October 2005/$4

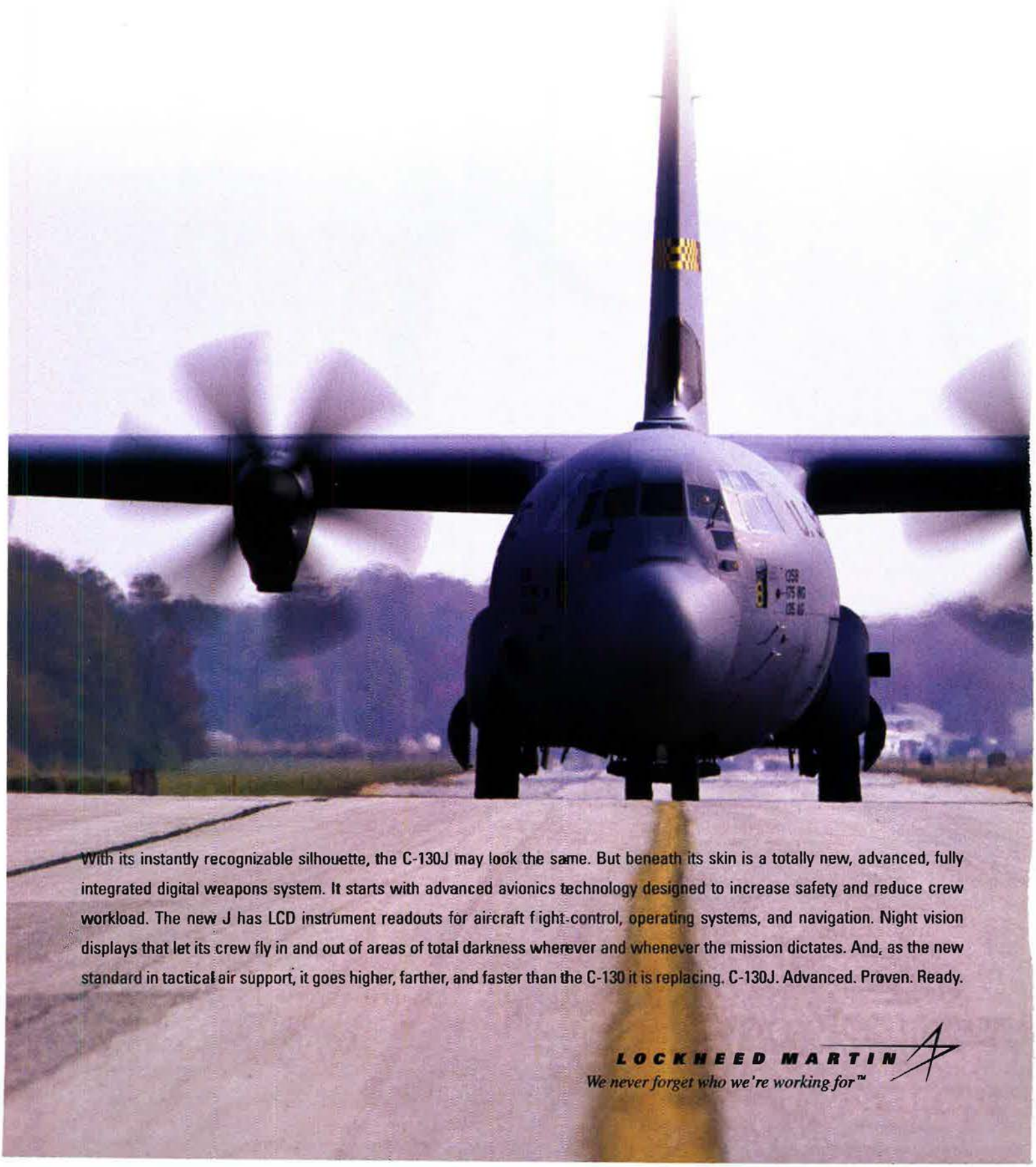
AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

The ICBM Makeover

The Jumper Outbrief
Total Force Turbulence
Rescue at Kham Duc

THE RESULT OF ADDING BRAINS TO BRUTE STRENGTH.



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October 2005, Vol. 88, No. 10

AIR FORCE MAGAZINE

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About the cover: A Peacekeeper missile test. Photo by Boeing. See "The ICBM Makeover," p. 34.

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Editorial

By Robert S. Dudney, Editor in Chief

Questions for Rumsfeld's Pentagon

PENTAGON chief Donald H. Rumsfeld soon will wrap up his 2005 Quadrennial Defense Review. The Secretary of Defense has peppered the services with tough questions. Given the stakes—the future of our armed forces—DOD officials should be willing to respond to some questions themselves. Here are a few suggestions.

In July 15 remarks made to the Bloomberg Forum, Ryan Henry, a senior QDR official, stated, "We are going to stay within the [spending] guidelines the President's budgeting folks have given us." Yet President Bush himself once insisted, "Our defense vision will drive our defense budget, not the other way around." The whole premise of a QDR, of course, is to establish requirements to help set spending levels. So: Which comes first—strong defense or fiscal hygiene?

Speaking of the President's "budgeting folks": They want to constrain spending even as we fight wars in Iraq and Afghanistan, plus a generalized global war with terrorists. They seem to see the current military burden on the economy—four percent of GDP—as the upper limit. Do you agree?

Under Ronald Reagan, defense took six percent of GDP. George H.W. Bush committed 5.3 percent. Were they being economically reckless?

One QDR assumption is that the US today faces no serious "traditional" military rival. Pentagon officials have cited this view as a reason for reorienting our forces away from high-end fighters, warships, and the like. How does one square that view with Rumsfeld's comments, made June 4, that China's investment in missiles and other advanced weapons poses a threat to US interests in the Pacific?

The Defense Secretary has asked, "Since no nation threatens China, ... why this growing investment?" What do you think is the answer to that question?

DOD is changing its force-planning concept to (in the words of the newsletter *Inside the Pentagon*) "a very infantry-centered view of the future." More funding in the future thus will go to the Army, Marine Corps, and, in particular, special operations forces, with correspondingly less going to USAF and the Navy. How will this shift improve our chances in a future military showdown with China, in which huge air and naval clashes would likely predominate?

Regarding this new emphasis on light, agile ground forces: This is advertised as a way to cope with Iraq-like insurgencies. Does the Pentagon expect to encounter more such challenges anytime soon?

What we will need to know about the big upcoming defense decisions.

On the subject of planning for the future: The Air Force's recently retired Chief of Staff, Gen. John P. Jumper, said, "Look back to 1988. How well did we plan for the 1990s? Not very well." He was pointing out that no one had raised an alarm about Saddam Hussein, Slobodan Milosevic, or Osama bin Laden. Are DOD's powers of prognostication sufficiently advanced to allow you to make better predictions about future threats and alter US forces accordingly?

In 2001, a Pentagon mobility study and subsequent analysis of alternatives found that the US needed a fleet of at least 222 C-17 transports. That was before the 9/11 attacks and the resulting Global War on Terrorism, which has generated an expansion of our mobility needs. Yet today, QDR officials suggest that purchases of C-17s could be halted at only 180 aircraft. Why is it that airlift demand and airlift capability seem to be going in opposite directions?

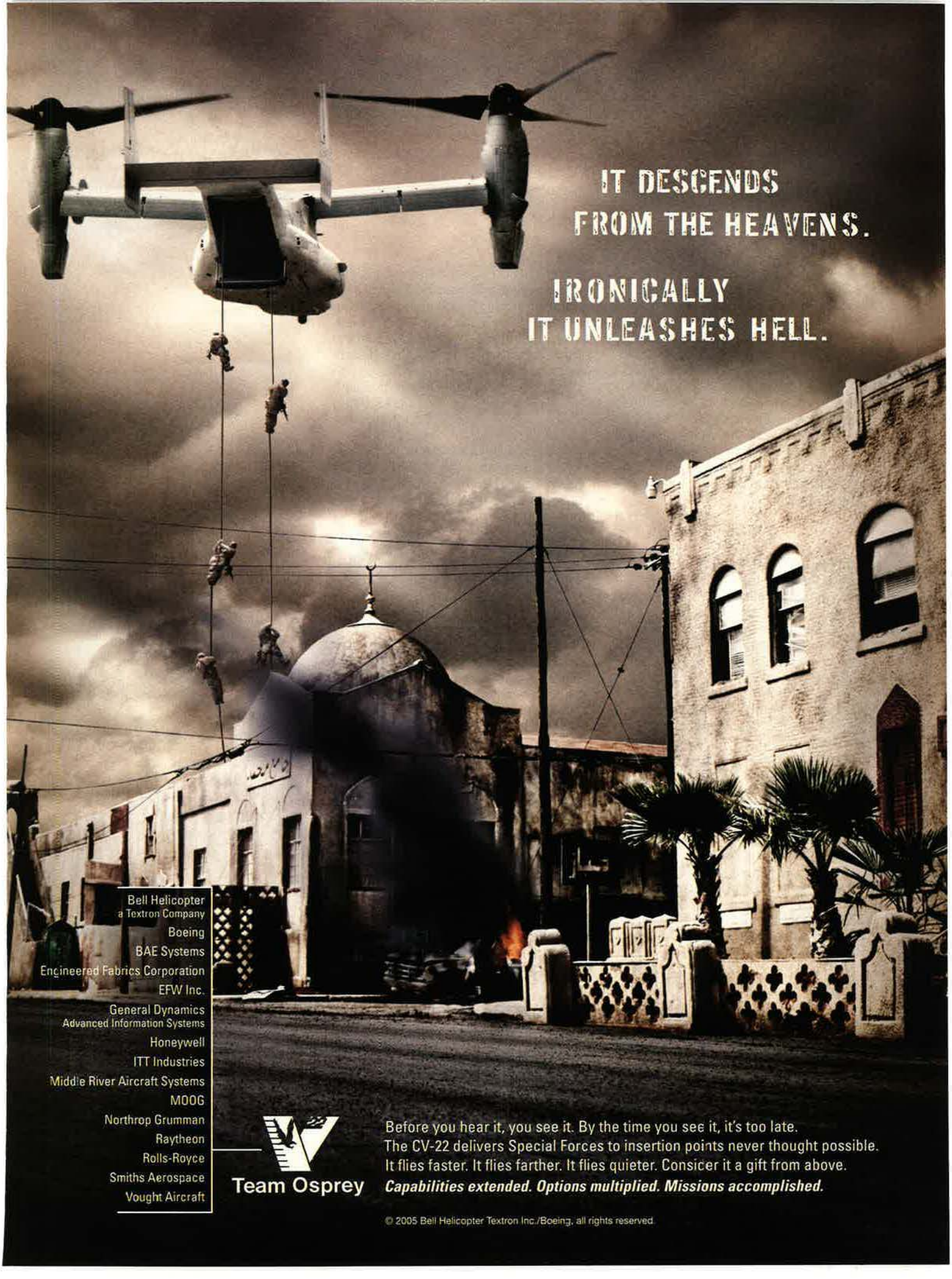
In a surprise move, the Pentagon in December cut USAF's F/A-22 program, excising 96 fighters and $10.5 billion. You (perhaps inadvertently) thereby imputed to those lost F/A-22s a per-airplane cost of $109 million. However, the only possible replacement—the F-15 fighter—costs about $80 million per airplane. Moreover, it has less than half the Raptor's combat prowess. Given that the December cut was an obvious false economy, was it simply an error? Or do you have no intention of replacing the lost F/A-22s?

The Air Force needs one Raptor squadron for each of its 10 Air and Space Expeditionary Forces. Fielding 10 squadrons requires 381 Raptors, but you are funding 180, enough for five squadrons. Insufficient numbers surely will cause severe overuse of F/A-22s and crews. Does that fact refute Rumsfeld's earlier position (offered in a 2002 speech at National Defense University in Washington, D.C.) that the term "low-density, high-demand asset" is nothing more than "a euphemism" for saying, "Our priorities were wrong, and we didn't buy enough of what we need"?

According to reports, senior QDR officials want to assign top priority to homeland defense—that is, directly securing US soil against terrorist attack. This is needed, they say, even if it means weakening overseas commitments and drawing down forces used for conventional combat. By contrast, 11 straight postwar Presidents (Truman through George W. Bush) have believed that the best way to defend the homeland is take the fight to the enemy overseas. Were they wrong?

The Air Force's combat airpower offers direct and enormous benefit to the other services, especially the Army. Indeed, no US soldier has been killed in an air attack since April 1953. That is a tribute to air superiority, but Air Force fighters also protect troops by destroying enemy ground forces, as in the 1991 and 2003 Gulf Wars. Moreover, USAF fighters more and more are linked to small, dispersed ground units that will rely heavily on aircraft for firepower support.

Have Army and Marine Corps leaders come to you to protest QDR attempts to cut or otherwise restrain Air Force combat airpower? ■



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Letters

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Airlift Is Everything

Some months back during discussions with a colleague—we both have sons in the same squadron—I stated that "airlift is everything." Considering what's been written in past issues outlining the projected comprehensiveness of what we're intending to do worldwide, a long, reliable military reach is absolutely necessary. Congress and the Pentagon had better get "off the dime." *[See "Air Mobility in the Doldrums," August, p. 32.]* If not, the ugly specter of America as a "paper tiger" seems to be once more on the horizon.

John S. Boyer
Corpus Christi, Tex.

The Trouble With Tankers

Reading your coverage of the tanker replacement issue over the last few months, it is becoming obvious that very little is being done to replace the KC-135. *[See "Washington Watch: New Tanker Plan Could Appear in 2008 Budget," August, p. 8.]* Can it be true that the actions of one acquisition official are stopping its replacement? If tankers are truly "the single choke point" of military operations and if America's superpower status really rests on the back of an aging relic, then what is really going on here? Twenty years ago, depot-level maintenance was finding frayed wiring, worn out pumps, and frame parts turned to powder, and we are still asking crews to fly the plane that good old granddad flew.

I see no reason why Boeing could not easily develop a roll-on, roll-off tanker modification for the C-17 within a couple of years or, better yet, a KC-17 variant.

Mike Leahan
Sun Prairie, Wis.

Why the Chinese Military Growth?

China's alarming military buildup and economic growth should not only concern the US, but other world leaders. *[See "Washington Watch: China's Buildup Alarms Pentagon," August, p. 12.]* China's goals are to become the economic power of the world and also the military power. Taiwan will never proclaim independence, in my opinion. Nor do I believe that the US would take military action against China if [China] were to invade Taiwan. Such a military action against China would result in the most horrible nuclear war. China's leaders have [indicated] to world leaders in the past that they will not be intimidated, especially over the issue of Taiwan.

Lt. Col. Donald E. Evett,
USAF (Ret.)
Bountiful, Utah

The Cuban Missile Crisis

"Airpower and the Cuban Missile Crisis" *[p. 78]* in the August issue is a superb article, exceptionally well-written in every respect.

Missing, however, for some reason, was the recall to active duty of a number of Air Guard and Reserve units. On national television, the evening of Oct. 28, 1962, President Kennedy announced in part, "I'm calling to active duty 21 Reserve troop carrier squadrons."

Thirty-six C-119 aircraft of the 434th Troop Carrier Wing, Bakalar AFB, Columbus, Ind., were alerted for airdropping airborne troops if the United States intervened. I was the base commander and wing commander at that time. Personnel remained on active duty for about 30 days, and I was personally thanked by President Kennedy at Homestead AFB, Fla.

Maj. Gen. John W. Hoff,
USAF (Ret.)
Columbus, Ind.

■ *I don't know how I missed the Reserve call-up. Even if I did not see it in all the research materials, I should have remembered it from the time.—JOHN T. CORRELL*

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

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Letters

Maj. Steve Heyser's U-2 tracker film was couriered by a SAC general officer directly back to Offutt AFB, Neb., after the mission landed Oct. 14, 1962, at McCoy AFB, Fla. By early that Sunday afternoon, A1C Michael Davis (now retired in Virginia), a lead photo interpreter experienced in looking at SS-4 and SS-5 missiles on satellite imagery, had espied the telltale shape of the SS-4s in Cuba. Colonel Tighe, chief of the 544th Research Center, informed SAC leaders. General Power, who personally viewed the film, no doubt called General LeMay later that afternoon.

It was the next day before this discovery was confirmed on the intelligence film in Washington, D.C. The swift SAC action validated the wisdom of having a fully staffed intelligence center outside the confines of Washington. Whether that Offutt intelligence center survives the throes of the latest defense transformation is an open question.

Lt. Col. Robb Hoover,
USAF (Ret.)
Bellevue, Neb.

In your excellent article, I failed to notice mention of any role EB-66s had in the operations. If I remember correctly, President Kennedy used the classified code word for the radar system for the SA-2, causing a new code word to be developed. The signals were supposedly picked up first by an EB-66 crew.

Also, Correll states that Francis Gary Powers was shot down by a Russian SA-2 SAM. As I remember the story, a MiG pilot decided to descend at supersonic speed so that the U-2 would be destroyed by the sonic boom, which, according to the MiG pilot, is what happened. The SA-2 seen in their photos was staged for credibility.

Which one of these versions of the U-2 downing is true?

Lt. Col. Bobby O. Welch,
USAF (Ret.)
Fort Walton Beach, Fla.

■ *Soviet radar began tracking Powers before his U-2 crossed the Soviet-Afghan border. He was pursued, without success, by more than a dozen interceptor aircraft. The SA-2 missile detonated close to and behind the U-2 about 70,500 feet above Sverdlovsk. The aircraft spiraled downward and crashed. Two boards of inquiry—both of which took a critical look at the evidence—confirmed this sequence of events. Kelly Johnson of the Lockheed Skunk Works examined photos of the wreckage and found it*

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consistent with destruction by a SAM. However, the results of the inquiries were not made public, and sensational versions of the incident circulated in the news media.—THE EDITORS

I enjoyed "Airpower and the Cuban Missile Crisis" as it brought back my two distinct memories of that event. On Oct. 21, 1962, I was deployed with the 354th Tactical Fighter Wing from Myrtle Beach AFB, S.C., to McCoy AFB, Fla. I remember seeing this ramp fully occupied with F-100 and F-105 aircraft, and an intense "sense of urgency" as ordnance was being prepped for all potential mission requirements.

On one October morning, a U-2 with an air police escort taxied into position for takeoff. I had never observed a U-2 prior to this time and envisioned a routine, full runway departure. Instead, after a short rollout, an almost vertical climb into the sky above Orlando! It was awesome.

MSgt. Michael W. O'Hearne
USAFR (Ret.)
Charlestown, N.H.

I very much enjoyed the John Correll article. On one point, I disagree. It is my understanding that President Eisenhower had ordered the grounding of U-2 flights prior to a scheduled peace conference with Premier Khrushchev, but that the CIA went ahead with the Powers flight and that the peace conference was cancelled after the shootdown and Eisenhower's use of a cover story about it being a weather study flight.

Dave Crenshaw
Rehoboth Beach, Del.

■ *Eisenhower not only knew in advance about the U-2 overflight, he also specifically authorized it, with the stipulation that it be flown by May 1 so it would not occur too close to the Paris summit meeting scheduled for the middle of May. Sources: Gregory Pedlow and Donald Welzenbach,* The CIA and the U-2 Program, 1954-1974, *p. 170-172. Stephen E. Ambrose,* Eisenhower: Soldier and President, *p. 506-507. Norman Polmar,* Spyplane: The U-2 History Declassified, *p. 132.—THE EDITORS*

Schriever Remembered

Your article on the great General Schriever is excellent. *[See "Aerospace World: Gen. Bernard A. Schriever, 1910-2005," August, p. 20.]* He was my boyhood hero in the 1950s. I remember Edward R. Murrow interviewing him on one of his TV shows.

In later years, I was assigned to the Ballistic Missile Office, Norton AFB, Calif. General Schriever came to Norton as a guest speaker on recurring invitations. I remember he said he was a second lieutenant three times in his career. Once on initial commission, the second time when he was recalled to active duty, and the third when the junior officers presented him with a permanent second lieutenant lifetime rank. On another visit, the general was asked what he attributed his success to. The general replied, "Well, I am not sure I am all that successful, but don't be afraid to take chances, have a goal in mind, and surround yourself with good people."

Nicholas R. Caliendo
Norman, Okla.

As a civilian space "brat" at Space and Missile Systems Organization in El Segundo, Calif., during the 1970s and 1980s, and later with NASA and Lockheed Martin, General Schriever's name was sacrosanct. Thank you for the acclamation in the August issue. It enabled many of us 70,000 people to pause and remember the important work we all did to contribute to the successful space program that is in existence today.

Jo Brink
The Villages, Fla.

Verbatim

By John T. Correll, Contributing Editor

Appeasement Theory

"If at the end of the First World War we had done what we promised the Arabs, which was to let them be free and have their own governments, and kept out of Arab affairs, and just bought their oil rather than feeling we had to control the flow of oil, I suspect this wouldn't have arisen."***—London Lord Mayor Ken Livingstone after terror bombings in London, to BBC as quoted by the Islamic Republic News Agency, July 23.***

Phony Purple Hearts

"Print your own Purple Heart. To get one of these babies, some dudes have to prove their physical, mental, and spiritual strength with great feats of bravery on the battlefield. All you need to do is press the button below."***—Web site promotion gimmick by producers of movie "Wedding Crashers," July.***

Then What Did They Intend?

"We understand the sensitivity regarding the medals and did not intend to make light of their significance in any way."***—Richard Socarides, spokesman for movie "Wedding Crashers," after Purple Heart gimmick was withdrawn following public and Congressional outrage, Associated Press, July 25.***

First Responder

"The truth is, Admiral Keating, you are the last number called. This is America. Civilians are in charge—always. Northern Command is not even the first military responder. The National Guard, under the command of a governor, is the first military responder."***—Robert M. Walker, former acting Secretary of the Army (January to July 1998) and former National Guardsman, responding to a statement by Adm. Timothy J. Keating, commander of US Northern Command, that the Department of Defense should lead the response to a WMD terror attack on the United States, op-ed column,*** **Washington Times,** ***Aug. 10.***

Constabulary Force

"Of course we need naval, air, and space power, too. But constabulary missions of the sort our current strategy requires depend on robust ground forces which, before the war in Iraq, were seen by many defense analysts as not very useful. This is especially true of those enamored of a 'revolution in military affairs' based on emerging information technologies."***—Mackubin Thomas Owens, Marine Corps officer in Vietnam, now a professor at the Naval War College,*** **New York Post,** ***July 19.***

Percentages, Then and Now

"Thanks to something that policymakers and academic experts grandly call the 'revolution in military affairs,' which has wedded the newest electronic and information technologies to the destructive purposes of the second-oldest profession, we now have an active duty military establishment that is, proportionate to the population, about four percent the size of the force that won World War II. And today's military budget is about four percent of gross domestic product, as opposed to nearly 40 percent during World War II."***—David M. Kennedy, op-ed column,*** **New York Times,** ***July 25.***

China, China, China

"You look at the Air Force's briefings, and they are all China, China, China."***—A "defense official" working on the Quadrennial Defense Review,*** **Los Angeles Times,** ***July 20.***

Where the Ducks Are

"When you look at where you're going to save the most money, obviously the most money is in the biggest programs. When you're faced with all those budgetary constraints, you sometimes make Draconian decisions."***—Marvin R. Sambur, former assistant secretary of the Air Force for acquisition, Fort Worth*** **Star-Telegram,** ***July 28.***

China and Japan

"The reality is that they must accept the idea of China as a rising military power, and we must accept the idea of Japan becoming a normal nation, whether we like it or not."***—Pang Zhongying, professor at Nankai University in northeast China,*** **New York Times,** ***Aug. 3.***

Terrorists' Advantage

"We face enemies that have no territory to defend. They have no treaties to bind; they're unencumbered by laws, by bureaucracy, by regulations. They have a significant advantage—they need to succeed only occasionally."***—Secretary of Defense Donald H. Rumsfeld, speech to Air Force Sergeants Association, Aug. 2.***

Jane Fonda's Baggage

"I've decided I'm coming out. I have not taken a stand on any war since Vietnam. I carry a lot of baggage from that."***—Jane Fonda, announcing her cross-country tour (on a bus that runs on "vegetable oil") to oppose US military operations in Iraq, Associated Press, July 25.***

Nukes for the North

"Our position is that North Korea has a general right to nuclear energy for peaceful purposes such as for agriculture, hospitals, and electricity generating. We have a different view to the United States."***—Chung Dong-young, South Korean unification minister and National Security Council chairman,*** **Washington Times,** ***Aug. 12.***

Not the Plan

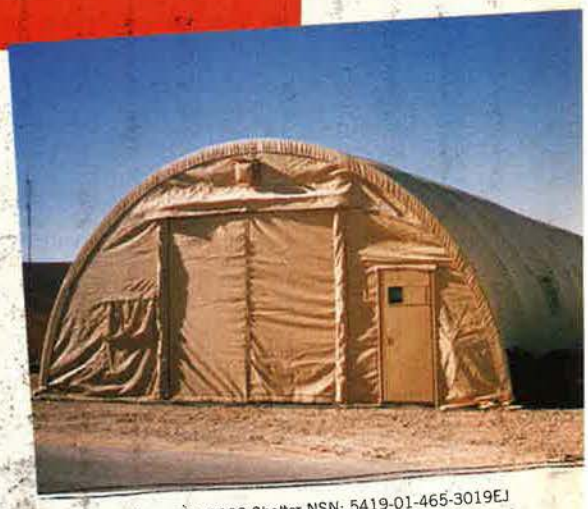
"We're not talking about weaponizing space."***—Gen. Lance W. Lord, commander of Air Force Space Command, to Fort Worth Airpower Council,*** **Fort Worth Star-Telegram,** ***July 28.***

Japan's Burden

"Why should the US ambassador to Japan have to spell out how much Japan benefits from its alliance with the United States? The reason is that Japan's leaders remain incompetent in explaining vital security issues to the Japanese public and so take the easy way out by bleating about the so-called burden of hosting US bases here."***—Robyn Lim, professor of international relations at Nanzan University, Nagoya,*** **Japan Times,** ***July 28.***

Bomb Smugglers

"To send a man to Mars we have a generously funded, well-integrated project; but to detect a smuggled nuclear bomb on its way to a US city, we allocate a puny fraction of those funds and scatter it among a multitude of disjointed studies that feed Congressional pork."***—Fred C. Iklé, undersecretary of defense for policy in the Reagan Administration,*** **Wall Street Journal,** ***Aug. 5.***



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Swept Up ... and Up

Boeing's swept-wing B-47 Stratojet of the late 1940s and 1950s could be a sight to behold. Clockwise from top: a late model B-47 on a JATO—Jet-Assisted Takeoff—flight; an XB-47 on one of the first JATO tests; and Maj. James Gallagher, a SAC pilot, inspecting installation of JATO bottles. Early jet engines lacked adequate thrust at low speeds, so B-47s were augmented with the JATO system, which added thrust for short-strip or heavy-load takeoffs. Some B-47s had 18 solid-fuel JATO rockets built into the fuselage sides, as seen in the Gallagher photo. Later models, like the one at top, used 33 external rocket units mounted on a collar strapped underneath the B-47. The JATO unit could be jettisoned. Such takeoffs were rare.

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Washington Watch

By John A. Tirpak, Executive Editor

Foregone Fighter Conclusions?; Rumsfeld's "No"; What Happened at the NRO"? .....

England Launches New Fighter Review

Gordon R. England, the prospective deputy secretary of defense, has launched a study aimed at further slashing the future size of the US military's fighter fleet. The terms of the study indicate a clear intent to make deeper cuts in the already truncated F/A-22 and F-35 programs to reduce defense spending.

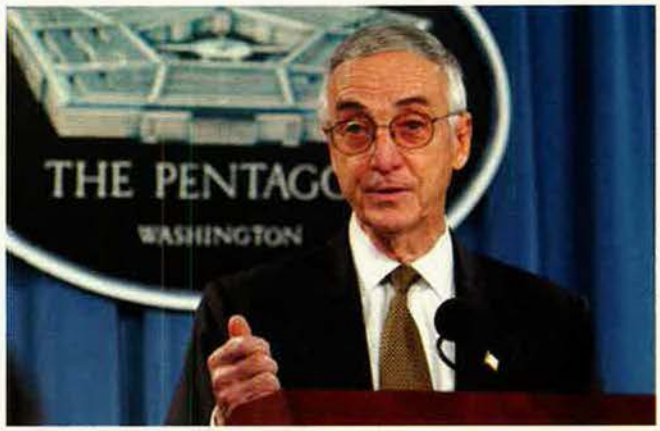
In an Aug. 4 memo to the service Secretaries, England said he had commissioned a study headed by the firm of Whitney, Bradley, & Brown, Inc., to "facilitate greater optimization of tactical aircraft." The goal of the study, England said, will be to "identify capabilities and efficiencies" resulting from rationalizing "Air Force, Navy, Marine, National Guard, and Reserve TACAIR." The company will have support from the vice chiefs of staff of the services and report directly to England and the vice chairman of the Joint Chiefs.

As Navy Secretary, England commissioned a similar study—from the same company—regarding optimization of Marine and Navy fighter aviation. The result was the merger of the two air arms and a reduction of more than 400 aircraft from the Navy's planned inventory of the F-35C Joint Strike Fighter.

The "terms of reference" for the TACAIR review specify that the study will consider the organization and numbers of tactical aircraft in light of a number of factors, including: results from the ongoing Quadrennial Defense Review; the increased capabilities of new aircraft compared to older ones; the "evolving threat" to US interests; "budgetary considerations and implications"; service and other studies of TACAIR requirements; and the results of a recent joint air dominance study.

This latter analysis, which was to be incorporated in the QDR, has been carried out by the Pentagon's Program Analysis and Evaluation shop. It was set in motion by Program Budget Decision 753, the infamous last-minute December budget cut that hacked the F/A-22 program down from 270 aircraft to just 180 without any supporting analysis. The Air Force's stated requirement remains 381 Raptors.

A senior Air Force official said the service "has expressed some concern" about the new study, especially since so many TACAIR reviews are already pending.



DOD photo by R.D. Ward

England expects WBB will do its duty.

"To come in at this late stage in the QDR and gin up another one, we're concerned that there will not be time for sufficient analysis to inform decisions," he said. "And the last thing we want is another PBD 753 drill, where you're jumping to conclusions, without the benefit of informed analysis," leading to "a lot of unintended consequences."

The WBB study will work from a new series of assumptions, England said in his memo. Among those assumptions: The services will need fewer new aircraft because the aircraft will be more capable and reliable than older ones; and "TACAIR optimization may result in less overall capacity while maintaining required capabilities."

In addition, the WBB analysts may assume that future capabilities—such as the Joint Unmanned Combat Air System—"will perform to the values stated in existing requirements documents." In other words, future systems will be judged based on optimistic expectations of what they'll be able to do, and this will be compared with "actual performance data" from aircraft of today.

Two assumptions possibly offsetting cuts are that "current forward based TACAIR assets will remain forward based" under existing treaties and agreements. Further, in an apparent nod to the Air Force's Air and Space Expeditionary Force, "peacetime operational employment concepts, to include forward basing and rotational requirements, will be taken into account."

Also to be considered is "basing flexibility," including operations from the sea, from expeditionary bases, and from main operating bases. It wasn't clear from the memo whether this meant that aircraft able to operate from aircraft carriers would be given a preference.

Besides the F/A-22 and F-35, England wants to "optimize" other programs, such as the Navy's F/A-18E/F Super Hornet and the J-UCAS.

Lest there be any mistake, however, the study assumptions also spelled out that savings will be achieved even if it means altering current strategy.

The study "may identify changes to joint and service

USAF photo by TSgt. Ben Bloker

F/A-22: Fate in the hands of Beltway Bandits?

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operating concepts needed to effect recommended optimization," stated the memo.

England decreed that WBB will have access to all previous studies and data on the topic, as well as special access, or top-secret, programs "that have implications for US TACAIR assets."

Helicopters and tilt-rotors won't be part of the study "but could be the subject of follow-on work." However, electronic attack aircraft, tankers, surveillance and patrol aircraft, long-range strike and other assets, while not part of the study, "will be considered in the evaluation of TACAIR."

The study is to look at the period from 2006 to 2025, which will capture all programs now in production as well as a planned 25 percent cut of the USAF fighter force as the service sheds its older airframes.

Plans called for England this month to take a quick-turn briefing on the issue, with a written report to come later. Phase II is to be ready by March and be used to influence Congress' deliberations on the Fiscal 2007 budget and six-year plan. The final report is to be completed next August.

Rumsfeld Throws Wet Blanket on F/A-22 "Hopes"

Defense Secretary Donald H. Rumsfeld thinks the F/A-22 is a good product, but he held out little hope that cuts to the program will be reversed anytime soon.

Appearing on the cable TV show of Sen. Saxby Chambliss (R-Ga.), in an interview recorded in July, Rumsfeld called the F/A-22 "a fine airplane," but said it will have to compete with the F-35 Joint Strike Fighter. The F-35, while stealthy, was designed for a different role.

Asked if the Air Force could expect to receive more than 180 F/A-22s, Rumsfeld said that the President and Congress decree how much money is available for defense, "and then we have to make choices between the various hopes and expectations and aspirations that the services have and we believe are needed." Rumsfeld did not clarify his answer, but it seemed to add up to "no."

Chambliss has a strong interest in the F/A-22, because final assembly of the aircraft takes place in Marietta, Ga.

DOD photo by R.D. Ward

On F/A-22, he's the master of faint praise.

Rumsfeld was much more laudatory of the C-130J, also built by Lockheed Martin in Marietta. Rumsfeld said older versions of the aircraft have been doing "a terrific job in Iraq and Afghanistan" and that the Pentagon is looking forward to deploying more of the brand-new C-130Js in theater.

Rumsfeld has reversed his stance on the C-130J, which he had planned to terminate only a few months ago. He changed his mind when it became apparent that buying out the existing contract for some 60 aircraft would cost billions less than terminating it at the government's pleasure. The Air Force has since altered the contract, making the C-130J more of a straight military procurement than an off-the-shelf product, which involves different rules and oversight.

Beyond Goldwater-Nichols (Yet Again)

The Defense Department needs to do a better job at coordinating with other national security agencies and should also reform its acquisition system, giving program management back to the service Chiefs, according to an independent study.

The Center for Strategic and International Studies, in the second phase of its "Beyond Goldwater-Nichols" study, said the Pentagon has done a great job pulling together the disparate expertise of various federal agencies in fighting the wars in Iraq and Afghanistan, but must formalize these relationships for the long term.

"While such ad hoc processes are agile, they are neither coherent nor durable," the CSIS team wrote. "Since there is no reason to believe that today's crisis will be the last, it makes sense to plan for the next one ... by institutionalizing strategic planning" across departments.

The study was launched three years ago and was conducted with the full cooperation and regular feedback of DOD. It was intended to make a status check on progress since the Goldwater-Nichols reforms of 1986. It is expected that the Pentagon will implement most of the BGN recommendations.

In the second phase of the BGN review, the team suggested that there be a pan-agency Quadrennial National Security Review, enlarging on the already mandated Quadrennial Defense Review that by law is to be completed by the fall of the first year of every administration. This broader review would help the agencies involved—State Department, CIA, NSA, and others—get their act together and best plan for a united effort to address security issues.

The team also suggested that the various agencies develop "a common US government template" for dividing responsibility for various areas of the world, so that agency and department experts know who their counterparts are and can more readily work together.

There also should be incentives for career national security specialists "to seek out interagency experience, education, and training."

The BGN team focused much of its effort on acquisition reform, saying that top managers have gotten too weighed down with management of yesterday's programs and don't have the time to think enough about long-term capabilities.

The study team suggested that setting requirements should rest with the combatant commands (such as US European Command, US Central Command, etc.), reasoning that, since they will have to do the fighting, they know what is needed. A new planning group consisting of the combatant commander deputies would replace the current Joint Requirements Oversight Committee, comprising the four service vice chiefs.

At the same time, management of the programs would be given back to the service Chiefs, who have demonstrated an ability to run them efficiently. This also would be in keeping with their legal charge to carry out Title 10 duties to organize, train, and equip the armed forces. All this would free up senior leadership to think more about what to buy in the future, rather than how to do it.

Another step would be to elevate the director of defense research and engineering to be the deputy to the newly refocused undersecretary of defense for technology, logis-

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tics, and acquisition policy. Past DDR&Es, before the job was relegated to a third-tier Pentagon post, did a great job identifying nascent technologies with huge potential payoffs, the study team said. The job attracted highly talented people—such as Harold Brown, Vannevar Bush, William J. Perry, and John Foster—who pushed the state of the art to DOD's advantage. But when the post was "subsumed" under the deputy for acquisition, technology, and logistics, "the office quickly lost cachet and influence."

Re-elevating the post would make the incumbent the "strategic architect" of the Pentagon's future technology and ensure that future dominance doesn't get sidetracked by interservice squabbling or short-term concerns.

The team also recommended that DOD create an undersecretary for management to deal with the agencies that are more like businesses, such as the supply organizations. This would further free senior leaders to worry first and foremost about future capabilities rather than immediate management issues.

Finally, the team said there should be a serviceswide US Logistics Command to oversee resupply of all forces. It would encompass the existing US Transportation Command as well as some other logistics-oriented agencies.

NRO Job Taken From Air Force

Ronald M. Sega has been sworn in as the new undersecretary of the Air Force. Compared to his predecessor, though, his portfolio is missing one important title—director of the National Reconnaissance Office.

In early July, after discussions among Defense Secretary Donald H. Rumsfeld, undersecretary of Defense for Intelligence Stephen A. Cambone, and the newly minted Director of National Intelligence, John Negroponte, Rumsfeld appointed a new NRO director whose sole responsibility would be the management of that organization.

On July 22, Rumsfeld named Donald M. Kerr to the job. Kerr had been the CIA's director for science and technology. He will report directly to Rumsfeld.

The move was surprising because the merger in 2001 of the Air Force Undersecretary position with that of NRO director was one of the changes recommended by the Space Commission, chaired by Rumsfeld himself before becoming the Defense Secretary nominee.

See no eagle.

Peter B. Teets, who served in the three-job USAF undersecretary position—his third was DOD executive for space—argued strongly before his retirement to keep the jobs together.

He wasn't the only one who thought it should be that way. Shortly after Kerr got the job, Reps. Terry Everett (R-Ala.) and Silvestre Reyes (D-Tex.), the chair and ranking member

USAF photo by Larry McTighe

England (left) swears in Sega as new USAF undersecretary.

of the House Armed Services strategic forces panel, wrote a letter to Rumsfeld questioning whether there would be adequate cooperation between USAF and NRO, whose spy satellite functions are closely aligned. The Air Force provides nearly 50 percent of the NRO's personnel. They worried that USAF, if cut out of the NRO loop, would stop providing adequate numbers of high-quality people to NRO.

The two also questioned whether the Air Force would have a sufficient role in decisions made about NRO resources and activities.

"Unless this relationship remains strong," they warned, the NRO's acquisition effort, which is battling to overcome long-standing cost overruns and delays in many programs, will struggle along with "a shrinking workforce with diminishing skills."

