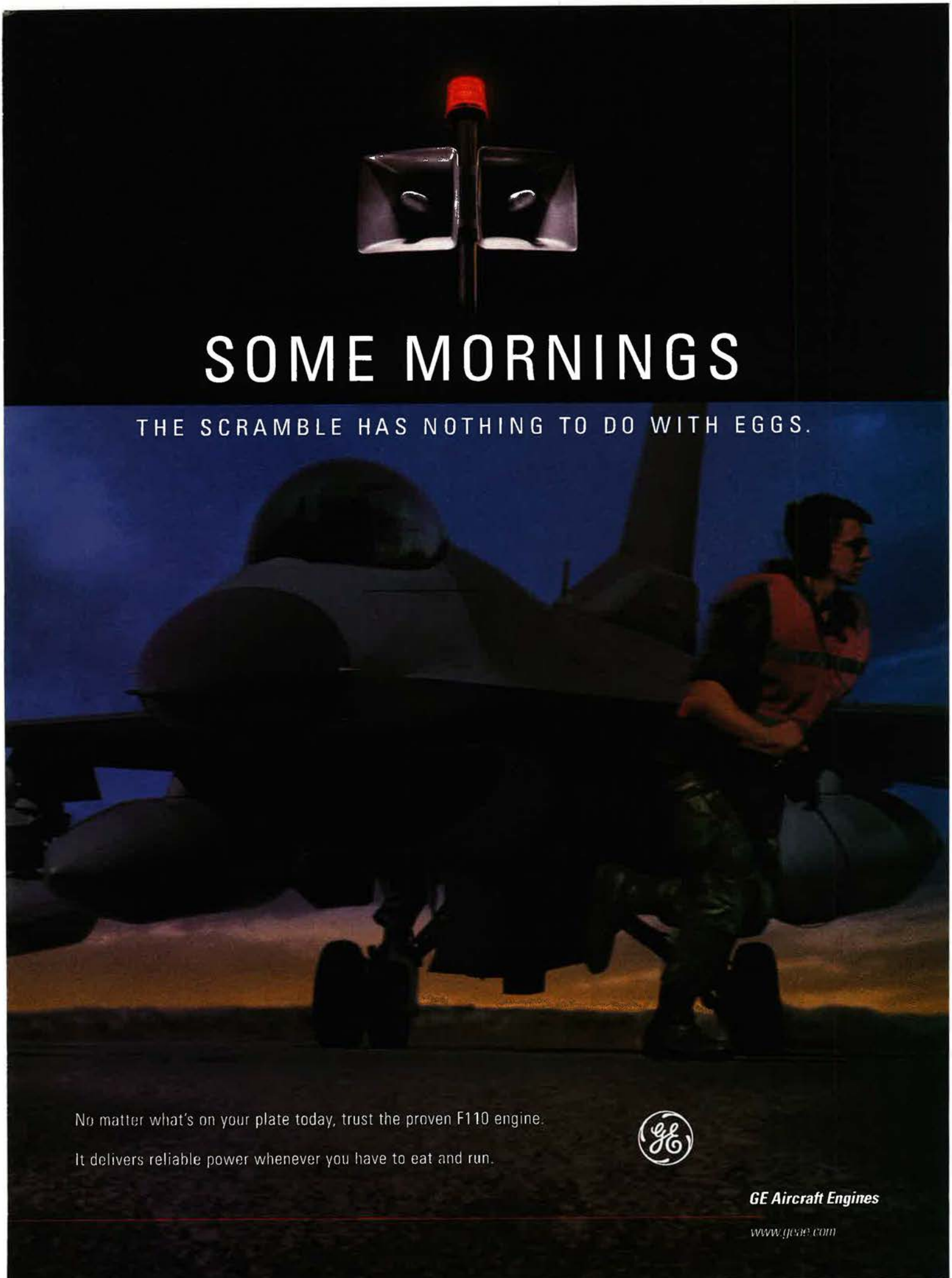
START I	START II	START III	SORT
6,000	3,000–3,500	2,000–2,500	1,700–2,222
1,600	Not applicable	Not applicable	Not applicable
In force	Never entered into force	Never negotiated	Signed, awaits ratification
July 31, 1991	Jan. 3, 1993	Not applicable	May 24, 2002
Dec. 5, 1994	Not applicable	Not applicable	?
Dec. 5, 2001	Dec. 31, 2007	Dec. 31, 2007	Dec. 31, 2012
Dec. 5, 2009	Dec. 5, 2009	Not applicable	Dec. 31, 2012

Source: Arms Control Association

A Model for Success



Capt. William G. Ryan checks the Army Air Forces 1st Motion Picture Unit's model of Nagasaki and the surrounding environs against the latest current reconnaissance photos. The unit produced bomb run briefing films for aircrews. Artists constructed massive "sets" depicting in miniature the exact topography of thousands of square miles of Japan, recreating in painstaking detail structures and terrain. A camera on a crane that mimicked the speed and altitude of a bomber then filmed the miniature. Separate sequences showed bomber crews the exact route to target and the point of bomb release.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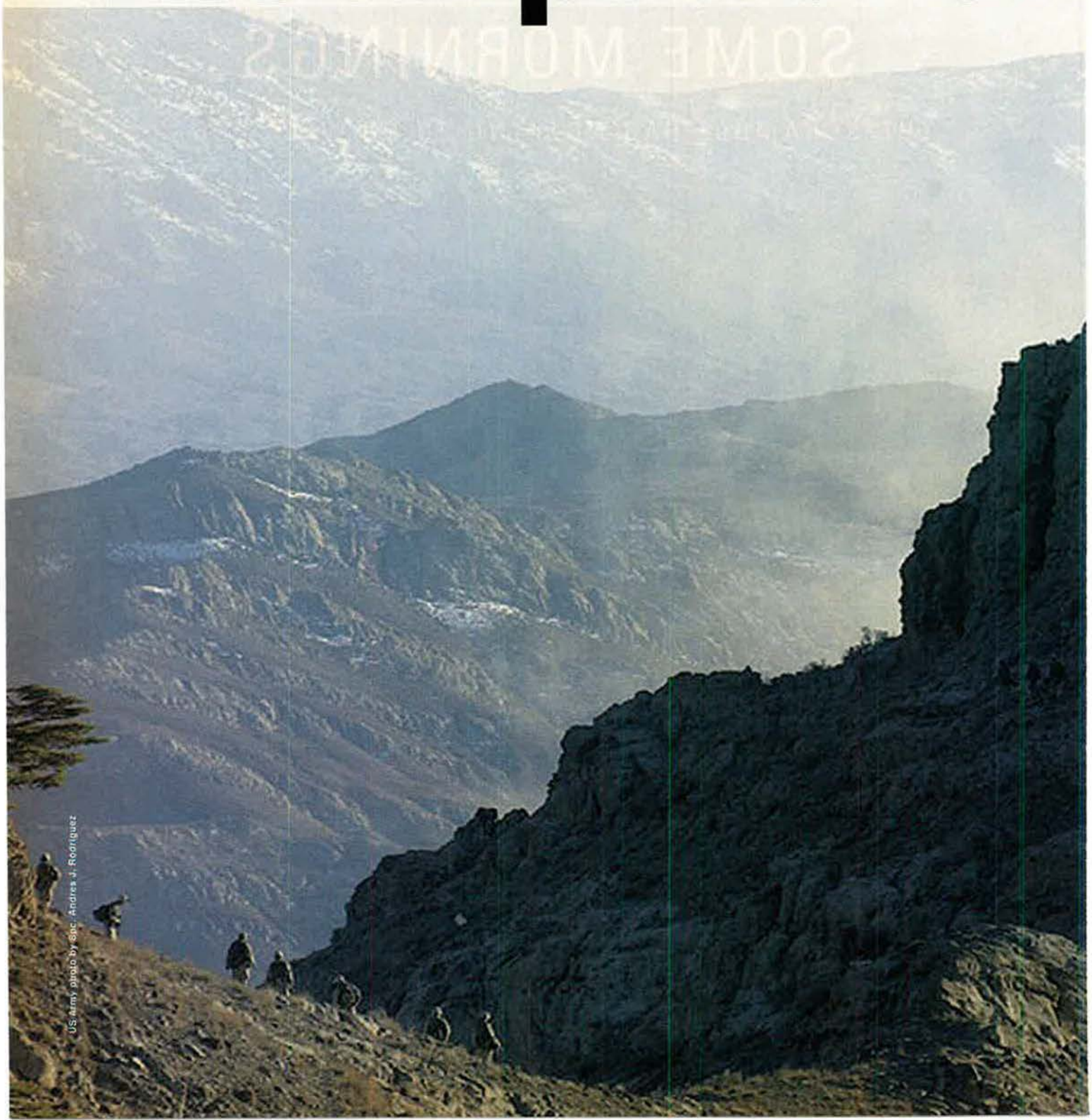
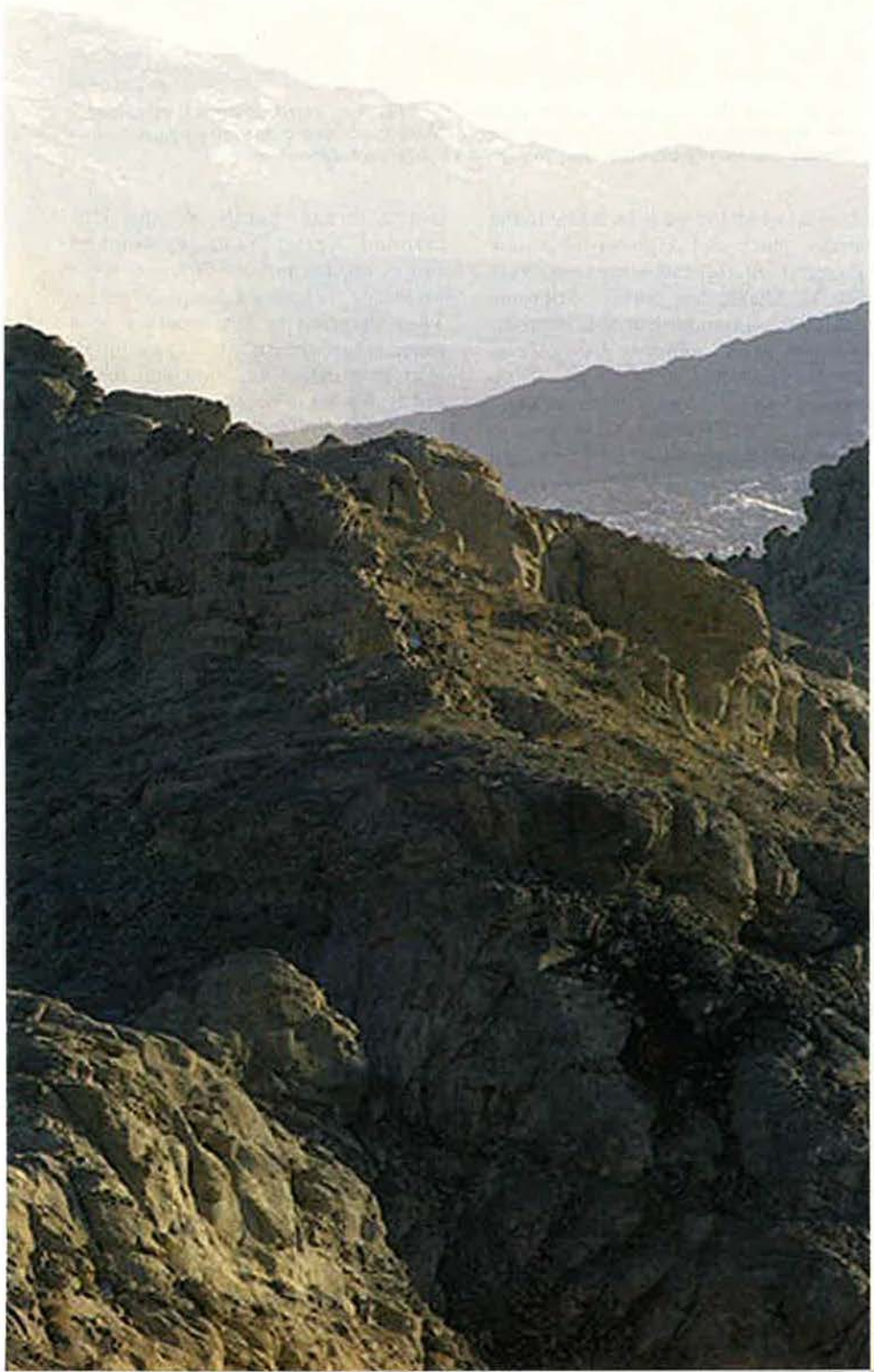
Strangling the enemy required more than encirclement and movement to contact; it took solid pounding from airpower, too.

The Airpower of



US Army photo by Sgt. Andres J. Rodriguez

Anaconda



WHEN American soldiers and their allies came under intense enemy fire in the mountains of eastern Afghanistan, it took airpower to save the day. Operation Anaconda was for US troops the biggest ground battle of the war on terrorism in Afghanistan. Beginning on March 1, 2002, US forces, their Afghan allies, and other coalition forces including Canadians and Australians took a beating in the rugged mountains near Pakistan. After initial contact sparked heavy fighting, airpower was called in to provide close air support and later to herd and pound the enemy.

Ultimately, Operation Anaconda was a success, due in no small part to the contributions of airpower and the bravery and heroism of those on the ground and in the air alike. "They defeated an evil enemy under horrendous conditions," said one military official after it was all over. Yet Anaconda—boldly named for the snake that crushes its prey—was also an object lesson in using airpower to stifle enemy resistance.

No More Tora Boras

Operation Anaconda was born out of a plan to trap al Qaeda fighters regrouping in the mountains. The quick collapse of strongholds like Kandahar compelled surviving al Qaeda fighters to move back toward

By Rebecca Grant

caves and 10,000-foot mountain peaks on the Pakistani border.

In December, at Tora Bora, al Qaeda fighters escaped bombing of the cave complex and fled into the mountains. Marine Gen. Peter Pace, vice chairman of the Joint Chiefs of Staff, said on Dec. 12, "There are multiple routes of ingress and egress, so it is certainly conceivable that groups of two, three, 15, 20 could, walking out of there, in fact, get out." US troops on the ground did not engage directly; according to Pace, their role was to support the Afghan fighters and "to direct the bombing that's taking place in support of the opposition forces." When Afghan forces encountered al Qaeda, surrender negotiations took place. Although the US tried to monitor the border with Pakistan, Pace conceded it was "not a perfect picture." The net result was that many al Qaeda fighters slipped away. The same thing happened when US airpower hit a camp complex at Zhawar Kili in January.

Frustration was building in Central Command, and clustering Taliban and al Qaeda offered a tempting target. Near the town of Shah-e-Kot, in the Arma mountains, a group of al Qaeda reportedly paid villagers to use their homes. Al Qaeda fighters also took up residence in the warren of caves built after the Soviet invasion more than 20 years earlier.

The failure to catch all the dispersed al Qaeda fighters was vexing, and when they began to mass again in the east, they presented a threat to the shaky peace and Afghanistan's new government. Retired Army Gen. Wesley K. Clark, the former Supreme Allied Commander Europe, in an interview with London's *Daily Telegraph* described it this way: "You can't win a war simply by being there and reacting." He said, "You have to do some information building and then you have to have a strong fighting force ready to follow it up."

In February 2002, Central Command watched closely as the clot of al Qaeda near Shah-e-Kot morphed from a force on the run to a concentrated threat. Satellites and Unmanned Aerial Vehicles tracked forces on the move. US teams were inserted to watch them more closely. They "started to get together in a place where they could have enough mass to be effective," said Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff. "And we've been following that, allowing it to develop until we thought it was the proper time to strike."

Defense Secretary Donald H. Rumsfeld described the danger al Qaeda still posed. "Their goal is to reconstitute, to try to throw out the new interim government of Afghanistan, to kill coalition forces, and to try to regain the ability to use Afghanistan as a base for terrorist operations."

"We intend to prevent them from doing that," he added.

There was another objective. As Myers delicately worded it in an interview on CNN, "One of the reasons we want to go in here is not just to eradicate the Taliban and al Qaeda, but also to gain information ... that might have impact on future operations somewhere around the world." Ideally, "we'd like some of them to surrender so we can get our hands on them and interrogate them," said Myers.

Part of the preparation included schooling selected Afghan soldiers in infantry tactics at a base near Khost, east of Gardez. Special forces trained perhaps as many as 1,000 Afghan soldiers in basic infantry techniques designed to improve their staying

USAF photo by MSgt. Greg M. Kobashigawa

A B-52 from the 2nd Bomb Wing, Barksdale AFB, La., returns from a mission over Afghanistan. B-52s equipped with JDAMs provided close air support—a role for the heavy bomber that many call transformational.

USAF photo by TSgt. Melissa Sanscraintie

A-10s deployed to Bagram air base, near Kabul, Afghanistan, have been flown by both active duty and reserve pilots. A-10s provide close air support for ground troops ferreting out al Qaeda and Taliban fighters in the mountains.

power and ability to fit in with a coordinated offensive. The idea was to break the pattern of advance and retreat and teach the Afghan soldiers to take and hold ground. In addition to the Afghans, 200 highly trained special forces from Australia, Canada, Denmark, Germany, and Norway joined in, while French strike aircraft signed on for coalition air duty.

CENTCOM's plan for eliminating al Qaeda pockets would be a "movement to contact" as Army Gen. Tommy R. Franks, CENTCOM head, later termed it. Instead of a single, traditional front line, the objective was to take key positions and form a screen around several known caves, compounds, and other al Qaeda strongholds. "This is a sizeable pocket of al Qaeda that needs to be dealt with," Central Command spokesman Rear Adm. Craig R. Quigley told the *New York Times*. "We have studied this place for some time."

When al Qaeda fled in front of the Afghan troops, US and coalition forces would be there to catch them. One former 10th Mountain Division commander in an interview with the *Washington Post* said that pushing an enemy into a preplanned blocking force was a classic light infantry tactic. In Afghanistan, it came with a helpful twist. Since airpower was far more precise than in the past, air–ground coordination could be more effective.

In concept, Operation Anaconda was designed to let al Qaeda build up. Then coalition forces would strike and eliminate them. Maj. Gen. Franklin L. Hagenback, who planned and led the operation, originally concluded it would take about 72 hours to complete.

Two things went wrong. First, the US, Afghan, and coalition troops did not know how much resistance they would face because estimates on the number of al Qaeda in the area varied widely. "We've been watching the area for several weeks now," Maj. Ralph Mills, a CENTCOM spokesman, said in a statement at the start of the operation. However, as at Tora Bora, it was difficult to gauge the level of resistance. "This enemy has learned how to conceal themselves from the things that we have at our disposal to look for them," one senior military official familiar with special operations tactics later explained.

USAF photo by SSgt. Aaron D. Allmon II

A crew loads 105 mm rounds into the powerful Howitzer carried by the AC-130 gunships. In Operation Enduring Freedom, the AC-130 has proved valuable for its long loiter time over target.

Three weeks before Operation Anaconda, Myers visited Afghanistan. He was briefed on the plan, but no specifics on the level of resistance were available. "Before we went in there, we heard everywhere from 200 to several thousand [al Qaeda troops]," Myers said on CNN. "We think there were hundreds." Myers told CNN that he concluded after he was briefed by Hagenback: "I don't think there was any doubt in his mind that this was going to be a tough fight."

Not knowing the exact number or location of al Qaeda fighters was not a recipe for disaster by itself. During October and November, estimates of resistance were uncertain, but the close coordination of ground teams with the air component helped identify targets quickly when needed and forestalled ambushes.

Operation Anaconda's second flaw was that the plan was not tightly coordinated with the air component. The emerging plan for Anaconda had all the earmarks of an operation planned almost exclusively within the Army component and special forces. What Myers, in his discussions with Hagenback, could not have known was that the plan for Anaconda had not been fully coordinated with the joint air component. According to one officer, the Combined Air Operations Center staff did not learn of Anaconda until a day before the operation was due to start.

Still, the operation went forward, after weeks of planning, with Rumsfeld's personal approval.

Anaconda Unfolds

The assault began early on Saturday, March 2, as trucks carried Afghan troops plus US and coalition special forces toward the small town of Sirkankel. The Afghan commander, Gen. Zia Lodin, reportedly had 450 soldiers with him. Heavy fire stalled the convoy, and one American soldier was killed by a mortar shell that hit his truck. US Army AH-64 Apache helicopters joined the fray, taking a number of hits. "There were many bad people shooting very big caliber weapons at them," said Maj. Bryan Hilferty, a 10th Mountain Division spokesman.

South of Sirkankel, a unit of the 101st Airborne Division also met opposition. Its commander, Col. Frank Wiercinski, said: "We survived three mortar barrages during the day and at one point we had nine or 10 al Qaeda coming to do us, but instead, we did them." Nearby in Marzak, elements of the 10th Mountain Division were pinned in another 12-hour battle, with mortar rounds and Rocket-Propelled Grenades taking a toll of 13 Americans wounded. Apache helicopters dove into the fray taking multiple hits from RPGs and small arms.

