

November 2002/\$4

AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE

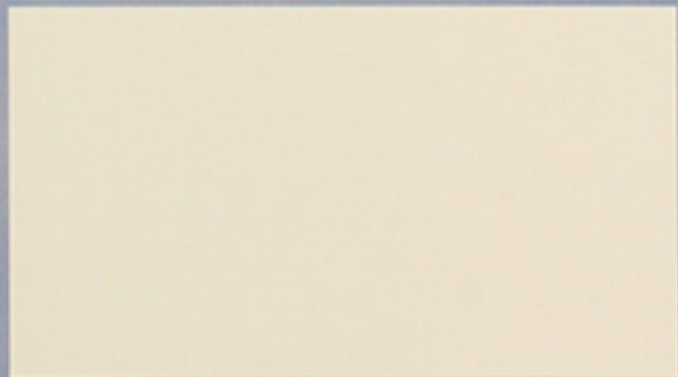


Agile Archer

When Fulcrum Meets the F-15

An Air War Like No Other
Triple-Threat Sensor

AFA's National Convention
Global Danger, Global Power



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AIR FORCE Magazine (ISSN 0730-6784) November 2002 (Vol. 85, No. 11) is published monthly by the Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Phone (703) 247-5800. Second-class postage paid at Arlington, Va., and additional mailing offices. **Membership Rate:** \$36 per year; \$90 for three-year membership. **Life Membership (nonrefundable):** \$500 single payment, \$525 extended payments. **Subscription Rate:** \$36 per year; \$29 per year additional for postage to foreign addressees (except Canada and Mexico, which are \$10 per year additional). Regular issues \$4 each. USAF Almanac issue \$6 each. **Change of address** requires four weeks' notice. Please include mailing label. **POSTMASTER:** Send changes of address to Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association. Copyright 2002 by Air Force Association.

Global Danger, Global Power

OUR world has changed. Terrorist attacks have shown the vulnerability of the American homeland, with the prospect of even worse attacks to come. The security of the United States is at risk.

The war on terror is not optional for the United States. We have no choice but to fight. We have been targeted by a fanatic terrorist network committed to killing Americans and destroying our way of life. Either we get them or they get us.

Essentially, terrorism is not a law enforcement problem, nor is it a sociological misunderstanding. It is a life-or-death issue of national security.

We cannot protect the homeland by defensive measures alone. It is not possible to be on guard everywhere all the time. We must take the war to the enemy's homeland, training camps, and sanctuaries. To the extent possible, we want to fight over there, not over here.

We agree fully with the policy that any nation harboring or supporting terrorists or terrorism will be regarded as a hostile regime and that we will hold open the option for preemptive action if that is necessary in order to forestall destructive acts against us.

Global power projection forces in air and space will have a prominent role in these endeavors, building on the lead they have taken in the conflicts of recent years.

This war comes in addition to, not instead of, previous national security requirements. We face a range of dangers, from terror attacks at home and abroad to the ever-present possibility of major theater conflict, as well as emerging challenges in space and cyberspace. We also face a range of potential adversaries, from nation states to transnational organizations and networks.

When the terrorists struck, US armed forces were already employed elsewhere in operations and deployments that kept them four times busier than they were during the Cold War, although the force is a third smaller and the budgets are less.

These requirements have not gone away.

We must sustain the war on terror and at the same time restore the vitality of the armed forces, worn thin by a decade of neglect, and transform the services to prepare them for the demands of the future.

Air Force Association 2003 Statement of Policy, adopted by the delegates to the AFA National Convention meeting on Sept. 15, 2002, in Washington, D.C.

Transformation will focus on fast response, long reach, precision attack, and a high order of intelligence, surveillance, and reconnaissance. These capabilities are the hallmarks of air and space forces.

Aerospace power is the primary military tool allowing us to scale up and down from small operations to major theater conflicts and to respond with agility to all of the obligations in between. Only with adequate air and space power can we handle new, unforeseen operations rapidly and successfully.

The War on Terror

The Air Force Association, along with the nation, appreciates and salutes all of the armed forces for their service in the war on terror, and we are especially proud of the Air Force.

Within minutes of the terrorist hijackings, the Air Force had established combat air patrols across America. Since then, Air Force components have flown most of the subsequent air defense sorties in Operation Noble Eagle, with the Air National Guard and the Air Force Reserve Command flying 80 percent of the total missions.

To project power against the terrorist strongholds, the nation called first on its forces in air and space. In Operation Enduring Freedom in Afghanistan, Air Force bombers, fighters, and gunships delivered a majority of the ordnance and accounted for more than half of the targets.

Air Force tankers made the strike missions possible for aircraft from all of the services, and everything that went into Afghanistan went by airlift. Special operations forces added enormously to the effectiveness and accuracy of the strikes. Air Force spacecraft, aircraft, and unmanned aerial vehicles wrote a dramatic new chapter in the level of intelligence, surveillance, and reconnaissance.

Afghanistan demonstrated again that there is no place on Earth that cannot be touched within hours by American air and space power.

However, it would be a mistake to regard the operations there as a template for all conflicts of the future. In Afghanistan, for example, the enemy's lack of modern air defenses made it possible for older aircraft to operate freely. We must regard this as an exceptional situation.

Combat under primitive conditions presents its own set of difficulties, but most wars of the future—in both the short term and the long term—will require far more advanced military capabilities.

We give credence at our peril to those who argue that 50-year-old bombers and 30-year-old fighters will be sufficient to our need in the conflicts to come.

Defense Strategy and Aerospace Power

The Quadrennial Defense Review adopted a new basis for national defense strategy and a new standard for sizing the armed forces.

Henceforth, the strategy will be "capabilities-based" rather than "threat-based," focusing on how an adversary might fight instead of on who the adversary might be and when or where the war might occur.

Accordingly, planners will concentrate on the growing array of capa-

bilities that adversaries might possess or could develop as well as determining the capabilities we will need ourselves.

The old force-sizing standard, which envisioned a force that would be able to fight two regional conflicts simultaneously, has been set aside.

The new standard prescribes a force that can defend the homeland, deter aggression forward in four critical theaters, and swiftly defeat aggressors in any two theaters at the same time.

The option is preserved for one massive counteroffensive to occupy an aggressor's capital or to replace its regime, but the Department of Defense will now maintain one occupation force instead of two.

The Air Force Association concurs

poned, programs were stretched out and underfunded, and capital equipment was not replaced as it wore out. Spare parts and munitions were in short supply.

Aging facilities and infrastructure were dilapidated and deteriorating. The aircraft fleet was concurrently getting older, less reliable, and more expensive to maintain. Our margin of advantage in military technology had begun to narrow.

On top of this accumulated backlog in recapitalization and modernization, the decision was made to "transform" the armed forces to better meet the needs of the future. It was also clear that transformation was essential in addition to, not instead of, the imperatives to recapitalize and modernize the force.

ment holiday" of the 1990s or to pay for transformation.

It is often suggested that the defense budget deficit can be made up by cutting forces and programs and by shifting money from one military account to another.

That is the kind of thinking that caused the problem in the first place. Some economies and reallocations are always possible, but basically, it is not a matter of the program being too large—it is that the budget is too small to balance tasking with resources.

We believe that the nation can and must commit four percent of its Gross Domestic Product to defense. By historical standards, that would be a moderate burden. For 50 years prior to 1995, the United States regularly



with these changes. It is sound strategy to prepare broadly for a range of threats that cannot always be specified exactly in advance.

These changes confirm and continue the trend in which air and space forces carry a heavier share of the burden in the nation's wars. The new strategy and force-sizing standard point to an increase, not a decrease, in aerospace power.

The strategy relies fundamentally on long-range precision strike, global situational awareness, and mobility. Major operations will be led by stealthy aircraft and advanced electronic and information technology to overcome anti-access barriers and "kick down the door" to permit entry by follow-on forces, including surface forces and air forces that will sustain the attack and operate in other roles.

Recapitalization, Modernization, and Transformation

When the war on terror began, the services were already struggling to recover from the accumulated neglect of the 1990s, when force levels and defense budgets were cut repeatedly, modernization was post-

The problem has become far more difficult, now that we are in the midst of the war on terror with the attendant requirements for forces and resources.

Although improvements are desirable in all elements and aspects of the force, it is inevitable that transformation must emphasize air and space forces. The capabilities most critical to transformation are global awareness, long-range precision strike, and control of air and space. Mobility is the fundamental enabler.

For the Air Force, transforming to implement the national defense strategy will lead to a portfolio of capabilities—integrating air and space assets, manned and unmanned aircraft, new systems along with older ones—which may be used in new ways or to support innovative concepts of operation.

Resources for Defense

The pending increase in the defense budget is substantial, but a large portion of it goes for the war on terror and other current expenses and to keeping the force from sliding any deeper into the hole. It is not sufficient to overcome the "procure-

allotted more than four percent of GDP to national defense.

Force Structure and Strength

It should be obvious now that the force has been cut too much, both in force structure and in numbers of people. At the end of the Cold War, the Air Force pulled back from most of its overseas bases, lost a third of its personnel strength, and disbanded units of every kind, from major commands to fighter and attack wings.

Contrary to the popular expectation, though, the nation's use of military forces increased rather than decreased. The drawn-down force was soon responding to one contingency after another and covering "temporary" operations abroad that went on for years. With infrastructure limited in remote locations, deployments typically had to include logistics and combat support elements as well as fighting elements.

To cope with surging operations tempo and personnel tempo, the Air Force reconfigured its combat capabilities into 10 "buckets of capability" called Aerospace Expeditionary Forces, or AEFs. This imposed some order and predictability, but the force

structure was still too thin and there were still too few people.

There are not enough resources to fill out all 10 AEFs. The Department of Defense recognizes a "Low-Density/High-Demand" problem. This refers to such systems as the Airborne Warning and Control System and Joint STARS, which were not bought in sufficient quantities and which are now tasked at maximum levels. In addition, some of the AEFs are without some basic organic elements. For example, only three of them have precision standoff strike capability.

Even before the war on terror, expeditionary demands were taxing the reduced personnel strength. The Air Force has no units or forces assigned or held aside for AEF duty only. Forces to meet that requirement are drawn from the normal complement of active, Guard, and Reserve units. Relentless deployments often leave home bases shorthanded, especially in mission support areas.

The Air Force met strength requirements for Operations Noble Eagle and Enduring Freedom by a mobilization of reserve components and by "Stop-Loss" actions that prevented people from leaving service at the end of their normal commitments.

Unfortunately, the need for an increase in personnel strength is cast into competition with other defense priorities and presumed fiscal constraints. Talk continues about alternative solutions, such as internal force realignments, reduced commitments overseas, outsourcing of functions, and base closures.

The Air Force Association believes it is time to recognize the problem and deal with it: We need 10 AEFs, fully fleshed out, with the requisite increases in personnel strength.

Investing for the Future

The war on terror and conflicts of the near future will be fought with the weapons and forces we have now. Transformation will develop capabilities for use by later generations, just as investments made in the 1970s and 1980s provided the weapons that won the conflicts of the past 10 years.

The system that will typify the asymmetric US advantage in the decades ahead is the Air Force's F-22. Its combination of speed, stealth, advanced avionics, and operating altitude will allow it to penetrate and survive in airspace deadly to any other aircraft. It will perform multiple missions, including air superiority, deep strike, and suppression of enemy air defenses.

The F-22 is under attack by people who want to kill or curtail it. The arguments against it are the same misguided ones made in the past by people who wanted to kill or curtail the F-15, AWACS, and the B-2, all of which went on to demonstrate their immense value to the nation.

We believe the F-22 program is critical to national defense and to transformation and that the fleet should be sufficient to allot two squadrons to each AEF. If the program is held below that level, we will create yet another Low-Density/High-Demand system.

The F-35 Joint Strike Fighter is a natural partner with the F-22 and will be available in larger numbers to fly the bulk of attack missions if a conflict persists. It is urgently needed to replace F-16 fighters, which have been flown more than anticipated and are now wearing out ahead of schedule.

We have urged repeatedly that the Air Force accelerate its timetable for fielding of a new long-range strike system. Recent events have demonstrated again the worth of weapon systems that can strike from afar. In the meantime, existing bombers should be upgraded and improved munitions developed.

The strategic airlift issue is an object lesson in defense investment. The C-17 airlifter program was set originally at 220 aircraft but then was cut radically for budget reasons. Operational realities are now returning us by increments toward the original number, but instability from churning the program has added billions to the cost. We should learn from this mistake—in this program and in others—and this time, buy enough.

Aerial refueling is the lifeblood of global reach and power projection by all of the armed forces. Our tankers are wearing out. Replacement is critical and it will not wait. We should get on with it. Now.

One of the major trends shaping the future is that numerous missions, especially in intelligence, surveillance, and reconnaissance, will migrate to space. Some of the desired capabilities are not yet within easy reach, but it is essential that we maintain the emphasis and the investment. It is through systems in space that we will ultimately move from local and regional perspectives to one that is truly global, taking in great sweeps of geography at a single glance.

Unmanned Aerial Vehicles, which performed so spectacularly in Afghanistan, represent another wave of the future. They will soon move beyond reconnaissance roles and

take on other missions, including attack of targets in areas where manned aircraft could not survive. We applaud the Air Force on its wisdom in nurturing UAV technologies thus far and we look forward to the emergence of even more impressive results from transformation initiatives.

People

In time of war, the public sees and honors the service rendered by men and women in uniform. Such recognition, occurring again during the present crisis, reinforces the bonds of mutual trust and respect between the armed forces and the nation.

Military people got a further signal about the value and importance of their service with the passage of the largest pay raise in 20 years and measures to reduce out-of-pocket expenses.

The environment of recurring expeditionary deployments and intense personnel tempo requires more emphasis on family support, including child care, the effective delivery of health care, and spouse employment initiatives.

Of particular concern is the condition of facilities in which our military people live and work. The condition of housing at many bases for both families and single members is a disgrace, and it is not uncommon that working conditions are better in temporary deployment locations than they are at home bases.

The Air Force Association supports further measures to improve the quality of life for military members and their families and to make the armed forces a desirable and rewarding career.

Total Force

As demonstrated in Operations Noble Eagle and Enduring Freedom, the Air Force could not go to war without the Air National Guard and Air Force Reserve Command. Additionally, the Air Force would be severely hampered in conducting peacetime operations without its reserve components.

The Guard and Reserve currently provide 25 percent of the aviation and almost 30 percent of the combat support elements for steady state, peacetime deployments of the Aerospace Expeditionary Forces.

They also provide more than 65 percent of the Air Force's tactical airlift capability, 35 percent of the strategic airlift, 60 percent of the air refueling, 38 percent of the fighters, and make significant contributions to rescue, bomber, and combat support missions.

We support the Air Force's initiative, called Future Total Force, that will further capitalize on the caliber of these components in blended units that will integrate active duty, Guard, Reserve, and civilian members for greater effectiveness and flexibility.

The Air Force Association expresses its appreciation for the support of the employers of Guard and Reserve members. Without their cooperation, the strength of the Total Force would not be possible.

The civilian service component of the Total Force needs special care and attention. Over the next five years, more than 40 percent of the career workforce will become eligible for retirement. Force reductions have already created problems with the skill mix. We support the Civilian

space operations as well as for air operations.

- The Nuclear Posture Review has found that two-thirds of our nuclear warheads can be taken out of operational service by 2012. We regard this as a rock-bottom position. The nuclear threat is persistent, and we must maintain enough countervailing power for a credible deterrent.

- We are vulnerable to attack by ballistic missiles of both intercontinental and theater range. We must pursue a comprehensive defense against these weapons, exploring directed energy solutions and other approaches. Contrary to proposals often heard, ballistic missile defense should not be funded at the expense of other defense programs. The defense budget must be large enough

be the dominant elements in most conflicts, we do not believe in single dimension strategies. Surface forces will continue to be important, and we will need a combination of land, sea, and air capabilities.

We cannot know where the next crisis will occur. It may be a variation on previous terror operations, an attack on our vital national infrastructures, an outbreak of chemical, biological, radiological, nuclear, or enhanced high explosive weapons, or a regional conflict with the requirement to halt and deal with an invasion force.

The nation makes a critical mistake if it fails to put sufficient emphasis on air and space forces. They uniquely define the military strength of the United States. They are the



Workforce Shaping initiative, which attempts to rebuild the civilian force in the right way. We applaud the integration of the military and civilian Air Force teams, which has added increased synergy to the force.

Areas of Specific Concern

- Transformation and US leadership in military technology are obviously dependent on a strong science and technology effort. However, the Department of Defense has not been able to meet its own goal of allocating three percent of its overall budget to S&T. In the Air Force, the spending level is below the historical average. Furthermore, where the Air Force led all of the services in S&T spending for more than 30 years, it now trails both the Army and the Navy in that regard. We believe the priority on S&T should be higher.

- The Department of Defense has designated the Air Force as its executive agent for space. The logical and desirable next step is to amend Title 10 of the US Code, as proposed by the congressionally chartered Space Commission, to assign the Air Force the responsibility to organize, train, and equip forces for

to cover all major national security requirements, of which this is one.

- Without an industrial base, the armed forces cannot be sustained, much less modernized or transformed. However, the defense industrial base today is characterized by consolidation and shrinkage as the Department of Defense reduces programs and production.

We cannot bring back the "Arsenal of Democracy" that once existed, but we can and must reinforce the remaining industrial base by wise acquisition strategies, fair contracting and business practices, and a climate in which a mutually beneficial partnership can thrive.

The Air Force's industrial base includes not only firms in the private sector but also the air logistics centers. To preserve a ready and controlled source of depot maintenance, we must strike a careful balance between the maintenance and repair workload that is contracted out and the portion performed by the air logistics centers.

Global Vigilance, Reach, and Power

Although air and space power will

hardest-hitting, longest-reaching, and most flexible forces that we possess. They offer our best hope of transformational gain.

Operations Noble Eagle and Enduring Freedom were only the first rounds in a long and difficult conflict, but there is an excellent chance of winning the military part of the war on terrorism if the nation will stay the course and sustain the effort.

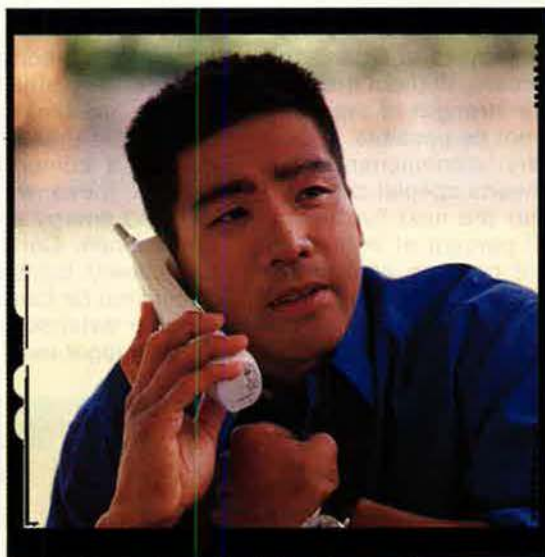
Whatever comes, the guiding military objective will be to find, fix, track, target, engage, and assess anything of consequence that moves on the surface of the Earth. This capability applies not only to the war on terrorism but also to whatever lies beyond.

In the 21st century, the United States will rely even more than it has in the past on its forces in air and space for global vigilance, global reach, and global power.

The foundations of the force are its people and its values. AFA has adopted the Air Force's core values, which are manifest in the actions of its members.

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- Service before self.
- Excellence in all that we do.

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About Those Bogus Charges

I [have] a few comments about the impressive article by Phillip S. Meilinger. [See "Bogus Charges Against Airpower," September, p. 70.] In general, the points made about airpower in World War II are right on the mark. I would point especially to the effect of airpower on Germany. There were lessons learned during the campaign that could not have been foreseen before the war.

However, I must give Meilinger low marks on his conclusion that the nuclear attacks on Hiroshima and Nagasaki were justified. Remember that Japan was looking for a face-saving way out of the war and took the threat of invasion as a means of doing just that. Japan was putting out peace feelers through Soviet Russia as early as December 1944 and made the retention of the emperor as the main condition. When the surrender finally came, it was unconditional except for the prime condition demanded by the Japanese.

Also, remember that American submarine operations had virtually eliminated the Japanese merchant marine. We had done to Japan what Germany had hoped to do to England. It is hard to believe that Japan would have endured freezing and starving during the winter of 1945-46 as an alternative to surrender.

In the end it was Stalin's perfidy in declaring war on Japan in the midst of interceding for them with the West, and the total effect of strategic bombing, as Meilinger notes, that persuaded Japan to surrender.

Our unfortunate decision to operationally use nuclear weapons is having an ominous effect on the present situation with rogue nations like North Korea and Iraq.

John Stanaway
Muskegon, Mich.

Meilinger correctly points out that many myths have grown up about the Allied strategic bombing campaign of World War II. It is especially ironic that it has become commonplace to cite the US Strategic Bombing Survey in support of the claim that the

Allied bombing had "no effect" on Germany, when in fact the survey concluded nothing of the kind. At a very minimum, Allied strategic bombing diverted substantial German resources and manpower to air defense and trapped the Luftwaffe fighter forces into a losing war of attrition that effectively stripped the German armies of tactical air cover from D-Day to the end of the war.

But I think Meilinger may go too far to the other extreme in dismissing criticism of Allied air strategy and in defending a questionable doctrine that proved far less effective than its champions claimed it would be and which took an arguably needless toll in civilian lives—not to mention the lives of thousands of Allied bomber crews.

While Meilinger is correct that the Air Corps did not enter the war with a "Douhetian" strategy of targeting civilians, there is no doubt that mainstream thought among American air leaders in the 1930s saw strategic bombardment as paramount—and as an independent, war-winning strategy. The percentage of courses devoted to various topics at the Air Corps Tactical School that Meilinger cites is less relevant than the content of those courses, and as early as 1930 the core "Airpower" course at ACTS was teaching its officer students that except in the most unusual circumstances the weight of airpower should be deployed against "strategical objectives," rather than the battlefield or its immediate vicinity. By 1935, the airpower curriculum was explicitly asserting that by striking directly at the "economic

and political heart" of the enemy nation, airplanes could defeat the enemy directly in a way soldiers and sailors never could. And while official Army field manuals declared a key mission of the Army Air Corps to be ground attack aviation, few ranking Air Corps officials agreed with that view. In a 1938 article, [Maj. Gen. Henry H. "Hap" Arnold], for example, declared that it was foolish to draw any lessons about the true potential of airpower from the recent fighting in the Spanish Civil War since what had gone on there was merely "support" of ground arms, not the kind of strategic attack that could "break the national will to fight, thus forcing governmental heads to sue for peace."

Certainly during the war both Arnold and [Air Chief Marshal] Arthur Harris, the commander of RAF Bomber Command, repeatedly asserted that such a "real" employment of airpower could win the war alone. It strikes me as semantics to suggest that Arnold never claimed strategic bombing would win the war alone because he merely claimed that strategic bombing would cause Germany to surrender before an invasion of Europe was necessary. In either case, Arnold was wrong.

Although American air commanders entered the war with the conviction that the enemy's will to resist could be defeated through the precision bombing of carefully selected vital nodes in the industrial fabric of the nation—and they rejected, on both practical and moral grounds, the direct targeting of civilian morale—the realities of bombing technology of the 1940s, and the rapid casting away of restraints in the ugly realities of the conflict, quickly made any distinction between "precision" bombing and "area" bombing almost meaningless. Harris advocated area bombing not, by the way, as a Douhetian attack on civilian morale but on grounds of pure expediency. He dismissed the notion of trying to hit specific targets as "panacea mongering," his argument being that the only way to be sure of destroying the militarily important things in German cities was to destroy the cities themselves—

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AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

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Circulation audited by
Business Publication Audit

Letters

and that, at any rate, was one thing his bombers could do by launching firebombing raids.

The Air Corps Tactical School theorists who developed America's wartime strategic bombing plans had always held open the possibility that a final, morale-cracking bombardment might cause an already weakened enemy society to collapse, and that thinking took over in the final year of the American strategic campaign against Japan. But the important issue for anyone who is trying to assess the effectiveness of such strategic bombing is not simply whether morale was affected—it undeniably was, as Meilinger notes—but whether that deterioration of civilian morale was at all efficacious in pressuring the enemy government to surrender. In fact, as Hirohito's biographer Herbert Bix has shown, the Japanese emperor was fully aware by the spring of 1945 that Japan was defeated militarily. He also was perfectly willing that millions of civilians should continue to give their lives for the honor of their country and their emperor. It is in fact extremely difficult to show that the firebombing of Japanese cities that occurred throughout 1945 in any way hastened Japan's surrender.

The real question analysts and historians need to ask is not whether the Allied strategic bombing hurt Germany and Japan—it did. But it clearly did not accomplish anything like what its Air Force advocates predicted it would do. And whatever it did, it did at substantial costs—costs in terms of diverting resources and manpower from other missions that might arguably have constituted a more effective, tactical use of airpower (such as the war against the U-boats and battlefield air attack) and also costs in terms of the millions of civilian lives lost. The laws of war do not automatically rule out attacks on urban targets of military importance, even if civilians are inadvertently killed, but there are few people today who would condone firebombing a city and killing some tens of thousands of people at a shot as a legitimate act of war. Even Churchill, who had been solidly behind the strategic bombing of Germany, began to question the wisdom of the strategy by 1943.

The guiding theory that an enemy can be coerced into surrendering by strategic air strikes against "critical nodes" in the political and economic infrastructure was dubious to begin with and was not substantiated by the experience of World War II. Pre-

cision weapons have made strategic attack far less costly to civilians and far more effective in terms of destructive effect achieved per sortie but not clearly more effective as a fundamental strategy of war.

Airpower unquestionably transformed warfare during World War II, as it has ever since. But that has largely been despite the enthusiastic theories of strategic attack, not because of them.

Stephen Budiansky
Leesburg, Va.

Adm. Thomas Hart, commander of the US Asiatic Fleet, is purported to have said, "I am greatly concerned about General MacArthur; he knows many things that are not so." While Meilinger has done a generally credible job, he knows several things "that are not so."

Regardless of the number of classroom hours devoted to bombardment, it is fatuous to deny the centrality of the concept to the ACTS curriculum. Certainly the authors of Air War Plans Division-1 (and the Air Corps leadership) would have loved more B-17s, but they didn't control the purse strings. Eaker wasn't a "tactical airman." Quesada was shunted aside to TAC by the big bomber brain trust after World War II, and Kenney was set up to fail when given SAC. Some airmen (Spaatz, Eaker, and "Bomber" Harris of the RAF) absolutely did believe that strategic bombing alone could win the war. The fact that fighter production in the Luftwaffe increased in 1944 is clearly unremarkable; the Luftwaffe was built to support the Wehrmacht; with the death of Walter Wever, whatever lukewarm support existed for strategic bombing in the German air arm died as well. The Luftwaffe's bombers of the Battle of Britain were all lights and mediums. Strategic bombing was the doctrinal underpinning for a separate Air Force—and thanks to ACTS, doctrine had congealed into dogma by the outset of World War II. To deny that is to ignore reality. As Disraeli said, "There are lies, damned lies, and statistics." We must bear that in mind. And as Air Force officers and military historians, we must guard against letting our emotions color the available historical evidence.

Lt. Col. Frank Howe,
USAF (Ret.)
Denver

From Phillip S. Meilinger

I appreciate these letters; however, it is important that we stick to the



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facts when discussing emotional or contentious issues.

If the Army Air Forces believed that strategic bombing could "win the war alone," as is alleged, then where is the evidence in force structure, doctrine, or the leadership structure to prove it? The statistics regarding the number of bombers built—less than two percent of the AAF total prior to Pearl Harbor and only 15 percent thereafter—the relatively small coverage of the subject in doctrine manuals and the tactical school curriculum; and the prevalence of fighter pilots in key leadership positions throughout the war are facts.

By mid-1944 the Ninth Air Force supporting Lt. Gen. Omar Bradley's 12th Army Group was larger than the Luftwaffe's entire combat strength. But also supporting Allied ground troops for the invasion were Twelfth Air Force and the British 2nd Air Force, as well as Bomber Command and Eighth Air Force that were often used for ground support. In the Southwest Pacific, B-29s did not arrive in the theater until late 1944. For the previous three years the entire Far East Air Forces was used to support MacArthur's ground effort. Can anyone possibly argue that support of ground forces was slighted?

By 1944, German single-engine fighters were not used for ground support; the few actually making it into operational units were used as interceptors against Allied bombers. Neither Ira Eaker nor Nathan Twining flew bombardment aircraft prior to World War II—they were career fighter pilots to that point. Indeed, Hap Arnold made Eaker commander of Eighth Air Force precisely for that reason—he wanted him to instill "a fighter pilot spirit" in the bomber crews. Elwood Quesada finished the war as a two-star but was promoted to lieutenant

general in 1947 at age 43—hardly a slow progression. He retired in 1951 over personality conflicts with the Chief of Staff, Gen. Hoyt S. Vandenberg, another fighter pilot, who had been Quesada's boss as commander of Ninth Air Force during the war.

The statistics regarding the number of bombs dropped on Germany and when they were dropped are stark: 85 percent of all US bombs falling on Germany did so after D-Day. Within four months, the German economy was shattered. Is it possible that an earlier emphasis on strategic bombing would have made Normandy unnecessary? I don't know, but airmen at the time thought so. It is not "semantics" to state that airmen understood the vital Soviet contribution to the Allied war effort—more than 300 German divisions were being chewed up on the Eastern Front (less than 60 divisions would oppose us in France). Air leaders thus believed that the combination of that grinding Soviet ground offensive plus the bombing of German industry would have made an invasion of France—and the tens of thousands of Allied dead it entailed—unnecessary. One cannot criticize AAF for not accomplishing what it hoped when it was not given the opportunity to try.

Regarding the atomic bomb: Again, the available evidence is clear. We have hundreds of decoded signals from the Japanese government in the summer of 1945, and they do not reflect an intention to surrender. It is not enough to say that Hirohito knew Japan was defeated by spring 1945—he had to impose his will on the war cabinet and force them to surrender. He did not do so until after Nagasaki.

To argue that the atomic bombs were unnecessary implies there were alternatives. In truth, the only options were to continue the conventional

bombing, invade, or continue the starvation blockade. All of those options—or a combination of them—would have involved far more casualties, to both sides, than did the atomic bombs.

Regarding civilian casualties: It is regrettable that any civilians die in war. However, the statistics are again compelling. Forty-five million civilians died in the war, less than five percent as a result of air attack. The remaining 95 percent died the old-fashioned way—they were shot, shelled, gassed, or starved to death.

The Fine Line

Reading Adam J. Hebert's excellent "Black September 11" [*September*, p. 46], my eyes were opened to the fine line between protecting our skies and committing government dollars and military manpower to a threat that most likely will never be realized again. With increased airport and on-plane security, it would seem continued round-the-clock military air patrols may be unnecessary. But after the apparent mishandling of intelligence in the months leading up to 9/11, the public expects all possible terrorism prevention precautions to be taken, and the Bush Administration can't afford to be caught with its pants down again.

Brian Kolomyski
Detroit

Missing Napalm

Rebecca Grant's excellent article ("The Airpower of Anaconda," September, p. 60) describing the fight on Takur Gar ridge revealed that a critical deficiency exists in our close air support munitions. We should know from our experience in Vietnam that during air mobile operations there is a good possibility Army and Marine infantry will land in close proximity to bunkers we didn't know were there until it is too late. This is a situation that calls for fighters carrying napalm that can be

delivered precisely and in very close proximity to friendly personnel without the high risk of fratricide present with [high-explosive] bombs.

Napalm also has the important advantage over cannon fire of being effective against personnel in bunkers. Even when it does not physically destroy enemy personnel, napalm's tremendous psychological effect can be sufficient to give friendly personnel the opportunity they need to overwhelm the enemy position.

Given that the US is increasing its emphasis on the use of light land forces, to include Special Operations Forces, the Air Force needs to take action now to ensure that in the future its forces are prepared to minimize friendly casualties by delivering napalm.

Lt. Col. Price T. Bingham,
USAF (Ret.)
Melbourne, Fla.

[The article] provided an interesting perspective a longtime reader could expect from *Air Force Magazine*: A good look at the strategy; analysis of Army tactics; and it even mentioned the role of "highly trained special forces" from other countries.

But I can't understand how, if you're going to get down to a level of detail that describes the first strafe runs of the F-15E, you could omit the fact that three guys from Air Force Special Operations Command lost their lives that day. Sgt. John Chapman, Sgt. Philip Svitak, and SrA. Jason Cunningham all died fighting heroically for their comrades. They even made the March 18 cover of *Newsweek*, yet they didn't get a single word in *Air Force Magazine*.

Mark Moore
Annapolis, Md.

■ *The deaths of the two airmen killed during the early action in Operation Anaconda were covered in "Aerospace World: Two Airmen Among Eight Killed" (p. 8) in the April 2002*

issue. They were TSgt. John A. Chapman and SrA. Jason D. Cunningham. Sgt. Philip J. Svitak was one of the four Army personnel killed. A subsequent news story on the posthumous award of the Air Force Cross to Cunningham appeared on p. 11 in the October issue.—THE EDITORS

Heartsick

I read with heartsick amazement the remarks by [Defense] Secretary [Donald H.] Rumsfeld concerning our nuclear weapons capabilities and relations with Russia or any other hostile power. [See "*Rumsfeld and Russia*," September, p. 55.]

I almost get the feeling from the article that this country has thrown in the towel; we've lost our will to fight a nuclear war or even deter one. This is borne out by the statement, "With the recently completed Nuclear Posture Review, the US has declared that we are not interested in preserving that balance of terror with Russia."

In the article, Rumsfeld indicates "we're entering a period of surprise and uncertainty when the sudden emergence of unexpected threats will be an increasingly common feature of our security environment." [He added,] "It is not only an uncertain world. It is a world that, besides promising surprise and promising little or no warning, is a world that has weapons of mass destruction."

Why in the world would this country ever consider reducing the present nuclear weapons arsenal? Sept. 11 should have taught us something.

I get the feeling we're being hoodwinked by Russia (or somebody). Rumsfeld speaks of a new friendly relationship, [so] there is no need to include detailed verification in the treaty. However, when you consider weapons treaties with the USSR—they broke most of them—why would we think this one is different?

We've seen a tremendous reduction in the armed forces (at least 40 percent) over the last eight years [accompanied by] increasing deployments. Now we're being driven toward a war with Iraq. It would seem (if we become engaged [with Iraq]) an excellent time for Russian adventures or Chinese engagement in Taiwan. Are our forces sufficient to counter these possible threats, I wonder?

Charles W. McConnell
Rose Hill, Kan.

Stop-Loss for Whom?

The September 2002 issue contained two articles on p. 14 that caught my attention. [See "*Aerospace World*."]

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The first was titled "Air Force Ends Stop-Loss," and the other was titled "USAF Extends 14,000 Reservists"

In 29 years of active duty with USAF, I always understood that the reserve force existed to supplement the active duty force in times of war, not to replace active duty personnel as they voluntarily retired and separated. However, the Air Force's action in allowing active duty personnel to depart, while involuntarily extending reservists, seems to indicate otherwise.

I wonder about the impact this will have on the recruitment and retention of those in the reserves, but I expect an official Air Force explanation for these contradictory actions would be mind-boggling.

What am I missing here? Could this policy be a number-crunching, year-end strength, "let's look good" budget exercise?

Col. Kenneth W. Durham,
USAF (Ret.)
College Station, Tex.

Earlier Tanker Wars

As the first program director of the KC-10 program office, I fought my share of tanker wars, including a firefight over an unexpected opportunity to lease aircraft. [See "Aerospace World: Tanker Wars Continue," September, p. 23.]

Early in our selection process, the Itel Corp. submitted an unsolicited proposal to buy, modify, and lease to the Air Force the commercial aircraft of our choice, essentially a production model of the B-747 or DC-10. Using the buying power of private corporate funds needed to commit to a quantity buy of in-production aircraft, Itel intended to purchase the aircraft economically, have them modified and delivered to the Air Force much earlier and at a significant savings in unit price. At the conclusion of the lease period, the aircraft could be returned to a commercial configuration and sold on the commercial market at an appreciated, profitable price.

The Itel offer made a lot of business sense, and top-level blue-suit leadership received it enthusiastically as we moved up the line seeking approval for this novel approach. But even four-star endorsement was not sufficient to overcome the traditional inertia of principally the top-level civilian procurement community. The notion of leasing mission aircraft ran crossways with "traditional" DOD funding and procurement practices.

The way out of the current "tanker war" is not new or revolutionary, but it does require hardheaded leadership and management discipline. The Air Force needs to state the tanker re-

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quirement very clearly in terms that even Congress can understand, appoint a program director with the vision to frame and articulate that requirement as a coherent program, give him the clear, straight line authority needed to manage the program, and then let the program sell itself up and down the line including Congress.

