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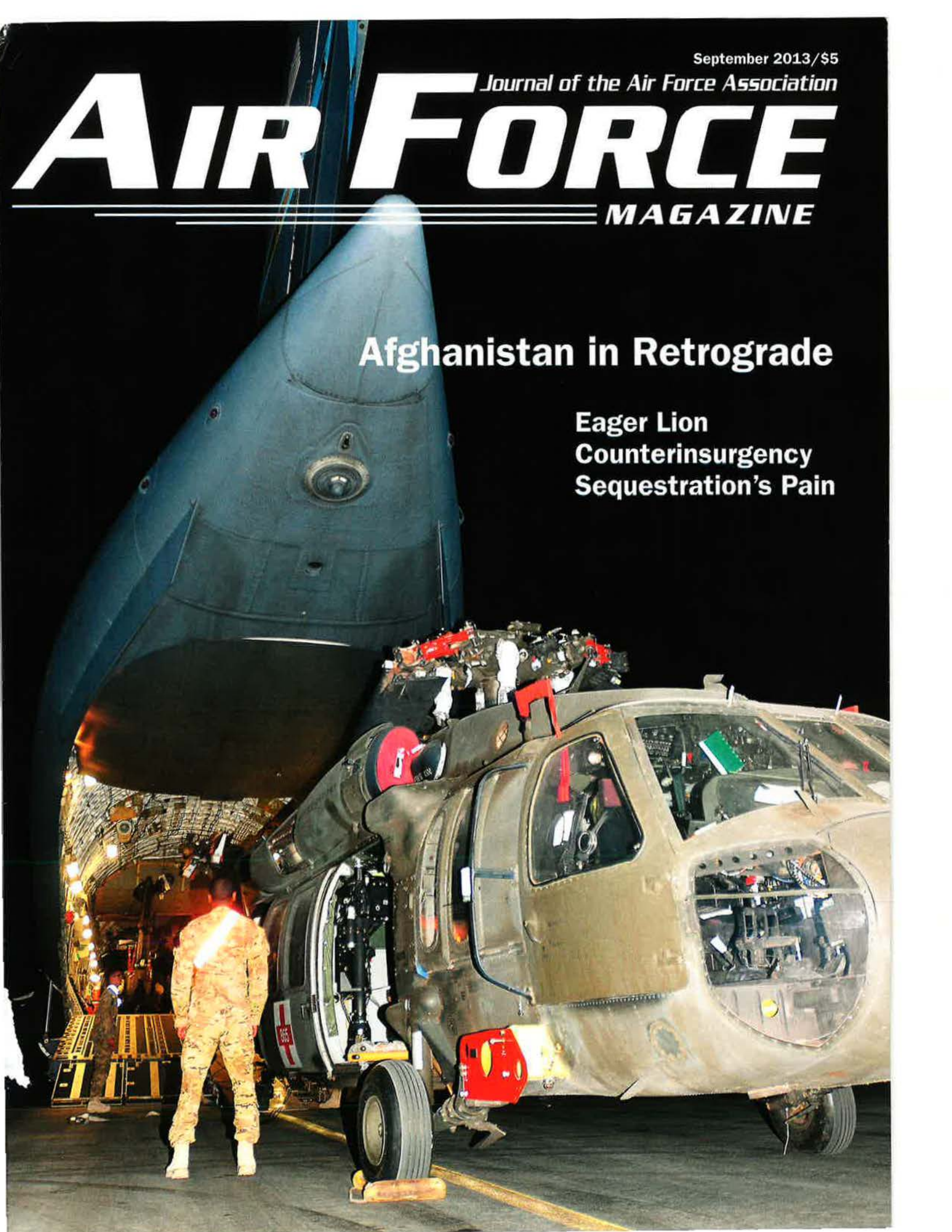
Journal of the Air Force Association

AIR FORCE

MAGAZINE

Afghanistan in Retrograde

**Eager Lion
Counterinsurgency
Sequestration's Pain**



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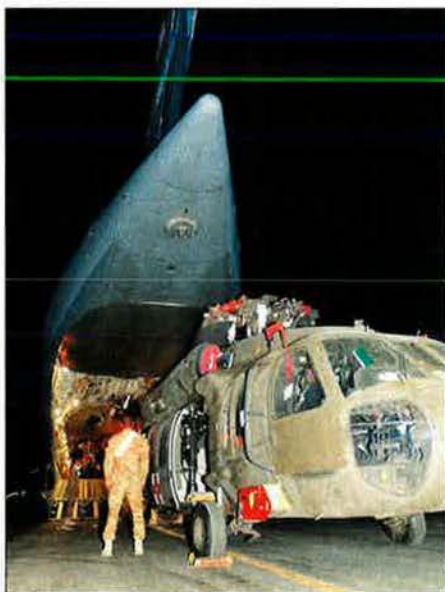






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About the cover: Soldiers load materiel into a C-17 at Kandahar Airfield, Afghanistan. See "Afghanistan in Retrograde," p. 40. US Army photo by Sgt. Daniel Schroeder.



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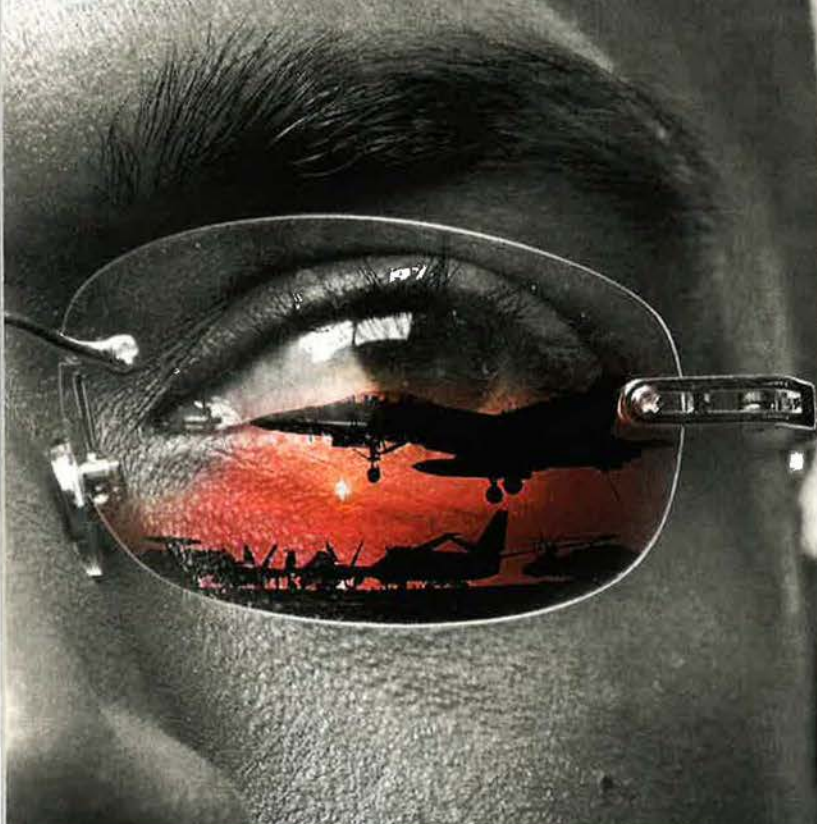
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Sequestration's Destructive Decay

IN APRIL, to meet congressionally mandated budget targets, the Air Force stood down 17 squadrons' worth of combat aircraft and shifted another 10 squadrons to a bare-bones readiness level. The majority of those affected were frontline fighter and bomber units belonging to Air Combat Command, Pacific Air Forces, and US Air Forces in Europe.

In July, the Air Force received permission to reprogram funds from within its accounts and promptly lifted the groundings, putting the affected squadrons back into the air again.

Problem solved, right?

Not even close.

After three months on the ground, the affected airmen and their equipment were left completely ineffective. Pilots didn't fly, crew chiefs were idled, fuels airmen didn't refuel aircraft. Training events large and small—including Red Flag exercises and even a Weapons School course—were canceled. Aircraft weren't maintained, spare parts weren't available, and aircraft were barely moved around enough to prevent flat spots in their tires.

This gave airmen an opportunity to catch up on their course work, simulator training, and perhaps even their sleep—but it's no way to run a combat air force. The grounded units slowly but surely lost the ability to go to war.