The encirclement was not going as smoothly. Al Qaeda fighters were dispersed in small groups sized from

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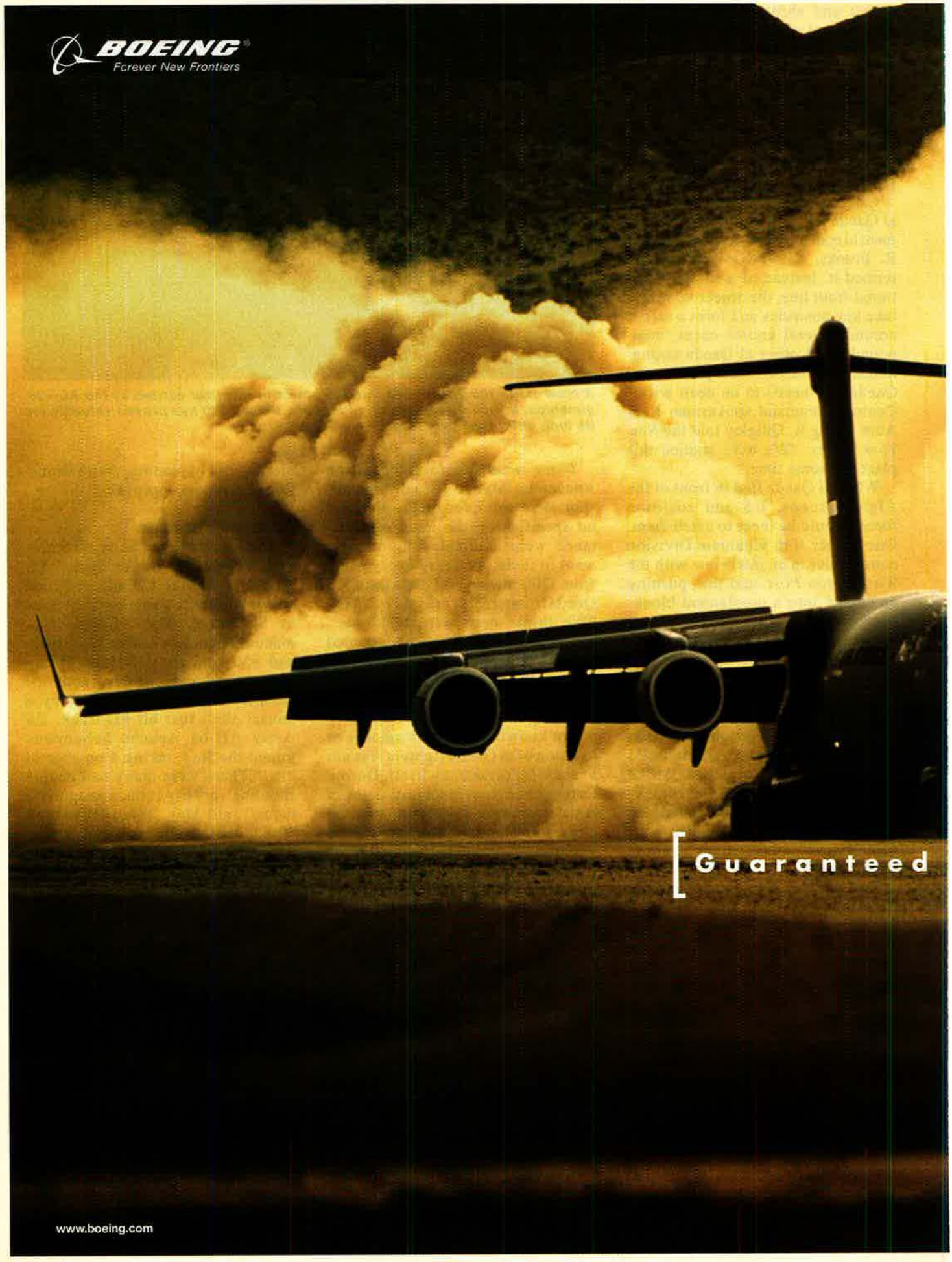
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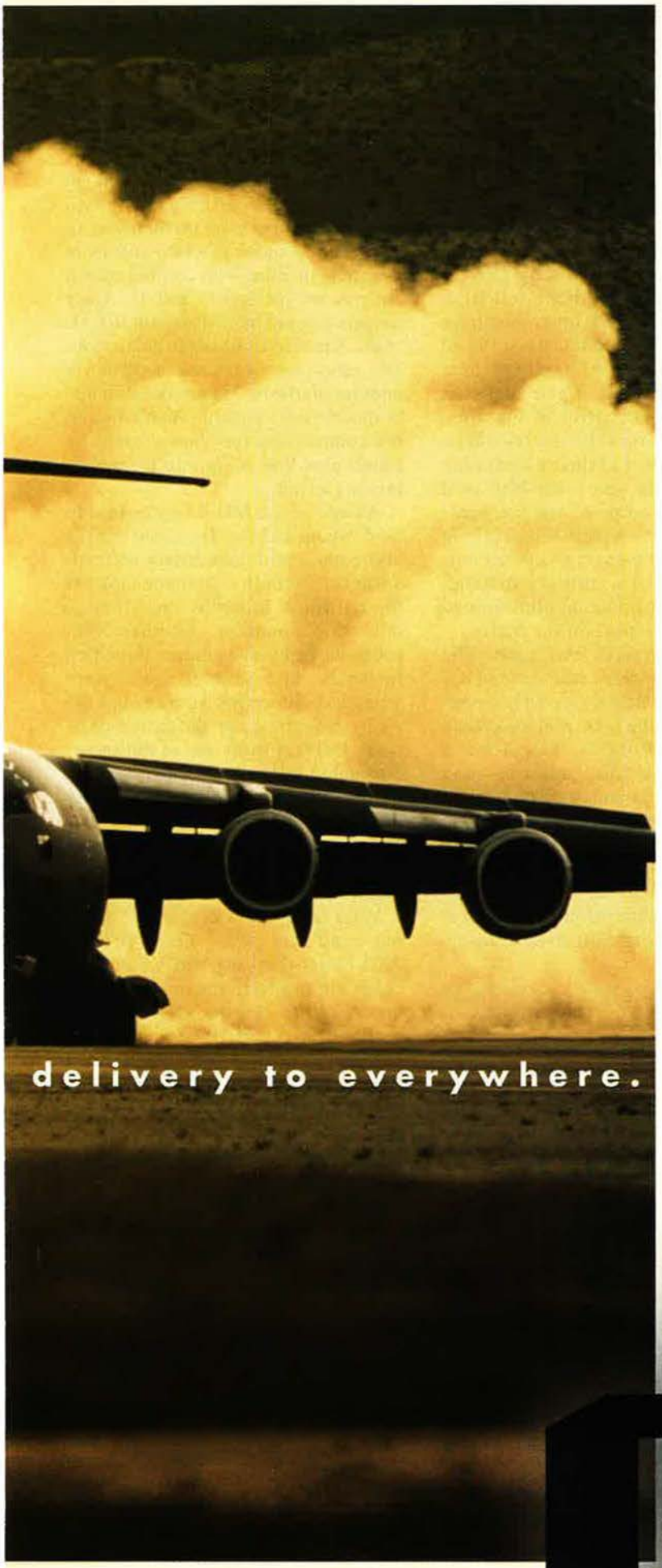

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C-17

There's only one.

Continued from p. 63

as few as three men to as many as a score. Some sheltered in the cave system while others occupied prepared positions on the mountain ridges. As coalition forces later found, the strong points were well-supplied with weapons brought in over the preceding months. Al Qaeda were indeed herded together—but they were ready for a fight.

Worse, coordination with the Afghans was not working. One US detachment poised near a small al Qaeda compound expected a supporting attack from Lodin, but it called in airpower instead. Al Qaeda "kind of hit us by surprise at first, south of the compound, and moved up," Army Lt. Charles Thompson told the *Los Angeles Times*. "But aircraft blew up about a platoon-sized element."

Takur Gar

For US forces, the worst was yet to come. Seven Americans died in fierce fighting during attempted helicopter insertions near a mountaintop called Takur Gar on March 4.

The ridge at Takur Gar commanded a view of the entire valley—15 miles of visibility in the clear weather of Operation Anaconda's first week. Part of the plan for Operation Anaconda called for US forces to take Objective Ginger, a little below the top of the ridge, giving coalition forces the sweeping strategic view of the valley. But above the ridge, on its shaded side, three feet of new snow masked hardened bunkers where al Qaeda fighters were ready to put up deadly resistance. The snow canopied on a pine tree, making the cover even more effective. The snow filled in footprints that might have revealed the presence of the enemy force.

First to discover the al Qaeda nest was a Navy SEAL team trying to insert troops under cover of darkness. The SEALs' MH-47 helicopter was hit through the hydraulic lines and withdrew hastily. Petty Officer 1st Class Neil C. Roberts fell from the back of the helicopter and later died of a bullet wound he suffered while fighting. An AC-130 and then, as daylight neared, a pair of F-15s flew combat air patrol in the area. The special forces did not take helicopter firepower of their own for the mission. "This was a stealthy infil [tration] to an outpost. And you don't want to put a whole lot of stuff in there to tell the enemy you're coming," explained a military official, an Army aviator later commissioned by Franks to report on the battle.

Tactical surprise was gone. The SEALs' helicopter crash-landed 4.3 miles away, while a second helicopter picked up the team and took them back to save Roberts. Now it was a rescue—not a long mission—and they needed to move fast. To get back to Roberts, the SEALs "dropped much of their equipment to lighten them up" and returned to the ridge taking just their combat gear and additional ammunition, said the senior military official. After reinsertion, the SEAL team on the ground picked their way forward over two and a half hours to reach Roberts. In the process they called on an AC-130 and two F-15Es for support and one unleashed a 500-pound Laser-Guided Bomb on the ridge.

While one F-15E refueled on an aerial tanker track 20 miles away, two more helicopters were on their way to the scene. A quick reaction unit from Bagram Air Base with combat search and rescue specialists and 10 Army rangers was summoned to aid the SEAL team. The SEALs trying to get to Roberts relayed coordinates to them via another platform—most likely an airborne control element—that filled in the communications gaps created by interrupted line of sight in the mountainous terrain.

As one of the MH-47s prepared to land "about 165 feet from that bunker at the top," said the military official, a Rocket-Propelled Grenade took off the tail rotor, dropping the Chinook onto the mountain. Another RPG killed the right-side gunner. Four died instantly, and several more were wounded. Surviving aircrew and the Army rangers set up defensive positions 150 feet from one of the snow-concealed bunkers. But the downed helicopter, now a refuge for the wounded, made a fat target. An attack by the rangers on the bunker—uphill, in snow—failed, leaving air as the only immediate recourse.

With the team was a USAF combat controller, SSgt. Gabe Brown. "All I kept thinking was we needed close air support, and we needed it now," Brown recalled. "My job was to concentrate on bringing in the bombs to knock out the enemy, and I knew I needed to do it fast."

After getting communications up and speaking with a fellow controller two miles away, Brown contacted the F-15Es. When Brown saw the enemy fire, he realized they were too close to risk using LGBs. "If we couldn't kill the bunker, we were going to be surrounded," said Brown.

Even with common visual references, the F-15E's job was tough. One pilot made a low sweep over the area, popping off rounds at the enemy troops. Brown said, "You could see the snow flying off the ground near the bunker, and I knew he was hitting it." The F-15E made several more passes, then the pilot indicated he was out of ammunition.

USAF photo

Crippled by rocket fire, an Army Chinook helicopter landed just yards from an enemy bunker, just below the Takur Gar ridgeline. A USAF combat controller called in F-15s to fire on the bunker—a precision bomb collapsed it.

The enemy was still firing. It was two hours into the fight, and Brown said he knew it would only get worse. He called for a bomb drop.

It worked. The bombs were right on target and collapsed the bunker. "The noise was just like it sounds in the movies," Brown remembered. "You could smell the burning pine off the trees and see the snow kicking off the ground."

Brown then told the F-15Es the enemy troops were too close and to use only guns again. No F-15E had ever used its gun in combat for close air support. All Brown and the F-15Es could target was a single pine tree, the lone visual reference both could sight. Brown called it the bonsai tree.

Throughout the day USAF aircraft provided close air support as the team on the ground held off al Qaeda for 14 hours before darkness fell and another helicopter extracted them. It was close air support at its best, but the overall cost of the mission was high. The ridge at Takur Gar claimed seven American lives.

Franks praised the individuals who fought. "It is the stuff of which heroes are made," Franks said of the battle. "We needed to have somebody on that hill," he said. "That's the mission that these young people took in stride."

Al Qaeda's concealed bunkers and command post changed the equation from a stealthy infiltration to a struggle to survive under fire. However, Franks speculated that, had Roberts not been left behind, the forces would have simply backed off and called in an air strike. As it was, the battle on the ridge took the utmost finesse in close air support.

USAF photo by SrA. James Harper

F-15Es flying close air support at Takur Gar put munitions on target using a single pine tree for visual reference. Precision bombing took out the al Qaeda bunker, but spared US personnel fighting only yards away.

Stacked Up

For Operation Anaconda as a whole, contact with the enemy demonstrated the need for more airpower, far exceeding the plan for a 72-hour campaign. By Sunday, bombers, fighters, and gunships were stacking up in the area estimated by the Pentagon to be only about 70 square miles—about the size of the District of Columbia.

The plan to flush out al Qaeda with Afghan troops while the Americans held blocking positions was also crumbling. Coordinating action with the Afghan troops remained a weak link. In the November offensives, timing for the Afghan advances had rarely been precise, making US Army–style coordinated offensives more a dream than a reality. Yet Anaconda was to rely heavily on coordination. Sgt. Maj. Frank Grippe of the 10th Mountain Division told the *New York Times* that his mission was to set up a blocking position to kill or capture al Qaeda driven out by advancing Afghan troops. But the new training in infantry tactics the Afghans had received was not watertight. On March 3, after initial resistance, Lodin pulled back his 450 men to regroup and did not rejoin the fight until Wednesday, March 6. One senior officer told the *New York Times*, "This plan changed 180 degrees."

The new heading relied far more on US forces and on airpower to help draw out al Qaeda. A senior defense official told the *Washington Post*, "The original plan was supposed to be Afghan led and US supported. After the early difficulties, it ended up becoming US led and Afghan supported." The other change was fighting al Qaeda in place, instead of blocking and trapping them fleeing, as expected from their behavior at Tora Bora. "We ended up having to

USAF photo by MSgt. Dave Nolan

An F-15E from the 366th Air Expeditionary Wing, loaded with 500-pound laser-guided bombs, prepares for a mission over Afghanistan. US aircraft had dropped more than 2,500 bombs in the Takur Gar area by March 12, 2002.

US Army photo by Sgt. Kevin P. Bell

Northern Alliance members inspect the remnants of bunkers in the mountains near the Shah-e-Kot Valley. Such Taliban and al Qaeda redoubts were pounded hard from the air.

fight the war in the area where the enemy was, rather than get them to run into choke points," the senior official added.

Revised tactics called for employing ground forces plus Predator UAVs and satellites to locate the enemy. With US ground forces pinning al Qaeda, precise air strikes delivered heavy blows. Those not killed by the bombing could be picked off as they emerged from caves and hideouts. Not only did the initial cluster of al Qaeda come under attack, but the battle drew in more al Qaeda fighters. "We caught several hundred of them heading with RPGs and mortars toward the fight," Hagenback told reporters on March 5. "We body-slammed them."

A-10s from Pope AFB, N.C., moved forward on March 10, flying combat sorties within 15 hours after receiving mission notification. Two A-10 pilots, Lt. Col. Edward Kostelnik and Capt. Scott Campbell, were credited with killing more than 200 al Qaeda and Taliban in a single mission, according to Lt. Col. Arden Dahl. "After that night, all al Qaeda and Taliban and their buddies were on the run," Dahl said. "They just got swacked."

Those in action praised the air support they got. Army Lt. Chris Beal said after seven days in battle: "We were hailed on, snowed on, shot at, and mortared at, but we did the right thing at the right time. After a lot of close air support came in, anything that moved was killed by our birds [helicopters] or snipers." Testimony to the impact of airpower painted a vivid picture of the real tactics of Operation Anaconda. Marine Capt. Brunson Howard, an AH-1 Cobra pilot, described seeing one al Qaeda fighter come out of a foxhole with an RPG, only to face three helicopter gunships. "He never got the chance to put it on his shoulder," Howard said.

Strategic Success

Strategically, the plan worked. American fighters and bombers dropped more than 2,500 bombs in the area by March 12. As more al Qaeda positions were located and destroyed, the operation began in its second week to focus on smaller and smaller pockets. By mid–March, news reports cited about 500 al Qaeda as dead.

The secondary objective, finding out more about al Qaeda operations, was also met. US forces found a mail-bomb factory and a hoard of technical manuals on microelectronics and digital technology in one house abandoned by al Qaeda during the fighting. "I was awestruck by the minute detail and ingenuity" of the materials, Army Staff Sgt. Robert Bond, one of the combat engineers at the house, told *USA Today*.

Franks claimed afterward on ABC's "This Week" that he was not surprised by the intensity of the battle. "I think anytime you have a whole bunch of people in uniform moving into an enemy area in order to attack objectives, there will certainly be places within this area where we'll encounter very, very substantial resistance." As Franks explained it, troops had to be inserted to gauge the strength of al Qaeda. Franks said, "We will almost never have perfect intelligence information, and so what we do is we take the information that we have and we move in to confirm or deny the presence of the enemy forces that we suspect." Franks admitted he "would not downplay the possibility" that his forces "got into a heck of a firefight at some point that they did not anticipate."

Clark, the former SACEUR, evinced the same tactical proclivities when he said in the *Daily Telegraph* interview about Anaconda, "The thing we must have is intelligence domination on the battlefield, and that means human intelligence and that means boots on the ground."

Strangling al Qaeda strongholds took more than ground encirclement and movement to contact—it took a solid pounding from airpower, too. One clear lesson was that air–ground coordination—a stunning success in the earlier phases of Operation Enduring Freedom—was given short shrift in the original planning for Operation Anaconda. The 72-hour operation stretched over more than two weeks, demanded intense air support, and might well have had seen higher casualties had the joint air support—from B-52s to F/A-18s to Apaches—not been there when needed.

"This will not be the last such operation in Afghanistan," Rumsfeld said March 4. But it may be the last one fought without proper planning that includes the joint air component from the start. ■

Rebecca Grant is a contributing editor of Air Force *Magazine. She is president of IRIS Independent Research, Inc., in Washington, D.C., and has worked for* RAND, *the Secretary of the Air Force, and the Chief of Staff of the Air Force. Grant is a fellow of the Eaker Institute for Aerospace Concepts, the public policy and research arm of the Air Force Association's Aerospace Education Foundation. Her most recent article, "Osirak and Beyond," appeared in the August 2002 issue.*

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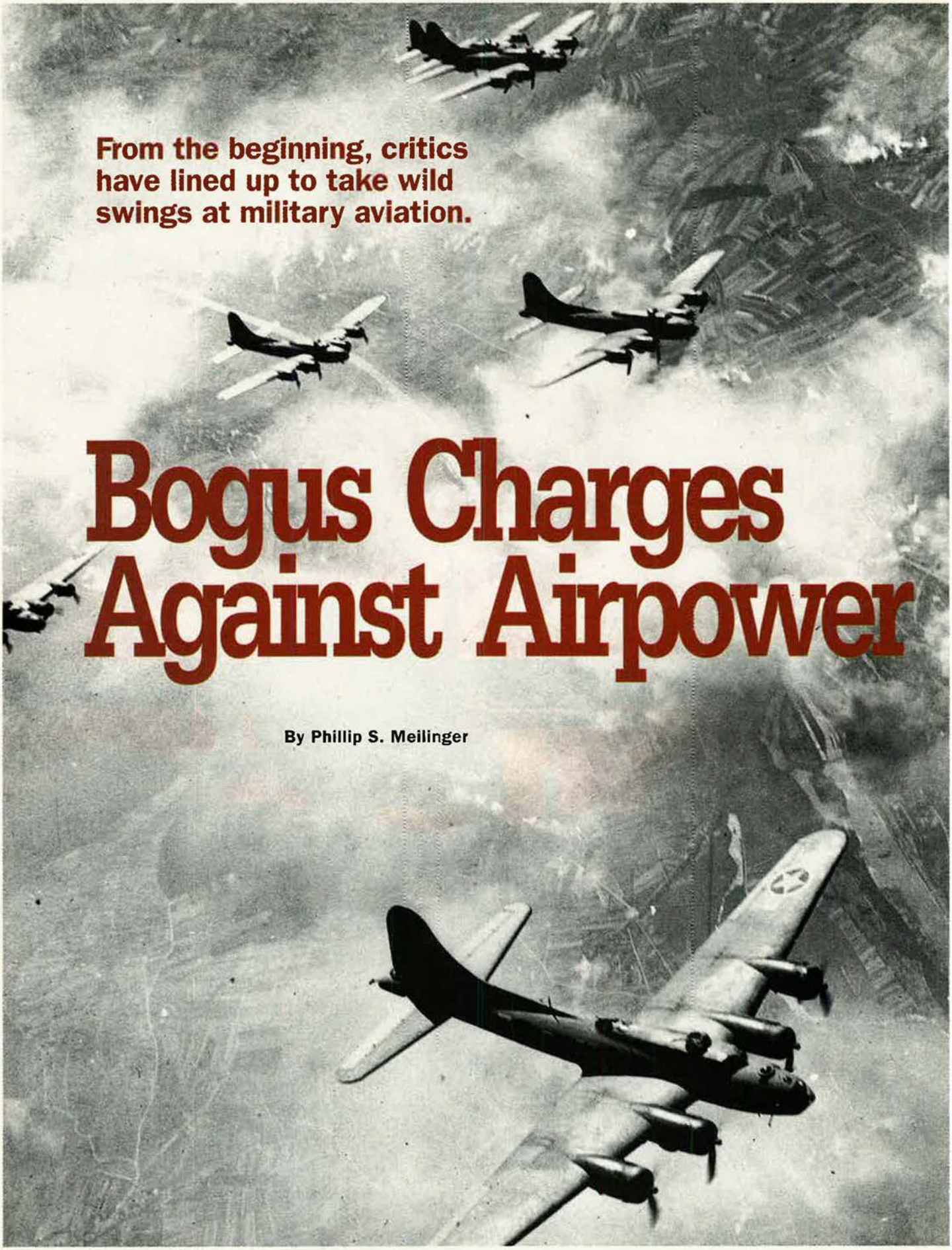

From the beginning, critics have lined up to take wild swings at military aviation.

Bogus Charges Against Airpower

By Phillip S. Meilinger

AIRPOWER, and specifically strategic bombing, generates controversy. Ever since the US Army bought its first "aeroplane" in 1909, debates have raged over its utility, effectiveness, and even its morality. These debates continue despite (or perhaps because of) the hundreds of books that have been written on the subject and the scores of combat operations witnessed. As the saying goes, certain topics tend to produce more heat than they do light. Some of the questions regarding airpower and strategic bombing defy easy answers, because soldiers, sailors, and airmen approach war from different viewpoints and service–cultural perspectives. Unfortunately, much of the debate regarding airpower and strategic bombing has been colored by misconceptions, inaccuracies, and myths.

This paper is an attempt to clear away some of the detritus by answering some of the charges commonly made regarding airpower and strategic bombing.

Charge: Between the world wars, the Army Air Corps received more than its fair share of funds from the Army, but continued to complain, agitate, and ask for more.

Response: On average, the Air Corps received 11.9 percent of Army appropriations between 1919 and 1939. There were, however, other sources of funding that funneled money into base construction, ordnance, medical supplies, etc., that benefited the Air Corps. When these "indirect appropriations" are included, the Air Corps received on average 18.2 percent of the total Army budget. Note that is the Army budget, not the US defense budget, which included the Navy and Marine Corps. This low level of emphasis is highlighted by the fact that as late as 1939, of the 68 general officers of the line in the US Army, not one of them belonged to the Air Corps. No service today would consider 10 percent of the defense budget as equitable, nor would it want its most senior positions occupied by officers from another service.

Charge: The Air Corps was unbalanced toward bombardment entering World War II, in both doctrine and force structure. As a consequence, air support of ground forces was inadequate and largely ignored by airmen.

Response: The Air Corps Tactical School is often depicted as a hotbed of radicalism. In actuality, 50 percent of the ACTS curriculum in the mid–1930s did not even deal with air matters. Instead, it covered the other Army branches, naval affairs, and the basic rudiments of being a staff officer—writing, logistics, administration, etc. Of the 50 percent of the curriculum devoted to air matters, only part focused on strategic bombing—pursuit, attack, and observation were also covered. In the 1935 curriculum, for example, 89 out of 494 class periods were devoted to "Air Force" and "Bombardment" subjects—18 percent of the curriculum. Certainly, the budding doctrine

Two years prior to the attack on Pearl Harbor, less than two percent of the US aircraft buy went to strategic bombers.

of strategic bombardment was taken very seriously at ACTS, but that is a far cry from maintaining that bombardment dominated the curriculum.

As for official Army doctrine—which is what the Air Corps was required to follow—Field Manual 1-5, *Employment of Aviation of the Army,* dated 1940, stated that offensive air forces would receive their targets from the "field commander," a soldier, and that air's first priority was to "decisively defeat important elements of the enemy armed forces." That was the doctrine with which airmen began World War II.

If it were true that the Air Corps favored strategic bombing, then one would expect to see that reflected in iron on the ramp. Yet, when World War II broke out in Europe in September 1939, there were a mere 26 B-17s in the Army Air Corps. The US then began to rearm, and over the next two years the Air Corps purchased nearly 21,000 aircraft. Of those 20,914 airplanes, 374 were strategic bombers—only 1.8 percent of the total aircraft bought during that two-year period.

"Attack" aircraft, those specifically designed to support ground forces, were always a priority within the Air Corps. Indeed, the first all-metal monoplane in the Air Corps was the Curtiss A-8 Shrike that entered the inventory in 1932, nearly two years before the Martin B-10. In 1944, the Army Air Forces' Ninth Air Force in Europe consisted of 4,500 aircraft—the largest tactical air unit in history—and was larger than the Luftwaffe's entire combat strength. The Ninth's commander, Lt. Gen. Hoyt S. Vandenberg, was a career fighter pilot who became the Air Force Chief of Staff in 1948. Other tactical airmen who achieved four-star rank included Nathan F. Twining (later Chairman of the Joint Chiefs of Staff), George C. Kenney, Earle E. Partridge, Ira C. Eaker, and John K. Cannon. Ground support aviation and its practitioners did not suffer.

Charge: The Air Corps entered World War II with a "Douhetian" concept of air war that emphasized area bombing and the waging of war on women and children.

Response: Giulio Douhet was an Italian air theorist whose major work, *Command of the Air,* advocated the bombing of urban centers. No one in the Air Corps hierarchy during the 1930s advocated such an air strategy. On the contrary, for military, legal, and humanitarian reasons, such an air strategy was expressly rejected. Instead, the Air Corps formulated a doctrine of high-altitude, daylight, precision, formation bombing of industrial targets. The prewar theories of ACTS were translated into a war plan in August 1941, AWPD-1. Its thrust was strikingly similar to those theories—no surprise since four former ACTS instructors wrote the plan. It called for the destruction of Germany's industrial structure through a sustained bombing campaign.

The doctrine manual the AAF took into the war, FM 1-5 referenced earlier, listed several target systems that could be struck after the first priority (enemy forces) had been sufficiently addressed: raw materials, rail, water, and motor communications, power plants, transmission lines and other utilities, factories and processing plants, steel mills, oil refineries, "and other similar establishments." There is no mention of targeting the civilian population. On the other hand, the bleak realities of war, coupled with the technological limitations of contemporary aircraft and bombsights, the miserable weather over Germany and Japan, and extremely stiff enemy defenses, rendered prewar doctrine insufficient. But few sailors or soldiers accurately predicted what the war would look like, either, as Pearl Harbor, Savo Island, Bataan, and Kasserine Pass painfully illustrated. It took all of the services some time to adjust to the war's realities.