That's the kind of management focus we enjoyed in the KC-10 program office, thanks to the clear direction of Gen. David Jones, and we

were able to negotiate an excellent contract for procurement and logistic support of the KC-10 delivered in record time at fixed unit prices.

A lease or buy decision is a tough call, to be sure, but dueling over parochial interests cannot possibly help the process. We need to speak with one voice, convince Congress, and get on with it.

Brig. Gen. Ken Bell,
USAF (Ret.)
Monument, Colo.

Aerospace World

By Suzann Chapman, Managing Editor

Congress Passes Iraq Resolution

Lawmakers in both the House and Senate voted overwhelmingly to grant President Bush the authority to use force against Iraq, as he deems necessary, and destroy Iraq's nuclear, chemical, and biological weapons.

The vote in the Senate, taken Oct. 10, was 77 to 23. The day before, the House voted 296 to 133 in favor of the measure.

A joint resolution, titled "Authorization for the Use of Military Force Against Iraq," listed Saddam Hussein's continued violations of United Nations sanctions since their inception following the liberation of Kuwait from Iraqi forces in 1991. The resolution continued, "The President is authorized to use the armed forces of the United States as he determines to be necessary and appropriate in order to defend the national security of the United States against the continuing threat posed by Iraq."

After the House vote, President Bush said, "The days of Iraq acting as an outlaw state are coming to an end."

Iraq Continues Strikes

Calling the number "remarkable," a Joint Staff spokesman said Iraqi forces, since Sept. 16, had fired 122 times on coalition aircraft enforcing UN sanctions.

"Of those 122 firings, 33 were against aircraft flying in Operation Northern Watch, and 89 were against Operation Southern Watch coalition aircraft," Rear Adm. David Gove told reporters Oct. 11.

Sept. 16 was the day Saddam Hussein sent a letter to the UN promising to allow weapons inspectors back into Iraq "without conditions."

Gove noted the Iraqi attacks on coalition aircraft over the past three years have been relatively consistent, except "there's been a remarkable number since Sept. 16 in terms of near continuous engagements."

"Within hours of the arrival of [Saddam's] letter, Iraq was again firing at US and coalition aircraft," Defense Secretary Donald H. Rumsfeld said Sept. 30. Those aircraft, he said, in



USAF photo by SrA. Valerie Freshour

SrA. Amanda View, an aerospace ground equipment journeyman, tightens a line on a hydraulic test stand. She deployed from Kadena AB, Japan, to Southwest Asia to support coalition aircraft enforcing the no-fly zone over southern Iraq.

addition to patrolling the northern and southern no-fly zones, "conduct aerial surveillance to help determine compliance with ... bans [on] nuclear, chemical, and biological weapons."

The Pentagon reported that Iraq started firing on coalition aircraft in 1992. During the past three years, Iraqi forces have targeted coalition aircraft with anti-aircraft artillery more than 1,000 times, launched 600 AAA rockets, and fired nearly 60 surface-to-air missiles.

Iraq Attacks A-10 Dropping Leaflets

On Oct. 2, Iraqi forces fired AAA and SAMs at an Air Force A-10 dropping warning leaflets in the southern no-fly zone, according to DOD officials. The leaflets advised Iraqi air defense operators not to fire on coalition aircraft or risk being targeted themselves.

It marked the first leaflet drop since last year.

The leaflets, in Arabic, say: "The destruction experienced by your colleagues in other air defense locations is a response to your continuing

aggression toward planes of the coalition forces. No tracking or firing on these aircraft will be tolerated. You could be next."

On Oct. 3, in retaliation for the Oct. 2 attack, coalition forces struck an Iraqi air defense center about 160 miles southeast of Baghdad.

USAF To Limit Personnel Working in Other Agencies

Out of 14,000 airmen working outside the Air Force, the service expects to return some 4,000 to the fold. The plan is to use those personnel to help relieve the critical workload stress occurring in some career fields.

"We have an end strength ceiling of approximately 360,000 people, and we have requirements that far exceed that," said William F. Booth Sr., USAF Manpower and Organization Directorate senior advisor. "The goal of this process is to reduce the stress on our people."

The 14,000 USAF personnel fill about 37 percent of the requirements levied by unified commands and defense agencies, while the service only

makes up some 26 percent of DOD's active duty strength. Air Force leaders want to reduce the service's share of joint personnel requirements to just 26 percent—about 10,000 personnel.

The goal will be to use Air Force personnel only where they are critical, which means each joint entity would not necessarily have exactly 26 percent of its manpower filled by Air Force personnel.

"There are certain commands, based on mission, that would require our contributions to probably be higher," said Booth.

The personnel shifts will not happen overnight. "This will be something we will work in phases over a three-to-four-year period," said Booth.

The service is working on an implementation plan with affected commands and agencies.

The "Yes Kind of Force"

The director of the Air National Guard said his force has become an "always-say-yes kind of force."

Lt. Gen. Daniel James III told reporters that the Air Guard is utilized more than ever. So much so, he said, "The Secretary of the Air Force is looking at that very closely."

Service leaders are worried that the high level of activity for the Guard will have a negative impact on retention and on equipment, James said. "We've figured out a way to get the job done, and one of the ways we've figured out to get the job done was to involve the Guard and Reserve more," he said.

James said the high operations tempo has affected not only pilots and aircraft maintainers but also firefighters, security forces, civil engineers, and intelligence analysts. After the Sept. 11 terror attacks, the peak number of Guard personnel mobilized was about 25,000. Some 16,000 remain on active duty.

The ANG director said Guard members are being asked to complete a survey to show how many times they deployed in the last year and whether there was a negative impact on either their family or civilian work. The goal is to help ANG leaders determine the break point before the Fiscal 2004 budget is complete.

"We're very concerned about where ... we've gone far enough," said James.

USAF Expands Anthrax Program

The Air Force announced Oct. 11 that the service plans to ask more airmen to take anthrax shots. It will expand the program from Priority 1 personnel to include Priority 2, as well.

"Some Assets in Short Supply"

Questioned by Congress about the adequacy of military forces and equipment to meet the Pentagon's growing list of commitments, including a potential war with Iraq, the nation's top military officer said that while some assets have shortages, the military can carry out its missions.

"There are some assets that are in short supply," Air Force Gen. Richard B. Myers, Joint Chiefs of Staff Chairman, told the Senate Armed Services Committee.

"Intelligence, surveillance, reconnaissance assets have historically been in short supply," he said in mid-September. "We tried to fix this through our budget requests in recent years, and in '02 we have made some headway there. You'll see more requests for those types of assets."

Myers emphasized, "Any major combat operation will, of course, require us to prioritize the tasks given to such units." He added, "We have to prioritize them today. We have to prioritize them in peacetime, for that matter. ... And, we will have to prioritize them if we are asked to do something else."

Personnel in the Priority 2 category are military members, emergency-essential DOD civilians, and specified contractors assigned or deployed to designated higher-threat areas for more than 15 consecutive days. The higher-threat areas include countries primarily in Southwest Asia, said Maj.

Linda Bonnel with the Air Force Medical Operations Agency, Bolling AFB, D.C.

Priority 1 personnel, who had already been receiving shots, include those in designated special mission units.

Bonnel said Priority 2 individuals

USAF Awards Eight Bronze Star Medals

The Air Force has awarded Bronze Star Medals over the past few months to a number of airmen for their actions during Operation Enduring Freedom. The medal recognizes valor or meritorious service.

The service recognized two airmen from the 66th Rescue Squadron at Nellis AFB, Nev. They were Lt. Col. Lee dePalo and Maj. Lee Harvis. They each received the Bronze Star Medals for their leadership of rescue operations while deployed to Afghanistan, Pakistan, and Uzbekistan.

CMSgt. David Whitaker of the 99th Supply Squadron at Nellis received a Bronze Star. He was stationed in Bahrain, where he organized a team of 37 fuels specialists from 18 bases to maintain fuel support for aircraft flying OEF missions.

Air National Guard Lt. Col. Sandra Duiker, a medical crew director with the 167th Aeromedical Evacuation Squadron at Martinsburg, W.Va., received a Bronze Star for ensuring the rapid evacuation of combat casualties. She commanded all US aeromedical personnel in Oman, Turkey, and Uzbekistan.

The Air Force awarded a Bronze Star to Lt. Col. Kimberly Cochran from Tinker AFB, Okla., for her leadership of an E-3 AWACS battle management aircraft squadron that flew 284 missions over Afghanistan.

TSgt. John Travis, noncommissioned officer in charge of 437th Fuels Management Flight Support at Charleston AFB, S.C., received the medal for his actions on March 5 at Gardez airfield in Afghanistan. He helped get a USAF MC-130E out of the mud where it had sunk after landing on an abandoned runway. The airfield came under enemy attack as Travis was organizing Afghan helpers, despite the language barrier, to use a truck to drag a concrete slab out of the aircraft's path. The team finished digging and pulling the aircraft out as the enemy mortars grew closer.

A USAF air traffic controller from Hickam AFB, Hawaii, MSgt. Jeffrey Haynes, received a Bronze Star for managing the combat airspace cell in Uzbekistan that helped maintain the flow of coalition aircraft and personnel from there into Afghanistan. He also deployed to locations within Afghanistan, where he came under fire, to assist air control operations.

The Air Force awarded Lt. Col. Kevin Wooton, 25th Information Operations Squadron commander at Hurlburt Field, Fla., a Bronze Star for leading an intelligence team, operating from two locations, that provided critical intelligence for a number of combat missions.

After Leaving USAF Out of Anaconda Planning, Army General Blasts Air Support

The commander of the US Army's 10th Mountain Division failed to bring the Air Force into planning for Operation Anaconda until the 11th hour and then complained about lack of effective air support.

Maj. Gen. Franklin L. "Buster" Hagenbeck, in remarks to *Field Artillery* Magazine, grudgingly conceded that the Air Force achieved success in striking fixed targets in the Afghan operation last March. However, he groused that USAF jets took too long to mount attacks on "fleeting" targets.

Hagenbeck went on to add this claim: What success the Air Force managed to achieve stemmed from the work of Army troops who pinned down al Qaeda fighters with mortars and small-arms fire.

Field Artillery, published at Ft. Sill, Okla., bills itself as the "professional bulletin for Redlegs." Redleg is a nickname for artillerymen.

Hagenbeck's comments stirred a controversy after they were repeated and amplified in a Sept. 30 *Army Times* article.

Hagenbeck planned and commanded the 17-day operation to destroy al Qaeda forces hiding in the caves of Afghanistan's Shah-e-Kot Valley. He emphasized the role of ground troops in the action, calling it a success. It was a vindication of the role of "boots on the ground," Hagenbeck suggested. In his opinion, airpower played a marginal role.

The remarks didn't sit well with Gen. John P. Jumper, the Air Force Chief of Staff. Upon hearing them, Jumper contacted his Army colleagues and was told that Hagenbeck's comments don't represent "the consensus of the leadership of the United States Army," Jumper told *Inside the Pentagon*.

Jumper went on, "I'm in charge of making sure that these sorts of things are not the opinion of our Army people on the ground that we serve. It's our job to make sure that this sort of thing doesn't happen."

Jumper announced that, in response to Hagenbeck's statements, he had launched a high-level review of the Air Force performance in Anaconda.

"If people really believe this, I want to talk to them," Jumper told *Inside the Pentagon*.

Privately, however, the Air Force leader was furious about the criticism, mainly because the Army commander had not bothered to coordinate Anaconda with the Air Force or the joint air component of US Central Command. Though Anaconda had been in the works for weeks, the Air Force got its first notice just 24 hours before the start of the operation. (See "The Airpower of Anaconda," by Rebecca Grant, September, p. 60.)

Hagenbeck, who commanded Coalition Joint Task Force Mountain in Afghanistan during Anaconda, had many complaints about USAF.

He thought it took too long to program satellite-guided bombs used against fleeting targets. "It took anywhere from 26 minutes to hours (on occasion) for the precision munitions to hit the targets," he said. "That's OK if you're not being shot at or the targets aren't fleeting."

The enemy could foil high-tech airborne Intelligence, Surveillance, and Reconnaissance simply by running under cover or hiding under a blanket, Hagenbeck said. He claimed airborne ISR assets had trouble finding cave complexes, and it took "boots on the ground" to do the job.

However, he allowed that he had specifically not wanted

a bombing effort prior to ground operations. "Air campaigns are most effective against 'fixed' targets," he explained.

Success stemmed mostly from Army actions, he suggested.

"We got a number of kills with close air support," said Hagenbeck, "primarily because our mortars and machine guns kept the al Qaeda from getting up and running back into the caves."

The Air Force effort did have some value, according to Hagenbeck. A-10 fighters by day and AC-130 gunships by night "were great," he said.

USAF officials noted Hagenbeck could have avoided some problems by letting the Air Force know he was about to go into action. The Army, making its own calculations, underestimated how long it would take to bring in squadrons based 1,600 miles away.

Hagenbeck gave the Air Force one day's notice that he would need massive C-130 transport assistance to deploy and sustain his forces. He got it, despite the lack of forewarning.

Hagenbeck said organic fire support was "indispensable" to Anaconda's success. (Airpower is "inorganic" support.) However, the general acknowledged he did not bring in big 105 mm howitzers because doing so would be "very difficult and dangerous."

Hagenbeck seemed to be saying that, while the air support wasn't all that good, he wanted more of it. He complained that USAF won't drop a precision guided munition unless the strike has been called in by an Air Force controller. The Army needs its own troops to be qualified to do the controller job, he said.

The general also took a swing at those who point out the large number of Air Force support sorties.

"A ground force commander does not care about the number of sorties being flown or the number and types of bombs being dropped and their tonnage," said Hagenbeck. "Those statistics mean nothing to ground forces in combat."

By contrast, the Army's AH-64 attack helicopter won high Hagenbeck praise—sort of. "The most effective close air support asset we had was the Apache, hands down," Hagenbeck said. "The Apaches were extraordinary. They were lethal and survivable." Then, he added, "We had six in the fight, with two left flying at the end of the first day. They were so full of holes. ... I don't know how they flew."

Jumper was not pleased to learn of the criticism via the medium of a press interview. "I'm a little surprised it comes out in the newspaper before it comes to me," he told *Inside the Pentagon* reporter Elaine Grossman.

Jumper went on to say that he had spoken to troops who actually had fought in Anaconda. "I don't think you'll get any of them to bad-mouth any of those great Navy or Air Force aviators that came in there and saved the day," said the Chief.

The timing of the interview may have been significant. Sean Naylor, author of the *Army Times* report, noted: "The comments come at a time when Army leaders are fighting a rear-guard action in Washington against what they see as the Defense Department's trend toward overreliance on precision guided munitions in shaping the future US military."

—Adam J. Hebert



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Northrop Grumman Integrated System's Affordable Moving Surface Target Engagement (AMSTE) Team has successfully scored a direct hit on a moving vehicle using a seekerless weapon. Using two Northrop Grumman Ground Moving Target Indicator (GMTI) radars, one on a Joint STARS and the other a Lockheed Martin JSF surrogate sensor, the team achieved extremely precise target location. And that means AMSTE systems of systems technology denies the enemy the sanctuary of movement, making it possible to conduct multiple, near-simultaneous, stand-off precision engagements of mobile surface targets, in all-weather conditions using low-cost munitions. So let them run.

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will be notified when to appear for immunization.

The Pentagon had initiated a plan in 1998 to vaccinate all military members. Since then, the program was reduced several times as the supply became increasingly scarce.

The sole US supplier, Bioport of Lansing, Mich., closed its production facility for renovations then had trouble regaining Food and Drug Administration approval. The FDA re-certified the Bioport facility and its manufacturing processes last January.

DOD announced in June that the number of personnel receiving the vaccinations would begin to increase. Officials said then that the Pentagon previously had vaccinated about 525,000 of its 2.3 million military personnel.

USAF Trims Security Forces Optempo

The Air Force has reduced the number of security forces personnel it needs to deploy by about 10 percent, according to an Oct. 10 news release. The move will ease the workload on one of the service's most stressed career fields.

It enables some 200 airmen to return to their home station earlier than expected. Most of those are Air National Guard and Air Force Reserve Command personnel.

A manpower assessment also concluded the service could reduce another 300 security forces positions from future deployments. The reductions are the result primarily of technological advances and the findings of an operations review, said Lt. Col. Troy Robinett, US Central Command Air Forces chief of force protection operations.

Peacekeeper Deactivation Begins

On Oct. 3, Air Force missile maintainers pulled a Peacekeeper ICBM from its launch facility in Wyoming, starting a three-year process during which the service will dismantle all 50 of its Peacekeeper ballistic missiles.

"It's a momentous point in history," said Air Force Secretary James G. Roche at the deactivation ceremony. "It's a reflection of how the world has changed and how we are adapting to a new era."

Last May 24, President Bush and Russian President Vladimir Putin signed the Treaty of Moscow, agreeing to reduce their respective nuclear arsenals. Each country will go down to between 1,700 and 2,200 warheads by Dec. 13, 2012.

The 90th Missile Wing, at F.E. War-

USAF Forecasts Changes in AEFs

The Air Force said it plans to make changes in its Aerospace Expeditionary Force beginning with Cycle 4 in June 2003. Service officials, in a Sept. 23 news release, outlined three major changes:

- The personnel and equipment from the service's two on-call wings will be distributed among the 10 AEFs.

- The draw of Expeditionary Combat Support assets from throughout USAF will be equalized.

- Some Air National Guard and Air Force Reserve Command AEF contributions will be realigned.

A senior Air Force official said the changes would enable the service to handle both steady-state requirements and surge support for contingencies.

"The thing that everyone needs to understand is [the AEF construct] has worked pretty well," said Maj. Gen. Timothy A. Peppe, special assistant to the Chief of Staff for air and space expeditionary forces. However, he added, "We know there are issues out there, and leadership is committed to fixing those issues."

One of those issues is that, while the AEF assumes personnel will have three-month deployments in a 15-month window, about 15 percent of those deployed have faced longer tours, especially since the Sept. 11 terror attacks. Some of those on longer tours have been reservists.

The service realized it needed to fold all combat assets into the normal AEF rotation and get all deployable personnel positions into its AEF library, now numbering more than 175,000. The goal is 250,000 out of nearly 360,000.

The on-call wings, which were reserved for pop-up operations, are the 4th Fighter Wing at Seymour Johnson AFB, S.C., and the 366th Wing at Mountain Home AFB, Idaho. Each will have its elements aligned within the 10 AEFs, and each will be a lead combat wing. Peppe said their change in status will not require people or equipment to move from their current bases.

The leveling process for Expeditionary Combat Support assets, said Peppe, will make some airmen vulnerable to deployment sooner than they expected, while others will see extended cycles.

"Instead of having 15 months between cycles, they will have 12," he said. "Some are going to move backward, having 18 months vs. 15 months, because the AEF Center is trying to match ECS assets, where possible, to where the iron is moved."

The third major change will move some reserve assets across AEFs to stabilize the workload for the Guard and Reserve.

"If you look at how they're postured right now, you'll see that they're heavily weighted in AEFs 7, 8, 9, and 10," said Peppe. The goal is to provide "a more ideal mix throughout the AEF cycle."

He said the service will realign ANG fighter aircraft by block type and geography.

"The bottom line is, we're making changes to maximize capability available across the board," said Peppe. "We want to smooth-flow capabilities across the AEFs and minimize the hills and valleys."

Army Plans To Drop Some Guard Tank Units To Make Way for Light Infantry

The Army National Guard will have two new types of organizations—mobile light brigades and multifunctional divisions—to make it "more deployable, more mobile, and more flexible," said Army Secretary Thomas E. White.

These units will be able to respond rapidly to hot spots at home or abroad, he said at the National Guard Association of the United States conference in Long Beach, Calif., in early September.

The Army Guard will have to reduce its tracked vehicle fleet by one-third—approximately 2,400 vehicles—to create the new light brigades.

Army officials had already briefed the adjutants general on the plan, dubbed the Army National Guard Restructuring Initiative. However, it still must pass muster with Congress.

Work on the plan continues, so White did not announce which units the Army expects to convert. He did say that implementation would begin in Fiscal 2008 and the process would be completed by 2012.

Lt. Gen. Roger C. Schultz, Army National Guard director, believes the changes will prepare "the Guard for the future and those missions emerging in the new defense strategy."

Blair Publicizes British Dossier on Iraq

British Prime Minister Tony Blair declared that Saddam Hussein's Weapons of Mass Destruction program is "active, detailed, and growing."

"The policy of containment is not working," he said in a statement accompanying the release of the British intelligence dossier on Iraq on Sept. 24. "The WMD program is not shut down. It is up and running."

Blair said that normally the work of the British Joint Intelligence Committee is secret. In this case, he said in a foreword to the 50-page dossier, it was released because "I believe this issue to be a current and serious threat to the UK national interest."

The dossier details the history of Iraq's WMD program, its breach of UN resolutions, and its current attempts to rebuild its illegal WMD program.

Blair related some of that history in his remarks, "because occasionally debate on this issue seems to treat it almost as if it had suddenly arisen, coming out of nowhere on a whim, in the last few months of 2002." Instead, he said, "It is an 11-year history ... of UN will flouted, lies told, ... obstruction, defiance, and denial."

The intelligence picture represented in the dossier, said Blair, was accumulated over the past four years. He called it "extensive, detailed, and authoritative."

Among the dossier's findings:

- Iraq has chemical and biological weapons and existing military plans for their use that could be activated within 45 minutes.

- Iraq continues to produce chemical agents for weapons, has rebuilt previously destroyed production plants, has bought dual-use chemical facilities, has retained key personnel, and has a "serious ongoing research program into weapons production—all well funded."

- Iraq has continued production of biological agents, rebuilt facilities formerly used for biological weapons, purchased bio-weapons equipment, retained personnel, and purchased mobile, easier-to-hide bio-weapons facilities.

- Iraq has been working toward restarting its nuclear weapons program by buying or attempting to buy specialized vacuum pumps, other equipment, and chemicals needed for gas centrifuge uranium enrichment; has been trying to buy "significant quantities of uranium"; and has brought back key personnel. These actions have taken place since the UN inspectors were forced to withdraw in 1998.

- Iraq concealed from UN inspectors a "significant number of longer-range missiles," including up to 20 extended-range Scud missiles, that could be used to deliver these weapons. In 2001, Iraq increased its ballistic program, such that development of weapons with a range greater than 620 miles has been "well under way" this year. Sanctions and import controls have only slowed Iraq's progress in this area.

Blair said that some will dismiss this intelligence and others will claim it will be years before Saddam acquires a usable nuclear weapon.

"With what we know and what we can reasonably speculate: Would the world be wise to leave the present situation undisturbed, to say, despite 14 separate UN demands on this issue, all of which Saddam is in breach of, we should do nothing?" asked Blair.

He continued, "Why now? ... I cannot say that this month or next, even this year or next, he will use his weapons. But I can say that if the international community, having made the call for his disarmament, ... shrugs its shoulders and walks away, he will draw the conclusion dictators, faced with a weakening will, always draw. That the international community will talk but not act."

"There is no way that this man ... could begin a conflict using such weapons and the consequences not engulf the whole world," said Blair.

ren AFB, Wyo., was the only unit to operate USAF's largest and newest ICBM. The Peacekeeper, capable of delivering up to 10 independently targetable warheads, reached initial operational capability in December 1986.

"This is the most accurate ballistic missile that was ever designed and

fielded," said Roche. "And it did its job."

ANG Wants JSF Earlier Than Planned

The Air National Guard should field the Joint Strike Fighter, or F-35, at the same time as the active duty Air Force, according to its director, Lt.

Gen. Daniel James III. The current plan is to equip the active force first.

The Air Force plans to purchase more than 1,700 of the new fighters as replacements for F-16s. The F-35 is slated for initial delivery in 2008.

James told reporters in late September that the plan needs to be changed to ensure the Guard can handle its operational load.

He noted that the tradition of moving, or cascading, older equipment from the active force to the Guard is under review because of the extraordinary stress placed on ANG aircraft by current operations in the war on terror.

"Cascading alone is not the answer," he said. "If we're really going to be full partners in transformation, just as we're full partners in the warfight, we need to have modernized weapons systems."

Two New Commands Stand Up

DOD officially launched its newest unified command and reinvented an older one on Oct. 1. The US Northern Command was activated, while US Space Command and US Strategic Command were disestablished, only to be reborn as the new US Strategic Command.

The activation of Northern Command, headquartered at Colorado Springs, Colo., was termed "historic," by Deputy Defense Secretary Paul D. Wolfowitz at the activation ceremony. It is the first unified command with responsibility for defense of the US homeland. (See "Aerospace World: Pentagon Establishes New Combatant Command," June 2002, p. 13.)

Officials stood down US Space Command at Peterson Air Force Base in Colorado Springs and US Strategic Command at Offutt AFB, Nebraska, followed by activation of the new US Strategic Command at Offutt by Air Force Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff.

"This new command is going to have all the responsibilities of its predecessors but an entirely new mission focus, greatly expanded forces, and you might even say several infinite areas of responsibility," said Myers.

The command will retain primary responsibility for nuclear forces, while at the same time define, plan, develop, and conduct space operations, Myers said. "We're even looking at new global missions, ... including taking the lead for missile defense worldwide," he added.

USAFE Gains Two Units

US Air Forces in Europe assumed responsibility for two Air Combat



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The Iraq Situation

In an early October survey, Americans told pollsters the national issue Americans discussed most often was the possibility of war with Iraq.

The Pew Research Center found that six out of 10 Americans were following the issue very closely. That number had grown from 48 percent in September.

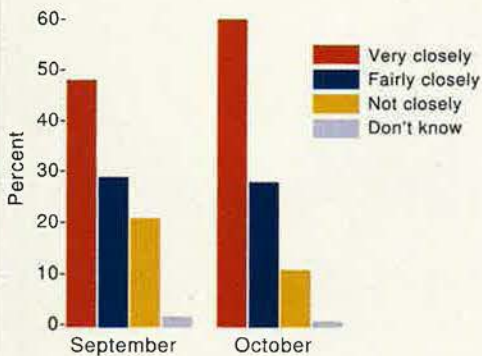
The survey also showed that more than half of those Americans polled discussed the issue frequently in their personal conversations, and nearly as many often talked about terrorist attacks. The next closest topic of conversation was health insurance and HMOs.

At the heart of public opinion, according to the PRC poll analysis, were perceptions about Saddam Hussein's capabilities. The key perception was that Saddam either has or is close to having nuclear weapons—a view shared by 79 percent of Americans.

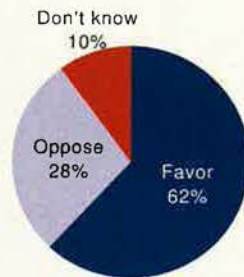
Surprisingly, seven out of 10 persons who oppose war with Iraq believed Saddam possesses nuclear weapons, or will soon. Two-thirds of those opposed to war with Iraq believed he must be removed not just disarmed. Overall, 85 percent said they thought Iraq must have a regime change.

At the same time, a majority of Americans felt there was still the possibility of a peaceful solution.

Paying Attention to Iraq Debate



Support for Military Action to End Saddam's Regime



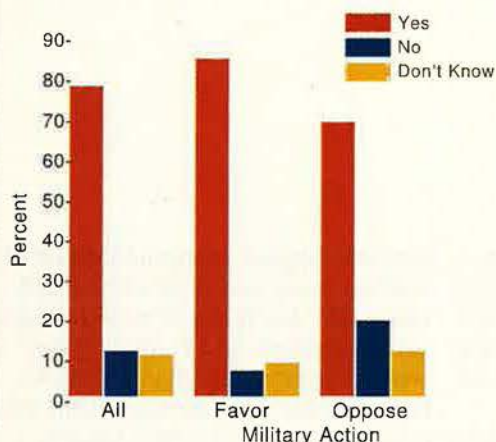
What Are Americans Talking About?

Possible war with Iraq	52%
Terrorists attacks	48%
Health insurance/HMOs	44%
Economic conditions	40%
Public education	40%
Stock market instability	30%
Business scandals	23%
Social Security problems	22%

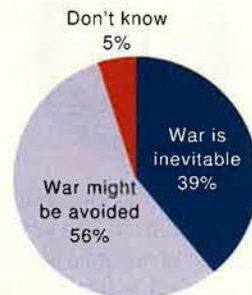
What Can Be Done About Saddam?

	Overall	Favor (Military Action)	Oppose
Must be removed	85%	95%	66%
Could be disarmed	8%	3%	21%
Other/don't know	7%	2%	13%

Saddam Is Close to Having/Has Nukes



Which Comes Closer to Your View?



Command units Oct. 1, as part of the new Unified Command Plan.

USAFE will now oversee the 65th Air Base Wing at Lajes Field, Azores, and the 85th Group at NAS Keflavik, Iceland.

The missions of the two units will not change, said USAFE officials. The 65th ABW provides support for intertheater and transient aircraft, while the 85th Group supports air defense and air rescue missions.

The two new USAFE units will fall under 3rd Air Force, headquartered at RAF Mildenhall, UK.

USAFE is the air component of US European Command, which received greatly expanded responsibilities in the new UCP. In addition to Europe, European Command's area of responsibility now includes most of Russia and the Caspian Sea.

"The change will increase our military-to-military relations with Russia and the scope of our cooperation," said Lt. Col. Colleen Ryan, bases branch chief in USAFE's Directorate of Plans.

Cause of B-1 Crash Still Mystery

The Air Force announced in late September that investigators had not been able to determine the cause of the Dec. 12, 2001, crash of a B-1B bomber into the Indian Ocean.

The four-member crew, which ejected safely, was flying a mission for Operation Enduring Freedom in Afghanistan. (See "Aerospace World: B-1B Crashes in Indian Ocean," January, p. 8.) The aircraft was destroyed on impact and sank. It has not been found, said service officials.

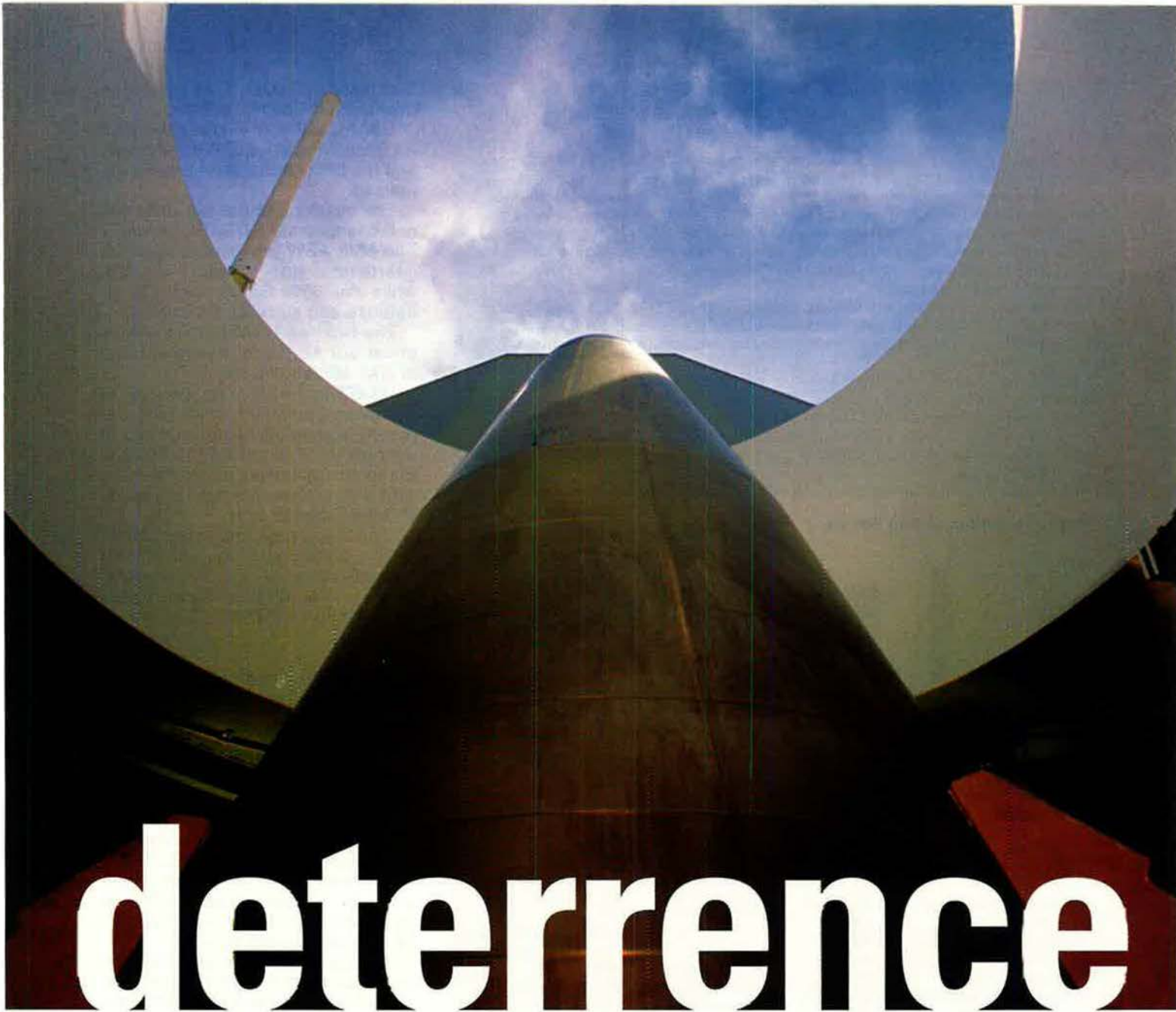
Investigators speculated that aircraft malfunctions might have affected the reliability of the attitude information and, consequently, might have made it difficult for the pilots to maintain control.

Navy Bases Subs in Guam

The Navy sent the first of three fast-attack submarines it plans to base in Guam to the Pacific island last month, according to a service news release.

The first of the subs to call Guam home is the Los Angeles-class *City of Corpus Christi*. The other two are scheduled to arrive by Fiscal 2004.

The Navy believes the move will help alleviate the critical shortage it has in attack subs. By homeporting the subs in Guam's central Pacific location, it expects to increase overall the attack sub days of operations. However, the Congressional Budget Office does not think three will be enough to provide sufficient mission days without having to build additional subs.



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force is truly able to contribute to the options available to our warfighters. The ICBM team - TRW, ATK Thiokol Propulsion, Boeing, Lockheed Martin, and Pratt & Whitney - is proud to support our nation and the Air Force by enhancing and maintaining this critical part of our homeland security.

According to a CBO study released earlier this year, the Navy must base more than three subs in Guam to offset its shortage. If it does that, the service could meet its requirements with a fleet of 55 subs. (See "Aerospace World: CBO Claims Navy Can Meet Goals With Fewer Subs," May, p. 30.)

The Navy considers the Guam basing a temporary measure. It would like to field 68 attack subs by 2015 and 76 by 2025.

The Clock Stops at 34+ for 42nd

The 42nd Airborne Command and Control Squadron at Davis–Monthan AFB, Ariz., inactivated Sept. 30, after more than 34 years of service.

The unit's mission is now being handled by E-3 Airborne Warning and Control System aircraft, E-8 Joint STARS surveillance aircraft, and ground systems, said Lt. Col. Norm Potter, 42nd ACCS commander.

The unit flew EC-130E Airborne Battlefield Command and Control Center aircraft. The Air Force will distribute those aircraft and the unit's 300 personnel to other units.

USAF plans to modify four of the aircraft into HC-130s for combat search and rescue. Two will go to the 41st and 43rd Electronic Combat Squadrons at Davis–Monthan. One will retire to the base's Aerospace Maintenance and Regeneration Center.

NATO Ministers Back US Rapid Reaction Force Plan

Defense Secretary Donald H. Rumsfeld met with NATO Secretary-General George Robertson Sept. 24 in Warsaw to urge NATO to develop lean, agile forces to deploy within days instead of months and to create a rapid reaction force that could deploy outside the alliance's traditional European area of operations.

These changes are needed to respond to the asymmetrical threats of today and tomorrow, said a senior DOD official.

Robertson and, later, the NATO defense ministers voiced their support for the proposals.

As envisioned, the rapid reaction force would include air, land, and sea forces and could perform traditional military missions or noncombatant evacuations. The force, which could take years to build, would have about 21,000 troops from across the 19-member alliance, on a rotating basis to minimize cost to any one nation.

Without such a force, said Rumsfeld, NATO could become irrelevant in light of 21st century threats.

Arnold Boosts Test Capability

Air Force officials plan a \$10.4



A1C Michael Burns, deployed to a base supporting operations in Afghanistan, prepares to launch the latest in force protection—an airborne surveillance aircraft that will transmit live footage as it surveys the base's perimeter.

USAF photo by SSgt. William Greer

North Korea Stuns US With Nuke Claim

In a diplomatic bombshell, North Korea acknowledged it has for years been secretly developing nuclear arms, thereby making a mockery of a 1994 agreement brokered by ex-President and Nobel laureate Jimmy Carter.