On Day 1 there was no effect. By Day 90, more than a dozen squadrons had no meaningful capability and others were at such a basic level they would not survive a war. This isn't fixed overnight.

USAF is fully supporting its steady-state requirements, as it did during the stand-down. Units supporting the war in Afghanistan, other "named" operations, nuclear missions, high-risk combatant command taskings, and air defense of the United States were essentially the only units protected from sequestration's across-the-board budget ax.

The standing requirements essentially sucked down all of USAF's sequestration-level operation and maintenance funding, leaving nothing in reserve.

One thing the Air Force has learned repeatedly over the decades: Unknowns can literally kill you. That is why the service eschews tiered readiness and keeps units trained and ready to go at a

moment's notice. The Global Response Force in particular offers packages that can quickly be deployed in the event of a crisis.

As 17 squadrons atrophied and others decayed to a "basic mission capable" level not suitable for war, USAF's ability to provide a Global Response Force died off. By the time the flying hour funding was restored in mid-July, Air Combat Command had half a bomber squadron's worth of GRF capability left.

The grounded squadrons are flying again, but the problem is not solved. Thirteen of the 17 mothballed units

This is not over. The problems have just begun.

spent more than 90 days on the ground. Officials say three months represents a tipping point. Up to then, skills are regained about as quickly as they are lost, but when airmen and aircraft surpass 90 days on the ground, recovery becomes slower.

At summertime readiness levels, even the recent Libya operation would have been impossible unless USAF pulled units from other frontline locations directly supporting combatant command missions. It will be early November before the combat units are fully capable again. If the Air Force is soon called to go into action over Syria, Iran, North Korea, or elsewhere it will have to pull units from Afghanistan or the Pacific.

The nation is currently missing its airpower bench. This creates "risk," but let's be real here—risk can mean dead troops and needlessly destroyed equipment.

So what's next? A slow climb back. The Air Force needs to be deliberate this fall. There will be temptations from the Pentagon down to the individual airman to go too fast. B-1 or F-15E operations, however, are not like riding a bike. Skills must be rebuilt slowly and methodically so that rusty airmen and unused aircraft don't lead to crashes and deaths.

It is important to note USAF was not given additional money to resume flying—it was only given permission to move funds among various sequestration-ravaged accounts to meet an immediate readiness need.

Funding shortages prevent the Air Force from fully implementing the training needed for the future.

For example, the service's "Wild Weasel" F-16CJs charged with the suppression of enemy air defenses have been heavily tasked with close air support missions in Afghanistan. High-intensity SEAD training fell by the wayside, and under sequestration it will be extraordinarily difficult to build it back up. This capability will be vital if the Air Force is called into action against a nation with advanced integrated air defenses, such as Syria.

The new fiscal year will begin at about the same time USAF's grounded combat units get back up to speed. What will another year of sequestration look like? More of the same, but with compounding effects.

There will not be enough money for readiness accounts, nor will there be enough to pay to design, develop, test, and install new equipment needed to keep today's aircraft relevant and survivable.

Sequestration's mandatory budget shortfalls mean the Air Force will have to cannibalize its future to pay for the present. Modernization and recapitalization will inevitably be gouged to pay today's bills. The current combat fleet is already older than it has ever been, and this summer's cash flow problems threw a new wrench into readiness.

Big-ticket recapitalization programs, such as the F-35 fighter, will be tempting targets under forced austerity. Even small cuts in quantities will force legacy aircraft to remain in service even longer. The Air Force faces years of sequestration-level funding to pay for a force that is already too small for its taskings. USAF is prohibited from closing excess bases and is frequently blocked from retiring aircraft. The situation is untenable.

Sequestration is not over, and its problems may have just begun. Unless Congress acts to end this budget nonsense, the nation will ultimately pay more for an Air Force that is less safe, less relevant, and less capable. In the meantime, let's all hope that none of America's adversaries get overly adventurous while the combat air forces are still rebuilding their capabilities. ■



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A Bigger Fix Needed

As a retired marine who was a military lawyer in the Regular Marine Corps from 1981 to 1992 and in the Reserve Marine Corps from 1993 to 2009, I have the following comments about Adam Hebert's "Do the Right Thing" editorial [*July, p. 4*].

He is of course correct that we should not have to tell military members not to mistreat each other, including by sexual or other harassment, just as we should not have to tell them not to point loaded weapons at each other. Human nature being as it is, however, the message about proper treatment among the ranks must be "transmitted in the clear" repeatedly just as we constantly emphasize firearms and aviation safety.

But having been both a prosecutor and a defense counsel, I noted that the editorial's focus was almost exclusively on the crime—sexual harassment—while minimizing discussion of fairness of process for those accused of such a crime. (Readers should understand that by advocating fairness of process for an accused I am NOT endorsing sexual harassment or any crime.)

When we lose sight of and ignore fairness in investigation and adjudication processes, we have "show trials," and we all know various countries where those were practiced, and some where they still are. In short, the mere accusation of sexual harassment—or any crime—is not proof that a crime was committed.

The other problem that must be addressed is command influence: a commander unlawfully influencing the finding or sentence of a judicial or nonjudicial disciplinary proceeding. The Uniform Code of Military Justice forbids command influence; the highest military court referred to command influence as the mortal enemy of military justice, or words to that effect.

In the end, we must judge our disciplinary system by fairness of process, not by result. How, given the same facts, can we on the one hand rejoice if we like the finding, yet on the other hand, condemn if we do not like the finding?

We may not like a Red Sox win over the Yankees, but we are fairly certain that the game was played with officials and teams acting as fairly as humanly possible.

Col. Charles A. Jones,
USMCR (Ret.)
Greensboro, N.C.

I did something with the latest issue of *Air Force Magazine* I don't often do: I read the editorial by Adam J. Hebert.

You bet there is something wrong with the culture of USAF, and as Hebert points out, "Sexual assault is a national issue, and the Air Force draws its airmen from the general population."

Oh. Really? I am old enough to remember World War II. I was a small child, but I clearly recall some of the major events back then. I grew up in a culture different from the one that exists today; that culture is nearly dead as people like me come to the end of life. The culture had changed somewhat during my 25 years in USAF, but it was still recognizable.

All of that has been replaced by the politically correct culture that now pervades American society. And everybody wonders what went wrong. Well, a few things went wrong. Adopting the notion that everybody could "have it all" is one problem. The notion that there is no functional differences between the sexes is another. Even the USMC has lost on that issue. Standards are relaxed all over the place; the unfortunate series of events involving nuclear weapons is but one example. Creating a culture of managers rather than leaders is yet another.

The problems the current generation face were created by the deliberate destruction of a culture that worked better (but not perfectly) than what exists now. It will take more time to develop a viable culture than it took to get where we are today.

Gerald P. Hanner
Papillion, Neb.

I submit the following: Mr. Hebert is right. Airmen shouldn't need to be told any of this, but it is a fact that people entering our great Air Force come from all walks of life and bring with them what they learned in their individual environments. Some of these environments allow behaviors that are unacceptable in the Air Force or anywhere for that matter. Their cultural change starts with basic (or OTS, etc.). So we need to train them correctly.

Mr. Hebert is also correct that sexual assault is a despicable crime, but what is happening all too often is commanders are not taking appropriate action. It's not the easiest thing for one human to

discipline another human, but that's what commanders get paid to do. If commanders shirk this important responsibility, *their* commanders should take the right action and discipline *them*. Accountability is key to proper discipline.

With respect to changing the UCMJ, again, I agree with Mr. Hebert. We absolutely must not lessen the authority of our commanders. The UCMJ was and is well-written and has stood the test of time. There are provisions for everything needed to prosecute those who break the code; we just need to responsibly apply them. Those politicians who would change the UCMJ to make themselves feel they did something about the problem are extremely shortsighted.

And when an airman (read: officer or enlisted) is convicted of sexual assault, that airman should be fined, jailed, and dishonorably discharged and certainly not allowed to retire. There couldn't be a much better deterrent if everyone knew this is the punishment for such a despicable crime.

Another point I would make—after sitting through our SAPR training, which was presented by a male and in which a video of another male was shown—I think we have missed a critical point with our female colleagues. I spoke to one afterwards and she pointed this out to me and also revealed there were three women in our session who cried—and nobody noticed!!! What does that tell us? Perhaps we should be more considerate with how this information is presented. How about some female speakers or at least female guidance for these training sessions?