Charge: Airmen thought they could win the war alone.

Response: Airmen did not believe they could win the war "alone;" rather, they thought that airpower could play a dominant or decisive role in both Europe and the Pacific—just as soldiers and sailors believed they could play such roles. Airmen realized the importance of the attritional toll that the Eastern Front was taking on the German war machine, as well as the effects of the US Navy's unrestricted submarine warfare campaign against Japan. Some airmen *did* maintain, however, that given a higher priority, strategic bombing—*in conjunction with* these land and sea campaigns—could force German and Japanese surrender prior to an invasion of France or the Japanese home islands. That is in fact what happened in Japan and, it was believed, could have happened in Europe. Realizing that much of the Allied bombing effort was diverted to support the invasions in North Africa, Sicily, Italy, and Normandy, the Battle of the Atlantic, the attacks on the German missile launching sites and the submarine pens, the Okinawa campaign, and B-29 mine-laying operations in Japanese home waters, one can better understand the airmen's argument. Indeed, 85 percent of all American bombs fell on Germany *after* D–Day (June 6, 1944). In the Pacific, 96 percent of all bombs fell on Japan after March 9, 1945. Airmen have often wondered what the results would have been had this "crescendo of bombing" occurred earlier.

Charge: German production continued to increase throughout 1944, especially aircraft production. Therefore, the bombing offensive was ineffective.

Response: Production did increase in Germany through the first half of 1944; it then began falling precipitously

in virtually all categories that autumn. Most of the production increase was the result of slack in the German economy—it had not been fully mobilized—and inefficiency caused by the lack of centralized control over raw materials and production assets. For example, the automobile industry, the largest sector of the German economy in the 1930s, was utilized at barely 50 percent of its capacity during the war. Many of these maladies were remedied by the appointment of Albert Speer as armaments minister in early 1942, but the real issue concerns what German leaders *expected* to produce vs. what they actually *did* produce. The difference between those figures is largely attributable to Allied bombing. In January 1945, Speer reported that Germany had produced 35 percent fewer tanks, 31 percent fewer aircraft, and 42 percent fewer trucks than planned during the previous year. German industry was able to surge in 1943 and early 1944 partly because it had not yet been seriously attacked (recall the statistics above regarding when the bombs actually fell on Germany). When it *was* attacked, the results were dramatic. In January 1945, Speer told Hitler: "The war was over in the area of heavy industry and armaments. ... From now on, the material preponderance of the enemy can no longer be compensated for by the bravery of our soldiers."

As for aircraft production, *fighter* production apparently did increase but did so at the expense of bomber and cargo aircraft—65 percent of all aircraft accepted by the Luftwaffe in 1944 were single-engine fighters, whereas in 1942, more than half of aircraft production had been bombers. Allied bombing forced Germany to stop building *offensive* weapons and concentrate instead on *defensive* ones.

There were also large discrepancies in the number of enemy fighters supposedly produced and the number actually employed. The weakness of the Luftwaffe can be best understood when it is realized that by April 1944 there were only 300 German fighters in the west to oppose the 12,000 aircraft of the Allies, with another 500 in the east to oppose the 13,000 aircraft of the Soviets. As a consequence, on D–Day the Luftwaffe flew only 200 sorties, most of which failed to reach the beachhead and none of which inflicted significant damage—compared to the Allies who flew nearly 9,000 sorties. The Luftwaffe had been eliminated as a threat to the Allied invasion, despite what the production figures allegedly illustrated.

Targets were tactical—armored vehicles, motor transports, and locomotives—not urban centers.

Even if we sweep those arguments aside, we look at the basic charge: Production increased, so bombing was a failure. A different perspective would be to note that in 1939 the German army consisted of 120 divisions. Yet, despite four years of war and the combined efforts of the Soviet, American, British, and French armies, it had grown to 318 divisions by 1944. Using the (fatuous) logic of the production argument above, the Allied armies were a dismal failure—no matter how hard they fought, the German army continued to grow.

Charge: Bombing was ineffective because it stiffened enemy morale.

Response: In truth, the United States Strategic Bombing Survey reported the following regarding morale in Germany: "Bombing appreciably affected the German will to resist. Its main psychological effects were defeatism, fear, hopelessness, fatalism, and apathy. It did little to stiffen resistance through the arousing of aggressive emotions of hate and anger. War weariness, willingness to surrender, loss of hope in German victory, distrust of leaders, feelings of disunity, and demoralizing fear were all more common among bombed than among unbombed people."

Regarding the Japanese population, the USSBS reported: "Civilian morale was predominantly, but not completely, destroyed. Just before the end of the war, there was still roughly one-fourth of the civilian population with some confidence in victory and willingness to go on." A study of morale under bombing conducted later confirmed the USSBS findings, while also concluding that if the populace did become angry, it was usually directed at their leaders for failing to protect them, not against the enemy.

Absenteeism among workers is a significant measure of economic performance, and in mid–1945 absenteeism in Japanese factories approached 50 percent. Nearly 8.5 million people had fled the cities to escape the bombing and nearly one-third of them were factory workers. In Germany, absenteeism hit 20 to 25 percent in key factories.

Charge: The atomic bombs were unnecessary. The Japanese were about to surrender, and even if not, an invasion or continued blockade would have been more humane.

Response: There is no indication the Japanese government was seriously contemplating surrender in July or early August 1945. President Truman's "Potsdam Declaration," calling on Japan to surrender or else, but also suggesting that survival of the emperor was acceptable, was rejected on July 26. Top secret "Ultra" intercepts from that time frame reveal that the Japanese were expecting and indeed hoping for an invasion—they assumed it would be such a bloodbath (based on casualty figures at Iwo Jima and Okinawa) that the Americans would be deterred from launching such an invasion and they could therefore get better peace terms.

As for an invasion, according to US intelligence at the time, there were more than 600,000 Japanese defenders on the island of Kyushu—where our first landings, involving 767,000 personnel, were scheduled for Novem-

The* Enola Gay *mission eliminated a land invasion, which could have cost hundreds of thousands of lives.

ber 1945. In reality, postwar findings revealed there were 900,000 Japanese defenders. A US invasion of the main island of Honshu, consisting of more than one million soldiers, sailors, airmen, and marines, was scheduled for March 1946. There were more than two million Japanese regulars defending the main island.

The following statistics give an idea what an invasion would have meant:

- Japanese soldiers tended to fight to the death rather than surrender—95 percent on average throughout the war, with 97 percent at Saipan and 99 percent at Iwo Jima. Using these precedents, Japanese military losses would have been nearly three million dead.
- In previous Pacific campaigns, US casualties ran about one-third of the troops engaged. Thus, of the 1.75 million men scheduled to assault the Japanese home islands, we should have expected more than 500,000 casualties. During the war, about 30 percent of the US Army's combat casualties were deaths; based on that ratio, the invasions would have cost around 150,000 US dead.
- Civilians got caught in the way when US and Japanese forces fought. As many as 150,000 Japanese civilians died during the Okinawa campaign, as well as 10,000 Korean laborers. Hundreds of thousands of Japanese civilians would have been "caught in the way" and killed in the massive ground assaults scheduled for late 1945 and early 1946.

Canceling the invasion and maintaining the blockade would have been an extremely long-term strategy, and it would have had two seriously deleterious effects. First, it would have slowly starved the Japanese population to death, as we did the Central Powers in World War I, when it is estimated that more than 750,000 German civilians died as a direct result of the Allied starvation blockade. Deliberate starvation is not more humane than bombing. Second, while we held back and waited for the blockade to take effect, we would have been condemning millions of Asians then under Japanese occupation to privation or death. A US policy of waiting would no doubt have been branded later as a deliberately racist strategy, because as many as six million Asians had already died under Japanese rule. Many more Chinese, Koreans, Vietnamese, Indonesians, Malays, etc., would have perished had we simply waited. In addition, the Japanese held more than 558,000 Allied prisoners of war and internees in August 1945. Japanese prison camps were notoriously deadly—nearly 40 percent of all prisoners died in captivity. Waiting the Japanese out almost certainly would have condemned these half-million men and women to death.

As for the contentious issue of what role the bombing, and specifically the atomic bombs, played in the Japanese decision to surrender, here are some statements made by key Japanese leaders at the time:

- "Fundamentally, the thing that brought about the determination to make peace was the prolonged bombing of the B-29s."—*Prince Fumimaro Konoye, president of Great East Asia League and former Premier*
- "Merely on the basis of the B-29s alone, I was convinced that Japan should sue for peace."—*Baron Kantaro Suzuki, Premier*
- "If I were to give you one factor as the one leading to your victory, I would give you the Air Force."—*Adm. Osami Nagano, supreme naval advisor to the emperor*
- "The chance had come to end the war. It was not necessary to blame the military side, the manufacturing people, or anyone else—just the atomic bomb. It was a good excuse."—*Chief Cabinet Secretary Hisatsune Sakomizu*
- "The enemy has begun to employ a new and most cruel bomb, the power of which to do damage is, indeed, incalculable, taking the toll of many innocent lives. Should we continue to fight, it would not only result in an ultimate collapse and obliteration of the Japanese nation, but also it would lead to the total extinction of human civilization."—*Emperor Hirohito, radio address announcing surrender, Aug. 14, 1945*

Charge: Strategic bombing was, overall, a wasted effort producing only minor effects.

Response: The subject of strategic bombing's overall effectiveness in World War II could be the subject of several papers. Unquestionably, it was the combined efforts of all the services and all the Allies that brought victory. Even so, at the risk of oversimplifying the issue, here are some statistics derived from American and British bombing surveys:

- By December 1944, German rail traffic was down by 50 percent, aviation fuel production was down by 90 percent, Ruhr steel production was down by 80 percent, and German coal supplies were down by 50 percent.
- By mid–1943, Italian industrial production was down 60 percent.
- Seventy-five percent of all German 88s (their best artillery piece and also best tank killer) were being used as anti-aircraft guns.
- Anti-aircraft artillery absorbed 20 percent of all German ammunition production, as well as one-third of

Continued on p. 76

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Continued from p. 74
all optics and more than one-half of all radar and signals equipment. The aluminum used to make AAA shells was enough to have built an additional 40,000 airplanes.

■ Two million people were engaged in the repair of damaged factories; one-half million were engaged in trying to move German factories underground; one million were used to reproduce civilian goods destroyed by air attack; and one million were engaged in the production and manning of air defense equipment. (There were more than 55,000 AAA batteries in 1943.) That's a total of 4.5 million people, or 20 percent of the German workforce. What if those 4.5 million had been building tanks, bombers, or submarines, or worst of all, put in uniform and stationed in France to defend against an Allied invasion?

Note also that production losses were not the result of German industrial areas being overrun by Allied troops. Silesia was not captured by the Soviets until late January 1945; the Rhine was not crossed at Remagen until March 7, 1945; and the Ruhr, Germany's industrial heartland, was not overrun until April 1945.

Below are statistics from USSBS regarding Japan:

■ By July 1945, aluminum production was down to nine percent of the wartime peak.

■ Steel and oil production were down to 15 percent of wartime peak.

■ Production in cities *not* bombed in Japan was at 94 percent of wartime peak but 27 percent in cities that *had* been bombed.

■ Overall, Japanese production dropped 53 percent between November 1944 and July 1945.

This latter fact prompted the USSBS to state: "By July 1945, Japan's economic system had been shattered. Production of civilian goods was below the level of subsistence. Munitions output had been curtailed to less than half the wartime peak, a level that could not support sustained military operations against our opposing forces. The economic basis of Japan had been destroyed."

Airpower alone did not cause this catastrophic collapse. The US Navy's unrestricted submarine warfare campaign, as well as the amphibious assaults of hundreds of thousands of US and Allied troops, were crucial to ultimate victory.

Regarding the cost of airpower: The US spent about $183 billion on armaments during World War II, of which the AAF's aircraft share was $45 billion (24.5 percent). Of that amount, the AAF spent $9.2 billion on heavy bombers (20.4 percent of the AAF total, five percent of the US total). In numbers of aircraft produced, of the AAF's 230,175 total, 34,625 were heavy bombers (15 percent). Was the five percent spent on bombers by the AAF excessive?

Charge: Strategic bombing was inherently inhumane and uncivilized because its victims were mainly helpless civilians.

Response: Civilian casualties in war are always too many and always regrettable. The USSBS states that 630,000 died in Germany and Japan as a result of air attacks—later estimates push this number higher. Although a terrible toll, it must be remembered that 60 *million* people died in World War II. This horrific total included 15 million Russian civilians—more than one million at the siege of Leningrad alone—yet bombing played almost no role on the Eastern Front. The bombing of Dresden in February 1945, often cited as a heinous act, killed perhaps 30,000 people, but more than five times that number of civilians died in the ground fighting on Okinawa. In truth, the vast majority of those who died in World War II, worldwide, were the result of traditional land and sea warfare. ■

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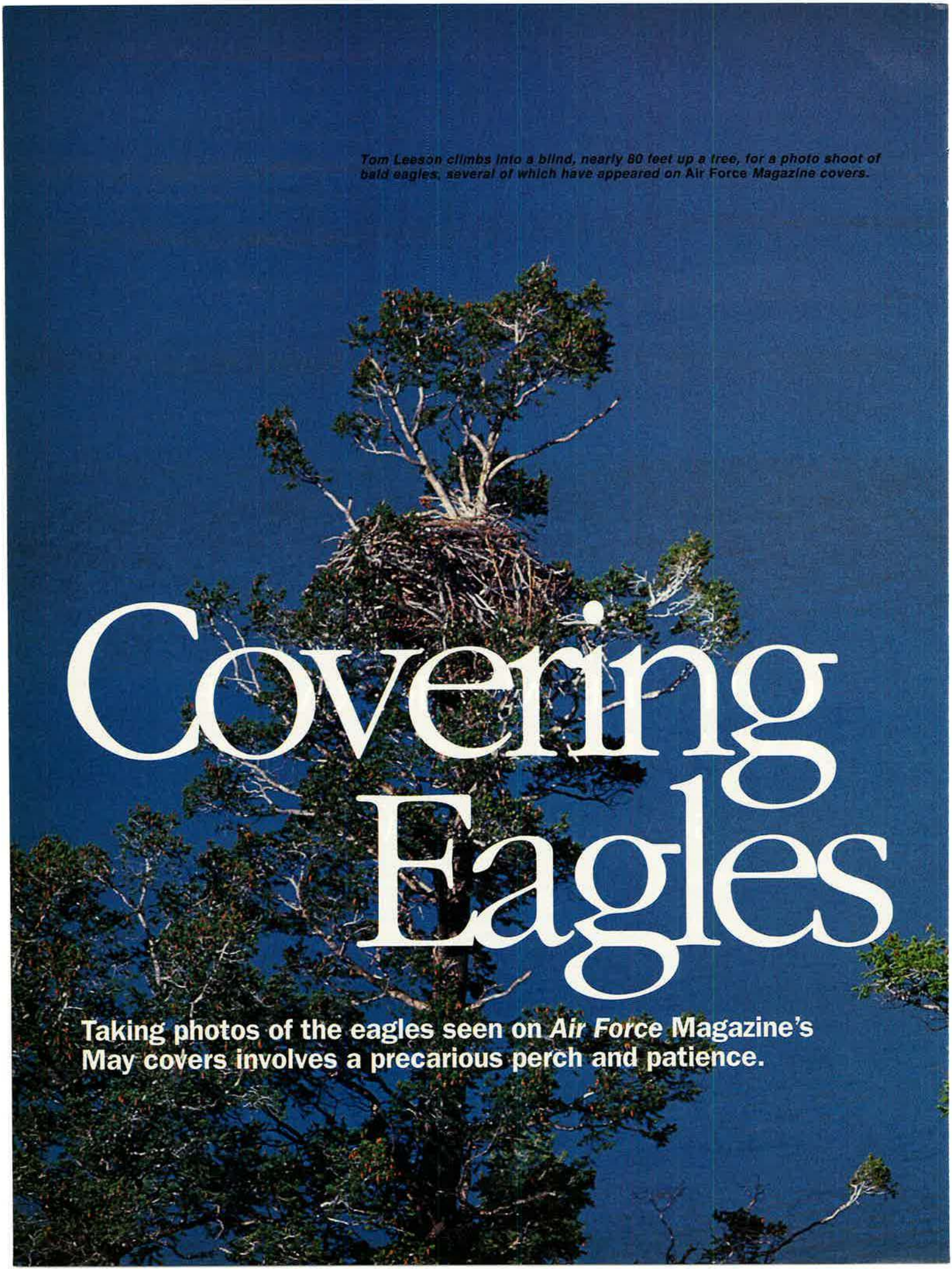
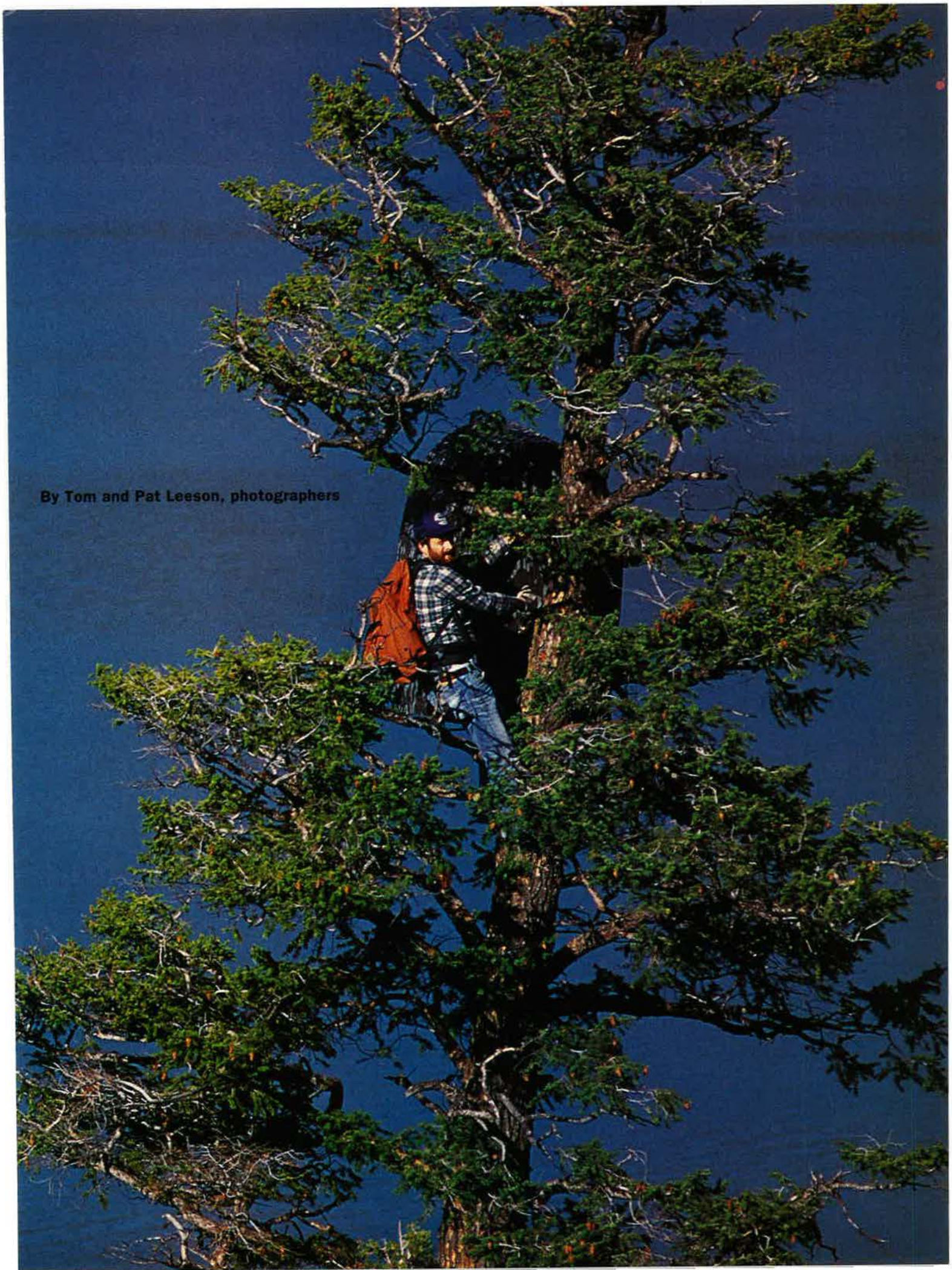


Tom Leeson climbs into a blind, nearly 80 feet up a tree, for a photo shoot of bald eagles, several of which have appeared on Air Force *Magazine covers.*

Covering Eagles

Taking photos of the eagles seen on *Air Force* Magazine's May covers involves a precarious perch and patience.



By Tom and Pat Leeson, photographers

An American bald eagle and its chick—photographed by Tom and Pat Leeson—first made the cover of Air Force Magazine's *"USAF Almanac" 10 years ago. An eagle photo by the Leesons next appeared as the May 1997 cover to mark the Air Force's 50th anniversary. That image of a powerful eagle—wings in motion, talons sharp—proved so popular with readers that a Leeson eagle photo has been the cover of the May almanac every year since.*

Photos by Tom and Pat Leeson

Based in Vancouver, Wash., Tom and Pat Leeson have more than 25 years of experience photographing everything from pandas to penguins. Their several books include The American Eagle.

Above, Pat Leeson gets close to eaglets in a nest. At left, an eagle has returned to its eyrie with food for a chick.

Preparation for such photos took months. In the summer, the Leesons searched for an appropriate eagle nest and found one on a lakeshore in British Columbia, Canada. That winter, a photography blind was custom built for them. They installed the structure—about 80 feet above ground in a neighboring Douglas fir tree—before the nesting season. After the chick hatched, they alternated in four-hour photography shifts in the blind.

From a photo blind (tan dome at left) on Kodiak Island, Alaska, the Leesons train their cameras on an eagle's nest perched atop the rocky point to the right. They spent two or three days slowly moving this blind closer to the nest. The rocky pinnacle gave the eagles some protection from predators. The Leesons, on the other hand, were buffeted by 30 mph winds, which caused the camera to vibrate and threatened to cause the blind to collapse.

Photos by Tom and Pat Leeson

On Adak Island, part of the Aleutian Islands chain, the eagles are somewhat more accustomed to humans because a naval air station is nearby. The familiarity allows Tom Leeson, above, to more easily find a spot close to a couple of eagles.

The eagles at this site often perched next to a clump of colorful wildflowers. At left, an adult feeds an eaglet. The female lays one to three eggs each spring. They hatch a little more than a month later, and the young are strong enough to fly at 12 weeks. Eagles add material to their nests year after year. Some habitations grow to be 10 feet in diameter.

Icicles on the Leeson camper prove outdoor photo shoots are not all sunshine and blue skies. Winter is the easiest time for them to photograph eagles because the birds tend to gather at a food source and spend more time on the ground or roosting.

Photos by Tom and Pat Leeson

Near Haines, Alaska, volcanic heat keeps the Chilkat River from freezing during winter. The Leesons say about 3,000 eagles gather here in late fall for the salmon run.