Some US officials called the disclosure "a jaw-dropper."

The Stalinist regime, which President Bush has named as part of the "axis of evil," told US officials about their nuclear weapons program during talks in Pyongyang in early October. The US, in turn, made the admission public Oct. 16.

Pyongyang said its action nullifies the 1994 deal, known as "the Agreed Framework." It called for North Korea to halt its nuclear-weapon-development effort in return for economic and political assistance.

The US said the project is a "very serious material breach" of the accord.

Before it was revealed to be an empty gesture, the Agreed Framework stood as a proud achievement for Carter, who was in the White House in the period 1977–81. Though out of office in 1994, Carter took a lead role in diplomacy that opened the way for the Clinton Administration to produce the accord.

Completing his mission to North Korea on June 18, 1994, Carter hugged dictator Kim Il Sung and called his trip "a good omen." On his return to Washington, D.C., Carter declared, "The crisis is over," a claim that left Clinton officials aghast.

Carter offered a strikingly uncritical assessment of the brutal communist dictatorship. "People were very friendly and open," he said, adding that Pyongyang, one of the world's most destitute cities, was a bustling place that reminded him of Times Square.

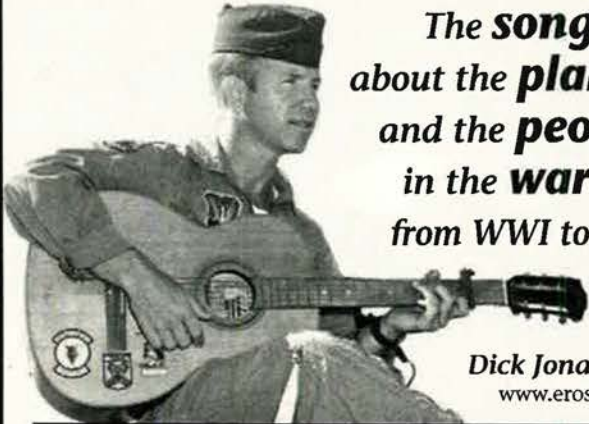
"I don't think that they are an outlaw nation," Carter opined. "Obviously they've done some things in the past that we condemn. They have their own justification for them and I won't go into that. ... This is something that's not for me to judge."

He added, "I don't feel as if I have been duped."

Former Secretary of State Lawrence S. Eagleburger said he was "horrified" to hear Carter "taking the word of this murderer who runs North Korea." The *Washington Post* noted, "Mr. Carter seems to take at face value much of the stated position of North Korea and its 'Great Leader,' dictator, aggressor, and terrorist Kim Il Sung, whom he found a rather reasonable and pleasant fellow."

The 78-year-old ex-President on Oct. 11 was awarded the Nobel Peace Prize for devoting his life, since being turned out of office, to freelance peace efforts and ventures such as the North Korean diplomacy.

More recently, Carter has criticized President Bush's determination to use force, if necessary, to remove the threat posed by Saddam Hussein. In fact, Nobel Committee Chairman Gunnar Berge declared Carter's selection "should be interpreted as a criticism of the line that the current Administration has taken. It's a kick in the leg to all that follow the same line as the United States." The statement did not draw a response from Carter.




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Customers are already lining up, said officials, for the projected spring 2004 upgrade completion date.

News Notes

■ USAF awarded a \$63.8 million contract to Northrop Grumman in late September to build the Global Transportation Network 21, which will improve an existing tracking system that the Air Force said reviews people and materiel on the move about two million times per day.

■ Pakistan test-fired a new surface-to-surface missile in early October. Pakistan notified India ahead of time. Tensions have run high between the two countries, each of which say they have increased their arsenals of nuclear weapons, for some time over the disputed Kashmir area.

■ The Air Force and Boeing may be near an agreement on the lease of up to 100 767 transports to be modified for use as aerial refueling aircraft. The price tag would be "significantly" lower than has been suggested by the General Accounting Office, USAF's top acquisition official, Marvin R. Sambur, told Bloomberg.com last month. (See "Aerospace World: Tanker Wars Continue," September, p. 23.)

■ The Pentagon extended USAF's permit to operate the PAVE PAWS radar station at Camp Edwards, Mass., for another 20 years. The previous permit would have expired in 2006. Local residents have long considered the radar a health hazard; however, Air Force officials maintain the station is safe.

■ The Air Force announced Oct. 1 that a fatigue crack in a high-pressure turbine blade caused catastrophic engine failure and resulted in the April 15 crash of an F-16 from Misawa AB, Japan, into the Sea of Japan. The pilot ejected, sustaining only minor injuries.

■ On Oct. 3, USAF announced that pilot error caused an A-10 to crash June 27 in a rural area in France. The pilot, Capt. Robert I. Lopez, from Spangdahlem AB, Germany, was killed. (See "Aerospace World: A-10 Pilot Killed in Crash," August, p. 14.) According to the investigation board, Lopez misprioritized his tasks, failing to properly execute a descent to 500 feet about ground level during a training mission. His attempt to recover came too late.

■ The Civil Air Patrol, USAF's auxiliary, opened a new national operations center Oct. 1 at Maxwell AFB, Ala.

■ Sierra Military Health Services

million test facility upgrade at Arnold AFB, Tenn. The upgrade would give Arnold Engineering and Development Center a Mach 8 capability, greatly enhancing its aerodynamic and propulsion test operation.

The Mach 8 milestone would nearly double the center's test capabilities, according to 1st Lt. Tim Budke, an AEDC project manager.

"AEDC's [aerodynamic and propul-

sion test unit] will be the only free jet test facility in the world that can test advanced hypersonic air-breathing propulsion systems over the entire flight range from subsonic to Mach 8 for extended periods of time," said Budke.

Other facilities can reach Mach 8, but they can only hold the speed—about 6,000 mph—for about 15 seconds, he said.

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said Oct. 7 that DOD had extended Sierra's five-year contract to manage 13 states and the District of Columbia. This is an interim move as the Pentagon seeks to overhaul the Tricare system, reducing the number of regions from 12 to three.

■ On Oct. 1 the Air Force announced selection of a new name tag for the service dress uniform. Officials had decided last year that it would return to the wear of a name tag on the service dress and reviewed several proposed types. The new tag has a brushed satin finish and blue letters. The previous name tag was blue with white letters.

■ Tricare awarded Express Scripts of Maryland Heights, Mo., a new mail order pharmacy contract in September. The new Tricare Mail Order Pharmacy contract, which covers a five-year period, replaces the existing National Mail Order Pharmacy contract. The NMOP expires in February. The TMOP begins in March and will provide a worldwide, full-service mail order pharmacy program to all Tricare-eligible beneficiaries. ■

Senior Staff Changes

RETIREMENT: Brig. Gen. Ben T. Robinson.

PROMOTIONS: To **General:** Charles F. Wald. To **Lieutenant General:** George P. Taylor Jr. To **ANG Major General:** George W. Keefe.

NOMINATIONS: To be **Brigadier General:** Bruce E. Burda, Thomas F. Deppe.

CHANGES: Brig. Gen. Mark G. Beesley, from Dir., Plans, NORAD, Peterson AFB, Colo., to Vice Cmdr., 7th AF, PACAF, Osan AB, South Korea ... Maj. Gen. Robert D. Bishop Jr., from Dir., Strategy, Policy, & Plans, SOUTHCOM, Miami, Fla., to Dep. Cmdr., SOUTHCOM, Miami, Fla. ... Brig. Gen. (sel.) Bruce E. Burda, from Dir., Prgm. Analysis & Eval., SOCOM, MacDill AFB, Fla., to Dir., Ops., AFSOC, Hurlburt Field, Fla. ... Maj. Gen. (sel.) Richard L. Comer, from Vice Cmdr., AFSOC, Hurlburt Field, Fla., to Dir., Policy & Planning, NORTHCOM, Peterson AFB, Colo. ... Brig. Gen. Bob D. Dulaney, from Cmdr., 354th FW, PACAF, Eielson AFB, Alaska, to Dir., Plans, NORAD, Peterson AFB, Colo. ... Maj. Gen. Dennis R. Larsen, from Vice Cmdr., 7th AF, PACAF, Osan AB, South Korea, to Cmdr., 13th AF, PACAF, Andersen AFB, Guam ... Maj. Gen. Theodore W. Lay II, from Cmdr., 13th AF, PACAF, Andersen AFB, Guam, to Dep. Cmdr., Joint Command North, NATO, Stavanger, Norway. ■

Comments of Top Marine Spur Senators To Review Roles of Joint Chiefs of Staff

Outgoing Marine Corps Commandant Gen. James L. Jones Jr. told Senators that the Joint Chiefs of Staff spend too much time on individual service responsibilities and not enough on providing military advice.

Asked to explain, Jones said that the role of the Chairman and the Vice Chairman were "crystallized more effectively" by implementation of the Goldwater-Nichols Act of 1986, but "the service chiefs have found themselves occupied in the majority of their time with the organize, train, and equip function." They have spent "a corresponding less amount of time dedicated to participating in the day-to-day dialogue of worldwide operations, emerging problems that should require a more focused attention," he said. "It's a question of devoting time to the issues."

Jones made his comments at the Senate Armed Services Committee confirmation hearing on his nomination to head US European Command and serve as Supreme Allied Commander Europe.

He went on to say that part of the solution to the problem requires each Chief to adjust his own schedule. "I see some self-adjustment being done right now in the JCS," said Jones. "The JCS is now into a more balanced division of time and labor on the more substantive issues."

"It is very easy to take your eye off the ball sometimes because there's so much to do," Jones added. "I am simply suggesting, not that anything is broken, but that we need to make sure that the contribution the Joint Chiefs can make as a body is still something that is valued and necessary and expected."

However, both Sen. Carl Levin (D-Mich.), committee chairman, and Sen. John Warner (R-Va.), ranking minority member, indicated they believe there could be more fundamental problems.

Levin told Jones, "You're being very candid ... and balanced, ... but I think we should really dig deeper."

Warner said he and Levin had been considering what reviews should be made of Goldwater-Nichols, now more than 15 years old. He agreed with Levin that the division of responsibilities for the service chiefs should be one of those reviews.

"Possibly some statutory emphasis on what we see as the need for greater balance between these two responsibilities may be needed," said Warner.

Yale Opens Doors to Military Recruiters, Vowing To Challenge Pentagon

Yale University agreed to allow military recruiters to attend a law school career day when it faced the loss of \$350 million in federal funds. Unlike Harvard and several other prestigious schools that have also grudgingly opened their doors recently, Yale said the move is only temporary.

Yale announced it intends to challenge the Pentagon's interpretation of the 1996 federal law, called the Solomon Amendment. The law links federal research funds to open access for military recruiters.

In an official statement Oct. 1, Yale University President Richard C. Levin said, "The university is committed to complying with the law, but we intend to pursue a determination of whether the law school's current policy satisfies the legal requirements."

Levin said the school provides names, addresses, and other student information to military recruiters and allows them to come to the law school to meet with students. He believes that policy satisfies the federal law. However, Yale did not allow military recruiters to participate in career day unless they submitted a nondiscrimination certificate.

At issue is the Pentagon's "Don't Ask, Don't Tell" policy governing homosexuals in the military.

The Pentagon earlier this year began cracking down on universities that had been skirting the Solomon Amendment. (See "Aerospace World: Harvard Law Finally Gives Up Military Recruiting Ban," October, p. 16.) The services notified various universities that they would forfeit their federal research funds if they did not open their doors completely to military recruiters.

The universities have complied in fact, if not spirit.

Verbatim

By John T. Correll, Contributing Editor

Reason to Remember 9/11

"The temptation on any anniversary is to just look back. But on Dec. 7, 1942, the country did not just look back on the sunken *Arizona*. It looked forward to the destruction of Japan."—**Charles Krauthammer, Washington Post, Sept. 6.**

Missions and Coalitions

"Wars are best fought by coalitions of the willing—but they should not be fought by committee. The mission must determine the coalition. The coalition must not determine the mission."—**Defense Secretary Donald H. Rumsfeld, Annual Report to the President and the Congress, Aug. 15.**

US-Terrorists Equivalence

"We too watched with shock the horrific events of Sept. 11, 2001. We too mourned the thousands of innocent dead and shook our heads at the terrible scenes of carnage—even as we recalled similar scenes in Baghdad, Panama City, and a generation ago, Vietnam."—**Oliver Stone, Jane Fonda, Danny Glover, Susan Sarandon, and other glitterati in a full page New York Times ad, Sept. 19.**

Not There Yet

"I believe that effects-based operations will be the doctrinal concept—the future joint warfighting concept—that our nation will employ. But it ain't ready yet."—**Army Gen. William F. Kernan, US Joint Forces Command commander, DOD briefing, Sept. 17.**

Here's to You, Mrs. Robinson

"Suddenly the T-word [referring to terrorism] is used all the time. ... Everything is justified by that T-word. I hope that countries will put human rights back on the agenda because it tended to slip after Sept. 11."—**Departing UN human rights chief Mary Robinson, quoted by Associated Press Europe, Sept. 8.**

They Know Nothing

"The people that are talking to the media about war plans are so far out of line and so disgracefully misbehaving. ... Anyone who knows any-

thing isn't talking, and anyone with any sense isn't talking. Therefore, the people that are talking to the media [are], by definition, people who don't know anything."—**Rumsfeld, remarks to reporters, Sept. 22.**

Air and Space

"Notably, the Space Commission report does not use the term 'aerospace' because it fails to give the proper respect to the culture and to the physical differences that abice between the environment of air and the environment of space. ... We will respect the fact that space has its own culture and that space has its own principles. And when we talk about operating in different ways in air and space, we have to also pay great attention to combining the effects of air and space."—**Gen. John P. Jumper, Air Force Chief of Staff, in foreword to Air University's fall 2002 Air & Space Power Journal, previously Aerospace Power Journal (and before that, Airpower Journal).**

What Requirements?

"We have a funny thing that we call requirements in the military. And of course, they aren't really requirements. Generally, they tend to be appetites or desires. And the word has a kind of bias contained right in it: Just the very word sounds like it must be met. And there are those that must be [met] and those that need not be."—**Rumsfeld, Pentagon briefing, Aug. 13.**

No Digging in California

"That's not the place where Marines should be digging their first fighting hole."—**USMC Lt. Gen. Edward Hankon, Combat Development Command commander, on Marines first learning a basic task on deployment to Afghanistan because environmental concerns bar their digging fighting holes in California, in Marine Corps Times, Sept. 9.**

War Is the Priority

"We have to be careful that we're not placing the global war on terrorism on top of our business-as-usual duties. We have to make the

global war on terrorism our daily business, and everything has to be looked at through that lens."—**Gen. Gregory S. Martin, commander, US Air Forces in Europe, in European Stars and Stripes, Sept. 11.**

Gift to Iraq

"It was a very innocent request, which we were obligated to fulfill."—**Thomas Monath, head of the Centers for Disease Control and Prevention lab which supplied Iraqi scientists with two dozen viral and bacterial samples in the 1980s, as quoted in Business Week, Sept. 30.**

Assurance

"There is no current danger to the United States from Baghdad."—**Former President Jimmy Carter, Washington Post, Sept. 5.**

From Dunkirk to Diana


"How Princess Diana's death gets rated the most significant event in British history in the past 100 years defeats me."—**Nick Barrett, historian and consultant to the UK History Channel, in whose poll World War II was judged second in importance to the death of Princess Diana, in the Washington Times, Aug. 31.**

Personnel Crisis

"Anytime you have an organization where half your employees are eligible for retirement within the next three to four years, that's a very serious situation. You would never want to be a shareholder in any company that found itself in that situation."—**Samuel Heyman, head of Partnership for Public Service, on potential crisis in federal workforce, in Wall Street Journal, Sept. 19.**

Vampire Defense Bill

"It's the vampire conference because we only seem to be able to work on it at night and on weekends."—**Congressional aide on compromise version of defense authorization bill, moving slowly because of concentration of armed services committees on possible war with Iraq, in ArmyTimes.com, Sept 10.**

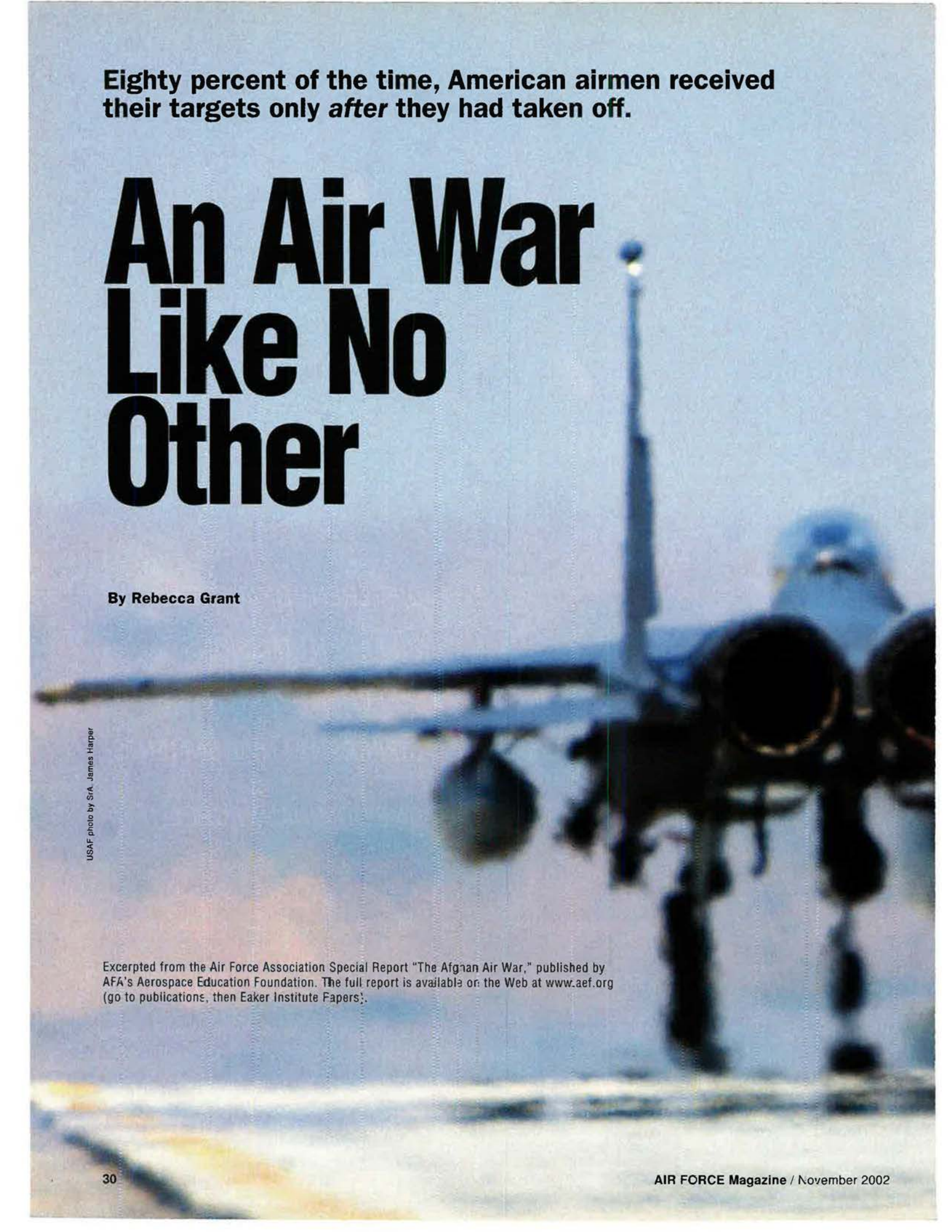


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Eighty percent of the time, American airmen received their targets only *after* they had taken off.

An Air War Like No Other

By Rebecca Grant

USAF photo by SrA James Harper

Excerpted from the Air Force Association Special Report "The Afghan Air War," published by AFA's Aerospace Education Foundation. The full report is available on the Web at www.aef.org (go to publications, then Eaker Institute Papers).



OPERATION Enduring Freedom marked the first time the US military responded to an act of terrorism with a large-scale, sustained, conventional-force operation. The war on the Taliban and al Qaeda was most intense from October 2001 through January 2002, when it featured mostly air and space power.

It was not, however, a massive air war; the sortie count from its start through takeover of major Afghan cities was about half that of Operation Allied Force in the Balkans in 1999 and nowhere near that of the Gulf War in 1991.

What made OEF unique was that joint airpower was able to respond on

command in a harsh, politically complex environment. The airpower component set the conditions for a coalition campaign and achieved success from the first night onward, adapting to tactical constraints and bringing precise firepower to bear. Indeed, 80 percent of the targets struck by US airpower were “flex targets”—those given to pilots en route.

The Sept. 11 attacks came as a thunderous strategic surprise. It took time for the Bush Administration to formulate its response. Soon, however, US attention was drawn to Osama bin Laden’s nest, Afghanistan. Its Taliban rulers had offered the Saudi-born terrorist a safe harbor since 1996. Thus, the first step in



An airman prepares a precision guided bomb during Operation Enduring Freedom. After dropping a portion of their loads, USAF's B-1Bs, such as this one, and B-52 bombers were on-call for emerging targets.

reducing the terror threat would be to eliminate al Qaeda bases in Afghanistan.

The primary internal opposition to Taliban rule came from the Northern Alliance, a loose coalition of irregular forces under the leadership of various Afghan strongmen. Somewhere in the days after Sept. 11, the Bush Administration decided that teaming with the Northern Alliance offered the best hope for "liquidating" the Taliban and al Qaeda in Afghanistan.

It was also clear that inserting any US military forces into the region would require cooperation from Afghanistan's neighbors. They were a complicated group. Afghanistan bordered nations whose names must have made planners shudder: China, Iran, the now-independent republics of Turkmenistan, Uzbekistan, and Tajikistan, and on-again, off-again US ally Pakistan.

The Buildup Begins

The US soon began assembling forces, however. The Air Force already had established a modern, top-of-the-line nerve center, called the Combined Air Operations Center, or CAOC, in a Persian Gulf state. This center would be used to direct all facets of the coming air campaign. Moreover, some Navy warships were in place in the northern Arabian Sea. The aircraft carrier USS *Enterprise* and its battle group had begun their return to the US after six months at

sea but turned back on station after hearing of the attacks.

Beyond that, everything for the war in Afghanistan had to go in by air. USAF's Air Mobility Command began putting in place an air bridge of tankers to refuel inbound aircraft. For the first time, the air bridge out of the United States ran in two directions, east and west, converging on Central Asia.

OEF began on Oct. 7, 2001. Gen. Richard B. Myers, the Air Force officer who had only recently become Joint Chiefs of Staff Chairman, announced the action. He said, "About 15 land-based bombers, some 25 strike aircraft from carriers, and US and British ships and submarines launching approximately 50 Tomahawk missiles have struck terrorist targets in Afghanistan."

On Oct. 7 and 8, strikes by Air Force bombers and Navy fighters hit Taliban air defense sites, airfields, military command-and-control centers, and other fixed targets near major cities and installations. The first order of business was to "remove the threat from air defenses and from Taliban aircraft," Defense Secretary Donald H. Rumsfeld said on Oct. 7.

"We need the freedom to operate on the ground and in the air, and the targets selected, if successfully destroyed, should permit an increasing degree of freedom over time," he added.

Humanitarian relief missions began on the first night of the war. Two

C-17 airlifters carried out a long-distance airdrop of humanitarian daily rations.

Air strikes to eliminate air defenses and other key targets were a logical first step, given the success of airpower in the conflicts of the 1990s. But Rumsfeld took pains to point out that a few days' worth of strikes would not topple the Taliban.

"We have to have a clear understanding of what is possible in a country like that," Rumsfeld said. "That country has been at war for a very long time. ... They do not have high-value targets or assets that are the kinds of things that would lend themselves to substantial damage from the air."

It was plain from the outset that OEF was not going to unfold according to a predetermined strategy. The Gulf War air campaign of 1991 pounded Iraqi forces for 38 days as the US "tried to set conditions" for hostilities, Myers noted in a late October briefing. "Then," he went on, "we had a ground component that went in and finished the job. You shouldn't think of this [the war against terrorists] in those terms."

"A Different War"

Echoing that point was Gen. Tommy R. Franks, the Army officer commanding US Central Command and thus the war's top military figure. "It has been said that those who expect another Desert Storm will wonder every day what it is that this war is all about," said Franks. "This is a different war."

Part of the strategy was to take steps to hunt down key individuals and learn more about al Qaeda's structure and any plans for future operations. Another was to unseat the Taliban.

The Northern Alliance, always a loose grouping, was not ready for coordinated air and ground offensives. Aid ranging from ammunition to horse fodder had to be flown into the theater and air-dropped to alliance forces. Trained US special operations teams and air controllers had to link up with assigned elements of the Northern Alliance.

The mechanics of airpower for OEF were different from those seen in other recent conflicts. Distance was a major challenge. Navy fighters flew more than 700 miles one way from their carriers to their com-

bat stations. Bombers coming from the British-owned Indian Ocean atoll of Diego Garcia faced a 2,500-mile one-way trip.

For airmen, the war shifted rapidly from strikes against preplanned targets to a combination of preplanned and flexible targets. "After the first week, the pilots didn't know what targets they'd be striking when they launched," said Vice Adm. John B. Nathman, then commander, Naval Air Force, Pacific Fleet.

As emerging targets came to dominate the tasking, the key was to keep fighters and bombers on station over Afghanistan long enough to get good targets for their weapons.

To cope with these requirements, Navy aircraft carriers worked under a new and different kind of operational concept in the Afghan air war. Previously, exercises focused on a single carrier generating combat power, a reflection of the Cold War emphasis on each carrier being able to survive and operate alone. OEF saw several aircraft carriers combining forces to generate the required effort. USS *Enterprise* was joined by four more carriers. USS *Kitty Hawk* shed all but eight strike aircraft from the air wing to make room on the deck for Special Operations Forces helicopters. Some of *Kitty Hawk's* fighter units pulled temporary duty at Diego Garcia to provide air cover for the bomber base on the island.

Naval aircraft flew about 75 percent of the strike sorties. With all-

precision air wings, the strike fighters averaged two aim points per aircraft per sortie, a monumental shift from the mass force packages of Desert Storm. A full 93 percent of the Navy strike sorties delivered precision guided ordnance.

"We are more precise than we were in the past," explained Adm. Vern Clark, the Chief of Naval Operations, during an interview with C-Span.

Gen. John P. Jumper, the Air Force Chief of Staff, concurred with Clark. "We've come a long way from 10 years ago [Operation Desert Storm], when we had to fly ATO [Air Tasking Orders] out to the aircraft carriers," Jumper told the *Washington Post*.

Roving Strike Force

Once on station, the air component became a roving strike force positioned over the battlespace to provide prompt, precise firepower on demand.

For the fighters—land-based Air Force fighters in the Gulf region and carrier-based naval fighters—a standard mission was to take off and fly to an assigned engagement zone. There they might orbit as the most recent information was being synthesized from a variety of sources before being passed on to the strike aircraft. The main obstacle to continuous fighter coverage was distance.

The need to fly more than 700 miles, strike, and recover within the

intricate deck cycle time of the carrier's operations created a major challenge.

Bombers were less affected by range limitations and soon shouldered the major part of the job. After two initial days of strikes, the B-2 stealth aircraft flying from Whiteman AFB, Mo., were not used again, since the air defenses in Afghanistan did not pose a threat to conventional bombers if they stayed above the altitudes for such man-portable SAMs and anti-aircraft fire as might be left. Other bombers were cast in starring roles. The Air Force deployed 18 B-52s and B-1s from the US to Diego Garcia. Officers in the CAOC generally could expect four sorties per day from the B-1s and five from the B-52s. Both the B-1 and B-52 now carried GPS-guided Joint Direct Attack Munitions.

These bombers, like the B-2s in Allied Force in 1999, received new target coordinates in real time by linking directly to the net of updated information. Rarely was a bomber's entire load of weapons destined for preplanned targets. Once a bomber crew completed its preplanned assignment, it would remain airborne and on-call for other targets.

Jumper called the use of the B-52 against emerging targets in a close air support role transformational. Those sorties, he said, would normally have been flown by attack aircraft such as the A-10.

While USAF bombers and Navy fighters were shifting gears, another, highly unusual type of air war was just getting under way. A clandestine air war used unmanned vehicles, satellites, and other intelligence sources to track time-sensitive targets, of which the most tempting and critical were the Taliban and al Qaeda officials on the campaign's most-wanted list.

Flexible Targeting

Time-sensitive targeting went by several names. Originally dubbed "flex targeting" during Allied Force in 1999, the process was also nicknamed "time-critical targeting." It could be used for attacking any moving or moveable target of high importance, especially one that through electronic emissions, communications, or other telltale signs gave only brief indications of its location. In the Kosovo war, time-sensitive

US Army photo by Sgt. Todd M. Roy



Special forces on the ground in Afghanistan included airmen, such as this master sergeant at far right. USAF combat controllers called in strike aircraft as targets were identified.



An Air Force Reserve Command A-10 pilot waits for the signal to launch at Bagram air base in Afghanistan. A-10s provided close air support in the rout of Taliban and al Qaeda forces during Enduring Freedom.

targets were more often military equipment such as SAMs. In 2001, the most time-sensitive targets of all were people such as Mullah Muhammad Omar, the Taliban's principal spiritual leader.

Months earlier, the Air Force had successfully test-fired Hellfire missiles from a Predator Unmanned Aerial Vehicle. The CIA appropriated the capability and used Predators to fire at, as well as track, key targets in Afghanistan.

The targeting of these time-sensitive targets, no matter how important, had to conform to the laws of war as dictated by the Geneva Conventions. Strict adherence to the rules of war served to eliminate any possibility of an airman being accused, down the road, as a war criminal.

CENTCOM long had employed lawyers from the military's Judge Advocate General Corps as experts on the laws of war. In Desert Storm, for example, the lawyers got a chop on preplanned targets. However, the handling of time-sensitive targets was harder.

Not only did intelligence sources have to produce coordinates quickly enough that could be relayed to a command center and then on to a strike aircraft, but also the target might have to be approved. No commander wanted to wind up attacking a carload full of Afghan civilians when the target was al Qaeda fighters. Restaurants, private homes, and civilian-style vehicles all posed

nightmarish ID problems, especially under time pressures.

Early in the clandestine air war, US operators believed they had Mullah Omar in their sights. As reported by Seymour M. Hersh in *The New Yorker*, a Hellfire-armed Predator was patrolling the roads near Kabul on the first night of the war. Hersh asserted, "The Predator identified a group of cars and trucks fleeing the capital as a convoy carrying Mullah Omar, the Taliban leader." The CIA controller had to refer the shoot-don't shoot decision to "officers on duty at the headquarters" of Central Command in Tampa, Fla.

Hersh went on: "The Predator tracked the convoy to a building where Omar, accompanied by a hundred or so guards and soldiers, took cover. The precise sequence of events could not be fully learned, but intelligence officials told me that there was an immediate request for a full-scale assault by fighter-bombers. At that point, however, word came from General Tommy R. Franks, the CENTCOM commander, saying, as the officials put it, 'My JAG'—Judge Advocate General, a legal officer—'doesn't like this, so we're not going to fire.' Instead, the Predator was authorized to fire a missile in front of the building, 'bounce it off the front door,' one officer said."

Hersh added that "an operative on the ground" later confirmed that Omar and his guards were in the convoy tracked by the Predator.

Whatever the precise facts, the story revealed that the coordination required for tracking and killing a time-sensitive target was not smooth.

Delicate Process

Target approval remained a delicate process throughout OEF, giving rise to speculative press stories about who grants approval and why and how often authorization was held back. The need for target approval by Franks and levels above him sometimes slowed the campaign. According to a report in the *Washington Post*, CENTCOM often denied requests from the CAOC to strike newly identified targets. This reportedly provoked one officer to declare, with heavy sarcasm, "It's kind of ridiculous when you get a live feed from a Predator and the intel guys say, 'We need independent verification.'"

Such stories cast a pall over OEF at a time when the air war was shifting from the short period of strikes on fixed targets to the hunt for Taliban military targets. As yet, cracks in the Taliban's control of Afghanistan were not evident.

Coalition achievement of air superiority was followed by a brief interval of seeming inactivity; serious Northern Alliance ground operations did not start up right away. To many pundits, this came across as a sign of failure. Within days, questions about the inability of airpower to eliminate al Qaeda centers of resistance filled the press. By the end of October, disenchantment had spread. "The initial US air strategy against Afghanistan is not working," University of Chicago professor Robert A. Pape declared in the *Washington Post*.

Despite repeated efforts by Rumsfeld, Myers, and other Pentagon officials to explain that this war was different, the reflex desire to blame airpower surfaced again.

Attempting to remedy what supposedly "ailed" OEF, many recommended committing US ground troops in substantial numbers. Mackubin T. Owens Jr., a professor of strategy and force planning at the US Naval War College, Newport, R.I., estimated the job would take 35,000 to 40,000 American troops. Former Pentagon official Daniel Goure upped the ante, projecting a need for at least 250,000 troops.

The cacophony prompted Franks

to say publicly that the war was “not at all a stalemate.” Rumsfeld even prepared a public statement (released last November) reminding Americans that the US in the past had fought and won long wars and that there was no possibility of instant victory.

The unspoken charge was that continuing the bombing campaign would be an exercise in senseless destruction to prove a point, while in the end, it would take conventional ground forces to do the job properly. Scattered collateral damage incidents, such as a hit on a warehouse, fueled more complaints.

Help Arrives

The common view of that contingent was, as Owens argued, “It’s doubtful the opposition forces can win without substantial [US ground force] help.” Owens was dead right about the Northern Alliance’s need for help but wrong about the source. Help was about to arrive, in a spectacular form, from CENTCOM’s joint air component.

For all of the hand-wringing about the progress of the air war, operational success always hinged mainly on establishing a linkage between air and ground forces. Rumsfeld said, “We feel that the air campaign has been effective. The fact that for a period we did not have good targets has now shifted, because we are getting much better information from the ground in terms of targets. Also, the pressure that has been put on fairly continuously these past weeks has forced people to move and to change locations in a way that gives additional targeting opportunities.”

While supporting the Northern Alliance push against the Taliban, the joint air component was also busy with attacks on a network of mountain caves that might be offering shelter to al Qaeda forces.

A Pentagon spokesman declared that al Qaeda did not any longer appear to be active in Afghanistan, given the continuous military pressure. As he put the situation, “We have taken away their ability to use their training camps. We have taken away their known infrastructure. We are striking at the caves that we have learned that they utilize or have utilized.”

By late October, the coalition had in place all of the pieces needed for rapid success on the ground. Rums-

feld said that “a very modest number” of US troops were positioned to help coordinate air strikes and provide logistic support to the Northern Alliance.

Myers went on to explain the tactical concept for the next phase of operations. “For several days now we’ve had US troops on the ground with the Northern Alliance,” he said. “Their primary mission is to advise [and] to try to support the Northern Alliance with air strikes as appropriate. They are specially trained individuals who know how to bring in airpower and bring it into the conflict in the right way, and that’s what they’re doing. We think that will have a big impact on the Northern Alliance’s ability to prosecute their piece of this war against the Taliban.”

The campaign was approaching a turning point. Some 300 Special Operations Forces members, divided into small teams, were in place, with about 200 of those in the north and the other 100 or so in tribal groups in

the south. The first step for each team, of course, was to build trust and relationships with the leaders of the Afghan group to which they had been assigned. The teams went into Afghanistan after careful preparation. Powell noted in a *Washington Post* interview, “You had a First World air force and a Fourth World army, and it took a while to connect the two.”

Once in place, the SOF teams and the CAOC’s delivery of “on-call” airpower proved to be the right operational concept for unseating the Taliban. The ability to call in air strikes on precise coordinates gave the Northern Alliance the boost in firepower needed to break the Taliban strongholds. At one Pentagon briefing, Myers showed gun-camera film of air strikes hitting two tanks and an artillery piece. Another news briefing featured film of a B-52 strike on Taliban fielded forces. Air-ground coordination was working: Controllers operating with the Northern Al-

The Area of Operations



liance were helping to bring precise firepower to bear on individual targets and directing bomber strikes against concentrations of troops.

First Towns Fall

In the first week of November 2001, air strikes concentrated on Taliban and al Qaeda forces and military equipment near Mazar-e Sharif and Kabul, the capital. Aircraft on Nov. 4 dropped two gigantic BLU-82 15,000-pound bombs on Taliban troops, with a telling effect. The Northern Alliance went on the attack, and by Nov. 6, its forces had captured villages around Mazar-e Sharif. Shulgareh fell on Nov. 7, and on Nov. 9 the Northern Alliance claimed Mazar-e Sharif itself.