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

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Letters

And finally, how about some leaders who actually do something about sexual harassment and assault in the workplace?

Col. Frank Alfter,
USAF (Ret.)
Beavercreek, Ohio

Nuance Counts

In the interest of accuracy, I need to correct a couple of inaccuracies in John Tirpak's article "Fighting for Access" [July, p. 22].

In referring to my Mitchell Institute presentation on China's air and space revolutions, Mr. Tirpak garbled two systems into one when he referred to "very high frequency passive radars" (p. 24). What my presentation actually referred to was passive systems the Chinese have acquired and a new generation of VHF radars they are developing. Also, I never said they are deploying a nationwide network of such systems, although in the long term that's a reasonable conclusion.

Also, in quoting me regarding the US Navy's reaction to the DF-21 (more precisely the DF-21D), "I think they're scared to death of it," he removed the nuance from my remark. I had actually said that was the case on a bad day, and on a good day the Navy says it is a complicated system and there are a variety of potential counters to it.

The ultimate thrust of my presentation and the Mitchell paper from which it was derived was that China's air and space revolutions were only partially completed, and there is ample opportunity for the situation to get worse. That should be more than bad enough.

Lt. Col. Thomas R. McCabe,
USAF (Ret.)
Burke, Va.

Get Real About Weapons

I enjoyed reading the article in the July edition ["Rethinking Air Dominance," p. 36], but the subtitle, "... USAF rethinks its most basic mission," caused me to read it with a critical eye. I always thought the "basic" mission of USAF was to use advances in aerospace technologies to deter wars or help win them—NOT to just shoot down enemy airplanes one at a time. But USAF has for decades spent (in my opinion) an inordinate amount of its resources to do just that. Why? While the threat was real during the Cold War, when the Soviets had thousands of attack aircraft to threaten our forces on the ground across the globe, I am at a loss to see the threat in today's world.

Since the 1990s USAF has used the tired old propagandist line (originally to justify the F-22) that "the last time US ground forces were killed by enemy airplanes was in 1953," the argument

being that our robust air-to-air capability has "saved" our ground forces from harm since then and we should not waste that capability. However, one could just as easily ask, "How many times since 1953 has the US been in a conflict where the enemy even had an air force that posed a threat to our ground forces?"

Vietnam? Name an instance where the VC or North Vietnam attempted an air attack on the marines or Army. Grenada? Panama? The Balkans? Iraq? Afghanistan? With the sole exception of but five to 10 days during the Gulf War of January 1991, I can't think of any potential threats to ground forces. Tragically, the real threat in that conflict was from IRBMs—NOT aircraft. And what weapon system did we turn to in the face of that threat—the F-15? Hardly. It was the Army's Patriot SAM system.

I think it is about time USAF starts to admit there are other systems that have protected our ground forces over the years—and not just the air-to-air dogfighter. As far as the offensive counterair goes: Spend the effort on systems that will kill SAMs and take out airfields. Now THAT would enhance air dominance!

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

Remembering Old Shakey

Ahh, Old Shakey ["C-124 and the Tragedy at Tachikawa," p. 70]. I still vividly remember my tour at McChord AFB, Wash., in the 7th MAS as a young copilot from '67 to '69. One particular trip I recall was truly representative of life in that old hauler. We had a full load of Hueys from Travis AFB, Calif., to Hickam AFB, Hawaii. The winds were bad and lower was better, so 6,000 feet was it, followed by losing an engine shortly after ETP! The sun went down and the sun came up as we churned our way west. The rescue C-130 came out from Hawaii to see if we were still there. 15.6 hours later, we kissed the ground at Hickam—just another day in Old Shakey!

Another memory of life on Old Shakey from the Pacific theater during Vietnam: I was assigned to a trip through Mactan in the southern Philippines. The aircraft commander was a Hughes AirWest DC-9 captain called to Active Duty because of the Pueblo crisis. On takeoff, one engine coughed, on downwind for departure we lost a different engine, and on final for a quick return a third engine experienced a generator overheat!

The commander coolly told the flight engineer that we were landing and to disregard the overheat! We were extremely pleased to be on the ground so quickly.



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Lt. Col. Bob Estus,
USAF (Ret.)
Smithville, Tex.

To know what flying the C-124 Globemaster II ("Old Shakey") was really like, one quote from my favorite Globemaster pilot Capt. Joe Bailey sums it all up. Every time we lined up for takeoff, he would say, "If this thing gets airborne, we will treat it as an emergency."

We always laughed, but we knew that disaster in the Globemaster was never far away. Take the Globemaster flying from McChord AFB, Wash., down the Aleutian chain to Shemya on a supply run. It literally lost an engine. It didn't just quit—it fell from the wing, leaving a 15-foot-diameter firewall. With drag like that disaster was just minutes away. The crew jettisoned everything. After all the movable items were jettisoned, they began cutting up the flooring with crash axes. The pilots brought it into Adak, and as one of them told me later, they sat there with tears running down their cheeks. They'd seen death and cheated it.

The copilot on that flight eventually went on to become an aircraft commander in the C-141. He died in Cam Ranh Bay, Vietnam, when his spoilers deployed on takeoff.

"Old Shakey" had more tricks than you could learn in a long time as a crew member. I spent four years in it as a navigator in the 50th ATS at Hickam AFB, Hawaii.

Many times we came out of Tachikawa, Japan, in winter weather when ice began to coat the plane. The aircraft commander would tell the navigator and load master to tap dance on the clamshell doors, which would accumulate a lot of ice. At first, I thought that was dumb but then I realized that the ice buildup could put us in the ocean. At that point, I tap danced like James Cagney.

All Globemaster missions were not fraught with danger. Take the one from McChord that flew north to supply a DEW Line station on an ice island. They carried a bulldozer so that the people on the ice island could plow out a runway. The blade of the dozer was detached and each unit was fitted with a parachute. Unfortunately, the dozer got the lightweight chute while the blade got the heavyweight chute. The dozer shot right through the ice island and into the Arctic ocean. The blade may still be orbiting the North Pole.

To be a Globemaster II crew member was to belong to a very rare breed of flier. We flew low and slow but we carried America's military strength all over the world.

Maj. Vern. J. Pall,
USAF (Ret.)
Tucson, Ariz.

[The incident described in] Walter Boyne's article was not the only time Old Shakey had engine fires on takeoff from Tachi. It was a dozen years later when I had both outboard engines catch fire via the alternators, causing us to come as close to crashing as we would ever care to come. We had full fuel tanks for the next planned 13-hour leg to Elmendorf, Alaska. Communist sympathizers had erected several bamboo poles 85 feet to 100 feet tall right outside the fence at the end of the 5,000-foot runway, meaning at our weight we would require cooler temperature than in daytime. I was fully aware that "get home-itis" had killed many MATS crews when I decided to take off with Yokota as departure alternate.

We had just passed "go" speed when I lost my attitude indicator. I thought, "no problem," since we practiced partial panel flying in the simulator, but this was quickly followed by the engineer reporting both alternators overheating followed by fire indicated on No. 1 engine and the scanner reporting flames visible. All I could say was to let it burn until we cleared those bamboo poles and got the gear up, but the engineer reported fire indicated on No. 4, followed quickly with scanner confirming flames also on No. 4.

With takeoff roll being somewhat less than a minute, it meant all this was happening in the approximate 30 seconds after we had passed safe abort speed. With my mind running faster than we were flying, I flipped a mental coin and told the engineer to feather No. 1 engine, as the scanner called flames still showing on No. 4. I could only say to the crew that we were having trouble staying airborne on three engines so we darned sure couldn't fly on two, so just let it burn, at least until we reached pattern altitude. After what seemed like an eternity the scanner reported no more flame showing on No. 4 as we turned away from the city, and the engineer reported alternator temperature coming down. From my own experience when my squadron from Dover AFB, Del., had four airplanes at Tehran, Iran, at one time with blown engines from having to hold high power so long over the hump, I was concerned about blowing one of our remaining good engines and instructed the engineer to alternately reduce power a bit on each engine to relieve stress. About the only difference that made was to make it more difficult for me to trim the aircraft to hold a heading.