The given reason for subtracting the NRO job from the undersecretary's purview was that the NRO needed a boss who could concentrate full-time on its programs and operations. Teets had many other areas of responsibility, having to do with missiles, rockets, and aircraft. However, it was this visibility across the spectrum of intelligence-gathering technologies that Teets said gave him a better feel for making decisions for the NRO.

Gen. John P. Jumper, who stepped down as USAF Chief of Staff Sept. 2, said in an interview with *Air Force* Magazine in August that the chain of command for the NRO is not nearly as important as the relationship between NRO and the Air Force.

"The real thing that we need to focus on ... is that solid black line that goes to the uniformed military," Jumper said. "I am concerned that we work out properly the way ... to keep the NRO strongly connected to the uniformed military in ways [that make them] responsive to the combatant commander."

Jumper asserted that "space has ... got to have its foot increasingly into the real-time fight." He added, "Nobody knows this better than Don Kerr, by the way. He's been a special friend to the Air Force in our attempts to do the integration of 'black' and 'white' space," a reference to secret and open satellite programs.

"He as well as anybody understands what has to be done," which Jumper said was to make "absolutely sure ... [that] the coordination with the uniformed [military] stays formal and required and within that solid black line."

Officials at the NRO said in August there was word that Kerr may even be given some kind of Air Force title, perhaps assistant secretary, that would formalize his relationship with the service and put him in the USAF Secretary's chain of command. In the meantime, Kerr's deputy, Dennis D. Fitzgerald, bears the newly created title of deputy undersecretary of the Air Force for space matters. ■

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Aerospace World

By Breanne Wagner, Associate Editor

Peacekeeper Era Ends

Sept. 19 was the final day of operations for the last existing LGM-118 Peacekeeper Intercontinental Ballistic Missile, the Pentagon said in an announcement. As the famous multiwarhead Cold War missile headed toward retirement, a whole era also was flickering out.

The last missile was deployed at the only Peacekeeper unit, the 400th Missile Squadron at F.E. Warren AFB, Wyo.

Plans always called for operators to remain on full alert until the end.

Peacekeeper, once called "MX" for "missile experimental," was fielded in the Reagan years. Its demise is the latest stage in a transition from the Cold War's tense superpower standoff to a new stance. (See "The ICBM Makeover," p. 34.)

The May 2002 Moscow Treaty requires 10 years of reductions in the US and Russian nuclear arsenals. The Air Force began deactivation of the Peacekeeper inventory in October 2002.

The Peacekeeper was able to carry 10 powerful W87 warheads. The land-based leg of the nuclear triad now will comprise 500 Minuteman III ICBMs, each carrying from one to three warheads.

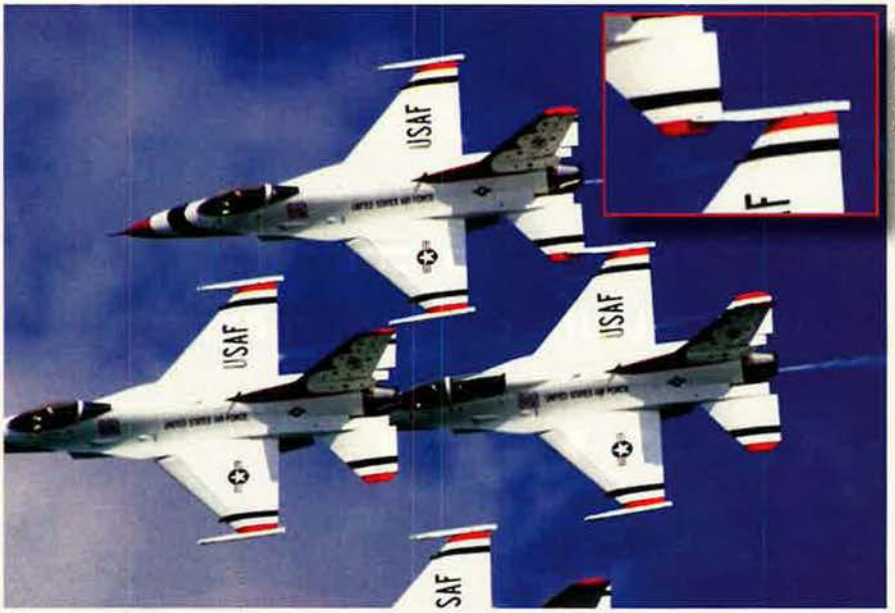


Photo by Chris Ware

On Aug. 20, USAF's aerial demonstration squadron, the Thunderbirds, suffered a mishap when the left horizontal tailplane of one F-16 touched the right missile rail of another (see inset) during Chicago's Air and Water Show. Both airplanes landed safely. The squadron canceled their grand finale, and temporarily put on hold their summer tour. After reviewing safety procedures, the T-birds continued their schedule.

Carlson Arrives at AFMC

After a year's delay owing to Senate holdups in confirmation, Gen. Bruce A. Carlson on Aug. 19 assumed command of Air Force Materiel Command at Wright-Patterson AFB, Ohio. He succeeded Gen. Gregory S. Martin, who retired.

Carlson had been nominated to the AFMC post in August 2004. He would have succeeded Martin at that time, as Martin had been nominated to be commander of US Pacific Command.

However, Martin withdrew his name from nomination when it became apparent that Sen. John McCain (R-Ariz.) planned to hold up the confirmation process as part of a broader effort to extract from the Air Force thousands of e-mails pertaining to the tanker replacement plan. (See "Aerospace World: Martin Withdraws Nomination for US Pacific Command Post," November 2004, p. 20.)

When Martin elected to stay at AFMC, it left Carlson in a holding pattern.

Carlson had been commander of 8th Air Force, Barksdale AFB, La. Before that, he was director of force structure, resources, and assessment on the Joint Staff.

The new AFMC commander has

GE-Rolls Royce Engine Team Secures F-35 Contract

A team comprising General Electric and Rolls Royce won a $2.47 billion contract to develop an alternative engine for the F-35 Joint Strike Fighter, the Pentagon announced Aug. 22.

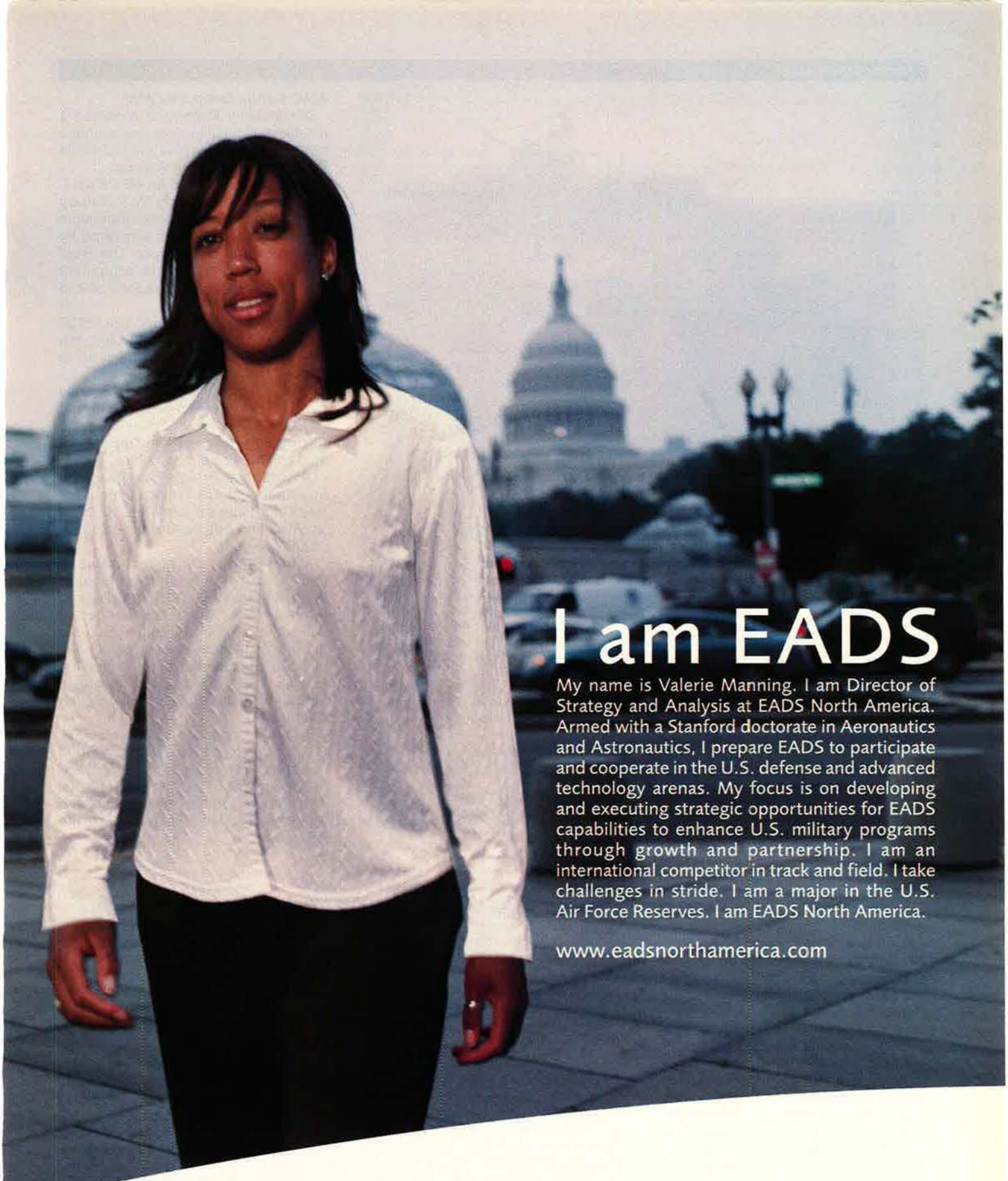
The team will jointly develop GE's F136 engine as a competitor to the Pratt & Whitney F135, which will power initial versions of the JSF. The GE-Rolls team will begin competing for an annual share of engines for the JSF beginning in 2013.

The contract will pay for the system development and demonstration phase of the F136 engine program. Initial ground testing will begin in 2006 using a pre-SDD development engine. Flight tests of a JSF with an F136 engine are projected to begin in 2010, and production engines will be available in 2012.

The F136 and F135 are to be interchangeable as used on the JSF, requiring no unique tools or apparatus, even though the technology will be different.

The contract is the first step in launching a new version of the 1980s "great engine war," in which GE and Pratt competed to supply engines for the F-15 and F-16. The competition is believed to have driven prices down and quality and performance up.

The Air Force, Navy, and Marine Corps expect to buy 2,400 JSFs, with the UK planning to buy another 150. Worldwide, the market is thought to be as high as 6,000 aircraft over 30 years, making a large investment in a second source worthwhile.



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AP photo by Wang Jianmin

Russian airborne soldiers coordinate action with paratroop combat vehicles during a drill in east China's Shandong Province in August.

China, Russia Stage Large Exercise

China and Russia held their first large-scale joint military exercise in August. It was a week-long affair closely watched by the US, which was not invited to observe the wargames directly. The maneuvers took place in the region of China's Shandong Peninsula, which juts into the Yellow Sea west of the Korean Peninsula.

Russia employed four long-range bombers in the exercise that involved more than 8,000 Chinese troops and nearly 2,000 Russian troops. Amphibious landings and airborne assaults were practiced, as well as submarine warfare and dogfights by fighter aircraft.

The two countries billed the event, called Peace Mission 2005, as preparation to jointly "fight terrorism." However, the wargames happened to exercise precisely the forces and techniques useful in an invasion of Taiwan. In fact, China wanted to conduct the exercises closer to Taiwan, but Russia vetoed the idea.

The maneuvers mark a strengthened relationship between the two Cold War rivals. "In recent years, Chinese-Russian relations have had their best-ever period," Prime Minister Wen Jiabao said at a news conference in March.

US officials say Moscow saw a chance to showcase military technologies as a signal that China and Russia are unhappy with the US military presence in central Asia.

AMC Sends Deep Sea Aid

Air Mobility Command mounted a sizable airlift to offer rescue assistance to seven Russian sailors trapped on the Pacific Ocean floor in August.

The sailors, aboard an AS-28 minisub, were participating in a military exercise off the Kamchatka Peninsula when their sub became ensnared by netting on the ocean floor. The Russian Navy lacked rescue equipment that could reach the sailors before their air ran out.

Taking a lesson from the 2000 sinking of the submarine Kursk, the Russians this time didn't hesitate to ask for foreign assistance.

Britain sent a C-17 carrying a Scorpio minisub, and the US sent C-17s and C-5s loaded with rescue gear designed for deep-diving operations. Japan sent ships with deep submersibles.

It was the British Scorpio, with assistance of US Navy divers, that freed the Russian craft and its crew as AMC aircraft began arriving with additional gear.

When the call for help came in, a C-5 Galaxy of the 60th Air Mobility Wing at Travis AFB, Calif., was diverted to NAS North Island, Calif., where it picked up two Navy Super Scorpio unmanned rescue vehicles, personnel, and related equipment. From there, the C-5 flew a 21-hour nonstop mission to Yelizovo, Russia, with aerial refueling en route.

A C-17 assigned to Charleston AFB, S.C., collected a Deep Drone 8000 remotely operated submersible at Andrews AFB, Md., and flew it to Russia. Two more C-17s flew in personnel and equipment from Louisiana and Yokota AB, Japan.

served in several key acquisition jobs at the Pentagon and commanded the F-117 stealth fighter wing at Holloman AFB, N.M.

Chilton Moves to 8th AF

Lt. Gen. Kevin P. Chilton on Aug. 10 assumed command of 8th Air Force, Barksdale AFB, La.

He succeeded Gen. Bruce A. Carlson in the commander's chair. Chilton previously served as acting assistant vice chief of staff. Like Carlson, Chilton's career progression had been interrupted by the Washington tanker battle (see above item). A year later than expected, Chilton assumed his new duties in a ceremony at Barksdale.

Chilton, a former astronaut and space shuttle commander, was previously director of programs under the USAF deputy chief of staff for plans and programs.

Contrary to Media Reports, There Is No SOF Exodus

Special operations personnel left the services in greater numbers last year than at any time since Sept. 11, but officials aren't worried that there will be a mass exodus. For Fiscal 2005, Air Force special operations forces retention is running seven percent higher than for Fiscal 2004, a US Special Operations Command spokesman said. Navy SEAL retention for this year is expected to be six percent higher than last year, and Army Special Forces expect a retention rate of seven percent better.

The higher-than-average departures last year were due in large part to personnel finally being allowed to leave the service after being involuntarily extended for the war. Under Stop-Loss provisions put in place in key specialties, many special operators who had already put in their papers before 9/11 were kept on duty. Those Stop-Loss orders were lifted last year, creating an abnormal number of departures.

"Special operators who had planned to retire or leave the armed forces while Stop-Loss was in effect acted on their plans, which contributed to the higher than normal attrition," the SOCOM spokesman said.

Press speculation held that special operations types were being lured from the service by private security companies paying top dollar for experienced personnel. The SOCOM spokesman said, "Special operators are not leaving the services en masse."

The sailors were rescued without injury, and the Russian government thanked Britain, the United States, and Japan for their efforts to save the sailors.

USAF MIA Remains Are Returned

Two Air Force officers previously classified as missing in action from the Vietnam War were identified as having died in the Southeast Asia war, the Pentagon announced on July 26. Their remains were returned to their families for burial this summer.

Col. James W. Lewis of Marshall, Tex., and Maj. Arthur D. Baker of San Antonio were in the lead ship of a formation of four B-57B Canberra aircraft over Xiangkhoang Province, Laos, on April 7, 1965. The two attacked a target through heavy cloud cover, after which Lewis radioed that they were flying away from the target. Communication was then lost with the aircraft, and the two airmen were declared MIA.

Subsequent search and rescue missions failed to find evidence of the two airmen until July 1997, when a joint US-Laos government team was led to the crash site after interviewing several witnesses. It is not known why the B-57 went down, but enemy fire and the poor weather may have contributed.

The Joint POW/MIA Accounting Command (JPAC) conducted four excavations from 2003 to 2004, unearthing human remains and crew materials. JPAC and the Armed Forces DNA Indentification Lab positively identified the remains of Lewis and Baker using the mitochondrial DNA method.

Lewis was buried in Marshall on Aug. 13, and Baker was buried in Longview, Tex., on July 29.

US Army photo

Gen. William C. Westmoreland, 1914-2005

Gen. William C. Westmoreland, the Army general who commanded US forces in Vietnam, died July 18 in Charleston, S.C., at the age of 91.

Westmoreland led the war effort in Indochina from 1964 to 1968. During that time, the US commitment in Vietnam grew from 20,000 troops to more than 500,000. He wanted to expand the war effort with 200,000 more, but the request drew national criticism and was refused by President Lyndon B. Johnson.

In a 1967 news conference, Westmoreland gave an upbeat assessment of the war's progress. It was derided by protesters and news media as overly optimistic. Ten weeks later, the Tet Offensive, which saw fighting throughout South Vietnam, including attacks on the US embassy in Saigon, seemed to confirm the public perception that the US was losing the war and that commanders were not being truthful in their assessments of progress. Even though Tet turned out to be a military defeat for the communist forces, the public had lost faith in Westmoreland, and Johnson recalled him to Washington. He served as Army Chief of Staff from 1968 until his retirement in 1972.

Two years later, Westmoreland made a failed bid to win nomination as the Republican candidate for governor of South Carolina.

He was in the news again in 1982, when he sued CBS News for slander, demanding $120 million in damages. In a documentary that year, CBS implied that Westmoreland had deceived Johnson and the American public about the true strength of communist forces in Vietnam. After an 18-week trial, the case was settled before a jury verdict was given.

Westmoreland was buried at West Point, where he had served as superintendent before taking command of forces in Vietnam.

Is JASSM Under New Threat?

Despite recent successful tests, the AGM-158 Joint Air-to-Surface Standoff Missile faced cancellation in August by opponents in Congress who are pessimistic about the weapon's long-term reliability.

In July and August, there were four successful tests of the stealthy JASSMs at White Sands Missile Range, N.M.—three from an F-16 fighter and one from a B-1 bomber, the Air Force reported.

The tests came on the heels of a series of test failures in April and May, mostly because of mechanical flaws in the missile, rather than in its design.

These failures prompted the House Appropriations Committee in June to include language in the Fiscal 2006 defense budget that would terminate the JASSM. The committee was unimpressed with the JASSM's 53.5 percent success rate in developmental and operational tests. "The missile has repeatedly failed reliability and performance tests," according to committee language.

The issue was headed for resolution in the House-Senate budget conference. Lockheed Martin builds the JASSM.

Predator Drones Headed To Texas

A squadron of 12 RQ-1 Predator unmanned aircraft will be sent to Ellington Field, Tex., Gov. Rick Perry announced Aug. 17.

Ellington is one of many sites that will receive Predators under the Air

USAF photo by MSgt. Jim Varhegyi

Gen. John Jumper (left) on Sept. 2 passed the USAF Chief of Staff guidon to Gen. T. Michael Moseley during a ceremony at Andrews AFB, Md. Jumper was Chief of Staff for four years and retires in November after 39 years on active duty. Moseley served as vice chief of staff before being sworn in as the 18th Air Force Chief of Staff.

US Navy photo by Geoffrey Patrick

A C-5 Galaxy of the 60th Air Mobility Wing at Travis AFB, Calif., is loaded with equipment at NAS North Island, Calif. The airplane was assisting in the rescue of seven Russian sailors trapped in a minisubmarine (see p. 20).

AFRC Gets First C-17

The first C-17 Globemaster III to belong to Air Force Reserve Command was handed over Aug. 9. The 452nd Air Mobility Wing at March ARB, Calif., received the airplane. The C-17 was flown by unit personnel to March directly from the Boeing factory at Long Beach, Calif.

March is undergoing $50 million worth of facilities renovation in anticipation of eight more C-17s slated to be delivered by January. They will replace C-141 Starlifters, the last of which are to be retired by next year.

The move underscores the Air Force's policy of providing to its Reserve and Guard components state-of-the-art systems, rather than active duty hand-me-downs. The C-17s delivered to March will be more advanced than many now serving with active forces, featuring greater range and more sophisticated navigation gear.

Force's Future Total Force initiative. The site was chosen because of its proximity to the Mexican border. The aircraft will patrol the border as part of an effort to reduce illegal border crossings and to help guard the Gulf Coast region's vast petrochemical industry, Perry said.

The 147th Fighter Wing at Ellington was slated to lose its F-16s as part of the Base Realignment and Closure process.

Predators have been used since 1995 in combat operations, most recently in Iraq and Afghanistan. Crews at Ellington are expected to be ready to operate the Predators by June 2006.

Japan To Revise No-War Clause?

Japan has taken steps to revise its postwar "peace" constitution, relaxing the "no-war" clause that has limited that nation's ability to send military forces abroad since World War II. The move is in response to China's growing military and economic power.

A draft proposal calling for the amendment was released Aug. 1. It would remove the pacifist Article 9 strictures on the nation's military and ease the process of war mobilization.

Although there seems to be domestic support for the change, the move has not been greeted with enthusiasm by other Far East nations, which still have vivid memories of Japanese barbarism in its World War II regional conquests. (See "Dragon, Eagle, and Rising Sun," June, p. 62.)

Prime Minister Junichiro Koizumi has tested the waters by sending approximately 1,000 Japan Self-Defense Forces to Iraq to provide humanitarian relief in noncombat zones and more to Southeast Asia for tsunami relief.

"Japan's new policy is to be able to have the SDF ready to respond militarily if there is an attack from [China]," said military analyst Toshiyuki Shikata, according to Asia Times Online. Tokyo has also expressed interest in fostering a closer military partnership with the US in light of growing Chinese military capabilities.

X-45As Complete Test Program

The X-45A Joint Unmanned Combat Air System (J-UCAS) flight-test program wrapped up Aug. 10, having successfully demonstrated many of the capabilities needed to perform the suppression of enemy air defenses mission.

The three-year test program built up to a "graduation" exercise this summer, in which the two X-45A test vehicles flew their most complex mission. The aircraft autonomously detected and avoided simulated threats, replanned their mission en route after operators changed battlefield conditions, performed multiship attacks on multiple targets, and detected off-limits items—i.e., those that should not be attacked.

The two vehicles returned safely to base after completing 64 error-free flights. Throughout the program, no vehicles were lost in accidents, which program officials said was unusual in an experimental unmanned aircraft program.

The first of the two X-45As flew in May 2002. Since then, missions have demonstrated autonomous weapons release in April 2004, multivehicle operations in August 2004, multivehicle reactive suppression of enemy air defenses in February 2005, and multivehicle distributed control in July 2005.

The J-UCAS X-45C will replace the experimental X-45A. It is the first unmanned system designed for armed combat operations.

Active Force Meets August Goals ...

All the military services met or exceeded their goals for active duty recruiting and retention in August, and all expected to meet or exceed their retention goals for the whole of

Lockheed Martin photo

The U-2 Dragon Lady high-altitude reconnaissance airplane in August celebrated 50 years in service.

Dragon Lady Turns 50

The U-2 Dragon Lady, stalwart of Air Force high-altitude reconnaissance operations since before the Cuban Missile Crisis, celebrated its 50th anniversary in August.

A ceremony marking the anniversary was held at Robins AFB, Ga., which provides system management and overall support for the U-2 fleet. A large scale model of the aircraft was dedicated, and the base's Museum of Aviation unveiled a U-2 exhibit.

Lockheed completed its first official flight test of the then-secret aircraft on Aug. 4, 1955. Intended to document Soviet activities in the Cold War, it has gone on to play a role in every armed conflict fought by the US since. A U-2 flew the first combat mission over Afghanistan following the Sept. 11 attacks.

The U-2 first came to prominence when a CIA U-2 piloted by Francis Gary Powers was shot down over the Soviet Union in 1960. The Air Force soon took over all U-2 operations and has kept the aircraft in service ever since. Over the years, the U-2 has been redesigned and new ones built to take advantage of advances in both aeronautical technology and sensors. The latest version, the U-2S, features new engines and a "glass" digital cockpit.

The War on Terrorism

OPERATION IRAQI FREEDOM

Iraq Casualties

By Sep. 6, a total of 1,886 Americans had died supporting Operation Iraqi Freedom. This total includes 1,881 troops and five Defense Department civilians. Of those fatalities, 1,467 were killed in action by enemy attack, and 419 died in noncombat incidents.

There have been 14,265 troops wounded in action during OIF. This includes 7,457 who returned to duty within 72 hours and 6,808 who were unable to quickly return to action.

Bomb Kills 14 Marines

A large roadside bomb killed 14 Marine Reservists, injured another, and destroyed a Marine amphibious assault vehicle (AAV) during a dawn patrol in the western Iraqi town of Haditha on Aug. 3. The event marked the worst roadside bombing loss since the 2003 invasion.

Nine of the marines were from the 3rd Battalion, 25th Marines, based in Brook Park, Ohio. The incident followed the death of six Marine snipers outside Haditha on Aug. 1, most of whom were from the same battalion.

The American forces were mounting simultaneous assaults on a string of towns along the Euphrates River to root out insurgents and curtail their freedom of movement. Since May, the battalion had launched combat operations in the area against insurgents to allow the Iraqi military to assume control.

The AAV in which the marines were patrolling is the primary means of transportation for marines and cargo in western Iraq, but it is only lightly armored. The AAV has been criticized for not having heavy armor plating like the Army's Bradley Fighting Vehicles.

OPERATION ENDURING FREEDOM

Casualties

By Sep. 6, a total of 232 Americans had died supporting Operation Enduring Freedom, primarily in and around Afghanistan. The total includes 113 troops killed in action, one DOD civilian death, and 118 who died in nonhostile incidents such as accidents.

A total of 582 troops have been wounded in Enduring Freedom. They include 210 who were able to return to duty in three days and 372 who were not.

C-17 Rolls Off Bagram Runway

A C-17 transport rolled off the runway during landing at Bagram AB, Afghanistan, on Aug. 6. No one was injured, but the airfield had to be closed for 30 hours to clear the runway.

The C-17 damaged its nose and right main landing gear. The aircraft is assigned to Charleston AFB, S.C.

Diverted aircraft continued combat missions, and airpower was maintained in the theater during repair operations. Bagram is the main USAF operating base in Afghanistan.

Technicians had to unload 105,000 pounds of fuel and 55,000 pounds of cargo from the aircraft in order to move it. Cargo pallets had to be broken down and moved by hand because of the way the C-17 was leaning.

The aircraft then was lifted with a crane. It was placed on a flatbed trailer and dragged to a parking ramp using two bulldozers.

The incident is under investigation.

Fiscal 2005, the Pentagon announced in September.

The fiscal year ended on Sept. 30. Announcement of the final results lag by several weeks.

The news was a relief to defense leaders who worried that declining public support for the war in Iraq would translate to a shortage of volunteers for uniformed service or an exodus from the service.

... But Guard and Reserve Slip

Numbers were not as good for Guard and Reserve forces, the Pentagon disclosed. In August, the Air Force Reserve, Air National Guard, and Marine Corps Reserve hit their recruiting targets, but the Army Guard recruiting was short 18 percent, and the Army Reserve was off nine percent. The Navy Reserve number was unavailable.

By way of explanation, Pentagon officials offered that recruiting tends to vary according to the time of year and that no one month is an indicator of long-term trends.

"We continue to monitor the effects of the increased use of our reserve components on retention rates," stated the Pentagon press release accompanying the figures.

Retention in the Army Guard was 103 percent and, in the ANG, 108 percent. The other services reported their reserve retention was "within acceptable limits" in August.

US To Ship F-16s to Pakistan

The Bush Administration has agreed to ship two refurbished F-16s to Pakistan and has forwarded to Congress Pakistan's request to buy as many as 75 more.

The deal marks the first transfer since the 1990 US embargo on arms shipments to Pakistan in protest of that country's efforts to develop and deploy nuclear weapons.

Pakistan has ordered 55 F-16s, with an option for 20 more. Islamabad currently fields 32 F-16s that were purchased and delivered before the embargo. The new aircraft could be funded by a five-year military aid package from the US.

President Bush decided to reverse the embargo in recognition of Pakistan's assistance with anti-terrorism operations in Afghanistan and elsewhere. Bush named Pakistan a major non-NATO ally last year.

Lockheed Martin builds the F-16. Delivery of the new aircraft could begin in late 2008.

C-130J Is Reviewed and Reviewed

The Pentagon's inspector general is looking into the C-130J program to see if the government got a fair price on it.

The review is one of several within the Defense Department aimed at answering questions about the C-130J raised by Sen. John McCain (R-Ariz.).

McCain has been scrutinizing the C-130J—newest of the Hercules family of transports—since February. He has concerns that the commercial, off-the-shelf manner of the procurement led to higher prices than a traditional procurement. McCain also has flagged operational issues regarding performance of the aircraft.

The cost of the C-130J was initially pegged at $66.4 million apiece in 1996. By 2003, that figure had ballooned to $81 million per copy.

Defense Secretary Donald H. Rumsfeld planned to terminate the C-130J last December, but reversed his position when accountants determined that it would cost less to simply buy

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Senior Staff Changes

RETIREMENTS: Maj. Gen. Barbara C. **Brannon,** Brig. Gen. Patrick A. **Burns,** Gen. John W. **Handy,** Maj. Gen. Gary W. **Heckman,** Maj. Gen. Edward L. **LaFountaine,** Brig. Gen. Leonard E. **Patterson,** Maj. Gen. Mary L. **Saunders,** Brig. Gen. Dale C. **Waters.**

NOMINATIONS: To be **Lieutenant General:** Douglas M. **Fraser.** To be **Brigadier General:** Richard J. **Tubb.**

CHANGES: Brig. Gen. (sel.) Clyde D. **Moore II,** from Dep. Dir., Global Power, Asst. SECAF, Acq., Pentagon, to Spec. Asst. to Cmdr., AFMC, Wright-Patterson AFB, Ohio ... Brig. Gen. Paul G. **Schafer,** from Dir., SECAF and Chief of Staff Executive Action Gp., USAF, Pentagon, to Spec. Asst. to DCS, Air & Space Ops., USAF, Pentagon ... Brig. Gen. (sel.) Mark S. **Solo,** from Cmdr., 97th AMW, AETC, Altus AFB, Okla., to Chief, US Office Mil. Cooperation, Kuwait, CENTCOM, US Embassy, Kuwait.

SENIOR EXECUTIVE SERIVICE RETIREMENTS: Charles E. **Browning,** Stephen L. **Davis,** Robert D. **Stuart,** Shirley C. **Williams.**

SES CHANGES: Barbara J. **Barger,** to Dep. Dir., Force Mgmt., DCS, Personnel, USAF, Pentagon ... Dallas C. **Brown III,** to Dir., Jt. Interagency Coordination Gp., CENTCOM, MacDill AFB, Fla. ... William H. **Budden,** to Dep. Dir., Log. Readiness, DCS, Instl. & Log., USAF, Pentagon ... Robert J. **Butler,** to Assoc. Dir., Jt. Info. Ops. Center, STRATCOM, Lackland AFB, Tex. ... Robert J. **Conner,** to Dir., Oklahoma City ALC, AFMC, Tinker AFB, Okla. ... James B. **Engle,** to Dep. Dir., P&P, AFMC, Wright-Patterson AFB, Ohio ... Richard A. **Genaille Jr.,** to Dir., Policy, Intl. Affairs, UnderSECAF (Intl. Affairs), Pentagon ... Alan B. **Goldstayn,** to Assoc. Dir., Prgm. Integration, US Army Space & Missile Defense Command, Huntsville, Ala.

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out the planned 60 or so aircraft under contract with Lockheed Martin than to terminate for the convenience of the government.

Lockheed Martin has said that it spent more than $1 billion developing the C-130J, but the IG says the company has not disclosed enough information about cost and pricing.

SBIRS Has Another Cost Breach

The Space Based Infrared System High will for a fourth time greatly exceed its budget, requiring the Defense Department to again certify to Congress that the system is needed and that no substitute is available.

SBIRS High, the missile warning satellite system built by a Lockheed Martin and Northrop Grumman team, is estimated to cost $9.9 billion when complete, versus the initial contract price of $2.16 billion, the Air Force said. This latest estimate incurs a Nunn-McCurdy breach, so-called because of the legislation requiring certification of need when costs escalate by more than 25 percent.

The program has been recertified each time it has overrun its budget because SBIRS High provides ballistic missile attack warning, a capability considered indispensable. It has been restructured several times, a management tactic made possible by the fact that the Defense Support Program satellite system, which SBIRS replaces, has lasted longer than expected.

SBIRS satellites will be positioned in geosynchronous orbit and use infrared sensors to detect the rocket plumes of missile launches.

Giambastiani Is Sworn In

Adm. Edmund P. Giambastiani Jr.

Continued on p. 30

News Notes

By Tamar A. Mehuron, Associate Editor

■ Space operators at Vandenberg AFB, Calif., launched an unarmed Minuteman III ICBM on July 21. The purpose was to demonstrate new monitoring, telemetry, and command destruct systems installed on the missile for data collection and safety requirements. The missile hit a predetermined target in the Kwajalein Missile Range in the western Pacific Ocean.

■ Pratt & Whitney recently finished manufacturing a hypersonic ground demonstration engine. The engine is currently being prepared for testing at Mach 5 conditions at NASA-Langley Research Center, Va.

■ C-5 aircrews no longer have to dim their onboard lights to use night vision goggles, thanks to a new lighting system. The C-5 Aviator Night Vision Lighting kit features two parts that clip on to the flight deck and the cargo compartment. It was developed at the Air Mobility Battlelab and approved for use in late July.

■ Gen. John W. Handy, commander of Air Mobility Command, received the Order of the Sword, the highest honor of the enlisted force, in a ceremony July 29 at Scott AFB, Ill. He is the seventh person in AMC to be so honored. Handy was slated to retire Oct. 1.

■ General Atomics Aeronautical Systems received an Army contract to deliver and test 17 Warrior unmanned aerial system vehicles. The aircraft has long-range, surveillance, and attack capabilities, with twice the Predator's weapons carriage load. The contract, announced Aug. 10, is valued at $1 billion.

■ USAF awarded L-3 Communications Corp., Arlington, Tex., a $240 million contract to develop and prepare advanced technologies to improve warfighter readiness. Work is scheduled to be completed by July 2010.

■ USAF has tapped 14,614 senior airmen for promotion to staff sergeant, from a pool of 36,405 eligible airmen. That represents a 40 percent selection rate.

■ F-16 pilots and engineers from Eglin AFB, Fla., and Edwards AFB, Calif., teamed up in late July to test an advanced avionics suite, the M4.2-plus. It combines two crucial capabilities, air-to-surface attack and destruction and suppression of enemy air defenses.

■ An Air Force accident investigation report released Aug. 4 cited a failed pilot bearing in the propeller shaft as the cause of an MQ-1 Predator crash March 30 in Southwest Asia. The unmanned aerial vehicle, assigned to the 57th Wing at Nellis AFB, Nev., was conducting an intelligence-surveillance-reconnaissance mission when it crashed in a remote area.

■ Without notifying India, Pakistan for the first time test fired a cruise missile Aug. 11, from an undisclosed location. The cruise missile, named Babur, has a range of 310 miles.

■ Civil engineers at Cape Canaveral AFS, Fla., demolished a service tower Aug. 6 that had helped send Atlas-Agena launchers on Lunar Orbiter missions in 1966 and 1967. Those missions mapped nearly all of the moon's surface. The tower's last launch occurred in April 1978.

■ A group of Chinese firms in July concluded deals with European Union officials to develop commercial applications for Europe's Galileo system, reported the *Washington Post* July 29. Galileo is the European version of the US's Global Positioning System.

■ An Air Combat Command accident investigation report Aug. 9 concluded that the March 25 crash of an F-15 was caused by a horizontal stabilator failure. During a training mission north of Nellis AFB, Nev., the pilot was executing a left rudder roll, and the aircraft went out of control and entered a spin. The pilot ejected safely, with no injuries.

■ Russia on Aug. 5 demonstrated its newest version of the MiG-29 fighter, featuring an engine with maneuvering nozzles at the rear of the aircraft. The nozzles can move in any direction and enable the aircraft to attack an enemy from all angles. The MiG-29 OVT will be on the market in two or three years.

■ DOD and NASA will rely on the Atlas V and Delta IV rockets to launch intermediate and larger spacecraft for national security missions, cargo resupply missions to the International Space Station, and civil and science missions, according to a letter signed by USAF Undersecretary Ronald M. Sega and NASA Administrator Mike Griffin. The letter was sent to the White House on Aug. 5.

■ USAF fighters and aircrews from the 81st Fighter Squadron, Spangdahlem AB, Germany, held their first training mission in Constanta, Romania, in a two-week-long exercise ending July 31. The USAF mission was held alongside Romanian-American Training Exercise 2005, which combined USAF, US Army, and Romanian troops.

Hurricane Katrina: Devastation and Recovery

From the Air Force, a Swift and Overwhelming Response

The Air Force mobilized helicopters, cargo aircraft, and rescue and medical personnel to help with the evacuation of New Orleans and to provide assistance to the storm-ravaged Gulf Coast.

Every type of cargo aircraft in the inventory—including C-17s, C-5s, C-130s, and the soon-to-retire C-141s—was engaged in the relief airlift, flying everything from earthmoving equipment to bottled water to a range of airfields throughout the region. All USAF rescue, utility, and special operations helicopters that could be spared from their usual activities were flown to the region, where they participated in picking up stranded persons or delivering equipment or supplies to areas cut off from ground transportation by debris or standing water. In many cases, routine training missions were canceled and the assets shifted to the rescue and recovery.

USAF medical personnel were flown in to assist with triage, first aid, and other emergency medicine from across the continental US and Puerto Rico. They also assisted and accompanied medical evacuations from the region. Air Force mental health specialists were deployed to the region to help residents profoundly affected by the catastrophe.