The CAOC kept directing bombs on target and the Northern Alliance started rolling up the Taliban. A stunning demonstration of the new technique at its best came when a B-52 bomber put bombs on target within 20 minutes of a call for assistance. Northern Alliance forces, who were riding on horseback, discovered a Taliban military outpost with artillery, barracks, and a command post. Although the Taliban force was quiet at the time, the Northern Alliance commander identified the outpost as a stronghold. He asked for coalition aircraft to strike the target within the next few days. A USAF combat controller notified the CAOC, and since the target lay in an already established engagement zone, the CAOC

alerted a B-52 overhead. The B-52 struck the outpost 19 minutes after the initial call.

Backed by that kind of airpower, the Northern Alliance pressed the pedal to the floor, and the allegedly stalemated war accelerated into high gear. Over the course of a week, the alliance, with on-call American airpower overhead, took town after town. Taloqan fell on Nov. 11. The Northern Alliance announced the liberation of Herat on Nov. 12. Opposition forces soon were making plans to recover the capital.

The morning of Nov. 12 saw the beginning of the end for the Taliban's control of Kabul. B-52 strikes pounded Taliban lines around the capital in the morning. By late afternoon, Northern Alliance armored forces were moving down the "Old Road" toward the city with infantry sweeping through former Taliban positions. Fleeing Taliban fighters discarded their equipment and their dead and ran for their lives. The air strikes around Kabul also killed a key bin Laden deputy, Mohammed Atef.

On Nov. 13, the Northern Alliance took control of Kabul and began to set up police control of the city. Elements of the Taliban were now in headlong flight southward to the sparsely populated areas controlled by Pashtun tribes.

Thus, in the space of only two weeks, the coalition broke the Taliban's grip on Afghanistan. Franks summed up the progress to date on

Nov. 15: "We in fact have the initiative. ... We have said that it's all about condition setting, followed by our attaining our objectives. The first thing we did was set conditions to begin to take down the tactical air defense and all of that. So we set conditions and then we did that. The next thing we did was set conditions with these special forces teams and the positioning of our aviation assets to be able to take the Taliban apart or fracture it. And we did that."

Bush Was Impressed

President Bush himself summed up the meaning of the action in a Dec. 11 speech at The Citadel. "These past two months have shown that an innovative doctrine and high-tech weaponry can shape and then dominate an unconventional conflict," he said, noting that "this combination—real-time intelligence, local allied forces, special forces, and precision airpower—has really never been used before."

The swift, mid-November collapse of the Taliban left the forces of OEF facing three main tasks in the months ahead:

- Conquest of the last remaining Taliban strongholds, such as Kandahar, the spiritual capital of the Taliban movement.

- Initial reconstruction of civilian government and infrastructure in Afghanistan.

- Elimination or capture of the scattered remnants of al Qaeda and the Taliban, including the leaders.

With peacekeeping duties beginning and with the Taliban collapsing so quickly, the pressure was on to finish the rout. The Northern Alliance took its hot pursuit of the Taliban and al Qaeda south to the remaining strongholds of Taliban power near Kandahar and Kunduz.

On Nov. 20, more than 1,000 Taliban fighters at Kunduz surrendered to the Northern Alliance. Six days later, Kunduz was occupied. By early December, Kandahar fell.

The second task, restoring civil order and starting the rebuilding process, gained some strength from the momentum of the Northern Alliance's victories and the ongoing humanitarian relief operations. OEF cast a new mold by delivering Humanitarian Daily Rations and other supplies starting the very first night. The HDRs were described by Joseph

USAF photo by TSgt. Joe Springfield



UAVs such as this RQ-1B Predator were star performers as US forces tracked time-sensitive targets and then relayed the data to airborne strike aircraft. Some 80 percent of the targets struck were given to pilots en route.

J. Collins, deputy assistant secretary of defense for peacekeeping and humanitarian affairs, as “a safe, vegetarian, nonculturally sensitive meal that has everything you need, unless you need taste.” An average daily airdrop delivered 35,000 HDRs. Sometimes the number went as high as 70,000.

Pursuing the Bad Guys

The third task entailed mopping up on a grand scale. Though Afghanistan was no longer under Taliban control, the country was not entirely free of Taliban or al Qaeda, either. Only a fraction of top leadership had been killed in battle or had fallen into the hands of the Americans. A conventional war might have ended with the fall of major cities and elevation of the government of interim Prime Minister Hamid Karzai. The war on terror had to continue.

OEF began to focus on the tracking of leadership, remaining troops concentrations, and strong points. As Franks had said Nov. 15, “The Taliban is not destroyed as an effective fighting force from the level of one individual man carrying a weapon until that individual man puts down his weapon.” Last fall, DOD officials repeatedly explained that the US still had to find and get al Qaeda and the Taliban, specifically the leadership.

This new phase of operations included deploying ground troops and using expeditionary air bases inside Afghanistan. Over the next several months, coalition air and ground forces worked together on a series of raids against Taliban and al Qaeda remnants.

Hovering over it all was the hope of finding bin Laden himself, or at least gaining new clues as to his whereabouts. Franks had said CENTCOM was closely watching both Kandahar and an area to the south, near Tora Bora. A Taliban ambassador announced in mid-November that bin Laden and his family had relocated to parts of Afghanistan not controlled by the Taliban. Then, in early December, coalition forces attacked a



An F-16 fighter displays the “Let’s Roll” nose art, commemorating the victims and heroes of the Sept. 11 terror attacks. In mid-October, some doubted the ability of airpower to rout the Taliban, but they were proved wrong.

cave complex near Tora Bora in the White Mountains.

Despite intense air strikes and an attack by US forces and the Northern Alliance, the battle did not round up all al Qaeda.

“I would think that it would be a mistake to say that the al Qaeda is finished in Afghanistan at this stage,” said Rumsfeld on Dec. 19. He noted that some of the Taliban fighters had “just gone home, dropped their weapons—these are Afghans—and they’ve gone back to their villages and said, ‘To heck with it. I’m not going to do anything.’”

Ever since the Gulf War, US strategy debates have tended to stumble over the issue of whether large-scale maneuvering by land combat forces with tanks and artillery are essential to success in battle. The early criticisms of airpower in OEF brought that argument to the table once again. In mid-October, some doubted it was possible to rout a wily and experienced Taliban force on its own turf especially with Afghans (and Americans) on horseback, a few hundred highly trained US airmen, soldiers, and sailors on the ground, and 50 to 100 strike sorties per day launched from distant bases.

Yet this is exactly what happened. The Air Force and Navy, using precision laser-guided and satellite-guided munitions, made every strike count. With a minimum of collateral damage and bloodshed, the air strikes enabled the Northern Alliance to overcome the Taliban’s numerical advantage and their supply of tanks, artillery, and vehicles and retake the 85 percent of Afghanistan once controlled by that oppressive regime.

At the same time, the air component mounted a major humanitarian relief effort and delivered nearly all materiel to surrounding bases by air. It proved the validity of a concept: US and allied airpower can work efficiently with local ground forces to accomplish the combatant commander’s objectives. While this will not be the solution for every potential campaign, it is now beyond dispute as a proven model for coalition operations.

Afghanistan offered convincing evidence that airpower is flexible enough to take the lead in many different types of conflict. US airpower enabled Northern Alliance forces to take back control of Afghanistan and did it in under two months. The war on terrorism will demand action in many forms on many fronts. Afghanistan demonstrated that the United States, by committing its joint air forces, even in an uncertain tactical environment, can enable American-led forces to prevail. ■

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Can the Air Force blend AWACS, Joint STARS, and Rivet Joint into a single battlespace management system?

Seeking a Triple-T

A NEW fleet of Intelligence, Surveillance, and Reconnaissance aircraft is taking shape on Air Force drawing boards and is planned for introduction at the beginning of the next decade. The aircraft will embody new technology that will quicken the process of finding and destroying mobile targets and will be closely matched to a new vision of how the Air Force will operate in the future.

The platform is called the Multi-

sensor Command and Control Aircraft, or MC2A. Service officials hope it will serve as a single-type replacement for today's E-3 AWACS air battle controller, E-8 Joint STARS ground target surveillance aircraft, and perhaps even the RC-135 Rivet Joint signals intelligence platform.

These sensor aircraft are today's principal Low-Density, High-Demand systems that regional combatant commanders insist on but which are in chronically short supply. How-

ever, they are expected to become difficult and costly to maintain in the coming decade. As their 707- and C-135-based airframes get older, their electronic components will become hard to replace due to what is called the "vanishing vendor" syndrome: Suppliers go out of business over the life of the platform or switch to more modern products.

The MC2A is the brainchild of Gen. John P. Jumper, Air Force Chief of Staff, who several years ago envi-



Boeing artist's concept

Threat Sensor

sioned a single “common widebody” replacement for the large aircraft in today’s ISR fleet. More than hoping to simply save money by consolidating airframes, Jumper also saw the new airplane serving as an adjunct to the air operations center in future wars, as not only a multisensor platform but also as the in-theater battle controller.

In this role, the common ISR airplane would be pivotal in the Global Strike Task Force concept, which calls for Air Force aircraft to “kick down the door” into a future theater of war by swiftly destroying enemy anti-access capabilities. These in-

By John A. Tirpak, Executive Editor



This is an artist's concept of a Boeing 767-based Multisensor Command and Control Aircraft designed to be an airborne information battleship, combining three of USAF's most in-demand assets—AWACS, Joint STARS, and Rivet Joint—into one platform.

clude air defenses, theater ballistic missiles, and weapons of mass destruction that could hold US forces at bay.

Pivotal Element

The MC2A would fly into the theater as part of the Global Strike Task Force air armada, controlling not only strike and fighter aircraft but also unmanned combat and sensor vehicles—such as Global Hawks and Predators.

This common widebody would be able to see the ground situation in fine-toothed detail and superimpose on it the unfolding aerial battle, overlaying threats and automatically highlighting time-critical targets. It would be connected to space-based Intelligence, Surveillance, and Reconnaissance assets as well as ground units and build a comprehensive picture of the war in near real time.

Further, the MC2A would translate the operational-level orders of the Joint Force Air Component Commander into tactical delegation of targets to aircraft.

Plans currently call for a fleet of as many as 55 of the Multisensor Command and Control Aircraft, though production numbers are at this point highly speculative. A great deal of conceptual and technological work must first be done to assess whether a two- or three-in-one airplane is even feasible.

The common widebody answers

not only the global strike concept but also Air Force Secretary James G. Roche's edict that "we will never again build a single-mission aircraft." From now on, the service wants aircraft with the flexibility to perform a variety of missions under a range of conditions.

The new project will also be the centerpiece of what Jumper calls "the horizontal integration of manned, unmanned, and space" platforms. By serving as the main battlefield node of information, the MC2A will collect data from its own sensors, fuse it with data collected from fighters, unmanned vehicles, and satellites, and create a coherent picture of the air war. This in turn will be passed to

aircraft on missions as well as to the air commander to help him plan and conduct operations.

Air Combat Command initially pursued the project as a Joint STARS update, which called for a substantial upgrade to the E-8's main radar. At Jumper's urging, ACC expanded the project to look at the possibility of performing both the AWACS function and the E-8 ground moving target indicator function on the same platform. Additionally, the service set the ability to spot and track cruise missiles as a basic program requirement.

Less than two years after the initial vision, the common ISR project is a going concern. It has an opera-



USAF photo by TSgt. Jack Braden



USAF photo by TSgt. Jeff Clonkey

The E-3 AWACS is beginning to suffer from age and component obsolescence but is still one of USAF's most crucial assets. The MC2A program seeks to increase the number and capability of AWACS-like aircraft in the inventory.

tional requirement, a platform and contractors selected, a timetable, experimental experience, and a budget. After an extensive analysis of alternatives, ACC settled on the Boeing 767-400ER as the preferred commercial, off-the-shelf airframe on which to base the MC2A.

Thinking Long Term

Jumper decided it was time to transition from the 1950's—vintage 707 design to a more modern type, according to Robert Smart, the Air Force's deputy director for information dominance systems.

"General Jumper ... was really convinced that the 707 platform was not giving us the long-term capability," Smart noted. "The maintenance was becoming an issue. Engines have been an issue." Smart said Jumper

told the program office that “now is the time to embrace a longer-term vision for the Air Force, move off of the 707 platform,” and transition to “a multiplatform program.”

Several airliners were considered, but the 767 had a leg up on the competition because it had already been converted to AWACS use for the Japanese Air Self-Defense Force. The 767 is also viewed as the most likely successor to the KC-135 for the air refueling mission.

The project has gotten off to a rocky start with Congress. There are four elements that have similar names and common budget line items. This has caused considerable confusion on Capitol Hill.

The first element is the MC2A project itself, which is the developmental program aimed at creating a new airborne ISR airplane. By 2012 the Air Force would like to acquire an initial “orbit” of four aircraft—necessary to maintain 24-hour-a-day watch over the battlefield—plus a fifth airplane dedicated as a test bed.

Next is the similarly named Multi-sensor Command and Control Constellation. Its purpose is to network existing ISR systems, as well as new systems, including the MC2A aircraft, space systems, and unmanned aerial vehicles, to create what Jumper calls the “machine-to-machine interfaces” necessary to speed up the transfer of information among ISR platforms and “shooter” aircraft.

The Air Force also has a 707 aircraft—dubbed the MC2A-X or Paul Revere—that is being used to experiment with battle management concepts and hardware, some of which could be applied to the MC2A project. The X aircraft is not a prototype for the new system because the older 707 is a different shape than the 767 so could not be used to deconflict interference from the various antennas and arrays.

The Air Force must buy an “empty” 767 to begin the form, fit, and function design process for the new multisensor airplane and to conduct tests for potential interference. Doing this work on a 707 won’t work, said Smart.

Lawmakers zeroed funding for a 767 from the Air Force’s Fiscal 2003 budget request, believing erroneously that the 707 Paul Revere could serve as the test bed. The service was unable to reverse the decision in the



The KC-135 Rivet Joint is probably in the best shape, structurally, of all the big ISR platforms, one reason its mission would be the last to be migrated to the MC2A.

House-Senate budget conference. Meanwhile, USAF held talks with Boeing about possibly paying for the 767 test bed in several annual installments.

The various labeling problems “cost us a bit of confusion on the Hill,” Smart said.

He said the solution may be to break these two programs out into their own separate budget line items. “They’re both very important, individually,” Smart asserted. “They both deserve their own program element.”

According to Smart, the Air Force must begin integration work next year to have the new common ISR aircraft ready in time for 2012. The 767 test bed is an “absolute necessity ... in ’03,” he said.

The Contracting Issue

Yet another controversial aspect of the program is the way in which it may be acquired. So far, the Air Force has elected to pursue the common widebody as a series of sole-source initiatives with the companies that have done such projects in the past. Contractors with similar capabilities have complained of being shut out of what could be many billions of dollars’ worth of business.

Northrop Grumman, Boeing, and Raytheon had by late summer set up a tentative cooperative teaming arrangement and were expected to formalize it this fall.

“I will be very candid and tell you that there have been some growing

pains with this team,” Smart asserted. However, “I will say unequivocally that, today, the teaming arrangement is very strong. We’re very satisfied with what we’ve seen between the three companies.”

Before Jumper began implementing his vision of the common widebody ISR aircraft, the Air Force was already pursuing an update of the E-8 ground target surveillance aircraft. It was called the Multiplatform Radar Technology Insertion Program and would have vastly improved the resolution of the Joint STARS system with a new electronically scanned radar.

The upgrade was aimed at giving the E-8 “enhanced air-to-ground capability and a limited air-to-air capability to do the cruise missile defense mission,” Smart pointed out. It was to be able to spot cruise missiles up to 10,000 feet and deliver 12 times better ground target resolution, down to objects about a foot long.

This upgrade has been recast as the first “spiral,” or step, in the MC2A program. The major change was the shift from a 707 platform to the 767. Spiral 1 will be led by Northrop Grumman and Raytheon, which were leading the now-defunct Joint STARS radar upgrade.

The next step, or Spiral 2, for the common widebody ISR program would add the E-3 airborne battle management capability. Boeing is slated to lead that phase. If technically feasible, it will be in this step



be that adjunct of the air operations center.”

Behler said the project enabled the Air Force to prioritize which of those systems would help most with those kill chain activities.

The experiment highlighted many valuable things that would not have surfaced in a ground-based simulation environment, Behler said. Some were mundane lessons like “where the people should sit, who should sit next to whom,” but others were extremely important, such as the problem of the lost data link.

“We found that when the aircraft went into a turn, we’d lose the data link,” Behler noted. “It’s like losing your cell phone: You’ve got to stop,

that the ability to see and track moving air targets, as well as ground targets, will be integrated, Smart said.

There could also be a Spiral 3 that would add a signals collection and intelligence function to the MC2A. If so, Raytheon would lead this successor to the Rivet Joint, but Smart cautioned that Spiral 3 “is not nearly as clear and it’s not nearly as defined” as Spiral 1 and 2.

The Paul Revere aircraft participated in this summer’s live-fly Joint Expeditionary Force Experiment at Nellis AFB, Nev. Roche last year ordered the experiment planners to include exploration of the MC2A concept.

A Jump Start

Maj. Gen. Robert F. Behler, commander of the Aerospace Command and Control and ISR Center at Langley AFB, Va., said, “The idea was to use Paul Revere to jump-start the MC2A program, to look at the Paul Revere from the point of view of the operators, the testers, scientists, engineers, technicians, concept development people, the acquisition people, all together, to ... look at where we’re going” with the common ISR aircraft.

Cobbled together from an empty 707 belonging to MIT’s Lincoln Laboratories, the Paul Revere used an assortment of existing equipment and new systems provided by contractors that, with the government, wanted to see what kinds of off-the-shelf equipment might work.

About \$13 million worth of gear



Photo by Paul Kennedy

The MC2A would not just be an information collector. It would also be a battle manager, directing combat aircraft as well as unmanned sensor platforms. Predator UAV controllers, such as these, would be aboard the MC2A.

went into the experiment, of which more than half was provided by industry.

Col. Bruce Sturk, who was then director of the Air Force Experimentation Office, said the experiment looked at ways information could be exploited in near real time to go after freshly identified Scud-type weapons and other emerging targets. The Paul Revere aircraft performed dynamic tasking of U-2 and Predator aircraft to hunt down targets.

“You’ve heard General Jumper talk about find, fix, target, track, engage, and assess,” Sturk noted. “That was the thread we wanted to use in an airborne experimental platform, to

redial the phone, re-engage the other party.”

The lesson learned was that new antennas—possibly ones that span the wing—will be needed to guarantee data links are not lost, especially during critical times of transfer.

“We had to reboot, get all the computers back up and synched back up. That was a great thing we learned, about how to maintain a data link with the ground and how critically important that is for that situational understanding of the battlespace,” Behler said. It also illustrated the complexities of issues like antenna placement and served as a prime example of why the Paul Revere could

not substitute for a 767 test bed, he added.

Another very valuable lesson had to do with the architecture the MC2A's systems should use.

Behler said the experiment showed the need to "get more into a Web-based technology, like you and I use when we go to AOL [America On Line] or Yahoo," the commercial Web search engine.

In the live-fly portion of the exercise, the Paul Revere did not actually task any aircraft to attack targets, as the MC2A would in battle, because it did not have direct AWACS data on where aircraft were. It was a safety of flight issue.

More experiments are planned. In the next, data links with space systems and Unmanned Aerial Vehicles will be established, Behler reported.

How Many?

Smart declined to say how many Multisensor Command and Control Aircraft orbits the Air Force would need, either to reproduce current Joint STARS capabilities or replace them altogether. Such decisions are "to be defined," he said.

A senior Air Force official conceded that the new common aircraft is "by no means a done deal," since the average age of the E-8 aircraft—first platform slated to be replaced—is only a few years and will only be an average of about 12 years when the first orbit is required. There is more understanding, said the offi-

cial, particularly in Congress, that the Air Force has to get something out there to replace the E-3 airborne battle management aircraft, the average age of which is already over 24 years. It will average nearly 40 years when the E-3-type system actually becomes available on the common widebody platform.

There are, however, concerns that the vision of an airborne information battleship may be overreaching the art of the possible, said Smart. The powerful radars used on the E-3 to scan the skies up to 200 miles away may be incompatible with the synthetic aperture radar functions used by the E-8 ground target surveillance aircraft. Smart acknowledged that such a configuration could lead to a self-jamming airplane. The issue is known as "co-site mitigation," he added.

Initial technology explorations also suggest that the airframe itself may offer interference problems to performing both missions simultaneously, Smart said.

"As we have become smarter and as we continue to get smarter, we still have questions about being able to put both those sensors on the same platform," Smart noted. The ground surveillance radar would likely be a long pod underneath the airframe, rather like the electronics canoe found on the Joint STARS aircraft. The AWACS sensor might be saucer-style radome or it might be a long bar-shaped device.

"General Jumper has now been very clear," Smart said. "It's preferable, but not mandatory," to have both sensors on the same airplane.

"What he has left the door open for is, let's push the envelope hard, but let's don't make it a showstopper if we can't do it."

Additionally, there is the issue of power. The Japanese 767 AWACS aircraft is already "on the edge of the envelope of power generation capability," Smart said, without adding the ground-tracking function as well.

If it proves impossible to perform both missions on the same aircraft, the Air Force may need a considerably larger ISR fleet than it expects.

Smart said there are "conflicting studies" on how long the existing ISR fleet will last, depending on who does the analysis. He allowed, though, that the C-135 fleet is not as badly off as the 707-based fleet, and "the sense of urgency to migrate off the RJ [Rivet Joint C-135] platform does not have the same sense of urgency as getting off the 707 [AWACS] platform."

Eventually, the service would like to get to a 767 fleet for all large-crew ISR platforms, said Smart.

The four-aircraft orbit is all that's funded today, "but as you evolve this into that next spiral of capability, and as we start to address the [air moving target indicator] piece, certainly the size of the fleet will continue to grow, and we have not yet determined what the end state size of the fleet will be," Smart added. "But you would certainly think that if you can combine both capabilities onto one platform, you could scale your fleet down significantly." Not being able to make the integration work would force "a more careful analysis" of fleet size, he said.

Jumper, asked at the Air Force Association National Convention in Washington, D.C., about the size of the common widebody fleet, said he expects that it will grow in size. Each MC2A, he said, will be more powerful and combine functions of today's aircraft.

The goal is to buy the same number as the existing combined fleet of E-3s, E-8s, and RC-135s. If that happens, said Jumper, "We will have far greater capability, and we can get out of this business of having our ISR assets constantly being an HD/LD [asset]."

USAF photo by SSgt. Reynaldo Ramon



Platforms such as the U-2 shown here would feed the MC2A, which would fly into battle along with the Global Strike Task Force. The MC2A would integrate data from many sources to create a seamless picture of the unfolding fight.

The skies over Key West, Fla., fill with Eagles, Hornets, Tigers, and Fulcrums for a joint exercise.

Agile Archer

Photography by Erik Hildebrandt



A German Luftwaffe MiG-29 leads a US Navy F/A-18C and an F-15A from the Florida Air National Guard.





Exercise Agile Archer 2002 took place at NAS Key West, Fla., from Sept. 4 to Oct. 5. Hosted by the Florida Air National Guard's 125th Fighter Wing, the joint exercise gave US participants an opportunity to conduct dissimilar air combat training against one of the most capable potential foes—the MiG-29 Fulcrum.



At left, a MiG-29—showing the AA-11 Archer infrared guided missile that lent its name to this exercise—leads an ANG F-15 Eagle (at top of photo) and a US Navy F/A-18 Hornet in a turn over Gulf waters.

The 125th Fighter Wing is based at Jacksonville Airport, Fla. One of its missions is to intercept aircraft penetrating sovereign US airspace. The wing transitioned to F-15s in 1995 and, with this mission in mind, began actively seeking opportunities to train in air-to-air combat. In May 2000, the 125th headed to Laage Air Base in northeast Germany for Exercise Agile Archer 2000. They spent nearly three weeks there, becoming the first US-based wing to deploy to Laage as a unit.

Laage is home of the German 1st Squadron of Fighter Wing 73—the Steinhoff Wing—equipped with MiG-29s from the now-defunct East German Air Force. The wing's mission since German reunification has been air defense. Because it has MiGs, it also routinely hosts fighter aircraft from other air forces seeking to train against the Fulcrum.

Below, a German MiG gets ready for an Agile Archer training mission from Key West.





The deployment to Laage inspired the 125th to organize Agile Archer 2002. It was a complex undertaking. More than 100 aircrews participated. This included F-15 pilots from the 85th Test and Evaluation Squadron, Eglin AFB, Fla., and the 131st Fighter Wing (ANG) in St. Louis, Mo. Navy aircrews came from the fleet and from the Naval Strike and Air Warfare Center—home of the Top Gun school. Aircrews from the Steinhoff Wing included some of the top MiG-29 pilots in the world.

Other Navy aircraft at Agile Archer were the F-14 Tomcat and the F-5 Tiger II at right, in camouflage as an aggressor aircraft.





The Key West area offered good flying weather for Agile Archer as well as extensive airspace. At left, an F-15 leads a MiG and an F/A-18 as the three major players prepare to mix it up. Supersonic, all-weather, and highly maneuverable, the F-15 Eagle was designed for air superiority. Its multimission avionics—such as a head-up display, advanced radar, and inertial and tactical navigation systems—give it an edge over current adversary aircraft.



Above, a German crew chief works on his MiG.

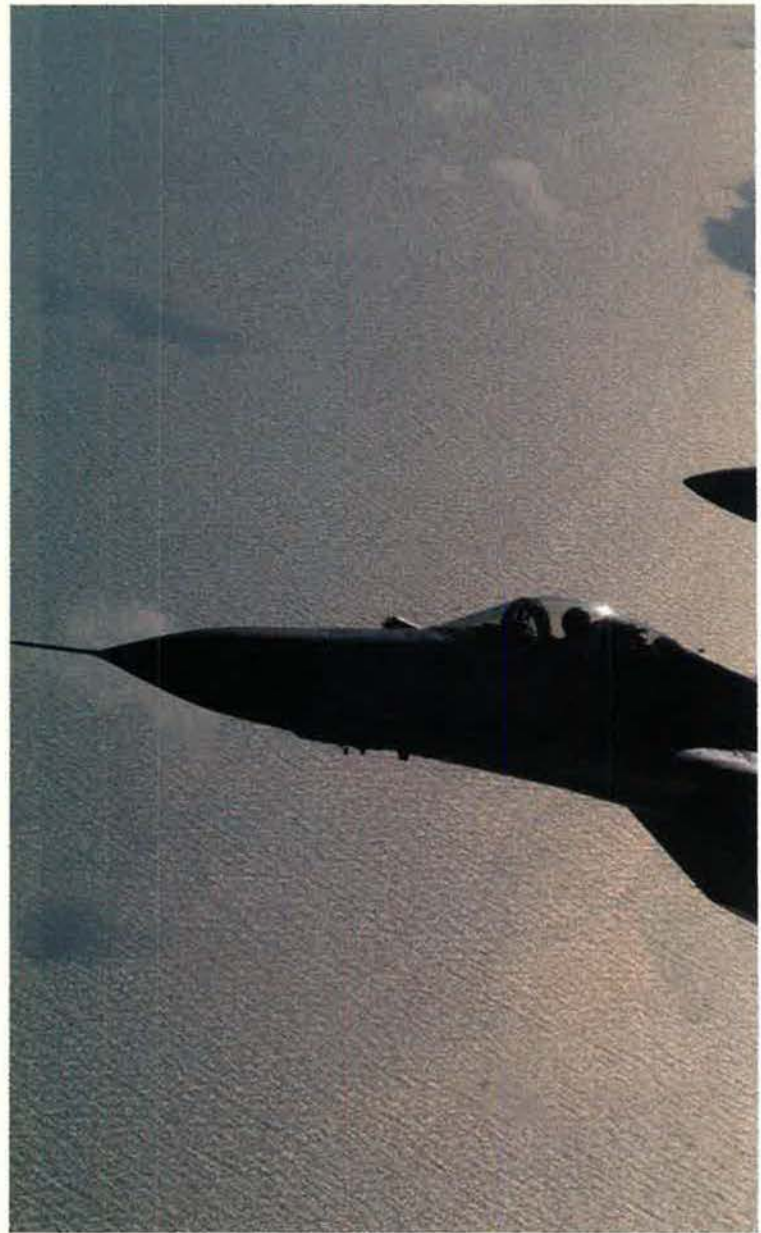
The MiG-29 air superiority fighter has been in service since 1985 and is flown by Iraq, Iran, and North Korea. Its speed, thrust-to-weight ratio, and maneuverability make it comparable to the F-15, F-16, and F/A-18. One advantage: MiG pilots use a helmet-mounted sight and the AA-11 Archer; the missile follows the pilot's line of sight. American F-15C/Ds are to be modified with a helmet-mounted "look and shoot" system.

The early morning light shows a flight line crowded with MiGs and F/A-18s. An all-weather fighter and attack aircraft, the Navy's F/A-18 handles interdiction and close air support.



Left to right, a MiG, an F/A-18, and an F-15 cruise over water.

Most Agile Archer scenarios featured one or two US fighters vs. one MiG. In the one-against-one basic fighter maneuvering missions, the simulated combat usually started with the adversaries turning directly toward one another, neither starting with a positional advantage. In the two-against-one engagements, the US fighters generally began the dogfight with the enemy at a positional advantage—defensive air combat maneuvering.





Agile Archer pitted US aircrews against “enemy” pilots as proficient and experienced as any they might face. The training missions from Key West gave the Air National Guard and Navy pilots insight on a highly capable adversary aircraft—and training in how to use the strong points of their aircraft to meet the challenge. ■



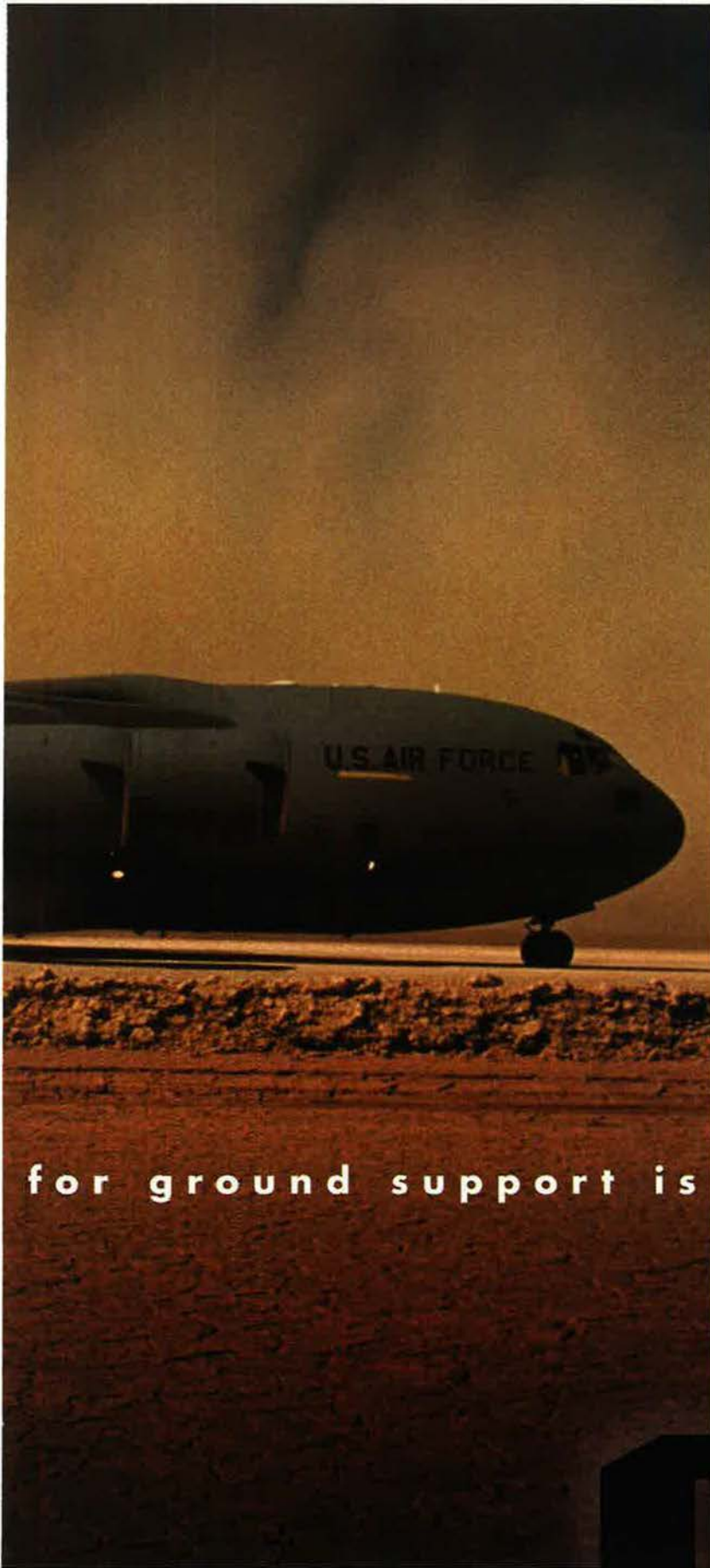


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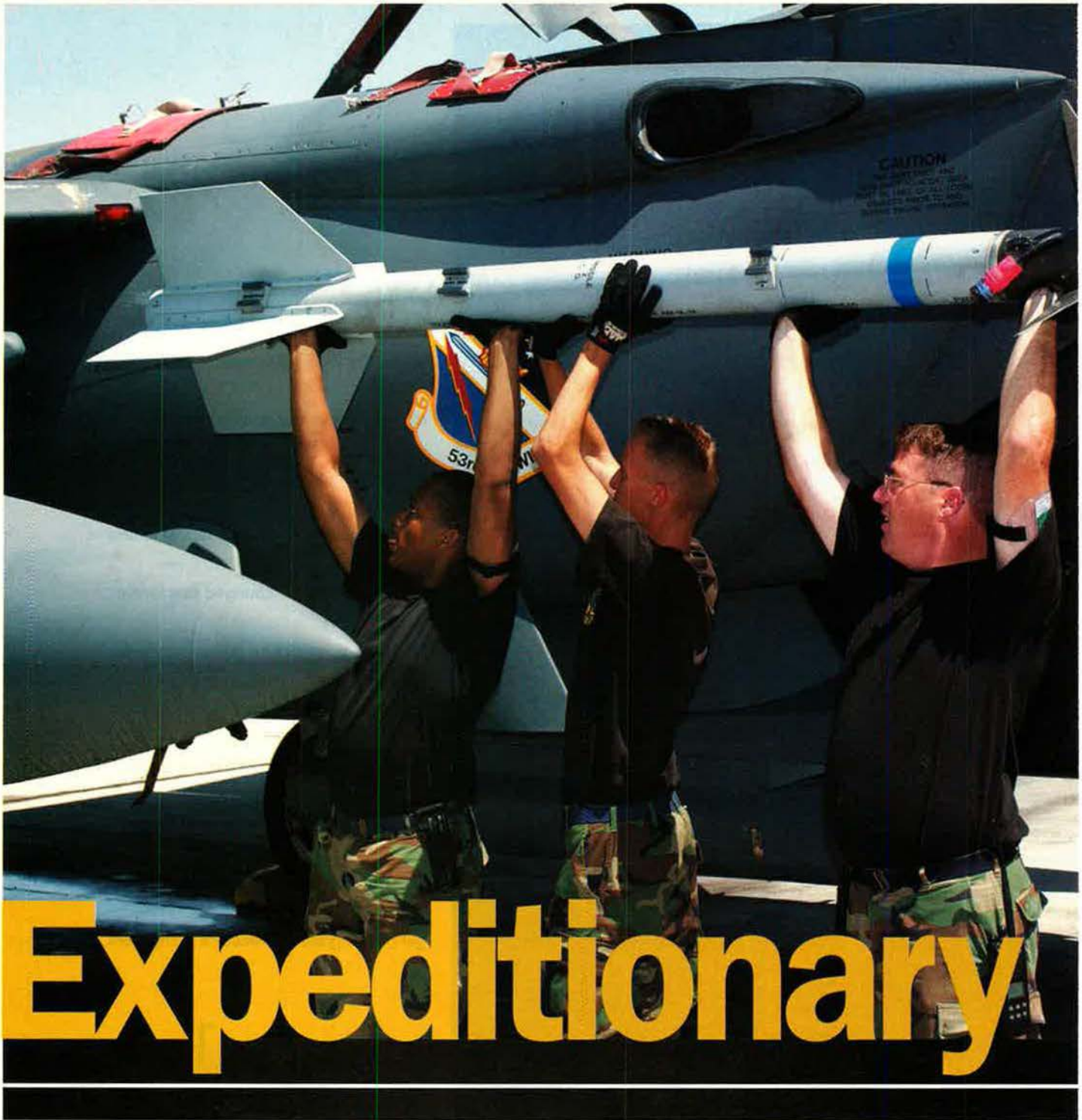


Before the C-17 Globemaster III, major airlift missions meant first establishing major ground support operations. That took time, manpower and machinery, all in short supply in time of crisis. But the C-17 changed that forever.