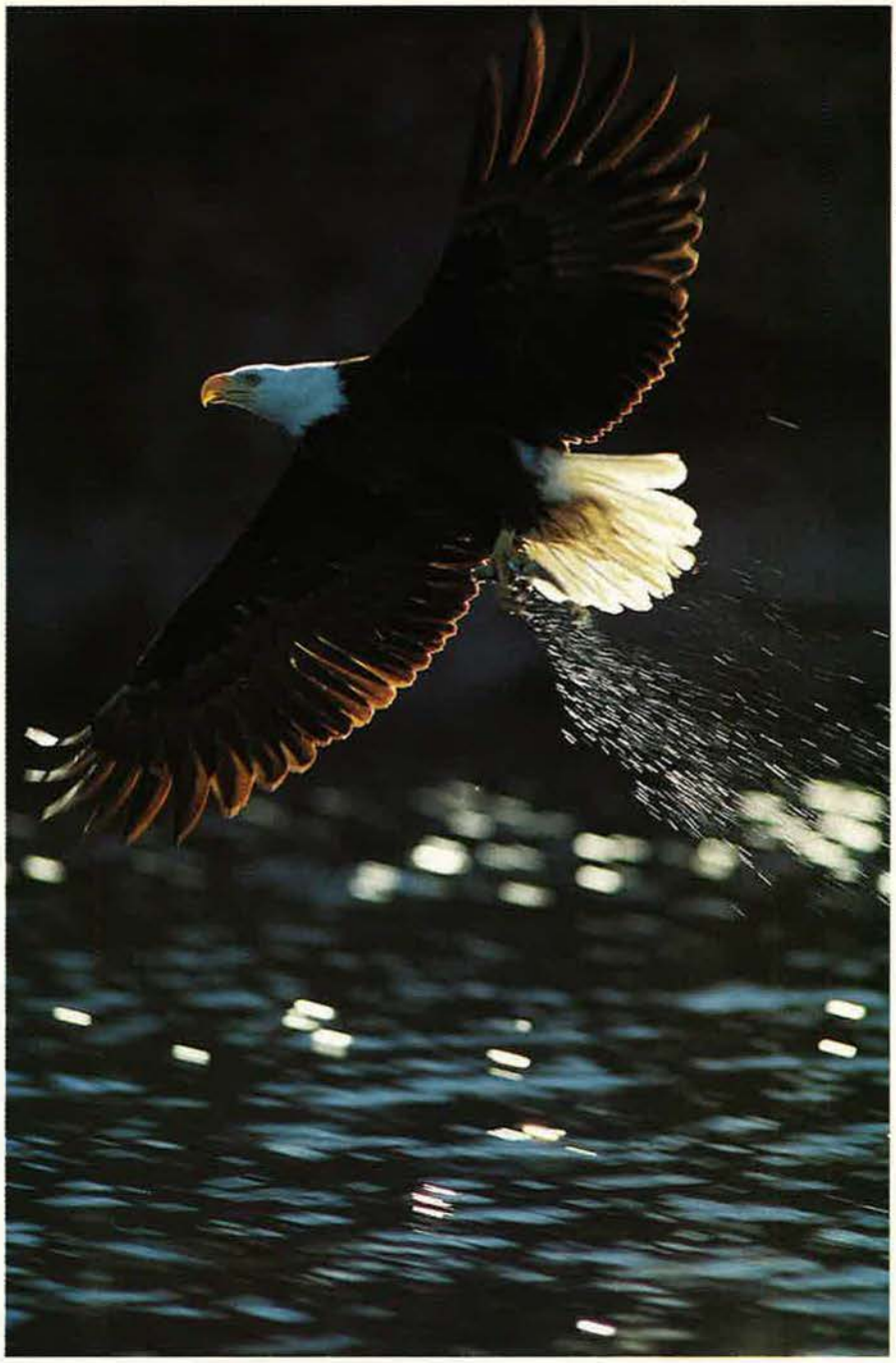
There are nearly 60 species of eagles, and the bird is found on every continent except Antarctica. Two kinds are found in the US, but the bald eagle is found only in North America. For this reason, the Second Continental Congress selected it as our national emblem in 1782.

The bald eagle became a part of Air Force heritage when President Harry Truman signed the National Security Act of 1947. The act created a separate Air Force and specified the eagle as an element of the USAF seal. The official language called for "an American bald eagle, wings displayed and partially elevated proper in front of a cloud."

The eagle at right was photographed near Homer, Alaska. Many eagles spend the winter at this site near Kachemak Bay, where a local resident has taken on the task of feeding several hundred of them every day.

When the eagle became America's symbol in the 1700s, population estimates ranged from 25,000 to nearly 500,000. By the early 1960s, hunting, deforestation, and pesticides had reduced the population to fewer than 500 nesting pairs. Today, eagles remain a threatened species, but they have rebounded and can be found in all states except Hawaii.

Above, a bald eagle seizes a fish in its talons. "Eagle eye" is no exaggeration; eagles have eyesight four times better than humans and can spot fish in the water several hundred feet below them.



Photos by Tom and Pat Leeson

Pat Leeson, after looking through the collection of eagle photographs, noted that the magnificent raptor has been a major theme of the photographers' careers. The eagle—as an embodiment of freedom and power—has become an important symbol for USAF and a recurring element in Air Force *Magazine as well.*

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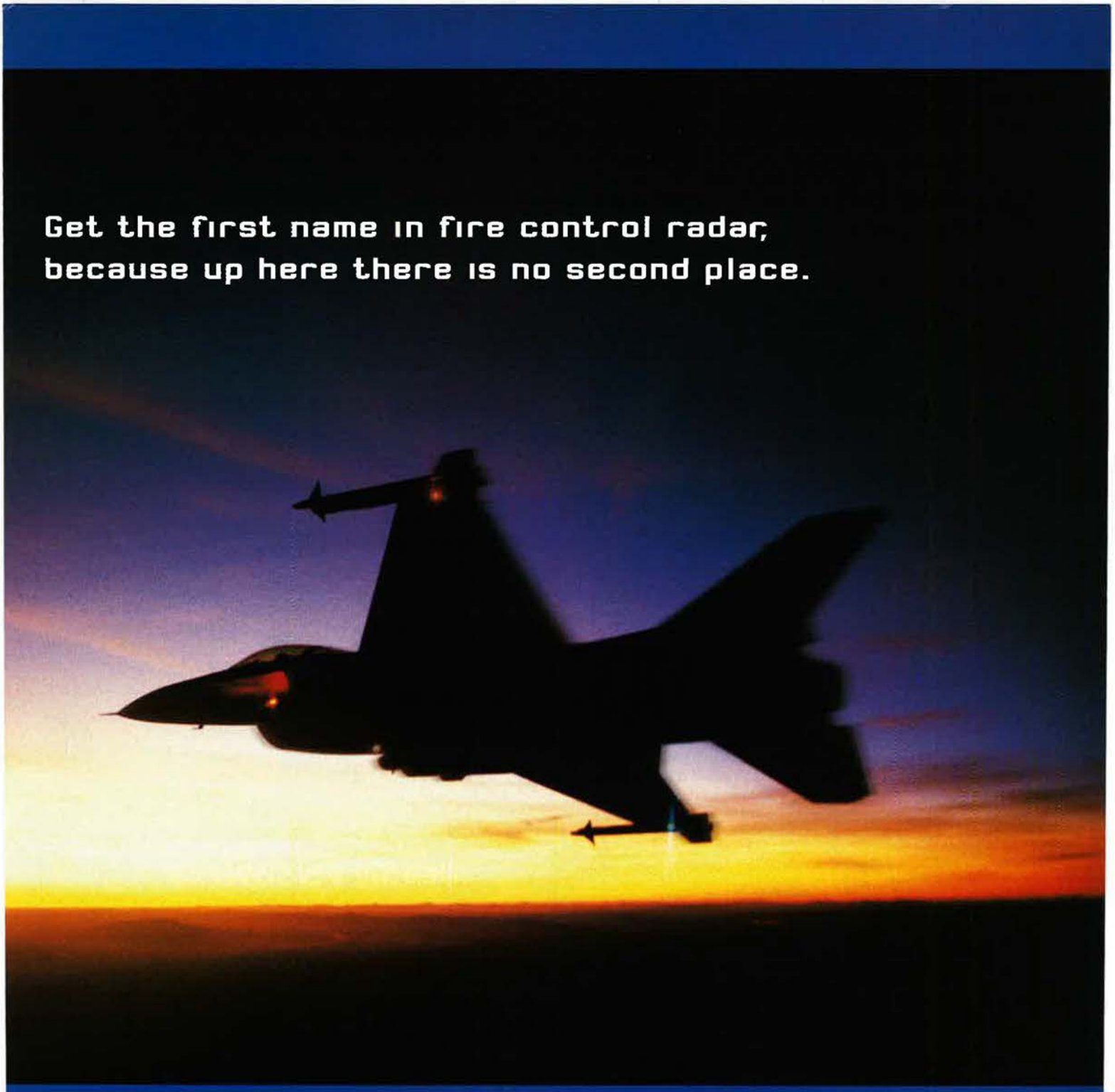

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Vacant

Director, C⁴ISR Infrastructure
Vacant

Director, C⁴ISR Integration
Brig. Gen. Dan R. Goodrich

Director, Communications Infostructure
Maj. Gen. Charles E. Croom Jr.

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Lt. Gen. Michael E. Zettler

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Maj. Gen. Earnest O. Robbins II

Director, Communications
Brig. Gen. Bernard K. Skoch

Director, Logistics Readiness
Maj. Gen. (sel.) Kevin J. Sullivan

Director, Maintenance
Brig. Gen. Elizabeth A. Harrell

Director, Plans & Integration
Vacant

Director, Resources
Brig. Gen. Peter J. Hennessey

Director, Services
Arthur J. Myers

Director, Transportation
Vacant

Deputy Chiefs of Staff (continued)

Deputy Chief of Staff, Personnel
Lt. Gen. Richard E. Brown III

Director, Learning & Force Development
Maj. Gen. (sel.) Peter U. Sutton

Director, Manpower & Organization
Brig. Gen. William P. Ard

Director, Policy & Programs
Maj. Gen. John M. Speigel

Director, Strategic Plans & Future Systems
William A. Kelly

Deputy Chief of Staff, Plans & Programs
Lt. Gen. Duncan J. McNabb

Director, Programs
Maj. Gen. Kevin P. Chilton

Director, Strategic Planning
Maj. Gen. Ronald J. Bath

Air Force Space

Undersecretary of the Air Force and Director, National Reconnaissance Office
Peter B. Teets

Deputy for Military Space
Robert S. Dickman

Program Executive Officer for Air Force Space
Lt. Gen. Brian A. Arnold

Director of Air Force Space Acquisition
Maj. Gen. Joseph B. Sovey

Director of National Security Space Integration
Maj. Gen. (sel.) C. Robert Kehler

Deputy Director, NRO
Dennis Fitzgerald

Air Force Acquisition

Asst. Secretary of the Air Force for Acquisition
Marvin R. Sambur

Principal Deputy Asst. Secretary of the Air Force for Acquisition
Lt. Gen. Stephen B. Plummer

Principal Deputy Asst. Secretary for Acquisition & Management
Darleen A. Druyun

Program Executive Officers

Airlift & Trainers
Brig. Gen. Ted F. Bowlds

Command & Control & Combat Support Systems
Brig. Gen. (sel.) Robert E. Dehnert Jr.

Fighter & Bomber Programs
Brig. Gen. William J. Jabour

Services
Timothy Beyland

Weapons Programs
Judy Stokley

Mission Area Directors

Global Power
Maj. Gen. John D.W. Corley

Global Reach
Maj. Gen. Paul W. Essex

Information Dominance
Brig. Gen. Edward L. Mahan Jr.

Major Commands

Air Combat Command

Hq. Langley AFB, Va.

Commander
Gen. Hal M. Hornburg

Vice Commander
Lt. Gen. Bruce A. Wright

1st Air Force (ANG)
Maj. Gen.Craig R. McKinley
Tyndall AFB, Fla.

8th Air Force
Lt. Gen. Bruce A. Carlson
Barksdale AFB, La.

9th Air Force
Lt. Gen. T. Michael Moseley
Shaw AFB, S.C.

12th Air Force
Lt. Gen. William T. Hobbins
Davis-Monthan AFB, Ariz.

Aerospace Expeditionary Force Center
Brig. Gen. Allen G. Peck
Langley AFB, Va.

Air Intelligence Agency
Maj. Gen. Paul J. Lebras
Kelly Field, Tex.

Air Warfare Center
Maj. Gen. Stephen G. Wood
Nellis AFB, Nev.

Air Education and Training Command

Hq. Randolph AFB, Tex.

Commander
Gen. Donald G. Cook

Vice Commander
Lt. Gen. John D. Hopper Jr.

2nd Air Force
Maj. Gen. John F. Regni
Keesler AFB, Miss.

19th Air Force
Maj. Gen. James E. Sandstrom
Randolph AFB, Tex.

Air Force Recruiting Service
Brig. Gen. Edward A. Rice Jr.
Randolph AFB, Tex.

Air University
Lt. Gen. Donald A. Lamontagne
Maxwell AFB, Ala.

Wilford Hall USAF Medical Center (59th Medical Wing)
Maj. Gen. Lee P. Rodgers
Lackland AFB, Tex.

Air Force Materiel Command

Hq. Wright-Patterson AFB, Ohio

Commander
Gen. Lester L. Lyles

Vice Commander
Lt. Gen. Charles H. Coolidge Jr.

Aeronautical Systems Center
Lt. Gen. Richard V. Reynolds
Wright-Patterson AFB, Ohio

Aerospace Maintenance & Regeneration Center
Col. Kenneth M. Lewandowski
Davis-Monthan AFB, Ariz.

Air Armament Center
Maj. Gen. Robert W. Chedister
Eglin AFB, Fla.

Air Force Flight Test Center
Maj. Gen. Wilbert D. Pearson Jr.
Edwards AFB, Calif.

Air Force Office of Scientific Research
Lyle H. Schwartz
Arlington, Va.

Air Force Research Laboratory
Maj. Gen. Paul D. Nielsen
Wright-Patterson AFB, Ohio

Air Force Security Assistance Center
Brig. Gen. Jeffrey R. Riemer
Wright-Patterson AFB, Ohio

Arnold Engineering Development Center
Col. David J. Eichhorn
Arnold AFB, Tenn.

Electronic Systems Center
Lt. Gen. William R. Looney III
Hanscom AFB, Mass.

Ogden Air Logistics Center
Maj. Gen. Scott C. Bergren
Hill AFB, Utah

Oklahoma City Air Logistics Center
Maj. Gen. Charles L. Johnson II
Tinker AFB, Okla.

Warner Robins Air Logistics Center
Maj. Gen. Donald J. Wetekam
Robins AFB, Ga.

US Air Force Museum
Charles D. Metcalf
Wright-Patterson AFB, Ohio

Major Commands (continued)

Air Force Reserve Command
Hq. Robins AFB, Ga.

Commander
Lt. Gen. James E. Sherrard III

Vice Commander
Maj. Gen. John J. Batbie Jr.

4th Air Force
Maj. Gen. James P. Czekanski
March ARB, Calif.

10th Air Force
Maj. Gen. David E. Tanzi
NAS Fort Worth JRB, Tex.

22nd Air Force
Maj. Gen. James D. Bankers
Dobbins ARB, Ga.

Air Mobility Command
Hq. Scott AFB, Ill.

Commander
Gen. John W. Handy

Vice Commander
Lt. Gen. John R. Baker

15th Air Force
Maj. Gen. John D. Becker
Travis AFB, Calif.

21st Air Force
Maj. Gen. George N. Williams
McGuire AFB, N.J.

Air Mobility Warfare Center
Maj. Gen. Christopher A. Kelly
Ft. Dix, N.J.

Tanker Airlift Control Center
Maj. Gen. Edward L. Lafountaine
Scott AFB, Ill.

Air Force Special Operations Command
Hq. Hurlburt Field, Fla.

Commander
Lt. Gen. Paul V. Hester

Vice Commander
Maj. Gen. (sel.) Richard L. Comer

16th Special Operations Wing
Col. Frank Kisner
Hurlburt Field, Fla.

352nd Special Operations Group
Col. O.G. Manon
RAF Mildenhall, UK

353rd Special Operations Group
Col. Mark Transue
Kadena AB, Japan

720th Special Tactics Group
Col. Craig Rith
Hurlburt Field, Fla.

USAF Special Operations School
Col. Jim Oeser
Hurlburt Field, Fla.

Pacific Air Forces
Hq. Hickam AFB, Hawaii

Commander
Gen. William J. Begert

Vice Commander
Lt. Gen. Steven R. Polk

5th Air Force
Lt. Gen. Thomas C. Waskow
Yokota AB, Japan

7th Air Force
Lt. Gen. Lance L. Smith
Osan AB, South Korea

11th Air Force
Lt. Gen. Norton A. Schwartz
Elmendorf AFB, Alaska

13th Air Force
Maj. Gen. Theodore W. Lay II
Andersen AFB, Guam

Air Force Space Command
Hq. Peterson AFB, Colo.

Commander
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Vice Commander
Lt. Gen. Robert C. Hinson

14th Air Force
Maj. Gen. Michael A. Hamel
Vandenberg AFB, Calif.

20th Air Force
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Space & Missile Systems Center
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Los Angeles AFB, Calif.

Space Warfare Center
Brig. Gen. Douglas M. Fraser
Schriever AFB, Colo.

United States Air Forces in Europe
Hq. Ramstein AB, Germany

Commander
Gen. Gregory S. Martin

Vice Commander
Lt. Gen. Glen W. Moorhead III

3rd Air Force
Maj. Gen. Michael W. Wooley
RAF Mildenhall, UK

16th Air Force
Lt. Gen. Ronald E. Keys
Aviano AB, Italy

Command Chief Master Sergeants

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Air Combat Command
Langley AFB, Va.

CMSgt. William A. Milligan
Air Education and
Training Command
Randolph AFB, Tex.

CMSgt. David D. Mimms
Air Force
Materiel Command
Wright–Patterson AFB, Ohio

CMSgt. Cheryl D. Adams
Air Force
Reserve Command
Robins AFB, Ga.

CMSgt. Ronald G. Kriete
Air Force Space Command
Peterson AFB, Colo.

CMSgt. Robert V. Martens
Air Force Special
Operations Command
Hurlburt Field, Fla.

CMSgt. Michael R. Kerver
Air Mobility Command
Scott AFB, Ill.

CMSgt. David W. Popp
Pacific Air Forces
Hickam AFB, Hawaii

CMSgt. Vickie C. Mauldin
United States Air Forces
in Europe
Ramstein AB, Germany

CMSgt. Valerie D. Benton
Air National Guard
Andrews AFB, Md.

CMSgt. Frances L. Shell
Air Force Office of Special
Investigations
Andrews AFB, Md.

CMSgt. John E. Ensor
United States
Air Force Academy
Colorado Springs, Colo.

CMSgt. Jonathan E. Hake
11th Wing
Bolling AFB, D.C.

Field Operating Agencies

Aerospace C²ISR Center
Langley AFB, Va.

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Maj. Gen. Robert F. Behler

Air Force Agency for Modeling & Simulation
Orlando, Fla.

Commander
Col. Grant F. Herring

Air Force Audit Agency
Pentagon

Auditor General
James R. Speer

Air Force Base Conversion Agency
Arlington, Va.

Director
Albert F. Lowas Jr.

Air Force Center for Environmental Excellence
Brooks AFB, Tex.

Director
Gary M. Erickson

Air Force Civil Engineer Support Agency
Tyndall AFB, Fla.

Commander
Col. Bruce R. Barthold

Air Force Communications Agency
Scott AFB, Ill.

Commander
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Arlington,Va.

Executive Director
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Air Force Flight Standards Agency
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Air Force Frequency Management Agency
Alexandria, Va.

Commander
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Air Force History Support Office
Bolling AFB, D.C.

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Air Force Inspection Agency
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Air Force Legal Services Agency
Bolling AFB, D.C.

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Air Force Logistics Management Agency
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Pentagon

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Air Force Personnel Operations Agency
Pentagon

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Pentagon

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Marvin R. Sambur

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Patrick AFB, Fla.

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Air Force Weather Agency
Offutt AFB, Neb.

Commander
Col. Robert H. Allen

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Andrews AFB, Md.

Commander
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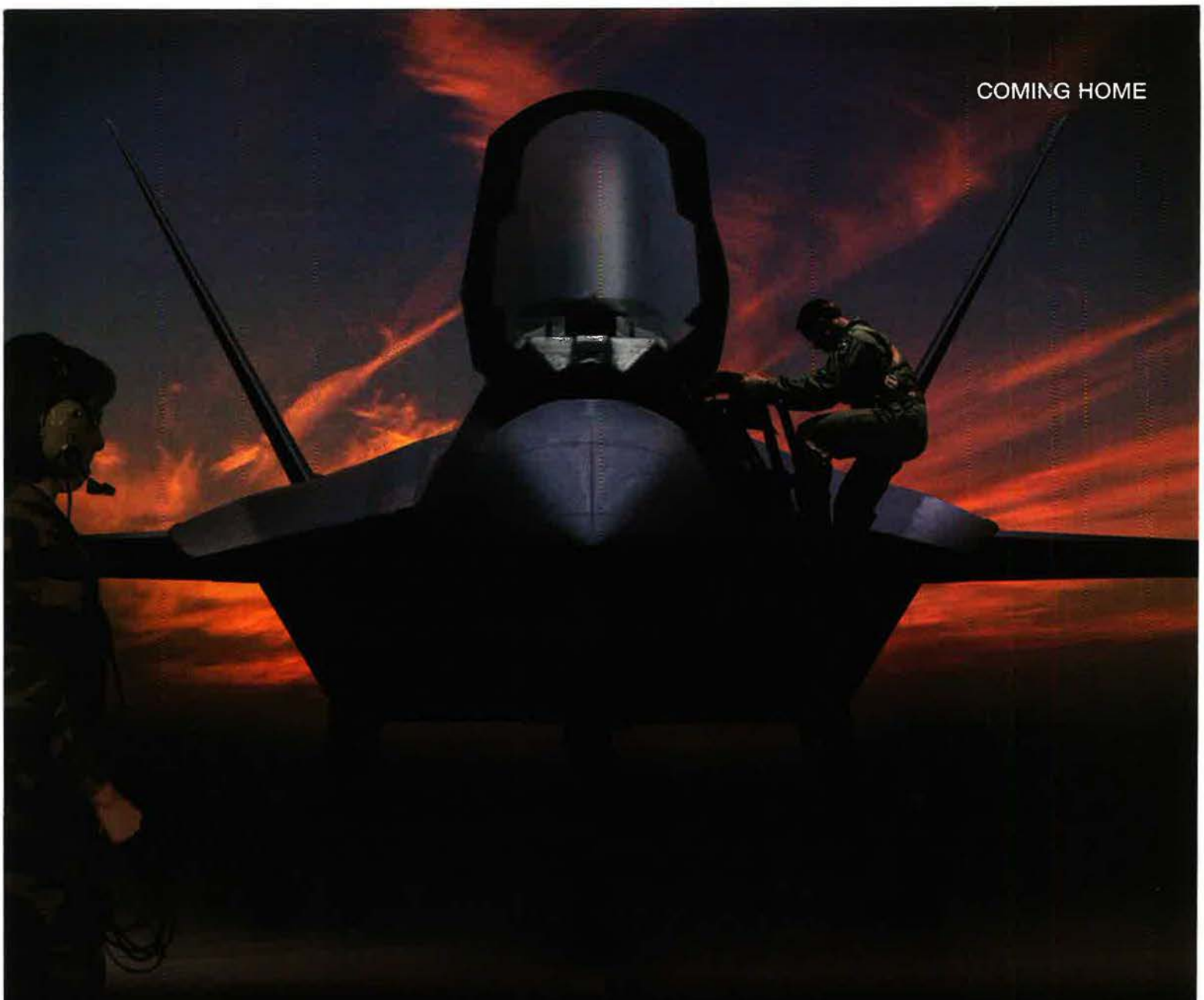

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Air Force Studies & Analyses Agency
Arlington, Va.

Director
Jacqueline V. Henningsen

United States Air Force Academy
Colorado Springs, Colo.

Superintendent
Lt. Gen. John R. Dallager

11th Wing
Bolling AFB, D.C.

Commander
Col. William A. Chambers

Air Force Generals Serving in Joint and International Assignments

Office of the Secretary of Defense

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Chairman, DOD Commissary Operating Board

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Director, National Assessment Group, USD, Acquisition, Technology, & Logistics

Maj. Gen. Leonard M. Randolph Jr.
Deputy Executive Director & CEO, Tricare Management Activity, USD, Personnel & Readiness

Brig. Gen. Ronald D. Yaggi
Director, Asia & Pacific Affairs, USD, Policy

Department of Defense

Lt. Gen. Michael V. Hayden
Director, National Security Agency
Ft. Meade, Md.

Lt. Gen. Ronald T. Kadish
Director, Missile Defense Agency

Lt. Gen. Harry D. Raduege Jr.
Director, Defense Information Systems Agency
Arlington, Va.

Lt. Gen. Tome H. Walters Jr.
Director, Defense Security Cooperation Agency
Arlington, Va.

Maj. Gen. Robert P. Bongiovi
Deputy Director, Defense Threat Reduction Agency
Dulles, Va.

Maj. Gen. Tommy F. Crawford
Deputy Chief, Central Security Service, NSA
Ft. Meade, Md.

Maj. Gen. Lee P. Rodgers
Lead Agent, Health Services Region 6
Lackland AFB, Tex.

Maj. Gen. Mary L. Saunders
Vice Director, Defense Logistics Agency
Ft. Belvoir, Va.

Maj. Gen. Michael P. Wiedemer
Director, Defense Commissary Agency
Ft. Lee, Va.

Brig. Gen. Thomas S. Bailey Jr.
Lead Agent, Health Services Region 5
Wright-Patterson AFB, Ohio

Brig. Gen. Richard J. Casey
Director, Combat Support, DTRA
Alexandria, Va.