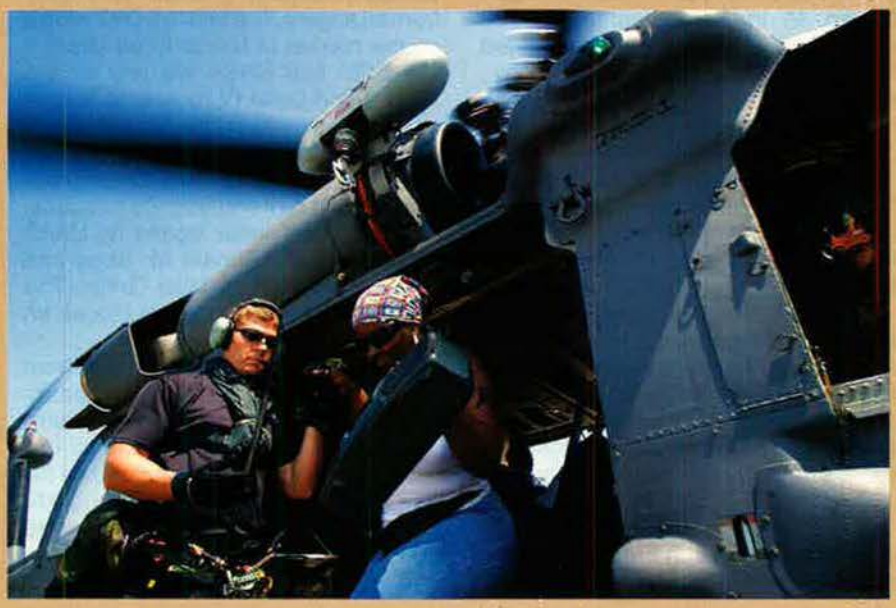
In addition, E-3 AWACS aircraft were deployed to help coordinate the mass of helicopters and aircraft buzzing over the storm zone. Aeromedical evacuation missions were flown by C-9 Nightingale aircraft, and even OC-135 and U-2 aircraft were employed to collect imagery of the devastated area to identify ground routes, survey damage, and prioritize rescue actions in support of the Federal Emergency Management Agency. KC-135 aerial tankers helped keep things moving by refueling all these aircraft into and out of the affected region. The Civil Air Patrol assisted with scouting flights.

Transportable hospitals and kitchens alike were moved into position, and bases outside the storm were just as active, receiving patients at base hospitals, loading relief supplies, and planning follow-up actions.

Air Force officials said they expected the high tempo of rescue and relief operations to continue for weeks.

Air Force active, Guard, and Reserve components worldwide were promptly mobilized to assist in the massive Gulf Region rescue and relief operation after the Aug. 29 storm.

USAF photo by MSgt. Efrain Gonzalez



Air Force rescue crews helped move evacuees from temporary collection points to New Orleans Airport. There, many residents of the stricken city were processed and moved to stable accommodations.

Hurricane Effort Poses First Test for Northern Command

The US military "pushed" capabilities and offers of assistance at civilian leaders organizing the rescue and relief response to Hurricane Katrina, Joint Chiefs of Staff Chairman Gen. Richard B. Myers told reporters in mid-September.

After the initial assessment of the storm damage, Myers said he told the services to be proactive in suggesting ways they could assist FEMA, going through US Northern Command chief Adm. Timothy J. Keating.

"As you, a service, think of a capability that might be needed, you work with Northern Command ... and you push it forward," Myers reported telling the service Chiefs. Myers was responding to charges that response to the hurricane by the federal government was slow. He pointed out that the Defense Department's role was to "assist" the Department of Homeland Security but that the military didn't wait to be asked for help. Myers said he authorized "vocal approval of orders" to streamline the process.

The relief effort was the first major operation to be headed by Northern Command, which was created in 2002, as a direct result of the 9/11 attacks.

As of Sept. 7, Myers reported, the military had deployed more than 58,000 troops to the storm zone, of which 41,000 were National Guard. Of the 17,000 active duty forces, 7,000 were Navy or Marine personnel afloat on 21 ships off the coasts of Louisiana and Mississippi.

"More than 350...helicopters and more than 75 DOD and National Guard fixed-wing aircraft are assisting in the effort," Myers reported, adding that more than 1,800 search and rescue, evacuation, and supply missions had been flown to that date. He said that US military personnel had rescued more than 13,000 people, transported more than 10,000 hospital patients and treated about 5,000 of those. The military delivered more than nine million Meals, Ready to Eat to FEMA, Myers said. In addition, more than 4,000 Coast Guard personnel were involved.

Defense Secretary Donald H. Rumsfeld asserted that, despite the deployment of US National Guard troops in Iraq and Afghanistan, there were more than enough troops available to both deal with the humanitarian crisis and any contingencies that might arise overseas.

US Army photo by SSgt. Manuel J. Martinez

TSgt. Lem Torres, cradling a young boy trapped by the rising flood waters, ascends to safety from the roof of the child's home in New Orleans. Torres and other pararescuemen and the 38th Rescue Squadron at Moody AFB, Ga., deployed to New Orleans for Hurricane Katrina search and rescue operations.

Hard-hit Keesler Inundated by Hurricane's Waters

Hurricane Katrina inflicted heavy damage on Keesler AFB, Miss., among the most badly hurt of the nation's many Gulf of Mexico military bases and facilities.

Located in hard-hit Biloxi, Miss., Keesler suffered sustained winds of more than 50 mph and gusts of more than 90 mph, and most of the base was covered by water, up to six feet deep in places. Some 6,000 people rode out the storm in one of seven shelters on base, and no personnel were reported missing or killed. Much of base housing was assessed afterward as "unlivable," and the industrial areas were severely damaged or destroyed, according to a base spokeswoman. However, the runway was operational soon after the storm passed, and 25 injured, sick, or pregnant persons were flown almost immediately to the hospital at Lackland AFB, Tex., for treatment.

From Hurlburt Field, Fla., the 823rd Red Horse squadron, which specializes in rapidly setting up austere air bases, deployed to Keesler within a day of the hurricane. The runway was able to handle C-17 aircraft bringing in relief supplies and rescue crews and taking out evacuees.

The Air Force issued a "stop movement" order, halting personnel on their way to a permanent change of station assignment at Keesler until further notice.

Maj. Gen. (sel.) William T. Lord, commander of the 81st Training Wing, ordered that Keesler's main mission of communications and electronics training be shut down until the base could be brought back up to speed. He also warned personnel that full power was not expected to be restored for at least three weeks, although generators were keeping mission-critical equipment powered.

"Treat this like a deployed environment," Lord said in a message to base personnel. No estimate has been offered on how long it will take to reconstruct the damaged facilities at Keesler.

Keesler happens to be the home base of the 53rd Weather Squadron, which flew 16 missions into Katrina with WC-130 "Hurricane Hunter" aircraft, plotting the track and characteristics of the storm until nearly the moment of impact. The last two of these missions were flown with brand-new WC-130J aircraft.

All the base's WC-130s were sent to inland facilities at Dyess AFB and Ellington Field, Tex., to ride out the hurricane before relocating to Dobbins ARB, Ga. The unit will operate from there until it can return to Keesler or another base is chosen.

Air Force bases located elsewhere in the zone of destruction inflicted by Katrina fared far better than Keesler. By Sept. 1, Eglin Air Force Base, Hurlburt Field, and Tyndall Air Force Base, all in Florida, reported minimal or no damage or injuries and were back to normal operations. Barksdale AFB, La., and Columbus AFB, Miss., were also spared substantial destruction, as was Maxwell AFB, Ala. Maxwell was selected to be one of the headquarters for the regional relief effort.

Troops home-based at Keesler who are returning from Iraq and Afghanistan were housed at nearby facilities and given assistance in tracking down their families.

USAF photo

Rising waters swallowed cars parked along streets on Keesler Air Force Base. The base and the 6,000 military students, permanent party, civilians, and their families survived the Category 4 hurricane in shelters, with no casualties. The initial damage was deemed catastrophic to base infrastructure. Keesler is currently in the assessment and recovery stage.

Continued from p. 26

was sworn in as vice chairman of the Joint Chiefs of Staff on Aug. 12. The post is the second-highest position in the uniformed military.

Giambastiani replaces Marine Gen. Peter Pace, who assumed duties of the Chairman on Sept. 30. Pace succeeds Air Force Gen. Richard B. Myers, who was set to retire on Oct. 1.

Giambastiani, who had been head of US Joint Forces Command and NATO's Allied Command Transformation, was responsible for developing new fighting concepts for both US forces and the NATO alliance.

Another Acquisition Panel Formed

Retired Air Force Lt. Gen. Ronald T. Kadish, who headed the US strategic missile defense effort, has been appointed chairman of a new committee charged with suggesting improvements to the Pentagon's acquisition system.

Kadish chairs the Defense Acquisition Performance Assessment Committee, which met for the first time on July 15. Creation of the committee was ordered by acting Deputy Defense Secretary Gordon R. England, in response to growing criticism about increasing costs and delays in Pentagon programs. Its aim is to develop ideas to streamline the procurement system and present them to England in November.

There have been many such panels over the past 20 years, but "the perception is that no reforms have addressed systemic weaknesses in structure, process, and governance of acquisitions," Kadish told the *Washington Post*. He said the Pentagon can only afford 60 of its 80 biggest programs currently in development. He also noted that the cost of these programs has increased $300 billion over their lifetimes.

The panel's assessment will feed the ongoing Quadrennial Defense Review and could fundamentally affect its decisions.

Iraq Rebuilds Air Force

Coalition forces have begun to rebuild the Iraqi Air Force, which aims to be able to conduct nationwide counter-insurgency operations from the air. The effort is about a year behind schedule because of increased focus on ground troops, said an Air Force official quoted in *Inside the Air Force.*

Most of the once-sizable Iraqi Air Force under the regime of Saddam Hussein was destroyed by coalition forces during Operations Desert Storm and Iraqi Freedom.

The new air force is being built around donated equipment, including three C-130E tactical transports, 16 UH-1H utility helicopters, five Jet Ranger helicopters, two Seabird Seeker observation aircraft, eight SAMA CH2000 single-engine airplanes, and six Comp Air SL7 surveillance aircraft.

The Coalition Military Assistance Training Team Air Cell is training Iraqi Air Force personnel. There are about 400 trainees now, but CMATT hopes to have 1,500 by next year, according to Lt. Col. Charles Westgate, a USAF planning officer in the CMATT Air Cell, in an e-mail to *ITAF.*

Three USAF officers and one Royal Air Force officer make up the air cell, and they manage support teams that provide training to the Iraqi airmen. The teams are a combination of Italian Air Force trainers and US military personnel. ■

Action in Congress

By Tom Philpott, Contributing Editor

Warner Takes Heat; Retiree and Survivor Gains; Will the Reserves Get Tricare?; New VA Shortfall ....

Warner Pounded on "Offset"

Sen. John Warner (R-Va.), chairman of the Senate Armed Services Committee, took a full blast of criticism from military widows and service associations.

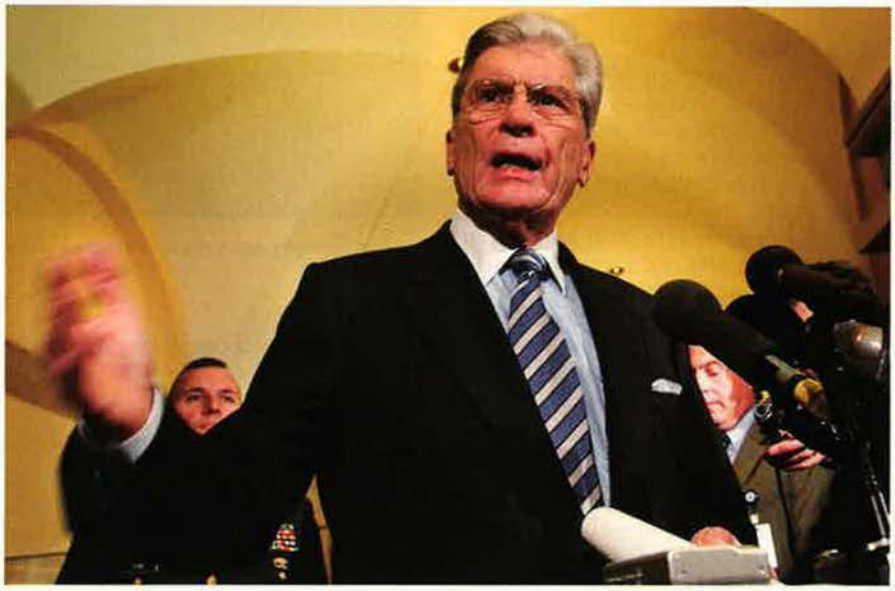
The complaint arose from a recent Warner amendment to the 2006 defense authorization bill. It promised a delay for as much as two years on a vote to eliminate a so-called "Survivor Benefit Plan-Dependency and Indemnity Compensation (SBP-DIC) offset." Ending the offset was a priority this year for The Military Coalition, which includes the Air Force Association.

Under current law, a dollar-for-dollar cut in survivor benefits occurs when a surviving spouse begins drawing DIC from the VA.

DIC is tax-free pay of at least $993 a month, available to survivors if a service spouse dies on active duty or from service-connected injuries or illnesses.

In late July, Sen. Bill Nelson (D-Fla.) proposed an amendment (S. Admt. 762) to repeal the cut. On the next day, Warner introduced a "second degree," or replacement, amendment calling for a study. The Senate immediately recessed, setting up a fall battle.

Retirees and surviving spouses complained to Warner that there is no need for a study and he should withdraw his amendment.



AP photo by Dennis Cook

Warner wants to put the offset into "context."

What Warner Wanted

The Warner amendment would direct the Veterans' Disability Benefits Commission to examine the SBP-DIC offset in the context of a comprehensive review of veterans' disability compensation, which has enjoyed numerous recent enhancements.

Because that panel won't complete its report until August 2006, advocates for military widows accused Warner of trying to delay a vote on the SBP-DIC offset until early 2007.

Worse, in their view, is the danger that the commission might even oppose ending the offset. The Warner amendment advises the panel to weigh retiree and survivor improvements such as:

- The phaseout of a ban on "concurrent receipt" of military retired pay and VA disability compensation for seriously disabled retirees and those with combat-related disabilities.
- The enhancement of SBP by phasing out a drop in benefits at age 62.
- The extension of SBP to the family of any military member who dies while on active duty.
- An increase in the military death gratuity, from about $12,000 to $100,000.
- An increase in maximum coverage under Servicemembers' Group Life Insurance, from $250,000 to $400,000.

Service organizations worry that the commission will conclude that there is no need for extra positive steps.

Household Goods Weight Allowance

In final negotiations over the 2006 defense authorization bill, the Senate will decide whether to accept or reject a House measure to raise household goods weight allowances for senior enlisted grades.

The House-approved plan holds that, as of Jan. 1, 2006, the following rules would apply:

- E-9 with dependents would be able to ship at government expense 15,000 pounds of household goods, an increase of 500 pounds over current allowances. E-9 without dependents could ship up to 13,000 pounds, about 1,000 pounds more than today.
- E-8 with dependents could ship an extra 500 pounds, to a revised ceiling of 14,000 pounds. E-8 with no dependents also would move up by 1,000 pounds, to 12,000.
- E-7 with dependents could ship up to 13,000 pounds—an increase of 500—while those with no dependents would be limited to 11,000 pounds.

The House provision is itself a compromise. Rep. Tom Latham (R-Iowa) proposed a bill (HR 1406) with even higher allowances. Latham said current senior enlisted allowances "are inconsistent with their time in service, increased responsibility, family size, personal status, and the respect they have earned," but he picked up only 15 co-sponsors for a more robust package.

VA Shortfall I

On Aug. 2, President Bush signed into law the Department of the Interior, Environment, and Related Agencies

appropriations bill (HR 2361)—and thus, without ceremony, added $1.5 billion in emergency funding to the Department of Veterans Affairs health care budget for Fiscal 2005.

Bush's written statement, released on signing the bill, made no mention of the VA emergency funding contained therein. The act closes the books on one VA health care shortfall, which had become a political embarrassment to the Bush team because the VA had evidently underestimated the scale of the need.

VA Shortfall II

Bush Administration officials and the Republican-led Congress turned their attention to adding another $1.9 billion to VA health care accounts, above what the White House had sought, for Fiscal 2006.

House and Senate Appropriations and Veterans' Affairs Committee leaders, as they worked the issue, made public pledges that VA health care will be fully funded for 2006.

Democrats, meanwhile, continued to insist that the money for 2006 won't be sufficient. Rep. Lane Evans (Ill.), ranking Democrat on the House Veterans' Affairs Committee, said the shortfall acknowledged by VA officials "is close to $3 billion for next year."

Evans contended that the Administration came in low, despite having reason to believe the figure was $3 billion.

Rep. Steve Buyer (R-Ind.), committee chairman, expressed little confidence in the Administration's new number for 2006.

"The past three weeks have exposed basic flaws in VA's budgetary process—flaws which caused a shortfall of almost $3 billion. Congress has already acted once to ensure that the VA has the funding it needs to successfully carry out its important mission. We will act again."

Stay tuned.

AP photo by Kevin Wolf

Buyer (center) sees many Veterans Affairs problems.

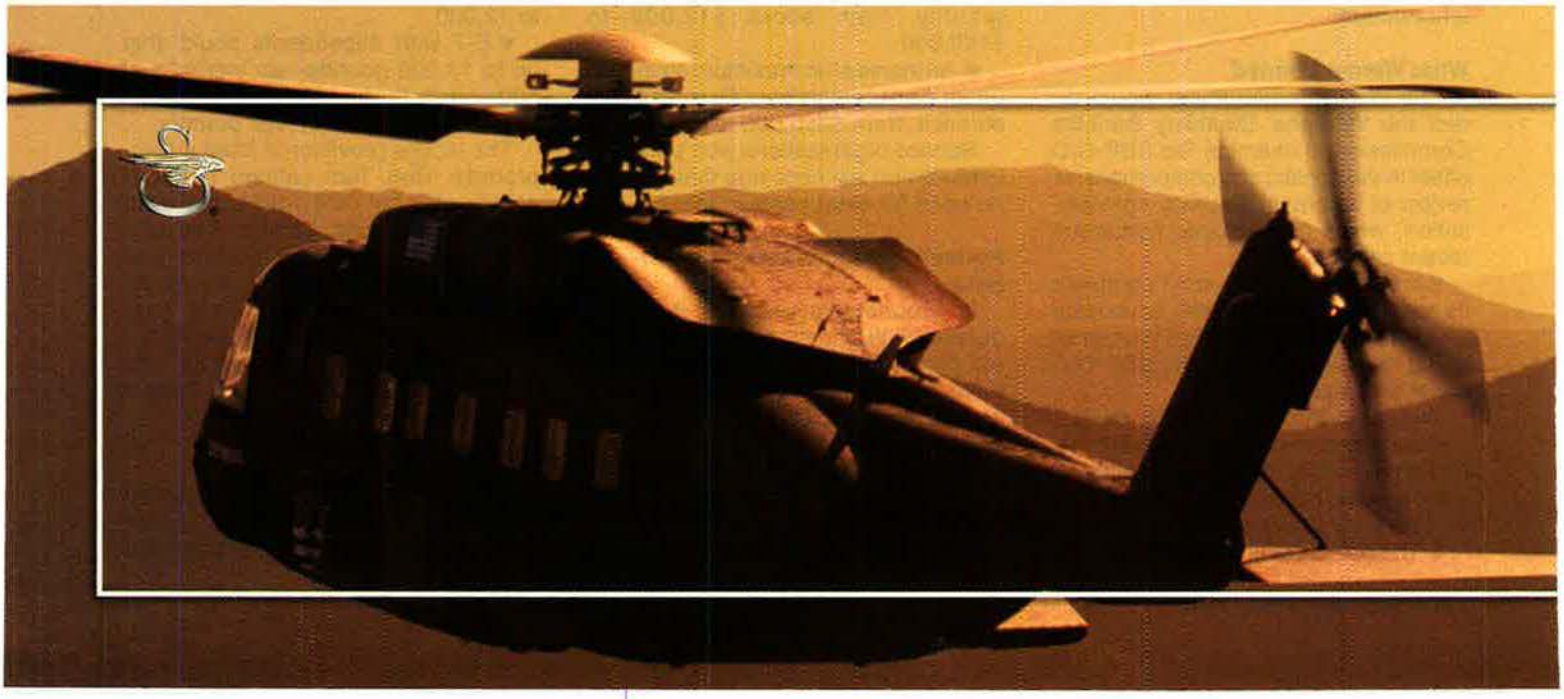
VA Patient Waits

Members of Congress are worried about an increase in the amount of time it takes a patient to get a VA medical appointment, as documented by a new VA inspector general report.

IG inspectors visited eight VA medical facilities, interviewed 247 staff responsible for scheduling appointments, and reviewed more than 1,100 medical care appointments scheduled during a week in June 2004.

The results showed:

- Schedulers did not follow established procedures when selecting the type of appointment and entering the desired appointment date.
- Schedulers often failed to select the next available appointment date for patients.
- Only 65 percent of "next available" appointment dates were within 30 days of dates desired by patients, well below the goal of 90 percent.
- VA requires that veterans with service-connected disabilities receive priority access, but schedulers often used incorrect procedures. As a result, actual waiting times were understated, resulting in medical facility directors being unaware that 2,009 service-connected-disabilities veterans waited longer than 30 days from desired date of care. If they cannot be seen within 30 days, VA must provide for their care at another VA facility or through a non-VA provider at VA expense. That doesn't occur as often as it should, however,



if VA medical facilities understate waiting times.

- VA medical facilities did not have effective procedures to ensure all veterans either had appointments within four months of the desired date of care or were identified as being on an electronic waiting list.
- Inaccurate waiting time data and waiting lists compromise VA's ability to assess and manage demand for medical care.

With the IG report suggesting longer patient waits at VA facilities nationwide, Rep. Steve Buyer (R-Ind.) asked for some current patient waiting times. The data provided show 1,638 patients waiting more than 30 days for appointments in Cleveland, 621 in San Diego, 287 in Indianapolis, and 2,650 in Tampa.

VA officials told the IG that they agreed with the report findings and were taking steps to improve scheduler training, performance, and accountability.

AP photo by Ken Ruinard

Graham wants "new benefits for a new war."

Graham "Adamant" on TRS

Sen. Lindsey Graham (R-S.C.) said he was "adamant" about getting final approval of his plan to open Tricare Reserve Select insurance to any drilling Guard or Reserve member.

The Senate this summer had approved Graham's proposal to let reserve component members join the insurance plan. All signs pointed to tough negotiations with the House, however.

Graham, chairman of the Senate armed services subcommittee on military personnel, called his Reserve Tricare provision "absolutely essential" to taking "better care" of reservists and families while improving recruiting and readiness.

In the summer months, Graham said in an interview, reserve component casualties in Iraq outnumbered active duty losses. He added that operational demands on reserve forces "are going to grow, not lessen."

As a result, he added, the military needed "new benefits for a new war." The cornerstone of an improved benefits package would be access to full-time military health care, Graham said.

TRS Politics, Up and Down

Graham's amendment gathered impressive political support. Sen. Hillary Clinton (D-N.Y.) and Sen. Carl Levin (D-Mich.), both members of the Senate Armed Services Committee, co-sponsored his measure. They were joined by SASC chairman Sen. John Warner (R-Va.). Warner planned to champion Graham's provision in a conference with House members.

The House was divided in early fall. The House Armed Services Committee had adopted a similar amendment from Rep. Gene Taylor (D-Miss.), but the chairman, Rep. Duncan Hunter (R-Calif.), excised it, saying it violated House budget rules. Its sponsors did not identify ways to offset its cost—estimated to reach $3.85 billion over five years.

Bush Administration leaders and House Republicans worried that there would be no brake on TRS costs. They said civilian employers likely would take advantage of the expanded benefit to tighten their own offerings to employees serving in reserve components. Some employers already pay reservists to use Tricare rather than employer-provided insurance, said the Pentagon. ■

Peacekeeper is gone, but USAF plans to revamp its long-range missile force for the long haul.

The ICBM Makeover

By Adam J. Hebert, Senior Editor

Pictured is the re-entry of eight test warheads carried by one Peacekeeper missile, such as the one pictured above (inset).

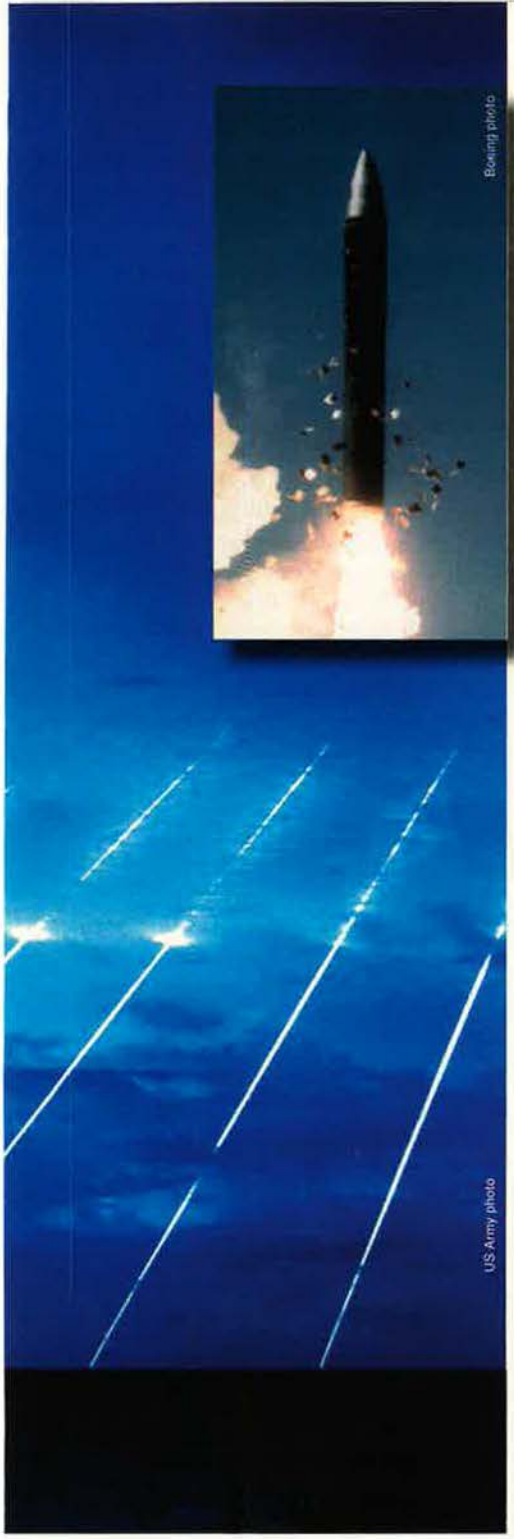
IN September, the Air Force deactivated its last remaining Peacekeeper ICBM, pulling the mammoth multiwarhead missile out of its Wyoming silo and sending it off to be dismantled. USAF once had maintained an awesome force of 50 LGM-118A Peacekeepers; now there are none.

This step marked the end of what many viewed as the most powerful weapon system ever built. Many may have been tempted to conclude that it also signified a steep decline in deterrence. However, unlike that iconic Cold War missile, the Air Force's strategic nuclear mission has not faded away. Far from it.

The United States still needs to have "a continuum of capabilities across the force," maintains Gen. Lance W. Lord, the chief of Air Force Space Command, which oversees the long-range missile force. And the ICBM—ready, accurate, able to blast any target on Earth in 35 minutes—will continue to occupy an important place on that continuum.

Today, Space Command and US Strategic Command, the joint service missile operator, are looking to move beyond systems that served the nation so well in the Cold War and bring on new and better ones. They are drawing up plans to build a next generation deterrent force more responsive to the needs of the modern era.

The effort has been under way for several years. The Bush Administration, after wrapping up a top-to-bottom Nuclear Posture Review in 2002, proposed a big cut in the number of



deployed nuclear warheads and called for increased reliance on a wider range of strategic capabilities, which for the first time would include antimissile defenses and secretive information operations.

The Air Force, as a result, began in October 2002 to decommission all of its 50 Peacekeepers, each of which could sport 10 high-performance, highly accurate re-entry vehicles. At the same time, the Air Force embarked on a program aimed at keeping its 500 Minuteman IIIs in service until 2020. Plans call for USAF to give the venerable Minuteman a host of life-extending upgrades.

No Let Down

The nation's only Peacekeeper unit, the 400th Missile Squadron at F.E. Warren AFB, Wyo., never wavered in discharging its duties. It kept up its full deterrence mission even as the force was drawing down over the past three years. Missile operators remained on full alert and kept regular schedules until the final launch vehicle was deactivated last month.

F.E. Warren missileers point out that, though the number of Peacekeepers steadily dwindled, they had no difficulty keeping up a professional approach to the missile.

Whether one is operating a Peacekeeper or Minuteman, the destructive power of an ICBM engenders an "environment of extreme seriousness," said 2nd Lt. Lyle Hedgecock, who was a member of the final Peacekeeper missileer training class. On your first day of alert, "you're afraid of the phone ringing," he added.

Capt. Tim Hawthorn, on duty in late July, said the alert intensity was still high even though only three Peacekeepers were still in service. Missile combat crew members at their control sites still monitored the safety and security of the entire network.

Capt. Lara Wilson, a 400th flight commander, said a combat crew member typically arrives at F.E. Warren at 7 a.m. on the day of an alert, receives the day's briefings, drives to the control site, and changes over with the departing crew—all before beginning the 24-hour alert.

Sometimes the "work day" is not complete until 5:30 p.m. on the second day—more than 34 hours after check-in.

As the decommissioning of the final LG-118A approached, plans called for Hedgecock and others to retrain and stay at F.E. Warren to take up new posts operating Minuteman IIIs. Other missileers of the 400th moved on to other bases, often for Air Force Space Command satellite operations assignments.

The technical expertise and attention to detail the missile operators develop in their first four years are highly valuable, said Lord. "Air Force Space Command's operators have benefited significantly from our ICBM experience," he has maintained. Missileers bring a combat mind-set to the rest of the command.

Lt. Col. Dave Bliesner, commander of the 400th Missile Squadron in its final days, noted that the Peacekeeper had been a mature operational system, requiring great focus from the missileers. These qualities are "very sought after" in the less-mature satellite and space operations realm, said Bliesner.

All 50 Peacekeeper silos may be empty, but complete deactivation requires quite a bit more work from the maintenance teams at F.E. Warren's 90th Space Wing. According to Bliesner, missileers have "a full year of work to do."

That work entails stripping the launch and control sites and pulling all classified materials so that they can be declared "nuclear decertified," said Col. Michael J. Carey, commander of the 90th Space Wing.

Components Live On

Some of the Peacekeeper equipment will be reused. The relatively new and highly complex re-entry vehicles are set to be transferred to the Minuteman III program, where they will replace some older deployed warheads. Peacekeeper booster components are to be used in space launch vehicles. Much of the infrastructure—batteries, access doors, and the like—can also be recycled.

In a break with past practice, the Peacekeeper launch silos will be kept intact. Maj. Gen. (sel.) Mark D. Shackelford, director of requirements for Space Command, said the Air Force has decided that launch control centers and silos are "not to be destroyed." Instead, this infrastructure will go into indefinite "mothball status" to ensure that the facilities will be available in case the need for them arises.

Previous deactivations of ICBMs typically resulted in their infrastructure being imploded, but Shackelford said that action was driven by the strictures of Soviet-American strategic arms control agreements—not military requirements.

That's not the only new wrinkle in the US approach to strategic arms. According to Lord, the nation has accepted that it must now move to "deter adversaries in the future." This, he said, will require a strategic force with both nuclear deterrent capability and "the flexibility to provide conventional strike capabilities."

Already, the Air Force has embarked on several critical upgrade programs,

The 1970s-era Minuteman III (shown in test flight) will be the backbone of the US deterrent. USAF plans to keep 500 updated versions on station for years to come. Some will have one warhead, some three.

tests, and studies. According to Maj. Gen. Frank G. Klotz, the commander of 20th Air Force and US Strategic Command's Task Force 214, the upgrades so far have proved to be unqualified successes.

Carey echoes that view. Minuteman III modernization plans, he said, will "ensure that the [deterrent] success we've enjoyed over the past decades will continue to be solid and secure in the future."

USAF's 500 Minuteman IIIs are being rebuilt from top to bottom to ensure their power and reliability. The buried launch control centers are getting upgraded command and control consoles. The missile's propulsion systems are being modernized. The outcome of a still-ongoing guidance system replacement program has been significant improvement in the average mean-time-between-failure of component parts.

From Three to One

The Air Force has radically reshaped the fleet of 150 Minuteman IIIs currently deployed at F.E. Warren. Missile engineers have "downloaded" each of the Minuteman systems from a triple-warhead to a single-warhead configuration, thereby eliminating 300 nuclear re-entry vehicles.

However, Klotz said the Minuteman III fleet will keep a mixture of warhead configurations. Some or all of the ICBMs based at Malmstrom AFB, Mont., and Minot AFB, N.D., will retain up to three warheads, he said, noting that the single-warhead weapon is not good for each and every threat.

Later, the Safety Enhanced Re-entry Vehicle (SERV) program will replace Minuteman III warheads with re-entry vehicles removed from the decommissioned Peacekeepers, a step that will also improve targeting accuracy.

The first SERV test flight took place in July, reported Shackelford. The Air Force plans to carry out four test launches before it makes a decision on whether to proceed with the full program. That decision is expected in 2006.

With all this work in progress, the Minuteman III remains a "very effective and reliable weapons system," said Klotz.

He points out that maintenance is manpower-intensive but "relatively modest cost," and the missile posts a "phenomenal" rate of sortie readiness. At any given time, 99.4 percent of Minuteman IIIs not undergoing planned maintenance are ready for launch.

During the Cold War, the difficulty of lifting multiple warheads with a single booster made it imperative to develop high "yield-to-weight" ratios, according to retired USAF Gen. Larry D. Welch, formerly the Chief of Staff and now head of the Institute for Defense Analyses in the Washington, D.C., area. This need, Welch went on, resulted in "exquisite" warhead designs containing "all kinds of esoteric, hard to handle materials." Now, the Air Force has under consideration a "reliable replacement warhead" that could free the Air Force of some maintenance headaches and safety concerns associated with the older warheads.

At present, Space Command officials are nearing the completion of an analysis of alternatives (AOA) evaluating options for a next generation land-based strategic deterrent. Space Command leaders are

AP photo by Douglas C. Pizac

Refurbished Minuteman III engines await shipment from Hill AFB, Utah, where the reconditioning takes place. The fleet will be rebuilt from top to bottom to increase safety and reliability.

In Arms Control, It's START, START, START, and SORT

Peacekeeper deactivation, like the other nuclear reduction programs, came in the context of arms control agreements.

START I, signed in 1991 and ratified by the US and Russia, limited each nation to 6,000 total warheads. According to the Arms Control Association, a think tank in Washington, D.C., the US reached this target in December 2001.

START II negotiations lowered the warhead limit to some 3,500 weapons. The treaty was signed in 1993 but never entered into force because it was soon overtaken by events. The US should be at roughly 3,800 weapons in 2007.

START III, agreed to in principle in 1997, would cut each inventory to some 2,250 warheads. (This total mirrors that set in the Strategic Offensive Reductions Treaty—SORT—talks between President Bush and Russian President Vladimir Putin in 2002.)

SORT called for the US and Russia to have 1,700 to 2,200 operationally deployed warheads by the end of 2012. Warheads and delivery systems do not have to be destroyed, merely kept at distinct, separate locations.

Maj. Gen. (sel.) Richard Y. Newton III, director of plans and policy for US Strategic Command, said US forces will adhere to all applicable arms control agreements.

This fact is made easier by SORT's more lenient counting rules, which do not force the United States to dismember or implode systems and display them for verification purposes.

The newly relaxed situation reflects a steep lessening of tensions between Washington and Moscow. In fact, said Newton, the coming reductions are "not a particular issue to me."

not calling the next generation system a "Minuteman IV," but the command has determined that it needs a follow-on long-range missile.

The AOA is looking at options in three areas: delivery vehicles, command and control systems, and security.

Col. Richard Patenaude, who is leading the AOA, said last year that there is considerable room for improvement in all three areas. For example, in delivery vehicles, the Minuteman III has four thrust nozzles. There is "no way we'd do that today," he said—a modern ICBM would be designed with one thrust nozzle.

Accuracy improvements are also possible. Re-entry vehicles currently designed with inertial guidance systems could be made better. The RVs could be supplemented with Global Positioning System guidance or incorporate the stellar positioning system the Navy uses for its submarine-launched ballistic missiles.

The AOA has already turned down a proposal to convert a portion of the Minuteman III force to "Minuteman Elite" status by adding GPS for greater accuracy. This idea is now on hold until the AOA is completed and a long-range nuclear plan can be formulated.

On the command and control front, there is a "significant potential for manpower savings," said Patenaude, if the Air Force can break free of its paradigm of 50 isolated, hardwired capsules used to control the missile fleet.

The ultimate command and control solution could entail use of all, some, or none of the capsules. Technology has advanced to the point where USAF is essentially free to create any sort of command architecture it desires, Patenaude said. The challenge is to avoid introducing "new vulnerabilities."

The "Standing Army"

Physical security is another long-standing concern. Current defenses are manpower-intensive; Klotz noted that 20th Air Force has a "large standing army" of security forces—in fact, it comprises roughly a third of its total airmen.

Technological improvements could bolster defenses while simultaneously reducing security forces' high operations tempo. The missile silos are currently monitored by motion detectors. Klotz would like to upgrade to a visual detection system, which would increase situational awareness and cut down on the number of false alarms security teams must respond to.

Technology cannot totally replace humans, said MSgt. Michael Parker, superintendent of the 790th Security Squadron, but it can be a force multiplier. There is "no room even for one error" in nuclear security, Parker said. The consequences would be grave if terrorists ever got possession of a warhead and "started running."

Officials expect the AOA to determine which nuclear options are the most promising. When it does, Space Command and Strategic Command will quickly turn their attention to the issue of prompt global strike. This is where the merits of conventional ICBMs, hypersonic missiles, and other options for providing a new level of accuracy and responsiveness will be weighed.

In a 2004 study, the Defense Science Board looked at what it called "imaginative candidates for prompt response." Among these candidates were large, stealthy, unmanned, long-endurance, air refuelable airplanes; hypersonic missiles or unmanned airplanes; and ballistic missiles with different kinds of payloads.

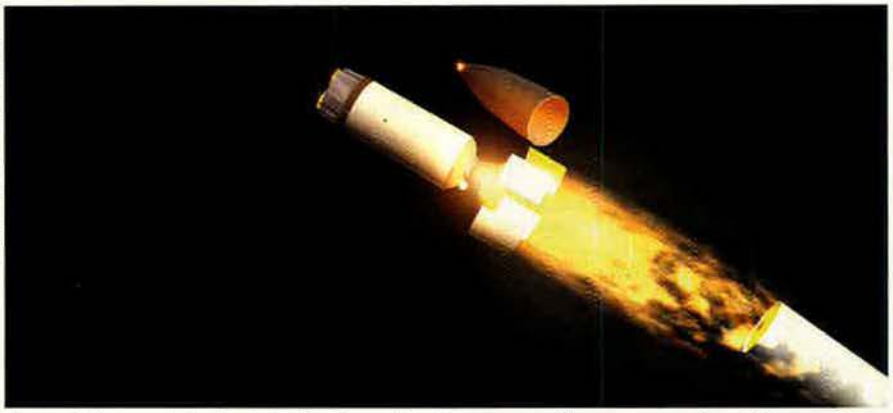
DSB concluded at the time that "no single alternative emerges as a clear winner," though it did recommend that the Air Force keep the deactivated Peacekeeper missiles for potential reuse as conventional platforms.

The DSB and Patenaude both said it

AP photo by Dan Cepeda

On Oct. 3, 2002, Air Force TSgt. Bryan Stewart (l) and SrA. Theadore Fife look at the third stage of a Peacekeeper that had been located near Hawk Springs, Wyo. It was the first of 50 to be dismantled.