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Expeditionary

Members of a ground crew at Nellis AFB, Nev., load a missile onto an F-15E as it is prepared for a sortie during JEFX 2002.

By Anne Plummer

THE Air Force's "kick down the door" concept—better known as the Global Strike Task Force—got a major test in the Pentagon's Millennium Challenge 2002 combat experiment.

US officials pitted USAF's notional task force of stealthy F/A-22 fighters and B-2 bombers against an enemy armed with advanced long-

range surface-to-air missiles in an anti-access scenario set five years in the future. The task force enjoyed major success, reported Lt. Gen. William T. Hobbins, 12th Air Force commander and head of the air and space component for the experiment.

"The Global Strike Task Force, using the stealth of the [F/A-22] and the B-2, was able to get inside the

In Millennium Challenge 2002, USAF's Global Strike Task Force won high marks.



Millennium Challenge, which went on until Aug. 15.

US Joint Forces Command sponsored the overall wargame, which featured some 13,500 personnel. It was mandated by Congress as both a live and simulated experiment.

"This was the first major joint experiment ever conducted," Army Gen. William F. Kernan, then JFCOM commander, told reporters Sept. 17.

The F/A-22 Edge

According to Hobbins, USAF's Global Strike Task Force faced enemy Scud missiles and some vehicles simulating SAMs, both of which remained mobile during the experiment. The objective was for Intelligence, Surveillance, and Reconnaissance assets to find the targets as they were moving and transmit that data to the F-15s, acting as F/A-22s, and B-2s, which had to attack their targets in the order given by the joint task force commander.

"Not only did we find them moving, but we were also able to hit the priority targets," said Hobbins. "We had a very determined live-flying adversary out there to try to take out our incoming aircraft, and they were removed from the fight by the surrogate [F/A-22s]. We then reset the scenario and did it again with the same result."

The exact nature of the scenario used in Millennium Challenge remains classified. Officials, however, did confirm they acted out a small-scale contingency that the United States could realistically face in 2007. It involved nonstate actors and a foreign government whose willingness to aid the US military was limited. Much of the terrain in the "war zone" resembled the California and Nevada deserts in which the services conducted live portions of the experiment.

The result was a positive assessment of service wish lists for future equipment and an evolving debate on the direction and purpose of military experimentation.

Like the other services, the Air Force brought to the table a list of technologies and concepts it wanted to prove as valuable to the future warfighter. And like the other services, Air Force officials say they are pleased with the results. What didn't pass with flying colors during the experiment will be refined and will likely resurface in future experiments.

Joint Forces Command, headquartered in Norfolk, Va., is already planning another major DOD-wide experiment in 2004. The Air Force will begin planning its piece this fall.

No concept tested during the experiment received a failing grade, a fact that prompted some to question whether Millennium Challenge went far enough. Many officials defend the event as one that helps the services determine how to apply new ideas already in the pipeline. They said Millennium Challenge offers the perfect venue to explore ways to apply service concepts to the puzzle of joint operations.

Validating a Concept

Military commanders said working alongside engineers and other technical experts familiar with the software of new technologies enabled them to ask whether specific capabilities can be achieved.

"We have to validate the concept" being tested, said Lt. Col. Daniel Bryan, now the director of the Air Force Experimentation Office. He served as deputy director during Millennium Challenge 2002. "We have to [figure out] what works and what doesn't work," he added. "And then if you're going to use [the concept], ... we've got to expose that to the joint community."

The Air Force, which spent \$42 million for its piece of Millennium Challenge, has conducted three JEFXs since 1999 with some participation by other services. It ran an earlier version without joint elements in 1998.

This year, however, Air Force ex-

threat area and kick down the door of the adversary's integrated air defense system, which enabled follow-on forces to come in," said Hobbins.

The event was part of the Air Force's Joint Expeditionary Force Experiment 2002, which unfolded over the period July 24 through Aug. 10. The JEFX, in turn, was folded into the three-week, \$250 million



Military and civilian personnel from various DOD organizations work at the joint air operations center set up at Nellis Air Force Base for the Air Force's JEFX, part of the DOD-wide Millennium Challenge 2002.

perimentation found itself joined at the hip with the other services and a major combatant command at the helm.

Much of Millennium Challenge focused on improving connectivity among various pieces of the military force. Joint air, land, and sea commanders collaborated over networks from various training ranges. They reported to the regional commander's joint force headquarters that responded to the unfolding crisis while on the move, including aboard a USAF C-17 aircraft and then the Navy's Coronado command-and-control ship in the Pacific Ocean.

For the live-fly portion of the exercise, USAF could not pull its new F/A-22s out of their testing schedule, so it simulated the F/A-22 by using F-15Cs and F-15Es, flying out of Nellis AFB, Nev. The service also used computer simulation to give the older F-15s the capabilities of an F/A-22, including its stealth and supercruise features as well as its weapons.

The exercise's 55-person regional headquarters, led by an Army lieutenant general, twice conducted live sorties using USAF's F-15 fighters and B-2 bombers. They were sent to destroy the "enemy's" double-digit SAM batteries. Meanwhile, the Army was able to roll out its new Stryker Interim Combat Vehicle at the Ft. Irwin training range in California. The Navy for the first time used its Advanced SEAL Delivery System.

The services also applied new organizational techniques and high-tech communications systems. These systems, though viewed as major enablers, were untested in the joint world. The objective was to see whether planners could use them to develop an attack plan in less time and execute it with precision.

For example, the Air Force tested a so-called toolkit that retrieves information from databases to build strike packages and help execute an air attack plan. This Master Air Attack Plan Toolkit is already fielded at a combined air operations center in the Persian Gulf region. Experimentation officials said other Air Force commanders have been clamoring for the technology.

Bryan said he believes the experiment helped to hone how the toolkit should be used, which should help push it out to the other commands.

"That was a huge success, not only in reducing the time it took to develop that air attack plan by 50 percent, but [enabling] us in that joint expeditionary air and space operations center to reduce our footprint by what we think will be approximately 10 workstations right now," Bryan reported.

The Air Force also used several new technologies and organizational changes to push information faster to the warfighter seeking to engage time-sensitive targets, or targets that must be destroyed within a certain period. One classified initiative, for

example, tried to improve coordination among intelligence sensors that can identify and locate mobile surface-to-air missiles.

Hobbins said these initiatives enabled him to assess intelligence and make smarter decisions faster.

For example, "as the time-sensitive targeting coordinator at Nellis Air Force Base, I could say, 'OK, the Navy can take this target out in five minutes vs. the Army that can do it in an hour and five minutes, so let's let the Navy do it,'" said Hobbins.

Integrating Space

Experimentation officials also gave Hobbins tactical control of space assets, a deviation from current doctrine. Accordingly, Hobbins's air operations center was reorganized as one that was also commanding joint space assets and became billed as the air and space operations center.

Officials said these new approaches—even if only organizational—helped save time.

"We've integrated capabilities that are spaceborne and airborne into a tighter package that allows us prosecution of not only standard target sets but time-sensitive targets as well, which is what we want to do to prosecute the battle," Bryan said.

The only initiatives unlikely to receive the green light from the Air Force's JEFX are a new tool used to manage ISR data and the "predictive battlespace awareness" concept. Bryan said both need significant work but will remain capabilities wanted by the service.

Meanwhile, concepts tested successfully are being polished, with plans to reach the warfighter as soon as possible. For example, a new survival radio that allows a downed pilot to transmit secure messages was sent immediately after the experiment to Langley Air Force Base in Virginia for software integration. Engineers are also tweaking a Blue [US] force tracking tool to work aboard a fixed-wing aircraft; the experiment revealed the tracking tool would not operate properly when the aircraft flies above a certain speed.

Hobbins said portions of the Master Air Attack Plan Toolkit are being refined as well, before full operational fielding. The final capability should allow a commander to easily move assets or change a flight se-

quence before the attack begins, he said.

"That's an example of one that because we exercised it, we learned exactly all the things we needed to do to fix it—and right there with the engineers [present] to do that," he added.

Not in the Script

By the time Millennium Challenge had ended, the *Army Times* reported that Lt. Gen. Paul K. Van Riper, a retired Marine Corps general who led the opposition force during the experiment, resigned in protest. He claimed the game had been scripted to allow US forces to win and his team had not been allowed to apply legitimate Red [opposition] team tactics, such as simulating the release of chemical weapons.

Van Riper again made headlines when he disclosed that his Red forces had simulated cruise missile attacks launched from aircraft and small boats, successfully "destroying" 16 Navy vessels, including an aircraft carrier, an Aegis cruiser, and five amphibious ships. Joint Forces Command would not confirm specifics of the losses, contending that analysis of the wargame must be complete before individual elements can be given context.

However, Kernan did tell reporters in September that it was the modeling and simulation tools that inadvertently put the Navy in "harm's way."

"The Navy was just bludgeoning me dearly," said Kernan, because the service maintained it would never fight the way the simulation was set up.

Regarding whether opposition teams were too restrained, Navy Cmdr. Sandra Irwin, a JFCOM spokeswoman, said US and enemy forces "worked under similar constraints and requirements" to ensure concepts were tested adequately. Also, because live exercises were "layered" upon ongoing virtual experiments, "the timing and evolution of the experiment at times required both Red and Blue forces to make choices they might not have taken in the real world," Irwin said.

Likewise, senior military officials publicly defended their decision to restrict Red force tactics during Millennium Challenge, contending that an experiment augmented by live operational exercises must remain somewhat scripted to be effective.

"There's a difference between ex-



USAF photo by TSgt. Robert W. Valencia

A1C Mike Heywood helps 1st Lt. Matthew Garrison from Shaw AFB, S.C., strap into an F-16 for JEFX 2002. The live-fly portion of the experiment was conducted at Nellis Air Force Base.

perimentation, which takes a particular set of criteria and changes one at a time to see what the results of that change are, and exercises, which are primarily free play," Marine Gen. Peter Pace, vice chairman of the Joint Chiefs of Staff, told reporters in late August.

Millennium Challenge was an experiment "designed to help quantify where we are and where we might be able to go, and then to experiment again," he said.

The Pentagon plans to pull together perceptions from various players and assess the value of the experiment. Any findings could change how the next major experiment, Olympic Challenge 2004, will be executed, Pace said.

In his Sept. 17 briefing to reporters on the results of the experiment, Kernan echoed the notion that maintaining the integrity of an experiment that involved 13,500 warfighters was challenging and required certain constraints. He said the event was an "experiment in experimenting" but ultimately "the endorsement" from the services and combatant commanders that testing new warfighting techniques in a joint context like Millennium Challenge "is the way to go."

Some Congressmen said they too plan to take a good look at how Millennium Challenge was conducted and possibly draft legislation that would mandate the Pentagon experiment with less popular concepts and take bigger risks. Another

concern for lawmakers is the level of control Joint Forces Command has over service experiments like the Air Force's Joint Expeditionary Force Experiment. The services devise their own concepts to test and decide how much to spend.

Still, the architects of JEFX maintain the USAF experiment held this summer was invaluable. Hobbins said a small team from 12th Air Force will travel to the Middle East this fall and share lessons learned with Air Force troops there.

"From my view, ... we learned a lot," Hobbins said. "We learned how to operate together [and] how to collaborate using information tools that are very advanced."

Bryan, the new leader of Air Force experimentation, agreed. He said the event offered the service technology and organizational solutions that will ultimately produce a more effective air operations center.

As for the future of joint experimentation, the approach could change.

"I think the great debate is whether experimentation [should worry] about winning or losing," Bryan said. He added, "It's a good debate that will probably be ongoing, and we'll probably draw some lessons learned from it." ■

Anne Plummer is an editor with Inside the Pentagon in Washington, D.C. This is her first article for Air Force Magazine.

The Air Force believes that, when it comes to Asian access, more is definitely better.

FOOTHOLDS ON TH



An F-15C from Kadena AB, Japan, flies over Okinawa. Bases near Asian hot spots can generate the most sorties but are more vulnerable than rear bases.

E ASIAN RIM

By Adam J. Hebert, Senior Editor



USAF photo by MSgt Marvin Krause

ELMENDORF AFB, Alaska, and Hickam AFB, Hawaii, both are more than 4,000 miles from the Taiwan Strait—too far away to be effective bases for Southeast Asian fighter operations. Osan AB, South Korea, and Misawa AB, Japan, are closer but could be threatened by ballistic missiles. And experience with Saudi Arabia and its Prince Sultan Air Base has shown that host nations may exercise control over US combat operations from their soil.

Pentagon planners say the Air Force needs better access to the vast Asia-Pacific region, which is growing in importance, but identifying the need may have been the easy part.

Because political or practical risks accompany almost any potential USAF operating sites in the Asia-Pacific region, analysts say the Air Force should use a broad range of strategies in its search for new bed-down locations there. The Air Force's goal, most agree, should be identifying the maximum number of options so that, when a mission has to be performed, there is no single-point basing failure. When it comes to access, more is better.

Last year's Quadrennial Defense Review noted that the current alignment of US assets concentrated in Western Europe and Northeast Asia "is inadequate for the new strategic environment." The report called for the Air Force to "increase contingency basing in the Pacific and Indian Oceans, as well as in the Arabian Gulf," since the Bush Administration sees these areas as being the most likely future hot spots.

A 2002 RAND report, *Strategic Appraisal: United States Air and Space Power in the 21st Century*, zeroed in on Southwest Asia, the Taiwan Strait, and South China Sea



Four F-15s based at Elmendorf AFB, Alaska, fly a training exercise. Elmendorf, home to some of USAF's most advanced equipment, is too far from China or North Korea to serve as a forward base for Asian operations.

as the principal areas of "problematic access."

As a result, the Defense Department will likely reach out to build new bilateral relationships across the Asia-Pacific region, but it is still studying how this should be done.

At a minimum, a larger presence on the island of Guam in the Western Pacific seems to be the logical first step.

The Challenge

The fundamental challenge in the Asia-Pacific region is distance. Air Force planners are forced to balance conflicting concerns when identifying bases. On the one hand, aircraft should be kept as close to the action as possible to maximize sorties. On the other, bases need to be far enough from the battle zone to make them less vulnerable to attack.

The current network of bases is largely optimized for staging fighter operations in Southwest and Northeast Asia. The drawback of being close to potential opponents, though, is that these locations are largely within the range of enemy short- and medium-range ballistic missiles. Analysts say adequate force protection requires aircraft to be at least 400 miles from enemy territory—perhaps more—though distances beyond 1,200 miles put fighters at the outer edge of their effective combat range.

Bombers are affected by distance,

as well. Though the Air Force showed it can fly 44-hour intercontinental B-2 sorties from Missouri, it could have flown far more sorties if these aircraft were based in the theater.

According to RAND, the Air Force would be wise to maximize dependence upon bases on its own territory because "no matter how friendly or closely aligned, a foreign government will consider its own interests first" even in the closest of relationships.

The think tank offered five approaches the United States could pursue to solve this problem, but two—identifying new, "reliable" allies akin to the United Kingdom and negotiating long-term international base leases—are unlikely to yield results.

Therefore, said RAND, the United States should focus on expanding overseas main operating bases; push for new security arrangements; and "rely on extended-range operations from US territory" as planning guidelines. These approaches should be pursued together, the report stated.

New security arrangements will be key, according to former Air Combat Command chief Gen. Richard E. Hawley, who retired in 1999. To avoid political surprises, the Air Force would be wise to "pick a whole slew of places" the service may be interested in as possible deployment locations. By seeking good relations with large numbers of nations, Hawley said, "if you work it right, one or

two [of these options] will pay off" when the time comes for action.

A Web of Relationships

Hawley, who also served in several Pacific command positions, noted that when it comes to finding the right bases for future conflicts, "everything is scenario-dependent." Therefore, the Air Force shouldn't be happy just with what it has—or with a single new option like Guam. The problem, he said, is that "we get so happy with a place ... we say we've got what we need," even when other options remain a necessity. As evidenced by the airfield supporting the war on terrorism at Manas, Kyrgyzstan, a "web of bilateral relationships works very well," Hawley said.

For all the political problems inherent in getting approval for military action from foreign bases, officials note that when push comes to shove, it is usually not just the United States that feels a need for action. Air Force Chief of Staff Gen. John P. Jumper recognized this in February 1998 when planning for Aerospace Expeditionary Force deployments. Then the commander of US Air Forces in Europe, Jumper said at an Air Force Association symposium that "access is an issue until you begin to involve the vital interests of the nation that you want and need as a host. Then access is rarely an issue."

Further, the Air Force does not necessarily need expensive, permanent operating locations. In some cases, an argument can be made against building new "superbases" like Prince Sultan or Osan.

Hawley said this fall, "It behooves us to begin cataloging" the locations the Air Force could operate from, although the service should not become wed to huge infrastructure investments in foreign countries because it "may be disappointed." Notably, the Afghanistan model showed that the Air Force is able to build up in truly austere locations if a bare minimum of infrastructure is in place.

As USAFE commander, Jumper saw value in maintaining a low-profile international presence. "If you are engaged with these countries in an aggressive exercise program instead of a prolonged rotational presence, if your maintenance people are involved at the grassroots level teach-

ing them how to maintain airplanes, if you make yourself valuable as a training asset to these countries in ways that are definable and measurable, then you add a dynamic of regional stability that otherwise would not be there," he said. Familiarity and comfort make the host nation's decisions easier "when you have to ask to deploy in a real situation," he added.

The RAND report noted that relying upon five locations to serve as "forward support locations"—essentially superbases—would put most of the world within the C-130's range, a distance useful for rapid resupply and proximity to combat operations. These five support bases could be based on US territory in Alaska, Puerto Rico, and Guam, and in England and on the British island of Diego Garcia in the Indian Ocean.

Expanding Guam

In the Pacific, North Korea and Japan are well covered by Pacific Air Forces, but the Taiwan Strait and South China Sea, farther from PACAF operating locations, are not. This "leaves a dangerous level of uncertainty" in the region, the RAND report asserted.

A larger presence on Guam is the consensus choice as best place to begin when the time comes to increase Air Force presence. Guam is closer to possible South Asia hot spots than Alaska, Hawaii, or Diego Garcia; Andersen Air Force Base is



USAF photo by A1C Joshua Strang

Guam has ample room for growth. Next door to the underutilized Andersen Air Force Base is Northwest Field (shown here), an abandoned airstrip that also could be used to base bombers and other large aircraft.

underutilized; and perhaps most important, the island belongs to the United States, assuring access for combat operations.

According to PACAF, there is really no contest when looking for where to build up first. While "locations in Japan and Korea are extremely important to the US, Andersen's location, size, established infrastructure, and politically stable environment are unmatched," a PACAF spokesman said in response to questions from *Air Force Magazine*.

That assessment was confirmed

by PACAF commander Gen. William J. Begert in an August discussion with reporters. Begert emphasized that no decisions have been made on how to improve access in the region but said Andersen has enormous unrealized potential. "If we could ever grow the Air Force a little bit, I'd put forces in there in a heartbeat," he said.

"If you take a look at the geography of where Guam is, there's no other place like it," added Begert.

PACAF noted, "Guam is 14 flying hours closer to South Asia than anything within the contiguous United States, [which] allows strike capability by long-range aircraft throughout the PACAF area without dependence on refueling. Tankers can then be used to aerial refuel other assets."

Basing aircraft on Guam would also reduce "the concentration of firepower along the western Pacific Rim," the PACAF spokesman stated. Currently, air forces are heavily clustered in Japan and South Korea—locations that fall within the range of China's Intermediate-Range Ballistic Missiles. Guam is at the outer edge of the IRBM threat, yet 3,000 miles closer to South Asia than Alaska or Hawaii—still close enough to serve as a base for fighter operations.

Begert said the base has a huge storage area housing modern munitions, and the Air Force has "put a lot of money into the infrastructure." Driven in part by the fact that Guam



USAF photo by TSgt. Jeff Clonkey

US and Thai Air Force members prepare for a mission during Cope Tiger 2002 in Thailand. Cope Tiger is one of many exercises the Air Force uses to foster cooperative military contact and good relations with allies.



Ballistic missiles, such as this one on display in China, could endanger US forces at bases in the Pacific. Dispersing aircraft among numerous bases is one way to reduce vulnerability to attack.

is in “typhoon alley,” the Air Force has continually upgraded Andersen even though the base is not a permanent aircraft host.

“Every once in a while, we get a typhoon that helps us modernize Andersen,” Begert explained. A recent storm required the Air Force to “spend about six million dollars putting things back together, and actually that’s helped us keep pretty modern,” he noted.

The PACAF chief added that investments have brought new hangars and improved munitions and fuel storage capability to the island. “We have more fuel stored at AAFB than any other place in the United States Air Force. ... The base infrastructure is in very good shape.”

In addition to infrastructure, Guam has repeatedly proved its capability as an aircraft host. “During the beginnings of Enduring Freedom, ... almost overnight, in 48 hours, Andersen went from zero airplanes on the ground to 75,” Begert said. “As people were passing through, they never missed a beat. We were not breathing hard.”

Advocates of a larger presence on Guam note that Andersen hosted more than 150 B-52s during the Vietnam War (roughly equivalent to the entire planned Air Force bomber fleet), but PACAF also pointed out “a peripheral drawback [would be] a decrease in the bomber fleet in the contiguous United States.”

The island also offers built-in force protection. The PACAF spokesman noted, “With proper surveillance assets, nothing can approach Guam without being detected.”

The advantage of proximity must be weighed against Guam’s isolation, however.

“The single largest drawback [to a larger presence on Guam] is, simply put, monetary,” according to PACAF. Being more than 5,800 miles from the US mainland means “most sustainment products must be brought to the island, and this distance increases the financial burden.”

Capabilities-Based Investment?

Given that the next battle may involve both long ranges and sophisticated air defenses, some argue the Defense Department is investing too little in systems offering stealth, endurance, and long range that could overcome the so-called tyranny of distance.

For example, USAF’s Global Strike Task Force Concept of Operations leverages the ability of the F/A-22 and B-2 to “kick down the door” in the early days of a conflict and eliminate enemy sanctuary. But acquisition requirements were not changed to reflect this CONOPS. There are no plans to build more than the existing 21 stealth bombers, and the F/A-22 buy, already revised downward several times, is under constant pressure. Earlier this year, Defense Secretary Donald H. Rums-

feld asked if 180 F/A-22s would be enough.

The Air Staff argues that the F/A-22’s centrality to future Air Force plans means more Raptors are needed, not fewer.

Air Force Secretary James G. Roche has floated the possibility of an FB-22 variant with longer range and greater payload than the F/A-22 as an option to address emerging strike requirements, though no new bomber programs are on the books. Many bomber advocates lament this, arguing that the growing importance of the Asia-Pacific region calls for transformational strike systems, not incremental improvements.

As one industry analyst said this fall, “Asia is considered the most challenging theater, not because there aren’t good basing opportunities but rather because we don’t currently have the systems to unlock the Pacific’s basing potential. Industry can deliver these systems over the near term—it’s up to the policy-makers to decide by when they want the Asia-Pacific problem solved.”

Meanwhile, Begert noted a growing need for Air Force Intelligence, Surveillance, and Reconnaissance systems that are already thinly spread. He sees a demand for more in his area.

“Part of the problem is, we don’t have enough [ISR] assets to go around,” Begert said. He said PACAF hopes to get additional Predator and Global Hawk unmanned aerial vehicles and Joint STARS and Rivet Joint reconnaissance aircraft based in the Pacific as more are procured. “I’d love to see a squadron of Global Hawks as a permanent presence in the theater in a place like Guam,” he said.

Despite the myriad political, distance, ownership, and systems challenges, officials stress that new bases in the Asia-Pacific region are both achievable and necessary. Reliable access to new bases in central Asia, such as at Manas and Bagram, put major sections of the continent inside a useful combat radius, greatly simplifying planning and improving efficiency.

Force protection and political concerns mean that the Air Force cannot become complacent, however. As the RAND report emphasized, “Access is not a problem to be solved—it is a portfolio to be managed.” ■



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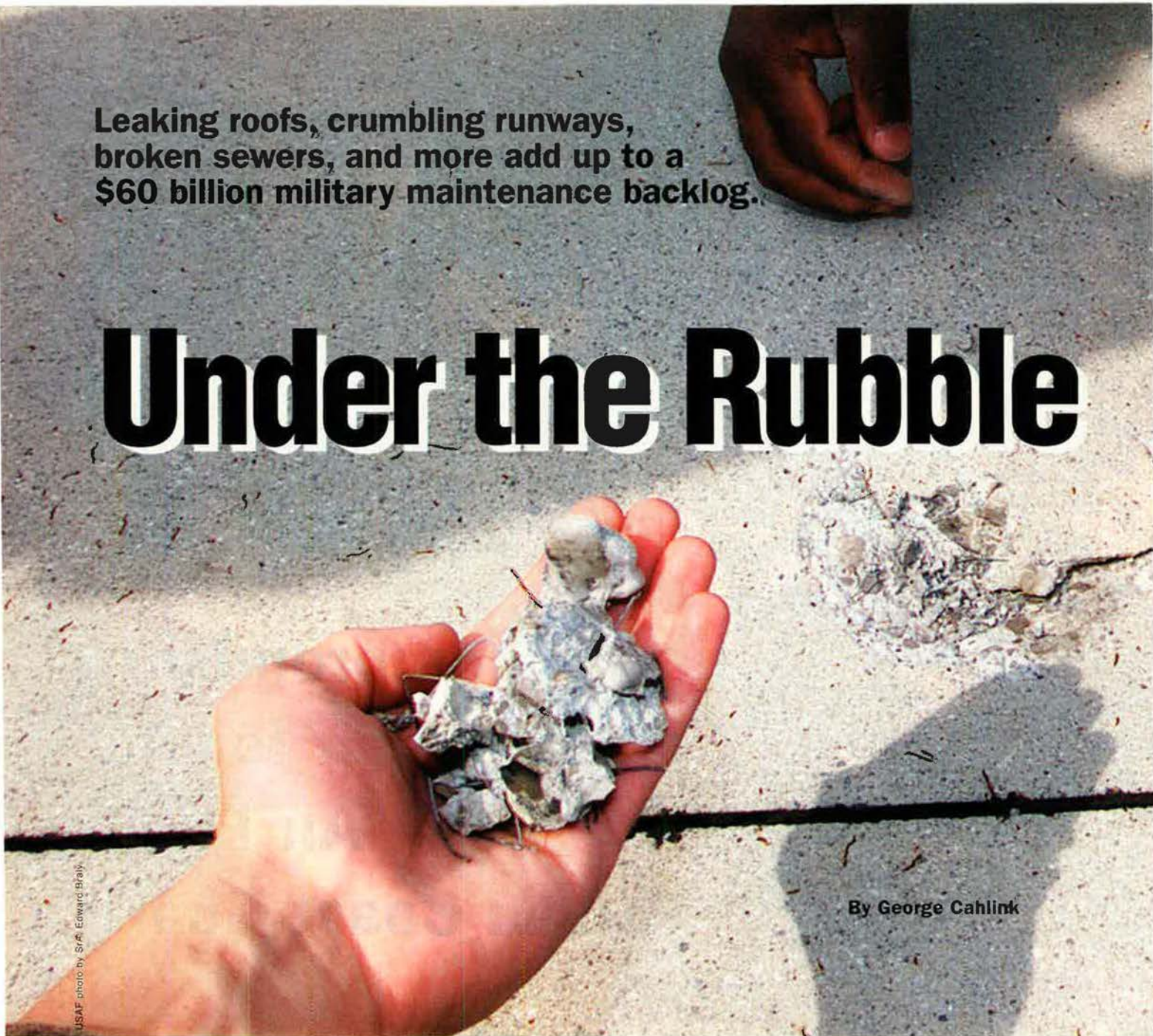
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Leaking roofs, crumbling runways, broken sewers, and more add up to a \$60 billion military maintenance backlog.

Under the Rubble



USAF photo by SrA Edward Braly

By George Cahlink

AS OPERATIONS unfolded in Afghanistan, the Air Force was forced to shut down one of the main runways at Pope AFB, N.C., for 30 days. Years of underfunding and putting off maintenance work had left the runway cracking and crumbling to rubble in some areas where airplanes touched down.

The Air Force performed a logistical ballet to ensure that closing down the strip did not directly affect the ongoing war on terrorism.

The service moved Pope's 32 C-130 aircraft, along with the 500 personnel who fly, maintain, and support them, from North Carolina to an Air National Guard base in

Gulfport, Miss. The base's 48 A-10 attack aircraft were flown to Seymour Johnson AFB, N.C., and Nellis AFB, Nev.

Air Force officials say they did not calculate the cost of the runway shutdown, but undoubtedly the closing put an additional strain on airmen and airplanes already stretched thin to support the war on terror.

"Shock Absorbers"

"Our infrastructure accounts have been shock absorbers for a lack of defense spending [over the past decade]," said Maj. Gen. Earnest O. Robbins II, USAF's top civil engineer. "The Air Force knows it's a

problem, but it's a matter of where you put scarce dollars."

Indeed, years of putting off basic repairs, skimping on scheduled maintenance, and not building new infrastructure—so the service could pay for new weapons systems and flying hours—means maintenance bills are long past due. Air Mobility Command faces a \$100 million backlog in airfield repair work at its bases. Air Combat Command buildings need \$70 million in roof repairs. Air Force weapons storage facilities need more than \$60 million in repairs and improvements. The average building on an Air Force base is 45 years old. All told, the service is about \$18 billion



behind in repair and renovation work on infrastructure across all bases.

The Air Force is not alone. The military services face a combined \$60 billion backlog in maintenance work at military facilities. The work ranges from patching up leaking roofs and sewer lines to repaving roads and runways. Without an increase in current maintenance spending, it would take DOD 192 years to get its facilities up to a level that would satisfy current requirements.

A 2001 Pentagon report based on a survey of major military commands found that more than two-thirds were either listed as having serious deficiencies or as unable to meet war-

fighting demands. The number of substandard facilities grew by 10 percent in just one year. The report was among the first to link the military's decision to spend money on new weapons systems, training, and operating costs—rather than on facilities and maintenance—to a decline in the military's ability to mobilize for and fight wars.

Raymond F. Dubois Jr., deputy undersecretary of defense for installations, underscored the report's findings and told the House appropriations military construction subcommittee in April that installations are an integral part of military readiness and key to executing the military's diverse missions. Not only do those poor conditions affect readiness, but also they directly impact the services' ability to attract and retain both military and civilian personnel, he said.

"Many surveys have shown that poor quality facilities are a major source of dissatisfaction for family members and service members alike," said Dubois. "Our aging and deteriorating infrastructure has a direct impact on retention."

Much Needed Boost

As a result, Dubois has proposed spending \$5.6 billion on sustaining, restoring, modernizing, and demolishing buildings and other infrastructure on military bases in Fiscal 2003—a \$579 million increase over such spending in Fiscal 2002. The increase will allow the military services to meet 93 percent of their maintenance requirements. In recent years, only about 75 percent of those repair needs were funded.

Those dollars cannot come soon enough for the services that are facing a myriad of maintenance problems, including:

- Almost every day at Langley AFB, Va., airmen walk up and down the runways looking for and picking up loose pieces of concrete. Without extra money to repair runways, the walks are critical because if a piece of debris is on the runway, it can be sucked into an airplane engine and potentially cause hundreds of thousands of dollars in damage. "That's not the best and highest use of a mechanic," concedes Robbins, adding that foreign object debris walks are the service's cheapest maintenance option.

- The Navy recently spent \$3 million to repair the roof of an aging airplane hangar at NAS North Island, Calif. The repairs should have only cost a third of that, but the Navy delayed maintenance for years and did not start fixing the roof until large chunks of it began to fall on mechanics and aircraft inside the hangar.

- Army reserve soldiers who wait at Ft. Bragg, N.C., before deploying to fight in the war on terror are staying in dilapidated wooden barracks built for temporary use in World War II. The Army has not been able to find the extra cash to replace the unair-conditioned quarters.

- Marine and civilian personnel at Camp Pendleton, Calif., are using converted World War II Quonset huts for administrative offices. Summer temperatures can top 100 degrees. Other wooden buildings at the Marine Corps' premier West Coast training facility are being eaten away by termites.

Readiness Suffers

Pope Air Force Base has become the Air Force's poster child for what happens when maintenance and construction accounts are repeatedly shortchanged. The North Carolina base is rated among the lowest in the Pentagon's recent review of facility readiness. DOD rated the base C-4, which means the facilities and infrastructure on the base are not adequate to support the Air Force during wartime.

Air Force officials say an additional \$208.5 million would be necessary for the base to meet minimally acceptable go-to-war requirements.

"What you have here is a phenomenal Air Force doing the job with limited infrastructure," said Col. Gerald J. Sawyer, commander of the 43rd Support Group at Pope and the person responsible for maintaining and improving base infrastructure. "We have not put anyone at risk, but people are constrained," he said.

Fleming Hall, headquarters for the 43rd Support Group, was built in 1933 and appears every bit a building that has not had a major overhaul since Franklin D. Roosevelt was President. All of the building's water fountains have been removed because rust from 50-year-old pipes contaminates the water. There are no elevators in the three-story building, a violation of the Americans With Disabilities Act.



A-10 II Thunderbolt aircraft from Pope AFB, N.C., stand on the ramp at Seymour Johnson AFB, N.C. Pope A-10s were moved to Seymour Johnson and Nellis AFB, Nev., during runway repair work.

The building also houses the base's courtroom. There, space is so tight, defendants cannot even see those testifying against them.

Throughout Fleming Hall, nearly 20 layers of lead-based paint peel and flake from walls that are insulated with cancer-causing asbestos. Sawyer said the service cannot pinpoint the asbestos for removal because there are no architectural drawings of the building. Nor, he said, can the Air Force simply put a wrecking ball to Fleming Hall since it is listed on the National Register of Historic Places. Instead, the base is hoping the Air Force will pay for a nearly \$5 million renovation.

"We've done a good job of putting lipstick on a pig, but it's still a pig," said Sawyer, pointing to curtains that office workers have made to cover exposed fiberglass in an office wall.

Pope has been waiting nearly a decade for military construction dollars to build a storage facility to house more than \$60 million of classified countermeasures equipment used by A-10 aircraft. Currently, the equipment is stored in a tin shed that does not meet DOD security requirements. Because of limited shed space, some of the equipment must be stored outside. And there is no backup location in the event of a hurricane, which is not uncommon in that region. Base officials said they need \$5.5 million to build a secure facility for the gear.

Aerospace Ground Equipment, such as generators and light carts

used for repairing aircraft, is also regularly left exposed to the elements at Pope. Most of the equipment is designed to operate outdoors, but year-round exposure means more routine maintenance and shortens the equipment's lifespan.

The base has about 15,000 square feet of warehouse space for storing and repairing AGE—about half of the 30,000 square feet required. Those warehouses and sheds were built in the 1950s and 1960s without air-conditioning. They do have plenty of duct tape and plastic tarps hanging from the roofs and windows to prevent the facility from flooding during a heavy rain. Consolidating the buildings into a single, 30,000-square-foot facility would cost \$6.4 million.

The List Goes On

Pope Medical Clinic officials say the Air Force has already promised to construct a new, multimillion-dollar medical facility at the base in 2006. In the meantime, the base makes do with a series of 1970s modular buildings and attached trailers to care for patients who range from sick babies to pilots getting their eyes examined.

Upon walking in, patients elbow against 16,000 medical records for space in the waiting area. Patients needing an X-ray must squeeze sideways through two bookcases into a small X-ray room. If patients cannot walk to radiology, they are sent several miles away to the Army's hospi-

tal at Ft. Bragg, which has more room to X-ray patients.

The clinic's pharmacy is not much bigger than the X-ray room. Drugs and pharmaceutical supplies are stored on wheeled shelves to make room for the pharmacy's workers, who spend the day saying, "Excuse me" to one another. "You should have seen what it was like when one of us was pregnant," joked one of the pharmacy workers. Equipment is available to do anthrax tests at the base, but there's no space at the medical clinic for storing it, so patients requiring those tests would have to go to Ft. Bragg, too.

Renee Otto, an environmental engineer at Pope, is not looking for a million-dollar fix for the base's aging sewer system—just \$140,000. Last spring, Pope's sewer system failed and dumped more than 15,000 gallons of wastewater into surrounding rivers and streams, in violation of both federal and state environmental laws. "At any time, we could receive a violation and be fined," said Otto.

Additionally, Pope lacks money to put alarms on the sewer system that would alert Air Force officials to leaks. Without alarms, leaks can go undetected for hours and even days.

Pope firefighters are quick to boast that they are among the busiest in Air Mobility Command, with nearly 2,000 annual calls, but they are not proud of their station which was built in the 1950s. It is about half the size of a standard service firehouse. Seven fire vehicles are regularly parked outside the station because there is no room to park them indoors. Meanwhile, poor ventilation inside causes diesel fumes to leak into the firefighters' sleeping quarters. Renovating the fire station would be more expensive than spending about \$10 million to build a new firehouse at Pope, fire officials said.