Brig. Gen. Frank G. Klotz
Director, Nuclear Policy & Arms Control, National Security Council
Washington, D.C.

Brig. Gen. (sel.) Stephen L. Lanning
Principal Director, Network Services
Defense Information Systems Agency
Arlington, Va.

Brig. Gen. Michael G. Lee
Military Director and D rector, Military Support & Operations
National Imagery & Mapping Agency
Reston, Va.

Brig. Gen. Henry A. Obering III
Deputy, Force Structure Integration & Deployment, and Program Director, Battle Management C², MDA

Brig. Gen. James P. Totsch
Commander, Defense Supply Center, Richmond, DLA
Richmond, Va.

Brig. Gen. David G. Young III
Lead Agent, Health Services Region 4
Keesler AFB, Miss.

Joint Chiefs of Staff

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Chairman, Joint Chiefs of Staff

Gen. John P. Jumper
Chief of Staff, United States Air Force

Maj. Gen. Michael M. Dunn
Vice Director, Strategic Plans & Policy

Maj. Gen. James A. Hawkins
Vice Director, Joint Staff

Maj. Gen. Robert A. McIntosh
Asst. to the Chairman, Reserve Matters

Maj. Gen. (sel.) John W. Rosa Jr.
Deputy Director, Current Operations

Maj. Gen. Glen D. Shaffer
Director, Intelligence

Brig. Gen. Jack J. Catton Jr.
Deputy Director, Operations (Information Operations)

Brig. Gen. Maria L. Cribbs
Director, Manpower & Personnel

Brig. Gen. William M. Fraser III
Deputy Director, Natl. Systems Operations

Brig. Gen. Stephen M. Goldfein
Deputy Director, Joint Warfighting Capabilities Assessments

Brig. Gen. Richard B.H. Lewis
Director, Joint Theater Air & Missile Defense Organization

Brig. Gen. Gary L. North
Deputy Director, Politico-Military Affairs (Asia, Pacific, & Middle East)

Brig. Gen. (sel.) Michael F. Planert
Deputy Director, Operations, National Military Command Center

Joint Service Schools

Brig. Gen. Roosevelt Mercer Jr.
Commandant, Joint Forces Staff College
National Defense University
Norfolk, Va.

US Central Command

Lt. Gen. T. Michael Moseley
Commander, US Central Command Air Forces
Shaw AFB, S.C.

Maj. Gen. Walter E. Buchanan III
Commander, Joint Task Force-Southwest Asia
Riyadh, Saudi Arabia

Maj. Gen. Michael N. Farage
Chief, US Military Training Mission
Riyadh, Saudi Arabia

Maj. Gen. Victor E. Renuart Jr.
Director, Operations
MacDill AFB, Fla.

Brig. Gen. Arthur F. Diehl III
Deputy Director, Engagement
MacDill AFB, Fla.

Brig. Gen. Robert J. Elder Jr.
Deputy Commander, US Central Command Air Forces
MacDill AFB, Fla.

US European Command

Gen. Joseph W. Ralston
Commander in Chief, US European Command
Mons, Belgium

Gen. Gregory S. Martin
Commander, Air Force Component
Ramstein AB, Germany

Maj. Gen. Jeffrey B. Kohler
Director, Plans & Policy
Stuttgart-Vaihingen, Germany

Maj. Gen. Quentin L. Peterson
Chief, Office of Defense Cooperation Turkey
Ankara, Turkey

Maj. Gen. Craig P. Rasmussen
Director, Logistics & Security Assistance
Stuttgart-Vaihingen, Germany

Brig. Gen. Gary L. Salisbury
Director, C³ Systems
Stuttgart-Vaihingen, Germany

Brig. Gen. Robin E. Scott
Commanding General, Combined Task Force-Operation Northern Watch
Incirlik AB, Turkey

US Joint Forces Command

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Director, Requirements & Integration
Norfolk, Va.

Maj. Gen. Jack R. Holbein Jr.
Chief of Staff
Norfolk, Va.

Brig. Gen. Walter I. Jones
Director, C⁴ Systems
Norfolk, Va.

Air Force Generals Serving in Joint and International Assignments (continued)

Brig. Gen. Marc E. Rogers
Deputy Commander, Joint Warfighting Center
Ft. Monroe, Va.

US Pacific Command

Gen. William J. Begert
Commander, Air Component
Hickam AFB, Hawaii

Lt. Gen. Robert R. Dierker
Deputy CINC, Chief of Staff
Camp H.M. Smith, Hawaii

Lt. Gen. Norton A. Schwartz
Commander, Alaskan Command
Elmendorf AFB, Alaska

Lt. Gen. Thomas C. Waskow
Commander, US Forces Japan
Yokota AB, Japan

Brig. Gen. Steven J. Redmann
Commander, Joint Task Force–Full Accounting
Camp H.M. Smith, Hawaii

Brig. Gen. Loyd S. Utterback
Deputy Director, Strategic Planning & Policy
Camp H.M. Smith, Hawaii

Brig. Gen. Donald C. Wurster
Commander, Special Operations Command, Pacific
Camp H.M. Smith, Hawaii

US Southern Command

Lt. Gen. Paul V. Hester
Commander, Air Force Component–Special Operations
Hurlburt Field, Fla.

Lt. Gen. William T. Hobbins
Commander, US Southern Command Air Forces
Davis–Monthan AFB, Ariz.

Maj. Gen. (sel.) Robert D. Bishop Jr.
Director, Strategy, Policy, & Plans
Miami

Maj. Gen. (sel.) Richard L. Comer
Vice Commander, Air Force Component
Camp H.M. Smith, Hawaii

Brig. Gen. David S. Gray
Vice Commander, SOUTHCOM Air Forces
Davis–Monthan AFB, Ariz.

Brig. Gen. Charles E. Stenner Jr.
Deputy Director, Strategy, Policy, & Plans
Miami

US Space Command

Gen. Ralph E. Eberhart
CINC and DOD Manager for Manned Spaceflight Support Operations
Peterson AFB, Colo.

Maj. Gen. John A. Bradley
Deputy Commander, JTF–Computer Network Operations
Arlington, Va.

Maj. Gen. Michael A. Hamel
Commander, Air Force Component–Space Operations
Vandenberg AFB, Calif.

Maj. Gen. Paul J. Lebras
Commander, Joint Information Operations Center
Lackland AFB, Tex.

Maj. Gen. Dale W. Meyerrose
Director, Command Control Systems
Peterson AFB, Colo.

Brig. Gen. Simon P. Worden
Deputy Director, Operations
Peterson AFB, Colo.

US Special Operations Command

Gen. Charles R. Holland
CINC
MacDill AFB, Fla.

Lt. Gen. Paul V. Hester
Commander, Air Force Component–Special Operations
Hurlburt Field, Fla.

Maj. Gen. (sel.) Richard L. Comer
Vice Commander, Air Force Component
Hurlburt Field, Fla.

Brig. Gen. (sel.) Bruce E. Burda
Director, Program Analysis & Evaluation
MacDill AFB, Fla.

Brig. Gen. Gregory L. Trebon
Deputy Commanding General, Joint Special Operations Command
Ft. Bragg, N.C.

US Strategic Command

Lt. Gen. Thomas B. Goslin Jr.
Deputy CINC
Offutt AFB, Neb.

Lt. Gen. Bruce A. Carlson
Commander, Air Force Component–Bombers
Barksdale AFB, La.

Lt. Gen. William T. Hobbins
Commander, Air Force Component–Reconnaissance
Davis–Monthan AFB, Ariz.

Maj. Gen. John D. Becker
Commander, Air Force Component–Tankers
Travis AFB, Calif.

Maj. Gen. Paul L. Bielowicz
Director, Operations & Logistics
Offutt AFB, Neb.

Maj. Gen. Timothy J. McMahon
Commander, Air Force Component–ICBMs
F.E. Warren AFB, Wyo.

Brig. Gen. Roger W. Borg
Director, Combat Plans
Offutt AFB, Neb.

Brig. Gen. David S. Gray
Vice Commander, Air Force Component–Reconnaissance
Davis–Monthan AFB, Ariz.

Brig. Gen. (sel.) Kimber L. McKenzie
Director, Intelligence
Offutt AFB, Neb.

US Transportation Command

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Scott AFB, Ill.

Maj. Gen. William Welser III
Director, Operations & Logistics
Scott AFB, Ill.

Brig. Gen. Charles B. Green
Command Surgeon
Scott AFB, Ill.

Brig. Gen. Gilbert R. Hawk
Director, C⁴ Systems
Scott AFB, Ill.

Brig. Gen. (sel.) Thomas E. Stickford
Inspector General
Scott AFB, Ill.

Brig. Gen. James W. Swanson
Chief Counsel
Scott AFB, Ill.

North Atlantic Treaty Organization

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Supreme Allied Commander Europe (SACEUR)
Supreme Headquarters Allied Powers Europe (SHAPE)
Mons, Belgium

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Commander, Allied Air Forces North Europe (AIRNORTH)
Ramstein AB, Germany

Lt. Gen. Ronald E. Keys
Commander, Allied Air Forces South Europe (AIRSOUTH)
Naples, Italy

Lt. Gen. Timothy A. Kinnan
US Military Representative, NATO Military Committee
Brussels, Belgium

Maj. Gen. Thomas L. Baptiste
Asst. Chief of Staff, Operations Division, SHAPE
Casteau, Belgium

Maj. Gen. (sel.) Felix Dupre
Executive Officer, SACEUR
Mons, Belgium

Maj. Gen. Edward R. Ellis
Assistant Chief of Staff, Operations, AIRSOUTH
Naples, Italy

Maj. Gen. Maurice L. McFann Jr.
Deputy Commander, Joint Command North
Stavanger, Norway

Maj. Gen. Gary A. Winterberger
Commander, NATO Airborne Early Warning & Control Force—E-3A Component
Geilenkirchen AB, Germany

Brig. Gen. William F. Hodgkins
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Larissa, Greece

Brig. Gen. Thomas P. Kane
Deputy Director, Allied Command Europe (ACE) Reaction Force Air Staff
Kalkar, Germany

Brig. Gen. Roy M. Worden
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Eskisehir, Turkey

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CINC
Peterson AFB, Colo.

Lt. Gen. Norton A. Schwartz
Commander, Alaskan NORAD Region
Elmendorf AFB, Alaska

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Commander, CONUS Region
Tyndall AFB, Fla.

Maj. Gen. Dale W. Meyerrose
Director, Command Control Systems
Peterson AFB, Colo.

Brig. Gen. Mark G. Beesley
Director, Plans
Peterson AFB, Colo.

Brig. Gen. Kenneth M. Decuir
Commander, Cheyenne Mountain Operations Center
Cheyenne Mountain AS, Colo.

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Deputy Commander, Canadian NORAD Region
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Maj. Gen. Dennis R. Larsen
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Lt. Gen. John H. Campbell
Associate Director of Central Intelligence for Military Support

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Dallas

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Dallas

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Program Executive Officer and Program Director, Joint Strike Fighter Program, Assistant Secretary of Navy for Research, Development, & Acquisition
Arlington, Va.

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Principal Assistant Deputy Administrator for Military Application, National Nuclear Security Administration, DOE
Washington, D.C.

USAF and NATO are spending $500 million to make Aviano a major hub of airpower in the Mediterranean.

Thunder Road on the Southern Flank

By Otto Kreisher

USAF photo by SrA. Stephen Schester

Two F-16s at Aviano AB, Italy, launch for a training mission. The arrival of the 31st Fighter Wing's two F-16 squadrons in 1994 was the first indicator that Aviano needed a major infrastructure overhaul.

THE US Air Force and NATO are midway through a $535 million effort to convert Aviano Air Base in Italy from an austere, outdated, and little-used outpost into a comfortable, modern, and efficient facility that has become a vital hub for allied air operations in southern Europe.

Air Force Col. Gary C. LaGassey, the program manager for Aviano 2000, says NATO's biggest construction project will transform the northern Italian airfield "from Sleepy Hollow to Thunder Road."

The need for the extensive improvement effort became clear in April 1994, when the 31st Fighter Wing's two squadrons of F-16s arrived as permanent residents at what had been primarily a transient base for NATO aircraft.

The wing's personnel and dependents doubled Aviano's population almost overnight, but found undersized and inadequate operational, maintenance, and support facilities and poor housing, base officials said.

Aviano's deficiencies became even clearer during the base's intensive use in the alliance's Bosnia campaign in 1995–96 and again in Operation Allied Force against Serbia in 1999. The hundreds of allied aircraft using the base during those conflicts overwhelmed its limited infrastructure. And many of the aircrews and support personnel had to live in a tent city along the runway.

The planned improvements will not

prepare Aviano to handle that kind of wartime load on a steady basis. But they will provide a major boost in the quality of work and quality of life for the permanent population of 3,593 US military personnel, 414 American civilian employees, and 3,749 family members. The workday population also includes 230 Italian air force personnel and 1,309 local employees.

The Lion's Share

Aviano 2000 was initiated in 1995 as a joint NATO–US project, with the alliance paying about 70 percent of the cost and the US Air Force providing the remaining 30 percent.

Italy, as the host nation, contributed to the effort by ceding 210 acres of additional land, which, under what's called the Zappala master plan, now contains the new commissary and base exchange and will include the chapel, a dining hall, visiting quarters, barracks, and other services.

Overall, the planned work includes 264 individual projects to build new facilities, modernize or improve many existing structures, and to make major improvements to the base utilities, runway, and aircraft parking ramps.

Improving quality of life for the Aviano residents is a major objective. That effort includes four new enlisted dorms, which will house 102 airmen, each in 1+1 rooms with a shared bath and kitchen, close to dining, recreation, and fitness facilities.

The plans also include a community recreation area with sports fields, basketball and volleyball courts, a lodge, a pavilion, a playground, and a picnic area with grills.

Other projects will improve flightline operations, create functional centers that consolidate similar functions, eliminate unneeded interim facilities, and incorporate force protection measures.

Flight-line operations will be enhanced by improvements to the runway, expansion of the ramps, and modernization of the three hangars and by building new maintenance shops and a taller, up-to-date control tower.

Force protection will be enhanced partly by bringing inside the security perimeter activities now located miles outside the base in leased facilities. Those include the kindergarten-through-12th-grade dependents schools, which were to move into new consolidated buildings last month, and the hospital, which should be ready in 2004.

USAF photo by SrA. Edward Braly

The new, consolidated school complex will replace existing base schools and those leased in the surrounding communities. Demolition debris is a common sight around the base. Aviano 2000 comprises 264 individual projects.

All of the family housing, however, remains outside the fence, in rented or leased quarters.

The NATO–funded projects have used the alliance's competitive bidding process, open to all NATO member countries, said Nancy Balkus, Aviano 2000 project management branch chief. Italian firms have won all of the contracts except two, which went to German–Italian joint ventures, she said.

The design work on 32 projects under US control went primarily to US firms.

The projects are supervised by a Navy civil engineer officer, because the Navy is the construction agent for the Mediterranean region, Balkus explained.

The Mediterranean Look

As much as possible, the new structures were designed to be compatible with the local architecture, she said.

Those buildings have a Mediterranean look, with red clay tile roofs and stucco exteriors in sunny yellow or peach color with white accents.

As with many large, complex construction projects Aviano 2000 has had its problems.

The original contractor for the school buildings was fired for poor performance in 2000, halfway through the $22.1 million project. That delayed the opening of the new school complex by two years.

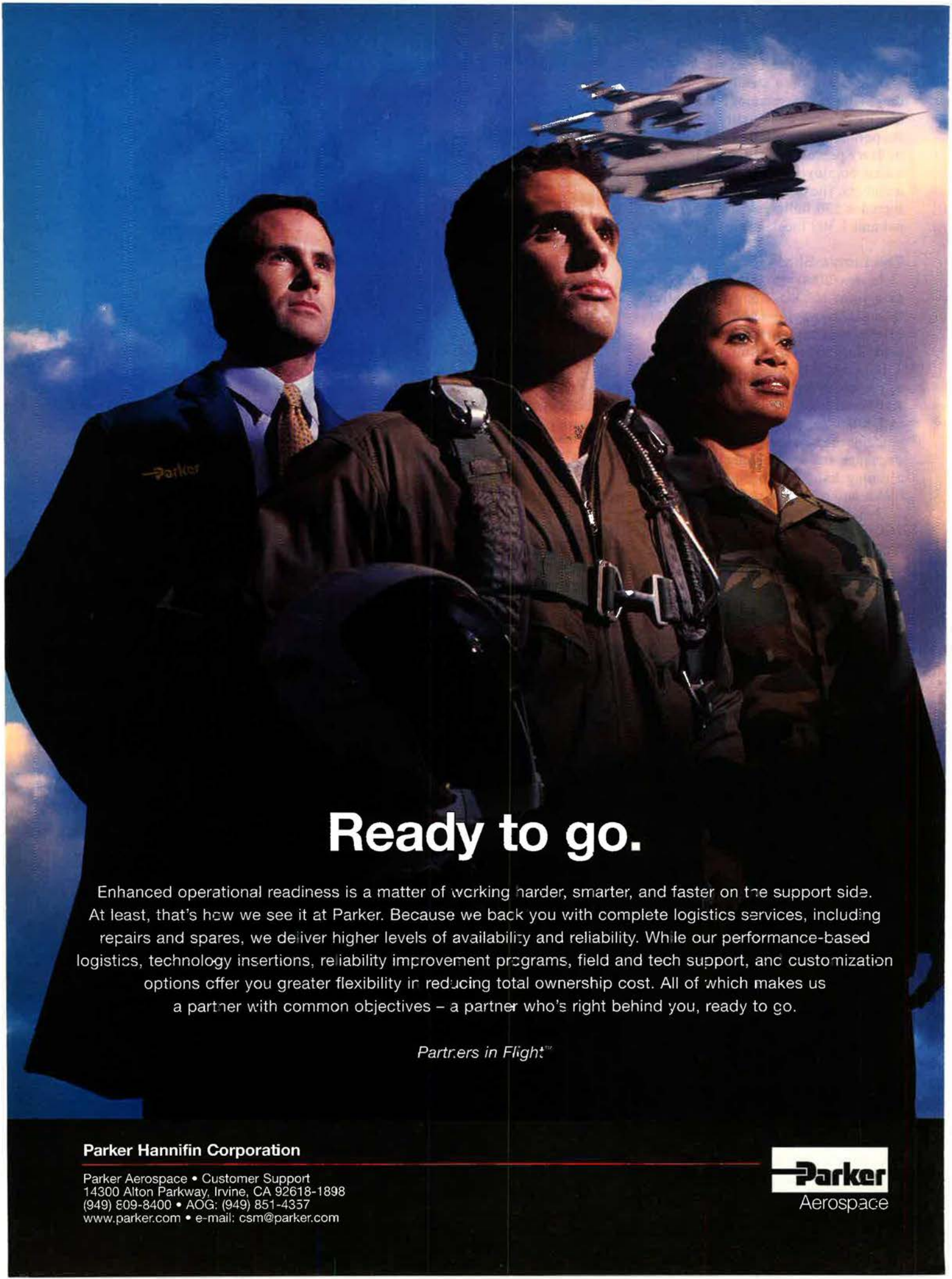
Then last year, the construction company working on the new club and temporary housing facility fell behind schedule and stopped work, demanding more than the $17 million it had bid. That demand was denied and the contract was given to a new firm, "which is moving forward smoothly," Balkus said.

Despite those glitches, all of the planned work is expected to be completed by 2007, she added.

In a visit to the base in April, Air Force Association National President John J. Politi awarded an AFA special achievement award to the Aviano 2000 program management team 2002 led by LaGassey.

And Maj. Gen. Earnest O. Robbins II, USAF civil engineer, said recently: "Aviano 2000 is perhaps the best example of major construction program management I've seen in over 32 years as an Air Force engineer." The way the Air Force, the Navy, Italy, and contractors pulled together "will serve as a model for us to emulate as we look into the future," Robbins said. ■

Otto Kreisher is a Washington, D.C.–based military affairs reporter for Copley News Service and a regular contributor to Air Force *Magazine. His most recent article, "The Quest for Jointness," appeared in the September 2001 issue.*



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The Paper Trail

By Bruce D. Callander

"Lands Without Being Wrecked"

Dayton, Ohio January 18, 1905

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Dear Sir:

The series of aeronautical experiments upon which we have been engaged for the past five years has ended in the production of a flying machine of a type fitted for practical use. It not only flies through the air at high speed, but it also lands without being wrecked. During the year 1904, one hundred and five flights were made at our experimenting station, on the Huffman prairie, east of the city; and though our experience in handling the machine has been too short to give any high degree of skill, we nevertheless succeeded, toward the end of the season, in making two flights of five minutes each, in which we sailed round and round the field until a distance of about three miles had been covered, at a speed of thirty-five miles an hour. The first of these record flights was made on November 9th, ... and the second on December 1st. ...

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If you can find it convenient to ascertain whether this is a subject of interest to our own government, it would oblige us greatly, as early information on this point will aid us in making our plans for the future.

Respectfully yours,

Wilbur and Orville Wright

A year after their first successful flight Dec. 17, 1903, the Wright brothers asked Ohio Congressman Robert M. Nevin how to offer their flying machine for sale to the government. Nevin told them to write him a letter, which he would personally deliver to the Secretary of War.

Nevin's staff, in his absence, simply forwarded the letter to the War Department, where it was viewed as just another unsolicited crank letter. The response to Nevin: "It appears ... their machine [is not at] the stage of practical operation."

Other attempts—by the Wrights and friends—followed, with similar results. Not until 1908 did the Army officially declare an interest, and then it was to announce an open competition to sell the US an airplane. The Wrights easily won.

The services controlled military operations until 1958, when Eisenhower gave that power to a new class of warrior.

American Chieftains

By Herman S. Wolk

THE way the American military is organized to fight the nation's wars has evolved incrementally since World War II, culminating in the Eisenhower reorganization of 1958 which removed the military departments from the operational chain of command.

In the 55 years since passage of the National Security Act of 1947, establishing the United States Air Force and creating the modern American national security establishment, a number of reorganizations have fundamentally altered the defense establishment.

Ironically, initial reluctance to reorganize centered on the fear of a "man on horseback," an all-powerful Secretary of Defense who would ride roughshod over the military services. As it turned out, the National Security Act gave insufficient authority to the Secretary of Defense. Politicians and defense officials for decades attempted to revise the 1947 act to strengthen the Secretary of Defense and Joint Chiefs of Staff at the expense of the services.

A number of these efforts—notably in 1949, 1953, 1958, and 1986—resulted in legislation that led to centralized authority and creation of a massive defense bureaucracy. This centralization of authority was primarily a response to the evolution of nuclear weapons and to service roles and missions disputes that were seen as affecting the nation's warfighting capability.

Landmark Reorganization

The pivotal reorganization, championed by President Dwight D. Eisenhower in his second term, occurred in 1958 when the military departments were removed from the operational chain of command. Operational direction would run from the President through the Secretary of Defense and the Joint Chiefs, to the unified and specified commands.

This landmark defense reorganization was not unexpected from a soldier–statesman with an extraordinarily distinguished military career. It was also true that Eisenhower felt much more confident of his abil-

As USAF Chief of Staff, Gen. Nathan Twining advocated a more unified defense establishment. Here, he is sworn in as JCS Chairman in August 1957 by Eisenhower and Percy Nelson, White House administrative officer.

ity in military affairs than in the civilian policy arena.

Eisenhower's experience in World War II convinced him of the absolute necessity of unified command. As Supreme Allied Commander, he realized it was time to change the way America fought its wars. The objective, he said, was to "achieve real unity" and end, "once and for all, interservice disputes." Unity of direction was the key, he explained, to victory in World War II.

His ideas on military organization—a fundamental concept of the military services as mutually supporting—and his abhorrence of interservice rivalry or parochialism, as he frequently called it, can be traced directly to his war experience. In November 1945, testifying before Congress about defense unification, Eisenhower observed: "At one time I was an infantryman, but I have long since forgotten that fact, under the responsibility of commanding combined arms. I believe it is honest to say that I have forgotten that I came originally from the ground forces, and I believe that my associates of the Air and of the Navy in that command came to regard me really as one of their own service rather than one of the opposite." He emphasized that "competition is like some of the habits we have—in small amounts they are very desirable; carried too far they are ruinous."

He was also sensitive to the effect on the economy of overemphasizing the military aspects of national security: "We must always retain," he said, "a strong and solvent economy." Thus, in the immediate post–World War II period, Eisenhower emphasized the need "to root out the empire builders [in the military] with a sledgehammer."