USAF graphic by SSgt. Mark A. Schurman



An artist's graphic depicts ejection of a Minuteman III nosecone shroud, revealing three re-entry vehicles. This action comes in the final seconds of the ICBM's stage 2 burn.

would make sense to base conventional ICBMs on the US coasts and not in the "holes" left by Peacekeeper. Patenaude noted that spent boosters of missiles launched from Wyoming would fall back onto US soil. Better to base conventional ICBMs, if approved, at Vandenberg AFB, Calif., Cape Canaveral AFS, Fla., or both, he said.

High Anxiety

Geographical separation of nuclear and conventional missile launchers also would help simplify the task of providing "assurance" to important powers. Russian leaders in Moscow, for example, surely would become highly nervous on being notified that the US had launched an ICBM. Should the launch come from coastal areas, however, they would know almost instantly that it was a conventional weapon and not aimed at Russia. That kind of knowledge would have a calming effect.

The Pentagon must answer many questions before it reaches a final decision about proceeding with a conventional ICBM.

Would a conventional system be cost-effective? Probably, conclude Air Force officers. Would it be responsive enough? Yes, because targets could be destroyed in minutes. Would it be sufficiently accurate to strike the kind of target set it likely would be sent to hit? Perhaps. Would it be politically viable? Hard to say. Overflight issues and international notifications and inspections also would have to be worked out.

Klotz said these decisions will come from a "much higher level" than 20th Air Force, but he offered an analogy. Strategic Air Command leaders designed the B-52 bomber to fly at high altitudes and strike the Soviet Union with nuclear weapons. Not long afterward, the B-52s switched to low-altitude approaches so as to foil improved Soviet air defenses. With the end of the Cold War, the BUFFs again switched course and now perform a range of conventional and nuclear missions.

In light of the B-52's history, one must say that it is "certainly feasible" to take a delivery system such as a nuclear ICBM and modify it to create new effects, said Klotz.

The US lacks good options for prompt, assured, non-nuclear attack, said USAF Lt. Gen. C. Robert Kehler, Strategic Command deputy commander at Offutt AFB, Neb. "If a geographic combatant commander needs to deliver highly precise, conventional kinetic effects on a target, can they do it?" Kehler asked. It can be done, but not always promptly.

The 2002 Nuclear Posture Review and subsequent guidance issued by President Bush called for the US to reduce its deployed strategic warheads to "the lowest number ... consistent with the security requirements of the US and its allies," while also developing a "new triad" of nuclear and conventional strike capabilities, improved defenses, and a responsive strategic arms infrastructure.

Kehler said "everything" on Strategic Command's plate today is done to reach the goals of the Nuclear Posture Review. The US is now nearing the completion of a first round of nuclear reductions.

In addition to reshaping the Minuteman fleet by taking off active status 300 warheads, the Air Force has now taken out of service the 500 warheads that once sat atop its 50 Peacekeepers. The Navy also has contributed to the reduction of warheads; by 2007, it will have completed the conversion of four Ohio-class ballistic-missile-carrying submarines into conventional cruise-missile subs.

As of January, the United States still deployed 5,966 strategic warheads, as calculated under counting rules that were put in place by the Strategic Arms Reduction Treaty talks of the 1980s. The real number is less than that; the arcane START rules still count all 500 Peacekeeper warheads and attribute 81

AP photo by Cliff Schiappa

An Oct. 28, 1995, controlled explosion destroys an underground Minuteman II silo near Holden, Mo. This was done as a part of Soviet-American arms control agreements. Standing in the Missouri cornfield and jointly pushing the button are American Secretary of Defense William Perry (left) and Russian Defense Minister Pavel Grachev.

warheads to the B-1B bomber, which has been a pure conventional system for some time now.

From START to SORT

Under terms of the Strategic Offensive Reductions Treaty (SORT) forged by Bush and Russian President Vladimir Putin three years ago, Washington and Moscow agree to operationally deploy fewer than 2,200 warheads by the end of 2012. However, SORT rules do not require the actual destruction of delivery systems, as was true of earlier superpower agreements. SORT says only that they must be stored separately from their warheads

These nondeployed warheads will become part of what the Bush Administration calls the "responsive force." It is important to have such a force, said one Strategic Command official, because the US is the only nuclear power that lacks any current ability to manufacture new weapons.

Advances in precision and intelligence fusion will make conventional weapons more versatile and help bring the NPR vision to reality, officials believe. This has "implications" for the stockpile, Kehler said, because rapid, precise, conventional weapons could perform some current nuclear missions.

USAF Maj. Gen. (sel.) Richard Y. Newton III, Strategic Command plans and policy director, said greater precision should allow "some targets to be serviced by fewer weapons." The ongoing strategic studies will help determine whether and how the US can further reduce its deployed-warhead count. There is no firm timeline for beginning additional cuts.

Improved targeting has permitted the US to safely cut nuclear forces in the past. Kehler was working on the Joint Staff when "tough discussions" occurred regarding START I requirements. Pentagon planners took a "hard look at the philosophical underpinnings of nuclear targeting," he said, and determined that the US could reduce its nuclear inventories and "still preserve the essence of deterrence."

Similar discussions are taking place today in centers of US nuclear policy and strategy formulation.

"It looks to us like there are some targets we hold at risk today with nuclear weapons that would be good candidates to be held at risk with a conventional weapon," Kehler said.

The answer "may be" conventional ballistic missiles, but precision, promptness, and intelligence capabilities all have to be developed together, Kehler said.

AP photo by Brett K. Snow

The contrail of an unarmed Minuteman in flight is vivid against the evening sky over Victorville, Calif., in a 1999 test. Though many have predicted the demise of the ICBM, all signs are that it will be around for quite a while longer.

"The Toughest Targets"

Lack of production capability does not mean the US cannot add new capabilities, however. Strategic Command is interested in developing new ways—nuclear or conventional—to solve the long-vexing problem posed by an enemy's hardened and deeply buried targets (HDBTs), principally command and control nodes.

Newton said this is a real "and growing" problem, one that is not likely to be solved by a single weapon.

HDBTs are "probably the toughest targets" for a variety of reasons, added Kehler. They are difficult to find and physically resistant to attack. Adversaries have studied US operations over the years and learned the American style of attack. They have come to regard the use of hardened and deeply buried centers as a way to defeat "what we strike [and] how we strike."

Planners say it is unacceptable for potential enemies to have any category of targets that the US cannot hold at risk. The Administration, in turn, has been pushing for development of a so-called Robust Nuclear Earth Penetrator.

Kehler said Strategic Command supports creation of new earth-penetrating capabilities, whether they are nuclear or conventional, but the biggest "bang for the buck" in the future is likely to come in intelligence and weapon fusion, he said, not through acquisition of any single system.

Some recall that in 2004, the Defense Science Board called on the Air Force to develop a "contingency arsenal" of specialized conventional weapons for niche purposes. The DSB highlighted the success DOD had had developing very effective specialized warheads such as the thermobaric bomb (used in Afghanistan). Such special-purpose weapons could serve strategic purposes as well and would increase flexibility.

Strategic Command already has targeting flexibility. Its senior officials are loath to discuss any aspect of this part of STRATCOM's business, but Newton allowed that nuclear planning reflects a wide range of options that are "more suited for today and tomorrow" than for the threats factored into the Cold War model, with its Single Integrated Operational Plan.

Another official noted that ICBM targets must be changed more frequently than was true in the past. This, he said, stemmed in part from greater US reliance on single-warhead ICBMs.

For the Air Force's missileers, life hasn't changed much, and it won't for the foreseeable future. Two-man missile combat crews still sit in buried, blast-resistant capsules under the Great Plains, each team directly responsible for overseeing and controlling 10 missiles while providing support for 10 more.

As they work their 24-hour shifts, they are constantly prepared to turn their keys in unison but hope they never have to. ■

Gen. John P. Jumper reflects on USAF's drive to reinvent itself even in a time of war.

The Four-Year Sprint

By John A. Tirpak, Executive Editor

Gen. John P. Jumper's agenda for his term as Air Force Chief of Staff didn't change very much when one of his first days on the job—Sept. 11, 2001—turned out differently from what anyone expected.

Given the stresses caused by the terrorist attacks and challenging back-to-back major military operations in Afghanistan and Iraq, it would have been easy to defer plans for reinventing the Air Force until things calmed down. Instead Jumper thought it even more urgent to push "effects-based programming."

It was a dramatic change in service culture, aimed at meeting new USAF requirements, whenever possible, with innovative ideas and existing capabilities, not with expansive demands for new weapons and hardware.

The approach dovetailed well with the ongoing war effort and with the Pentagon's wider attempt to reinvent itself for the new century. Jumper believes the conflicts in Afghanistan and Iraq have vindicated the goal and that the service is better off for having pursued it.

As Jumper approached his planned Sept. 2 retirement date, the Chief sat for a series of interviews in which he reflected on his four eventful years at the head of the uniformed Air Force as it wrestled with day-to-day combat operations as well as the need to lay a foundation for longer-term success.

In his view, the Air Force is more powerful and savvy than it was four years ago. He sees it as battle tested, streamlined, and more efficient. He also notes with pride that, despite a high operating tempo, the morale of the force is high and retention continues strong.

However, problems remain. The fleet is old, and launching replacement programs is proving to be a tough sell. The Air Force is finding itself in an often bruising debate in the ongoing Quadrennial Defense Review.

Jumper insists the service is getting a fair shake in the review, but he sometimes isn't happy with the way the service's arguments are presented. The Air Force's top fighter programs seem to be under constant attack, even as it embarks on a long-planned divestiture of older systems. The stakes remain high.

Origins of an Agenda

Jumper came to his post after being the head of Air Combat Command, and many of the initiatives he launched there he brought with him to the Chief's office.

"We had already started a fairly aggressive campaign in Air Combat Command to talk about concepts of operation," Jumper recalled. "I had a strong plan to immediately start work to get the concepts of operations turned into 'effects-based programming' as part of transformation."

The term "transformation" was the buzzword and goal of the Pentagon early under the leadership of Defense Secretary Donald H. Rumsfeld. Few at first could define what it meant, other than that the vestiges of Cold War thinking needed to be swept aside. Although the Air Force was not credited with it, Rumsfeld and his lieutenants quickly picked up on "effects-based planning" as a smart way to approach an overhaul of the US military. The notion called for an emphasis on desired effects, rather than on the systems that created them.

The headliner among the new concepts Jumper brought forth was the Global Strike Task Force, which called for USAF to kick down the door into any theater of operations using its unique capabilities in stealth, long-range attack, and precision strike, then keeping up the pressure on an enemy while the rest of the US military could flow its forces into the region.

Next up was to tackle the maddeningly complicated lines of communica-

tion between the service's various communities, whose special abilities had to be coordinated in wartime. Jumper had seen, close-up, the difficulties in doing so when he was commander of US Air Forces in Europe, during the Balkan campaign in 1999.

In his early speeches as Chief, Jumper railed against the difficulties of translating the "tribal languages" of various Air Force specialties into "actionable information." He ranted against the "stovepipes" that needlessly fed perishable knowledge into bureaucratic dead ends, instead of to the warriors who needed it for battle.

USAF photo by MSgt. Jim Varhegyi

Jumper promoted within the Pentagon the concept of "effects-based planning" —the idea that new requirements don't always have to be met with new programs. He also campaigned for the wide distribution of Air Force-collected intelligence.

Horizontal Integration

Jumper capsulized his vision by announcing that USAF was determined to achieve "horizontal integration" of systems. Toward this end, it would create "machine-to-machine interfaces," in which battle information would be passed automatically from sensors to shooters and that, ultimately, the purpose of all the intelligence-surveillance-reconnaissance power of the Air Force ought to be focused simply on getting a "cursor over the target."

These phrases, Jumper said, he used as "organizing principles" to help people visualize their direct role in the process of finding and defeating an enemy.

"I think we are well on the way" to realizing the vision, Jumper said. "I think we're out of the intellectual ruts" that prevented extracting full value from the mountains of data already collected by air- and spaceborne sensors, he said.

His hope is that the Air Force will soon be able to present to anyone who needs it a view of the battlespace akin to that enjoyed by pilots of the F/A-22 Raptor, which has a "God's-eye" display of all the friendlies, enemies, unknowns, and threats within a given operating area. That display is constructed not only by the F/A-22's own sensors but by many offboard sources, from E-3 AWACS to satellites to listening posts, the data from which is fused into a coherent presentation.

"And we should be able to do this from the air operations center, too, or from any other platform," he added. The display should not just be a comprehensive picture but one that reacts to instructions. Just as in the F/A-22, Jumper wants the AOC to be able to "put [a] cursor over the target and make things happen," such as automatically dispatching the closest strike aircraft to destroy a pop-up target and deconflicting the aircraft with others in the vicinity. Jumper has labored to redefine the AOC as a weapon system in its own right.

The effort to make this vision a reality is under way, he said, but "because of ... wartime necessity, we've really had to work it from the bottom up, sort of, application by application. ... We now have to start taking a look at this from the top down, so we can characterize the whole battlespace."

He anticipates it will not be long before an experimental version of what he has called the AOC "data wall" becomes a reality, "so we can get out of our platform-centric thinking and into more ... visualizing the networking and integration that's required."

The realization of the big-picture display may take some time, and there may be setbacks, but "we can't give up on it, because it is so very leveraging," said Jumper.

Going into the wars in Afghanistan and Iraq, the approach was broadened to integrate not just varied parts of the Air Force but to improve connections with the other services as well. Afghanistan saw Air Force tankers refueling Navy carrier-based aircraft on six-hour missions in and out of the land-locked target area. Iraq saw dozens of disparate aircraft from all the services stacked up above ground combat zones, ready to provide any of a catalog of effects from above, whether it be bombs, radio jamming, a cut fiber-optic cable, or just a frightening sonic boom on demand.

Proof From War

On the whole, Operations Enduring Freedom and Iraqi Freedom illustrated both the value of old capabilities and the benefits of thinking about old systems in new ways, Jumper said.

"What we did show, in Afghanistan in particular, was, the only way you could get in there is by air. You can't do it without big airlift airplanes, and you can't do it without long-range bombers to be overhead and be ready" to dispense weapons when ground forces call for them, "and tankers, especially, ... the whole team depends on [them]."

A rehearsal of the fight, in the deserts of Nevada, sharpened the war plan and allowed for drill of the coordination between systems and people who had to work together. Jumper marvels at "all the power that came from our ability to practice with those very precious assets and then take that same practice team and put them into combat." It was a dramatic example of "the power of integration."

The lesson was further driven home when ground forces in Iraq were mired in place by a devastating sandstorm. The enemy believed he could have respite from attack during the storm, but by "getting all the bombers and all the intelligence platforms networked

together in the right way," from the E-8 Joint STARS ground surveillance radar airplanes to Global Hawk unmanned aerial vehicles, the air forces were "able to zero in on the bad guys and make them just totally ineffective."

He has since tried hard to use the real-world example to correct a damaging misperception about airpower. The Army has for years discounted the value of airpower, Jumper believes, because of the artificial way that combined arms are exercised. In wargames, the Air Force usually inflicts massive destruction on opposition ground forces, just as it did in Iraq. However, if those losses "counted," the Army would have little opportunity to practice ground combat. Typically, the ground units destroyed by airpower are "brought back to life," and the Army commences to have its battle. The problem is, ground commanders not aware of the reset have come to expect airpower to be ineffective. Iraqi Freedom should have dispelled that notion, Jumper has said, but not everyone has gotten the word.

It was Jumper who directed that Predator unmanned aerial vehicles be armed with Hellfire missiles—again, based on his frustrations in Allied Force, when Predators would spot a fleeting target and be helpless to do anything about it. It's an innovation that has worked brilliantly in Afghanistan, Iraq, and elsewhere. Constant trade-offs between the relative merits of UAVs versus manned aircraft have been a hallmark of his tenure.

In fact, getting acceptance of UAVs has turned out to be one of the unexpectedly easier aspects of his agenda, he said.

"Bringing lethality to what had always been assumed to be a surveillance and reconnaissance system ... had a very quick payoff in combat operations," he noted. "There were many who resisted that right up front, and that resistance sort of melted away" as the benefits became apparent.

Now Jumper sees UAVs as holding out considerable promise as the next wave in long-range strike.

There is a "continuing effort to discover whether the next generation is going to be manned or unmanned and see if we can combine the features of long-range strike [with] ... persistence over the battlefield," Jumper said. An unmanned bomber would be able to fly long distances to a target area, and then loiter in the vicinity of ground troops for hours at a time, occasionally slipping back to a waiting tanker to refuel.

Near-Space

Jumper has been an outspoken advocate for making use of near-space, the region between 12 miles above the Earth and low Earth orbit. Used as data transfer or long-term surveillance platforms supplementing satellites, such craft "can save the nation a whole lot of money ... and provide comprehensive coverage of areas for an extended period of time."

However, he admits that such vehicles are a long way from becoming operational.

"I'm not sure the technology is there in the near term," he said. "It's very close, but I'm not sure it's 'there' enough to be useful."

Jumper said, "It's hard to say what the right ratios" of unmanned and manned aircraft will be in the future. He has often said he doesn't want to pursue UAVs for their own sake but would when they are the appropriate vehicle for the mission.

"We can do a lot more, unmanned," particularly in reconnaissance, he said. So far, UAVs can't defend themselves as well as "the greatest-trained pilots in the world," but "when the technologies are there, they'll have to compete." He added that "we'll make those transitions if it's appropriate."

He also pointed out that some missions are fungible and may swing between manned and unmanned aircraft. He said that some fighters in Iraq have used streaming video from targeting pods to walk ground troops toward the enemy, "just like the UAV." However, they had "the added benefit that you're talking to a guy in an airplane that's got 12 or so bombs on board" and can "dash from place to place, and be where they need to be quickly, and respond quickly." Such experience shows the continued value "of the supersonic fighter" even in a ground support role, Jumper said.

Although there's been lots of talk about graduating to a new level of performance in long-range strike, perhaps using hypersonics, Jumper is cool on the idea.

Hypersonics is one of a number of technologies "that are good ideas waiting for an application," he said.

"If we had hypersonic engines today, we still don't have the materials that make the vehicles that ... can make use of the hypersonics," he explained.

The tradition of always reaching for "higher, faster, farther ... is not an absolute measure. We have to figure out where it's useful to us.... Can it carry a practical payload? Can it get there and return? Can you take advantage of all this velocity?"

He asserted that, today, "we have lots of ways" to conduct a strike, anywhere, worldwide, and "we can guarantee pretty much that they'll get through. So, is it the right thing to do right now to spend a lot of money to invent another way? Or do we want to spend that money on something we can't do?" In long-range strike, he believes, the biggest payback

USAF photo by TSgt. Ben Bloker

Impressed with the sensor-fused view of the battlespace available to F/A-22 pilots, Jumper wants to expand that at-a-glance comprehension to air operations centers and troops on the ground. Here, an F-15C flies with a brace of F/A-22s.

would be from developing the means to persist over the target, not in getting there faster.

Bomber Fleet OK

As for today's fleet of bombers, Jumper said he sees no reason to alter its size or mix.

The B-52Hs now in service, he asserted, are the "best 100" of a fleet of 700 "that had been rebuilt three times in their lifetime." He described them as "sound flying machines" and in far better condition than the service's KC-135 tankers of the same vintage. The B-52 fleet is "going to be very good for a while."

The B-1B continues to be "expensive" to operate, Jumper maintained, due to support costs, but "nothing in that reduction from 93 to 67 or so has hurt our combat capability." Early in his tenure, Jumper succeeded in persuading Congress to allow the Air Force to reduce the B-1 fleet, using the operating savings to invest in upgrades and support improvements.

Finally, the stealthy B-2 "continues to be the thing that we can get anywhere in the world, anytime we want to," he said.

He acknowledged that some of the toughest potential adversaries the Air Force might face are half a world away, but "we've lived with challenges far overseas for, what, 15 years now? And there's nothing in our experience that tells us we don't have enough bombers."

One issue that confronted Jumper from the beginning was low-density, high-demand (LD/HD) systems and people, those platforms or specialties constantly being requested by regional commanders but that were—and in most cases, remain—in short supply.

"There's a supply side and a consumer side of that," he explained, and we're "working both ends."

The Air Force is working with regional commanders to make sure that they have a genuine need for what they request, to "moderate the sum of these requests." Some commanders demand a virtual constant presence of these capabilities, "regardless of whether the tension level is high, medium, or low."

The other end of the equation is to generate more of the in-demand capabilities. In many mission areas, UAVs will supplement the overburdened forces.

Among the most requested LD/HDs are the E-3 AWACS airborne radar warning and control aircraft, the E-8C Joint STARS ground mapping aircraft, and the Rivet Joint signals intelligence aircraft. Jumper has pushed hard to replace these aging systems with a series of new ones on a Boeing 767 airframe, called the E-10, which would also be an airborne battle manager. He hasn't had much success selling the idea to Congress.

E-10 On the Bubble

When asked if he is confident the Air Force will get the E-10, he said, candidly, "No," but added, "I'm confident ... that we need it. And I'm confident that it makes no sense to put an upgraded sensor on an old Boeing 707 platform."

He said the Air Force will simply have to keep making its case for the E-10. "So far, it's still in the budget and we're still working hard on it."

Personnel was another LD/HD concern, and obtaining the right mix of specialties in USAF is "a work in progress," Jumper said.

The Air Force has succeeded in getting back down to its authorized end strength after exceeding it for several years due to the post-9/11 conflicts. However, while the numbers are right, "now we've got the balance wrong," Jumper said. There are too many officers versus enlisted, and that has cramped his ability "to go and get the critical enlisted specialties that we need."

It's becoming apparent that Air Force retention goals—55 percent first term, 75 percent second term, and 95 percent career—"may not apply equally to all career fields and probably should be adjusted," Jumper explained. For example, security forces may set lower retention goals to increase the number of younger people in the field, "so you don't have ... to put master sergeants out walking the guard duty on fence lines. What you want is ... to get youngsters doing youngsters' work," he noted.

Of the QDR, Jumper said, "We are heard, there's no doubt about it." However, he said that "no one is ever happy with the way their argument is characterized as it goes through the system. ... But that's the way the system is designed. We have to make our arguments thoroughly and present them with analytical background." He added, "I have no problem with that. ... In the end, with the power of analysis, you're able to make your case."

When asked what the toughest challenge is that he's leaving for his successor, Gen. T. Michael Moseley, Jumper said it is, without doubt, the recapitalization of the fleet.

"I am of course not happy with where we leave the acquisition system," Jumper said.

"We still struggle to get ourselves around these contracts where we thought we could rely on commercial best practices to substitute for oversight. Quite frankly, it has not worked."

The Air Force, he said, has "let go" too much in-house expertise in systems engineering and oversight, and "we have to rebuild those, ... especially in space." It will take a decade or more, he allowed.

Moreover, the system as it is now designed doesn't easily adapt to new thinking. Jumper has long wanted to put data relay systems on aerial tankers since they are already airborne and in the battlespace and have a large unused internal volume.

However, "if I walk into the acquisition system we have now, putting those things on a tanker is defined as gold-plating, because it's excess to what you need to buy new tankers." Even though such an approach would enhance combat performance, save time and money, and create "a multitude of effects" on the battlefield, in a system that only understands "its down-to-the-last-penny value as a tanker, ... it's hard to sell that."

As for the replacement of aging systems—a fighter fleet averaging more than 24 years old, sensors installed on used 707s more than 25 years old, and a tanker force older than 40 years, average age—Jumper said it must begin as soon as possible.

"We've got to find a way to get started," he said. "We have to find a way to work our acquisition processes so that the spiraling costs of these things that we buy don't present us with such 'sticker shock' that we only buy a handful of them and thus make the price go even higher. We've got to work these things with the Congress and here in the Department of Defense to get this under control."

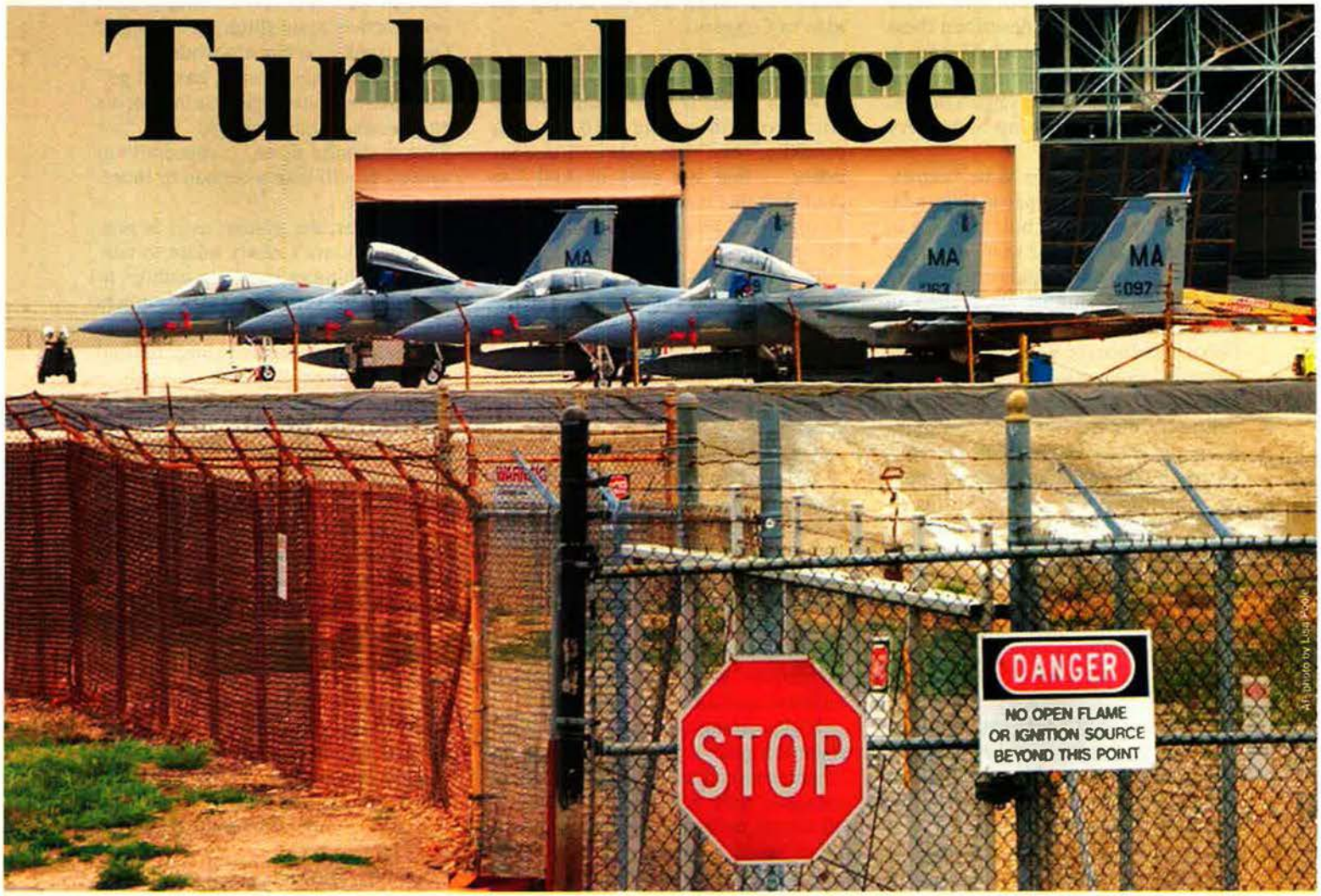
Jumper said he's optimistic that some way will be found to accomplish the modernization of the fleet.

"I'm always optimistic because the nation has dominated the air and space in the last 15 years. We've seen it in spades. I think they're proud of that, and I don't think they want to see it deteriorated." ■

Pentagon, Congress, states, and governors struggle to set the right course for the Air National Guard.

Total Force Turbulence

By Rebecca Grant



"A fiasco," fumed retired ANG Brig. Gen. Stephen M. Koper, head of the National Guard Association of the United States, in an interview with *Hearst Newspapers*.

"Shocking," complained Nebraska Air National Guard Maj. Gen. Roger P. Lempke, president of the Adjutants General Association of the United States.

"Incensed," huffed Rep. Curt Weldon (R-Pa.), describing his reaction to recent events.

"We're not happy," said retired Adm. Harold W. Gehman Jr., a member of the Pentagon's 2005 base closure commission, to the *St. Louis Post-Dispatch*.

Each of these criticisms—and many more—was in recent months directed at Air Force leadership. What brought the service under such withering fire was a collection of Air Force proposals that would reduce, reshape, and relocate significant parts of the 108,000-strong Air National Guard.

Rarely, if ever, had such broad condemnation come down on the corporate Air Force for its dealings with reserve components—the Air National Guard and Air Force Reserve. As the strong language made all too plain, serious rifts had been opened up between the Air Force and the Guard over ANG's future.

Over the past year, several powerful political factors converged to create divisions:

■ The QDR. Throughout 2005, the Congressionally mandated Quadrennial Defense Review, a top-to-bottom Pentagon assessment of US military forces and policies, generated pressure on the Air Force to cut its overall fighter force structure. Fighters are a significant part of ANG, and the Air

Force marked the Guard's fighter force structure for painful reductions that ANG supporters resisted.

■ Future Total Force. The FTF concept, which generated little stir when unveiled in 1997, began to put the Air Guard in a bind. It pushed ANG to turn away from traditional fighter and mobility tasks and toward "emerging" missions such as unmanned aerial systems (UASes), cyberwar, intelligence, and space operations. FTF plans called for creating "blended" units (active and Guard or Reserve combined), which sparked serious questions about state control over ANG units.

■ BRAC. In May, DOD presented a long-awaited—and much-dreaded—base realignment and closure hit list. It contained USAF plans to pull aircraft from 30 ANG units to reduce the size and cost of infrastructure. It became clear that some Guardsmen would have to move or leave ANG altogether. From Massachusetts to Nevada, governors reacted with shock and anger. Illinois resisted plans to move its fighters to Indiana. Connecticut threatened to sue the Air Force if it tried to move that state's A-10s.

By fall the BRAC debate was settling, but it was clear that it would take a while to heal the internal divisions and put the Air Guard back on a stable path.

Few had foreseen this storm. Last year, the Air Force was anticipating unique transformation opportunities, not intramural warfare. Lt. Gen. Duncan J. McNabb, then USAF's director of plans, told Congress in early 2004 that the Air Force over the next two years would have a "rare chance" to "reshape and transform" itself into a new "Total Force."

Instead, the Air Force ran into unprecedented resistance in 2005. It became a boiling fight that began to cloud the fate of the Future Total Force, generate new pressures on the Air Force budget, and undermine USAF's plans for transformation.

It also loosened the hard-won bonds between all airmen, be they active or Guard. According to ANG Maj. Gen. Kenneth R. Clark of New Hampshire, the confrontation led some Guardsmen to think that "you maybe don't have the partnership you thought."

Clark's comments, made at a Heritage Foundation event in June, were unusual because his state, far from losing out, was set to gain KC-135s from California ANG units. His words underscored the fact that the central issue was how much say the states would have in the Guard's future roles, missions, and force structure decisions.

AP photo by Steven Senne

At left, F-15s of the 102nd Fighter Wing line up at Otis ANGB, Mass. Local interests mounted a strong effort to preserve the unit. The BRAC Commission ultimately voted to move the Otis F-15s to another base. However, Otis itself will stay open in a realigned capacity.

Two Basic Questions

The controversy created two lingering questions: Who will shape the future role and structure of the Air Guard? How will the states and the Air Force balance competing desires and new missions?

The Air National Guard has a degree of independence from Washington, which it derives from the language of Title 32 of the United States Code. The bulk of the language was drafted in the 1950s and sets down the organization, responsibilities, and chain of command of the National Guard, both Army and Air Force.

Title 32 reflects a different era. Much of its language emphasizes the need to prevent Guard units from falling behind in war readiness or depleting their manpower. Clearly, those phrases were written long before the Air Guard became a full partner in what is now a highly sophisticated, all-volunteer active force engaged in global and homeland missions.

Various Title 32 amendments have altered the status of the Air National Guard. However, it has been quite a while since this uniquely American institution has had a major makeover. Earlier rounds of base closures as well as post-Cold War force structure cuts zeroed in on the active Air Force and had a much smaller impact on the Air Guard.

The aircraft inventory of the Air Guard, for example, held steady at about 1,500 from after the Korean War through the mid-1990s. In the mid-1990s, ANG shed a net of about 300 mostly outdated aircraft, after which the force once again held steady at a new level of about 1,200 aircraft.

The physical size of the Air National Guard may have remained virtually unchanged, but the quality of the partnership between it and the active Air Force certainly did not. That relationship improved dramatically. USAF opened the door for more Guard involvement and got a positive response. Guard units gave up the "flying club" mentality and, in return, received modern equipment from USAF.

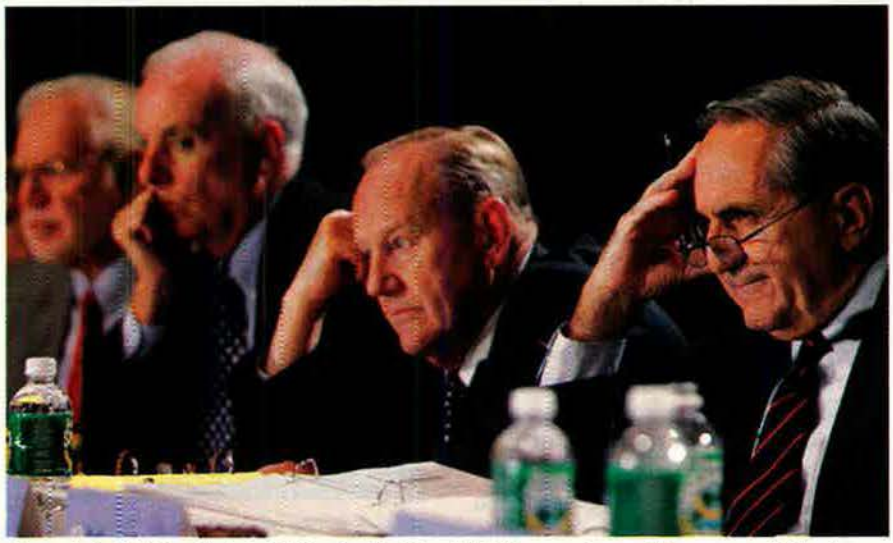
Soon enough, ANG was playing an integral role in all facets of air operations. By the time of the 1991 Gulf War, the Air Force depended on the Guard for specialized missions, such as RF-4 aerial reconnaissance, and large chunks of air mobility and air refueling missions.

Problems caused by deep, post-Cold War cuts to the active duty force pushed the active Air Force and ANG together even more tightly. The Air National Guard and Air Force Reserve became the repositories of 65 percent of the Total Force's tactical airlift, 60 percent of its air refueling capability, 35 percent of its strategic airlift, and 33 percent of its fighter-attack capability.

During the post-Sept. 11, 2001, Global War on Terror, the interdependence of Guard and active forces grew again. Commanders in the field

proudly noted that they saw no difference in active and Guard performance. For example, Marine Corps forward air controllers near Baghdad called for close air support during an April 9, 2003, firefight. They didn't want bombs; they wanted strafing. Michigan ANG's Maj. Scott Cuel, an A-10 pilot, received the call and put 600 precise rounds into the Iraqi target.

Pride in the Guard's operational excellence is one of the reasons that proposals to move airplanes—such as Michigan A-10s—are so politically contentious.



AP photo by Manuel Balce Ceneta

From left, BRAC officials Philip Coyle, Harold Gehman, James Hansen and Charles Battaglia listen to testimony during the panel's final deliberations. Aircraft cuts led to inflamed tensions between the Air Guard and the Pentagon.

Who's In Charge?

The legal issue is as follows: Section 104 of Title 32 states that "the President may designate" the types of units that go to each state or territory. However, it says, "No change in the branch, organization, or allotment of a unit located entirely within a state may be made without the approval of its governor."

Several governors have cited the law in support of their claim that they, and not the federal government, have power over state ANG units. The Justice Department issued a ruling contrary to that claim—but to little effect. By late August, Connecticut, Illinois, Pennsylvania, and Tennessee had filed lawsuits to block the Pentagon plan, and several other states were considering similar legal actions.

From there, the issue gets even murkier. The state governor has full authority "in time of peace" over many types of missions for Guard forces. C-130s ferrying rescue personnel and supplies to flood-ravaged areas work directly for the state governor, an official who can summon them on short notice. However, if the same C-130s are called for federal missions, such as combat in Iraq, the governor is not in the chain of command.

Money, as always, is an issue. States fund the salaries of most Guardsmen unless they are put on federal duty. Equipment—such as a fighter aircraft—is purchased with federal money, as is ammo, trucks, military construction supplies, and the like.

State contributions and the part-time status of most Guardsmen make the Air Guard a good economic deal for the nation, but many costs are borne by the federal government.

Also at issue is the relationship between the Air National Guard and the communities that create it. No one wants to weaken the militia concept that has been part of American life since colonial times. Guardsmen are community members. Recruiting new members depends heavily on word of mouth and the appeal of serving with friends, neighbors, and even family members. The Guard can keep costs low by drawing in part-timers, and that means staying close to the community and local employers. Some may be willing to commute to units somewhat distant from their hometowns, but many others probably will not.

More fundamentally, state authorities have fought to keep control of Air Guard assets because they've learned to love what they do. "We'll have to call Massachusetts and ask them to do flyovers for Memorial Day," said the Connecticut adjutant general, Brig. Gen. Thad Martin, in remarks reported by the *Hartford Courant*.

Flyovers are the least of it. West Virginia's adjutant general, Maj. Gen. Allen E. Tackett, called the state's C-130s "the most valuable resource that we have" because they have provided an essential element in the safety and care of citizens in that flood-prone state.

Another issue weighing in the balance is unit pride. Many Air Guard units have turned in exceptional service in Afghanistan and Iraq, and moves to transfer their equipment to other states would break up the team. Rep. Joe Schwarz (R-Mich.), for instance, noted the combat record of the A-10 units from Battle Creek, Mich. "This unit will have its iron shipped to another base, but its people are gone forever," he said in a July 20 hearing. This will "eviscerate" the Air Guard in Michigan.

Got To Have Airplanes

State authorities also are concerned about the consequences of shifting the Air Guard to new missions of the type that don't include aircraft sitting on the ramp. It's a cultural issue. They believe that the loss or diminution of the basic flying mission will make ANG duty inherently less desirable and lead to personnel losses and shortages.

The chief of the federal National Guard Bureau, Lt. Gen. H. Steven Blum, echoed this view. "If you take the flying unit out of the National Guard, you've taken the Air out of the ... Air National Guard," he said. "Pretty soon, you don't have an Air National Guard."

Blum added, "I am personally committed to stationing a flying unit in every state and territory, bar none."