Pope Library Director Faye Couture would like to put more books on the shelves—including many of those that are recommended reading by the Air Force—but cannot because the base's library is less than half the 12,000 square feet of space needed and authorized for Pope. Often, she said, new books only go on the shelves when damaged books get thrown out. Last year, Couture said, she had some openings because she

tossed out about 100 reference books that were infested with mold because, like the fire station, the library has inadequate ventilation and air-conditioning systems.

Pope officials are not only worried about the base's infrastructure meeting current requirements but are increasingly concerned about whether it will be able to handle new demands.

Beginning in 2006, Pope is slated to serve as a beddown facility for the Air Force's new C-130J-30 cargo aircraft. The new mission will require an additional flight simulator, more Aerospace Ground Equipment, new two-bay and one-bay aircraft hangars, technical and fuselage training facilities, and consolidated maintenance centers.

"Pope's current infrastructure is not capable of meeting the demands of the new C-130J-30 beddown mission," according to an Air Force information paper. "Upgrades to area infrastructure are necessary to ensure the C-130J-30 new mission is a success."

Those upgrades will cost at least \$16 million, including putting in more robust water and electrical distribution systems and expanding the capacity of the base's sewer system, Pope officials said.

Relief in Sight?

Robbins said increased defense spending in Fiscal 2003 will begin to cut the maintenance backlog and make long overdue facilities upgrades at bases like Pope. But, he said, the Air Force needs consistent long-term funding for those accounts.

By 2007, the Air Force and other services hope a steady funding stream will have cut from 192 to 67 years the time it takes to replace buildings. Philip W. Grone, Dubois's top deputy and a former staff director of the House Armed Services Committee's military installations and facilities subcommittee, said 67 years is still longer than the private sector, which upgrades buildings every 30 to 55 years. However, getting to 67 years, he said, would meet military readiness requirements.

The Defense Department also will spend substantial dollars tearing down buildings it no longer needs. Since 1998, the military services have demolished 62 million square feet of excess facilities at a cost of \$900 million. They expect to recoup those



USAF photo by TSgt. Dave Ahlschwede

The flight line at Aviano AB, Italy, a key base for USAF operations, undergoes major renovations. Servicewide, the Air Force is about \$18 billion behind in repair and renovation work.

costs—and more savings—through reduced maintenance bills.

The Air Force alone expects to eliminate another four million square feet of space over the next two years by either tearing down facilities or giving old buildings to local communities.

The Defense Department expects to free up money for maintaining and improving infrastructure by closing military bases. Pentagon officials have repeatedly said there is as much as 25 percent excess infrastructure at the military's 398 bases. They maintain that shuttering those bases could free up as much as \$3.9 billion annually.

Last year, Congress approved a new round of military base closures for 2005. The Pentagon had been pushing for 2003.

Meanwhile, the services are looking for other ways to lessen their infrastructure load. For instance, Robbins said Air Force base managers have been told that they should only hire contractors who have ideas and strategies that will keep down long-term maintenance costs to design, build, and refurbish facilities.

Additionally, he said Air Force bases are being encouraged to pursue creative partnerships with local communities, so bases can be upgraded without additional dollars.

Brooks Air Force Base in San Antonio is the first to launch what the service terms a city-base approach to cut Air Force operating and maintenance costs. Brooks transferred its

property to San Antonio, which will maintain and, in some cases, overhaul base facilities. San Antonio's Brooks Development Authority will endeavor to make the base a technology and business center. The Air Force units at Brooks, including the service's human systems research wing, are now tenants of the BDA.

Los Angeles Air Force Base, on the other hand, is pursuing a deal that would transfer underutilized land at the base to a commercial developer. In exchange, the developer would build the service a new 580,000-square-foot office building.

Ultimately, however, DOD's ability to upgrade bases will rely mainly on Congress' willingness to fund repair and maintenance accounts. Last summer, several lawmakers on the House Armed Services Committee spent three days visiting more than 20 bases across the country and came away vowing to improve them. "What we have seen can only be described as outrageous," said Rep. Curt Weldon (R-Pa.), who chairs the House Armed Services military readiness subcommittee.

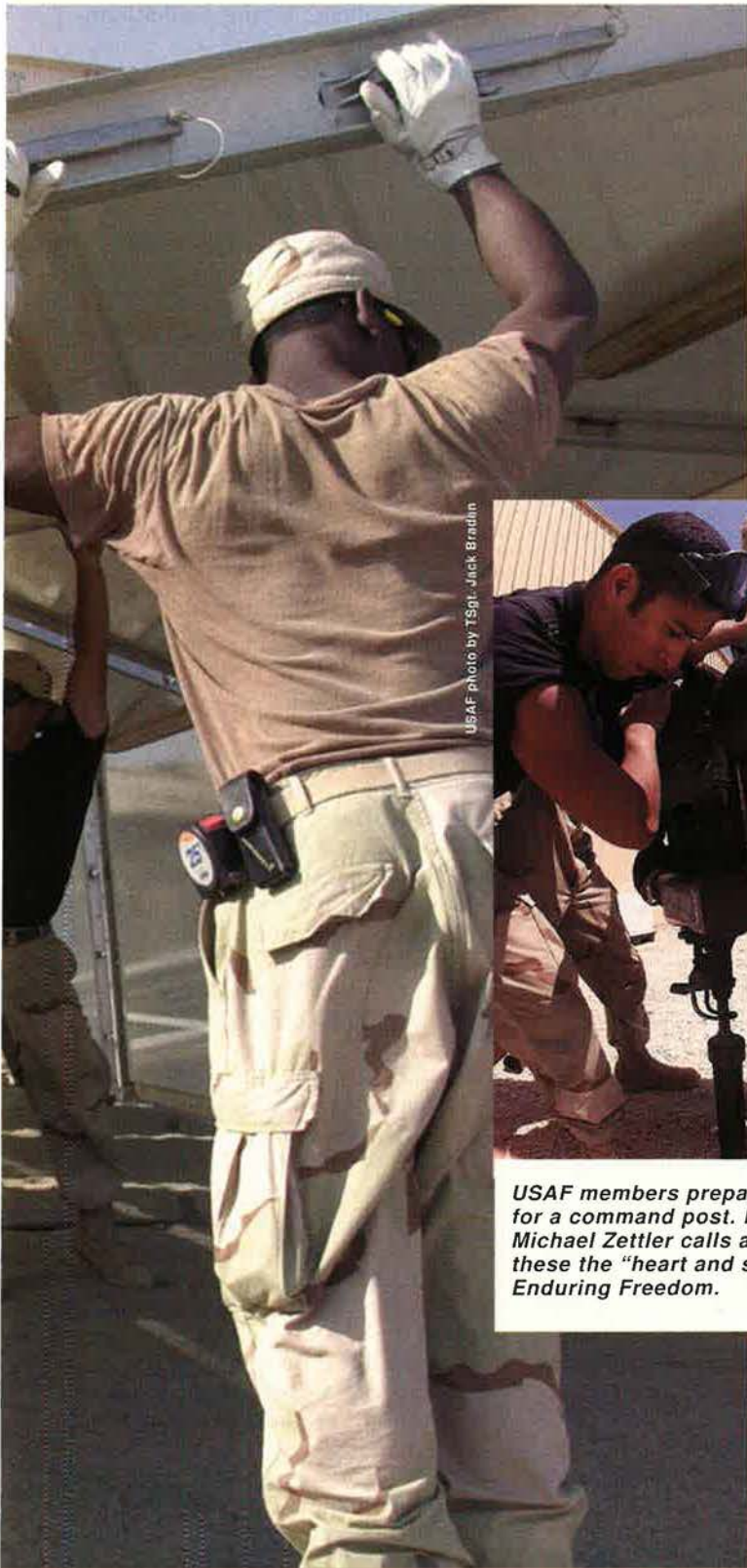
Since then, lawmakers have proposed adding nearly half a billion to maintenance accounts—and have promised that's only the beginning. ■

George Cahlink is a military correspondent with Government Executive Magazine in Washington, D.C. This is his first article for Air Force Magazine.

USAF photo by TSgt. Deborah K. Alvarado

Operation Enduring Freedom posed the most demanding Air Force logistics challenge since the Gulf War.

Loggie Power



A team from the 321st Expeditionary Support Squadron erects a storage facility at a forward location in the Gulf.



USAF photo by TSgt. Jack Bradlin

USAF members prepare the ground for a command post. Lt. Gen. Michael Zettler calls airmen like these the "heart and soul" of Enduring Freedom.

By Peter Grier

THE anti-terror war that the Air Force is waging from forward operating locations might well be called a "two-through-five war," asserts USAF's top logistics officer.

Lt. Gen. Michael E. Zettler, deputy chief of staff for installations and logistics, reports that he has made many visits to bases now being used for Operation Enduring Freedom. What was most striking, he said, was the performance of those airmen with two, three, four, or five stripes on their sleeves.

These ranks—airman first class through technical sergeant—were "the heart and soul" of the job, said Zettler.

The general was quick to say that his observation is not meant to detract from the effort of senior non-commissioned officers and officers, who have provided advanced technical skills, management, and leadership.

However, he said, it was those in the lower ranks who were erecting the tent facilities, getting USAF communications systems up and running, fixing airplanes, moving cargo, providing spares support, and even putting up fitness centers and facilities.

"The muscle of the Air Force was [provided by] these young men and



At al Udeid air base in Qatar, 823rd RED HORSE Squadron members apply the finishing touches to the concrete surface of a new 1,240-foot ramp. USAF civil engineers did everything from preparing the ground to obtaining fill materials to pouring and shaping the concrete.

women,” said Zettler in a wide-ranging interview.

Zettler discussed not only the war effort but also aging aircraft, the high cost of readiness, aircraft cannibalization, spare parts, depot modernization, and the 50–50 government–industry work share issue.

The task of supporting Enduring Freedom has posed one of the most daunting logistics challenges that the Air Force has faced since the Gulf War in 1991. Conditions are harsh and operating locations remote. Some of the installations, such as Bagram air base in Afghanistan itself, are far more primitive than any the Air Force used during Desert Storm.

Nearly Perfect

Yet the service sortie success rate has been greater than 99.5 percent. Virtually every aircraft takes off as planned. And everyone from aircraft maintainers to munitions handlers has worked together like a well-coached team.

“If we fly 60 to 180 sorties a day, and we lose one sortie every other day, it’s almost like a surprise,” said Zettler.

Most impressive have been the troops who have risen to the task of

operating in austere conditions and also have come through with solutions to problems they would not have faced back at home bases.

At one forward base, for instance, military personnel had been living entirely on bottled water. So two airmen took it upon themselves to find ways to cut down on the significant time and cost it was taking to bring water in. They set up a system of reverse osmosis purification, taking existing equipment and making it so efficient that it could produce enough water for sanitation, cooking, and cleaning.

When Zettler visited the base, the airmen gave him a short demonstration of their system. “At the end of the presentation by these two airmen I was handed a glass of water,” said Zettler. “You have very little choice, so I drank the water. Everything was fine.”

Similarly, small groups of civil engineers are working miracles in the Enduring Freedom area of operations, particularly with construction projects.

One huge ramp was built entirely by RED HORSE civil engineering teams. They did everything themselves—obtaining fill material, pack-

ing it in place, laying asphalt on top, and then capping the whole thing with several inches of concrete. The result was a permanent aircraft parking ramp of a size equivalent to 22 football fields. At al Udeid air base in Qatar, another crew built another such ramp.

“And the ramps are as good as anything you’ll find commercially anywhere in the world,” said Zettler. “They’re capable of handling our largest airplanes.”

Al Udeid and other locations have been turned into large integrated bases almost overnight, said the chief logistician. The tents are organized, the streets identified. Flagpoles have their traditional signs marking the miles to New York or San Francisco.

“I’m very proud of our engineers and services people for taking care of our people in such an outstanding fashion,” said Zettler. “It makes that 90 days ... of deployment a lot more palatable.”

Supply, transportation, and crucial communications links are now up and working as well. From a logistics-and-installations standpoint, the entire Enduring Freedom area of operations is working “phenomenally well,” according to Zettler.

“The churn of the early stages is gone,” he said. “We are in a long-term sustainment mode right now.”

Unsung Heroes

Other unsung heroes are the fuels specialists. They’ve done everything possible to make fuel available for all aircraft, as needed, where needed.

“The parts of the world we’re operating in may have a lot of gas in the ground, but they don’t have a lot of gas in tanks and bladder bags,” said Zettler.

Yet the fuels people have put up the infrastructure to power more than 100,000 sorties through early fall, without a single gas problem.

Back home, one of the largest logistics challenges the Air Force faces, from a technical standpoint, is aging aircraft. Today the average age of Air Force airplanes is around 22 years.

“If we buy every airplane that we’ve got in the [plan], it will still go to about 30 years by 2015 or 2020,” said Zettler. “So we’re in uncharted territory.”

There is certainly risk in having such an elderly fleet. It is not so

much flight safety risk as one of technical surprises. Who knows what problems will suddenly surface? Who knows how much time and money will be needed to fix them?

As Zettler tells it, there is a risk the Air Force won't have its maintenance programs laid out as well as it should. There's a risk of increased aircraft downtime. There's a risk of technical obsolescence—particularly in the area of avionics.

"So you've got three or four areas that add to the risk of operating an Air Force that's increasingly aging," said Zettler.

Aging Fleet Problems

One place the Air Force is feeling its airplanes' age is in the service pocketbook. The cost of flying hours is going up as the fleet gets older. "It looks to me, depending on how you measure it, that we're going up at about eight to 10 percent [annually] after you adjust for inflation," he added.

Material costs are the biggest driver of this growth. Parts are breaking down because of their age and the conditions under which they are operated.

"Things we typically see wearing out are structures and avionics," said Zettler. "Those are things that cost us an awful lot of dollars to maintain."

Age certainly has affected USAF's C-135 fleet, for example. Aging—combined with base closings and a



USAF photo by SSgt. Cherie A. Thurby

Problems that come with the aging of the fleet—particularly the C-135 airframe—contributed to a huge maintenance backlog. The average age of C-135s now in service is more than 40 years.

contractor strike—caused a huge number of C-135s to stack up waiting for depot maintenance. The peak, Zettler said, has now passed.

The replacement of rotating hardware in aging engines is a significant expense. Yet Zettler said there are also other areas of the engine that cause worries. These include fan ducts, pumps, and fuel controls. Will surprise problems crop up in these subsystems as time continues to go by? That is the kind of technical question the Aging Aircraft System Program Office has been set up to answer.

"I think they've got a great technical plan for the way ahead," he said.

For the larger airframes, corrosion has become a problem. During E-3 AWACS aircraft upgrades, for example, maintainers discovered corrosion beneath the flight deck.

"It's the unknowns that you find in the depot repair cycle that drive the time, and to some degree, drive the cost," said Zettler.

One long-standing problem that has improved significantly in recent years is cannibalizations. Instances of removing parts from one aircraft to fix another have declined by about 15 to 20 percent from the high years of 1997 and 1998.

"I think we're at about 11-and-a-half cans per 100 sorties," Zettler said. "So I feel like we've made a significant dent in cannibalizations."

Perhaps the biggest factor in the turnaround was full funding for spare parts. As recently as the beginning of 2001, Air Force Materiel Command had 610,000 parts on back order, per requests from field commands. That figure has now dropped to about 150,000.

"That [reflects] a huge increase in the availability of parts," said Zettler.

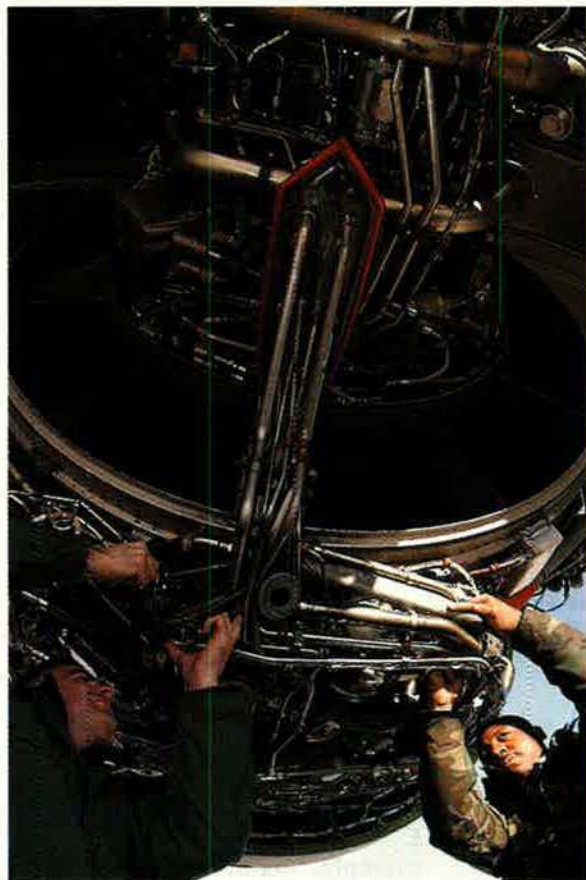
But an increased retention rate for first-term airmen has also helped the cannibalization situation. Increased retention equals a more experienced workforce—which equals fewer cannibalizations due to misdiagnosis.

"If the troubleshooting isn't really strong, then they may take out



USAF photo by SSgt. Cheresia D. Clark

Millions of tons of cargo must be moved to support overseas contingencies. These airmen, deployed with the 320th Expeditionary Aerial Port Sq., load a C-130 in support of Enduring Freedom.



SSgts. Talor Adams and Vernell Richardson of the 315th Aircraft Generation Squadron, Charleston AFB, S.C., work on a C-17 engine on the flight line at Rhein-Main AB, Germany. Recent funding for spare parts has significantly improved the aircraft cannibalization rate and helped reduce the parts order backlog.

the wrong boxes and wind up cannibalizing until they get the right one fixed," he said. "So it saves a lot of wear and tear [to have more experienced maintainers]."

Fewer cannibalizations, in turn, lead to increased morale and higher retention rates. It's a self-reinforcing process: More parts equals less frustration for mechanics, which gives better retention, which equals a more skilled force, which equals fewer mistakes, which leads to more parts being available.

The cann problem appears as if it will stay under control for at least the next several years. The 2003 budget allocates sufficient funds to parts, and the 2004 budget looks promising in this regard.

"I think we're past the crisis point here but we need to pay careful attention to it," said Zettler.

One way the Air Force is trying to ensure it doesn't return to the darker days of the past is through a reinvigorated hangar queen program.

For years, official service policy has been that no aircraft should spend so much time on the ground because of parts removal that it becomes a grounded hangar queen. Recently, however, Air Force leadership has

decided to go back to an enforceable hangar queen program that is standardized among all commands.

Aircraft that have not been flown in 30 days have to be reported to major command headquarters. After 60 days the airframe will become a Category 2 hangar queen. After 90 days, well, "somebody needs to be taking charge," said Zettler.

Depot Criticism

In recent years, the Air Force's depot policies and procedures have come in for criticism from some lawmakers. They charge that the Air Force, either intentionally or through poor management, has moved too much work from government facilities to private contractors.

Indeed, in both Fiscal 2000 and 2001, the Air Force leadership has waived certain requirements that preclude the service from contracting out more than 50 percent of its workload. Reminded that Congress watches this issue closely, Zettler noted that "we watch it closer."

The Air Force did not need such a waiver in 2002, he pointed out. Things look similarly in hand for 2003.

"On the books right now, it looks

like we're in pretty good shape," said Zettler.

A much-anticipated long-term depot maintenance plan was recently delivered to Congress. It outlines how the Air Force intends to handle each weapon in regards to maintenance and the depots. Addendums lay out master plans for each of the three gigantic air logistics centers.

"Secretary Roche is firmly committed to the depots," said Zettler. "He believes that we should create three world-class depots. They are a vital part of our total industrial complex."

The plan for the depots includes more money, a push to improve effectiveness via commercial practices, and better worker training programs.

"We're talking about an approach that will elevate our depots to the next level of professionalism," said Zettler.

At the same time there is enough work for the Air Force to maintain significant industry partnerships. Air Force leaders intend to continue to try to leverage the best of both the private and public worlds to get the greatest advantages they can for aircraft readiness.

Zettler said he believes that, after Congress sees how hard the Air Force is working on the 50-50 issue, it may cease to be such a major point of contention.

"The Air Force has a responsibility to live within the statute that Congress has given to us," he said. "And I think that after we do that for a few years some of the emotion of the moment will be in abeyance."

The bottom line is that the installations-logistics team of the Air Force is providing airpower readiness at a crucial time in US history. From the planners and supply and transportation people at one end, to the civil engineers, communications specialists, and others who make installations livable at the other, it is a team effort.

"We bring it all together," concluded Zettler. ■

Peter Grier, a Washington, D.C., editor for the Christian Science Monitor, is a longtime defense correspondent and a contributing editor to Air Force Magazine. His most recent article, "Disorder in the Court," appeared in the October 2002 issue.

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Photo by Paul Kennedy

A large group of people, mostly men in suits and ties, are gathered in a dimly lit room with warm, reddish lighting. They appear to be at a formal event or reception. Some are standing and talking, while others are seated at tables. The atmosphere is busy and social.

CON

VENTNITION ▶

By Tamar A. Mehuron, Associate Editor



In remarks from senior Air Force leaders and in special forums, AFA's 2002 National Convention highlighted USAF's role in the global war on terror.

UNDER the banner of "Global War on Terrorism—the Air Force Responds," delegates to the 2002 Air Force Association's National Convention gathered Sept. 15–18 at the Marriott Wardman Park Hotel in Washington, D.C. The event came a year after the Sept. 11 terror attacks on America and the subsequent cancellation of AFA's 2001 convention.

It also took place at a time of increased pressure for military action in Iraq. As a result, AFA members paid tribute to the forces engaged in the global war on terrorism and those about to embark on new and different battles.

Many delegates attended a memorial service at Arlington National Cemetery, where AFA National Chaplain Donald J. Harlin gave the invocation and closing prayer. The 2001 and 2002 Memorial Tribute



Exchanging greetings are the Air Force Association's top two newly elected leaders: John Politi (at left), Chairman of the Board, and Pat Condon, National President.

Lists were read by then-AFA National Chairman of the Board Thomas J. McKee and then-National President John J. Politi.

At the Air Force Anniversary Dinner on Sept. 17, USAF Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, received the H.H. Arnold Award, AFA's top honor for contributions to national security by a member of the armed forces.

During that same evening, AFA presented the W. Stuart Symington Award to Rep. James V. Hansen (R-Utah), a senior member of the House Armed Services Committee. The award recognizes the outstanding contribution of a civilian to national security.

Sydney Gillibrand, chairman, AMEC, London; and Jerry Morgensen, president and CEO, Hensel Phelps Construction, Greeley, Colo., were honored with the John R. Alison Award for industrial leadership in national security. The two companies rebuilt the section of the Pentagon damaged by the Sept. 11 terrorist attack and did so in less than a year.

The USAF Concert Band and Singing Sergeants, conducted by Col. Dennis M. Layendecker, closed the evening event with a musical presentation "A Tribute to Heroes," with New York City police officer Daniel Rodriguez, vocalist.

The convention keynote address was delivered on Monday, Sept. 16, by Gen. Gregory S. Martin, com-

mander of US Air Forces in Europe. Later that day, AFA recognized the Air Force's 12 Outstanding Airmen of the Year at a dinner in their honor. Gen. Robert H. Foglesong, vice chief of staff of the Air Force, was the dinner speaker. CMSAF Gerald R. Murray was toastmaster.

As delegates and USAF leaders focused on the past year's achievements, protesters gathered outside the convention site on Monday morning and Tuesday evening. They objected to potential US military action in Iraq. A group of about 50 protesters showed up on Monday

morning, possibly hoping to be seen and heard by Defense Secretary Donald H. Rumsfeld. He had been invited to deliver the keynote address.

AFA convention delegates, military attendees, and other guests heard major addresses by James G. Roche, the Secretary of the Air Force, and Gen. John P. Jumper, the USAF Chief of Staff.

The convention's theme, which centered on the Air Force role in the global war on terror, was reflected in three AFA policy forums.

On Sept. 16, Air Force special operations was the topic of the first forum presented during the convention. Substituting for Gen. Paul V. Hester, commander of Air Force Special Operations Command, who could not attend, was Brig. Gen. (sel.) Lyle Koenig Jr., Hester's special assistant. Koenig briefly described the command, then turned the podium over to TSgt. James Hotaling, an AFSOC combat controller. Koenig said Hotaling is "the real warrior who has lain on the ridge line and shot back at terrorists."

The forum on Tuesday, "Transformation: Let's Get Specific," focused on the F/A-22 fighter and featured a briefing by Rebecca Grant, president of IRIS Independent Research. On Wednesday, at the third forum, Lt. Gen. Daniel James III, director of the Air National Guard, spoke about ANG and homeland defense.

About 8,000 people participated



USAF Gen. Richard Myers, Chairman of the Joint Chiefs of Staff, addresses the audience at the Air Force Anniversary Dinner. He received the H.H. Arnold Award for his contributions to national security.



For a complete list of AFA Region Presidents and National Directors, including those re-elected, see "This Is AFA" on p. 99.

The Aerospace Education Foundation elected the following officers: Richard B. Goetze Jr., Arlington, Va., as Chairman of the Board; L. Boyd Anderson, Ogden, Utah, as President; Victoria W. Hunnicutt, Gray, Ga., as Secretary; and Mark J. Worrick, Denver, as Treasurer. There is no longer a vice president. The newly elected AEF trustees are: Bonnie Callahan of Winter Garden, Fla., William D. Croom Jr. of San Antonio; David R. Cummock of Daytona Beach, Fla.; Mary Anne Thompson of Oakton, Va.; Robert M. Canady of

in one or more of the convention-related activities. The 298 registered delegates—representing 47 states, the District of Columbia, and AFA in Europe—were joined by senior military and government officials for featured speeches, social events, and the Aerospace Technology Exposition. The three-day exposition showcased more than 100 exhibitors. On hand to cover the convention were more than 100 reporters and other news representatives.

Holding meetings concurrently were the trustees of AFA's affiliate, the Aerospace Education Foundation, as well as the Air Force Memorial Foundation trustees and Air Force command chief master sergeants. Also meeting were AFA's Air National Guard Council, Civilian Advisory Council, Company Grade Officer Council, Enlisted Council, Reserve Council, and Veterans/Retiree Council.

Election of Officers

John J. Politi, Sedalia, Mo., was elected AFA's Chairman of the Board for a first term. Stephen P. "Pat" Condon, Ogden, Utah, was elected National President for a first term. Daniel C. Hendrickson, Layton, Utah, was re-elected National Secretary for a third term, and Charles A. Nelson, Sioux Falls, S.D., was re-elected National Treasurer for a third term.

Other Elections

Three new Region Presidents were elected. Newly elected are Keith N. Sawyer (Midwest Region), James M.



Jack Steed (at top), then an AFA national director, looks over material at the Aerospace Technology Exposition. Here, Lt. Gen. Richard Brown, deputy chief of staff for personnel, chats with Politi, James Carlock from AFA's Civilian Advisory Council, and Thomas McKee, outgoing AFA Board Chairman.

Crawford (North Central Region), and Michael G. Cooper (Texoma Region).

Elected to the Board of Directors for three-year terms were W. Ron Goerges, Fairborn, Ohio; Stanley V. Hood, Columbia, S.C.; John Lee, Salem, Ore.; Julie E. Petrina, Baltimore; Robert C. Rutledge, Johnston, Pa.; and Emery S. "Scotty" Wetzell Jr., Las Vegas.

Three new Leadership Development Directors (formerly known as Under-Forty Directors) joining the AFA board are Brian P. McLaughlin, Bonaire, Ga.; John C. Moore, Dallas; and Warren E. White, Minneapolis.

La Quinta, Calif.; and Sanford Schlitt of Sarasota, Fla.

Other AFA Business

Delegates unanimously approved the AFA Statement of Policy and Top Issues, as well as the Strategic Plan for 2003–06. They also issued a statement of support for the nation's armed forces in the war on terrorism.

Congressional Activity

AFA state delegations sponsored Congressional breakfasts on Tuesday and Wednesday of convention week, with 36 members of Congress participating. Among them were

Sens. Wayne Allard (R-Colo.) and Mark Dayton (D-Minn.) of the Senate Armed Services Committee, and Sens. Robert Bennett (R-Utah), Kay Bailey Hutchison (R-Tex.), and Byron L. Dorgan (D-N.D.), who are on the Senate Appropriations Committee. Sen. Orrin G. Hatch (R-Utah), and Sen. Paul D. Wellstone (D-Minn.) also attended the meetings.

Several members of the House Armed Services Committee also participated in the AFA breakfast meetings. They included ranking member Rep. Ike Skelton (D-Mo.), Reps. Roscoe Bartlett (R-Md.), Randy Forbes (R-Va.), James Hansen (R-Utah), Joel Hefley (R-Colo.), Jeff Miller (R-Fla.), and Ciro Rodriguez (D-Tex.). Reps. Virgil Goode (I-Va.), Carrie Meek (D-Fla.), and John Sununu (R-N.H.), members of the House Appropriations Committee,



USAF Chief of Staff Gen. John Jumper and former Air Force Secretary F. Whitten Peters have a chance to catch up at the Aerospace Technology Exposition.

Photos by Paul Kennedy

Staff photo by Guy Aceto



The Aerospace Education Foundation called its Sunday night gala "Carnival 2002." Convention delegate Donald Anderson from the Langley (Va.) Chapter and his wife, Barbara—wearing glow-in-the-dark novelty necklaces that AEF gave to guests—watch a card trick, above. The magician was part of the evening's entertainment.

Security was an important concern during the convention. At right, a military working dog and his handler inspect the banquet hall before the gala.



attended. Co-chairman of the Air Force Caucus Rep. Sam Johnson (R-Tex.) attended a breakfast, as well.

Other Congressmen attending the breakfasts were Reps. Howard Coble (R-N.C.), Jeff Flake (R-Ariz.), Barney Frank (D-Mass.), Gil Gutknecht (R-Minn.), Mark Kennedy (R-Minn.), Frank Lucas (R-Okla.), Bill Luther (D-Minn.), James McGovern (D-Mass.), Betty McCollum (D-Minn.), Connie Morella (R-Md.), Collin Peterson (D-Minn.), Earl Pomeroy (D-N.D.), Jim Ramstad (R-Minn.), Martin Sabo (D-Minn.), Pete Sessions (R-Tex.), John Tierney (D-

Mass.), Mark Udall (D-Colo.), and Wesley Watkins (R-Okla.).

The Florida delegation met separately with Rep. Mark Foley (R-Fla.). Foley and Sen. Zell Miller (D-Ga.) received AFA awards for service to USAF.

Air Force Secretary Roche visited breakfasts hosted by Oklahoma, Midwest Region, and Maryland. Air Force Chief of Staff General Jumper visited the breakfasts hosted by Virginia and Colorado.

Aerospace Education Foundation

A video on the theme of the Air Force Junior Reserve Officers Training Corps' role in building better citizens and communities won AEF's Jimmy Stewart Aerospace Education Award. The winning entry was from



Photos by Paul Kennedy

Air Force TSgt. James Hotaling receives a standing ovation after his presentation on his experiences as a combat controller in Afghanistan.



AFA's newest Gold Life Member Card recipient, Nathan Mazer (center), receives congratulations from a fellow Utahan, Wycliffe McFarlane of the Northern Utah Chapter. Mazer's friends Nate Nilo and Joan McGuire are at right.

Unit VA-20011 at Franklin County High School, Rocky Mount, Va. The video opened with the scene of the World Trade Center towers burning in the Sept. 11 terrorist attacks, noting that on that day, "the price of freedom was forever changed." Cadets featured in the video said that AFJROTC builds leadership, fosters patriotism and service to country, and makes them feel a part of the Air Force team. The video ended with the now famous words, "Let's Roll!"

Col. Jack D. Howell II, USMC (Ret.), from Palm Coast, Fla., won the Christa McAuliffe Memorial

Award as the year's outstanding aerospace science, mathematics, or computer science teacher. The Hurlburt Chapter, Hurlburt Field, Fla., received the Sam E. Keith Jr. Aerospace Education Award of Excellence. The award is named in honor of the late AFA leader and former National President and Board Chairman from Fort Worth, Tex. John Salvador, Montgomery Chapter, Ala., won the George D. Hardy Memorial Award. The winner is nominated by an AFA chapter for outstanding contributions to furthering the scientific, technical, and aerospace education of the nation.

On Tuesday afternoon, Jumper presented the Chief of Staff Team Excellence Awards for 2002 to: the C-17 Electronic Testing and Evaluation of Student Training Team, Charleston AFB, S.C.; Combat Intelligence Center Battle Management System Team, 48th Operational Support Squadron, RAF Lakenheath, UK; F-15 Wing Shop, Lean Depot Repair Team, Warner Robins Air Logistics Center, Robins AFB, Ga.; Air Force Flight Test Center Base Energy Team, Edwards AFB, Calif.; and GPS User Equipment Diminishing Manufacturing Sources & Materiel Shortages Team, Robins AFB, Ga.

Acknowledgments

Parliamentarian for the AFA National Convention was Joan Blankenship. Inspectors of Elections were David T. Buckwalter (chairman), Steven R. Lundgren, and Coleman Rader Jr. Tommy G. Harrison chaired the Credentials Committee, serving with Judy K. Church and George C. Pankonin.

The association is particularly grateful to a corps of volunteers who assisted the staff in convention support: Cecil G. Brendle, Jimmy R. Canlas, Francisco A. Flores, Robert Harrelson, Debbie and Greg Snyder, Charlie Tippett, Leola Wall, and Patricia Wolfe.

The 2003 National Convention will again be held at the Marriott Wardman Park Hotel, Washington, D.C., Sept. 14-17, 2003. ■

Awards



These are the Air Force Association National Awards for 2002.

National Aerospace Awards

Award

H.H. Arnold Award

AFA's highest honor in national security to a member of the armed forces

W. Stuart Symington Award

AFA's highest honor in national security to a civilian

John R. Alison Award

AFA's highest honor for industrial leadership

David C. Schilling Award

Outstanding contribution in flight

Theodore von Karman Award

Outstanding contribution in science and engineering

Gill Robb Wilson Award

Outstanding contribution in arts and letters

Hoyt S. Vandenberg Award

Outstanding contribution in aerospace education

Thomas P. Gerrity Award

Outstanding contribution in logistics

Department of Veterans Affairs Employee of the Year

Recipients

Gen. Richard B. Myers, Chairman, Joint Chiefs of Staff

Rep. James V. Hansen (R-Utah), co-chairman, House Depot Caucus

Sydney Gillibrand, Chairman, AMEC, London, and **Jerry Morgensen**, President and CEO, Hensel Phelps, Greeley, Colo.

27th Fighter Squadron, Langley AFB, Va.

Air Force Intelligence, Surveillance, and Reconnaissance UAV Team, Pentagon

Tom Brokaw, NBC Nightly News, New York

Civil Air Patrol Aerospace Education Program, Maxwell AFB, Ala.

Col. Duane A. Jones, Shaw AFB, S.C.

Barbara Chiariello, Veterans Benefits Administration Office, New York

At the convention, Rep. James Hansen (R-Utah) and his wife, Ann, speak with Jack Price (left), then Chairman of the Board of the Aerospace Education Foundation. Hansen received the W. Stuart Symington Award, AFA's highest honor in national security for a civilian.