Yokota approach control took over and sent us way south to get around the city of Tachikawa because we were unable to reach pattern altitude, causing us to fly about 30 miles to get on final to Yokota. My erratic heading control had not been critical in the pattern, but I had to ask for a "Gyro Out PAR" as approach reported

fog moving in rapidly. First it was MATS minimums of 200 feet, half-mile about the time we were able to start our descent followed closely with the call of USAF mins of 100 feet, one-quarter. All I could reply was we were committed so keep talking. Somewhere about a half-mile out a wx special observation was officially zero-zero. We barely saw a glow from the strobes, and neither tower nor crash rescue knew we had landed. Once I got the airplane stopped, fortunately on the runway, my adrenaline was suddenly all used up and I was shaking so hard I could not taxi but had to set the parking brake. I had just flown the most precise precision approach of my entire career at zero-zero, and I found it unbelievable we had made it. We sat there several minutes without any crew member saying a word since we all knew how close we had come to crashing. Ground control finally located us and sent a follow-me to lead us to parking.

Post Flight Analysis: Attitude indicator was merely a blown fuse, cause undetermined. With that being the only fuse I had blow in over 4,000 hours in Old Shakey, perhaps I could be forgiven for not knowing the exact fuse location, and we were a bit busy to go searching around in the dark.

Alternator fires had not been an accident. Knowing we were flying in to north country on the next leg, we had written up windshield heat as inop. Maintenance had changed both alternator voltage regulators but had wired them both hot and backwards, meaning they would always be on, and the approximate minute at takeoff RPM meant fires were inevitable. I had feathered No. 1 and the hot wire had burned in two on No. 4 before anything else, such as magnesium, caught fire. If my choice had been reversed would the No. 1 engine fire have gone out? We will never know. I was never made aware of what, if anything, happened to the maintenance crew that changed the voltage regulators.

Lt. Col. R. W. Hudson,
USAF (Ret.)
Fresno, Calif.

I quite enjoyed your article on the old "slab-sided" C-124. I had an experience with "Old Shakey" I will never forget—nor the skilled pilot flying it at the time. I was returning from emergency leave to Hahn AB, West Germany, and caught a ride in the C-124 from Dover to Rhein-Main. Things were fine until we passed the halfway point and were advised that all of Europe was fogged in and there was nowhere our fuel would take us. The pilot elected to head to Lajes, Azores, the closest base with a nice long runway. After an hour's worth of white-knuckle let down,



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Options eyed in the review include bringing the Army down by 70,000-100,000 soldiers from its current end strength of 490,000 Active Duty and 15,000-60,000 from its 555,000 reserve component. Navy carrier battle groups would potentially be reduced "from 11 to eight or nine," Hagel said, and "the Air Force could reduce tactical aircraft squadrons—potentially as many as five—and cut the size of the C-130 fleet with minimal risk." The service could also "retire older ... bombers." Marine end strength could be reduced from 182,000 to between 150,000 and 175,000.

Hagel stressed that none of these cuts is a "proposal," but rather a series of options developed to give Washington a "clear-eyed assessment of what our military can and cannot do in the event of a major confrontation or a crisis after several years of sequester-level cuts."

The goal was "to be able to give the President informed recommendations, not to prejudge outcomes," Hagel pointed out.

The SCMR will also serve as a springboard for the upcoming Quadrennial Defense Review and assist planners in developing the Fiscal 2015 budget, he noted. Programmers will actually have to build two budgets going forward: one for sequester and one for the President's proposal, he added.

While the review was respectful of the sacrifices of the troops, the Pentagon can't bear big military pay and benefits increases—as it has for the last 12 years—now already claiming half the Pentagon's budget, said Hagel.

Part of the financial solutions ahead include a slower growth in pay, changes to the way housing allowances are calculated, and the probable end of commissary subsidies.

"If left unchecked, pay and benefits will continue to eat into our readiness and modernization. That could result in a far less capable force that is well-compensated but poorly trained and poorly equipped," Hagel pointed out.

That could also mean shifting retirees to private-sector insurance, "reducing the overseas cost-of-living adjustments, [and] continuing to limit military and civilian pay increases," he added.

The sequester cuts are in addition to \$487 billion of reductions over the next decade the Defense Department has already had to accommodate, Hagel pointed out. Besides that, he and his predecessors have been moving to slash DOD overhead: Robert M. Gates proposed \$150 billion in efficiencies; Leon E. Panetta \$60 billion; and Hagel himself \$34 billion.

Consequently, Hagel said, there's "not much" efficiency left to find, and even all those projections aren't likely to bear full fruit. Even so, he announced plans to cut 20 percent from headquarters budgets for the Pentagon, combatant commands, defense agencies, and field activities and flattening out the organizational chart. He also said there would be consolidation of intelligence analysis functions that have bloomed since 2001 and which Hagel said are duplicative.

Adm. James A. Winnefeld Jr., vice chairman of the Joint Chiefs, who helped head up the review, said it was about "teeing up choices. We haven't made those choices yet. We now understand them very, very well."

LEAD, FOLLOW, OR ... WATCH

A new Air Force study of the service's technological future focuses on areas where USAF must lead, where it must follow the commercial market, and where it should simply keep an eye on what its allies and competitors are doing.

"Global Horizons" directed by Chief Scientist Mark T. Maybury, who has since moved on to a new position outside the service, follows the last big Air Force technology forecast by just three years.

Global Horizons forecasts the broad demands on the Air Force and its core missions out to 2050, conditions such as population growth, climate change, competition for resources, and the rapidly shifting capabilities of US military competitors.

The study found that everything in "Technology Horizons," the previous technology report conducted by Werner J. A. Dahm, remains valid. Specifically, it states that USAF has to invest in faster and more resilient networks, find ways to get the gear it needs at lower cost, and improve its people over the long-term to be able to keep up with the ever-accelerating pace of military operations and information.

Broadly, Maybury's study found that the Air Force is going to have to lead in ways to get faster: faster at computing, faster at traveling through the domains of air, space, and cyber, and faster at comprehending rapidly changing conditions and making the right choices about what to do.

At the same time, USAF will be competing for a shrinking pool of people who are experts in science, technology, engineering, and math. The Air Force also will have to do more to recruit—earlier than ever—cultivate, and retain them against higher bidders.

It will be tougher to perform USAF's core missions because all "domains will be increasingly contested, congested, and competitive," Maybury said in the executive summary of the report.

He recommends a more comprehensive and dedicated program to keep an eye on technologies being developed overseas and a faster, more focused effort to identify and counter new technology threats.

Key technologies with the greatest potential to be "game changers" for the Air Force include "trusted and resilient cyberspace" and assured positioning, navigation, and timing, as well as hypersonic propulsion, directed-energy weapons, "bio-inspired computation," advanced materials and the means to produce them, and enhanced ways to extract the highest physical and mental performance from individuals.

In "fast follower" mode, USAF will adopt technologies developed by other agencies or allies that it can use to further its strength in core functions.

As a "technology watcher," it will keep tabs on technologies not directly pertaining to its core functions but where those technologies can help with its enabling capabilities.

Along with these key thrusts there will have to be new, agile acquisition methods that can dramatically accelerate the current process, which is too long and cumbersome to keep up with technology change, Maybury said.

This will involve more widespread partnerships among the various government agencies that foster and nurture technology breakthroughs and seeking more international partnerships on common technology efforts. Maybury noted ongoing collaboration with Australia on hypersonics as an example.

In aircraft, Maybury said the drive is on to make remotely piloted systems more autonomous while humans retain control over the weapons release. Stealth will still be important, and stealth aircraft coupled with directed energy systems will likely be a game changer. There will need to be more teaming between manned and unmanned aircraft, though.

Maybury foresees combat aircraft becoming more generic, outfitted for specific missions with modular payloads and mission systems. This will extend their service lives, by making them adaptable to new missions as they arise.

Because almost all countries have the ability to get to space on their own or by buying launch and payload services, Maybury sees space becoming rapidly more congested, with greater "cyber and physical threats" that must be guarded against.

He anticipates greater use of smallsats, "fractionated satellites" and "disaggregated constellations." These are mix-and-match constellations that collectively perform certain tasks and, in other configurations, can do other things without putting an entire capability on a single big satellite.