Three-Legged Stool

Eisenhower later likened his philosophy of a balanced military to a three-legged stool: "We have learned by hard experience that the nation's security establishment is, in fact, a single fighting team composed of three services each supplementing the other in proper balance. No single service can be independently considered."

Gen. Henry H. "Hap" Arnold, commanding general, Army Air Forces, in his testimony on defense unification, echoed Eisenhower's view, noting that a basic pattern emerged from the war: "This pattern is coordinate organization of the principal forces having their respective missions in one of the major elements—land, sea, and air—each under its own commander and each respectively responsible to a supreme commander, i.e., three coordinate forces under unified supreme command."

The framework advocated by Eisenhower and Arnold was created on Dec. 14, 1946, when President Harry S. Truman signed the Outline Command Plan establishing seven unified commands. (The Outline Command Plan was the first of what is now known as the Unified Command Plan.) The first seven unified commands were Alaskan Command, Atlantic Command, Caribbean Command, European Command, Far East Command, Northeast Command, and Pacific Command. The plan also recognized the existence of Strategic Air Command, a command of the US Army Air Forces, and placed it under the responsibility of the JCS. SAC was the first of what would later be designated specified commands.

The drive toward defense centralization continued to pick up momentum. In 1949, amendments to the 1947 National Security Act removed the service Secretaries from their policy role in the National Security Council. A reorganization in 1953 further centralized authority in the Office of the Secretary of Defense,

Ever since adoption of the 1947 act, the Air Force had favored a more unified defense establishment. In 1956–57, when Sen. W. Stuart Symington (D–Mo.), who had been the first Secretary of the Air Force, conducted his airpower hearings—the most comprehensive ever held on the subject—the Air Force took the position that a defense reorganization was required. Gen. Nathan F. Twining, Air Force Chief of Staff, emphasized that it was a mistake for each service to attempt to attain self-sufficiency.

The Air Force View

Throughout the 1950s, the Air Force continued to press for a more unified defense structure. With evolution of Strategic Air Command as the fulcrum of US defense policy, air leaders reasoned that a stronger OSD would institutionalize the Air Force's justifiable domination of the defense structure.

In October 1957, in the wake of the launch of the Sputnik satellite by the Soviet Union, critics of the Eisenhower Administration blamed interservice rivalry for the lag in US missile and space technology.

In late 1957, a study panel of the Rockefeller Brothers Fund described three significant defects in the organization of the Department of Defense:

- Roles and missions had become competitive rather than complementary.
- The organization and responsi-

bilities of the Joint Chiefs precluded development of a comprehensive and coherent defense doctrine.

- The Secretary of Defense spent too much time arbitrating interservice disputes and could not contribute significantly to evolving military policy.

The Rockefeller panel recommended that the military departments be removed from the chain of operational command and instead support the unified commands. It proposed that "all operational military forces of the US should be organized into unified commands to perform missions dictated by strategic requirements. The units assigned to each unified commander should be organic to his command not simply placed under his temporary operational control."

In early January 1958, President Eisenhower, in his State of the Union address, emphasized the need for a shakeup in defense organization. In late January, the Senate preparedness investigating subcommittee recommended action "to reorganize the structure of the defense establishment" and to "accelerate and expand research and development."

Consequently, Secretary of Defense Neil H. McElroy appointed a group to draft reorganization legislation and, based on its report, Eisenhower on April 3, 1958, asked Congress to deploy troops into truly unified commands and to eliminate separate ground, sea, and air warfare forever.

The President emphasized that future wars would be waged "in all elements, with all services, as one single concentrated effort. ... Strategic and tactical planning must be completely unified, combat forces organized into unified commands, each equipped with the most efficient weapons systems that science can develop, singly led and prepared to fight as one, regardless of service." He expected the unified command "to go far toward realigning our operational plans, weapon systems, and force levels." The nation required, he said, "maximum security at minimum cost," a constant refrain of Eisenhower's since World War II.

Congress incorporated most of Eisenhower's recommendations in the Department of Defense Reorganization Act of 1958. This legislation marked a turning point in American military organization by removing the military departments and their service Secretaries from the operational chain of command.

The New Warrior Chiefs

The 1958 act stipulated that operational command would be directed from the President to the Secretary of Defense through the Joint Chiefs (as an advisory conduit) and then to the unified and specified commands. The JCS would provide a channel of communications from the Secretary of Defense to the unified and specified commands. The law gave unified and specified commanders control and direction of US combatant forces.

The so-called nonoperational chain of command or responsibility for preparing and supporting forces remained with the military departments. The act greatly strengthened the powers of the Secretary of Defense, granting him direction, authority, and control over the Department of Defense and the military services. It repealed the previous legislative authority for the service Chiefs to command their respective services. The National Security Act of 1947 described "three military departments separately administered," as opposed to the 1958 act which described a "Department of Defense, including three military departments, to be separately organized."

In addition, the 1958 legislation granted control and direction of military research and development to the Secretary of Defense and created a director of defense research and engineering. The Secretary of Defense was also authorized to establish agencies to conduct any service or supply function common to two or more services.

In sum, although the 1958 reorganization act left the military departments intact, it centralized power in the Office of the Secretary of Defense and gave the Secretary more responsibility to craft strategy in concert with the Joint Chiefs of Staff. The service Secretaries and Chiefs could still present recommendations to Congress.

From the Air Force's perspective, the legislation failed to achieve the control of combat forces desired by Eisenhower. "The top military body," emphasized Gen. Thomas D. White, Air Force Chief of Staff at the time, "was still shot through with interservice rivalry." According to White, there was "no more agreement in the JCS" than before the reorganization. Although the law "was a pretty good step," White believed that legislation by itself could not resolve interservice rivalry.

However, the war in Southeast Asia increased the pressure to strengthen the role of the combatant commanders. In early 1982, prior to his retirement as JCS Chairman, Air Force Gen. David C. Jones testified before the House Armed Services Commit-

Continued on p. 106

Defense Secretary Neil McElroy, here with service heads Army Gen. L.L. Lemnitzer, Adm. Arleigh Burke, and USAF Gen. Thomas White and the NORAD commander, Gen. Earle Partridge, drafted the 1958 defense reorganization plan.


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Continued from p. 104

tee, stating that commanders of the combatant commands and the position of Chairman of the Joint Chiefs needed to be given more authority and responsibility. He pointed out that since the 1958 reorganization, the only important change within the defense department had been in 1978 when the Marine Corps Commandant received full-fledged status on the Joint Chiefs of Staff.

In Jones's view, it was absolutely essential to construct "a joint staff and a joint system that were not beholden to the services." He observed that "we need to spend more time on our warfighting capabilities and less on intramural squabbles for resources."

In early 1985, a study conducted under the auspices of Georgetown University Center for Strategic and International Studies argued "for a sweeping restructuring of the American military operation." It described the military structure as "stagnated" and rife with interservice rivalries.

Participants in this study included Rep. Les Aspin (D–Wis.), the new chairman of the House Armed Services Committee and later a Secretary of Defense under President Clinton; Sen. Sam Nunn (D–Ga.); Sen. William S. Cohen (R–Maine), also later a Clinton Secretary of Defense; and Sen. Barry Goldwater (R–Ariz.), chairman of the Senate Armed Services Committee.

The Navy opposed restructuring, with Secretary of the Navy John F. Lehman Jr. commenting that these proposed reforms "would centralize too much power in Washington and diminish civilian control."

Toward the Eisenhower Vision

The drive for reform picked up more steam in October 1985 when the Senate Armed Services Committee issued another study recommending that the Joint Chiefs be replaced with a military advisory council, that OSD be strengthened, and that more responsibility be given to the unified commanders. This Senate study concluded that the position of the Secretary of Defense was weaker "today than when it was created by President Truman in 1947."

Before he retired as JCS Chairman in June 1982, USAF Gen. David Jones, here talking with Sen. Barry Goldwater, told Congress that the military must spend more time on warfighting capabilities and less on intramural squabbles.

Congress then reached a final compromise resulting in the Goldwater–Nichols Department of Defense Reorganization Act of 1986, signed into law by President Reagan. Nunn, one of the major architects of the legislation, declared that it provided the country the kind of unified structure that Eisenhower had had in mind for the 1958 reorganization.

The Goldwater–Nichols legislation gave more power to the Chairman of the Joint Chiefs and to the unified commanders. It designated the JCS Chairman as the principal military advisor to the President. Thus, the JCS Chairman now assumed the advisory role that the corporate Joint Chiefs had maintained since 1958. The law also stipulated that communications between the President and Secretary of Defense and the heads of the unified and specified commands could be channeled through the Chairman.

The Joint Chiefs and individually each service Chief remained outside the operational chain of command. The legislation also stipulated that the JCS Chairman would perform reviews of the unified and specified commands and submit a report on roles and missions of the services every three years.

The act contained two other major provisions. It made the Secretary of Defense responsible for strategic and logistical planning and budget requests. And, it created a four-star vice chairman of the JCS, a position to be manned from a service other than that of the Chairman.

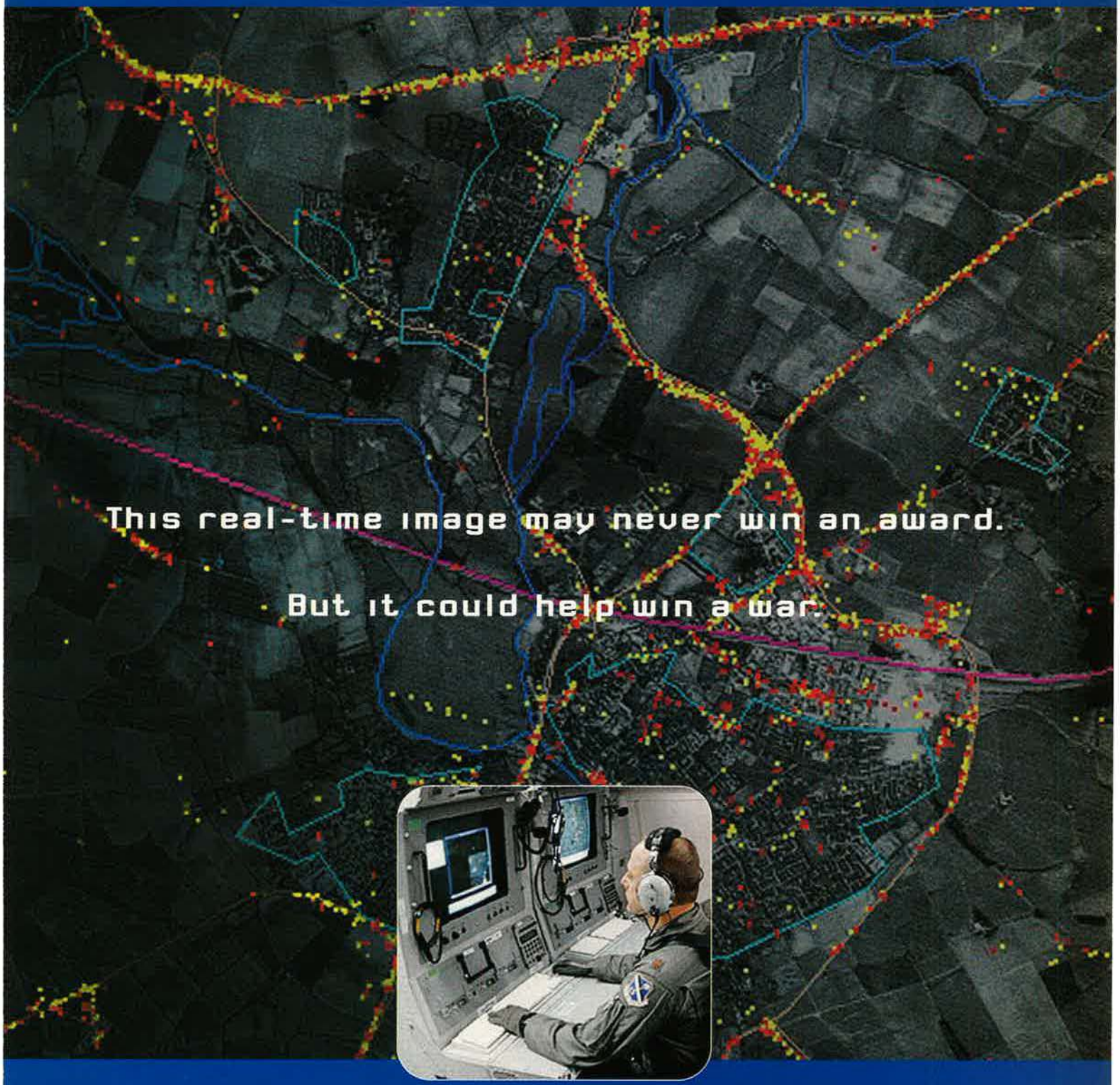
Air Force Gen. Robert T. Herres was the first officer to occupy the position of vice chairman of the JCS. He described the objective of Goldwater–Nichols to be "less talk of so-called roles and missions of the services and more meaningful, aggressive action to support the combat commanders."

Herres stressed that the architects of the law believed "service interests" had been "served at the expense of joint responsibilities" and "resource managers held excessive influence at the expense of warfighters."

It had taken 28 years to reach Goldwater–Nichols. Since then, additional reports have focused on strengthening America's warfighting capability, emphasizing ways to field a fighting force not constrained by parochialism.

The end of the Cold War and the startling events of the past decade have once again turned the spotlight on how best to organize the nation's military to meet the difficult challenges ahead. ■

Herman S. Wolk is senior historian in the Air Force History Support Office. He is the author of The Struggle for Air Force Independence, 1943–1947 *(1997), and a coauthor of* Winged Shield, Winged Sword: A History of the United States Air Force *(1997). His most recent article for* Air Force *Magazine, "Pantelleria, 1943," appeared in the June 2002 issue.*



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By Frances McKenney, Assistant Managing Editor

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1954	Santa Monica (Calif.) Area Chapter
1955	San Fernando Valley (Calif.) Chapter
1956	Utah State AFA
1957	H.H. Arnold Chapter (N.Y.)
1958	San Diego Chapter
1959	Cleveland Chapter
1960	San Diego Chapter
1961	Chico (Calif.) Chapter
1962	Fort Worth (Tex.) Chapter
1963	Colin P. Kelly Chapter (N.Y.)
1964	Utah State AFA
1965	Idaho State AFA
1966	New York State AFA
1967	Utah State AFA
1968	Utah State AFA
1969	*(no presentation)*
1970	Georgia State AFA
1971	Middle Georgia Chapter
1972	Utah State AFA
1973	Langley (Va.) Chapter
1974	Texas State AFA
1975	Alamo Chapter (Tex.) and San Bernardino (Calif.) Area Chapter
1976	Scott Memorial Chapter (Ill.)
1977	Thomas B. McGuire Jr. Chapter (N.J.)
1978	Thomas B. McGuire Jr. Chapter (N.J.)
1979	Brig. Gen. Robert F. Travis Chapter (Calif.)
1980	Central Oklahoma (Gerrity) Chapter
1981	Alamo Chapter (Tex.)
1982	Chicagoland–O'Hare Chapter (Ill.)
1983	Charles A. Lindbergh Chapter (Conn.)
1984	Scott Memorial Chapter (Ill.) and Colorado Springs/Lance Sijan Chapter (Colo.)
1985	Cape Canaveral Chapter (Fla.)
1986	Charles A. Lindbergh Chapter (Conn.)
1987	Carl Vinson Memorial Chapter (Ga.)
1988	Gen. David C. Jones Chapter (N.D.)
1989	Thomas B. McGuire Jr. Chapter (N.J.)
1990	Gen. E.W. Rawlings Chapter (Minn.)
1991	Paul Revere Chapter (Mass.)
1992	Central Florida Chapter and Langley (Va.) Chapter
1993	Green Valley Chapter (Ariz.)
1994	Langley (Va.) Chapter
1995	Baton Rouge (La.) Chapter
1996	Montgomery (Ala.) Chapter
1997	Central Florida Chapter
1998	Ark–La–Tex Chapter (La.)
1999	Hurlburt Chapter (Fla.)
2000	Wright Memorial Chapter (Ohio)
2001	Lance P. Sijan Chapter (Colo.)
2002	Eglin Chapter (Fla.)

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1957	George D. Hardy (Md.)
1958	Jack B. Gross (Pa.)
1959	Carl J. Long (Pa.)
1960	O. Donald Olson (Colo.)
1961	Robert P. Stewart (Utah)
1962	*(no presentation)*
1963	N.W. DeBerardinis (La.) and Joe L. Shosid (Tex.)
1964	Maxwell A. Kriendler (N.Y.)
1965	Milton Caniff (N.Y.)
1966	William W. Spruance (Del.)
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1968	Marjorie O. Hunt (Mich.)
1969	*(no presentation)*
1970	Lester C. Curl (Fla.)
1971	Paul W. Gaillard (Neb.)
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1974	Howard T. Markey (D.C.)
1975	Martin M. Ostrow (Calif.)
1976	Victor R. Kregel (Tex.)
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1985–86

Martin H. Harris
1986–88

Sam E. Keith Jr.
1988–90

Jack C. Price
1990–92

O.R. Crawford
1992–94

James M. McCoy
1994–96

Gene Smith
1996–98

Doyle E. Larson
1998–2000

Thomas J. McKee
2000–02

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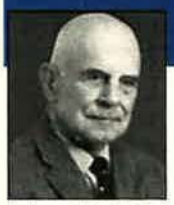
Air Force Association National Presidents



Jimmy Doolittle
1946–47

Thomas G. Lanphier Jr.
1947–48

C.R. Smith
1948–49

Robert S. Johnson
1949–51

Harold C. Stuart
1951–52

Arthur F. Kelly
1952–53

George C. Kenney
1953–54

John R. Alison
1954–55

Gill Robb Wilson
1955–56

John P. Henebry
1956–57

Peter J. Schenk
1957–59

Howard T. Markey
1959–60

Thos. F. Stack
1960–61

Joe Foss
1961–62

John B. Montgomery
1962–63

W. Randolph Lovelace II
1963–64

Jess Larson
1964–67

Robert W. Smart
1967–69

George D. Hardy
1969–71

Martin M. Ostrow
1971–73

Joe L. Shosid
1973–75

George M. Douglas
1975–77

Gerald V. Hasler
1977–79

Victor R. Kregel
1979–81

John G. Brosky
1981–82

David L. Blankenship
1982–84

Martin H. Harris
1984–86

Sam E. Keith Jr.
1986–88

Jack C. Price
1988–90

O.R. Crawford
1990–92

James M. McCoy
1992–94

Gene Smith
1994–96

Doyle E. Larson
1996–98

Thomas J. McKee
1998–2000

John J. Politi
2000–02

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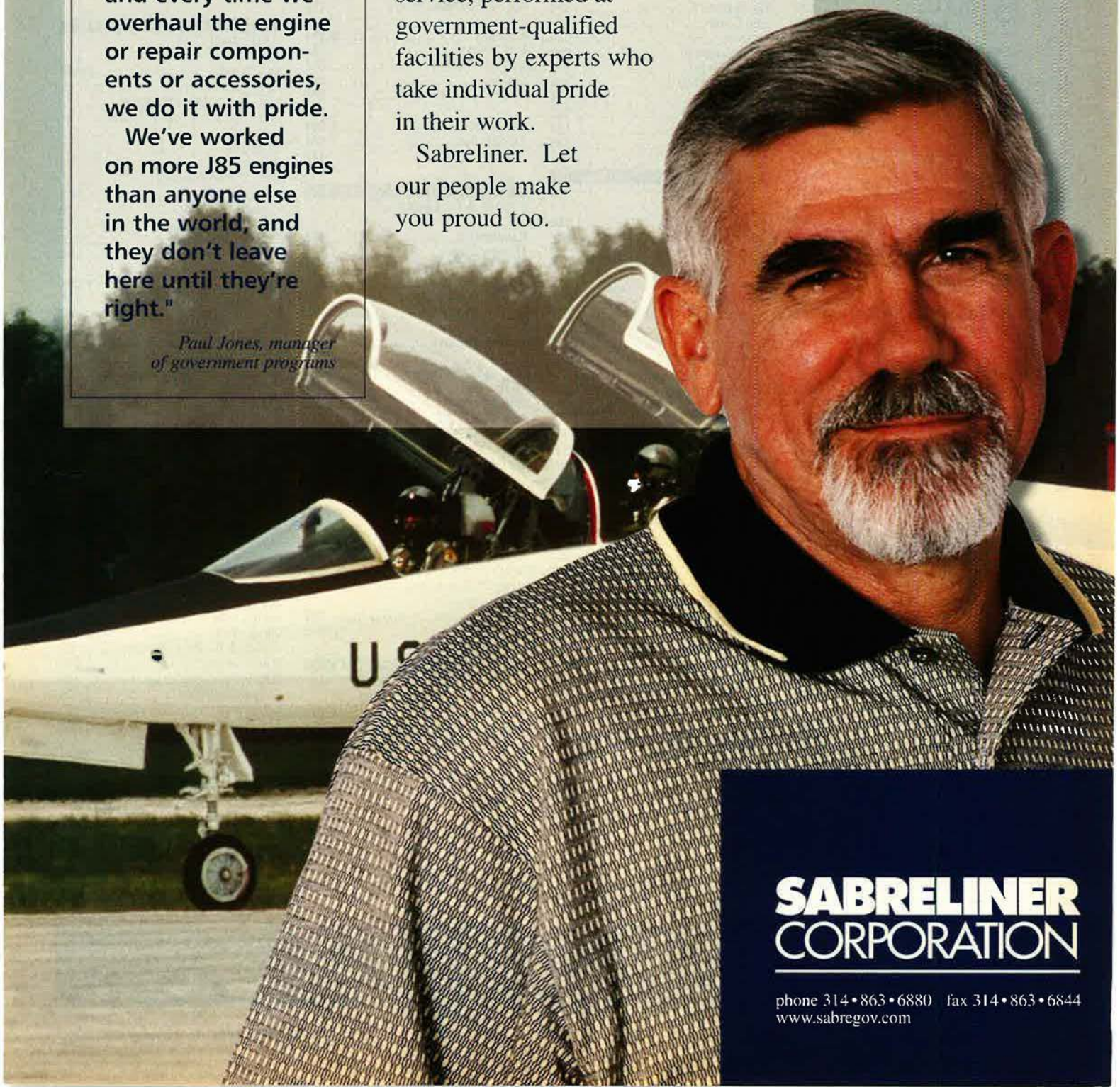

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www.sabregov.com

AFA's Regions, States, and Chapters

These figures indicate the number of affiliated members as of June 30, 2002. Listed below the name of each region is the region president.

CENTRAL EAST REGION 13,189
Thomas G. Shepherd

Delaware 712
Delaware Galaxy 534
Diamond State 178

District of Columbia 729
Nation's Capital 729

Maryland 2,851
Baltimore* 862
Central Maryland 428
College Park Airport 136
Thomas W. Anthony 1,425

Virginia 8,519
Danville 62
Donald W. Steele Sr. Memorial 3,537
Gen. Charles A. Gabriel 1,258
Langley 1,754
Leigh Wade 159
Northern Shenandoah Valley 225
Richmond 589
Roanoke 307
Tidewater 399
William A. Jones III 229

West Virginia 378
Brig. Gen. Pete Everest 86
Chuck Yeager 292

FAR WEST REGION 15,082
Michael J. Peters

California 14,053
Antelope Valley 529
Bob Hope 1,066
Brig. Gen. Robert F. Travis 1,126
C. Farinha Gold Rush 1,655
Charles Hudson 118
David J. Price/Beale 569
Fresno* 378
Gen. B.A. Schriever Los Angeles 671
General Doolittle Los Angeles Area* 1,632
Golden Gate* 833
High Desert 262
Maj. Gen. Charles I. Bennett Jr. 332
Monterey Bay Area 286
Orange County/Gen. Curtis E. LeMay 949
Palm Springs 504
Pasadena Area 409
Robert H. Goddard 853
San Diego 1,071
Tennessee Ernie Ford 810

Hawaii 1,029
Hawaii* 998
Maui 31

FLORIDA REGION 11,748
Bruce E. Marshall

Florida 11,748
Brig. Gen. James R. McCarthy 402
Cape Canaveral 1,257
Central Florida 1,589
Col. H.M. "Bud" West 297
Col. Loren D. Evenson 619
Eglin 1,745
Falcon 445
Florida Highlands 353
Gainesville 312
Gen. Nathan F. Twining 549
Gold Coast 452
Hurlburt 640
Jerry Waterman 1,304
John C. Meyer 325
John W. DeMilly Jr. 357
Miami 379
Pensacola 158
Treasure Coast 181
West Palm Beach 384

GREAT LAKES REGION 9,686
James E. Fultz

Indiana 1,799
Central Indiana 456
Columbus–Bakalar 110
Fort Wayne 275
Grissom Memorial 180
Gus Grissom 151
Lawrence D. Bell Museum 310
Lester W. Johnston 31
Southern Indiana 187
Terre Haute–Wabash Valley 99

Kentucky 801
Gen. Russell E. Dougherty 521
Lexington 280

Michigan 2,237
Battle Creek 188
James H. Straubel 850
Kalamazoo 319
Lake Superior Northland 168
Lloyd R. Leavitt Jr. 204
Mid–Michigan 88
Mount Clemens 317
PE–TO–SE–GA 103

Ohio 4,849
Capt. Eddie Rickenbacker Memorial* 752
Frank P. Lahm 576
Greater Cincinnati 286
North Coast* 378
Steel Valley 235
Wright Memorial* 2,622

MIDWEST REGION 9,227
W. Graham Burnley Jr.