Tactical fighters lay at the heart of the months-long war of words between the active Air Force and the Air Guard. The active force lost nearly half of its 37.5 tactical fighter wings during the early 1990s. As a result, the active Air Force now accounts for 64 percent of Total Force fighter aircrews, while the Guard provides about 30 percent. The Air Force Reserve supplies six percent.

Worse, plans called for the total Air Force to shed another big chunk of fighter force structure—the equivalent of a fighter wing each year for five years, or a cut of about 25 percent. The question all year was: Which

component will give blood? Air Force senior leaders said it should be the Air Guard.

They noted that, throughout the 1990s, advanced precision guided weapons increased manyfold the combat capability of each fighter. Today's fighter force is much smaller than it was in 1991, during Desert Storm, but it can strike a far larger number of aim points.

Moreover, stealth and other improvements embodied in the F/A-22 and F-35 fighters would cut the Air Force's future losses to enemy air defenses. The Air Force, as a result, decided that it no longer needed to maintain a large reserve force of legacy aircraft to replace aircraft and crews lost in battle.

The upshot was that fewer fighters are needed for the mission. Today's force of about 2,500 tactical warplanes (active, Guard, and Reserve) could well shrink to as few as 1,700 in the next decade. Older F-16s and F-15s would retire, leaving behind a lean force of F/A-22s, F-35s, and some later-model F-15E and other legacy fighters.

Top USAF officials argued that the Air Force could not impose these new reductions on the active fighter units and still preserve a semblance of Total Force balance.

Fork in the Road

The Guard thus faced diverging paths. On the one hand, it could hold onto every fighter squadron that it has now, but, as a result of wear and tear and other factors, wind up with fewer and fewer fighters to spread across those squadrons as time went on. (USAF projects that, in a little more than a decade, an average ANG fighter squadron would have a mere six aircraft.) On the other hand, the Guard could close down units, roll up flags, and consolidate its remaining fighters into a relative handful of squadrons big enough to be stable and efficient.

The Air Force decided to take the second route, but the Air Guard resisted. Therein hung the biggest issue. Fighter numbers had to be reduced; the only real questions were when and where.

The new streamlining moves promised to bring the Air Guard into line with the active component's reorganization, begun more than a decade ago.

"We took down [active] flags to keep the numbers of aircraft up in [active] squadrons," said USAF Lt. Gen. Stephen Wood, director of plans on the Air Staff. "In the Air National Guard and in the Air Force Reserve, we kept the same number of flags—squadrons across states and [territories]—but lowered the [per-unit] number of aircraft" as systems slowly aged out.

This time, senior USAF leaders believed the Guard should follow the active force's lead. There was to be no loss of actual ANG personnel spaces. Vanished flying squadrons would be replaced by units responsible for other types of missions.

As many viewed it, moving on from fighters to other, newer missions was a natural result of the maturation of air and space power. BRAC may have been a forcing factor, but it was the Future Total Force initiative that called for the Air Guard to follow the active duty Air Force into the new missions such as UASes, space, and cyber-warfare.

Reorganization was part of that plan, but it proved to be highly controversial. Critics worried that the FTF plans for new missions and blended units would undercut state prerogatives and dilute the unique esprit de corps that characterized long-standing, local-based air units.

Already, however, FTF has had some successes. USAF's goal was to station more active and reserve component members together to keep units robust and to take advantage of Guard experience. The 116th Air Control Wing, Robins AFB, Ga., flies the E-8 Joint STARS battle management aircraft. It has been working under the FTF concept since 2002. At Creech AFB, Nev., Predator UAS squadrons draw on active, Guard, and Reserve members.

USAF photo by MSgt. Don Taggart

Lt. Col. Mike Cosby of the 177th FW, New Jersey ANG, prepares to land his F-16C at Atlantic City Arpt., N.J. Future Total Force measures have created pressure on ANG to turn away from traditional fighter tasks and toward "emerging" missions.

AP photo by Dave Weaver

Lt. Gen. H. Steven Blum, chief of the National Guard Bureau, wanted a flying unit in each state. He said Guard members "are in there every day involved in Future Total Force," helping shape the Guard's future mission set.

AP photo by Nati Harnik

Air National Guard Maj. Gen. Roger Lempke, president of the Adjutants General Association of the United States, says the Guard wants to modernize and move ahead but that the Pentagon needs to come up with a "bridge" to the future missions.

The Guard and Reserve forces have the kind of experienced personnel that become high-value assets needed for the active components to meet their force requirements.

Brig. Gen. Charles V. Ickes II, deputy director, Air National Guard, noted the power provided by ANG experience. "The vast majority of our maintainers are a little older and a little more experienced," he said. "They will more rapidly [give] experience [to] the young active duty folks. ... That's the same for our aircrew members."

Despite FTF's positive features, trust and consensus were required to make the project work. Those elements were seriously damaged by the BRAC and QDR imbroglios.

National Guard Bureau

A key player in this drama was the National Guard Bureau, headquartered in Washington, D.C. This bureau encompasses both the Army Guard and Air Guard and is headed by Blum, who is a Title 10, federal active duty military officer.

Managing the Guard requires cooperation between the states, Air Force, and Guard Bureau. The process calls for the Air Force to lay out future requirements, which then go to the Air Guard office within the National Guard Bureau, which then determines a new mission set apportioned to states and various Guard units. According to Wood, the Air Force already had identified more than 100 of these "emerging mission" opportunities, some that would be core missions of 21st century operations.

Blum pointed out that, when it comes to planning future missions, his Guard Bureau is "stuck in the middle" between USAF and the 54 adjutants general of the states and territories. He added, "I act as the channel of communication" between these elements.

Blum made it clear that his NGB was "totally involved" in the development of future missions sets and in preparations for the 2005 Quadrennial Defense Review. He also emphasized that USAF's leaders had pledged to look after ANG's interests no less than those of the active force.

He told reporters earlier in the year: "I have been assured by the Secretary of the Air Force and the Chief of Staff of the Air Force ... that the Air Force will not exclude the Air National Guard from any mission set, nor will we be denied the opportunity to fly and operate any equipment that will be developed and fielded in the Air Force."

Blum also went on record with favorable comments on FTF. "We in the National Guard Bureau ... are in there every day involved in Future Total Force," he said in a July 20 appearance before the House Armed Services Committee. "Twelve adjutants general are making recommendations [as state representatives] ... on Future Total Force and the way ahead."

"It's Not His Lane"

However, Blum contended that the armed services should not cross into sensitive territory by trying to shape Guard missions in anything more than a general way. The NBG chief had a firm response when asked whether he thought the Chief of Staff of the Air Force had the power to dictate missions for specific units.

"It's not his authority," declared Blum. "It's not his responsibility. It's not his lane. It's mine."

When force structure has been placed in the Guard, he said, it is up to the Guard to decide what to do with it. He added, "I have made that very clear."

Blum reported that disagreement over this matter had become a sore point with the Air Guard. "I don't have that issue with the Army," he said. "It is only the Air Force. ... They are starting to discover that the Air National Guard is part of the National Guard. They have viewed it as part of the federal reserve of the Air Force for many years."

With those remarks as a prologue, Blum's declared intent to keep a flying unit in every state began to stand out as a marker—and a possible future source of contention.

Blum went on to say that, from his perspective, the airframes themselves were not the most important considerations. "The flying unit brings with it all of the complementary pieces—engineers, base facility operations, security, communications, command and control, fire fighting, medical facilities, logistics facilities," he said. "The airplane is the least important part for the governor of the state. What is important for the governor of the state is the presence of all of those enablers, all of those combat support specialties that are necessary to sustain and generate that air unit." They would be critical to state missions, homeland security operations, or federal operations.

Complicating everything was the resurgent role of the Air Guard in homeland security missions. Guard air defense fighters were the ones that responded first on 9/11. Now they fly about 90 percent of the air sovereignty missions. They are backed by air refueling units and mobility forces that are critical to emergency response plans of all types.

"We truly do guard America's skies," said Lt. Gen. Daniel James III, head of the Air Guard.

The emergence of this prominent new homeland mission made the governors even more reluctant to surrender any of their Guard capabilities. ANG C-130 transports and other force elements, it should be noted, have been key components in exercises for statewide emergency response.

State governors do have the authority to organize and maintain defense forces, and they hold full rights to use those forces within their state borders "in time of peace," as Title 32 put it. However, efficient homeland missions could require the nation to take another look at how to adapt traditional state militia concepts to 21st century needs.

Some argued that ANG responses

should be organized not by state but by region (as is the case with the Federal Emergency Management Agency). Biological weapon attacks and other nightmare scenarios almost inevitably would demand a rapid, regional, federally organized response that would tap into ANG and active units from multiple locations.

National or State Missions?

Proponents of change made the case that new threats do not always respect state borders. ANG's air sovereignty fighters are performing a national mission, not a state mission, they note, adding that the Guard of tomorrow may be more a resource for one nation than for 54 states and territories.

"Some states are dramatically larger in size than others," said Rep. Victor F. Snyder (D-Ark.), a member of the House Armed Services Committee. "Some states are quite tiny. We have places where we have bases right on a border. ... Certainly, members can join an Air Guard unit and drive from Oklahoma to Fort Smith [in Arkansas] to work with the F-16s."

Snyder added, "It's still not clear to me why [Guard units] have to be sprinkled in every state and territory."

While some Guard backers cited the letter of the law to oppose change, proponents of the Future Total Force concept said they wished to uphold both the letter and spirit of Title 32, which they believe endorses even-handedness between the components "so far as practicable."

Future Total Force concepts appeared to be the main avenue for including the Air Guard in new missions. However, even those units that are open to taking on such missions expressed some concerns about the period of transition. "I can't ask these guys to take a leap of faith," said Blum. "You can't have a unit sitting home, waiting for two, three, seven years, for that new platform to arrive."

Guard officials called for devising some form of "bridge" to get the Guard units past this period. One possibility would be to smooth the way to the future with small new purchases of F-15s and F-16s for some Guard units. "All 54 adjutants general realize that we need to modernize and we need to move ahead," said Lempke, the head of the adjutant generals' group. "The issue is the bridge."

The corporate Air Force has little room to maneuver. USAF already faces major cuts to the F/A-22 and F-35, both vital modernization programs. Given that there is no money to spare, such bridge purchases of legacy aircraft would only compound the problem.

What's more, said USAF officers, the Guard will be moving into new equipment, as the active force will. Plans called for shifting the Virginia ANG's F-16 unit from Richmond to nearby Langley Air Force Base so that it and the 1st Fighter Wing could train pilots and maintainers to operate the F/A-22.

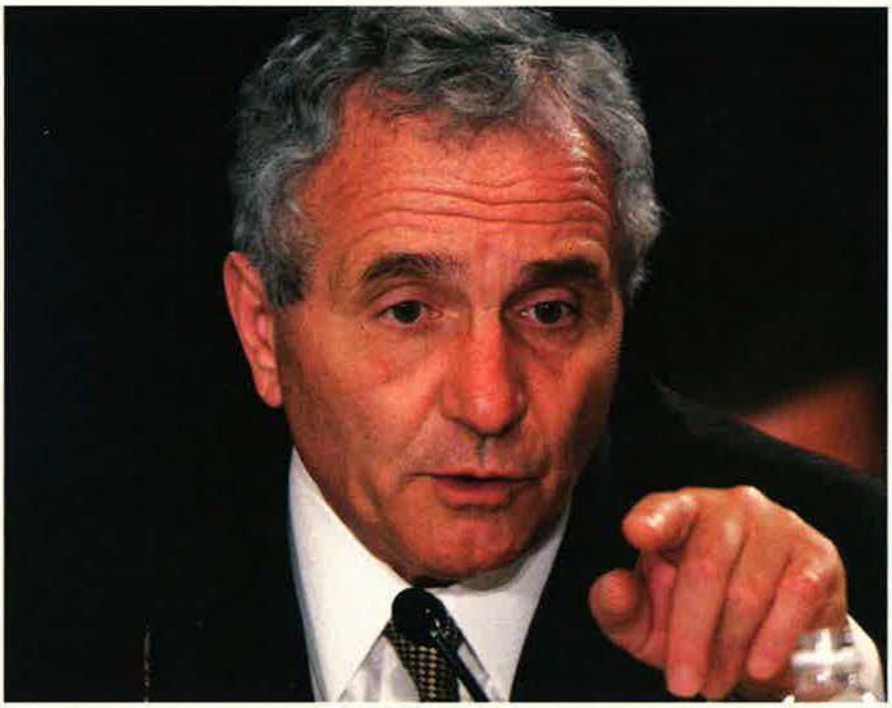
In North Dakota, unmanned aerial systems operations are slated to become a major mission. KC-135s from Grand Forks will move, Fargo F-16s will retire, and Grand Forks will get "a family" of UASes, including Predators and the high-altitude Global Hawks. Predator and Global Hawk conduct split operations. The air vehicles and small launch and recovery contingents deploy overseas, while pilots, sensor operators, and analysts work from a Stateside base via satellite link.

Wood described UAS operations as a "perfect fit for our citizen airmen" not least because the mission calls for about 90 percent of personnel to remain Stateside.

Concrete evidence from domestic and overseas operations suggested to many that the new organizations and missions could give a big boost to the Air Guard. However, it will take committed partnership between the states, the National Guard Bureau, and Air Force headquarters. The lesson of 2005 is that the partnership cannot be taken for granted.

There is disagreement on the depth of Air Force-Air Guard estrangement. Anthony J. Principi, chairman of the BRAC panel, noted at a late August hearing that he saw "a chasm" between the two military organizations. USAF Chief of Staff Gen. John P. Jumper, who was at the hearing, shot back, "We don't consider disagreements out there with a few adjutants general in the states to be a rift between the Air Force and the National Guard."

Virtually everyone agreed it was time for a bit more cooperation. As Wood summed up, "It's a hard process, ... and we need to do it right and so we need to do it together." ■



AP photo by Charles Dharapak

Anthony Principi, BRAC commission chairman (pictured here), worried about "a chasm" between the active force and the Air Guard, but Gen. John Jumper, USAF Chief of Staff, saw problems only with "a few adjutants general in the states."

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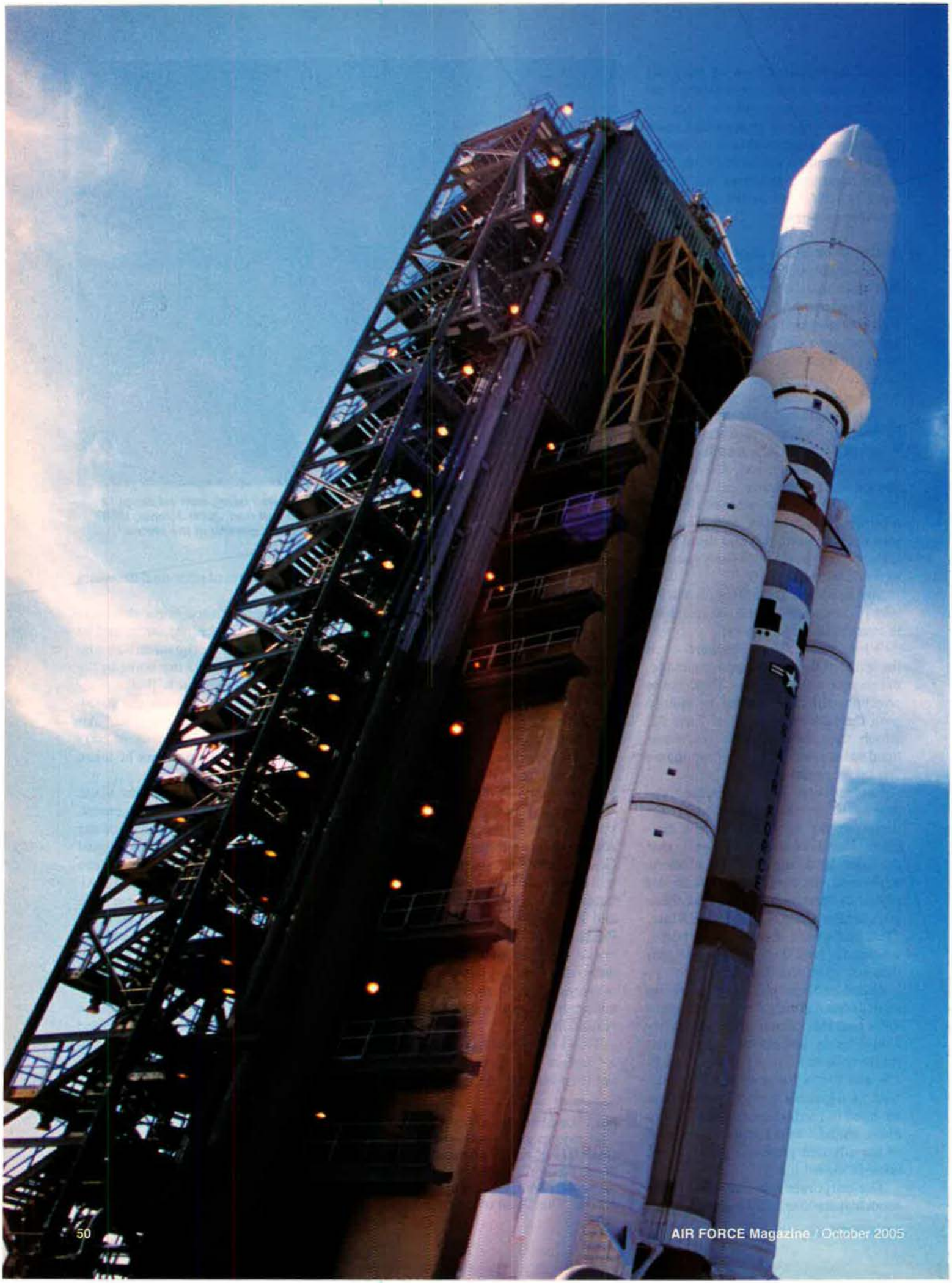
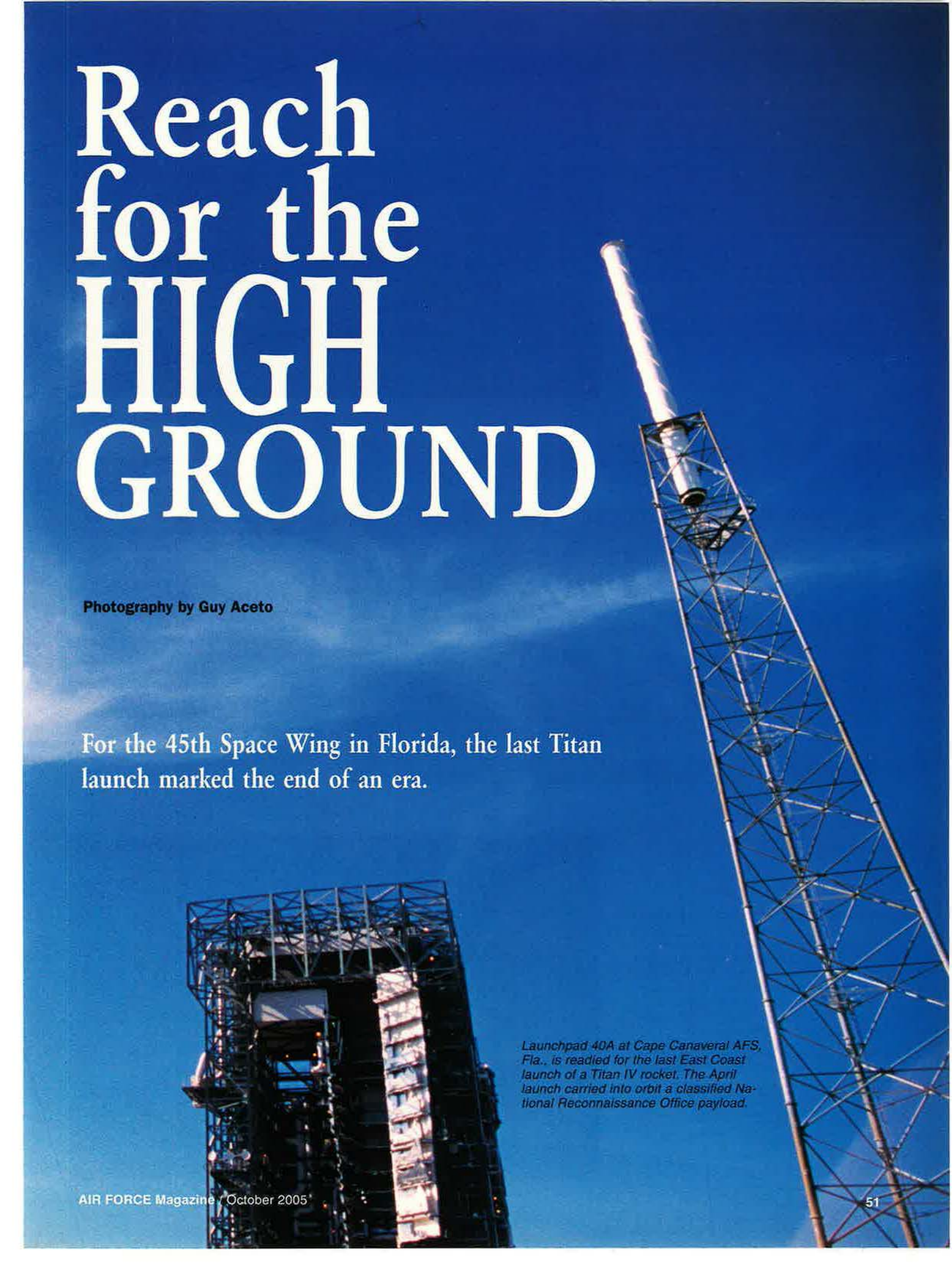


Reach for the HIGH GROUND

Photography by Guy Aceto

For the 45th Space Wing in Florida, the last Titan launch marked the end of an era.



Launchpad 40A at Cape Canaveral AFS, Fla., is readied for the last East Coast launch of a Titan IV rocket. The April launch carried into orbit a classified National Reconnaissance Office payload.

Cape Canaveral is part of what is often called America's "Space Coast," a 72-mile strip of Atlantic beaches halfway between Miami and Jacksonville, Fla. Here is not only NASA's Kennedy Space Center but also two major Air Force space centers. Air Force Space Command's 45th Space Wing operates from Cape Canaveral AFS, Fla., and nearby Patrick AFB, Fla., located just to the south. Wing headquarters is at Patrick, while launch operations take place at the Air Force station. The 45th SW offers support for NASA activities at Kennedy Space Center.

Towering rocket launch gantries (at right) are common features of the landscape at Cape Canaveral.

Photos by Guy Aceto

The cape is the starting point for much of America's space program—NASA's manned space shuttle missions as well as USAF's launches of national security satellites. Space systems sent into orbit from the cape supply military forces with vital communications signals as well as position, targeting, and surveillance data.

It takes months to prepare for a space launch. Workers must first assemble the launcher system in one of two vertical assembly areas pictured at left. It is then transported into place. Moving a fully assembled rocket is no small feat. Special rail lines connect various assembly and launch sites. For April's launch, the giant Titan IV rocket moved over rail lines from the vertical assembly building to Launchpad 40A. That particular pad has been used for Titan launches continuously since June 1965.

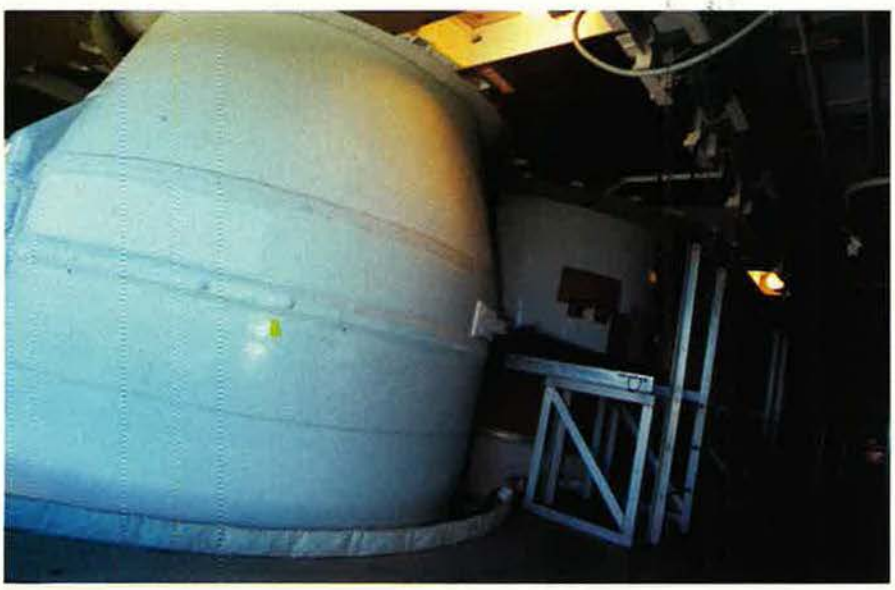
Physical security at Cape Canaveral has always been extraordinarily tight, given the extremely high value of and secrecy surrounding its payloads. Each building is equipped with a set of security notification lights that alert personnel to the security condition at any building. At right is an assembly area's high-security entry gate and its security notification lights.

The fences deter intrusions, using sophisticated motion detectors to alert security personnel when there is unexpected traffic in an area. Special codes are needed to enter each assembly building.

Photos by Guy Aceto

Rail lines (left and below) carry assembled rockets to their protective launch gantries. Each gantry is surrounded by four metal towers (below) that draw lightning strikes away from the assembled rocket. The photo at left was taken from the vantage of a gantry.

Airmen and civilian contractors work side by side. Shown at right (l-r) are SSgt. Toby Farr, Bill Kernan, Denny Ross, and TSgt. Chris Labine.



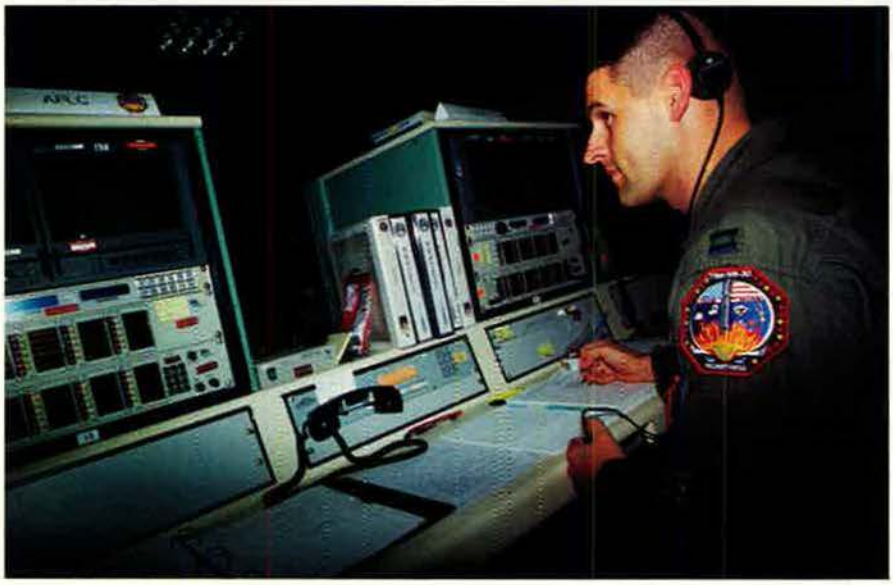
At left is the crucial joint where the Titan's solid rocket motors were mated to the main stages. The solid rocket motors fire first, lifting the rest of the launch vehicle.

Air Force and contractor personnel do their utmost to ensure success. The technicians monitor, check, and recheck the equipment to ensure everything is performing to exacting specifications.

The launch control center, or LCC (pictured at right), serves as a kind of central nervous center for every space launch. Ed McDaniel (l), chief of area safety, discusses the upcoming Titan launch with Capt. Craig Dumas, Air Force launch commander from the 3rd Space Launch Squadron. At right (wearing headset) is Marshall Lynch, a civilian launch contractor.

Sometimes a launch mishap creates a dangerous situation that requires the swift destruction of an in-flight booster. The LCC commander has the unenviable responsibility for destroying a rocket and its payload, some valued in the millions. The rocket can be destroyed by the push of a button from the LCC.

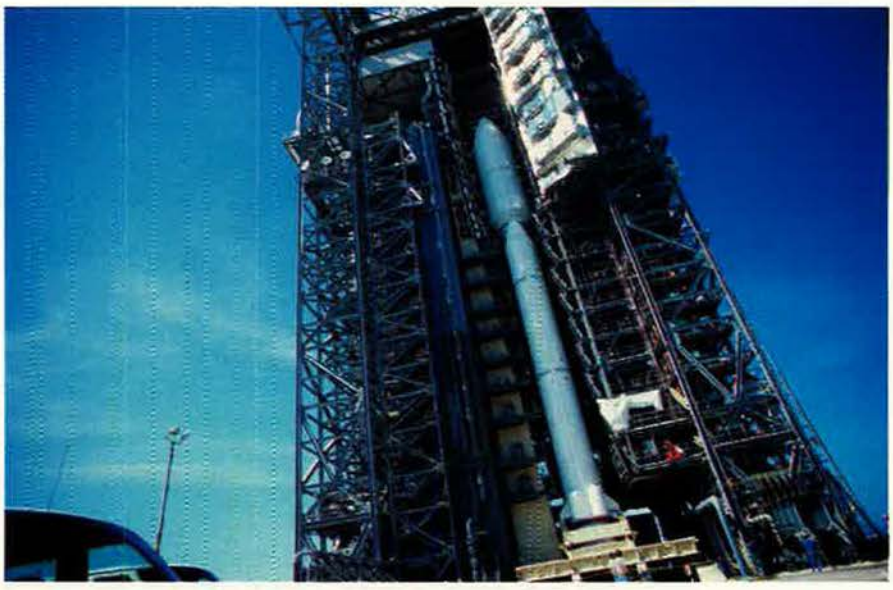
Photos by Guy Aceto



At left, Dumas monitors the proceedings from the launch commander's seat. He wears a mission patch created specially for this launch. The wearing of unique patches for each mission is a tradition at Cape Canaveral.

Most rockets launched from the station carry military and commercial satellites. A few carry scientific satellites and other types of payloads for NASA. Most launches are not classified.

At right, the fully assembled Titan IVB rocket stands upright with its inertial upper stage and NRO payload mounted on top. The rocket is still inside its mobile service tower at pad 40A. Before the launch, workers will slowly pull away the service tower and leave only the umbilical tower.



Photos by Guy Aceto

At top, the mobile service tower has been pulled back, leaving the launch vehicle in full view. Moving the million-pound tower without damaging the rocket requires extreme care. Above, MSgt. Lou Moyer, noncommissioned officer in charge of the 3rd SLS's booster section, observes as the door to the tower is prepared for rollback.

Above, a civilian contractor technician watches the gantry roll back away from the rocket. With missions taking so much time and preparation, the final launch is an event typically attended by the press and many of the workers. Special shirts, such as those seen on the contract workers at left, commemorate the event.

At right, airmen assigned to the wing's range operations control center (ROCC) coordinate all of the range activities needed to support the launch properly. For example, they vigorously monitor the airspace exclusion area along the Florida coast, trying to ensure that it has been cleared of unauthorized aircraft.

Photos by Guy Aceto

Above, 1st Lt. Mike Smith (l), an operator with the 1st Range Operations Squadron, works alongside operations evaluator Capt. Ingrid Kaat from the 45th Operations Group. They are monitoring vast stretches of nearby air and sea.

At left, Smith keeps watch on the range up until the time of the actual launch.

Each launch is a major news event, covered by local and national media. Above, photographers stake out sites with preferred vantage points, while TV trucks (at right) are readied for their transmissions. The press area is three miles from pad 40A.

Photos by Guy Aceto

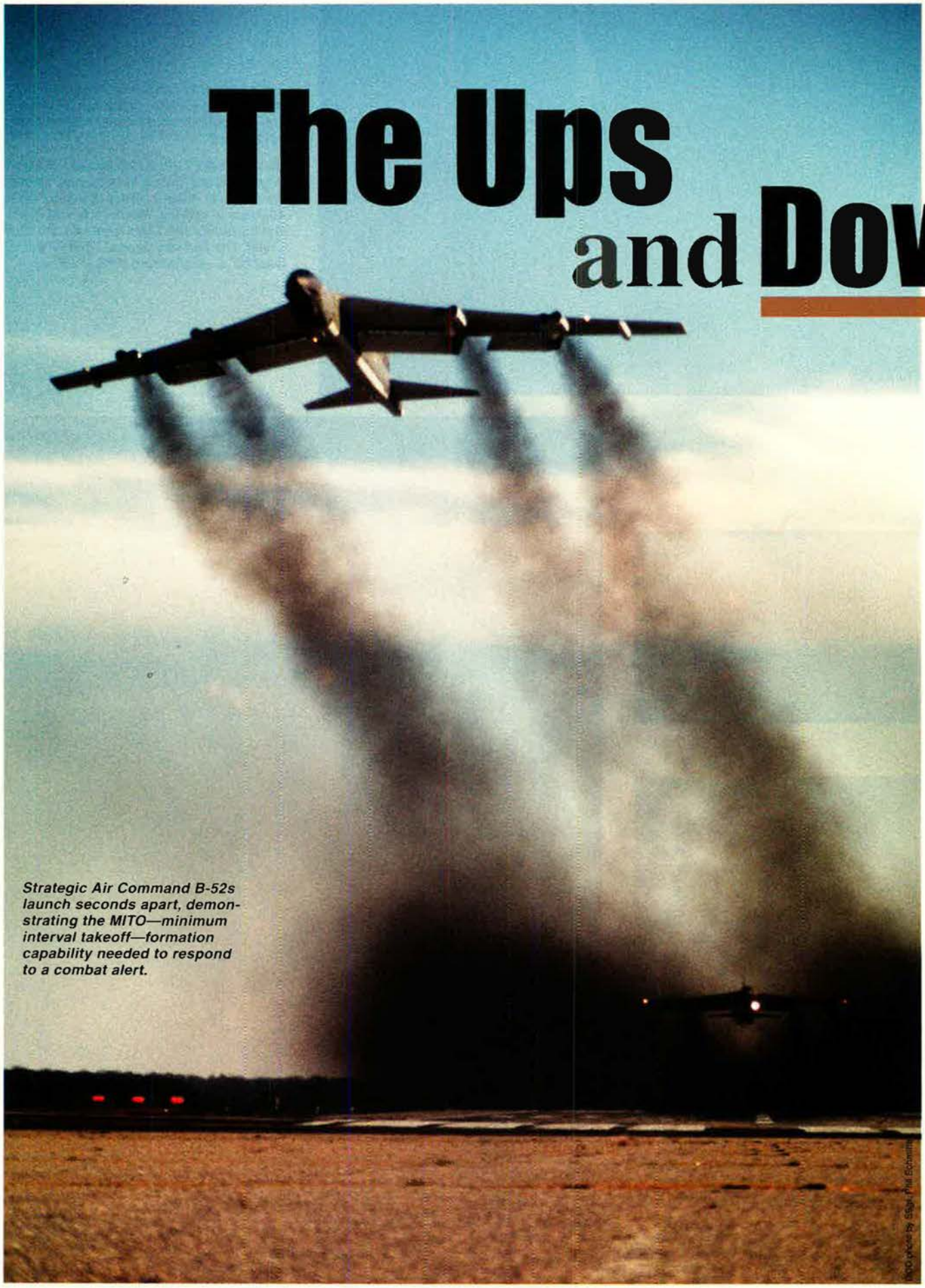
The photo at left shows the enormous rocket, fitted with its inertial upper stage and payload, awaiting its scheduled evening launch.

Below, on April 29, 2005, Mission B30 is a "go," and the Titan's fiery blastoff shakes the earth for miles in every direction. After 40 years in service, this launch was the last hurrah for the Titan series on the East Coast. The last operational Titan IV will blast off at Vandenberg AFB, Calif.

Lockheed Martin photo

Above, top: Seconds after blastoff, the rocket and its payload roar upward, lighting the sky and trailing a plume of smoke. Above, a wall at pad 40A is decorated with "mission markings" for each successful launch from that site. Now, data for B30 can be added. ■

The Ups and Dow



Strategic Air Command B-52s launch seconds apart, demonstrating the MITO—minimum interval takeoff—formation capability needed to respond to a combat alert.

A big issue in the Cold War was whether nuclear weapons should be targeted mainly on the enemy force or on the enemy's cities.

ns of Counterforce

By John T. Correll

The early atomic bombs were crude city-busters. They weighed more than 5,000 pounds each, and, in the years immediately following World War II, the United States had only a few of them. At that point, not much deep thinking had gone into the development of a nuclear strategy.

In the 1950s, the United States adopted a policy of "Massive Retaliation," relying on airpower and the threat of a full nuclear counterattack to deter nuclear aggression by the Soviet Union.

Real options on how to employ nuclear weapons did not emerge until the middle 1950s, when the bombs became smaller and more powerful. By the end of the decade, nuclear warheads were compact enough for delivery not only by bombers but also by fighter aircraft and long-range ballistic missiles.

There were two basic targeting concepts: counterforce and countervalue. Counterforce emphasized strikes on the enemy's military forces, installations, and assets. Countervalue, also called countercity early on, centered on the enemy's economy and population.

Countervalue was easier, cheaper, and could be done with simpler capabilities. It was the forerunner of "Assured Destruction," the balance-of-terror doctrine which held that each side should have just enough nuclear force to destroy the other as a viable society.

The Air Force advocated counterforce. "It makes a great difference whether victory is sought by the depopulation of a nation or by the disarming of a nation," said Gen. Nathan F. Twining, Air Force Chief of Staff, in a February 1954 speech. "We can now aim directly to disarm an enemy rather than to destroy him as was so often necessary in wars of the past."

Nuclear targeting had moved well beyond city-busting. Strategic Air Command's first priority was the enemy's atomic capability. Second priority was counterair strikes to retard the advance of Soviet ground forces. Third priority was destruction of the enemy's "war sustaining resources."

Minimum Deterrence

The Army and the Navy were more inclined toward countercity targeting. When Gen. Maxwell D. Taylor became Army Chief of Staff in 1955, he called for "flexible response," with less emphasis on strategic airpower and more emphasis on conventional ground forces.

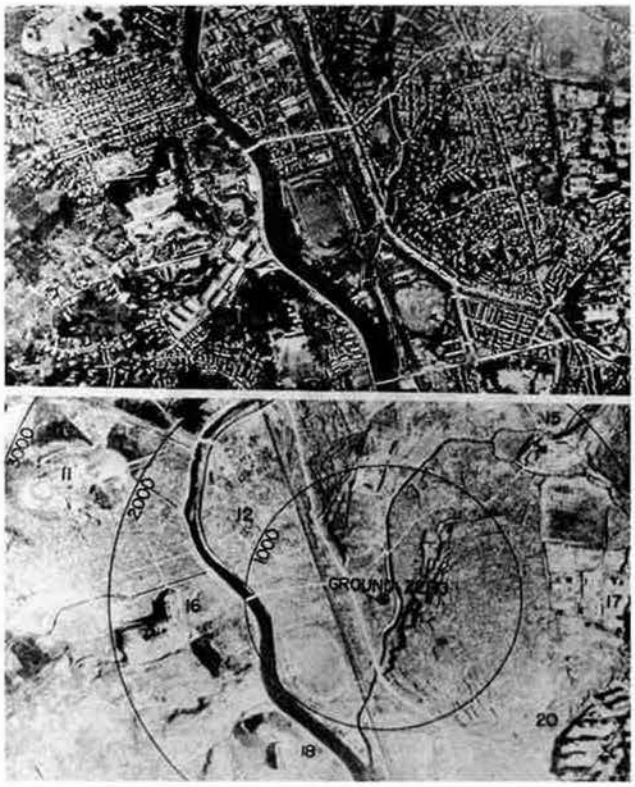
Taylor was unable to sell his program. Disgruntled, he retired and wrote a book, *The Uncertain Trumpet*. It was laden with complaints about the Air Force and about the Army's reduced share of the defense budget.