Photo by Paul Kennedy

Crew Awards and Special Citations

Award	Recipients	Achievement
Airborne Battle Management Crew	12th Airborne Air Control Sq., Robins AFB, Ga.	Best ABM crew
CMSAF Thomas N. Barnes Award	SSgt. Jeremy J. Johnson, 37th Airlift Sq., Ramstein AB, Germany	Crew Chief of the Year
Lt. Gen. Claire L. Chennault Award	Maj. Steve D. Hughes, 4th Fighter Wing, Seymour Johnson AFB, N.C.	Best aerial warfare tactician
Brig. Gen. Ross G. Hoyt Award	Chain 05 and Chain 06 Crews, 8th Special Operations Sq., Hurlburt Field, Fla.	Best air refueling aircrew
Gen. Curtis E. LeMay Award	Crew Poison 61, 28th Air Expeditionary Bomb Wing, Diego Garcia	Best bomber aircrew
Gen. Jerome F. O'Malley Award	Rivet Joint Crew Easy 67, 97th Intelligence Sq., 38th Reconnaissance Sq., 55th Operations Support Sq., Offutt AFB, Neb.; 488th IS, 95th RS, 343rd RS, RAF Mildenhall, UK	Best reconnaissance crew
Gen. Thomas S. Power Award	Crew S-258/E-052, 91st Operations Group, Minot AFB, N.D.	Best missile combat crew
Space Operations Award	Bravo Crew, 21st Space Wing, Peterson AFB, Colo.	Best space operations crew
Lt. Gen. William H. Tunner Award	Havoc 11 aircrew, 7th SOS, RAF Mildenhall, UK	Best airlift aircrew
USAF Test & Evaluation Team of the Year	G-Range Scramjet Team, Arnold AFB, Tenn.	Best test team
Special Citation	2nd Bomb Wing and 917th Wing (AFRC), Barksdale AFB, La., and 5th BW, Minot AFB, N.D.	Maintained B-52s in mission-ready state

Air National Guard and Air Force Reserve Command Awards

Award	Recipient	Achievement
CMSgt. Dick Red Award	CMSgt. Daniel J. Wheeler, 114th Fighter Wing, South Dakota ANG	Best ANG aerospace maintenance
Maj. Gen. Earl T. Ricks Award	TSgt. Scott L. Anderson, Utah ANG	Best ANG airmanship
Best Air National Guard Unit	129th Rescue Wing, California ANG	Top ANG unit
Best Air Force Reserve Unit	315th Airlift Wing, Charleston AFB, S.C.	Top AFRC unit
President's Award	Team 23 Crew, 76th Air Refueling Sq., McGuire AFB, N.J.	Best Reserve aircrew

USAF Team of the Year

Recipient	Unit
SSgt. Travis D. Hartzell	823rd Security Forces Sq., Moody AFB, Ga.
MSgt. Vicki L. Jones	11th Security Forces Sq., Bolling AFB, D.C.
SrA. Andres E. Salazar	310th Security Forces Sq., Schriever AFB, Colo.
SSgt. Brandon E. Sprague	55th Security Forces Sq., Offutt AFB, Neb.
MSgt. Todd A. Weinberger	115th Security Forces Sq. (ANG), Madison, Wis.

USAFA Outstanding Squadron

Cadet Squadron 24
"Phantoms," "Hard Core 24"
Fall Cadet Commander
Cadet Lt. Col. Kristin Wenner
Spring Cadet Commander
Cadet Lt. Col. Joshua Fogle

Citations of Honor

Recipient	Achievement
Air Force Pentagon Communications Agency, Pentagon	Developed and implemented a secure communications plan for DOD in the hours after the Sept. 11 terrorist attacks.
Distributed Ground Station 2, Beale AFB, Calif.	Transformed Global Hawk UAV from an ISR test bed platform into an operational asset in support of Operation Enduring Freedom.
86th Air Mobility Sq., Ramstein AB, Germany	Established Ganci AB, Kyrgyzstan. Provided logistical support for Afghan air-drops. Performed airfield surveys in six classified locations.
MSgt. Edward Ferguson, Scott AFB, Ill.	Managed public affairs and media relations for Air Force Communications Agency. Enhanced USAF use of information technology.
51st Fighter Wing, Osan AB, South Korea	Implemented new CONOPS and tactics for chemical warfare, resulting in drops in sortie degradation and project casualty rates.
56th Fighter Wing, Luke AFB, Ariz.	Eased F-16 pilot shortage by integrating reserve pilots as instructors. Generated more than the required number of aircraft for Operation Noble Eagle.
494th Fighter Sq., RAF Lakenheath, UK	Twice saved UAVs from Iraqi MiGs. Dropped the most AGM-130 precision guided munitions while in support of Operation Southern Watch.
19th Aircraft Generation Sq., Robins AFB, Ga.	Superb performance while undergoing expeditionary operational readiness inspection and glass-cockpit conversion.
19th Special Operations Sq., Hurlburt Field, Fla.	Provided modeling and simulation training support, including technologically advanced capabilities, to warfighters.
21st Space Operations Sq., Onizuka AFS, Calif.	Configured USAF Satellite Control Network for NASA shuttle missions. Ensured continuous flow of data to warfighters.

Professional, Civilian, and Educational Awards

Award	Recipient
Gen. Billy Mitchell Award for C ⁴ Excellence	Capt. Oscar Delgado, Mountain Home AFB, Idaho
Paul W. Myers Award for Physicians	Lt. Col. David F. Vanderburgh, Wright-Patterson AFB, Ohio
Verne Orr Award for Human Resources	341st Space Wing, Malmstrom AFB, Mont.
Juanita Redmond Award for Nursing	Capt. Christie L. Lennen, McChord AFB, Wash.
Stuart R. Reichart Award for Lawyers	Col. Conrad M. Von Wald, Travis AFB, Calif.
Personnel Manager of the Year	MSgt. Mark C. Long, Vandenberg AFB, Calif.
Civilian Wage Employee of the Year	Pamela R. Best, McChord AFB, Wash.
Civilian Program Specialist of the Year	Robert E. Coward Jr., Holloman AFB, N.M.
Civilian Program Manager of the Year	Stephen J. Dunn, Langley AFB, Va.
Civilian Senior Manager of the Year	William D.W. Grimes, Wright-Patterson AFB, Ohio
AFROTC Cadet of the Year	Brendhan A. Goss, Wright State University, Dayton, Ohio
CAP Aerospace Education Cadet of the Year	Peggy E. Schnack, Crystal, Minn.
Joan Orr Award for Air Force Spouse of the Year	Charlotte D. Engeman, Aviano AB, Italy
Christa McAuliffe Memorial Award for Teachers	Col. Jack D. Howell II, USMC (Ret.), Palm Coast, Fla.
Sam E. Keith Jr. Aerospace Education Award of Excellence	Hurlburt Chapter, Hurlburt Field, Fla.
George D. Hardy Memorial Award	John Salvador, Montgomery Chapter, Ala.
Jimmy Stewart Aerospace Education Award	VA-20011 Unit, Franklin County High School, Rocky Mount, Va.

Management and Environmental Achievement Awards

Award	Recipient
AFMC Executive Management Award	Col. Edward T. Alexander Jr., Los Angeles
AFMC Middle Management Award	Maj. Clarke O. Manning, Seattle
AFMC Junior Management Award	Capt. Henry Myers Jr., Robins AFB, Ga.
Gen. Edwin W. Rawlings Award for Environmental Excellence (Management)	Helen V. Walker, 11th Wing, Bolling AFB, D.C.
Gen. Edwin W. Rawlings Award for Environmental Excellence (Technical)	TSgt. Michael Durako, Grand Forks AFB, N.D.

AFA Member of the Year

Thomas J. Kemp, Tex.



AFA Member of the Year Thomas Kemp chats with AFA National Director Emeritus William Spruance.

D.W. Steele Sr. Memorial Award

(AFA Unit of the Year)

Eglin Chapter, Fla.



Stanley Siefke, an Eglin Chapter vice president, accepted the award for his hardworking chapter.

Jack Gross Award

Small Chapter

Newport Blue & Gold, R.I.

Medium Chapter

Golden Triangle, Miss.

Large Chapter

Capt. William J. Henderson, Wis.

Extra Large Chapter

Scott Memorial, Ill.

Chapter Larger Than 1,500

Central Florida, Fla.

Arthur C. Storz Sr. Membership Awards

Chapter Award

Capt. William J. Henderson, Wis.

Individual Award

Thomas Stark, Ill.

Dottie Flanagan Staff Award of the Year

A donation from Jack Gross, national director emeritus, enables AFA to honor staff members each quarter. Those members become eligible for the staff award of the year.

- 1992 Doreatha Major
- 1993 Jancy Bell
- 1994 Gilbert Burgess
- 1995 David Huynh
- 1996 Sherry Coombs
- 1997 Katherine DuGarm
- 1998 Suzann Chapman
- 1999 Frances McKenney
- 2000 Ed Cook
- 2001 Katie Doyle



Thomas Stark (center), pictured here with John Politi, then AFA National President, and Thomas McKee, then Chairman of the Board, was presented with the Arthur Storz Sr. Membership Award for an Individual.

Unit Activity Awards

Outstanding State Organization
Colorado

Outstanding Small Chapter
Charles Hudson, Calif.

Outstanding Medium Chapter
Miami, Fla.

Outstanding Large Chapter
Gen. B.A. Schriever Los Angeles, Calif.

Exceptional Service—Best Single Program
Paul Revere, Mass.

Exceptional Service—Communications
Hurlburt, Fla.

Exceptional Service—Community Partners
Wright Memorial, Ohio

Exceptional Service—Community Relations
Alamo, Tex.

Exceptional Service—Overall Programming
Donald W. Steele Sr. Memorial, Va.

Exceptional Service—Veterans' Affairs
Harry S. Truman, Mo.

Community Partner Membership Awards

Gold Award

Altus, Okla.
Cape Canaveral, Fla.
Carl Vinson Memorial, Ga.
Cheyenne Cowboy, Wyo.
Col. H.M. "Bud" West, Fla.
Contraails, Kan.
Diamond State, Del.
Eagle, Pa.
Enid, Okla.
Fairbanks Midnight Sun, Alaska
Fort Wayne, Ind.
Gen. B.A. Schriever Los Angeles, Calif.
Gen. David C. Jones, N.D.
Happy Hooligan, N.D.
High Desert, Calif.
Hurlburt, Fla.
Lance P. Sijan, Colo.
Leigh Wade, Va.
Llano Estacado, N.M.
Lloyd R. Leavitt Jr., Mich.
Northeast Texas, Tex.
Panhandle AFA, Tex.
Richard D. Kising, Iowa
Richard S. Reid, Ariz.
Robert H. Goddard, Calif.
Steel Valley, Ohio
Swamp Fox, S.C.
Total Force, Pa.
Ute—Rocky Mountain, Utah
Wright Memorial, Ohio

Achievement Award

Alamo, Tex.
Ark—La—Tex, La.
Bob Hope, Calif.
Cochise, Ariz.
Delaware Galaxy, Del.
Del Rio, Tex.
Earl D. Clark Jr., Mo.
Edward J. Monaghan, Alaska
Francis S. Gabreski, N.Y.
Gen. Charles L. Donnelly Jr., Tex.
Highpoint, N.J.
Jackson, Miss.
Joe Walker—Mon Valley, Pa.
John W. DeMilly Jr., Fla.
Langley, Va.
Long's Peak, Colo.
McChord AFB, Wash.
Mel Harmon, Colo.
Mercer County, N.J.
Monterey Bay Area, Calif.
Montgomery, Ala.
Mount Clemens, Mich.
Palm Springs, Calif.
Pope, N.C.
Thunderbird, Nev.
Tidewater, Va.
William A. Jones III, Va.

Named in Memorial Tribute

Deaths during the past year that were formally recognized at the convention

George Apostle
Lt. Col. F.M. Barnes, USAF (Ret.)
Maj. Willard F. Beard
Lt. Gen. Marion L. Boswell, USAF (Ret.)
Lt. Col. Ludevit Cerven, USAF (Ret.)
Charles H. Church Jr.
David O. Cooke
Gen. Benjamin O. Davis Jr., USAF (Ret.)
Maj. Gen. Andrew J. Evans, USAF (Ret.)
Dorothy L. Flanagan
Col. Eric Friedheim, USAF (Ret.)
Col. Francis Gabreski, USAF (Ret.)
Maj. William W. Hall, USAF (Ret.)
LeRoy W. Homer Jr.
Frank Jones
Arthur F. Kelly
Moya Lear
Raymond F. Maisch
David A. Nuzum
Col. Richard L. Penny, USAF (Ret.)
Lt. Col. Kenneth K. Plumeau, USAF (Ret.)
Col. Cletus J. Pottebaum, USAF (Ret.)
Col. Henry A. Potter, USAF (Ret.)
Col. Robert M. Rawls, USAF (Ret.)
Col. Peter J. Schenk, USAF (Ret.)
William J. Schorr
TSgt. Clair J. Smith, USAF (Ret.)
Lt. Col. Nathan R. Stanley, USAF (Ret.)
Ethel Stefanichin
John E. Swanstrom Jr.
Tommy Sylvester
Dolores Vallone
Lt. Col. Robert C. Vaughan, USAF (Ret.)
Glen W. Wensch
David H. Whitesides
Lavern Willie

Special Recognition—Sustained New Member Recruitment

Altus, Okla.
Cape Fear, N.C.
Capt. William J. Henderson, Wis.
Central Florida, Fla.
Charles Hudson, Calif.
Chautauqua, N.Y.
Col. H.M. "Bud" West, Fla.
Contraails, Kan.
David D. Terry Jr., Ark.
Earl D. Clark Jr., Mo.
Edward J. Monaghan, Alaska
Enid, Okla.
Fairbanks Midnight Sun, Alaska
Fort Wayne, Ind.
Gen. David C. Jones, N.D.
Golden Triangle, Miss.
Grissom Memorial, Ind.
Happy Hooligan, N.D.
Highpoint, N.J.

Hurlburt, Fla.
Iron Gate, N.Y.
Joe Walker—Mon Valley, Pa.
John W. DeMilly Jr., Fla.
Lance P. Sijan, Colo.
Leigh Wade, Va.
Lt. Col. B.D. "Buzz" Wagner, Pa.
Mercer County, N.J.
Miami, Fla.
MiG Alley, South Korea
Mount Clemens, Mich.
Northeast Texas, Tex.
Richard S. Reid, Ariz.
Robert H. Goddard, Calif.
Taunton, Mass.
Total Force, Pa.
Ute—Rocky Mountain, Utah
Worcester, Mass.

Individual Activity Awards

Gold Life Member Card

Nathan H. Mazer, Utah

Presidential Citation

W. Graham Burnley Jr., Mo.
Eugene M. D'Andrea, R.I.
Emil M. Friedauer, Fla.
Arthur W. Gigax, Ariz.
William R. Goerges, Ohio
James T. Hannam, Va.
William G. Stratemeier Jr., N.Y.
Joseph E. Sutter, Tenn.
Howard R. Vasina, Colo.

Central East Region

Medal of Merit

Teresa A. Connor, Del.
James R. Hobbs, Va.
Clyde S. Judy, W.V.
Myrle B. Langlely, Va.
James E. McInerney, Va.
Daniel J. Murawinski, Va.
Sheila T. Padlo, Va.
Jeffrey L. Platte, Va.
Miles L. Sawyer, Va.
Briggs M. Shade, Va.

Exceptional Service Award

George DeFilippi, Va.
Herman N. Nicely II, W.V.
Kenneth R. Reynolds, Va.

Far West Region

Medal of Merit

John Barnette, Hawaii
Kraig A. Croft, Hawaii
Jack L. DeTour, Hawaii
Karin L. Fones, Hawaii
James L. Grogan, Calif.
James K. Iwamura, Hawaii
Dennis Laws, Calif.
Edith A. Magerkurth, Calif.
Linda D. Pagett, Calif.
Lou Ruscetta, Calif.
Michael E. Schorn, Calif.
John F. Wickman, Calif.

Exceptional Service Award

John K. Barbour, Calif.
Kathryn G. Chapman, Calif.
Rich Taubinger, Calif.

Special Citation

Melanie Habener, Calif.

Florida Region

Medal of Merit

George C. Ferkes, Fla.
Deborah L. Hatch, Fla.
David O. Miller, Fla.

John F. Rogers, Fla.
Gary B. Sharpe, Fla.
Harvey W.C. Shelton, Fla.
Charles L. Snyder Jr., Fla.
David R. Swanick, Fla.

Exceptional Service Award

James Shambo, Fla.

Great Lakes Region

Medal of Merit

Dennis Bodem, Mich.
Amy Beth Cervone, Ohio
Toni G. Fuzo, Ohio
William R. Grider, Ind.
Betty J. Moredock, Ohio
William A. Morris, Mich.
Walter D. Shellhorn, Ohio

Exceptional Service Award

Roger L. Claypoole Jr., Ohio
Thomas Eisenhuth, Ind.
Daniel E. Kelleher, Ohio

Midwest Region

Medal of Merit

Norman J. Beu, Iowa
Richard D. Gaddie, Neb.
John E. Guiste, Ill.
John D. Miller, Mo.
Gregg A. Moser, Kan.
Mark R. Musick, Neb.
Robert D. Persinger, Iowa
Loran C. Schnaidt, Mo.

Exceptional Service Award

Robert D. Lewallen, Neb.
Gilbert E. Petrina, Mo.
Patricia J. Snyder, Mo.

New England Region

Medal of Merit

Lori A. Ashness, R.I.
David W. Houde, N.H.
Steven J. Negrón, Mass.
Richard Taito, R.I.
Timothy W. Trimmell, N.H.
Thomas L. Wade, Mass.
Edward N. Warfield, N.H.
Ann E. Warmuth, Mass.
Donald B. Warmuth, Mass.

Exceptional Service Award

Kevin F. Gilmartin, Mass.
Jeffrey W. Hallahan, Mass.

North Central Region

Medal of Merit

Milton Arneson, N.D.
Larry W. Barnett, N.D.
Katherine DuGarm, Minn.
Robert P. Talley, N.D.
George T. Unsinger, N.D.
Leo E. Wittenberg, Minn.

Exceptional Service Award

James M. Crawford, N.D.
Steven R. Winegarden, Minn.

Northeast Region

Medal of Merit

Edward Droblich, Pa.
David DuBarr, Pa.
Paul J. Fiske, Pa.
Ruth Iarussi, Pa.
Stephen E. Lipski Jr., N.J.
Warren E. Reid, Pa.
William J. Worthington, Pa.

Exceptional Service Award

Robert C. Rutledge, Pa.

Northwest Region

Medal of Merit

James V. Drew, Alaska
Bryon R. Fessler, Ore.
Angeline M. Gori, Alaska
David A. Reinholz, Wash.
Kenneth St. John, Wash.

Exceptional Service Award

John C. Moore, Ore.

Rocky Mountain Region

Medal of Merit

Debbie Boe, Utah
Robert M. Farr, Wyo.
Roger Mack, Utah
Preston Prunty, Colo.
Gary Strack, Utah
Richard F. Warnke, Colo.
Kit K. Workman, Utah

Exceptional Service Award

Ted Kerr, Colo.
Wycliffe McFarlane, Utah
Brad Sutton, Utah

South Central Region

Medal of Merit

Winston Daws, Tenn.
Linden L. Gill, Tenn.
M.J. Northway, Ark.
Jerry Reichenbach, Ark.
Al Yantis, La.

Exceptional Service Award

Peyton Cole, La.

Southeast Region

Medal of Merit

Janice Del Valle, Ga.
Lynn Morley, Ga.

Exceptional Service Award

William T. Stanley, N.C.

Southwest Region

Medal of Merit

Joseph E. Anton, Ariz.
DeVonde D. Clemence, Nev.
Jeffrey K. Halstead, Ariz.
Victor R. Hollandsworth, Nev.
Douglas M. Nelson, Nev.
Thomas E. Rowney, Ariz.
Michael P. Wojcik, Nev.
Duane C. Wyles, Ariz.

Texoma Region

Medal of Merit

Richard Baldwin, Okla.
Al Caldwell, Tex.
Mary Feightner, Okla.
Annie Howell, Tex.
Richard Johndrow, Okla.
Carlos Massiatte, Tex.
Mark Montague, Tex.
John Murray, Tex.
Daniel O'Neal, Tex.
Bob Pavelko, Tex.
Joe Wiser, Tex.

Exceptional Service Award

Kermit V. Bjorge, Tex.
David A. Dietsch, Tex.
Donald L. Johnson, Okla.
George C. Pankonin, Okla.
Karen S. Rankin, Tex.
Terry Thomas, Tex.

Europe

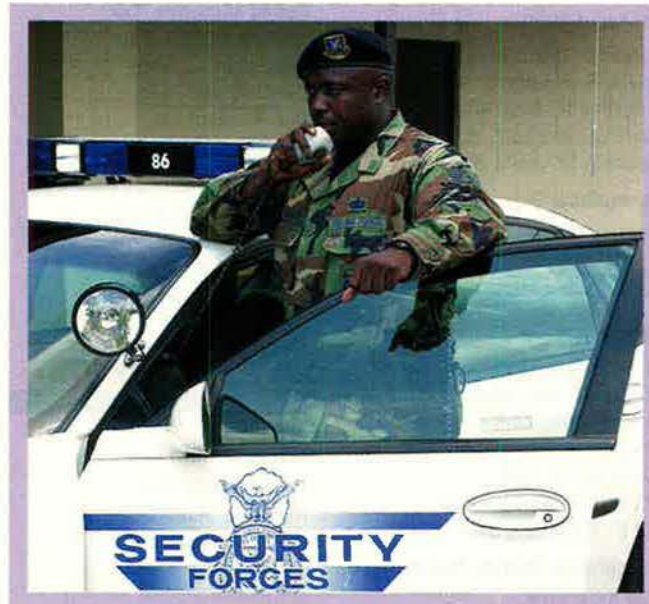
Medal of Merit

Luis A. Martinez Jr.
Robert L. Masorti Jr.

The Outstanding Airmen

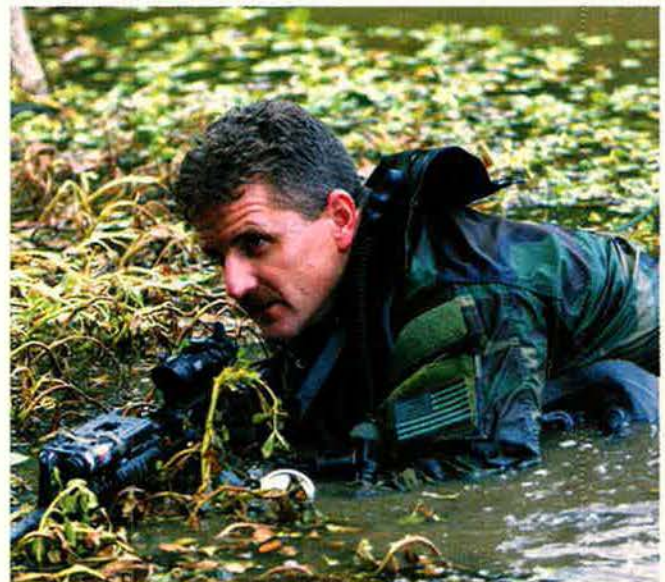
By Tamar A. Mehuron, Associate Editor

SMSgt. Edy D. Agee. Management and Systems Chief, 39th Supply Squadron, Incirlik AB, Turkey (US Air Forces in Europe)—Led the activation of a contingency supply cell following the Sept. 11 terrorist attacks. ... Planned, directed, and executed delivery of thousands of items for Operation Enduring Freedom in Afghanistan. ... Expedited fuel filter delivery to C-17s en route to Afghanistan. ... Supported Operation Northern Watch F-16 operations by timely acquisition of a halon shipment. ... Helped to cut aircraft downtime with improved tool inventory program.



SSgt. Terrence F. Carraway. Security Journeyman, 315th Security Forces Squadron, Charleston AFB, S.C. (Air Force Reserve Command)—Outstanding force protection record. ... Led force protection team during Northern Watch deployment. ... Assisted Secret Service in providing security for President Bush's visit to Charleston. ... Superb fire team leader. ... Leadership and training methods boosted performance and retention.

MSgt. Bruce W. Dixon. Special Tactics Team Leader, 24th Special Tactics Squadron, Pope AFB, N.C. (Air Force Special Operations Command)—Planned and led special tactics team on US ground operation in Enduring Freedom. ... Led five team members in a high-altitude low-opening parachute jump into Afghanistan. ... Devised new combat tactical survey techniques to assess hard surface runways and taxiways. ... Dynamic leadership helped unit earn two consecutive outstanding ratings from AFSOC inspector general team. ... Excellent strategic planner and organizer.



The Air Force Outstanding Airman award is an annual program that recognizes 12 outstanding enlisted personnel for superior leadership, job performance, community involvement, and personal achievements.

The program was initiated at the Air Force Association's 10th annual National Convention, held in New Orleans in 1956.

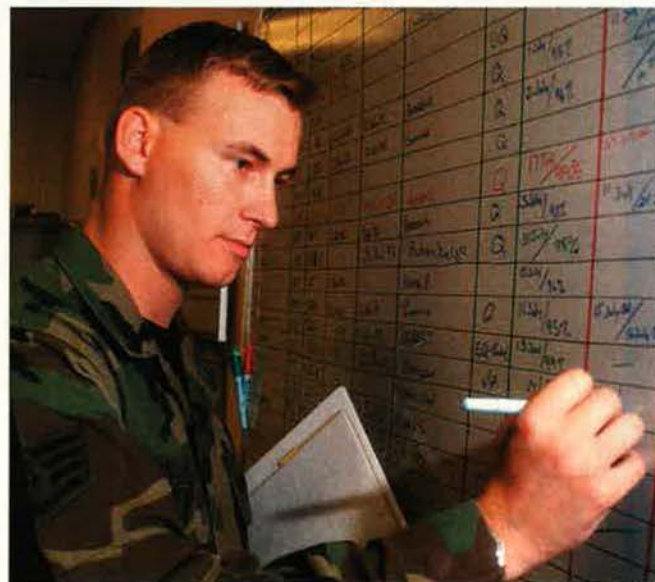
The Chief Master Sergeant of the Air Force and the command chief master sergeants from each USAF major command form the selection board. The selections are reviewed by the Air Force Chief of Staff.

The 12 selectees are awarded the Outstanding Airman ribbon with the bronze service star device and wear the Outstanding Airman badge for one year.



MSgt. Timothy K. Garland. Superintendent, AWACS Communications Flight, 752nd Computer Systems Squadron, Tinker AFB, Okla. (Air Combat Command)—Led team that, within 10 hours, installed ground-to-air communications systems for AWACS use in Enduring Freedom. ... Built crucial communications link to NATO AWACS aircraft supporting Operation Noble Eagle sorties. ... Created first group maintenance standardization evaluation program. ... Helped to improve unit productivity and reduce equipment downtime. ... Streamlined training program for radio maintenance and operators.

SrA. (now SSGT.) Brian Hamilton. Noncommissioned Officer in Charge of Weapons Standards/Evaluations, 611th Air Control Squadron, Elmendorf AFB, Alaska (Pacific Air Forces)—Evaluated teams protecting airspace over the Alaskan NORAD Region. ... Coordinated air-to-air defensive missions involving combat fighters, tankers, and AWACS aircraft. ... Selected as Operator of the Month for his Noble Eagle actions, including his handling of the largest single day volume of emergency action messages in NORAD history. ... Instructor in emergency actions qualification training.



SSgt. Michael A. Holland. Noncommissioned Officer in Charge of Resource Protection and Electronic Security, 12th Security Forces Squadron, Randolph AFB, Tex. (Air Education and Training Command)—Selected as top airman from 19th Air Force. ... Developed and carried out security plans for sensitive base facilities. ... Designed a commandwide force protection briefing. ... Used electronic sensor kits to help identify the culprit in a string of house break-ins. ... His interrogation led to suspect's confession. ... Chosen as key representative to FBI regional terrorism working group.

TSgt. Caesar Kellum. Noncommissioned Officer in Charge of Airspace Division, Southeast Air Defense Sector, Tyndall AFB, Fla. (Air National Guard)—Earned top weapons director rating in two consecutive evaluations. ... Excelled as enlisted weapons director, weapons director technician, and tracking technician. ... Monitored combat air patrols and set up scramble procedures for Noble Eagle and standardized them with FAA facilities. ... Coordinated airspace for NORAD air defense joint exercise with the Nuclear Regulatory Commission, Federal Emergency Management Agency, and law enforcement agencies.



TSgt. Rhonda K. Miller. Noncommissioned Officer in Charge of Air Defense Analysis, 324th Intelligence Squadron, Hickam AFB, Hawaii (ACC)—Led analysis on the Navy EP-3 aircraft incident with China. ... Delivered reportable data on the incident to the President and National Security Council. ... Wrote and contributed to intelligence reports for the President and Secretary of Defense on global reaction to Enduring Freedom. ... Analyzed three years of raw data in a national review of US overseas intelligence facilities. ... Managed production of key intelligence reports used to develop countermeasures for US pilots.

SSgt. Brian P. Sharman. Explosive Ordnance Disposal Journeyman, 437th Civil Engineer Squadron, Charleston AFB, S.C. (Air Mobility Command)—Chosen by AMC to deploy to Dover AFB, Del., to help process human remains recovered from the Sept. 11 terror attacks on the World Trade Center and Pentagon. ... Helped lessen impact on flight operations by taking charge of damaged guns and flares following several F-15 aircraft ground emergencies at Hickam AFB, Hawaii. ... Selected to lead multiservice teams to help enhance security at Camp David. ... Handpicked for sensitive State Department assignment.





MSgt. Taru K. Taylor. Chief, Wholesale Logistics, Ogden Air Logistics Center, Hill AFB, Utah (Air Force Materiel Command)—Selected for the wholesale logistics advanced career program. ... Directed a major annual depot repair effort at the Aircraft Directorate Avionics Shop Service Center. ... Established a new A-10 aircraft supply chain program well ahead of schedule. ... Tracked and solved a problem in getting F-16 avionics components, including recovering some parts lost in transit from suppliers.

SrA. (now SSgt.) Claudia V. Van Hassel. Mental Health Technician, 460th Medical Squadron, Buckley AFB, Colo. (Air Force Space Command)—Took responsibility beyond her rank in working as drug testing program assistant manager. ... Served as instructor and manager for suicide awareness and prevention of workplace violence programs. ... Developed program to help prepare high-risk groups, such as firefighters and medics, to handle traumatic stress.



SSgt. Alan T. Yoshida. Combat Control Craftsman, 23rd Special Tactics Squadron, Hurlburt Field, Fla. (Air Force Special Operations Command)—One of the first combat controllers to enter Afghanistan for Enduring Freedom. ... Called in numerous close air support strikes against enemy targets. ... Awarded Purple Heart for injuries suffered during ground combat. ... Key planner for controllers' predeployment actions. ... Helped integrate USAF combat aircraft missions into Special Forces fire support plans. ... Picked as STS team leader for combat search-and-rescue teams deployed to support operations in Afghanistan.

Aerospace Technology Exposition

Staff photos by Guy Aceto



The Air Force Association Aerospace Technology Exposition featured more than 100 exhibitors this year. About 8,000 visitors attended the three-day event, along with about 100 members of the media.

Futuristic unmanned aerial vehicle concepts, such as the one shown above next to the F/A-22 at Lockheed Martin's booth, were a popular draw. At right (inset), Air Force Chief of Staff Gen. John Jumper and Secretary of the Air Force James Roche officially announce the change in designation for the Raptor, from the F-22 to the F/A-22.



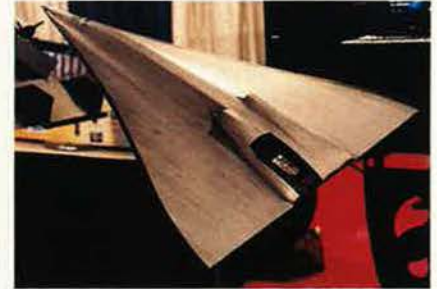
The American version of the EH-101 helicopter, US101, was presented in a joint display from AgustaWestland and Lockheed Martin. It's being considered to replace some aging USAF helicopters.

Photo by Paul Kennedy



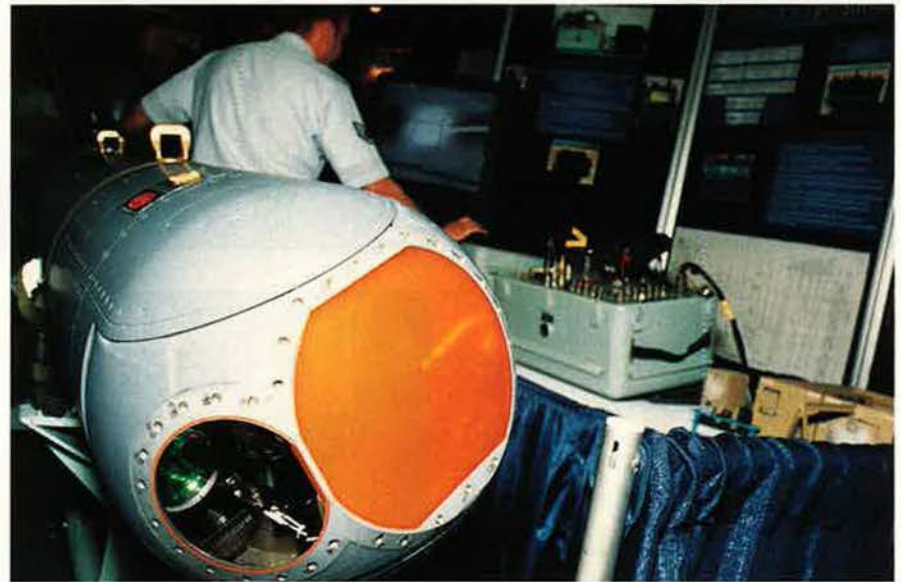
At left, a representative from the Air Force Research Laboratory describes technologies with applications in directed energy, munitions, and sensors.

The AFRL booth featured dramatic visualizations of future technology, including models of conceptual aircraft.



Displays from the Air Force Chief of Staff Team Excellence Award program were a particular highlight.

A team from the 388th Fighter Wing, Hill AFB, Utah, showcased an operational simulator and targeting pod (at right) as well as background information on the Low-Altitude Navigation and Targeting Infrared for Night Mobility Shelter set.



Interactive booths always draw a crowd. At left, Lt. Col. Christy Nolte, a DOD public affairs officer, gets hands-on experience at Boeing's tanker exhibit, which featured next-generation refueling technology.



Exposition guests included USAF members, senior military and government officials, AFA members and delegates, and industry representatives. Above, Maj. Theresa Humphrey and Col. Margie McGregor take the opportunity to examine USAF weapons systems displayed at the MBDA booth.



At right, a model JDAM munition with a wing extension kit.



Foreign officials, military personnel, and industry representatives from allied countries also attended the exposition. At left, officers from the Colombian air force talk with a contractor near the T-6A Texan II display.

The Aerospace Technology Exposition presents the best of the best in defense technology and offers visitors an excellent opportunity to learn about the direction USAF is taking in a time of transformation.

Aerospace Exhibitors in Review

Agencies and companies represented at the AFA Aerospace Technology Exposition

Air Force Chief of Staff Team Excellence Award Finalists

325th Maintenance Analysis Team
388th Fighter Wing LANTIRN Aircraft Simulator Team
A-10 Phase Flow Team
Advanced Concepts Technology Demonstration Team
Air Force Flight Test Center Base Energy Team
Air Force Manpower and Innovation Agency
Ballistic Missile Range Safety Technology Team
C-5A Torque Deck Repair Team
C-17 Electronic Testing and Evaluation of Student Training Team
Combat Intelligence Center Battle Management System Team
Core Automation Maintenance System Information Technology Team
DOD Manned Space Flight Support Office Space Shuttle Recovery/
Turnaround Team
Enhanced Electronic Countermeasures Pod Maintenance Team
F-15 Wing Shop Lean Depot Repair Team
Global Operational Environmental Review Team
GPS User Equipment Diminishing Manufacturing Sources &
Materiel Shortages Team
Hurlburt Field Deployment Processing Team
Pharmacy of the New Millennium Team
Strategic Planning Team
Team Niagara
USAFE Operational Weather Squadron Training Team
Weather Integration Improvement Team
2001 Chief of Staff Team Excellence Award Winners

Department of Defense/US Government

Air Force Command & Control, Intelligence, Surveillance, &
Reconnaissance Center/Air Force Experimentation Office
Air Force History Office
Air Force Junior ROTC
Air Force Materiel Command
Air Force Research Laboratory
Air Force Research Laboratory Information Directorate
Air Force Reserve Officer Training Corps
Air Force Special Operations Command—Deployed Status Reports
Air Force Weather
Air Intelligence Agency
Alaska's Joint Armed Services Committee
Anthrax Vaccine Immunization Program Agency—Office of the
Surgeon General
Armed Services Blood Program Office
Civil Air Patrol
Defense Acquisition University
Defense Information Systems Agency
Defense Logistics Information Service
Deployment Health Support Directorate
DOD Software Protection Initiative
Electronic Systems Center/DIWS (Air Force Public Key
Infrastructure System Program Office)
General Services Administration, Federal Supply Service,
Information Technology Acquisition Center
Missile Defense Agency
Missile Defense Targets Joint Project Office
National Imagery & Mapping Agency
National Reconnaissance Office
OSD Joint Test & Evaluation Program
Tobyhanna Army Depot
Warner Robins Air Logistics Center
White Sands Missile Range—46th Test Group

Industry Exhibitors

Aerea S.p.A.
Alaska Structures
Anteon
AP Labs
Atlantic Research
Autonomy
BAE Systems
Base-X Shelters
Bell Helicopter
Belleville Shoe Manufacturing
Boeing

Booz Allen Hamilton
California Industrial Facilities Resources
Cessna Aircraft
Convera
Druck
DuPont
DynCorp
EADS
EDO
EMS Technologies
Ensil International
Formation
GE Aircraft Engines
General Atomics/G.A. Aeronautical Systems
General Dynamics
General Dynamics Decision Systems
Goodrich—Universal Propulsion
GovWorks
Gulfstream Aerospace
Honeywell
IBM
Innovative Solutions & Support
Integrated Defense Technologies
Intergraph Solutions Group
Ixiasoft
John Deere
Johnson Controls World Services
L-3 Communications
Lear Siegler Services
Lockheed Martin
MathWorks
MBDA
Military Aerospace Technology
Military Retirement Center
Motorola
Northrop Grumman
Orbital Sciences
Parker Hannifin Aerospace
Pratt & Whitney
Pratt & Whitney Canada
Pratt & Whitney Space Propulsion
Raytheon
Rolls-Royce
RS Information Systems
Saab Avionics
Sargent Fletcher
Sarnoff
SEI Division of Simula
Smiths Aerospace
Tadpole
TEAC America
Team US101—AgustaWestland/Lockheed Martin S.I.
Telephonics
Textron Systems
Titan Systems
Toys & Models
TRW
Ultra Electronics
Vision Systems International
Vought Aircraft Industries
Wallop Defence Systems
W.L. Gore & Associates

Other Exhibitors

Air Force Aid Society
Air Force Enlisted Widows Home Foundation
Armed Forces Journal International
Army and Air Force Mutual Aid Association
Defense News
Flight International
Jane's Information Group
USAA

Air Force leaders see a need for new capabilities, organizations, and structure.