Illinois 3,567
Chicagoland–O'Hare 1,392
Heart of Illinois 58
Land of Lincoln 401
Richard W. Asbury 217
Scott Memorial 1,499

Iowa 684
Gen. Charles A. Horner 253
Lancer 158
Northeast Iowa 102
Richard D. Kisling 171

Kansas 921
Contrails 73
Lt. Erwin R. Bleckley 586
Maj. Gen. Edward R. Fry 262

Missouri 2,171
Earl D. Clark Jr. 390
Harry S. Truman 517
Ozark 255
Spirit of St. Louis 909

Nebraska 1,884
Ak–Sar–Ben 1,505
Lincoln 279

NEW ENGLAND REGION 4,482
David T. Buckwalter

Connecticut 903
Flying Yankees 157
Gen. Bennie L. Davis 194
Gen. George C. Kenney 178
Lindbergh/Sikorsky 199
Sgt. Charlton Heston 175

Massachusetts 2,185
Boston 141
Maj. John S. Southrey* 186
Minuteman 352
Otis 193
Paul Revere 748
Pioneer Valley 175
Taunton 188
Worcester* 202

New Hampshire 864
Brig. Gen. Harrison R. Thyng 436
Pease 428

Rhode Island 298
Metro Rhode Island 235
Newport Blue & Gold 63

Vermont 232
Burlington 232

NORTH CENTRAL REGION 4,343
Gary H. Olson

Minnesota 1,278
Gen. E.W. Rawlings 1,031
Richard I. Borg 247

Montana 447
Big Sky 348
Treasure State 99

North Dakota 612
Gen. David C. Jones 279
Happy Hooligan 143
Red River Valley 190

South Dakota 550
Dacotah 245
Rushmore 305

Wisconsin 1,456
Billy Mitchell 576
Capt. William J. Henderson 528
Madison 352

NORTHEAST REGION 8,968
Karl Miller

New Jersey 2,480
Aerospace Founders 65
Brig. Gen. E. Wade Hampton 177
Brig. Gen. Frederick W. Castle 184
Hangar One 133
Highpoint 115
Hudson* 80
John Currie Memorial 87
Mercer County 222
Passaic–Bergen* 199
Sal Capriglione 140
Thomas B. McGuire Jr. 819
Union Morris 259

New York 3,404
Albany–Hudson Valley* 428
Chautauqua 69
Forrest L. Vosler 398
Francis S. Gabreski 309
Gen. Carl A. "Tooey" Spaatz 236
Gen. Daniel "Chappie" James Jr. Memorial 134
Genesee Valley 240
Iron Gate 212
L.D. Bell–Niagara Frontier 417
Lloyd Schloen–Empire 150
Nassau Mitchel 359
Queens 251
Thomas Watson Sr. Memorial 201

Pennsylvania 3,084
Altoona 62
Brandywine 167
Eagle 67
Greater Pittsburgh* 425
Joe Walker–Mon Valley 138
Lehigh Valley 277
Liberty Bell 651
Lt. Col. B.D. "Buzz" Wagner 130
Mifflin County* 106
Olmsted 367
Pocono Northeast 225
Total Force 180
York–Lancaster 289

*These chapters were chartered prior to Dec. 31, 1948, and are considered original charter chapters; the Maj. John S. Southrey Chapter of Massachusetts was formerly the Chicopee Chapter; the North Coast Chapter of Ohio was formerly the Cleveland Chapter.

NORTHWEST REGION 5,751
Steven R. Lundgren

Alaska 990
Edward J. Monaghan 747
Fairbanks Midnight Sun 243

Idaho 215
Snake River Valley 215

Oregon 1,189
Bill Harris 149
Portland* 787
Willamette Valley 253

Washington 3,357
Greater Seattle 1,181
Inland Empire 772
McChord 1,404

ROCKY MOUNTAIN REGION 7,085
Craig E. Allen

Colorado 5,057
Gen. Robert E. Huyser 146
Lance P. Sijan 2,831
Long's Peak 278
Mel Harmon 173
Mile High 1,629

Utah 1,591
Northern Utah 643
Salt Lake 449
Ute–Rocky Mountain 499

Wyoming 437
Cheyenne Cowboy 437

SOUTH CENTRAL REGION 7,945
Frederick A. Zehrer III

Alabama 2,140
Birmingham 432
Montgomery 1,342
Tennessee Valley 366

Arkansas 1,252
David D. Terry Jr. 856
Ouachita 136
Razorback 260

Louisiana 1,346
Ark–La–Tex 911
Maj. Gen. Oris B. Johnson 435

Mississippi 1,240
Golden Triangle 409
Jackson 207
John C. Stennis 624

Tennessee 1,967
Chattanooga 157
Everett R. Cook 467
Gen. Bruce K. Holloway 628
H.H. Arnold Memorial 185
Maj. Gen. Dan F. Callahan 530

SOUTHEAST REGION 9,574
Rodgers K. Greenawalt

Georgia 4,286
Carl Vinson Memorial 1,812
Dobbins 1,739
Lt. Col. Philip Colman 64
Savannah 344
South Georgia 327

North Carolina 3,009
Blue Ridge 392
Cape Fear 222
Kitty Hawk 77
Piedmont 493
Pope 592
Scott Berkeley 576
Tarheel 657

South Carolina 2,279
Charleston 644
Columbia Palmetto 433
Ladewig–Shine Memorial 216
Strom Thurmond 409
Swamp Fox 577

SOUTHWEST REGION 8,429
William A. Lafferty Jr.

Arizona 4,468
Barry Goldwater 191
Cochise 94
Frank Luke 1,127
Phoenix Sky Harbor 1,222
Prescott 204
Richard S. Reid 156
Tucson 1,474

Nevada 2,027
Dale O. Smith 445
Thunderbird 1,582

New Mexico 1,934
Albuquerque 1,292
Fran Parker 391
Llano Estacado 251

TEXOMA REGION 15,979
M.N. "Dan" Heth

Oklahoma 3,046
Altus 413
Central Oklahoma (Gerrity) 1,557
Enid 567
Tulsa 509

Texas 12,933
Abilene 452
Aggieland 216
Alamo 4,276
Austin 1,140
Concho 320
Dallas 1,020
Del Rio 166
Denton 415
Fort Worth 2,058
Gen. Charles L. Donnelly Jr. 428
Ghost Squadron 144
Heart of the Hills 177
Northeast Texas 461
Panhandle AFA 312
Permian Basin 112
San Jacinto 1,236

AFA's Overseas Chapters

CHAPTER	LOCATION
	United States Air Forces In Europe (USAFE)
Charlemagne	Geilenkirchen, Germany
Dolomiti	Aviano AB, Italy
Lufbery–Campbell	Ramstein AB, Germany
Spangdahlem	Spangdahlem AB, Germany
United Kingdom	Lakenheath, UK
	Pacific Air Forces (PACAF)
Keystone	Kadena AB, Japan
MiG Alley	Osan AB, South Korea
Miss Veedol	Misawa AB, Japan
Tokyo	Tokyo, Japan
	Supreme Headquarters Allied Powers Europe (SHAPE)
Gen. Lauris G. Norstad	Mons, Belgium

AFA's First National Officers and Board of Directors

This panel of officers and directors acted temporarily until a representative group was democratically elected by membership at the first National Convention, in September 1947.

OFFICERS

President Jimmy Doolittle
First Vice President Edward P. Curtis
Second Vice President Meryll Frost
Third Vice President Thomas G. Lanphier Jr.
Secretary Sol A. Rosenblatt
Assistant Secretary Julian B. Rosenthal
Treasurer W. Deering Howe
Executive Director Willis S. Fitch

BOARD OF DIRECTORS

John S. Allard
H.M. Baldridge
William H. Carter
Everett R. Cook
Burton E. Donaghy
James H. Douglas Jr.
G. Stuart Kenney
Reiland Quinn
Rufus Rand
Earl Sneed
James M. Stewart
Forrest Vosler
Benjamin F. Warmer
Lowell P. Weicker
Cornelius Vanderbilt Whitney
John Hay Whitney

The Twelve Founders

John S. Allard, Bronxville, N.Y.
Everett R. Cook, Memphis, Tenn.
Edward P. Curtis, Rochester, N.Y.
Jimmy Doolittle, Los Angeles
W. Deering Howe, New York
Rufus Rand, Sarasota, Fla.
Sol A. Rosenblatt, New York
Julian B. Rosenthal, New York
James M. Stewart, Beverly Hills, Calif.
Lowell P. Weicker, New York
Cornelius Vanderbilt Whitney, New York
John Hay Whitney, New York

H.H. Arnold Award Recipients

Until 1986, AFA's highest aerospace award was the H.H. Arnold Award. Named for the World War II leader of the Army Air Forces, it was presented annually in recognition of the most outstanding contributions in the field of aerospace activity. In 1986, the Arnold Award was redesignated AFA's highest honor to a member of the armed forces in the field of national security. It continues to be presented annually.

YEAR	RECIPIENT(S)
1948	W. Stuart Symington, Secretary of the Air Force
1949	Maj. Gen. William H. Tunner and the men of the Berlin Airlift
1950	Airmen of the United Nations in the Far East
1951	Gen. Curtis E. LeMay and the personnel of Strategic Air Command
1952	Sens. Lyndon B. Johnson and Joseph C. O'Mahoney
1953	Gen. Hoyt S. Vandenberg, former Chief of Staff, USAF
1954	John Foster Dulles, secretary of state
1955	Gen. Nathan F. Twining, Chief of Staff, USAF
1956	Sen. W. Stuart Symington
1957	Edward P. Curtis, special assistant to the President
1958	Maj. Gen. Bernard A. Schriever, commander, Ballistic Missile Division, ARDC
1959	Gen. Thomas S. Power, commander in chief, Strategic Air Command
1960	Gen. Thomas D. White, Chief of Staff, USAF
1961	Lyle S. Garlock, assistant secretary of the Air Force
1962	A.C. Dickieson and John R. Pierce, Bell Telephone Laboratories
1963	The 363rd Tactical Reconnaissance Wing, TAC, and the 4080th Strategic Wing, SAC
1964	Gen. Curtis E. LeMay, Chief of Staff, USAF
1965	The 2nd Air Division, PACAF
1966	The 8th, 12th, 355th, 366th, and 388th Tactical Fighter Wings and the 432nd and 460th Tactical Reconnaissance Wings
1967	Gen. William W. Momyer, commander, 7th Air Force, PACAF
1968	Col. Frank Borman, USAF; Capt. James Lovell, USN; and Lt. Col. William Anders, USAF, Apollo 8 crew
1969	*(No presentation)*
1970	Apollo 11 team (J.L. Atwood; Lt. Gen. Samuel C. Phillips, USAF; and astronauts Neil Armstrong, Col. Edwin E. Aldrin Jr., USAF, and Col. Michael Collins, USAF)
1971	John S. Foster Jr., director of defense research and engineering
1972	Air units of the Allied Forces in Southeast Asia (Air Force, Navy, Army, Marine Corps, and the Vietnamese Air Force)
1973	Gen. John D. Ryan, USAF (Ret.), former Chief of Staff, USAF
1974	Gen. George S. Brown, USAF, Chairman, Joint Chiefs of Staff
1975	James R. Schlesinger, Secretary of Defense
1976	Sen. Barry M. Goldwater
1977	Sen. Howard W. Cannon
1978	Gen. Alexander M. Haig Jr., USA, Supreme Allied Commander, Europe
1979	Sen. John C. Stennis
1980	Gen. Richard H. Ellis, USAF, commander in chief, Strategic Air Command
1981	Gen. David C. Jones, USAF, Chairman, Joint Chiefs of Staff
1982	Gen. Lew Allen Jr., USAF (Ret.), former Chief of Staff, USAF
1983	Ronald W. Reagan, President of the United States
1984	The President's Commission on Strategic Forces (the Scowcroft Commission)
1985	Gen. Bernard W. Rogers, USA, Supreme Allied Commander, Europe
1986	Gen. Charles A. Gabriel, USAF (Ret.), former Chief of Staff, USAF
1987	Adm. William J. Crowe Jr., USN, Chairman, Joint Chiefs of Staff
1988	Men and women of the Ground-Launched Cruise Missile team
1989	Gen. Larry D. Welch, Chief of Staff, USAF
1990	Gen. John T. Chain, commander in chief, Strategic Air Command
1991	Lt. Gen. Charles A. Horner, commander, US Central Command Air Forces and 9th Air Force
1992	Gen. Colin L. Powell, USA, Chairman, Joint Chiefs of Staff
1993	Gen. Merrill A. McPeak, Chief of Staff, USAF
1994	Gen. John Michael Loh, commander, Air Combat Command
1995	World War II Army Air Forces veterans
1996	Gen. Ronald R. Fogleman, Chief of Staff, USAF
1997	Men and women of the United States Air Force
1998	Gen. Richard E. Hawley, commander, Air Combat Command
1999	Lt. Gen. Michael C. Short, commander, Allied Air Forces Southern Europe
2000	Gen. Michael E. Ryan, Chief of Staff, USAF
2001	Gen. Joseph W. Ralston, commander in chief, US European Command
2002	Gen. Richard B. Myers, USAF, Chairman, Joint Chiefs of Staff

John R. Alison Award Recipients

Established in 1992, the John R. Alison Award is AFA's highest honor for industrial leadership.

1992	Norman R. Augustine, chairman, Martin Marietta
1993	Daniel M. Tellep, chairman and CEO, Lockheed
1994	Kent Kresa, CEO, Northrop Grumman
1995	C. Michael Armstrong, chairman and CEO, Hughes Aircraft
1996	Harry Stonecipher, president and CEO, McDonnell Douglas
1997	Dennis J. Picard, chairman and CEO, Raytheon
1998	Philip M. Condit, chairman and CEO, Boeing
1999	Sam B. Williams, chairman and CEO, Williams International
2000	Simon Ramo and Dean E. Wooldridge, missile pioneers
2001	George David, chairman and CEO, United Technologies
2002	Sydney Gillibrand, chairman, AMEC; and Jerry Morgensen, president and CEO, Hensel Phelps Construction

W. Stuart Symington Award Recipients

Since 1986, AFA's highest honor to a civilian in the field of national security has been the W. Stuart Symington Award. The award, presented annually, is named for the first Secretary of the Air Force.

YEAR	RECIPIENT
1986	Caspar W. Weinberger, Secretary of Defense
1987	Edward C. Aldridge Jr., Secretary of the Air Force
1988	George P. Schultz, secretary of state
1989	Ronald W. Reagan, former President of the United States
1990	John J. Welch, assistant secretary of the Air Force (acquisition)
1991	George Bush, President of the United States
1992	Donald B. Rice, Secretary of the Air Force
1993	Sen. John McCain (R–Ariz.)
1994	Rep. Ike Skelton (D–Mo.)
1995	Sheila E. Widnall, Secretary of the Air Force
1996	Sen. Ted Stevens (R–Alaska)
1997	William Perry, former Secretary of Defense
1998	Rep. Saxby Chambliss (R–Ga.) and Rep. Norman D. Dicks (D–Wash.)
1999	F. Whitten Peters, Secretary of the Air Force
2000	Rep. Floyd Spence (R–S.C.)
2001	Sen. Michael Enzi (R–Wyo.) and Rep. Cliff Stearns (R–Fla.)
2002	Rep. James V. Hansen (R–Utah)

Gold Life Member Card Recipients

Awarded to members whose AFA record, production, and accomplishment on a national level have been outstanding over a period of years.

Name	Year	Card No.
Gill Robb Wilson	1957	1
Jimmy Doolittle	1959	2
Arthur C. Storz Sr.	1961	3
Julian B. Rosenthal	1962	4
Jack B. Gross	1964	5
George D. Hardy	1965	6
Jess Larson	1967	7
Robert W. Smart	1968	8
Martin M. Ostrow	1973	9
James H. Straubel	1980	10
Martin H. Harris	1988	11
Sam E. Keith Jr.	1990	12
Edward A. Stearn	1992	13
Dorothy L. Flanagan	1994	14
John O. Gray	1996	15
Jack C. Price	1997	16
Nathan H. Mazer	2002	17

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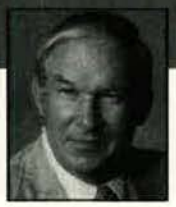
W. Randolph Lovelace II
1963–64

Laurence S. Kuter
1964–66



Walter J. Hesse
1966–69

J. Gilbert Nettleton Jr.
1969–73

George D. Hardy
1973–75

Barry M. Goldwater
1975–86

George D. Hardy
1986–89

James M. Keck
1989–94

Walter E. Scott
1994–97

Thomas J. McKee
1997–98

Michael J. Dugan
1998–2000

Jack C. Price
2000–02

Aerospace Education Foundation Presidents

John B. Montgomery
1963–64

Lindley J. Stiles
1964–66

B. Frank Brown
1966–67

Leon M. Lessinger
1967–68

L.V. Rasmussen
1968–71

Leon M. Lessinger
1971–73

Wayne O. Reed
1973–74

William L. Ramsey
1975–81

Don C. Garrison
1981–84

George D. Hardy
1984–86

Eleanor P. Wynne
1986–87

James M. Keck
1988–89

Gerald V. Hasler
1989–94

Thomas J. McKee
1994–97

Walter E. Scott
1997–98

Jack C. Price
1998–2000

Richard B. Goetze Jr.
2000–02

AFA Executive Directors

Willis S. Fitch
1946–47

James H. Straubel
1948–80

Russell E. Dougherty
1980–86

David L. Gray
1986–87

John O. Gray
1987–88

Charles L. Donnelly Jr.
1988–89

John O. Gray
1989–90

Monroe W. Hatch Jr.
1990–95

John A. Shaud
1995–2002

Donald L. Peterson
2002–

AFA National Secretaries

Sol A. Rosenblatt	1946–47
Julian B. Rosenthal	1947–59
George D. Hardy	1959–66
Joseph L. Hodges	1966–68
Glenn D. Mishler	1968–70
Nathan H. Mazer	1970–72
Martin H. Harris	1972–76
Jack C. Price	1976–79
Earl D. Clark Jr.	1979–82
Sherman W. Wilkins	1982–85
A.A. "Bud" West	1985–87
Thomas J. McKee	1987–90
Thomas W. Henderson	1990–91
Mary Ann Seibel	1991–94
Mary Anne Thompson	1994–97
William D. Croom Jr.	1997–2000
Daniel C. Hendrickson	2000–

AFA National Treasurers

W. Deering Howe	1946–47
G. Warfield Hobbs	1947–49
Benjamin Brinton	1949–52
George H. Haddock	1952–53
Samuel M. Hecht	1953–57
Jack B. Gross	1957–62
Paul S. Zuckerman	1962–66
Jack B. Gross	1966–81
George H. Chabbott	1981–87
William N. Webb	1987–95
Charles H. Church Jr.	1995–2000
Charles A. Nelson	2000–

AFA Membership

Year	Total	Life Members
1946	51,243	32
1947	104,750	55
1948	56,464	68
1949	43,801	70
1950	38,948	79
1951	34,393	81
1952	30,716	356
1953	30,392	431
1954	34,486	435
1955	40,812	442
1956	46,250	446
1957	51,328	453
1958	48,026	456
1959	50,538	458
1960	54,923	464
1961	60,506	466
1962	64,336	485
1963	78,034	488
1964	80,295	504
1965	82,464	514
1966	85,013	523
1967	88,995	548
1968	97,959	583
1969	104,886	604
1970	104,878	636
1971	97,639	674
1972	109,776	765
1973	114,894	804
1974	128,995	837
1975	139,168	898
1976	148,202	975
1977	155,850	1,218
1978	148,711	1,541
1979	147,136	1,869
1980	156,394	2,477
1981	170,240	3,515
1982	179,149	7,381
1983	198,563	13,763
1984	218,512	18,012
1985	228,621	23,234
1986	232,722	27,985
1987	237,279	30,099
1988	219,195	32,234
1989	204,309	34,182
1990	199,851	35,952
1991	194,312	37,561
1992	191,588	37,869
1993	181,624	38,604
1994	175,122	39,593
1995	170,881	39,286
1996	161,384	39,896
1997	157,862	41,179
1998	152,330	41,673
1999	148,534	42,237
2000	147,336	42,434
2001	143,407	42,865
2002	141,117	43,389

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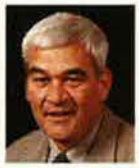

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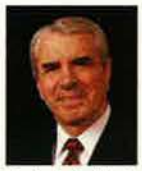

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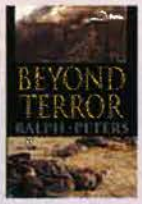
Books

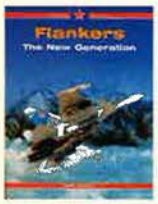
By Chequita Wood, Editorial Associate

Beyond Terror: Strategy in a Changing World. Ralph Peters. Stackpole Books, Mechanicsburg, PA (800-732-3669). 353 pages. $22.95.



Luftwaffe Aces of the Western Front: Luftwaffe at War, Vol. 19. Robert Michulec. Stackpole Books, Mechanicsburg, PA (800-732-3669). 72 pages. $14.95.

Stormchasers: The Hurricane Hunters and Their Fateful Flight Into Hurricane Janet. David Toomey. W.W. Norton & Sons, New York (800-233-4830). 314 pages. $25.95.



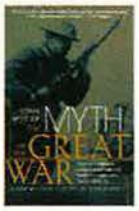
Flankers: The New Generation, Red Star Vol. II. Yefim Gordon. Specialty Press Publishers and Wholesalers, North Branch, MN (800-895-4585). 127 pages. $27.95.

MIG Alley: Sabres vs. MIGs Over Korea. Warren E. Thompson and David R. McLaren. Specialty Press Publishers and Wholesalers, North Branch, MN (800-895-4585). 190 pages. $39.95.

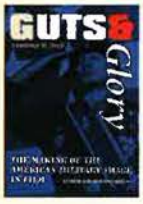
Uncovering Ways of War: US Intelligence and Foreign Military Innovation, 1918–1941. Thomas G. Mahnken. Cornell University Press, Ithaca, NY (607-277-2211). 190 pages. $35.00.

Forecaster!: Battling the Weather Odds in Peace and War. Theodore L. Cogut. Mining History, Thatcher, AZ (520-299-1949). 345 pages. $24.95.

The Myth of the Great War: A New Military History of World War I. John Mosier. Perennial, New York (212-207-7000). 381 pages. $14.95.



The US Army War College: Military Education in a Democracy. Judith Hicks Stiehm. Temple University Press, Philadelphia (800-621-2736). 260 pages. $22.95.



Guts & Glory: The Making of the American Military Image in Film. Lawrence H. Suid. The University of Kentucky Press, Lexington, KY (800-839-6855). 748 pages. $29.95.

Peacekeeping Fiascoes of the 1990s: Causes, Solutions, and US Interests. Frederick H. Fleitz Jr. Praeger Publishers, Westport, CT (800-225-5800). 224 pages. $39.95.

The US–Japan Security Alliance: Why It Matters and How to Strengthen It. Ted Osius. Center for Strategic & International Studies, Washington, DC (202-887-0200). 106 pages. $19.95.

The Hunt for Zero Point: Inside the Classified World of Antigravity Technology. Nick Cook. Broadway Books, New York (800-733-3000). 291 pages. $26.00.

Petlyakov Pe-2 in Action: Aircraft No. 181. Hans-Heiri Stapfer. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 49 pages. $9.95.

When I See a "Forty and Eight"... I Remember World War II. Jacques Adnet. Order from: Adnetech, Colorado Springs, CO (719-481-2887). 210 pages. $14.95.

The Last Mission: The Secret History of World War II's Final Battle. Jim Smith and Malcolm McConnell. Broadway Books, New York (800-733-3000). 346 pages. $24.95.