In one astounding passage, Taylor said with disdain, "The Air Force sees our principal danger in the growing strategic air and missile forces of the Soviet Union."

Taylor said the requirement for strategic retaliatory force could be met by "a few hundred reliable and accurate missiles, supplemented by a decreasing number of bombers."

The Navy, whose strategic role and budget share had been diminished by the rise of the Air Force, also advocated a strategy of a minimum force for deterrence. In 1959, the Navy tried to seize the strategic nuclear mission, arguing that the retaliatory power to destroy 100 to 200 Soviet population centers was enough and that 45 Polaris

AP photo



These photos show the city of Nagasaki, Japan, before (top) and after (bottom) the atomic bomb attack that helped end World War II. This bomb and the few developed immediately after the war were crude city-busters.

submarines would "come close" to the total deterrent force required.

The Navy proposal appealed to the economizers, but was judged too risky. In 1960, the Joint Strategic Target Planning Staff was created to control the targeting of both Air Force and Navy strategic weapons. The JSTPS director was the commander in chief of Strategic Air Command.

"Counterforce/No Cities"

President Kennedy rejected the Single Integrated Operational Plan—the nuclear war plan for strategic forces—in effect when he took office. It called for firing nuclear weapons in a single flush in the event of a Soviet attack.

"Our strength may be tested at many levels," Kennedy said in his 1962 State of the Union address. "We intend to have at all times the capacity to resist non-nuclear or limited attacks—as a complement to our nuclear capacity, not as a substitute. We have rejected any all-or-nothing posture which would leave no choice but inglorious retreat or unlimited retaliation."

Kennedy's Secretary of Defense, Robert S. McNamara, was likewise repelled by the SIOP, which he regarded as "spasm war." He had recently gotten a detailed presentation on "Counterforce/No Cities," and he made that the official targeting doctrine in February 1961. (McNamara did not like the term "counterforce," and he eventually banned it from use in the Pentagon.)

He did not say much in public about Counterforce/No Cities but a revision to the SIOP in April 1962 allowed for more flexibility and emphasized counterforce targets.

McNamara announced the change to NATO leaders in May 1962. The Europeans, especially the French, did not like the departure from Massive Retaliation. They wanted a full response by the US nuclear deterrent linked automatically to an attack on Europe.

A month later, McNamara was the commencement speaker at the University of Michigan. He gave the same speech he had given to the NATO ministers, minus the classified targeting data.

"The US has come to the conclusion that to the extent feasible, basic military strategy in a general nuclear war should be approached in much the same way that more conventional military operations have been regarded in the past," McNamara said. "That is to say, principal military objectives, in the event of a nuclear war stemming from a major attack on the alliance, should be the destruction of the enemy's forces, not of his civilian population."

SIOP-63, adopted in the fall of 1962, incorporated that view. Most of the US nuclear weapons were targeted on Soviet forces. Only 18 percent were targeted on cities and industry.

McNamara's Switch

For reasons that are not altogether

AP photo/John F. Kennedy Library and Museum

Defense Secretary Robert McNamara (left) meets with President John Kennedy and Gen. Maxwell Taylor, who had been recalled by Kennedy to active duty as Chairman of the Joint Chiefs of Staff. McNamara shifted strategy toward "counterforce," wanting more options short of "spasm war." European allies were not happy with the departure from massive retaliation. McNamara himself soon repented and switched his support back to city busting.

clear, McNamara began to repent of his conversion to counterforce. For one thing, the services—especially the Air Force—could use it to justify budget increases. He was also persuaded by the argument that nuclear war was best prevented by the sheer horror of an all-out exchange.

In December 1963, McNamara switched his support to Assured Destruction, although the change was not announced until February 1965.

Assured Destruction was a reflexive revenge doctrine. After absorbing a nuclear strike, the United States would retain enough retaliatory power to destroy the aggressor. The target was the enemy population. The logic of Assured Destruction was that it must be suicidal for both sides, leaving no motive for the aggressor to attack in the first place.

It would have been a return to "spasm war" except for one thing: McNamara neglected to change SIOP-63. Assured Destruction never went into actual effect. Nevertheless, McNamara's espousal of Assured Destruction established a rallying point for those who wanted to limit US strategic forces.

McNamara and his aides set about the grisly task of setting a standard for Assured Destruction. How much devastation would a US counterattack have to inflict in order to deter the initial Russian attack?

"After careful study and debate," said McNamara aides Alain C. Enthoven and K. Wayne Smith, "it was McNamara's judgment, accepted by Presidents Kennedy and Johnson, and not disputed by the Congress, that the ability to destroy in retaliation 20 to 25 percent of the Soviet population and 50 percent of its industrial capacity was sufficient."

With the passage of time, McNamara's commitment to Assured Destruction intensified. "It is important to understand that Assured Destruction is the very essence of the whole deterrence concept," he said in a speech in September 1967. "Our alert forces alone carry more than 2,200 weapons, each averaging more than the explosive equivalent of one megaton of TNT. Four hundred of these delivered on the Soviet Union would be sufficient to destroy over one-third of her population and one-half of her industry."

McNamara critic Donald G. Brennan of the Hudson Institute stuck the prefix "Mutual" onto Assured Destruction, making it Mutual Assured Destruction and creating the famous acronym, MAD.

AP photo

The 1965 Moscow parade commemorating the 20th anniversary of VE Day featured this display of a Soviet ICBM. While America debated counterforce, the Soviets pressed their efforts to achieve strategic superiority.

MAD was supposed to be a pejorative term, but McNamara came to accept it and sometimes used it himself. "It's not mad!" he said in an interview with CNN in 1997. "Mutual Assured Destruction is the foundation of deterrence."

Retreat From Superiority

The United States prevailed in the Cuban Missile Crisis in 1962 because it had clear-cut strategic nuclear superiority over the Soviet Union. The two nations learned different lessons from the experience and moved in opposite directions.

The Soviet Union worked to close the strategic nuclear gap, gain superiority, and never again be caught behind.

The United States turned its back on strategic superiority. It canceled weapons programs, imposed a ceiling on its missile and bomber forces, and aimed for strategic parity with the Soviet Union.

Minuteman ICBM production was cut from 2,000 missiles to 1,600, then to 1,000. The United States capped its ICBM force at 1,054. The B-70 bomber was downgraded to R&D status, then killed. The Skybolt missile for the B-52 was canceled. The Advanced Manned Strategic Aircraft (later revived as the B-1 bomber) was sidelined.

In Moscow, the outlook was different. The Soviets achieved parity in strategic missiles in 1969, but their objective was not parity. When they pulled even in ICBMs, they kept on building, both in numbers and quality.

The huge SS-9 ICBM showed up in a parade in Moscow in 1964. It was subsequently flown with three multiple independently targetable re-entry vehicles (MIRVs). While politicians in the United States argued in the 1970s about whether to make Minuteman more accurate, the Soviets introduced four new ICBMs.

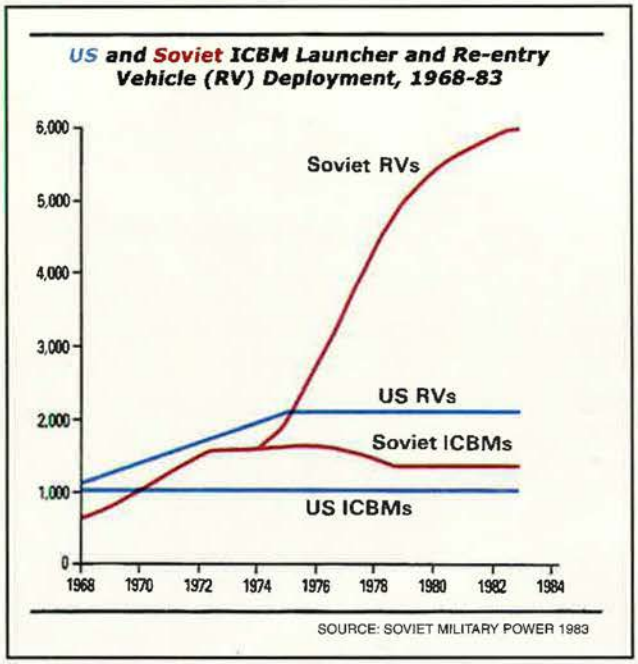
There was strong opposition to improving the US strategic force. A sense of Congress resolution, sponsored by Sen. Edward W. Brooke III (R-Mass.), said that "neither the Soviet Union or the United States should seek unilateral advantage by developing counterforce weapons which might be construed as having a first strike potential."

The Soviet Union, which was the only side then building a counterforce capability, paid no attention to Brooke's resolution.

Paul C. Warnke, a longtime Washington liberal, said, "The fine tuning of our nuclear weapons and delivery systems could create fears of counterforce attack on the other side and hence be destabilizing."

Assessing Soviet Intentions

McNamara had opined in 1965 that



By 1970, the USSR caught up with and passed the US in number of ICBMs. After launcher totals were capped by SALT I, the Soviets turned to increasing the number of re-entry vehicles to expand their advantage.

"there is no indication that the Soviets are seeking to develop a nuclear force as large as ours." The Central Intelligence Agency said, "We do not believe that the USSR aims at matching the US in numbers of intercontinental delivery vehicles. Recognition that the US would detect and match or overmatch such an effort, together with economic constraints, appears to have ruled out this option."

The CIA forecast that the Soviet Union would have no more than 400 to 700 operational ICBMs by 1970. (In fact, the Soviets had 1,440 ICBMs by 1970.) The CIA noted that Air Force Intelligence disagreed with both the evaluation of Soviet objectives and the projected number of Soviet ICBMs.

The Air Force's belief that the CIA understated the Soviet threat was a sticky point. In 1964, CIA Director John A. McCone sent McNamara a classified CIA report on Air Force dissent.

"The Air Force has consistently taken the position of crediting the Soviets with a greater current and prospective capability than the other members of the Intelligence Community," McCone said, asking McNamara "to handle this communication on a very personal basis."

Disagreement between the Air Force and the CIA persisted.

By the early 1970s, the Russian ICBMs were of growing concern to the United States. Secretary of Defense James R. Schlesinger said in 1974 that the combination of increased throw weight, increased accuracy, and MIRVs on the new Soviet missiles was leading to "a major one-sided counterforce capability against the United States ICBM force."

The Air Force was not alone in distrusting the CIA estimates. Both Schlesinger and President Richard Nixon "felt that the CIA's analysts reflected the bias of the liberal intellectual and academic communities at large," Pulitzer Prize-winning author Thomas Powers said in his biography of CIA Director Richard Helms.

The issue flared up again in 1975, when the National Intelligence Estimate said SS-18s and SS-19s, the most accurate of the Soviet ICBMs, were not accurate enough to threaten the US Minuteman.

Team B

In 1976, CIA Director George H.W. Bush appointed "Team B," a panel of outsiders, to give an independent assessment on whether Soviet strategic objectives were more ambitious and more threatening than depicted in the National Intelligence Estimate.

Team B reported that the CIA estimates tended "to play down the Soviet commitment to a war-winning capability" and "minimize the Soviet strategic buildup because of its implications for detente, SALT negotiations, and Congressional sentiments as well as for certain US forces." Especially noteworthy, Team B said, was "the continued absence of recognition of Soviet strategic counterforce emphasis and aspirations" in the National Intelligence Estimates.

The Team B report set off a great uproar from liberal commentators, who said that Team B was wrong and that it was all a right-wing trick to undercut detente.

The minimizers hoped that their views about Soviet military power would pre-

AP photo by Jim Palmer

Soviet leader Leonid Brezhnev and President Richard Nixon share a light moment during the detente years. The Soviets had surpassed the American nuclear arsenal. Nixon's response was "strategic sufficiency."

vail after the election of Jimmy Carter, but that did not happen. An article in *The New York Review of Books* bemoaned "the Carter Administration's surrender to the notion of the vulnerability of its land-based missiles."

Indeed. The best defense thinker the Democrats had was Carter's Secretary of Defense, Harold Brown, and some of his positions sounded a lot like Team B.

"The Soviet Union's approach to war is different from that of the US," Brown said in 1979. "They desire and are seeking capabilities which would enable them to fight, win, and survive a nuclear exchange."

Detente

Ironically, it was Nixon, the arch foe of communism, who established detente—the relaxation of tension—with the Soviet Union.

When Nixon began his term in 1969, US strategic superiority was already gone. Always a realist, Nixon tailored his foreign and defense policies to the situation. During his first months in office, he adopted the planning principle of "Strategic Sufficiency" instead of trying to restore strategic superiority.

In 1974, Strategic Sufficiency was refined by Schlesinger into a more precise concept called "Essential Equivalence." Schlesinger said, "There must be essential equivalence between the strategic forces of the United States and the USSR—an equivalence perceived not only by ourselves, but by the Soviet Union and Third World audiences as well."

Schlesinger's successors, Donald H. Rumsfeld and Harold Brown, followed the same basic approach.

In the Ford Administration, Rumsfeld—in his first tour as Secretary of Defense—recast the concept slightly, calling it "Rough Equivalence."

Brown returned to the formulation of Essential Equivalence. It required, Brown said, that "our overall forces be at least on a par with those of the Soviet Union and also that they be recognized to be essentially equivalent."

The biggest innovation affecting the strategic balance came from a new direction: arms control. In 1972, Nixon and Soviet leader Leonid Brezhnev signed two agreements. The SALT I treaty froze the number of strategic nuclear missiles at existing levels for five years, and the ABM treaty limited each side to two antiballistic missile sites.

AP photo by Dennis Cook

President Reagan discarded detente and launched an aggressive program to match Soviet strength. Coupled with his Strategic Defense Initiative, the program convinced Moscow that the US was moving toward a first-strike capability.

The ABM Treaty was a big trophy for the factions in Congress and the news media that opposed counterforce. They had waged an intensive campaign on behalf of the treaty. Ballistic missile defense went against the precepts of Mutual Assured Destruction. The devastation had to be mutual and assured. Anything else was destabilizing and stimulated the arms race.

Nuclear Options and Strategies

In 1970, Nixon described the inflexibility of options for response to a nuclear attack. He sounded much like Kennedy had in 1962.

"Should a President, in the event of nuclear attack, be left with the single option of ordering the mass destruction of enemy civilians, in the face of the certainty that it would be followed by the mass slaughter of Americans?" Nixon asked. "Should the concept of assured destruction be narrowly defined and should it be the only measure of the variety of threats we may face?"

Assured Destruction had taken its toll on the planning process. Failure to improve the accuracy of US missiles had reduced their effectiveness against Soviet military targets, which were now hardened and more numerous.

The "Limited Nuclear Options" strategy adopted in 1974 included an explicit return to counterforce. It provided for "selected nuclear operations to seek early war termination ... at the lowest level of conflict possible" if deterrence failed.

"We face a wide range of possible actions involving nuclear weapons, and no single response is appropriate to them all," Schlesinger said. "To threaten to blow up all of an opponent's cities, short of an attack on our cities, is hardly an acceptable strategy, and in most circumstances the credibility of the threat would be close to zero, especially against a nation which could retaliate against our cities in kind."

The Carter Administration established the "Countervailing Strategy" in July 1980. Brown chose his words carefully, acknowledging Assured Destruction without being hemmed in by it.

"What has come to be known as Assured Destruction is the bedrock of nuclear deterrence, and we will retain such a capacity in the future," Brown said. However, it was also necessary to "have plans for attacks which pose a more credible threat than an all-out attack on Soviet industry and cities. These plans should include options to attack the targets that comprise the Soviet military force structure and political power structure and to hold back a significant reserve."

Brown later said, "The countervailing strategy is less of a departure from previous doctrine than is often claimed."

The Strategic Triad

President Ronald Reagan appointed a bipartisan commission, headed by Brent Scowcroft, national security advisor in the Ford Administration,

to examine strategic force requirements.

The Soviets "probably possess the necessary combination of ICBM numbers, reliability, accuracy, and warhead yield to destroy almost all of the 1,047 US ICBM silos, using only a portion of their own ICBM force," the Scowcroft Commission reported in 1983.

"The US ICBM force now deployed cannot inflict similar damage, even using the entire force. Only the 550 MIRVed Minuteman III missiles in the US ICBM force have relatively good accuracy, but the combination of accuracy and yield of their three warheads is inadequate to put at serious risk more than a small share of the many hardened targets in the Soviet Union. Most Soviet hardened targets—of which ICBM silos are only a portion—could withstand attacks by our other strategic missiles."

The Soviets did not have a clear shot at the US strategic force. Each leg of the strategic triad—bombers, ICBMs, and submarine-launched ballistic missiles—had particular strengths and weaknesses. This diversity made it difficult for an enemy to simultaneously attack or defend against all three legs.

Still, land-based missiles were vulnerable. To strengthen its ICBM force, the United States planned to deploy the MX missile—subsequently called Peacekeeper—supplemented by a small, road-mobile missile dubbed "Midgetman."

Plans for the MX basing mode moved from Multiple Protective Shelters ("the shell game") to Closely Spaced Basing ("dense pack"), to deployment in existing Minuteman silos—as an interim step on the way toward Rail Garrison basing (on warning, the missiles would move out of their garrisons onto the railroads).

The Cold War ended before Rail Garrison was established. The end of the Cold War also overtook Midgetman, the small road-mobile ICBM with a single warhead.

The counterforce features of the MX Peacekeeper drew fierce attacks from the strategic minimizers.

"President Reagan's decision on the MX missile signals that the United States is now firmly and publicly embarked on a first-strike nuclear policy," complained Herbert Scoville Jr., president of the Arms Control Association and formerly assistant director of the Arms Control and Disarmament Agency and deputy director at the CIA.

The counterforce capability for MX was supposedly dangerous and objectionable, whereas the Russian missile counterforce was nothing to get excited about.

Ash Heap of History

Reagan revoked the policy of detente and threw out strategic parity as an objective. He did not believe the Cold War should be—or had to be—strung out in a permanent balance of terror.

Reagan requested and got a large increase to the defense budget. He described the Soviet Union as an "evil empire" and said that Marxism-Leninism was headed for the "ash heap of history."

Reagan also launched the Strategic Defense Initiative, an R&D program for defense against ballistic missile attack. There was widespread doubt, in the defense community and elsewhere, that SDI would work.

The Soviets took SDI seriously. Marshal Sergei Akhromeyev, former chief of the General Staff, said in 1990 the Russians did not expect SDI to create a perfect shield against ICBM attack, but they did believe it was a broad technology offensive meant to overcome the Soviet Union militarily and ruin it financially.

The Soviet Union was tottering in the 1980s, but the Soviet strategic buildup continued. The heavy SS-18 was the key weapon in the fleet, but in 1985, the Russians introduced two mobile missiles, the SS-24 and the SS-25. The expectation was that within a few years, half the Soviet ICBM force would consist of mobile missiles.

For the United States, Peacekeeper achieved initial operational capability in 1986, and the effectiveness of Minuteman and the bomber force against hardened military targets was increased.

Neither side completed its strategic modernization program. The Soviet Union collapsed in 1991 and the Cold War was over.

After the Cold War

Arms control negotiations continued. The START II treaty in 1993 directed the phased elimination of the US Peacekeeper and the Russian SS-18 and SS-24, though the treaty never entered into force.

At a summit meeting in 2002, the United States and Russia agreed that each side would cut its nuclear stockpile to 2,200 or fewer deployed warheads by 2012.

So far, the Russians have eliminated more than half of the ICBMs they inherited from the Soviet Union. Their long-range plan is to field an ICBM force consisting completely of SS-27 Topol Ms. The last of the Peacekeepers was withdrawn last month and the US ICBM fleet now consists of 500 Minuteman IIIs.

The United States has been careful to preserve a capability to attack and destroy hardened military targets. Writing for the Arms Control Association, Janne Nolan said that "prompt counterforce remains the sacrosanct principle of American nuclear strategy."

In *Foreign Policy* earlier this year, McNamara denounced US nuclear weapons policy as "immoral, illegal, militarily unnecessary, and dreadfully dangerous."

"For decades, US nuclear forces have been sufficiently strong to absorb a first strike and then inflict 'unacceptable' damage on an opponent," McNamara said. "This has been and (so long as we face a nuclear-armed, potential adversary) must continue to be the foundation of our nuclear deterrent."

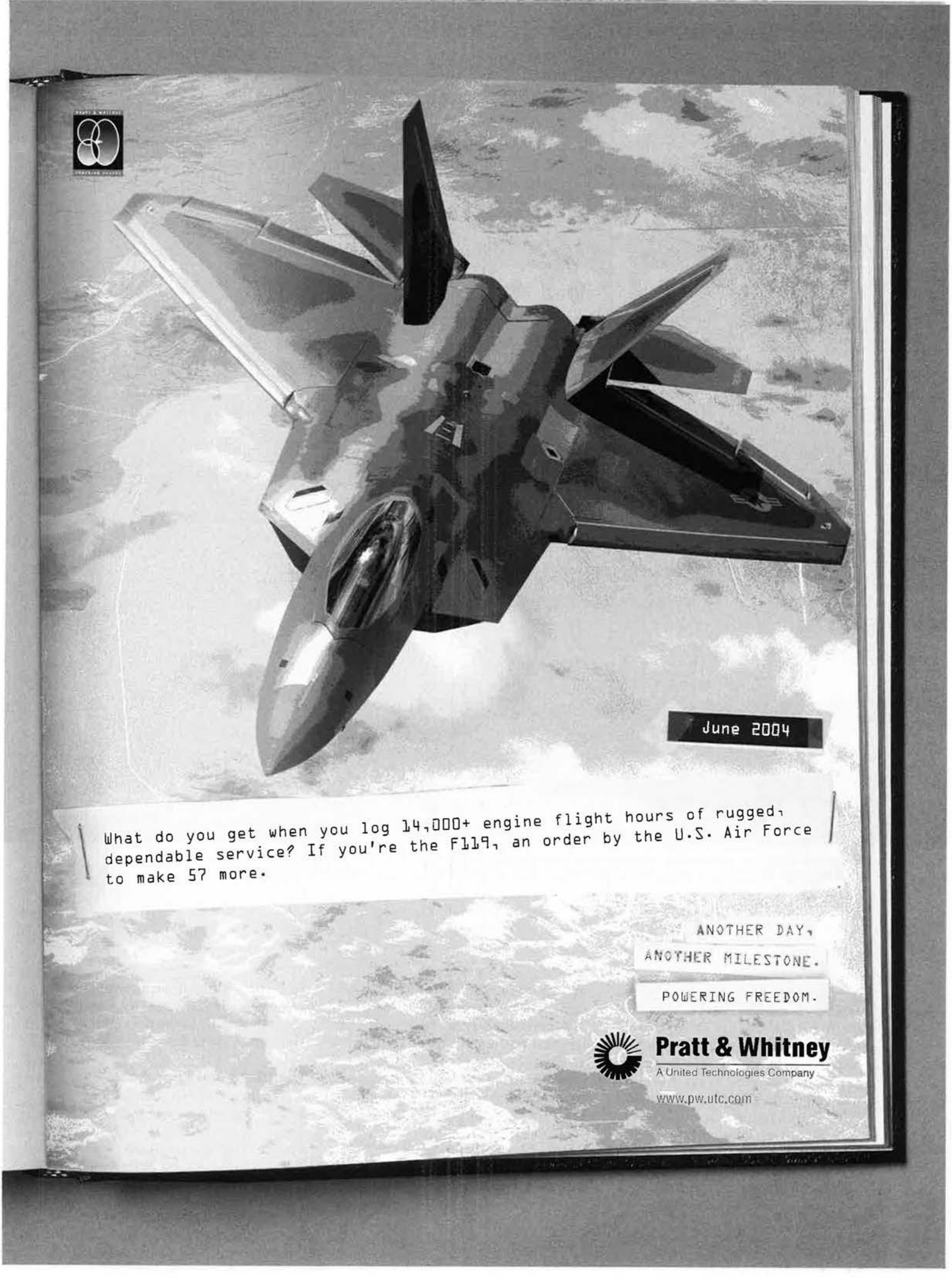
McNamara's recollections and opinions aside, the US has not depended on that kind of strategy for a long time.

No one knows where or when the next strategic nuclear challenge might arise, but the current nuclear triad of bombers (including stealthy B-2s), improved Minuteman IIIs, and modern SLBMs is an effective deterrent against nuclear threats—and it offers flexibility and options in time of crisis.

That, not assured destruction of the enemy's cities, has been and still is the objective of US nuclear strategy. ■

See the Air Force Association study "The Air Force and the Cold War," from which this article is adapted, at www.afa.org.

John T. Correll was editor in chief of Air Force *Magazine for 18 years and is now a contributing editor. His most recent article, "The Air Force and the Cold War: A Chronology, 1945-91," appeared in the September issue.*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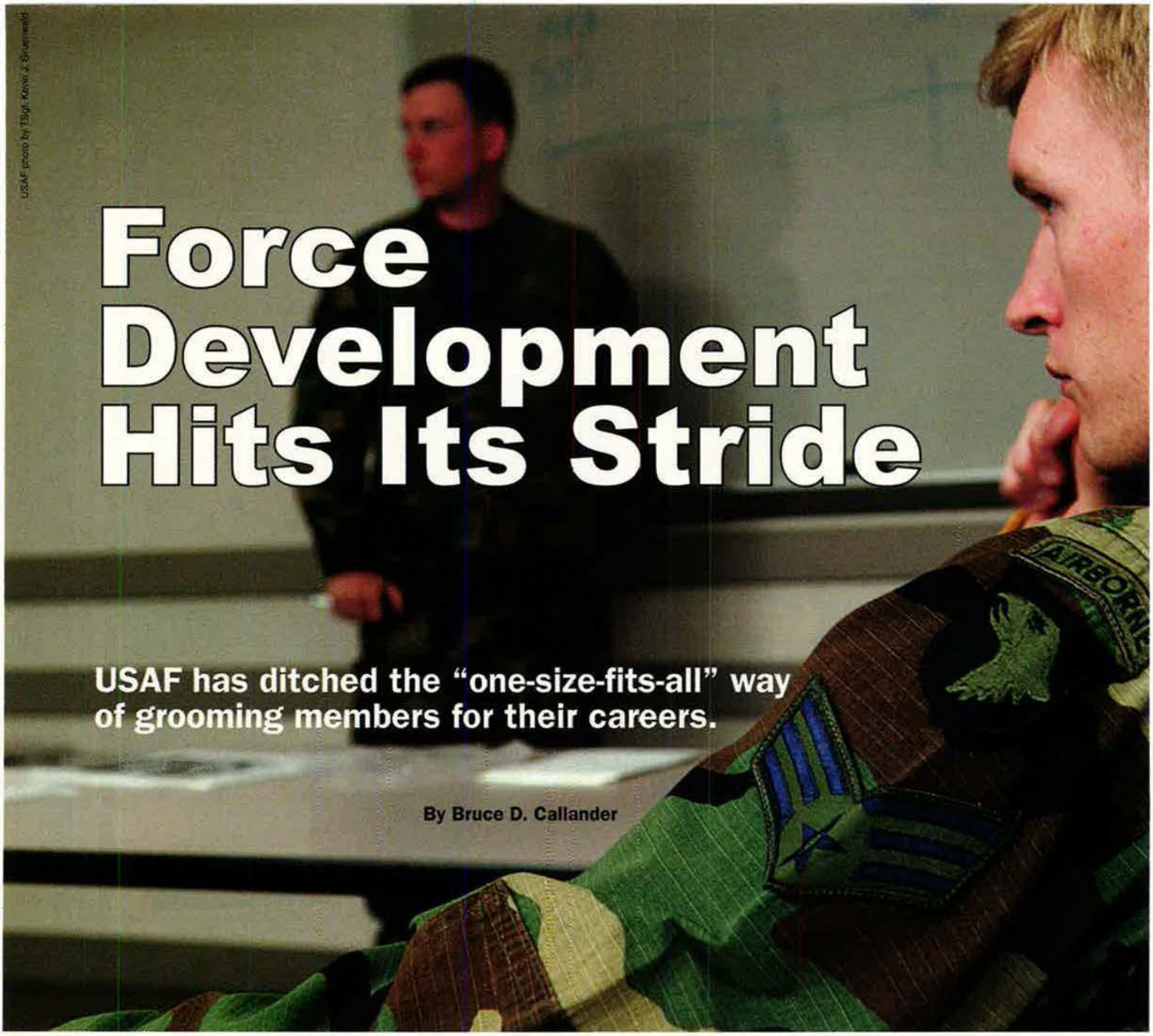


USAF photo by TSgt. Kevin J. Gruenwald

Force Development Hits Its Stride

USAF has ditched the "one-size-fits-all" way of grooming members for their careers.

By Bruce D. Callander

Airmen will advance deliberately through basic skills to leadership roles. SrA. Jeremy Bowling (foreground) and SSgt. Troy Carle learn about artillery operations as battlefield airmen supporting Army units.

Some three years have passed since the Air Force launched the initiative it called Force Development. Service leaders had been concerned about how well USAF was preparing members for careers. Force Development entailed a sweeping overhaul of USAF's personnel system, the goal being to tie training and education more closely to an airman's career development and to tailor assignments to the same end.

What's happened since then? How has the initiative affected the preparation and competence of the force?

A close look at developments over the past three years points toward a general conclusion: The career prospects for some officers have changed considerably. Similar changes are in store for enlisted airmen and civilian personnel.

The effort, backed by the top Air Force leadership, has sharply challenged the way the service has managed members in the past. Officials are now searching for alternative measures that would put the right people in the right jobs at the right time—with the right skills.

Nontraditional Approach

That may not always mean filling slots from traditional sources, declared Lt. Gen. Roger A. Brady, USAF's deputy chief of staff for personnel, during an address to the Air Force Association's 2004 Air and Space Conference. Brady,

noting that the program had been under way for about two years, said the Air Force should be asking if a given job, traditionally done by an officer, can be done just as well, or better, by a noncommissioned officer, civilian, or another member of the Total Force.

A number of changes have already been made, and others are well under way. Among them:

- For officers, where the Air Force is concentrating its main attention at the moment, there now are 28 development teams that meet two or three times a year. Their goal is to develop career paths or "vectors" for USAF officers, selecting them for courses that will advance their careers. The teams also help pick individuals for command opportunities.
- The Senior Leader Management Office (SLMO) is looking for jobs that can be occupied by either a general officer or a senior civilian employee. The office came into being in 2001 at the time of the merger of the General Officer Matters Office and the Senior Executive Management Office. USAF is developing career management teams for civilians similar to those for officers. Management and development of chief master sergeants has also been turned over to the SLMO.
- The service has set up a new advanced course for the airmen chosen for chief master sergeant. Some chiefs are being sent to courses previously attended only by top civilians, generals, and selected colonels.
- When it comes to education, the service has broadened the traditional professional military education (PME) approach to include a variety of other training possibilities, including the offer of advanced degree work for members on specific career paths.
- In the Air National Guard and the Air Force Reserve components, development is not as far along, but USAF officials say senior Guard and Reserve leaders have embraced the concept and are adapting it to their unique circumstances.
- In ways large and small, the service is encouraging members to seek broader skills. For example, USAF is combining leadership of manpower and personnel. As a result, it will expect its manpower and personnel specialists to widen their expertise. In other cases, members will be urged to take on secondary skills and acquire greater breadth to enhance their careers.

The Force Development idea, announced in November 2002, stemmed from mounting frustration that the service did not have a systematic way of developing leaders and often was left filling top posts with individuals who were the "most available" and not necessarily the "most qualified."

More Than One Size

The problem was that the Air Force had developed a "one-size-fits-all" approach to manning. Officers were sent through courses and assignments that did more to enhance their resumes than to meet the service's future leadership needs. Enlisted members were pushed through career steps with little attention to their actual development, and the most senior NCOs often were stuck in jobs that did not require the expertise they had acquired.

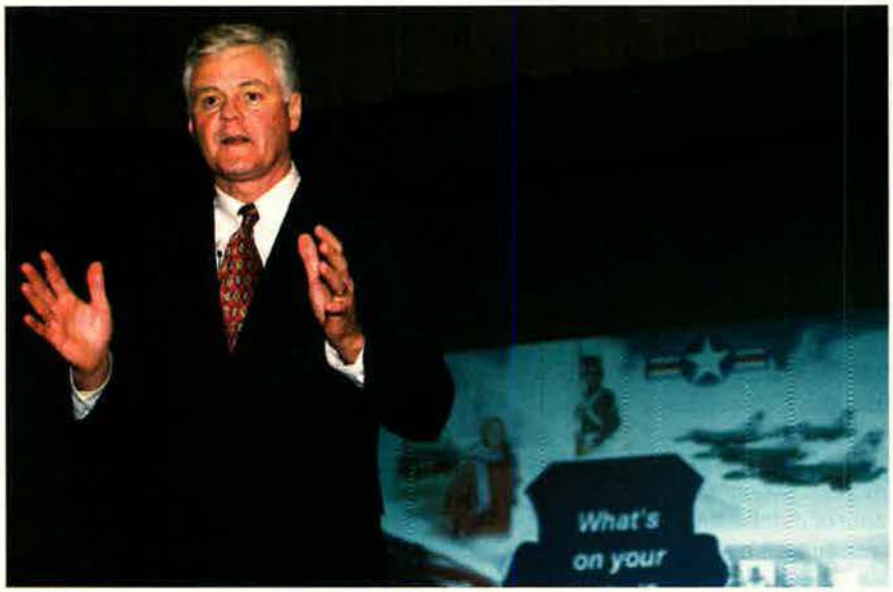
Development of civilian employees had been largely "ad hoc," officials say—unplanned and aimed more at filling immediate vacancies than at preparing people for future leadership.

The philosophy behind the new development approach is that members should follow standardized career patterns only up to a point, and then they should be groomed deliberately for leadership and supervisory positions.

Whatever career path a member may take, Force Development provides three levels of advancement:

- Tactical. At the tactical level, members master their primary duty skills, develop experience in applying those skills, and begin to acquire knowledge of the service. Tactical level performance is seen in flying an aircraft, guarding a perimeter, loading a pallet, identifying a hostile radar return, treating a broken arm, and other activities accomplished by both military and civilian personnel.
- Operational. At the operational level, members must understand the broader Air Force perspective and the integration of diverse individuals and skills to execute operations. This is where members make a transition from being pure specialists to understanding Air Force integration. Assignment to command a squadron or to head a branch or similar positions of authority occur during this phase. It is here too that warfighting is executed and the day-to-day command and control of Air Force operations are carried out.
- Strategic. At the strategic level, Air Force members combine a number of highly developed occupational competencies to produce broad professional leadership. They understand how USAF operates within joint, multinational, and interagency systems. This level focuses on effects across an Air Force major command, a theater, the entire Air Force, or the Department of Defense. Individuals at this level have the ability to influence the Air Force's role in military operations.

"The tactical level is going to be the first few years of assignment because it's going to be where the individual is serving as an expert in his career field,



USAF photo by SSgt Dawn M. Bolen

Roger Blanchard, USAF's No. 2 personnel official, says a key strength of force development is its inclusion of career field functional managers in the assessment of individuals within that field.

usually at the squadron level or below," said Air Force personnel official John Park. "The operational level is going to be about the [Majcom] level, and the strategic level is as they get into [the air staff] and out into the joint environment."

Focus on Field Grade

At the moment, the development program is focusing mainly on field grade officers, Park said, but the effort will work down to the tactical level. Every officer will perform at the tactical level, said Park, so "there is less need for us to review them individually as we do the field grade officers."

Senior officers will get more intense scrutiny. The Force Development teams that evaluate their potential will have much to do with their careers.

Roger M. Blanchard, USAF's assistant deputy chief of staff for personnel, said the teams are made up of functional managers from the occupations the officers work in. They are aided by personnel advisors and personnel analysis. "One of the strengths of the Force Development concept [is] that it has heavily involved functional and line managers in the assessment and evaluation of people within that occupation," said Blanchard.

There will be a series of deliberate and rewarding challenges in education, training, and experience. Force Development is designed to provide the individual—and the Air Force—with the capabilities to foster leadership.

Senior members of the Force Developmental teams become familiar with the people in their occupational areas and learn their strengths and weaknesses. They discover who the high-potential people are, who is getting by, and who is not doing well. The team members have direct contact with the individuals and access to their commanders' assessments and overall records.

Blanchard said the teams can apply that familiarity by vectoring people to developmental assignments.

The teams identify the requirements the Air Force needs to meet. They then will be able to specifically and deliberately develop the people to meet those requirements. Leaders can be drawn from the pool of best-qualified members.

The impact on civilian employees may be even more pronounced, as civilian roles in Air Force leadership become more defined. "I think what we are already seeing in the case of officers and civilians is a movement toward more interchangeability, particularly at the senior level," Blanchard said. The SLMO is "heavily engaged in finding jobs that can be occupied by either a general officer or a senior civilian" and assigning those individuals based on the best choice.

Civilians To Step Up?

Officials expect more civilians to move into positions previously limited to officers. They also predict more interchange between officers and top NCOs, making the best use of the service's human capital.

This process of deliberately developing civilians to meet requirements is a departure from past practices and opens new opportunities. USAF is creating career fields on the civilian side to mirror the career fields on the officer side. Some of those career fields have gone so far as to integrate the military officer and civilian development teams into a single team. That, officials say, has tremendous potential to create greater synergy between the officer corps and the civilian corps.

Among enlisted members, the greatest changes to date have been in the ranks of the chief master sergeants. In

USAF photo by 2nd Lt. Katherine Kebisek

USAF concentrated its first force development efforts on field grade officers, such as Maj. Dawn Keasley, who commands a mission support squadron, to ensure they gain the wider perspective to take them from the operational to the strategic level.

USAF photo by SSgt. Shad Eldson

For the first few years of service, every airman—officer or enlisted—and civilian functions at the tactical level, mastering his area of expertise, such as weather officer 1st Lt. John Hurley, checking flight-line instruments.

addition to placing the management of chiefs under the SLMO, the Air Force has sent its first chiefs to the Center for Creative Leadership. The service is developing a cross-flow program to move chiefs in overmanned specialties into vacant leadership positions. And it is limiting chiefs to three years of service in joint, Air Staff, major command, and special duty assignments, to give more field units access to chiefs with these key experiences.