Also, he suggests USAF begin migrating to higher frequency electromagnetic communications, because lower bands are getting too crowded. ■

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Anheuser-Busch received the Secretary of Defense "Outstanding Public Service" award in 2009.

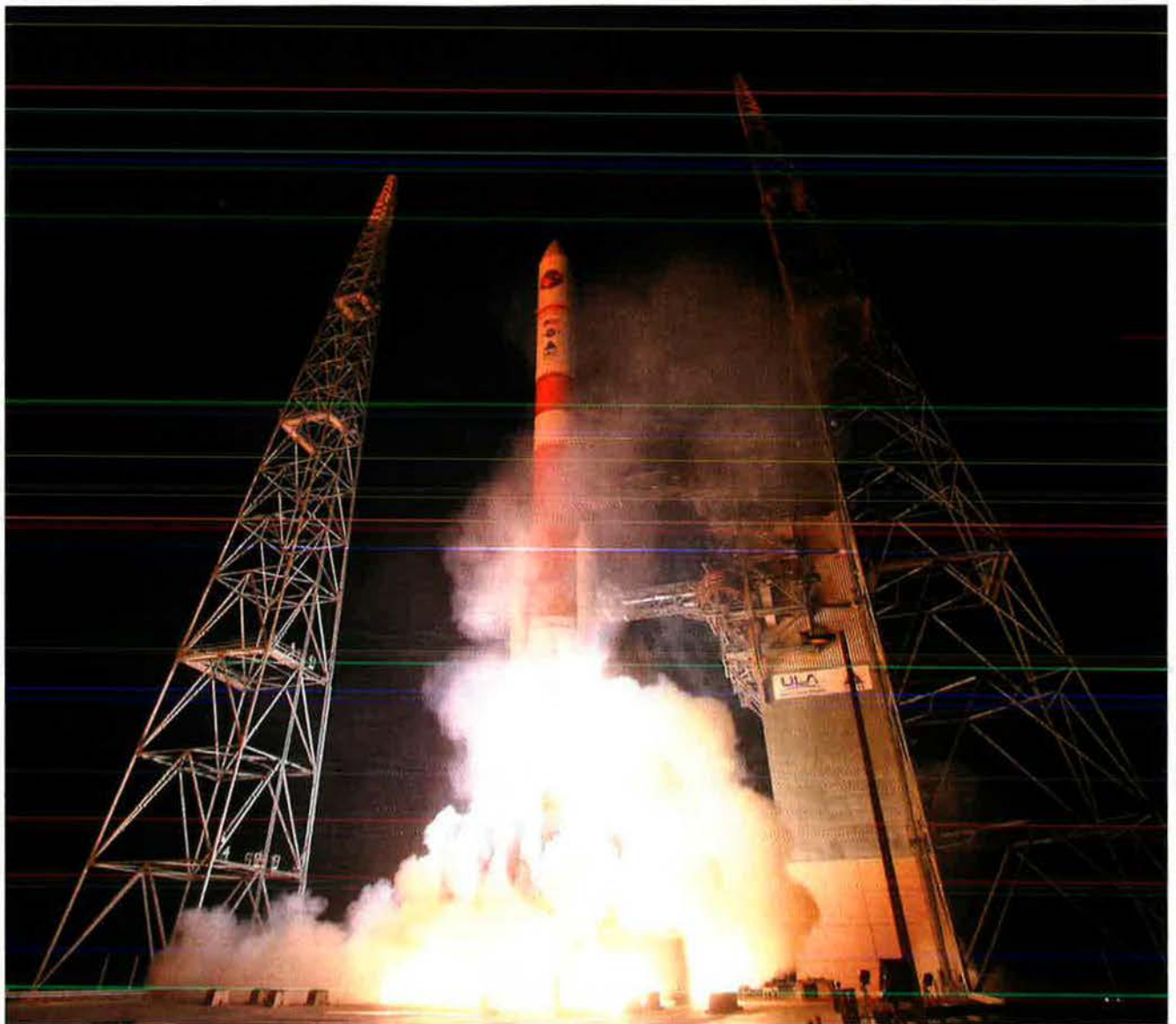
Bud's \$6 million donation to Folds of Honor provides scholarships for the dependents of service members killed or disabled while serving.



★ HERE'S TO THE HEROES ★

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United Launch Alliance photo



Further, any commander who makes a disciplinary decision regarding an airman for a sexual assault must report that decision to his servicing general court-martial convening authority who has attained the rank of brigadier general or higher. The general court-martial convening authority will then review the intended disposition and take any further action deemed appropriate.

Pacific Posture

The Air Force does not plan to build any more bases in the Pacific, but will maintain a significant presence in the region. During the Cold War era “almost every CONUS unit” would operate from Europe, rotating in and out every 18 months to two years, said Gen. Hebert J. Carlisle, commander of Pacific Air Forces. “The Air Force is turning to that in the Pacific,” he told reporters in Washington, D.C., in late July.

Carlisle said the United States already is beefing up its Pacific presence with 12 rotating F-22s at Kadena AB, Japan, and 24 F-16s in South Korea “on top” of what was there before.

The first overseas F-35 squadron also will be based in the Pacific, likely in Alaska, Japan, or South Korea, he said. In addition, the Air Force will “maintain [its] capability in northeast Asia” while “increasingly [moving] south and west with the rotational

Half-A-Dozen Up There: USAF's sixth Wideband Global SATCOM was launched on a United Launch Alliance Delta IV from Cape Canaveral AFS, Fla., Aug. 7. The satellite will provide coverage for US defense forces and international partners including Australia, which supported the cost of the sixth SATCOM.



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presence" in places such as India, Indonesia, Malaysia, the Philippines, Singapore, and Thailand, he said.

Back to Flying

While the Air Force has put money back into its flying hour accounts for the remainder of the fiscal year, time will be the critical factor in getting the units that stopped flying in April combat-capable once again, said Adm. James A. Winnefeld Jr., vice chairman of the Joint Chiefs of Staff.

"What I can tell you [is] that if you take one of these squadrons that hasn't been flying at all, it's gonna take anywhere from one to three months for them to bring their proficiency back up just in basic airmanship skills," Winnefeld told the Senate Armed Services Committee on July 18 in response to questioning from Ranking Member Sen. Jim Inhofe (R-Okla.).


It will take another three months beyond that for the units to get their combat skills up to standard, said Winnefeld. He said he would provide Inhofe with the monetary costs associated with the retraining of these units, for the record.

Soldier Earns Medal of Honor

President Obama will award Army SSgt. Ty M. Carter of Antioch, Calif., the Medal of Honor for his conspicuous gallantry during combat operations in Afghanistan, announced the White House. The President was expected to present Carter with the MOH at the White House on Aug. 26, making him the fifth living MOH recipient for actions in Iraq or Afghanistan, according to the White House's July 26 release.

Carter was a cavalry scout with the 4th Infantry Division's 4th Brigade Combat Team serving at Combat Outpost Keating in Nuristan province on Oct. 3, 2009, when a force of more than 400 insurgents attempted to overrun the outpost. During the intense six-hour-plus battle, Carter resupplied ammunition to fighting positions, provided first aid to a battle colleague, killed enemy troops, and "valiantly risked his own life to save a fellow soldier," stated the Army's narrative of his action.

Of the 54 Keating defenders that day, eight were killed and more than 25 were injured, according to the Army.

 [To read more about the battle, go to www.airforcemag.com and search "Keating."]