New Directions in Air and Space Power

By Adam J. Hebert, Senior Editor

Secretary James G. Roche

America's increasing reliance upon military space systems is obvious, not just to the Air Force but to potential adversaries as well. Making certain these space systems are protected from possible enemy disruption must be a top priority, said Air Force Secretary James G. Roche.

"We cannot risk the loss of space superiority," he said in remarks before the Air Force Association's 2002 National Convention. "We must and will continue our efforts to protect our space assets and prepare ourselves to counter any enemy's space assets."

Space systems, working as force multipliers, have been indispensable at the operational, tactical, and strategic level. Roche said they are no longer simply something "nice to have."

Soon, Roche predicted, space systems will grow beyond their traditional role as force enhancers and "will play a more active role in preventing, fighting, and winning wars."

Dual-use capabilities are becoming more prominent, and the line between classified and public space is becoming blurred, he explained.

The Global Positioning System is probably the clearest example. It provides precise location and timing data to US and allied military forces for navigation and weapons targeting, but it is also made freely available to the public for use by drivers, hikers, fishermen, and others.

"We must ensure our space architectures remain capable of supporting our military missions as well as our civil users," Roche said.

The Secretary also discussed acquisition issues, such as "inadequate accountability regimes." He said the Air Force is ultimately responsible for the performance of its systems, so it must take steps to ensure contractors are motivated by service requirements.

"We've recently taken a small but tangible step in that direction," he announced. Prompted by problems it encountered with the Space Based Infrared System High, the Air Force included a new provision in the contract for the next-generation environmental satellite system.

Twice a year, Roche said, the contract calls for the contractor to share Air Force program reviews with the

firm's board of directors. That way, said Roche, "we'll have a way of communicating with the board of directors whether or not these companies—which are so highly dependent on us for business—are in fact performing for us."

He called this a modest step but one that should help avert future cost problems by giving companies greater incentive to accurately forecast costs and enforce financial discipline.

However, not all cost problems can be blamed on the contractors, Roche pointed out. Fluctuating requirements and funding levels can also wreak havoc on programs. One "sad" example of this is the C-17, he said. The airlifter project started out with a requirement for 210 airplanes, was cut to 40, and has gradually been increased back up to more than 200 again. The cost of restructuring the program to accommodate all those changes along the way has been \$16 billion, a history that must not be repeated, Roche asserted.

While the C-17 is now performing "magnificently," he said, "any one of us can think of what we can do

with \$10 or \$16 billions of dollars to help our airmen.”

Gen. John P. Jumper

The Air Force needs to change its culture and some long-established career paths to fully exploit its new combat wing organization, said Gen. John P. Jumper, Air Force Chief of Staff.

To make this new concept of operations work, one of the first things the service must do is ensure it has the right individuals in charge of maintaining aircraft. “The two hardest things we do in our Air Force [are to] fly and fix airplanes,” Jumper said. There is a well-established flying career path that young pilots can follow to reach leadership positions, he said, but there is no similar path for those who fix airplanes—the maintainers.

Jumper explained that the service expects its operations group and squadron commanders to be “the epitome of leadership in the air.” They should be the best pilots.

“When I fire an ops group commander or a squadron commander, it is probably going to be for an infraction in the air, and that is where he better have his office,” he said.

However, there are no such obvious role models for maintainers. Young maintenance officers who look up the leadership chain today, Jumper said, see a logistics group commander, a person who stopped maintaining airplanes to get the other qualifications needed to hold the logistics group position.

Jumper said he wants those who fly and those who fix airplanes to have the same experience factor. “I want the ops group commander to spend his 24 years learning how to fight in the air,” he said. The same applies to maintenance officers. No one, said Jumper, will be as good at commanding a maintenance group as the person who spent 24 years in maintenance.

However, Jumper said the “hardest part” in moving the service into its new wing configuration will be filling mission support commander positions. “We have not built a person,” he said, who can be the focal point for setting up an expeditionary presence.

“Somebody has got to understand loading the airplane, in-transit visibility, how to bed them down at the

far end, how to set up the tent city, where to put the munitions,” Jumper said. Presently this set of skills doesn’t exist in one place.

As the Air Force grows its new mission support commanders, said the Chief, they “are going to be qualified to go off in a major operation and command a tent city.”

He said the campaign in Afghanistan highlighted what is needed to set up a bare base when the necessary permanent infrastructure doesn’t exist. Jumper also noted that setting up and fighting the war on terror has consumed more than 52,000 sorties, half of which have been airlift missions.

Some 13,000 sorties were tanker missions. He said it is the unmatched refueling capability of the US that makes it a global military power. Jumper said, “Tens of thousands of tanker sorties [were needed] to get us where we need to be, and it is routine, it is commonplace, people take it for granted, but we are the only Air Force in the world that can do it.”

Gen. Gregory S. Martin

The need for appropriate transformation has been brought into sharp focus by the strain of handling increased commitments with a smaller force, according to Gen. Gregory S. Martin, commander of US Air Forces in Europe.

Martin said the Air Force can’t maintain its current level of operations without structural changes, because the service finds itself tasked four times as heavily as during the Cold War, but with about 40 percent fewer people.

Airmen “are good, and they are carrying the pack,” said Martin. “But we know we can’t sustain it.”

Despite initial calls for additional end strength and force structure to support Enduring Freedom and Noble Eagle, the Administration instructed the services to seek ways to transform operations so they could make do with the personnel and equipment they have.

Defense Secretary Donald H. Rumsfeld has developed a comprehensive list of critical transformational capabilities, noted Martin.

Martin said they are simple, really: “We must be able to defend our homeland and our forces that may be deployed. ... To project and sustain

those forces in times of need. ... To deny the enemy its sanctuary. ... To protect our information operations networks and deny the enemy the use of his. ... To link our joint forces and our coalition forces in a way that they can operate at greater levels of achievement and capability than ever before. And we must be able to protect our space assets.”

Exactly how transformation will be accomplished is still being debated, he said, but whatever the direction chosen, the Air Force will be ready.

He reminded the audience that the service has reinvented itself repeatedly in its 55-year history, and wide fluctuations in manpower levels have accompanied those changes.

Lt. Gen. Daniel James III

The Air National Guard has been carrying a heavy load supporting Enduring Freedom and Noble Eagle over the past year. It needs to know what its long-term commitments are going to be in support of these missions so it can plan appropriately, according to Air National Guard Director Lt. Gen. Daniel James III.

The Guard has been instrumental in making Combat Air Patrols over US cities a reality and in providing the tanker and airlift support necessary for the global war on terror. Even before the September 2001 terrorist attacks, James said the Guard’s operating tempo was high—up to 8,000 Guardsmen were already mobilized. That figure was higher than at any time in the previous 10 years.

After Sept. 11, the Guard’s op-tempo spiked as its units flew more than 45,000 sorties for Enduring Freedom and Noble Eagle. The new duties were heaped on top of the already high operating pace.

“Although we’ve never said we can’t do both,” James said, “the question now becomes how long and how much?” The increased burden has been met largely through reserve call-ups and use of existing aircraft—both temporary solutions.

“How long can we contribute so highly to Noble Eagle and still retain our relevancy for the global missions?” asked James. “As we determine the steady-state requirements for Noble Eagle and the alert posture we must seek, it must be—and there has to be—a Total Force solution.”

The problem is not just one of

strained personnel and stressed equipment, James said. Noble Eagle requirements have affected training and how well the Guard can prepare to support Aerospace Expeditionary Force deployments.

Guard F-16 units with precision guided munitions capability aren't training for their next AEF deployments if they're flying CAP, said James. Therefore, he said, the Guard will be taking a close look at which pilots and aircraft are assigned to CAP missions so "we are not misusing or misguiding our resources" to perform Noble Eagle at the expense of combat training.

He called the present situation a great challenge and asked, "What is going to be our new steady state?"

Rebecca Grant

The Defense Department needs to set priorities in its pursuit of a "transformed" military, and one should be the F/A-22, because it can address several crucial needs at once, according to Rebecca Grant, president of IRIS Independent Research.

Several transformational capabilities are embodied in the F/A-22, which will be in ever greater demand as new air defenses and threats develop, Grant said.

Fighters are typically at the leading edge of technological advancement—the F/A-22 is no exception. Compared to legacy fighters, the Raptor's increased lethality, survivability, and sortie generation capability will allow the Air Force to defeat larger numbers of mobile and fixed targets in the early days of a battle. It will enable follow-on systems to quickly move in.

Even the stealthy B-2 bomber's effectiveness will be enhanced by F/A-22. The Raptor will help the B-2s to penetrate in daylight against the most lethal air defenses, said Grant.

The ability to efficiently destroy ground targets was a motivating factor in the Air Force's recent decision to redesignate the F-22 as the F/A-22. Ground-attack capabilities will become increasingly dependent upon information dominance, Grant noted, adding that information fusion is another advantage offered by the F/A-22.

Recent operational experience explains why: Preliminary data from Enduring Freedom showed that up to 80 percent of the targets were

"flex targets"—targets unknown to aircrews when they took off.

"That tells us that our airpower now and in the future must be transformed to take full advantage of information dominance," she said.

One key F/A-22 benefit will be its ability to serve as both a sensor and a shooter, which means it will be able to quickly defeat emerging targets. Data links will enable the F/A-22 to share intelligence with other aircraft, making the Raptor a force multiplier.

How many F/A-22s are needed remains a contentious issue. Grant argues that one squadron of 24 combat-coded Raptors is needed for each Aerospace Expeditionary Force,

yielding a requirement of 382 aircraft when attrition, backup, test, and training fighters are factored in. A smaller buy threatens to make the F/A-22 another low-density, high-demand asset.

With its advanced sensors and high speed, though, the F/A-22 can also serve a critical homeland defense role, especially with the rise of new threats, such as cruise missiles. Assigning F/A-22s to continuous Combat Air Patrols would require at least 192 more combat Raptors, said Grant.

She added, "Covering all risks simultaneously requires at least 432 combat-coded F-22s," which translates to a total buy of more than 700 aircraft. ■

On the Ground With a Combat Controller

Air Force special operators in Afghanistan were heavily tasked with a series of surveillance and combat missions culminating in key roles during Operation Anaconda, according to Air Force Reserve Command combat controller TSgt. James Hotaling.

Assigned to a coalition special forces team, one of Hotaling's first tasks was to gather intelligence on a suspected al Qaeda chemical weapons plant. His team, which was inserted into the area by helicopter, drove about 12 miles on four-wheel All-Terrain Vehicles, then walked to an observation location.

"We are there for about two days, ... watching the bad guys, ... and lo and behold, a bedouin walks right up to our encampment," said Hotaling. After the team sent him away, said Hotaling, he ran to the local village to tell the militia.

So Hotaling performed his first escape and evade mission within a week of being in Afghanistan. "We were able to get back to our ATVs, and we were being chased by four Toyota 4Runners that had .50-caliber machine guns mounted on the back of them," he said.

A Navy P-3 surveillance airplane aided their escape, directing the team to safety, said Hotaling. "We later [called in] a direct-action mission on that chemical production facility," he added.

Hotaling also received help from above during Anaconda—this time from a Predator unmanned aerial vehicle. He said he was part of a control party directed to "catch the squirters." When coalition troops engaged al Qaeda forces in the mountains, the team found itself about five miles south of the Army's 10th Mountain Division units, which were pinned down by unexpectedly heavy al Qaeda resistance in the operation's opening hours.

"I am too far away to call in any close air support," he said, as he showed photos of the area to the convention audience. The team's plan to be relocated by helicopter was scuttled after a surface-to-air missile threat emerged in the valley. They had to walk to a better position.

"Tactically, it was everything you would not want to do," Hotaling explained. The team had to climb 1,000 feet during a daylight "forced march" of more than three miles—through enemy territory. Further, for this mission, each team member was carrying about 143 pounds of gear. The altitude was about 10,000 feet. "That is completely unacceptable," he said, adding that Special Operations Command is trying to get lighter equipment to the field.

But the team had one major advantage, Hotaling noted. "We had the Predator, and what he was able to do for us that day was incredible," he said. "The Predator was actually my point man" and directed the team to safety.

Once established at a new observation point, Hotaling was able to work in conjunction with other combat controllers to call in air support from Air Force A-10 attack aircraft, AC-130 gunships, and other aircraft that ultimately turned the tide of the battle. (See "The Airpower of Anaconda," September 2002, p. 60.)



AFA Councils



Air National Guard Council

Cross

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 (Liaison)
 CMSgt. Robert Baggstrom (Ret.)

CMSgt. Lori Casucci
 Capt. Michael Cavender
 SMSgt. Kevin Gadd
 SMSgt. Larry Harris
 Maj. Randy Johnson
 Col. Robert Newman (Vice
 Chairman)
 Lt. Col. Craig A. Noll
 SSgt. Peter Terry
 Brig. Gen. David A. Brubaker
 (Advisor)



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 Barbara Barger
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Rodriguez-Rey

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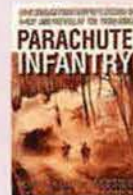
Air Combat Legends, Vol. II. Nicolas Trudgian. Howell Press, Charlottesville, VA (800-868-4512). 96 pages. \$50.00.



Flying Higher: The Women Airforce Service Pilots of World War II. Wanda Langley. The Shoe String Press, North Haven, CT (203-239-2702). 132 pages. \$25.00.



Parachute Infantry: An American Paratrooper's Memoir of D-Day and the Fall of the Third Reich. David Kenyon Webster. Dell Publishing, New York (800-726-0600). 379 pages. \$12.95.



The Air Force. Gen. James P. McCarthy, USAF (Ret.), ed. Publishers Group West, Berkeley, CA (800-788-3123). 368 pages. \$75.00.

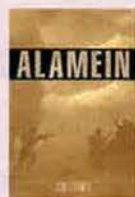


German Starfighters: The F-104 in German Air Force and Naval Air Service. Klaus Kropf. Specialty Press Publishers and Wholesalers, North Branch, MN (800-895-4585). 176 pages. \$29.95.



Red Sky in the Morning: The Battle of the Barents Sea, 31 December 1942. Michael Pearson. Stackpole Books, Mechanicsburg, PA (800-732-3669). 154 pages. \$24.95.

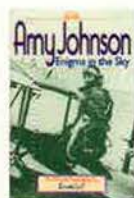
Alamein. Jon Latimer. Harvard University Press, Cambridge, MA (800-405-1619). 400 pages. \$27.95.



Iraq's Military Capabilities in 2002: A Dynamic Net Assessment. Anthony H. Cordesman. Center for Strategic and International Studies, Washington, DC (202-887-0200). 100 pages. \$21.95.



Scourge of the Swastika: A Short History of Nazi War Crimes. Lord Russell of Liverpool. Stackpole Books, Mechanicsburg, PA (800-732-3669). 259 pages. \$34.95.



Amy Johnson: Enigma in the Sky. David Luff. Stackpole Books, Mechanicsburg, PA (800-732-3669). 368 pages. \$24.95.



The Knights of Bushido: A Short History of Japanese War Crimes. Lord Russell of Liverpool. Stackpole Books, Mechanicsburg, PA (800-732-3669). 335 pages. \$34.95.



Third Reich Victorious: Alternate Decisions of World War II. Peter G. Tsouras, ed. Stackpole Books, Mechanicsburg, PA (800-732-3669). 256 pages. \$34.95.

And Nothing Is Said: Wartime Letters, August 5, 1943–April 21, 1945. Michael N. Ingrisano Jr. Sunflower University Press, Manhattan, KS (800-258-1232). 520 pages. \$22.95.



Kosciuszko, We Are Here!: American Pilots of the Kosciuszko Squadron in Defense of Poland, 1919–1921. Janusz Cisek. McFarland & Co., Jefferson, NC (800-253-2187). 248 pages. \$45.00.



Tritium on Ice: The Dangerous New Alliance of Nuclear Weapons and Nuclear Power. Kenneth D. Bergeron. The MIT Press, Cambridge, MA (800-405-1619). 234 pages. \$24.95.



Fleet Air Arm: British Carrier Aviation, 1939–1945. Ron Mackay. Squadron/Signal Publications, Carrollton, TX (800-527-7427). 64 pages. \$14.95.



The Lessons of Afghanistan: War Fighting, Intelligence, and Force Transformation. Anthony H. Cordesman. Center for Strategic and International Studies, Washington, DC (202-887-0200). 168 pages. \$21.95.



Yakovlev's Piston-Engined Fighters, Red Star Vol. V. Yefim Gordon and Dmitriy Khazanov. Specialty Press Publishers and Wholesalers, North Branch, MN (800-895-4595). 143 pages. \$29.95.

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By Frances McKenney, Assistant Managing Editor

AEF Names Teacher of the Year

The Aerospace Education Foundation named Jack D. Howell II as the 17th recipient of its Christa McAuliffe Memorial Award for Teachers.

A retired Marine who heads a Marine Corps JROTC program, Howell received the national-level award honoring him as AEF's teacher of the year at the Air Force Association's National Convention in September.

Howell has taught for nine years at Jean Ribault Senior High School in Jacksonville, Fla. He combined the school's aviation program with MC-JROTC to create a college preparatory military science and aviation magnet program. Along with field trips to Cape Canaveral and the Kennedy Space Center, Howell's program offers students flight simulator training, military aircraft orientation flights, and a chance to fly a Cessna 172 with a certified flying instructor.

Howell's nomination packet for the McAuliffe award was two inches thick and contained endorsements from test pilot A. Scott Crossfield to Marine Corps Pfc. David R. Hagelstein II, one of Howell's former students.

Howell retired as a colonel in 1990 after serving for 24 years. He earned a bachelor's and a master's degree in education and, after retiring, a Ph.D. in counseling.

An Air Force Memorial Update

The Air Force Memorial Foundation's Board of Trustees formally declared on Sept. 18 that the foundation has enough funds to begin construction of the memorial.

This launches the site preparation process that should lead to construction beginning in September 2004 at a site near a promontory point of land overlooking the Pentagon.

The foundation continues to solicit contributions for the estimated \$6 million still needed for the memorial.

Capitol Hill Gathering

AFA's Congressional education program on Capitol Hill in September highlighted USAF task forces and the F/A-22 as key to the service's transformation.



Photo by Paul Kennedy

AEF's Teacher of the Year, Jack Howell, chats with Marguerite Cummock (dressed for AEF's carnival) from the Brig. Gen. James R. McCarthy (Fla.) Chapter, which nominated him for the award. "The award was important not just for me," Howell said. "It validates the quality of the program at our high school."

Twenty-four members of Congress attended this gathering. It was the latest in AFA's series of programs that bring Air Force issues to the attention of Congress in an informal setting.

Storyboards arranged around the Rayburn Foyer in the Rayburn House Office Building explained USAF's air and space expeditionary concept of operations and the six task forces supporting it: global strike; homeland security; nuclear response; global response; global mobility; and space and C⁴ISR.

House Armed Services Committee members at the Sept. 4 reception were Reps. James V. Hansen (R-Utah), Curt Weldon (R-Pa.), Roscoe Bartlett (R-Md.), Var Hilleary (R-Tenn.), Walter Jones Jr. (R-N.C.), James A. Gibbons (R-Nev.), Robin Hayes (R-N.C.), Ken Calvert (R-Calif.), Jeff Miller (R-Fla.), Gene Taylor (D-Miss.), Ciro D. Rodriguez (D-Tex.), and Joe Wilson (R-S.C.).

Reps. Rodney Frelinghuysen (R-N.J.) and James P. Moran (D-Va.), both House Appropriations Commit-

tee members, were on hand. Judy Istook represented her husband, Rep. Ernest Istook Jr. (R-Okla.), who is also on the committee.

Reps. Cliff Stearns (R-Fla.), Shelley Berkley (D-Nev.), and Henry E. Brown Jr. (R-S.C.), all on the House Veterans' Affairs Committee, attended the reception.

Members of the House Air Force Caucus who were there: Rep. Sam Johnson (R-Tex.), Paul E. Gillmor (R-Ohio), and Roger Wicker (R-Miss.). Gibbons, Hansen, and Hilleary also belong to the caucus. Stearns is the caucus co-chairman.

Other Congressmen among the guests were Howard Coble (R-N.C.), Timothy V. Johnson (R-Ill.), Dale E. Kildee (D-Mich.), and Thomas C. Sawyer (D-Ohio).

Air Force Secretary James G. Roche headed a large group of nearly 30 USAF senior officers and more than 20 Air Force civilian leaders at the program.

John J. Politi, then AFA National President, was among those representing the association.

Learning Experience

When the touring company for "Charlie Victor Romeo" came to the University of Florida in October, the **Gainesville Chapter** helped sponsor a seminar to discuss issues raised by the award-winning off-Broadway play.

"Charlie Victor Romeo" places the audience in the cockpit during six airline emergencies that actually took place, including the July 1989 United Airlines DC-10 crash at Sioux City, Iowa. The play's cast members speak lines taken almost directly from black-box transcripts. The play opened in 1999 at a small theater in New York and won four awards the next year. Last year, the Air Force videotaped the drama for use in its crew resource management training program.

To build on the play's eight performances in Gainesville, the AFA chapter joined the university and the Florida Institute of Technology in organizing a seminar on human factors in flight; situational awareness; psychological stress; and aircraft accident investigation. The seminar took place the morning after the play's first performance at the university.

Kerry A. Crooks, chapter treasurer, served as moderator for the seminar's six panelists. Chapter President John M. Holley also participated.

Three Times More

The **Scott Memorial (III.) Chapter** tripled the amount of money it usually raises through its golf tournament, because it combined the fundraiser with Air Mobility Command's annual Industry Day at Scott AFB, Ill., in September.

Chapter President Walter J. Evans said the scholarship money-maker brought in more than \$9,000.

The chapter in turn increased the number of scholarships it granted, to three \$1,000, five \$500, and eight \$150 awards. Evans said every qualified applicant—that is, an AFA member or dependent—received some financial support. He added that the funds left over would be used to increase the number of chapter-sponsored Visions of Exploration classes and to broaden the chapter's awards program for Scott personnel.

Industry Day—which actually spans two days—gives AMC directorates a forum to brief members of the defense industry and academia on air mobility issues. At the command's invitation, the chapter added its golf outing to the list of this year's symposium activities.

More than 150 guests attended the presentations by senior AMC officers. More than 100 entered the golf tour-



John Politi (left), then AFA National President, and Charles Zimkas, Colorado state president, present Sandy Dahl with an AEF Doolittle Fellowship plaque at the state's convention. The fellowship honored her husband, pilot of the airliner that crashed in Pennsylvania after being hijacked by terrorists on 9/11.

nament, which had 17 corporate sponsors, reported Evans. He and Chapter Vice President Col. Thomas J. Stark and member Capt. Jeffry W. Glenn handled most of the tournament's logistics.

Convention in Colorado

United Airlines Capt. Jason Dahl, whose aircraft was hijacked Sept. 11 and crashed in Somerset, Pa., after passengers resisted the terrorists, was named an AEF Doolittle Fellow at the Colorado State Convention. Dahl had lived in the Denver area.

The **Mile High Chapter** hosted the convention in Denver in August.

John J. Politi, then AFA National President, and Charles P. Zimkas Jr., state president, presented the Doolittle award plaque to Sandy Dahl. Her 43-year-old husband was flying the 757 from Newark, N.J., to San Francisco with 43 others on board. Four hijackers took control of the airplane near Cleveland. Several passengers fought back, and the aircraft crashed in a field in Pennsylvania.

At the Colorado convention, other award recipients that evening were: Ted Kerr, state AFA member of the year; the **Lance P. Sijan Chapter**, chapter of the year; and 10 service members and civilians, including then-SrA. Claudia V. Van Hassel. She is one of USAF's 12 Outstanding Airmen of the Year and is stationed at Buckley AFB, Colo., with the 460th Medical Squadron.

Zimkas was re-elected state president in the convention's business sessions, as was Charles L. Sell as trea-

surer. SMSgt. Brad Steininger will serve as secretary. All three are from the Sijan Chapter. David W. Thomson of the **Mel Harmon Chapter** was elected VP.

Convention in Pennsylvania

In the Keystone State, the **Lehigh Valley Chapter** welcomed state convention guests with a pool party—appropriate for a gathering at the height of summer in Pennsylvania.

Edith G. Laver was keynote speaker for the convention's awards luncheon the next day. Granddaughter of Gen. Carl A. "Tooney" Spaatz, she gave a personal look at USAF's first Chief of Staff, speaking about his life and responsibilities.

The luncheon's award recipients included SSgt. Daniel J. Kennedy, 258th Air Traffic Control Squadron, Johnstown, Pa., who was named outstanding Air National Guardsman, and SMSgt. Paul C. Jordan. He is from the 911th Airlift Wing, Pittsburgh Airport, Pa., and was named outstanding Reservist.

An evening Aerospace Banquet turned the spotlight on the **Joe Walker-Mon Valley Chapter** as Chapter of the Year and Thomas Baker from the **Altoona Chapter** as state Man of the Year.

Baker was also elected state treasurer in the convention's business session. Others elected as state officers: Edmund J. Gagliardi of the **Eagle Chapter**, president, and David L. DuBarr and Karen G. Hartman, both of the Joe Walker-Mon Valley Chapter, VP and treasurer, respectively.

AFA/AEF National Report

Insight on Enduring Freedom

The **Prescott and Barry Goldwater Chapters** in Arizona held a joint meeting at Northern Arizona University in Flagstaff in September, with Kenny Linn from Northrop Grumman's Air Combat Systems Division as guest speaker.

He presented a briefing on B-2, Global Hawk, and F/A-18 operations in Afghanistan. Prescott Chapter President Thomas E. Rowney said Linn spoke about the challenge of conducting air operations in a landlocked country. Linn said Enduring Freedom was a test bed for some of the latest technology and described how defense contractors assisted the military with high-technology systems.

Linn, who retired as a Navy captain in 1998, also talked about the B-2 sorties from Whiteman AFB, Mo., carrier-based aircraft strikes carried out with USAF air refueling support, and the effectiveness of joint operations—"emphasis joint," Rowney said.

The meeting was held at the university specifically for the benefit of AFROTC cadets there, noted Rowney. He added that Prescott Chapter members were joined by about a dozen from the Goldwater Chapter, including President Duane C. Wyles.

Karl A. Miller, 1931–2002

Karl A. Miller, Northeast Region president, died in his sleep Sept. 18 in Washington, D.C., where he had been attending the AFA National Convention. He was 71 years old.

A resident of Yonkers, N.Y., he was born in Reading, Pa., and earned a bachelor's degree in engineering from Pennsylvania State University. He also earned a master's degree in management from the Massachusetts Institute of Technology.

Miller served in the Navy from 1949 to 1953. He worked for General Electric early in his civilian career and had retired as a management consultant.

He had been an AFA member since 1982 and was instrumental in renaming the Westchester Falcon (N.Y.) Chapter in 1998 as the **Gen. Carl A. "Tooy" Spaatz Chapter**. Miller had served since September 2001 as region president for the area encompassing New Jersey, New York, and Pennsylvania.

More AFA/AEF News

■ US Rep. F. Allen Boyd Jr. (D-Fla.) was guest speaker at the **Col. H.M. "Bud" West (Fla.) Chapter's** meeting in August. Boyd is a member of the House Appropriations Com-



Photo by John Koplan, Island Photography

AFA National President Pat Condon runs past Air Force Materiel Command headquarters at Wright-Patterson AFB, Ohio, during the Air Force Marathon on Sept. 21. Condon began running such 26.2-mile road races six years ago. This was his 22nd marathon, his fifth this year—and he signed up for another one to be held the very next weekend in his home state of Utah.

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mittee. In the audience were 60 cadets from Florida State University, Amos P. Godby High School in Tallahassee, and the Civil Air Patrol Tallahassee Composite Squadron. As part

of the meeting, new chapter officers were installed: Wayne Coloney, president; Kevin M. Vislocky, VP; John Schmidt, secretary; and M.F. Caruthers, treasurer. ■

Unit Reunions

reunions@afa.org

20th FW/FG Assn (1930s-present). Sept. 24-27, 2003, in Dayton, OH. **Contact:** Dennis Schaan, 5645 Nicole Ct., Las Vegas, NV 89120 (dschaan@compuserve.com).

55th Strategic Recon Wg. Sept. 3-6, 2003, in Fairborn, OH. **Contacts:** Jack Kovacs, 564 Sartell Dr., Fairborn, OH 45324 (J1a2c3k@aol.com) or Bill Ernst, 410 Greenbriar Ct., Bellevue, NE 68005 (BillErnst@aol.com).

391st BG Assn (WWII). May 22-24, 2003, in San Antonio. **Contact:** Clyde Kirkbride, 2015 Iowa St., Brookings, SD 57006 (605-692-2555) (ckirk@itctel.com).

505th BG. Twentieth AF, Tinian Island (WWII). May 26-30, 2003, at Loews Annapolis Hotel in Annapolis, MD. **Contact:** Sam Greenwood, 129 Wye River Dr., Queenstown, MD 21658 (410-827-6331) (fairdinkum@friend.ly.net).

551st, 552nd, 966th, 79th, Det. 1, 20th ADS AEW&C, and 553rd Recon. May 18-21, 2003, at the Silver Legacy Resort in Reno, NV. **Contact:** Tony Praxel (916-487-1975) (tpraxel@aol.com).

862nd Engineers Aviation Battalion (1942-57). May 25-29, 2003, at the Hyatt Regency Islandia in San Diego. **Contact:** Sherl Hasler, R.R. 7, Box 1111, Bloomfield, IN 47424 (812-384-4666).

Niigata AB, Japan, all personnel (1945-57). May 2-4, 2003, at Wright-Patterson AFB, OH. **Contact:** Charles Sensel, 3624 Belvoir Dr., Rockford, IL 61107 (815-399-3511) (ssensel@jvlnet.com).

OCS Classes 56-D and 57-A. May 28-June 1, 2003, in Albuquerque, NM. **Contact:** Dick Cullom, 2305 Carver Dr., Roswell NM 88203 (505-622-3045) (dcullom@dfn.com).

Seeking military and civilians who were stationed at **Cannon AFB, NM**, for a reunion Oct 1-4, 2003. **Contacts:** Virginia Murphy (505-763-3356) or Pat Miller (505-763-6419) or Marian Knapp (505-266-6621).

Seeking members of **Pilot Tng Class 54-N** for a reunion in the summer of 2004. **Contacts:** Jerry Fowler, 4454 Melissa Ln., Dallas, TX 75229 (214-352-2563) (jfwler2@airmail.net) or Dick Siegman, 1323 Big Pine Dr., Valrico, FL 33594 (813-681-9601) (dicknick@juno.com). ■

Mail unit reunion notices four months ahead of the event to "Unit Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.



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US Postal Service Statement of Ownership, Management, and Circulation

(Required by 39 USC 3685)

1. Publication Title: Air Force Magazine
2. Publication No.: 0730-6784
3. Filing Date: Oct. 20, 2002
4. Issue Frequency: Monthly
5. No. of Issues Published Annually: 12
6. Annual Subscription Price: \$36
7. Complete Mailing Address of Known Office of Publication (not printer): 1501 Lee Highway, Arlington, VA 22209-1198
8. Complete Mailing Address of Headquarters or General Business Office of the Publisher (not printer): 1501 Lee Highway, Arlington, VA 22209-1198
9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: Publisher: Donald L. Peterson, 1501 Lee Highway, Arlington, VA 22209-1198; Editor: Robert S. Dudley, 1501 Lee Highway, Arlington, VA 22209-1198; Managing Editor: Suzann Chapman, 1501 Lee Highway, Arlington, VA 22209-1198
10. Owner: Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198
11. Known Bondholders, Mortgages, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of bonds, Mortgages, or Other Securities: None
12. Tax Status (For completion of nonprofit organizations authorized to mail at special rates): Has not changed during preceding 12 months
13. Publication Title: Air Force Magazine
14. Issue Date for Circulation Data Below: October 2002

15. Extent and Nature of Circulation	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest to Filing Date
a. Total No. of Copies (Net press run)	146,295	148,723
b. Paid and/or Requested Circulation		
(1) Sales Through Dealers and Carriers, Street Vendors, and Counter Sales (Not mailed)	792	630
(2) Paid or Requested Mail Subscriptions (Include advertiser's proof copies and exchange copies)	135,632	138,731
c. Total Paid and/or Requested Circulation (Sum of 15b(1) and 15b(2))	136,424	139,361
d. Free Distribution by Mail (Samples, complimentary, and other free)	492	492
e. Free Distribution Outside the Mail (Carriers or other means)	1,908	1,909
f. Total Free Distribution (Sum of 15d and 15e)	2,400	2,401
g. Total Distribution (Sum of 15c and 15f)	138,824	141,762
h. Copies not Distributed		
(1) Office Use, Leftovers, Spoiled	7,392	7,471
(2) Returns from News Agents	—	—
i. Total (Sum of 15g, 15h(1), and 15h(2))	146,216	149,233
j. Percent Paid and/or Requested Circulation (15c/15gx100)	98.27	98.31

16. Publication of Statement of Ownership Required. Will be printed in the November 2002 issue.
17. Signature and Title of Editor, Publisher, Business manager, or Owner: Robert S. Dudley, Editor in Chief, (signed) Date: 10-4-02

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Pieces of History

Photography by Paul Kennedy

Sabres in Korea



During the Korean War, the Soviet-built MiG-15 posed a serious threat, but the US Air Force countered with its own swept-wing jet fighter, the F-86, shown here. The Sabres arrived in Korea in December 1950, about six months into the war. Their first pilots in Korea were World War II veterans, many of them aces. This F-86 on display at the USAF Museum bears markings identical to the

Sabre flown by Lt. Col. Bruce H. Hinton, who shot down a MiG-15 on Dec. 17, 1950. It was the first MiG kill for the F-86. By the end of the Korean War, the Sabre had racked up a 10-to-one kill ratio.

Courtesy US Air Force Museum, Wright-Patterson AFB, Ohio

Above and Beyond

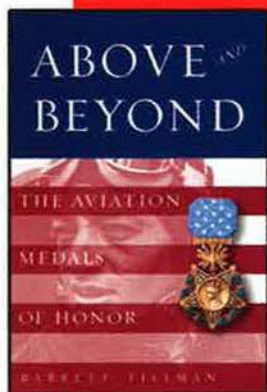
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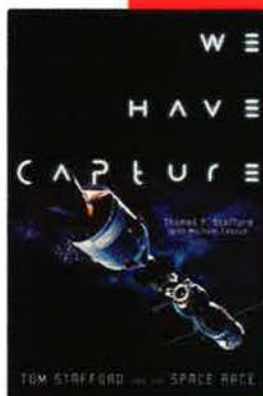
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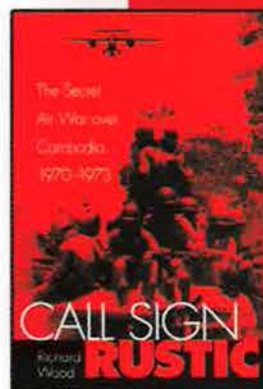
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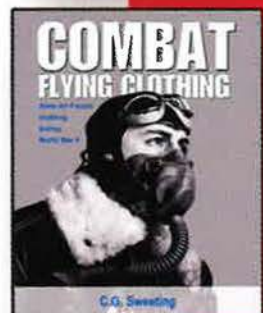
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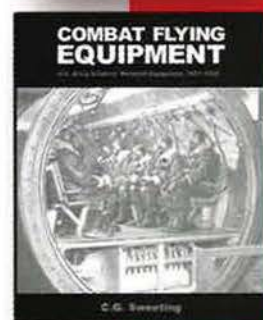
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