Selection for Air Staff and other designated chief master sergeant billets will come through a nomination process. When a top position opens, Majcoms will nominate their most qualified chiefs.

An aim of the career-shaping effort is to encourage more members to serve as instructors. "One of the things that the Chief of Staff has emphasized is the importance of paying back the Air Force for the training a person has received," said Col. Lee Hall, director of assignments at the Air Force Personnel Center. "What we are trying to do is get the developmental team to help us identify the right folks to be instructors."

In the past, the Air Force has had difficulty getting members to volunteer for instructor duty with Air University or the Air Force Academy. Such assignments have been considered sort of a tax, Hall said. People whom career field leaders did not particularly want, or those they had left over after filling key jobs, were often submitted for teaching assignments.

"That's not good enough," said Hall. "What we are trying to do is find people who are inclined toward being instructors. ... This is one of those things we ought to be doing deliberately, instead of doing by chance or by whoever is left over in the end."

Blanchard added, "The emphasis on instructor training is a key element of Force Development."

The Air Force also has joined the other services in encouraging members to go into educational careers when they retire from or leave the military. This "Troops to Teachers" program is welcomed by school boards and local educators who value the discipline and lifelong-learning philosophy that former service members bring.

Developmental Education

Another major element of Force Development is what officials call "developmental education." The Air Force always has put heavy emphasis on training, but it has tended to send members to school, based more on where they were in their careers than for the sake of furthering those careers. Under the new approach, more emphasis will be placed on courses that fit the individual's career plans.

The Air Force has expanded intermediate-level developmental education—the operational-level training. This can be at Air Command and Staff College or its sister schools, and USAF has broadened operational education to include advanced academic degrees at the Air Force Institute of Technology and the Naval Postgraduate School.

The Joint Military Intelligence College, the Advanced Study of Air Mobility, and a variety of other courses also provide intermediate developmental education, said Maj. Patricia Ross in the personnel office. These are places where the individual who needs to go on a specific development path can be assigned.

In the case of the chief master sergeants, the service is developing a new PME course and a new leadership course.

While the service is putting more emphasis on training, it also is pressing for ways to instruct members already heavily burdened by work and often deployed to distant sites. Ross said USAF now has education offices in remote locations, and technology has brought the classroom to the students, through computers.

This distance learning makes it possible to check into class even in operational environments. Remote study requires self-discipline, but Ross said some members stick with it. One enabler is that some units allow students to use work computers after hours or during lunch breaks.

It will be some time before the full Force Development program is in place. Hall estimates it may take five years to bring all the vectors and career paths into the system.

Still, the colonel said the program is progressing. "I think the officers are going great," he said, and the civilians have come a long way. "The next big challenge for us will be incorporating the Guard and Reserve. Their processes are less mature but I do think that there is good acceptance."

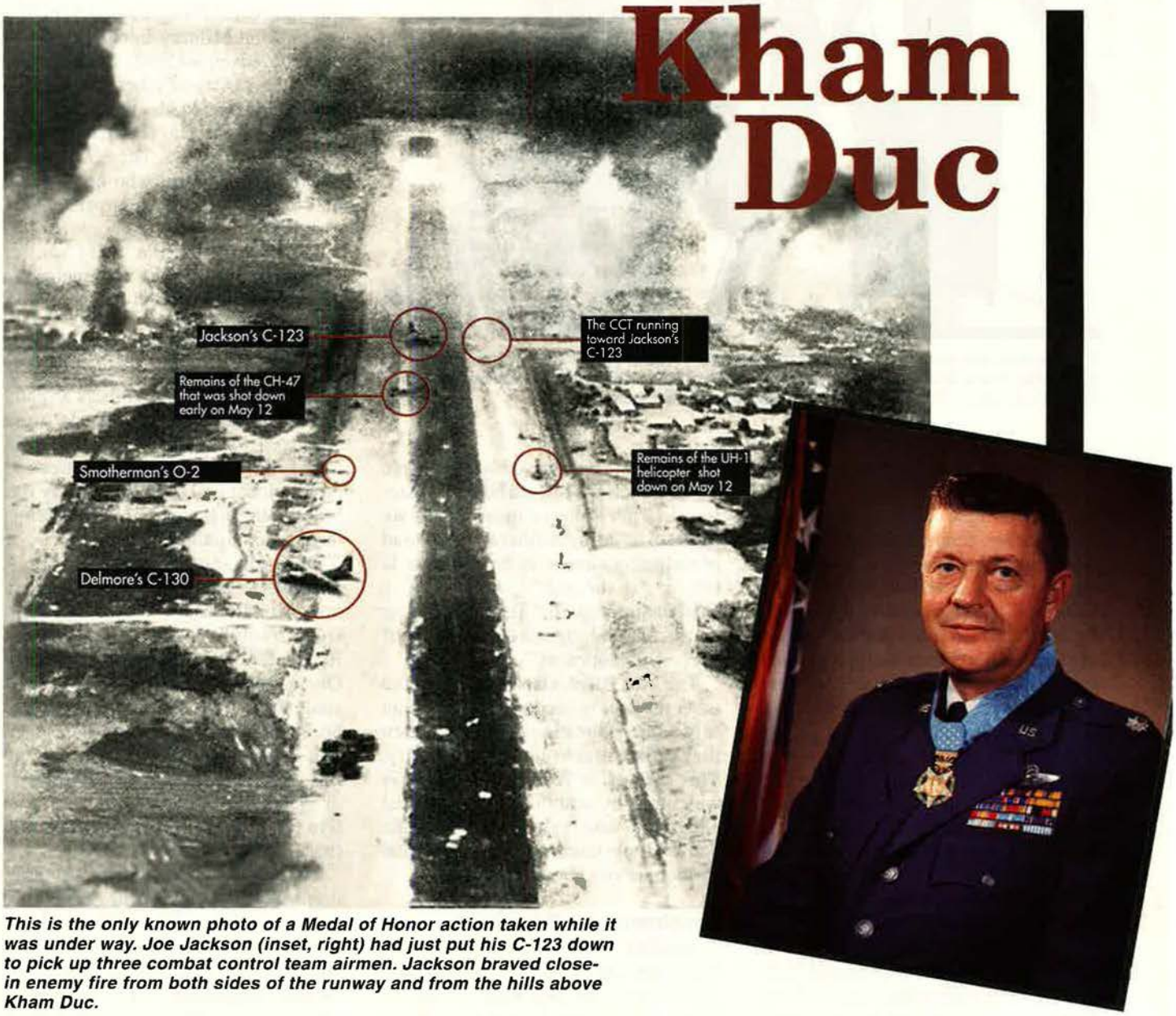
Developing firm requirements comes next. Once needs are finalized, the service should be able to deliberately develop members to meet them.

"There is a lot of work to do," Hall said. "It's still a new process, [but] ... the foundation is there, and people see the importance of it."

Bruce D. Callander is a contributing editor of Air Force *Magazine. He served tours of active duty during World War II and the Korean War and was editor of* Air Force Times *from 1972 to 1986. His most recent article for* Air Force *Magazine, "The Class of 50 Years Ago," appeared in the July issue.*

Rescue at Kham Duc

USAF photo



This is the only known photo of a Medal of Honor action taken while it was under way. Joe Jackson (inset, right) had just put his C-123 down to pick up three combat control team airmen. Jackson braved close-in enemy fire from both sides of the runway and from the hills above Kham Duc.

By John T. Correll

In early 1968, the North Vietnamese Army launched a major offensive into South Vietnam. It began in January with an attack on the US Marine Corps base at Khe Sanh, just below the Demilitarized Zone. The siege lasted 77 days, with the marines sustained by air strikes and aerial resupply.

The main blow of the offensive fell on Jan. 31, the Tet lunar new year holiday, when the NVA and the Viet Cong attacked military bases and population centers all over South Vietnam.

In May, in the second phase of the offensive, two NVA regiments attacked the US Army Special Forces camp at Kham Duc, located in a valley about eight miles from the Laos border and 100 miles south of Khe Sanh.

From there, US Special Forces, augmented by South Vietnamese soldiers and Montagnard irregulars, kept watch on the Ho Chi Minh Trail on the

other side of the mountains. The camp also impeded enemy infiltration of the South Vietnamese highlands.

Kham Duc had a 6,000-foot-long asphalt runway, built in the 1950s to bring in materials to build a hunting lodge for South Vietnamese leader Ngo Dinh Diem. Wooded hills rose on all sides.

The camp was not built to withstand a major assault by artillery and infantry, and it did not hold out long against the large NVA force. The attack began May 6 at a forward operating base, Ngoc Tavak, three miles to the southwest. The casualties were heavy, and two Marine Corps helicopters were lost. Survivors retreated to the main camp.

Kham Duc was reinforced by airlift in the May 10-11 period, but the NVA occupied the surrounding hills, sweeping away the defensive machine gun outposts. The North Vietnamese could shoot down on the camp and on aircraft landing there.

As the attack intensified with heavy fire from artillery, mortars, and recoilless rifles, Military Assistance Command Vietnam changed its mind about reinforcing Kham Duc. Army Gen. William C. Westmoreland, commander of US forces in South Vietnam, decided to evacuate the camp instead.

The US faced the need to bring out about 1,000 people, not only US troops but South Vietnamese soldiers and, in some cases, their family members. Army and Marine Corps helicopters would conduct about half of the evacuation, but fixed-wing Air Force airlifters would be needed as well.

At 8:30 a.m. on May 12, the Air Force's 834th Air Division, which controlled all the C-130s and C-123s operating in South Vietnam, was told to begin an all-out effort to evacuate Kham Duc.

The C-130 was the primary tactical airlifter in Vietnam and was on its way to becoming one of the greatest airplanes of all time. It carried three times the payload of the old C-123 that it was to replace. However, the Vietnam War gave a new lease on life to the C-123, which had been declared obsolete and was scheduled for retirement. It was ideal for missions into short airstrips and remote locations. The K model of the C-123 had two small jet engines fitted on wing pylons for extra power at takeoff.

Also around 8:30, 7th Air Force ordered maximum priority for air strikes to support the evacuation. US airpower pounded the NVA positions throughout the day, beginning with B-52 strikes at dawn. Tactical airpower flew about 140 sorties at Kham Duc, 120 of them from Air Force units in Vietnam and Thailand.

Joe Jackson put the C-123 into a steep dive toward the embattled airstrip, where three airmen had been left behind.

Check Ride Diverted

Since the evacuation wasn't laid on until 8:30 that morning, Air Force units in Southeast Asia had already begun operations for the day before they got the news.

Lt. Col. Joe M. Jackson, commander of a C-123 detachment at Da Nang, had taken off at 7 a.m. for his semiannual flight check. Maj. Jesse W. Campbell, the flight examiner, was in the co-pilot's seat.

Jackson had scheduled the check ride for a cargo mission, no passengers, to various locations up and down the coast. The flight check involved such things as shutting down an engine, best done without passengers aboard.

This was Joe Jackson's third war. He enlisted in the Army at Newnan, Ga., in 1941, when he was 18 years old. He became a crew chief on B-25 bombers, then earned his commission and wings in the aviation cadets. He flew P-40 and P-63 fighters and, toward the end of World War II, B-24 bombers.

After the war, he returned to fighters and flew 107 combat missions in F-84s in Korea. He was one of the first Air Force pilots selected to fly the U-2 reconnaissance aircraft. Jackson is credited with several aeronautical innovations, including a bomb-tossing method to deliver nuclear weapons from fighter aircraft, later adopted by Strategic Air Command for use by bombers.

Jackson was serving as a war planner in Europe when he got his orders to go to Vietnam. After being checked out in the C-123, he arrived at Da Nang on Aug. 28, 1967. His detachment, part of the 311th Special Operations Squadron at Phan Rang, had eight aircraft. They had seen hard duty during the siege of Khe Sanh.

Jackson's call sign for the check ride was "Bookie 771." The crew, in addition to flight examiner/co-pilot Campbell, consisted of the flight engineer, TSgt. Edward M. Trejo, and the loadmaster, SSgt. Manson L. Grubbs. The aircraft they were flying was a C-123K, the model with the booster jets under its wings.

Early that afternoon, they were told to return to Da Nang for diversion to the evacuation of Kham Duc. Campbell declared the flight check over (Jackson passed) and stayed on for the air evac mission as co-pilot.

They drew flak vests, extra ammo for their .38 revolvers, and an extra M-16, and were airborne for Kham Duc at 2:55 p.m. The camp was about 45 miles west of Da Nang.

Upon arrival, Bookie 771 reported in to "Hillsboro," the C-130 airborne battlefield command and control center (ABCCC), and joined the other aircraft stacked up over the base. In another one of the airplanes then orbiting Kham Duc was Maj. Gen. Burl W. McLaughlin, commander of the 834th Air Division.

Evacuation of Kham Duc

A fierce battle had been raging at Kham Duc since daybreak. The first helicopter to arrive, an Army CH-47, was shot down about 7:30. Moments later, an Air Force A-1E was shot down outside the camp perimeter.

The NVA shot and killed the bulldozer driver who was trying to clear away the helicopter, which was blocking the runway. It was eventually pushed to the side, but the runway remained partially obstructed.

In all, seven aircraft—three helicopters, the A-1E, an O-2, and two C-130s—would be lost that day at Kham Duc. When Bookie 771 got there, a good deal of the action had already taken place.

■ The first C-130 in that morning was

flown by Lt. Col. Daryl D. Cole. The crew had not yet heard about the evacuation and was delivering a full load of cargo. Cole drew ground fire as he approached and landed with extensive battle damage. A main landing gear tire was flat, and the wing fuel tanks had been punctured and were leaking. The crew could not unload because panicky Vietnamese civilians and irregular troops rushed aboard and refused to budge. The damaged airplane could not take off with all that weight. Cole taxied off the runway, and the crew hacked away as much of the bad tire as they could with a bayonet. When the aircraft drew mortar fire, the Vietnamese fled. One explosion came so close that it shattered a cockpit window. The fuel leak had thrown the aircraft out of balance, but despite the problems, Cole got it into the air and back to Cam Ranh Bay, where the crew counted 85 bullet and shrapnel holes.

■ At midmorning, Capt. Phillip Smotherman, an O-2 forward air controller working tactical air strikes on enemy positions, was shot down over the base. He made a controlled crash and got his airplane off the runway. He found an abandoned Air Force radio and remained on the ground for five hours, translating the base's needs for close air support to the ABCCC and the forward air controllers. He worked one strike that put ordnance just over 30 yards from his bunker. He left on the last C-130 that took passengers out.

■ Early in the afternoon, Maj. Bernard L. Bucher's C-130 took off with 150 women and children, families of the Vietnamese irregulars, aboard. The aircraft was shot down as it cleared the field and crashed with no survivors.

power and little directional control. The airplane struck the remains of the CH-47, and Delmore wrestled it off the runway, where it hit a dirt mound and stopped.

About 4:30, the ground commander ("Crossbow") reported that all friendly forces were clear and requested air strikes to demolish the base and the equipment left behind.

"The airborne command post then gave an order to the fighters that were in the area to go in and destroy the camp," Jackson said, but "the C-130 that had just taken off said, 'Negative, negative. I let three members of the combat control team off,' and that's when the dead silence was so loud. ... It was just like hitting a guy in the face with a dead fish."

It was in this C-123K Provider that Jackson and his crew made their courageous rescue. The K model had small jet engines to assist in max-performance takeoffs. Ignoring safety, Jackson kept them at high power, keeping time on the ground to fewer than 50 seconds. Miraculously, not a single bullet hit the aircraft.

■ Lt. Col. William Boyd Jr., also flying a C-130, saw Bucher go down. Ground fire was heavy as he approached. As he was about to touch down, a shell exploded 100 feet in front of him. He pulled up, went around, landed, and took 100 people aboard. He took more battle damage on the way out. The aircraft made it to Cam Ranh Bay, where somebody spray painted "Lucky Duc" on the side, referring to its fortune in surviving.

■ As Lt. Col. John Delmore's C-130 came in, the cockpit was riddled with ground fire. The enemy was trying to kill the crew. Delmore crash-landed, but he had no brakes or hydraulic

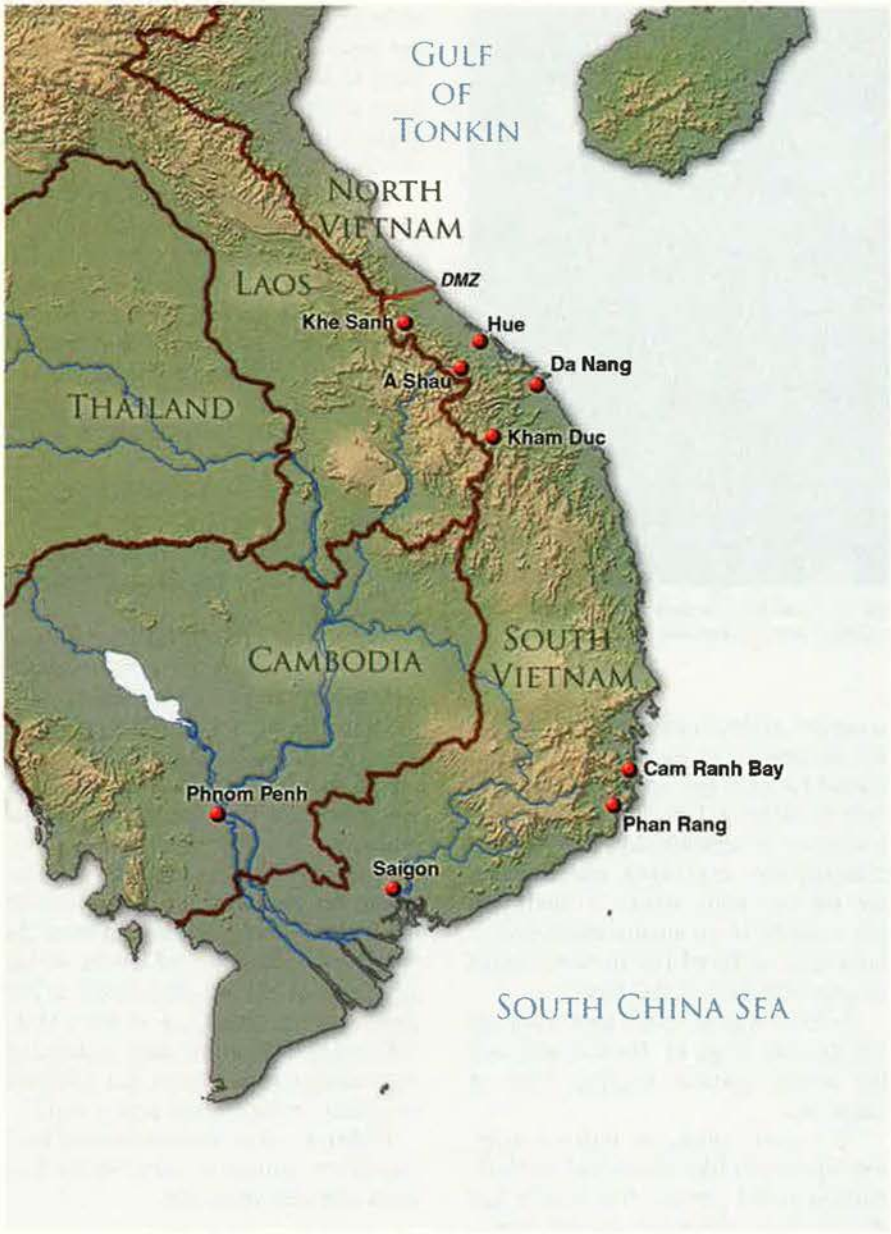
Capt. Robert M. Gatewood, duty controller on the ABCCC, said, "A hush could be felt, literally, over the radio as all agencies realized the implication of this statement."

After a few moments, the ABCCC broke the silence to tell the strike fighters to hold up and to send some O-1 and O-2 FAC aircraft down to look. They weren't able to see anything.

An airplane would have to go in to get the combat control team.

The Combat Control Team

Maj. John W. Gallagher was mission commander of the combat control team, although he was a C-130 pilot,



Kham Duc was a staging area for Green Berets and Montagnard tribesmen keeping watch on enemy infiltration routes just to its west, in southeastern Laos. Four months after the Tet Offensive, the base was attacked by North Vietnamese regulars. Communications foul-ups put an American combat control team on the ground after Kham Duc had been ordered abandoned.

not a combat controller. The other two members of the team, TSgt. Morton J. Freedman and SSgt. James D. Lundie, were both fully qualified combat controllers.

They had come to Kham Duc as part of the first contingent of reinforcements May 10. Their job was to control the airlift and coordinate the approach, loading, and unloading to expedite departure of the airplanes and limit their exposure to ground fire.

On the morning of May 12, Gallagher heard that the airlift mission had been canceled. There was room for confusion. According to an Air Force study of the battle by Lt. Col. Alan L. Gropman, 7th Air Force called off the C-130 evacuation about 10:30 because of the severity of ground fire. Military Assistance Command Vietnam subsequently ordered resumption of evacuation.

Gallagher decided the CCT should pull out, overruling the opinions of Freedman and Lundie, who thought that the team ought to stay. On Gallagher's orders, the CCT boarded Cole's C-130 when it left at midmorning for Cam Ranh Bay.

McLaughlin, learning that the CCT had left before the job was complete, ordered that they go back in. Indeed, Cole's airplane was the first C-130 into Kham Duc. By the middle of the afternoon, seven more C-130s and a C-123 landed at Kham Duc. However, these flights were finished by the time the CCT returned to the camp in the late afternoon.

A great many people were involved in the evacuation, which was a complicated operation. Some of the details—such as the situation of the CCT—got lost in the weeds.

When the CCT got to Cam Ranh Bay, Gallagher was told that the team had to go back to Kham Duc. Maj. Jay Van Cleeff, whose C-130 had been diverted to Cam Ranh Bay, was instructed to fly them to the embattled camp. That seemed strange. Previously, Van Cleeff's crew had understood they would be making a container delivery system airdrop at Kham Duc because it was too dangerous to land. Now they were going to put people on the ground there.

Gallagher and Van Cleeff called "Hilda," the airlift control center at Saigon, and questioned the order. Hilda told them they were "talking too much over the air" and that the CCT should go back to Kham Duc and help with the evacuation. Before they left Cam Ranh Bay, Freedman tried to obtain an FM radio, but was unable to do so. He would have to rely on his survival radio.

Van Cleef landed at Kham Duc about 4:20, and the CCT got off. The airplane stayed on the ramp for a few minutes, then left.

There was nobody at Kham Duc except the CCT and the enemy. Everybody else had been evacuated. To make matters worse, Freedman's radio wouldn't work, so they couldn't notify anyone of their plight. The NVA had placed three .50-caliber machine guns along the runway. Freedman put one of them out of action, killing the gunners with his M-16.

Lundie had a rifle as well, and they had enough ammunition to fight for a while. "Sergeant Lundie had five clips and I had six," Freedman said.

Several airplanes passed over the field, then a C-123 came in, rolled by, and took off before the CCT could flag it down. The stranded airmen did not know if they had been seen by the airlifter crew.

"The thought of another plane was impossible and illogical because the NVA were moving all around us," Freedman said. "So much ammo was blowing up you couldn't tell 'incom-

President Lyndon Johnson presents the Medal of Honor to Jackson at a White House ceremony Jan. 16, 1969. Others in the action were awarded an Air Force Cross, Silver Stars, and the Mackay Trophy.

ing' from our own, and it was throwing debris all over the runway. Even if they knew we were here, no man in his right mind would attempt a landing. I never felt so lonely in all my life."

They were close to despair when Gallagher called out: "There's a 123 on short final."

Assault Landing

The first 123 that went in looking for the CCT was "Bookie 750" from Phan Rang, flown by Lt. Col. Alfred J. Jeanotte Jr. Fighter aircraft escorted him down and strafed the jungle, but the enemy fire was hot.

Rather than reversing engines to come to a full stop, Jeanotte kept moving down the runway, looking for the CCT. He accelerated to full power and took off. The C-123 had broken ground before the crew spotted the CCT waving at them. Jeanotte did not have enough fuel left to land again, stop, and make another maximum effort takeoff.

The next airplane in the queue was Joe Jackson's Bookie 771. Jeanotte briefed him on where the CCT had been seen.

Col. William K. Bailey, commander of the 311th Special Operations Squadron, to which the C-123s were assigned, later described the situation.

"Kham Duc by now was a battleground in hostile hands. It was under heavy ground and mortar attack," Bailey said. "The hostile forces had long since zeroed in on the airstrip with small arms, mortars, light and heavy automatic weapons, and recoilless rifle fire. Within the immediate vicinity of the runway, manned hostile gun emplacements had been established. The camp was engulfed in flames; its ammunition dumps were continuously exploding and littering the runway with debris. In addition, the remains of an enemy-destroyed ... helicopter reduced the runway length to approximately 2,200 feet."

Jackson was at 9,000 feet when he got the call to go in. He had watched the enemy gunners blazing away at Jeanotte.

"I was not going to make a long, low approach like this other airplane had because I saw the fire that he had drawn from this ridge on the southwest part of the field, and I [didn't] want any part of that," Jackson said. "I decided to make my approach extremely steep, just as straight down as it would go."

(Many published accounts of the mission are in error. They say Jackson applied full aileron and opposite rudder for a "sideslip" descent. Jackson says that never happened.)

On an assault landing, Jackson said, "the airplane more or less slams into the ground, [and] at that point, you normally reverse the propellers ... to reduce your stopping distance."

However, he was not going to do that. Reversing the propellers on a C-123K would automatically shut off the two auxiliary jet engines to prevent damage to the engines from debris and gravel thrown up by the propellers.

"I briefed the guys that I would not reverse the engines unless necessary because I didn't want to have to take time to start them," Jackson said. "It took about a minute or so ... to get them started, and I figured that was too long.

"I briefed the co-pilot, Major Campbell, [and] I said the only thing I want you to do when we get on the ground is to make sure that the flaps get from the assault position, which is full down, back up to the takeoff position. [I] briefed the loadmaster, ... as soon as this thing touches down, I want the doors opened just as quick as possible."

With that, he closed the throttles, put the landing gear down, put the flaps down full, and set the propellers in a flat pitch. The jet engines were started and idling.

Jackson took the old airlifter down in a dive it was never designed to make, descending at 155 mph. Supposedly, the flaps would not hold at that speed. Around 151 mph, the wind pressure in the "blowup valve" blows the flaps back up to prevent damage to the system. However, the flaps held.

Bookie 771 leveled out 50 feet above the ground and 1,500 feet from the runway. Jackson came in from the southwest and touched down at the very end of the airstrip, some 2,200 feet from the wreckage of the CH-47 helicopter. That much runway, he said, was "adequate to stop in, but you have to clamp on the brakes pretty well."

Jackson's unorthodox descent took the enemy gunners by surprise, but they soon adjusted their aim.

50 Seconds on the Ground

"It didn't seem like there was any possible way for a plane to get in," Lundie said. "The whole camp was burning and exploding. When I looked up and saw that C-123 coming in, it was like a miracle. I couldn't believe it."

The CCT was "in a ditch alongside the runway and they started running toward the runway when I was about halfway down on the landing roll," Jackson said.

Two of the enemy machine gun positions along the ramp were still firing. One was under the wing of Delmore's C-130, and the other was beside the wreckage of a UH-1 helicopter.

Gunners in the hills were shooting down at them. "I saw tracers coming out from under the airplane that had apparently struck the runway and were ricocheting off the runway, under the

airplane," Jackson said. The C-123 "only sits about two feet off the ground, so they were missing mighty close."

Jackson figured the hillside gunners "just kinda underestimated the range. That made the bullets drop enough to just hit the runway underneath the airplane and then ricochet out the other side."

As Jackson was turning the airplane around, Campbell exclaimed, "My God, look at that!"

A 122 mm rocket, apparently fired at zero elevation from the ridge to the north, was coming down the runway toward them. It struck the ground, bounced, and came to rest about 30 feet from the airplane, but it did not explode. It was a dud.

The CCT, having sprinted from the ditch, boarded the airplane quickly. "The loadmaster said, 'All on board,' and Campbell made a very astute observation like, 'Let's get the hell out of here,'" Jackson said.

Jackson steered around the dud rocket and ran the throttles up. The jet engines reached 100 percent, and they were off. They used only about 1,000 feet of the runway for the takeoff roll.

"I say that we were on the ground somewhere around 40 to 50 seconds," Jackson said.

Fifteen seconds after the airplane started moving, the spot where it had been stopped erupted with mortar fire. Jackson figured the mortar shell had been in flight something like 40 seconds and that they made it away just in time.

When they got back to Da Nang, they checked the airplane for bullet holes. There weren't any.

In nominating Jackson for the Medal of Honor, the 311th SOS commander, Bailey, noted that "miraculously, Bookie 771 survived the approach, landing, turnaround, and departure without receiving a single hit."

Hilda, the airlift command post in Saigon, almost struck again. According to Sam McGowan—a C-130 crew member in Vietnam, now a prolific writer on airpower—after Jackson had gotten the first CCT out, Hilda ordered another C-130, carrying another CCT, to put them on the ground at Kham Duc. The order was not rescinded until the C-130 was about to go in.

Medal of Honor

The critical moment at Kham Duc was captured for all time in a photograph taken from the air during the 50 seconds that Bookie 771 was on the ground. It is believed to be the only photo ever taken during an action that led to the award of the Medal of Honor.

The picture is fuzzy and the scene is obscured by smoke, but Jackson's C-123 is clearly visible on the runway, as are the other aircraft shot down earlier in the day. The photo was taken moments before the dud rocket got there. The CCT can be seen running from the ditch. It is not known who took the photo, but a copy of it was attached to the nomination for the Medal of Honor.

Jackson himself received a copy of the photo through regular distribution about two weeks after the battle. It arrived at Da Nang aboard a cargo airplane and was turned in to the airlift control center, which passed it on to Jackson. The photo was between two pieces of cardboard, wrapped in brown paper with Jackson's name on it.

Shortly after the Kham Duc mission, the wing vice commander from Phan Rang was visiting Da Nang and staying with Jackson. The two of them were together when the vice commander got a telephone call. Hanging up, he told Jackson that he was to be nominated for the Medal of Honor.

While the nomination was pending, Jackson was directed not to fly any more missions. He finished his tour in Vietnam in August with 298 combat sorties.

The Medal of Honor was presented to Jackson at the White House by President Lyndon Johnson on Jan. 16, 1969.

Co-pilot Campbell was awarded the Air Force Cross. The crew members, Trejo and Grubbs, were decorated with the Silver Star. There were other awards for the action at Kham Duc. Bucher, who died when his C-130 went down, was awarded the Air Force Cross, as were Boyd, the pilot of "Lucky Duc," and Jeanotte, who made the first attempt to rescue the CCT.

Cole, pilot of the first C-130 in, who made it out with the destroyed tire and leaking fuel tanks, received not only the Silver Star but also the Mackay Trophy for most meritorious flight of the year.

Eight months after the Medal of Honor ceremonies at the White House, Jackson was at the Air Force Association convention looking at the exhibits when he ran into Westmoreland. They talked about the war and Kham Duc, and Westmoreland said, "You know, I was the guy who recommended you for the Medal of Honor."

He had followed the action at Kham Duc closely as it unfolded. Apparently, the call to the vice wing commander at Da Nang had been the word from Westmoreland, coming down the line, to make the nomination.

Jackson spent three years in the Pentagon in the Directorate of Plans. In 1971, he was reassigned to the Air War College faculty to teach strategic studies. He retired in 1973 after 33 years in the Air Force.

Reunion in Charlotte

Jackson went to work for Boeing, setting up a training program for the Iranian Air Force, which was using Boeing 707s in a number of roles. He was in Iran for three years, then came back to Seattle to work in Boeing's training department. He retired for good in 1985.

In the years since then, he has kept busy with volunteer work and other activities.

In May 1997, Joe Jackson was being honored at the observance of the 50th anniversary of the Air Force at a race at the Charlotte Motor Speedway in North Carolina. For one person in the crowd of 185,000, it was a special surprise when Jackson was introduced.

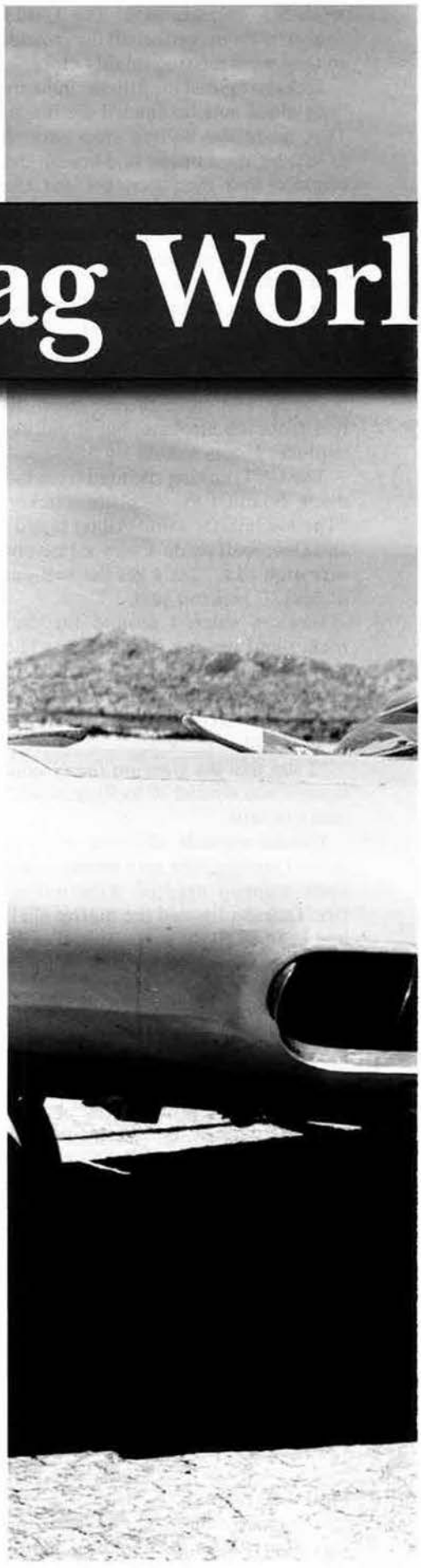
Jim Lundie of Concord, N.C., recognized the pilot who had rescued him at Kham Duc 29 years before. It was an emotional moment as Jackson and Lundie hugged and shook hands.

"You hear about long lost family members being reunited and the emotions they feel," said Lundie, who had left the Air Force in 1968. "This was the same close family feeling for me." ■

John T. Correll was editor in chief of Air Force *Magazine for 18 years and is now a contributing editor. His most recent article, "The Air Force and the Cold War: A Chronology, 1945-91," appeared in the September issue.*

The legendary designer was obsessed with "the perfect airplane," but fate intervened.

The Low-Drag Worl



IN the course of a long and illustrious career, the legendary Jack Northrop created a series of outstanding aircraft that ranged from a tiny wooden biplane to gigantic flying wings which were, in some ways, 40 years ahead of their time.

Friendly and self-effacing, but possessed of an iron will when it came to engineering, Northrop always attributed his many achievements to the talent and drive of his co-workers. For all that, Northrop was personally at the leading edge of three distinct revolutions in aviation technology.

The first was brought about by his series of sleek wooden monoplanes that became the chosen mounts for famous explorers and record-setters such as Amelia Earhart, Wiley Post, Charles Lindbergh, and Roscoe Turner, to name a few.

Next, Northrop roiled the aviation industry with a succession of swift silver aircraft featuring his innovative all-metal stressed skin construction techniques. Using a low wing, huge bell cowling, and tightly streamlined "trousered" landing gear, the "civil Northrops" outperformed most of the first-line military fighters of the day. They were quickly adopted by aerial adventurers and widely used by airlines around the world.

There followed a host of military variants, one of which—the Douglas SBD Dauntless—proved to be a decisive weapon in the Battle of Midway. The hand of Northrop could be seen in even more-advanced designs such as the famed P-61 Black Widow, the trimotor C-125 Raider, and the F-89 Scorpion interceptor.

His turbojet-powered SM-62 Snark of 1953 was one of the first intercontinental missiles ever seen. It featured inertial navigation moderated by stellar navigation.

Perfect

Jack Northrop's third revolution stemmed from his virtual obsession with creating a "perfect airplane," a flying wing that would eliminate the weight and drag of a conventional fuselage and empennage. After 20 years of effort, Northrop seemed to have reached his goal with the huge XB-35 bomber and its jet variants. Then fate stepped in, either in the form of technology or, as some say, government subversion, and Northrop saw his flying wing dreams collapse in a heap of canceled contracts.

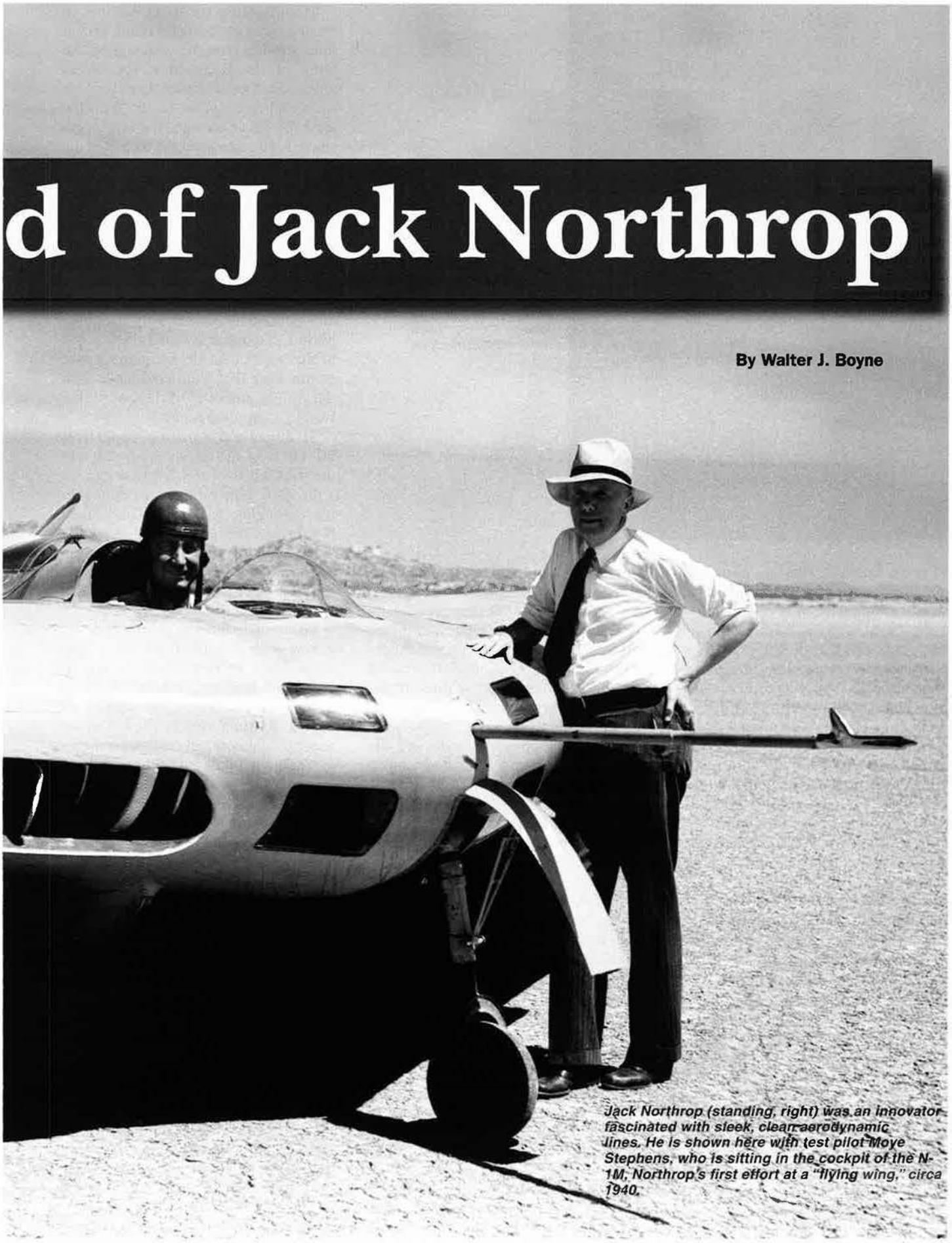
John Knudsen Northrop was born in Newark, N.J., on Nov. 10, 1895. Charles and Helen, his parents, moved the family west in stages, ultimately settling in Santa Barbara, Calif. From 1906 through 1923, Charles Northrop operated a small construction business, building and remodeling homes.