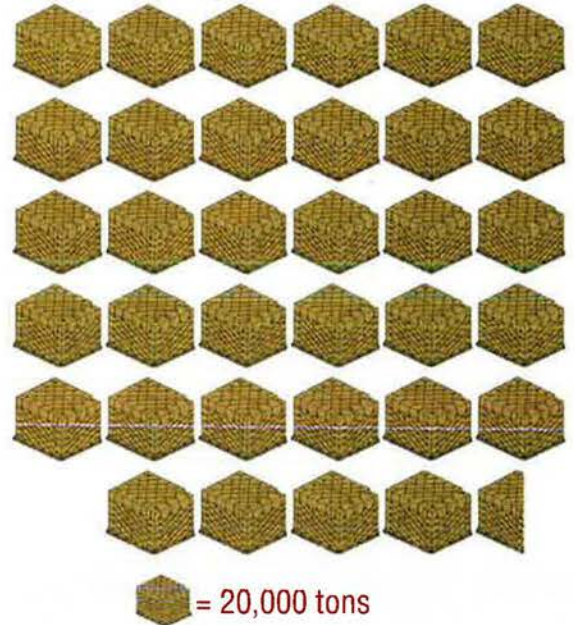
Pararescueman Honored

SSgt. Zachary Kline, a pararescueman with Air Force Reserve Command's 306th Rescue Squadron at Davis-Monthan AFB, Ariz., received the Silver Star during a July 14 ceremony for his

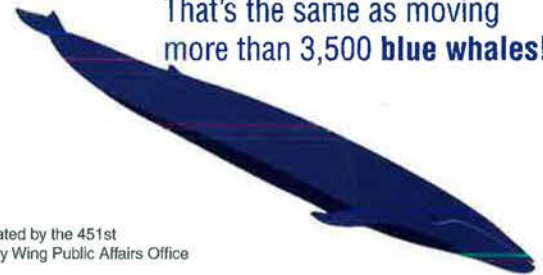
BY THE NUMBERS

690,834

Tons of cargo moved by the 451st Expeditionary Logistics Readiness Squadron aerial port since its June 29, 2009, activation at Kandahar Airfield, Afghanistan.



That's the same as moving more than 3,500 blue whales!



Source: Created by the 451st Expeditionary Wing Public Affairs Office

Dempsey Details Airpower Options in Syria

The US military is prepared to conduct either "limited standoff strikes" or establish a no-fly zone over Syria, said Joint Chiefs Chairman Army Gen. Martin E. Dempsey. They are among the military options for dealing with Syria available to the White House and Congress, wrote Dempsey in a letter dated July 19 to Sen. Carl M. Levin (D-Mich.), Senate Armed Services Committee chairman. Levin asked Dempsey to provide an unclassified assessment of the options.

For limited strikes, requirements would dictate "hundreds of aircraft, ships, submarines, and other enablers" to strike Syrian air defenses, missile sites, and other targets, wrote Dempsey. Depending on the time frame, the costs would be in the "billions" of dollars, and there is the possibility of collateral damage, the Syrian regime's dispersal of assets, and retaliatory attacks on US forces, he stated.

To establish an NFZ, the United States would need hundreds of aircraft ranging from strike to electronic warfare assets to carry out air superiority operations, wrote

Dempsey. He estimated the costs of the NFZ as \$500 million "initially" and as much as \$1 billion per month over the course of a year. Risks would entail the possible loss of US aircraft, requiring personnel recovery missions.

Sen. John McCain (R-Ariz.), who voted against approving Dempsey's nomination for a second term, released a statement in early August calling Dempsey's proposal both "disingenuous" and "exaggerated." According to the statement, McCain supports the option of limited standoff strikes to degrade Syrian President Bashar al-Assad's airpower and ballistic missile capability, an approach that McCain said was deemed "eminently feasible" by a report from the Institute for the Study of War.

"Without sound professional military judgment guiding our top decision-makers, Syria will become a failed state in the heart of the Middle East and a safe haven for al Qaeda and its allies and degrade into a regional conflict that threatens the national security interests of the United States and its allies," McCain said.




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ANG photo by SrA Nicholas Carzís



Beating the Heat: A C-130 releases fire retardant over the mountains near Palm Springs, Calif., on July 19. Members of the California Air National Guard's 146th Airlift Wing were activated to help fight massive wildfires that raged in the San Bernadino National Forest.

role in a daring mountainside rescue of the crew of a downed Army helicopter in Afghanistan in 2011. On April 23, 2011, Kline deployed from Bagram Airfield aboard one of two HH-60 rescue helicopters tasked with retrieving the two-member crew of an Army OH-58D helicopter that crashed in a hostile area of an Afghan valley.

Kline endured approximately six hours on the ground under intense enemy fire, defending the crash site and coordinating aerial counterattacks, according to Air Force accounts. His actions helped enable the rescue force to save the injured pilot, recover the body of the second pilot, and also retrieve a wounded soldier.

Combat Controllers Awarded Silver Stars

TSgt. Ismael Villegas and SSgt. Dale Young each received a Silver Star during a July 22 ceremony at JBSA-Lackland, Tex., for gallantry in combat on separate occasions near Helmand province, Afghanistan. Villegas, the Air Force's only two-time Silver Star recipient currently on Active Duty, was recognized for his heroics "during nonstop enemy engagements" from Feb. 6 to 24, 2011, according to Air Force accounts. He controlled numerous strike aircraft that took out eight enemy fighting positions and killed more than 20 insurgents.

Young was honored for his actions from May 19 to 23, 2009. Despite being under continuous enemy fire for 94 hours, he controlled coalition aircraft and ensured effective fires on enemy positions, resulting in the destruction of "more than \$1 billion in black tar opium," stated the news release.

US, Vietnam Partnership

The United States and Vietnam announced the formation of a "comprehensive partnership" to deepen bilateral ties in

The Readiness Avalanche

Thus far, budget sequestration has not affected the day-to-day readiness of the units operating the nation's nuclear triad or executing other critical US Strategic Command activities in space and cyberspace, said STRATCOM Commander Gen. C. Robert Kehler in July. That's because the services have given "preferential treatment" to supporting those missions.

However, the services will not be able to sustain this practice if sequester lingers long-term, leaving the specter of a readiness crisis on the horizon, he said.

"I am worried about readiness. It is like watching an avalanche where you see it start small and if you continue to ignore readiness accounts, the momentum builds and eventually you have a big readiness avalanche," he said. The human dimension of this, such as the furlough of Defense Department civilian personnel due to the sequester, "has gotten lost" in the budget debates, he added.

"I am very worried that those [civilians] who are near retirement age will not hang on with us because they will not be confident in us," he said. Similarly, some civilian new hires already have come to their supervisors and said: "I don't think I am going to stay because I don't see the future here," said Kehler.

—Michael C. Sirak

a host of areas from defense and security to trade, science, and technology.

News of the partnership came in a joint statement following a July meeting of President Obama and Vietnamese President Truong Tan Sang in the White House. The agreement is meant to "contribute to peace, stability, cooperation, and prosperity in each country, in the region, and in the world,"



Photo courtesy of U.S. Air Force

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Operation Enduring Freedom

Casualties

As of Aug. 19, 2013, a total of 2,258 Americans had died in Operation Enduring Freedom. The total includes 2,255 troops and three Department of Defense civilians. Of these deaths, 1,775 were killed in action, while 483 died in noncombat incidents.

There have been 19,141 troops wounded in OEF.

US-Afghan Agreement

Joint Chiefs Chairman Army Gen. Martin E. Dempsey told reporters in Kabul he would not recommend the "zero option" of pulling out all US troops from Afghanistan after the completion of NATO's combat mission there at the end of 2014.

Dempsey, who was in Afghanistan for meetings with Afghan President Hamid Karzai and senior officials, said he had a "significant level of confidence" in the Afghan security forces, but the Afghans' progress is "not irreversible," should US and NATO advising and training support stop.

"An interruption in that progress could be a setback for the country," he added. A follow-on US-Afghan security agreement is critical to continuing the development of the country's security forces. The signing of that agreement might be possible by October, putting in place the framework for the post-2014 training, assisting, and advising mission, he said.

Behind the Curtain

The demands on the Air Force will not let up even after the US military's drawdown in Afghanistan, said Chief of Staff Gen. Mark A. Welsh III.

"We are not going to get less busy," he said during a July talk at the annual Aspen Institute's Security Forum in Aspen, Colo. "Our Air Force does an awful lot of stuff behind the curtain that people don't really see."

There still will be the need for intelligence, surveillance, and reconnaissance missions all over the world, and the Air Force will continue performing an airlift mission every 90 seconds, every hour of every day, said Welsh. Plus, many thousands of airmen will operate satellites, protect cyber networks, and maintain the readiness of the nation's ICBMs and nuclear-capable bombers, he said.

In fact, about 220,000 airmen in all—about 43 percent of the uniformed force—are committed to supporting combatant command activities every day from their home station, said Welsh. "It's a different mode than the other services have, and as a result, most people don't really understand it," he said.

No Ragtag Ops

Maj. Gen. Kenneth S. Wilsbach, commander of the 9th Air and Space Expeditionary Task Force-Afghanistan, said he was surprised to learn the Afghan Air Force was not a "ragtag operation."