Secret Shadows of Yesterday. Bruce Stockdell. FirstBooks Library, Bloomington, IN (800-839-8640). 108 pages. $17.95.

Yakovlev Yak-25/-26/-27/-28: Yakovlev's Tactical Twinjets. Yefim Gordon. Specialty Press Publishers and Wholesalers, North Branch, MN (800-895-4585). 128 pages. $27.95.

AFA / AEF National Report

afa-aef@afa.org

By Frances McKenney, Assistant Managing Editor

North to Alaska

Air Force Association National Chairman of the Board Thomas J. McKee traveled to Alaska in June to attend the state convention and receive an orientation to Alaskan NORAD Region, 11th Air Force, and Elmendorf and Eielson Air Force Bases.

In Anchorage, the **Edward J. Monaghan Chapter's** membership drive received a boost when Elmendorf's base newspaper comprehensively covered McKee's remarks there. The article described many AFA and Aerospace Education Foundation efforts on behalf of airmen.

It also quoted McKee on the importance of such outreach visits: "We want to get out and meet with the men and women of the Air Force, sit down and understand what their issues are, what their quality-of-life and service issues are, so that we in Washington can help get resources and funding to meet those needs."

In Fairbanks, McKee was featured speaker at a luncheon meeting of the Greater Fairbanks Chamber of Commerce. The program, including McKee's remarks, was broadcast over the radio to a potential audience of 80,000, said Alaska State President Bart LeBon. He added that the **Fairbanks Midnight Sun Chapter** gained new Community Partners as a result of McKee's contact with city business leaders.

McKee spoke later that afternoon to the AFA state convention, providing a national perspective that will help convention-goers explain to their local audiences the AFA mission and message, LeBon reported.

A highlight of McKee's visit to Eielson was an F-16 flight with Brig. Gen. Bob D. DuLaney, commander, 354th Fighter Wing. McKee noted that the 354th was the last active duty wing he flew with, when he was an A-7D Corsair II pilot in 1977 at Myrtle Beach AFB, S.C.

USAF photo by Melanie Rodgers

AFA National Chairman of the Board Thomas McKee congratulates MSgt. Yvonne Smith, who earned the AFA Academic Achievement Award for Class 02-D at the Senior NCO Academy, Maxwell AFB, Ala. Smith is first sergeant with the 353rd Special Operations Group at Kadena AB, Japan.

A Visions Classroom Visit

Lincoln (Neb.) Chapter's aerospace education Vice President, Diane R. Bartels, and three AFROTC cadets from the University of Nebraska at Lincoln spent an afternoon at the Santee Sioux American Indian reservation, talking to schoolchildren about the Air Force, education, and planning for the future.

The cadets at UNL have been sponsoring a Visions of Exploration class at the reservation, and this visit—organized by Bartels—was part of their outreach effort.

To get to the K–12 Santee Community School, Bartels flew a Piper Cherokee 180 to an airport near the reservation, located on the Iowa–Nebraska border. Mike Larson, head of flight training at the university's aviation institute, was her passenger. AFROTC cadet Ryan Schmid piloted a Cessna 172 to the same airport, with fellow cadets Kerry Sheridan and Katrina E. Smith—a Lincoln Chapter member—on board. The three belong to the Arnold Air Society, an affiliate of AFA. TSgt. Alden Harriman, an Air National Guard recruiter in the Lincoln area, drove to the reservation, rounding out the roster of visitors.

Bartels, Schmid, and Sheridan spent two hours with the elementary school–level students. They explained what a vision is, described the future plans they themselves had as youngsters, and encouraged the kids to plan their own careers. It was the first time some of the students had been exposed to the military, Bartels said, so the cadets talked about uniforms, military customs and courtesies, aviation, and physical fitness. They even led the kids in push-ups.

Visions of Exploration is sponsored by *USA Today* newspaper and AEF and promotes the study of math, science, and aviation topics. Although the program is for elementary and middle school students, the Santee school wanted this visit to include its high schoolers, Bartels said. Smith, Harriman, and Larson spoke to these older students about career choices, not only as pilots but also in other areas such as aviation maintenance.

In the 2001–02 school year, 1,208 classrooms participated in the Visions program, according to AEF. This was an increase of 140 classrooms over the previous year. They were supported by 66 chapters in 32 states.

First Flight

In June, the **Lt. Col. Philip Colman (Ga.) Chapter** sponsored two orientation flights on a C-130 for several Air Force personnel at Ft. Gordon and AFJROTC and Civil Air Patrol cadets from the Augusta, Ga., area.

The C-130, from the Air National Guard's 165th Airlift Wing at Savannah Airport, flew into Augusta's Bush Field. On board were ANG CMSgt. Michael J. Bolton, Georgia state president, and ANG Col. Edward I. Wexler, an AFA national director and state VP for veterans affairs. Bolton and Wexler are members of the **Savannah Chapter.**

The cadets took the first 45-minute orientation flight over Augusta. Wexler said the youngsters got especially excited when the transport's green light—which usually signals the OK for a parachute jump—flashed on to let them know it was all right to unbuckle their seat belts and look out the windows. Two or three at a time were allowed onto the flight deck.

The second orientation flight was for active duty USAF NCOs, who according to Wexler, attend the communications school at Ft. Gordon. Also on board were members of USAF's 31st Intelligence Squadron, located at the post, and the squadron commander, Lt. Col. Mark C. McLaughlin. He is the Colman Chapter president.

Although Ft. Gordon is the home of the US Army's Signal Corps, personnel from all services serve there. The chapter, which has grown to 64 members, was chartered two years ago at the urging of then–AFA National Chairman of the Board Doyle E. Larson. It is named for a World War II ace who also served in the Korean War and retired as a wing operations officer in the Georgia ANG.

Lincoln Chapter's Diane Bartels arranged a Visions of Exploration visit to schoolchildren at the Santee reservation in Nebraska. Here, cadets Kerry Sheridan and Ryan Schmid pose with some of the kids and teachers.

First-Responders

The New York State Convention, hosted by the **Thomas Watson Sr. Memorial Chapter** in Owego, N.Y., honored local fire, police, and emergency personnel who helped in the rescue and recovery effort at the World Trade Center after the terrorist attacks last September.

In introducing the first-responders to the audience, Donald R. Reed, chapter president, said it was one thing to have seen the attacks on TV, but it was quite another to be one of the rescuers on the scene.

AFA Chairman of the Board McKee and ANG Maj. Gen. Archie J. Berberian II, who is the New York ANG chief of staff and also an **Albany–Hudson Valley Chapter** member, presented medallions to about 55 first-responders. Reed said the rescue workers came from an area of upstate New York encompassing Binghamton, Elmira, and Ithaca, about a three-hour drive from New York City.

The chapter and the AFA state organization had designed the silver dollar–sized medallions that depict not only the World Trade Center but also the Pentagon and the field in Pennsylvania where one of the terrorist-hijacked airplanes crashed. Several medallions were later delivered to recipients who couldn't attend the ceremony.

The convention-goers re-elected their state AFA officers for another year: Timothy G. Vaughan, president; Susan M. Griffith, secretary; Robert C. Bienvenue, treasurer; and R.H. Waring, western region VP. They are all from the **L.D. Bell–Niagara Frontier Chapter.** The other re-elected VPs are, from the downstate region, Fred Di Fabio of the **Nassau Mitchel Chapter,** and from the central region, Edward J. Hayes Jr. of the Albany–Hudson Valley Chapter.

SSgt. Janice Del Valle (standing, fourth from right), programs VP for the Lt. Col. Philip Colman Chapter, came up with the idea of a C-130 orientation flight at Ft. Gordon, Ga. On her left is Chapter President Lt. Col. Mark McLaughlin. Standing at far left is ANG CMSgt. Michael Bolton, Georgia state president, and standing at far right is ANG Col. Edward Wexler, wing vice commander.

North Carolina State Convention

AFA chapters in North Carolina presented their first state-level Teacher of the Year award at their June state convention, hosted by the **Cape Fear Chapter** in Wilmington.

Crystal Holland, a sixth-grade math teacher at Brevard Middle School in Brevard, N.C., received the award from Gerald V. West, state president, and William T. Stanley, state aerospace education VP.

In other awards presentations at the convention, the **Blue Ridge Chapter** received the state-level Chapter of the Year award, and chapter member Sara M. Bishop took home the Member of the Year honor. The Cape Fear Chapter received the award for chapter membership. Millie L. Hudgins, who heads the **Scott Berkeley Chapter,** was recognized as chapter president of the year.

Korean War ace Dolphin D. Overton III was the keynote speaker for the event. According to William D. Duncan Jr., who is state VP for membership, Overton spoke about his flying exploits. He is credited with five aerial victories in the Korean War.

Among the special guests at the gathering were James E. "Red" Smith, an AFA national director emeritus; Rodgers K. Greenawalt, Southeast Region president; and Roger Rucker, South Carolina state president.

Convention in Tennessee

In the "Volunteer State" of Tennessee, James C. Kasperbauer, president of the **Everett R. Cook Chapter,** was named Volunteer of the Year at the state convention. The **Chattanooga Chapter** hosted the event in their city in May.

Kasperbauer, who has been an AFA member for 28 years, was selected because of his longtime service to the chapter and state. During the convention's business sessions, in fact, he was elected state president.

Col. Joe Wilson and SSgt. Ross Tomlin, both from Det. 790 at Tennessee State University, accepted the outstanding AFROTC detachment award. Among other awards presented by Frederick A. Zehrer III, South Central Region president, and Joseph E. Sutter, state president: MSgt. Oscar Brown, 345th Recruiting Squadron, outstanding recruiter; Scott Grigg and Carrie Sayer, both from AFROTC Det. 800 at the University of Tennessee, outstanding Arnold Air Society and Silver Wings member, respectively; and retired Maj. William Cox, the senior aerospace science instructor at Heritage High School in Maryville for outstanding AFJROTC program.

Serving with Kasperbauer will be incumbents Nancy I. Blanchard (VP), from the **Maj. Gen. Dan F. Callahan Chapter,** and George A. Vitzthum (secretary), from the **Gen. Bruce K. Holloway Chapter.** Glenn L. Fuller, of the Cook Chapter, will be treasurer.

More AFA/AEF News

- Jack H. Steed, a national director and member of the **Carl Vinson (Ga.) Memorial Chapter,** attended a dinner in July for Nelson F. Gibbs, assistant secretary of the Air Force for installations, environment, and logistics. Gibbs had been visiting Warner Robins Air Logistics Center at Robins AFB, Ga. Steed presented him with a chapter coin inscribed, "Every day in middle Georgia is Air Force Appreciation Day."
- At the Air Force Academy in Colorado Springs, Colo., the state's AEF organization hosted the third annual "Evening of Champions" reception for golfers. Special guests included former Denver Broncos football player, Steve Foley; Fisher DeBerry, head coach for the USAF Academy's football team; AFA Board Chairman McKee; AFA National President John J. Politi; AEF VP Charles P. Zimkas Jr.; Joan Sell, president of the Colorado AEF; and Ted Kerr, president of the **Lance P. Sijan (Colo.) Chapter.** At the reception, the Colorado AEF donated $500—part of the proceeds from its 2001 reception and golf tournament—to AEF. This year's tournament took place the following day on the course of the academy's Eisenhower Golf Club. The reception and tournament raised a net total of $20,000.
- At the New Jersey state convention, Robert Nunamann was elected state president, with Judith M. Nunamann as secretary and Ronald Hartrim serving as treasurer. They are all from the **Highpoint Chapter.** Almalinda B. Fairlie of the **Mercer County Chapter** was elected state VP. The state convention was held in Cape May, N.J., with Nicholas Asselta, state assemblyman from the district that includes Cape May, as guest speaker.
- The **Enid (Okla.) Chapter's** VP for aerospace education, Oscar Curtis, recently presented AEF Pitsenbarger Awards and chapter scholarships to four recipients at Vance AFB, Okla. Community College of the Air Force graduates MSgt. Barb Naruszewicz and TSgt. Darren Phillips each re-

ceived $400 Pitsenbarger Awards. Chapter scholarships for $400 went to MSgt. Randy Hessley and TSgt. Jerry Smith. Commenting on Curtis's support for the Vance community, Kelly Murphy–Salts, the base education services officer, said they are "lucky to have someone so dedicated and involved."

■ The **Fort Worth (Tex.) and Dallas Chapters** teamed up to have a granite marker placed at the Dallas–Fort Worth National Cemetery to recognize the work of the Air Force honor guard that performs ceremonial duties at the funerals of military veterans in the state. The volunteers in this honor guard come from active duty and reserve units around Texas. The cemetery was dedicated only two years ago and is the first national cemetery for veterans in north Texas. M.N. "Dan" Heth, Texoma Region president, was among those at the unveiling of the two-foot-tall marker in June.

■ Kevin F. Sliwinski, a member of the **Gen. E.W. Rawlings (Minn.) Chapter,** presented an AFA award to Civil Air Patrol cadet Bridgett Whiting of CAP's North Hennepin (Minn.) Squadron in May. These AFA awards recognize oustanding cadets in CAP squadrons. Sliwinski serves as the CAP liaison to the Rawlings Chapter.

■ During a trip to Spain, Richard A. Ortega, the state and the **Central Florida Chapter's** aerospace education VP, snagged four new members. He began membership recruiting while inflight across the Atlantic, signing up Dr. Jeremy Ockrim, a urologist whose father was an RAF bombardier in World War II. He also signed up Capt. Tom Drape, who was on his way to the University of Barcelona to complete Ph.D. studies. Ortega continued recruiting at the American School of Barcelona, where he spoke to junior high and high school students about the Air Force Academy and AFROTC. There, he signed up Ettie Zilber, director of the school, and Jacob Zilber, a retired aerospace engineer. "Let us not hesitate to invite those we meet to join AFA," he said later, summing up his efforts.

■ The **Total Force (Pa.) Chapter** set up tables at the third annual Wings Over Pittsburgh 2002 air show in June. Hosted by Air Force Reserve Command's 911th Airlift Wing at Pittsburgh Airport/ARS, the two-day air show featured the USAF Air Demonstration Squadron, better known as the Thunderbirds, and the Army's Golden Knights parachuting team. Manning the AFA tables were Patricia Accetta, chapter president; Robert Iarussi, chapter VP; Ruth Iarussi, treasurer; and Lee W. Niehaus, communications VP. ■

AFA Conventions

Sept. 7	Delaware State Convention, Dover, Del.
Sept. 15–18	AFA National Convention, Washington, D.C.
Sept. 21	New Hampshire State Convention, Manchester, N.H.

Unit Reunions

reunions@afa.org

48th FS, FIS, FTS. Oct. 23–27 at Columbus AFB, MS. **Contact:** Capt. Mike Colson (662-434-2741).

390th FS. Oct. 10–14 at Mountain Home AFB, ID. **Contact:** Capt. Charles Corcoran (208-828-4396) (charles.corcoran@mountainhome.af.mil).

AFROTC graduates of the University of Northern Colorado (formerly Colorado State College). Oct. 17–19 in Greeley, CO. **Contacts:** Rex Schweers, 4465 W. Pioneer Dr., Greeley, CO 80634 (970-378-9339) (lrschweers2@attbi.com) or Alumni Association, Greeley, CO 80639 (970-351-2551 or 800-332-1862).

Douglas, GA, aviation cadets and instructors (WWII). Oct. 13–19 in Jekyll Island, GA. **Contact:** R.D. Wilcox, 809 Hillaire Rd., Lancaster, PA 17601 (717-898-8617) (bob.wilcox3@gte.net).

Pilot Class 43-D, all commands. May 7–11, 2003, at the Red Lion in Colorado Springs, CO. **Contacts:** Jack Patton, 4530 Windewood Village Dr., Colorado Springs, CO 80917 (719-637-3097) or Frank Dutko (850-932-3467) (duke43d@hotmail.com).

RAF Station Manston, UK. Oct. 1–5 at the Doubletree Hotel in Arlington, VA. **Contact:** Milton Torres, 11200 S.W. 99th Ct., Miami, FL 33176 (305-238-3342).

Stray Goose International, all involved with MC-130 Combat Talon operations in the Pacific. Oct. 11–13 in Fort Walton Beach, FL. **Contact:** Lee Hess, PO Box 9355, Hurlburt Field, FL 32544 (850-651-0353) (stgooseint@aol.com).

Seeking members of Moody AFB, GA, **Pilot Training Class 71-01** for a reunion. **Contact:** Max Vilhelmsen, 65 Calypso Dr., S6J 1G1, SK, Canada (306-692-4705) (max.vilhelmsen@nftc.com). ■

Mail unit reunion notices four months ahead 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. We reserve the right to condense notices.

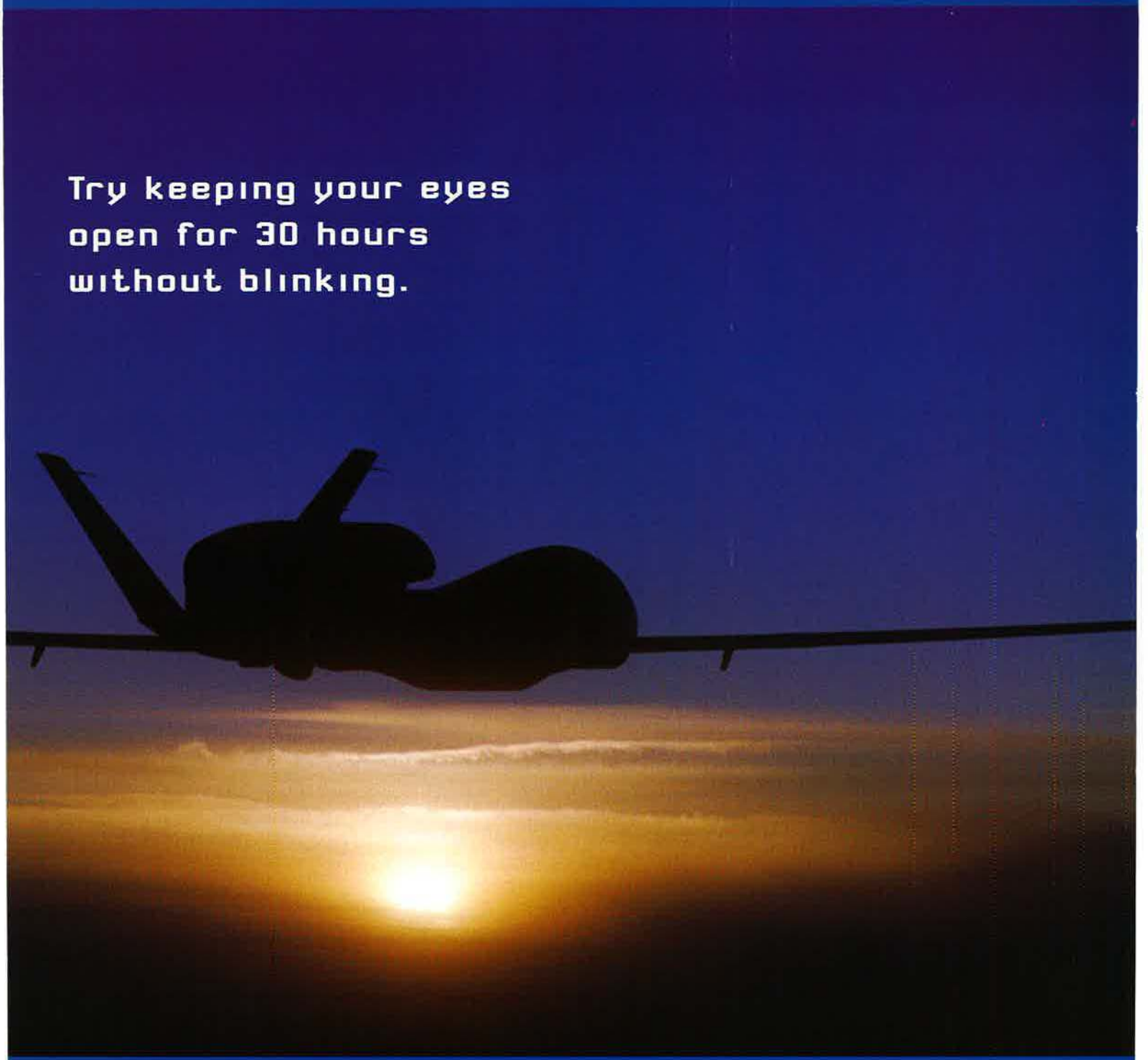
Pieces of History

Photography by Paul Kennedy

Enduring Freedom

When we look back on Sept. 11, we remember the horror and heroism of that day. In the year since, we saw patriotism expressed in everything from rock music to red, white, and blue bunting and the global war on terrorism in Afghanistan and other foreign countries. This nation has rallied and carried on since then—united, resolute, and prepared for the long haul. This is a freedom that endures.

Try keeping your eyes open for 30 hours without blinking.



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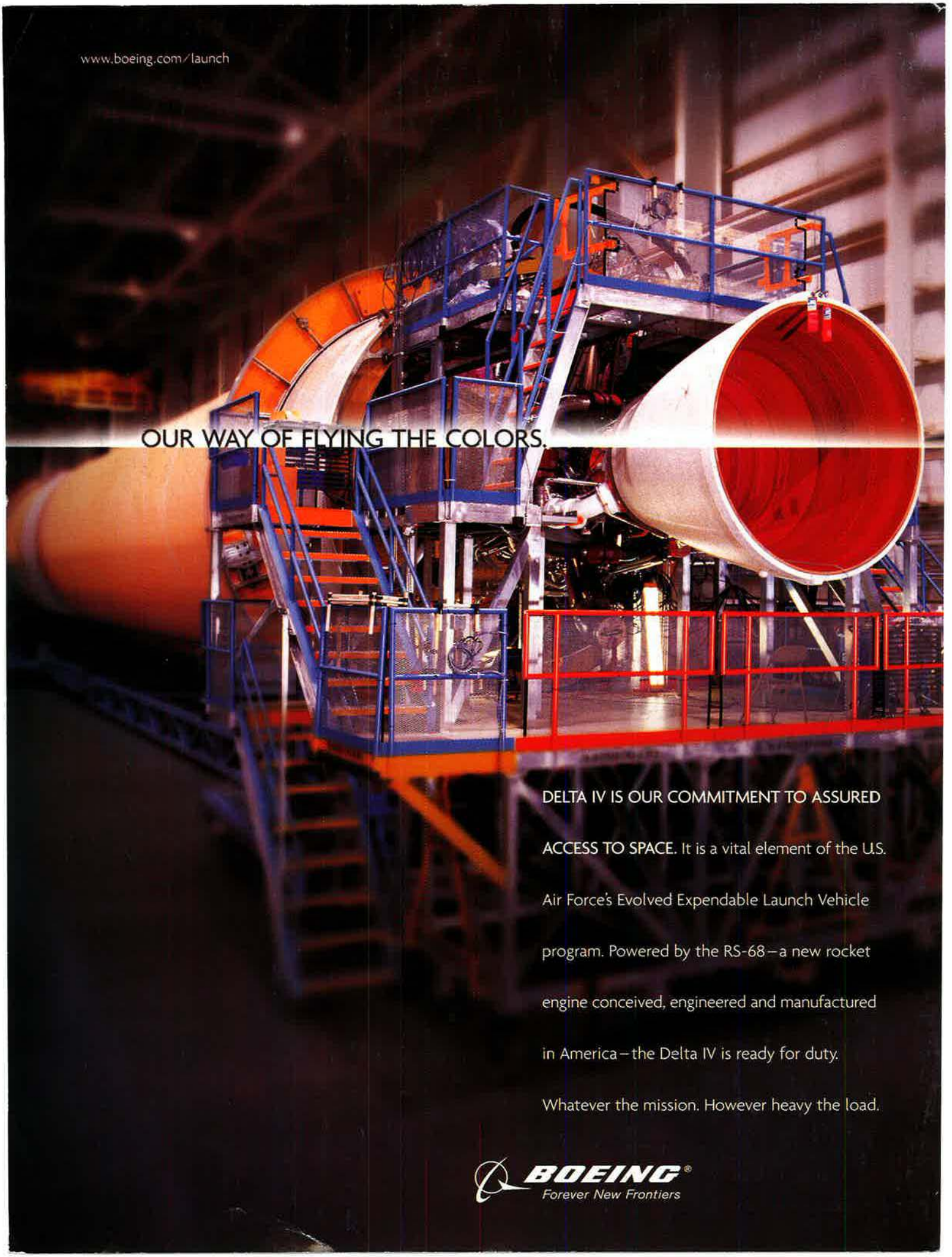
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