Young Jack Northrop became interested in aviation in his early teens when he witnessed Didier Masson, who modestly termed himself "the world's greatest aviator," flying over Los Angeles.

Northrop inherited his father's mechanical skills. After graduation from high school, he put them to use, working on automobiles in a garage owned by a local named William Rust. He next accepted a position in an architect's office, where he performed minor designing and learned the fundamentals

d of Jack Northrop

By Walter J. Boyne



Photos via Walter J. Boyne

Jack Northrop (standing, right) was an innovator fascinated with sleek, clean aerodynamic lines. He is shown here with test pilot Moye Stephens, who is sitting in the cockpit of the N-1M, Northrop's first effort at a "flying wing," circa 1940.

Northrop was a seminal figure in aviation, pioneering advancements at both Lockheed and Douglas before striking out with his own company, which today is among the top three defense contractors.

of stress analysis. This was an unusual accomplishment for the time, one that would soon prove to be invaluable.

In 1916, two brothers, Allan and Malcolm Loughead, came to Santa Barbara and set up shop in a part of Rust's garage. The two brothers—who later changed the spelling of their surname to Lockheed—soon encountered the 20-year-old Northrop and hired him as an engineer and draftsman. He was put to work on a new biplane called the F-1.

The F-1 was a twin-engine, 10-passenger flying boat. Northrop designed its 74-foot-wide wings and aided in the design of its hull and empennage. Then he did all the three-view and detail drawings and took part in construction.

Not long afterward, however, Northrop was drafted into the Army as an infantryman. Someone noted his aviation experience and transferred him to the Signal Corps, which was the focus of Army aviation at the time. The Loughead brothers, however, made a plea for his return; after six months, the request was honored. Jack Northrop returned to Santa Barbara to conduct an analysis of Curtiss flying boats. In moving from the Army to the aviation industry, his annual pay jumped sevenfold, from $252 to $1,800.

After World War I ended in 1918, the firm turned to the civilian market, and Northrop designed the Loughead S-1, a tiny sports biplane featuring a strong streamlined fuselage of molded plywood. Northrop, factory manager Anthony Stadlman, and Loughead jointly patented a new method of fuselage construction. Three layers of casein-soaked plywood strips were placed in a concrete mold of the fuselage's desired size and shape. The glue's grip was strengthened by a custom-shaped inflatable rubber bag that pressed the layered strips against the mold, eliminating air bubbles and creating a light, strong structure when cured.

The S-1 was a delight to fly, but could not compete in a market saturated with dirt-cheap war-surplus Curtiss Jennys. The Lougheads closed their factory in 1920. Malcolm went to Detroit, where he founded the Lockheed Hydraulic Brake Co. and soon became a millionaire. Allan acted as his West Coast agent and sold real estate.

Enter Donald Douglas

Jack Northrop returned to work for his father, but not for long. In 1923, Northrop was picked up and hired by Donald W. Douglas in what would prove to be a complex relationship. His first job was to design the fuel tanks for the Douglas World Cruiser.

Moonlighting for Ryan Airlines in San Diego with Douglas chief draftsman Art Mankey, he redesigned the wing of the Ryan M-1, the direct antecedent of Charles Lindbergh's immortal *Spirit of St. Louis*. With the refinements in design, the engineers shaved 250 pounds off the weight of the wing—weight savings that showed up directly in the Lindbergh airplane.

Despite the excellence of the Douglas and Ryan aircraft, Northrop hated what he saw as excessive drag of their struts and wires. Working at home, he designed a clean commercial monoplane with a cantilever wing, without any struts or wires. During the same period, discussions with Stadlman led to his vision of the ideal airplane, a pure flying wing that would dispense with the weight and drag of the traditional fuselage and empennage.

Stadlman and Northrop would later fall out over the question of who was the true father of the flying wing.

In 1926, Northrop parted amicably with Douglas. Allan Loughead liked Northrop's designs, which used the same type of fuselage construction as that of the S-1. Loughead formed the Lockheed Aircraft Co. with Jack Northrop as chief engineer.

Soon, Northrop was at work on a new aircraft called the Vega. The Vega made its first flight on July 4, 1927, and was an immediate success, quickly producing a large backlog of orders. So many pilots used it to set records that company advertisements boasted, "It Takes a Lockheed to Beat a Lockheed."

Northrop's flexible design enabled him to lay out concepts for follow-on aircraft that repositioned the basic Vega wing and fuselage in new configurations.

Although Northrop was pleased at the worldwide acceptance of the Vega design, he was convinced that new 24ST aluminum alloys made wooden structures obsolete. He resigned from Lockheed on June 28, 1928, to form the Avion Corp. There, he laid plans for an all-metal commercial aircraft. He also developed his concept for a workable flying wing.

Northrop's inaugural product, unveiled in 1929, was the Avion Experimental No. 1. It was a flying wing with no commercial prospects whatsoever. The center section of the Avion's thick 30-foot wingspan enclosed the 90 hp engine and cockpit. The Avion had a distinctive "reverse" tricycle landing

gear, with two wheels forward and one aft. Both fixed and retractable gear were tested. Because a pure flying wing configuration was so radical, Northrop played it safe by adding a twin-boom, twin-tail empennage.

Stressed Skin

But the most revolutionary aspect of the Avion was Northrop's new all-metal stressed skin construction, in which span-wise shear webs replaced the conventional wing spars. William E. Boeing visited the plant, recognized the worth of the all-metal technique, and arranged for his United Aircraft and Transport Corp. to buy Avion Corp., establishing it as the Northrop Aircraft Corp. on Jan. 1, 1930.

The new arrangement permitted the Avion's flight-test program to be continued until September, by which time Northrop had become convinced that his ideas on the flying wing were sound.

At this point, he concentrated his energies on the Alpha, a low wing monoplane using his stressed skin multicellular construction technique, geared to commercial use. Northrop later maintained, "As far as the structure is concerned, that which was developed into the Alpha was really the pioneer for every airplane in the sky today." He always insisted that this structural innovation was his greatest contribution to aviation technology.

The handsome silver Alpha, with seats for six forward and with the cockpit well aft, gained immediate acceptance despite an early crash of the prototype. Transcontinental and Western Air, Inc., used the Alphas as mail airplanes, flying at night in all weather. Seventeen were built, and the last existing example is in the collection of the Smithsonian's National Air and Space Museum.

Northrop pioneered all-metal airframes, streamlined design, cantilevered monoplane wings, and the use of new metal alloys. His P-61 Black Widow (shown here) was the first US night fighter, serving in both theaters of World War II.

In September 1931, the chilling effects of the Great Depression caused United Aircraft to economize by merging the Northrop Aircraft Corp. with Stearman Aircraft in Wichita, Kan.

Northrop refused to leave California, however, and decided to form a new company. His stalwarts, Walter J. Cerny, Kenneth Jay, and Don Berlin, all elected to stay with him.

Northrop turned to his old friend Donald Douglas for help. Douglas' high opinion of Northrop's ability was reinforced by the fact that the new series of DC airliners were scheduled to use Northrop's stressed skin construction. On Jan. 1, 1932, the Northrop Corp. was formed as a Douglas subsidiary.

Experimental Days

It was Northrop's intent that his firm would serve as an experimental and research tool for Douglas, but when the parent firm's production capacity was filled, the Northrop Corp. began to take on production contracts. The new plant was located in Inglewood, Calif.

Northrop worked closely with prominent pilots to make sure his next design would meet high-performance needs. The result was the Gamma, essentially a scaled up Alpha mated to a 700 hp engine. Civil and military orders followed for variants of the adaptable Gamma and its parallel development, the Delta.

Airlines wanted the Gamma as a fast mail airplane. The Gamma also was used for extensive experimental research in instrument flying and in the development of anti-icing techniques. The famed aviatrix Jacqueline Cochran bought a Gamma and later leased it to Howard Hughes for his 1936 record-breaking transcontinental effort.

In 1934, the Army Air Corps award-

Unconventional designs were Northrop's trademark. The F-89 Scorpion was one of the first fighter "systems," integrating the aircraft, radar, and weapon. It was the first nuclear-armed interceptor and served in air defense for 17 years.

engine aircraft was the first specifically designed American night fighter. Nearly 700 were delivered, and they operated in both the European and Pacific Theaters.

Meanwhile, Northrop built four N-9M flying wings as engineering development vehicles to gather data for the XB-35. The N-9Ms had 60-foot wingspans and were powered by two 260 hp engines. The first N-9M flew Dec. 27, 1942. This aircraft crashed five months later, killing test pilot Max Constant.

Northrop was tasked to create some other flying wings to meet specific, if often bizarre, wartime requirements. The XP-56 Black Bullet was a flying wing fighter with disappointing performance. The MX-324 and MX-334 were

ed Northrop a $2 million contract to build 110 A-17 attack bombers. This was followed by orders for 129 A-17As with retractable landing gear. He was equally successful with the Navy, which came to Northrop for development of its BT-1, a dive-bomber that was subsequently transformed into the Douglas Dauntless.

Donald Douglas now pressured Northrop to merge the two firms, but Northrop wished to keep his independence. A friendly separation took place on April 5, 1937. What had been the Northrop Corp. became Douglas' El Segundo division. It was not until August 1939 that the new Northrop Aircraft, Inc., opened for business. War seemed inevitable, and Northrop planned a large 122,000-square-foot factory on 72 acres in Hawthorne, Calif.

Northrop started out subcontracting tail sections and later produced the Vultee V-72 Vengeance bomber. Norway purchased 24 Northrop N-3PB patrol bombers, which were twin-float developments of the Gamma design. Within months of the plant's opening, Northrop had a huge backlog of orders that permitted him to fulfill his dream of almost 20 years, the creation of a true flying wing.

The first of these, the N-1M, flew July 3, 1940. The N-1M's 38-foot wingspan contained two 65 hp engines driving pusher propellers through a faired extension shaft. The N-1M was very underpowered, and later two 117 hp engines were substituted.

While the N-1M looked simple, it was in fact a complex aircraft with unusual controls. The flying wing's relatively brief test program was ham-

Northrop's first big flying wing was the XB-35, anticipated to be USAF's first postwar bomber (shown at top with a P-61 flying chase), but it couldn't handle the giant atomic bombs of the time. The YB-49 (above) was a jet-powered advancement of the design, comparable in shape and size to today's B-2 stealth bomber.

pered by inadequate engine cooling and stability problems. It nonetheless demonstrated to Northrop that his vision was correct.

As it happened, the Chief of the Army Air Forces, Maj. Gen. Henry H. "Hap" Arnold, was an old friend of Northrop's, and the designer made contact. He submitted preliminary designs for what would become the XB-35 in September 1941. The Army contracted for two of the giant bombers, with the implicit understanding that they would probably not be required during World War II.

This was more than acceptable to Northrop, whose plant was busy producing the P-61. This large, twin-engineering development vehicles for the XP-79B, a twin-jet interceptor designed to ram enemy bombers. And the JB-1 Power Bomb, a ground-launched missile, was Northrop's equivalent of the German V-1.

Gaining Momentum

Even as other flying wing programs faltered, the XB-35 gathered momentum. A large aircraft that was roughly three times the size of a B-24, the XB-35 had controls as distinctive as its outline. Both the elevons and the rudders were power operated, with artificial feel provided to the pilot. The trailing edge of the wing had trim flaps, elevons, and landing

Shown here are XB-35s lined up on the ramp. Northrop modified the XB-35 to handle new requirements, but USAF in January 1949 terminated the program and scrapped all the existing aircraft. The decision sparked a decades-long controversy.

flaps. The rudders were split flaps built into the trim flaps and operated differentially for turns and together as a speed brake. At high angles of attack, the automatically controlled wingtip slots opened.

The XB-35 had eight bomb bays that could carry a combined total of 10,000 pounds of bombs, but they were not large enough for nuclear weapons. Heavy defensive armament consisted of machine guns in seven remotely controlled turrets.

Power was supplied by four Pratt & Whitney engines, each rated at 3,000 hp and driving complex counter-rotating propellers.

Northrop's dream finally came true June 25, 1946, when the XB-35 made its first flight. Management had requested that workers not go out and line the runway to watch the first flight, and, characteristically, Northrop obeyed the edict, staying at his desk while his pride and joy took off.

The Army let a contract for 13 test YB-35s, but the airplane soon was plagued by problems in its propeller gearboxes. Single rotation gearboxes were installed, solving the problem. Of much greater importance, the jet age had arrived and the prospect of in-flight refueling as a regular tactic was already anticipated. Northrop attempted to adjust to new circumstances by modifying two YB-35s with eight 4,000-pound-thrust J35 jet engines, creating the YB-49. The new flying wing jet was taken aloft on Oct. 21, 1947.

Jet engines vastly improved the aircraft's performance, though fins had to be added on either side of the two bays of jet engines to compensate for a loss in stability that had been provided by the propellers. Yet the YB-49's airframe was of the piston engine era, and the wing was too thick, factors limiting its top speed. Consequently it was not really competitive with the faster Boeing B-47 or B-52 bombers.

The Fatal Blow

Tragedy struck on June 5, 1948, when the second test YB-49 crashed, killing its crew, including Capt. Glen W. Edwards, the namesake of today's Edwards Air Force Base in California.

Despite this, the flying wing program seemed to gather new life when the Air Force ordered 30 RB-49s as reconnaissance aircraft. Then began a flying wing controversy that continues to this day.

On Jan. 11, 1949, the Air Force told Northrop to terminate work on the RB-49 program. Northrop was allowed to keep working on one aircraft, the YRB-49A, but only as a test bed for reconnaissance equipment. In November 1949, the government decided that it would not convert the existing YB-35 aircraft to the jet-powered YB-49 version. Instead, all of these aircraft simply would be scrapped.

The Northrop Flying Wing was dead, but the arguments over its merits never would be. There are many facets to the long argument. Fans of the flying wing claim that the YB-49 produced performance superior to that of the B-36. The question is, what happened?

In the wake of the decision, Northrop testified before Congress that he was under no pressure at the time of the YB-49 cancellation. Many years later, however, he withdrew the statement, claiming in 1980 that the flying wing was canceled because he had refused to merge his firm with Convair. He said the Air Force's reaction to his refusal was to cancel his contracts and to order the existing flying wing aircraft destroyed.

Not so, the Air Force insisted. USAF maintained that, while the YB-49 design had many problems in its fuel system, landing gear, and cockpit layout, its principle drawback was that it was not a good bombing platform. The aircraft also may have needed some form of stability augmentation. Unfortunately for the flying wing, the computers necessary to provide such stability simply did not exist at the time.

The cancellation of the flying wing program and the destruction of all remaining examples deeply wounded Northrop. He decided to retire in 1952 and was bitter about what he believed was a cruel and unnecessary end to his flying wing dreams.

Toward the end of his life, however, Jack Northrop managed to salvage a bit of satisfaction. The Northrop Corp. in April 1980, after obtaining the required security clearances, showed the legendary Northrop a model of a beautiful flying wing. It was Northrop's B-2 stealth bomber. Eyes welling with tears, Northrop reportedly said, "Now I know why God has kept me alive for the last 25 years."

He died Feb. 18, 1981, content at last in the knowledge that his concept of a pure flying wing had been made real. ■

Walter J. Boyne, former director of the National Air and Space Museum in Washington, is a retired Air Force colonel and author. He has written more than 600 articles about aviation topics and 40 books, the most recent of which is Today's Best Military Writing: The Finest Articles on the Past, Present, and Future of the US Military. *His most recent article for* Air Force *Magazine, "The Lord of the Skunk Works," appeared in the June issue.*

U.S. Air Force photo by Staff Sgt. Terry L. Belvins

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AFA/AEF National Report

afa-aef@afa.org

By Frances McKenney, Assistant Managing Editor

Honor Flight for Honored Vets

The **Wright Memorial Chapter** has helped World War II veterans from Ohio visit the new memorial that honors them at the National Mall in Washington, D.C.

Called "Honor Flight," the program was organized by the aero club of Wright-Patterson AFB, Ohio. Volunteer pilots have been flying disadvantaged World War II veterans in general aircraft, at no cost, from the Springfield-Beckley Airport in Ohio to Manassas, Va. From there, other volunteers have driven the vets to downtown Washington to view the National World War II Memorial, which was dedicated in May 2004. (See "To Honor a Generation," August 2004, p. 86.)

Wright Memorial Chapter President Michael Winslow said the chapter helped Honor Flight organizer Earl Morse identify pilots to fly the small aircraft and also spread the word about the project through the chapter's newsletter.

Winslow represented the Wright Chapter as a pilot on the first Honor Flight. It took place on May 21. A dozen World War II veterans traveled to the nation's capital aboard seven aircraft, most from the aero club, Winslow said. "We arrived back at Springfield at sunset to a flag-waving and cheering crowd of family and friends," he said.

A second Honor Flight took place in June. Project organizer Morse, who is a retired Air Force captain and a Veterans Affairs physician's assistant, said 160 vets had signed up for the five trips that remained this year. He said the last flight would take place this month, and the program would resume next spring. Morse told American Forces Press Service that he created Honor Flights because he didn't want his patients to die without seeing their memorial.

Convention in Texas

AFA National President Robert E. "Bob" Largent and Aerospace Education Foundation Chairman of the Board L. Boyd Anderson headed the list of dignitaries at the Texas State Convention in San Angelo in July. The **Concho Chapter** was the convention host.

Largent provided the attendees with an update on AFA's Air and Space Conference and other association initiatives. Lt. Gen. Dennis R. Larsen, vice commander of Air Education and Training Command, Randolph AFB, Tex., was the luncheon guest speaker. He described AETC's programs and its role in preparing airmen for combat in Southwest Asia. The dinner speaker was former astronaut Terence T. Henricks. A retired USAF colonel and space shuttle commander and pilot for four flights between 1991 and 1996, Henricks spoke about the history and future of the shuttle program. He is a member of the **Denton Chapter (Tex.).**

Other AFA officials at the convention included Thomas J. Kemp, AFA national secretary, and M.N. "Dan" Heth, an AFA national director, both from the **Fort Worth Chapter;** Buster Horlen, Texoma Region president and an **Alamo Chapter** member; and Sheila K. Jones, Oklahoma state president and a member of the **Central Oklahoma (Gerrity) Chapter.**

During the business session, Robert L. Slaughter of the Denton Chapter was elected Texas state president.

USAF photo by Raymond Crayton

In August, AFA Chairman of the Board Pat Condon (front row, fourth from right) spoke at the Georgia State Convention, held at the Museum of Aviation at Robins AFB, Ga. The Carl Vinson Memorial Chapter hosted the event.

Leg Up on the Competition

The **Harry S. Truman Chapter (Mo.)** used an AEF Matching Grant to send 10 AFJROTC cadets to the American Legion's Boys and Girls State Programs in Missouri and Kansas in June. The program, which operates in 49 states, teaches high school juniors the basics about how government works and encourages good citizenship, leadership, and an interest in public service.

This summer, the Truman Chapter sent one boy and one girl from each of the area's five AFJROTC units (four in Missouri, one in Kansas) to week-long Boys and Girls State sessions. The students campaigned for office, elected their own officials, visited the state legislature, and attended classes.

Jerry Hughes, the Truman Chapter aerospace education VP, pointed out that since 2001, the five cadets from their area who have received full AFROTC college scholarships have all been Boys or Girls State participants—and all sponsored by the chapter. Attending the program helped the students' scholarship applications stand out from the competition, he said, because Boys and Girls State is an outside activity and "highly regarded by selection boards."

"Our chapter efforts and financial support could not have been better applied," he said.

Brig. Gen. Randal Fullhart (left), commandant of Air Command and Staff College at Maxwell AFB, Ala., joins Mary Anne Thompson, president of the Aerospace Education Foundation, in presenting Maj. Andrew Kovich with the AEF Spaatz Award. Kovich was honored for writing the best ACSC essay on airpower.

Chapter President James Snyder added that the young AFJROTC cadets always attend the chapter's annual "Salute to Youth" meeting in the fall and report on their Boys or Girls State experience.

Their talks "do much to generate contributions, which then go to fund the next year's program," he said.

Publicity for AEF

When a local physics teacher received the chapter and state Teacher of the Year award, the *Garden City (Kan.) Telegram* ran his photo and a short feature article that gave AEF and the **Contrails Chapter** a publicity boost.

Casey Wise, chairman of the science department at Garden City High School, told the newspaper reporter that his neighbor, Samuel M. Gardner, urged him to compete for the award.

The newspaper noted Gardner's roles as chapter aerospace education VP and AEF trustee emeritus. The newspaper also quoted him as saying that Wise received the award because he allows students to telephone him at home with homework questions, and he helps students before and after class and at lunch hour. "He just goes the extra mile," Gardner told the paper.

Spouse Scholarship in Germany

At its July meeting, the **Lufbery-Campbell Chapter** at Ramstein AB, Germany, presented an AEF Spouse Scholarship to the only recipient from US Air Forces in Europe.

April M. Perolio received the award from MSgt. Michael G. Burnham, the chapter president. He also gave her a letter of congratulations from Gen. Robert H. Foglesong, USAFE commander, who was unable to attend the meeting.

Perolio is earning a master's degree in higher education leadership through Capella University, based in Minneapolis. Her spouse is SSgt. Michael J. Perolio of the 435th Vehicle Readiness Squadron at Ramstein. At the time she received the scholarship, April Perolio worked as a counselor aide for Central Texas College in the Kaiserslautern area.

Air Force Association Balance Sheet

	Dec. 31, 2004			Dec. 31, 2003		
	General Fund	Life Membership Fund	Total	General Fund	Life Membership Fund	Total
Assets						
Cash and Investments	3,963,535	14,311,101	18,274,636	3,338,233	12,973,583	16,311,816
Accounts Receivable	1,228,564	200,421	1,428,985	1,516,712	197,792	1,714,504
Prepaid Expenses	156,320		156,320	147,636		147,636
Inventory	109,690		109,690	95,054		95,054
Property and Equipment (net of depreciation)	10,512,851		10,512,851	10,324,175		10,324,175
Prepaid Pension	5,128,955		5,128,955	5,213,092		5,213,092
Other Assets	1,449,887		1,449,887	1,470,714		1,470,714
Total Assets	**22,549,802**	**14,511,522**	**37,061,324**	**22,105,616**	**13,171,375**	**35,276,991**
Liabilities and Net Assets						
Liabilities						
Accounts Payable	1,168,520		1,168,520	1,021,732		1,021,732
Premium Refund Payable	315,195		315,195	334,995		334,995
Accrued Expenses	467,938		467,938	488,559		488,559
Deferred Revenue	919,209		919,209	988,186		988,186
Note Payable	900,000		900,000	940,000		940,000
Total Liabilities	**3,770,862**	**0**	**3,770,862**	**3,773,472**	**0**	**3,773,472**
Net Assets-Unrestricted						
Undesignated	16,980,242		16,980,242	16,533,446		16,533,446
Designated	1,798,698	14,511,522	16,310,220	1,798,698	13,171,375	14,970,073
Total Net Assets	**18,778,940**	**14,511,522**	**33,290,462**	**18,332,144**	**13,171,375**	**31,503,519**
Total Liabilities and Net Assets	**22,549,802**	**14,511,522**	**37,061,324**	**22,105,616**	**13,171,375**	**35,276,991**

This year, AEF awarded 30 scholarships to Air Force active duty or reserve spouses who are pursuing undergraduate or graduate degrees.

More AFA/AEF News

■ An aircraft maintenance officer in the New York Air National Guard was guest speaker for the April meeting of the **Shooting Star Chapter (N.J.).** Edward A. DeFalcon has also served with the New Jersey Air National Guard, as well as on active duty at Spangdahlem AB, Germany.

■ J. Ray Lesniok, the region president from the **North Coast Chapter (Ohio),** called it the "Great Lakes Region Face to Face Meeting." Two dozen AFA representatives attended this gathering, hosted by the **Fort Wayne Chapter (Ind.)** over two days in May. Chapter President Ted Huff conducted a POW/MIA remembrance ceremony at the Friday dinner. The next day's activities included presentations on AFA strategic planning. William Howard from the host chapter was nominated to be the next Great Lakes Region president.

■ Stu Entz, president of the **Maj. Gen. Edward R. Fry Chapter (Kan.),** presented a chapter scholarship to the outstanding AFROTC cadet at the University of Kansas in Lawrence in May. Matthew Weilbacher, a sophomore majoring in business, received the $500 award.

■ At a June luncheon, the **Northern Shenandoah Valley Chapter (Va.)** donated $1,500 to Randolph-Macon Academy in Front Royal, Va. Chapter President Art Olson presented the gift to the school's president, retired USAF Maj. Gen. Henry M. Hobgood. The donation represented $500 from the chapter and matching funds from the state and Central East Region AFA organizations. The funds support a scholarship at RMA, the oldest co-ed boarding school with AFJROTC.

■ Several **Kitty Hawk Chapter (N.C.)** members attended the dedication of a historic-site marker honoring a newspaperman who championed the building of the Wright brothers monument, the granite memorial atop Kill Devil Hill. Melvin Daniels, Ed Greene, Tom Halfhill, and Joseph M. Hardman were among the crowd at the dedication of the marker for W.O. Saunders in Elizabeth City, N.C., in June. ■

Air Force Association
Comparative Statement of Revenues and Expenses

	Year Ended	
	Dec. 31, 2004	Dec. 31, 2003
General Fund		
Revenue		
Aerospace Technology Exposition	1,536,616	1,488,587
Building Operations	1,037,982	1,064,055
Convention	928,440	570,552
Industrial Associates	98,700	99,600
Insurance Programs	1,848,864	2,189,600
Investments	121,323	141,321
Magazine	1,423,121	1,375,340
Membership	3,911,456	3,961,401
Patrons	291,954	290,790
Other	723,120	509,171
Total Revenue	**11,921,576**	**11,690,417**
Expenses		
Program Services:		
Aerospace Technology Exposition	717,396	732,103
Convention	1,581,959	1,243,971
Industrial Associates	130,544	132,850
Insurance Programs	2,448,903	2,424,377
Magazine	1,252,798	1,251,311
Patrons	301,456	299,310
Total Program Service Expenses	**6,433,056**	**6,083,922**
Supporting Services:		
Building	677,977	635,028
Membership	4,363,747	4,596,948
Total Supporting Services Expenses	**5,041,724**	**5,231,976**
Total Expenses	**11,474,780**	**11,315,898**
Changes in Net Assets General Fund	**446,796**	**374,519**
Life Membership Fund		
Life memberships granted	339,239	300,318
Revenue from investments	2,289,755	2,575,420
Less: Transfer to General Fund for equivalent annual dues and other costs	(1,288,847)	(1,287,420)
Changes in Net Assets Life Membership Fund	**1,340,147**	**1,588,318**

Treasurer's Note: The figures presented herein have been extracted from audited financial statements submitted previously to the Board of Directors of the Air Force Association. Expenses include chapter commissions, state commissions, and other direct support for field units totaling $476,971 in 2004 and $455,392 in 2003.

AFA In Action

The Air Force Association works closely with lawmakers on Capitol Hill, bringing to their attention issues of importance to the Air Force and its people.

AFA Co-hosts E-8 Tour

A number of Congressional staff members recently got a chance to tour an E-8 Joint STARS C4ISR platform at Andrews AFB, Md. Aircrew members provided detailed briefings and answered questions about the aircraft's air-to-ground radar that can locate, classify, and track vehicles moving on the Earth's surface.

The tour was a cooperative undertaking between AFA and the Air Force and is part of an ongoing effort to educate Hill professional staffers about USAF's capabilities.

Have AFA/AEF News?

Contributions to "AFA/AEF National Report" should be sent to *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: afa-aef@afa.org. Digital images submitted for consideration should have a minimum pixel count of 900 by 1,500 pixels.

Reunions

361st FG Assn, UK, France, and Belgium (WWII). Oct. 20-24 at the Holiday Inn-Rossiyn in Arlington, VA. **Contact:** Bill Street, 5912 Wilson Blvd., Apt. 412, Arlington, VA 22205 (703-528-8964) (streetdecoy@aol.com).

801st/492nd BG Assn (WWII). Nov. 9-13 in San Diego. **Contact:** Sebastian Corriere, 4939 N. 89th St., Milwaukee, WI 53225-4107 (phone/fax: 414-464-8264) (corriere@voyager.net).

MTI Assn. Oct. 26-28 at Lackland AFB, TX. **Contact:** John Pavey Jr., PO Box 665, Sylva, NC 28779 (828-586-8987) (j.pavey@mchsi.com).

SAC Airborne Command Control Assn. April 5-9, 2006, at the Radisson Suites in Tucson, AZ. **Contact:** Steve Leazer, 6141 Bagley Ave., Twentynine Palms, CA 92277-2502 (760-367-7631) (leazersd@thegrid.net).

Stray Goose International, including all involved with Combat Talons in the Pacific. Oct. 7-9 at the Enlisted Hooch Soundside at Hurlburt Field, FL. **Contact:** Col. Lee Hess, PO Box 9355, Hurlburt Field, FL 32544 (850-651-0353 or 850-240-0707) (papasan@mc130.com).

University of Miami-Florida International University US Army ROTC Alumni, including all services. Oct. 27-30 at the University of Miami in Coral Gables, FL. **Contact:** Bill Jennewine, 11015 Browning Rd., Lithia, FL 33547 (813-681-7844) (bgtd96@aol.com).

USAF Pilot Training Class 56-H. Spring 2006 in Las Vegas. **Contact:** James McDonnell Jr. (763-682-0660 ext. 15) (jim@thedrummer.com).

USAF Training Class 53-F. Oct. 27-30 in Tucson, AZ. **Contact:** Frits Forrer (850-916-7566) (fforrer@bellsouth.net).

Veterans of Underage Military Service. Nov. 7-13 in Branson, MO. **Contact:** R. Thorpe, 6616 E. Buss Rd., Clinton, WI 53525 (608-676-4925).

Vietnam Veterans. Nov. 12-13 at Nells AFB, Nev. **Contact:** Amanda Hayes (702-506-2065) (amanda@aviationnation.org).

Willie All-Class Reunion, including all **Williams AFB, AZ,** pilot training classes and alumni. Nov. 10-11 in Mesa, AZ. **Contact:** Willie Heritage Celebration, 6027 South Sagewood, Mesa, AZ 85212 (phone: 480-727-1048 or fax: 480-727-1677) (information@williieheritage.com).

Seeking members of **Pilot Training Class 56-H** for a reunion, spring 2006 in Las Vegas. **Contact:** James McDonnell Jr. (763-682-0660 ext. 15) (jim@thedrummer.com).

Seeking members of **Pilot Training Class 56-M,** Bainbridge and Spence ABs, GA, and Bartow AB, FL, for a reunion the last week of April 2006 in San Antonio. **Contact:** John Mitchell, 11713 Decade Ct., Reston, VA 20191-2942 (phone: 703-264-9609 or fax: 703-264-1746) (mitchelljf@yahoo.com).

Seeking members of the **US Strategic Bombing Survey** (1943-47) for a reunion in Riverside, CA, in January 2006. **Contact:** Curtis Curtis, 13063 5th St., Yucaipa, CA 92399 (planeeagle@netzero.net). ■

Mail unit reunion notices four months ahead of the event to "Unit Reunions," *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. E-mail notices to reunions@afa.org. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.

Air Force Association
Los Angeles National Symposium and Annual Air Force Ball

"Space: Enabling the Warfighter"

The Beverly Hilton Hotel
Los Angeles, California
Nov. 18, 2005

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Acting Secretary of the Air Force

Gen. T. Michael Moseley
Air Force Chief of Staff

Gen. Bruce A. Carlson
Commander, Air Force Materiel Command

Gen. Lance W. Lord
Commander, Air Force Space Command

Panel Discussion

There will also be a panel discussion with aerospace industry leaders moderated by **Lt. Gen. Michael A. Hamel**, *Commander*, Space and Missile Systems Center, Los Angeles.

The AFA Symposium

In the 21st century, space capabilities are truly joint in nature because they serve all warfighters. Space provides for precise navigation and timing, missile warning, surveillance, space control, weather tracking, and communications. In fact, space assets are essential to all military operations and to the nation. Airmen, soldiers, sailors and marines in the field require critical information to do their jobs and to stay ahead of the enemy.

At the 2005 Los Angeles National Symposium and Ball, top military and commercial leaders will address the contributions of space to the combat environment and current challenges affecting the military, civilian, and commercial space partnership.

The Air Force Ball

The 34th Annual Air Force Ball will also be held at the Beverly Hilton Hotel on Friday evening, Nov. 18. For additional information on the ball and to reserve tickets and/or a table, please call Henry Sanders at (310) 645-3982.

Beverly Hilton Hotel

If you plan to stay at the Beverly Hilton Hotel, please call to make reservations as soon as possible: (310) 274-7777 or 1-800-HILTONS. Mention the AFA symposium to receive the special symposium rate of $190 for single or $205 for double, plus 14.05 percent tax. The deadline to receive these rates is Oct. 20, 2005.

Registration

The fee for the symposium is $425, which includes a continental breakfast, coffee breaks, and lunch. (The fee is $500 for nonmembers.) To register, call (800) 727-3337, ext. 5805, or visit www.afa.org.

Pieces of History

Photography by Paul Kennedy

From Air Forces to Air Force

For American airpower, the decade of the 1940s was a unique period, one in which US Army Air Forces slowly pulled away from the Army to become an independent Air Force. USAF's formal date of birth was Sept. 17, 1947. However, the separation did not proceed uniformly or all at once; clothing, training manuals, patches, handbooks, and other items survived from one era to the next, sometimes remaining in use for years. Shown here is a collection of such items from the 1940s, many of which made the transition from USAAF to USAF and then faded away by the early 1950s.

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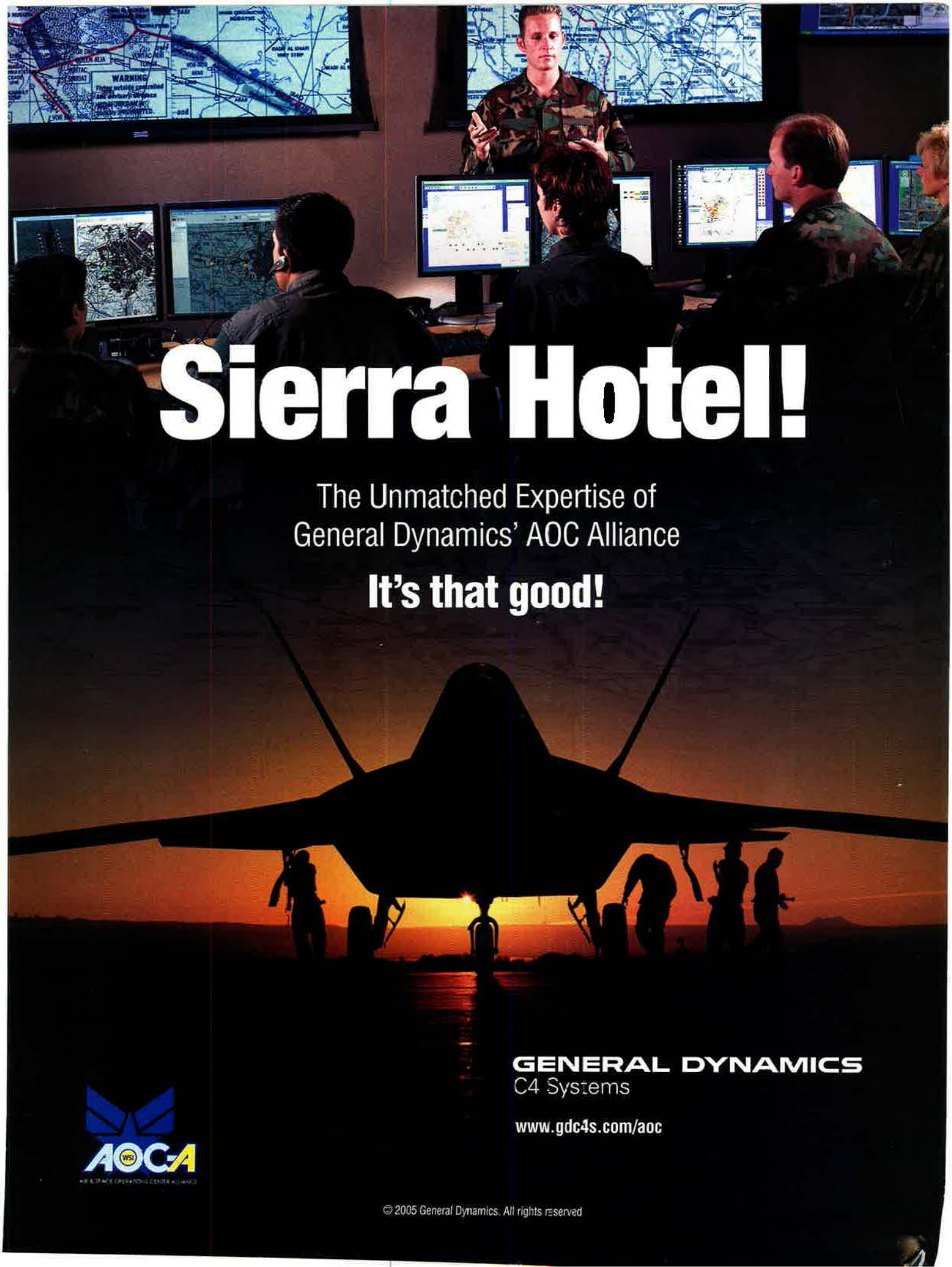
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