In the three months since he assumed his role as the top Air Force general in Afghanistan, Wilsbach discovered the AAF actually is "a small and capable force [that is] improving all the time," he told *Air Force Magazine*.

In the second quarter of 2013, Wilsbach said the AAF conducted 795 missions—an improvement of 35 percent over the first quarter. That included 460 medical evacuation missions—an increase of 139 percent over the first quarter. In addition, Afghan-run and -organized cargo runs were up 52 percent and troop transport missions were up 51 percent.

Flying Time

Aircrews assigned to the 451st Air Expeditionary Wing at Kandahar Airfield, Afghanistan, flew 133,415 sorties between the unit's standup on Jan. 26, 2009, and the end of May, according to officials. Those sorties resulted in 877,007 hours in the air over that span. To match that operational tempo, an aircraft would need to take off once every 15 minutes for four consecutive years or fly nonstop for 100 years, 41 days, and 23 hours, a wing spokesman told *Air Force Magazine* in July.

During that same period ending in May, the base's 451st Expeditionary Logistics Readiness Squadron passenger terminal processed 884,925 passengers, and the aerial port moved 690,834 tons of cargo in support of operations in Afghanistan. Using C-130s and, at one time, C-27Js, the wing also dropped 24,992 tons of cargo to ground forces.

The final rotation of C-27Js left Afghanistan in May 2012, and the Air Force is now divesting the mini-airlifters as it looks to shave costs from its tightening budget.

USAF photo by A1C Peter Thompson



read the statement. With regard to defense and security, the two leaders "agreed to expand mutually beneficial cooperation to enhance capabilities such as search and rescue and disaster response."

WWII Airman's Remains Identified

Defense Department forensic scientists identified the remains of Sgt. Jerome E. Kiger, 22, of Mannington, W.Va., an airman missing in action since World War II. Kiger's remains were laid to rest with full military honors on July 21 at the Mannington Memorial Park in Mannington.

Kiger was one of nine crew members of a B-24 Liberator that enemy fire brought down southwest of Munich on July

Blade Runner: A1C John Aguilar Porrata-Doria inspects the propeller blades on a C-130J on the flight line at the Lockheed Martin facility in Marietta, Ga. Gen. Paul Selva, Air Mobility Command commander, piloted the 28th—and final—J model to the 317th Airlift Group at Dyess AFB, Tex. The 317th now has the largest C-130J fleet.

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George "Bud" Day: 1925-2013

George E. "Bud" Day, who served in three wars, created the famed "Misty FAC" unit in Vietnam, and was awarded the Medal of Honor for his heroism during five-and-a-half years as a prisoner of war, died in July at age 88.

Day, who rose to the rank of colonel in the Air Force, also was an attorney who, after retiring from the service, was instrumental in getting the US government to make the Tricare program available to veterans of World War II and Korea. He also joined the two presidential campaigns of his one-time cellmate in North Vietnam, Sen. John McCain (R-Ariz.). He was one of the most decorated US military men since Douglas MacArthur, with some 70 medals.

In August 1967, Day's F-100 was hit by an anti-aircraft missile over North Vietnam, and he ejected. Captured, badly injured—his right arm was broken in three places—and strung upside down by his captors, the shoeless and bleeding Day managed to escape and evade recapture for 10 days, surviving an artillery barrage as he moved toward US lines. Within sight of a Marine encampment, he was shot in the hand and leg and recaptured by the Viet Cong. Despite open wounds and relentless torture—which left him permanently impaired in the use of his arms—Day offered "maximum resistance" to interrogation, refusing to give up any useful information. He was awarded the Medal of Honor for his gallantry and intrepidity during that time.

He received the Air Force Cross for his continued gallantry as a POW in 1969, surviving continued torture, starvation, and threats of execution; serving as the inspirational leader of other POWs; and refusing to provide information on how the POWs communicated with each other or about USAF escape and evasion tactics. After McCain was shot down in 1967, Day helped nurse the naval aviator back from near-death, in spite of being close to death himself.

In *Faith of My Fathers*, McCain's autobiography, he wrote that Day had "an indomitable will to survive with his reputation intact" and was "a fierce resister, whose example was an inspiration to every man who served with him." McCain eulogized Day on the floor of the Senate in July, saying Day saved his life and was "a hard man to kill" who expected the same resiliency from the men under his command.

Born in Sioux City, Iowa, Day dropped out of high school to join the Marine Corps in 1942, serving in the Pacific during the war. After the war, he graduated college and law school, but joined the Iowa Army Reserve in 1950. He soon transferred to the Air National Guard and earned his wings. During the Korean War, Day flew F-84s intercepting Soviet aircraft off the Korean coast.

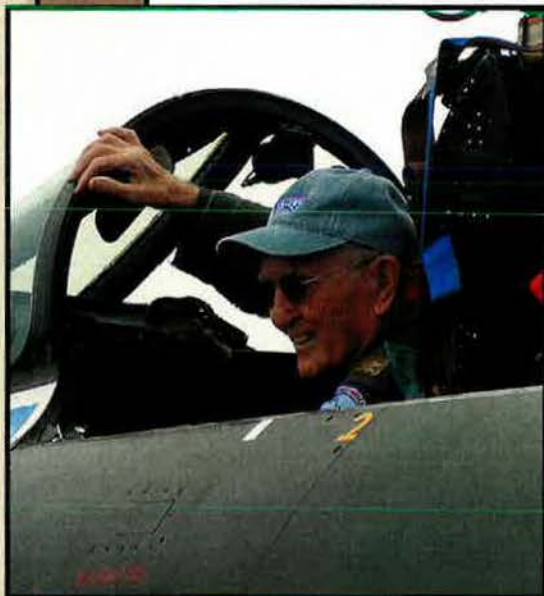
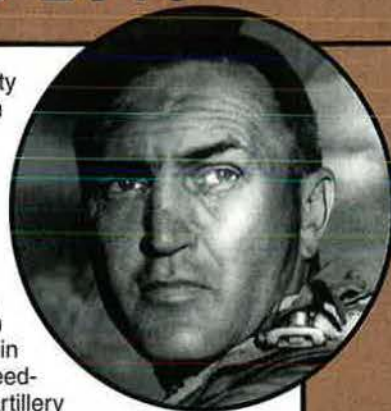
He stuck with the service and became Regular Air Force, or a full-time, career airman, but wanted to stay in past an anticipated 1968 retirement, so he volunteered for Vietnam duty in 1967. As a major, he was given the job of creating a unit of fast forward air control (Fast FAC) aircraft, to help coordinate bombing attacks and strikes on enemy air defenses. Though Detachment 1 of the 416th Tactical Fighter Squadron was officially named "Commando Sabre," he nicknamed the unit and the mission "Misty" for his favorite song. There were 16 pilots and four F-100F two-seaters in the unit. Day's call sign was "Misty 01." He was shot down on his 65th mission over North Vietnam. In 2011, the Air Force Association honored the Misty FACs with its prestigious Lifetime Achievement Award.

After being repatriated, Day, promoted to colonel in captivity, remained in the Air Force. After heavy rehabilitation and multiple waivers, he was allowed to resume flying duties as vice commander of the 33rd Tactical Fighter Wing, flying F-4s. In 1976, he served on the Defense Department's Code of Conduct review board, which set new guidelines for those US service members taken prisoner. He retired in 1976, having amassed nearly 8,000 flying hours.

Day re-entered the public spotlight in 1996, filing a petition on behalf of military retirees who lost their Defense-provided health care at age 65. Arguing that these veterans had been promised lifetime health care for their service, he won the case in the US district court in 2001, but it was overturned by the US Court of Appeals in 2002. Attention to the case, however, spurred Congress to establish the Tricare for Life program, which restored medical benefits not paid by Medicare to vets over 65.

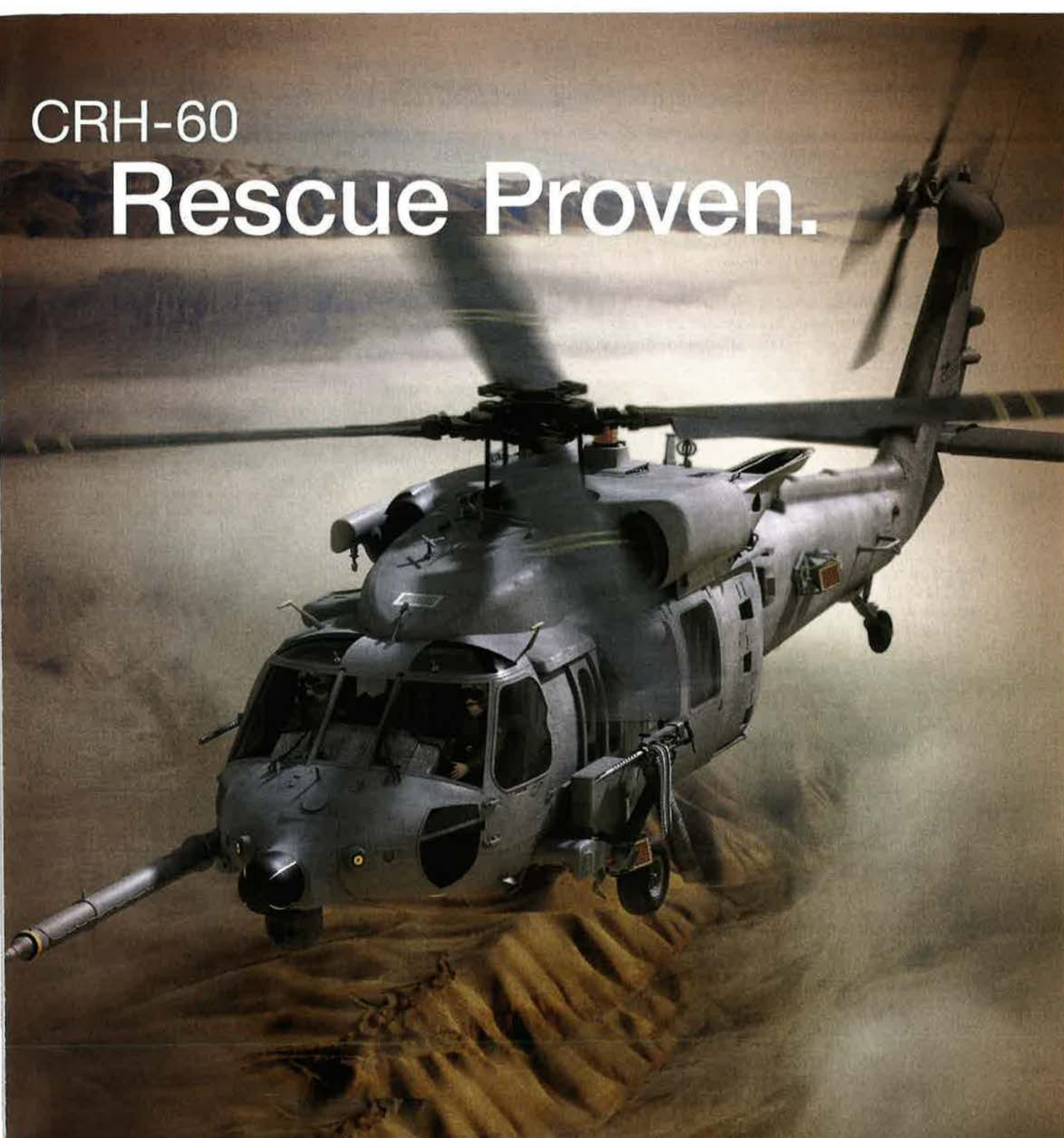
Day wrote his autobiography, *Return With Honor*, in 1989 and updated it with the title *Duty, Honor, Country* in 2002. The Survival School building at Fairchild AFB, Wash., is named for him, as is the Sioux City airport.

—John A. Tirpak



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Senior Staff Changes

RETIREMENTS:

Lt. Gen. Robert R. Allardice, Lt. Gen. Larry D. James, Maj. Gen. Timothy A. Byers, Maj. Gen. Joseph Reynes Jr., Brig. Gen. Robert P. Givens, Brig. Gen. Jeffrey B. Kendall.

NOMINATIONS:

To be General: Robin Rand. **To be Lieutenant General:** Stephen W. Wilson. **To be Air National Guard Brigadier General:** Roger L. Nye.


CONFIRMATION:

To Lieutenant General: Douglas J. Robb.

21, 1944, while on a bombing raid to Oberpfaffenhofen, Germany, according to a Pentagon news release.

The forensic scientists used circumstantial evidence, dental comparisons, and mitochondrial DNA to help identify Kiger's remains.

DOD had announced, this June, identification of the remains of another crew member on Kiger's bomber, Sgt. Charles R. Marshall.

 [Check out www.airforcemag.com regularly, where you will find daily news updates, feature stories, and more.] ■

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Lightning Strikes Twice

An Air Force proposal to lift restrictions on F-35 flight traffic from Eglin AFB, Fla., over the adjoining city of Valparaiso has sparked criticism from the city's mayor and rekindled a debate that began some five years ago when the Air Force first considered bringing F-35s to the north-west Florida installation.

The proposal comes as the Air Force is preparing to ramp up F-35 operations at Eglin, which has hosted the Defense Department's joint F-35 schoolhouse since 2009.

The document, released in May, outlines several alternative proposals for how the schoolhouse could accommodate more students and aircraft. The preferred alternative would lift the flight restrictions over Valparaiso.

While the Air Force is not expected to make a decision until early 2014, Bruce Arnold, Valparaiso's mayor, is already criticizing the preferred proposal, saying noise levels from the aircraft would harm the city and its residents.

"The city's not encroaching on Eglin," he told *Air Force Magazine* in a July telephone interview. "Eglin is encroaching on the city."

Arnold is concerned that lifting the restrictions would result in lower property values and in a significant portion of the town's population leaving.

Local resistance to the F-35 presence at Eglin is not new. In 2008, some Valparaiso residents expressed concern over projected F-35 noise levels over the city as the Air Force was making a decision whether to bring the schoolhouse to Eglin.

In 2009, the Air Force announced it would go forward with plans for the schoolhouse, but would temporarily restrict flight operations over Valparaiso and would limit the number of F-35s that it would beddown at the base pending completion of a supplemental environmental impact statement.

Shortly thereafter, Valparaiso city officials filed a lawsuit against the Air Force. At the time, Arnold claimed noise levels from the F-35s would affect more than 90 percent of the city's residents. The case ended in a settlement in 2010.

F-35 flight operations formally commenced at Eglin in 2012, with temporary restrictions placed on air traffic over the city.

Now, USAF is considering lifting the restrictions, and Arnold is once again speaking out. He said he's frustrated with the Air Force's apparent unwillingness to sit down and discuss its plans with city leaders.

Conversely, Mike Spaits, Eglin's environmental spokesman, said the Air Force has always been open with city officials. "We've never stopped talking to Mayor Arnold, from our top leadership down," he said.

In July, Spaits said Air Force officials have invited Arnold to various events at Eglin, including community leader breakfasts. He also said for several years, Eglin held a noise committee, in which residents from surrounding communities, including Valparaiso, could voice their concerns. Ultimately, said Spaits, Eglin officials decided to discontinue the committee meetings, because both base leadership and community residents agreed that there weren't enough serious issues being discussed.

"We are well aware of concerns from several leaders from Valparaiso and we are including all of their comments and concerns as we move forward," said Andy Bourland, spokesman for Eglin's 96th Test Wing. Despite Arnold's criticisms, the communities around Eglin have generally been "very supportive" of the F-35's presence, said Bourland.

—Brandon Conradis

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THE US military will spend the next year walking a fine line between the ongoing mission in Afghanistan and the need to meet President Obama's December 2014 deadline for withdrawing US combat forces from theater.

As a means of meeting that goal, Obama announced during his State of the Union address plans to withdraw 34,000 troops from Afghanistan by Jan. 31, 2014, giving the US military roughly one year to cut its footprint essentially in half. That's no easy task after more than a decade of war.

If you look past the bunkers and T-walls intended to protect personnel from incoming rocket attacks, Afghanistan's main bases are a little piece of home plopped in the middle of the desert. Kandahar's famed boardwalk has everything from a TGI Friday's restaurant to souvenir shops that sell Afghan rugs, scarves, and even glass enclosed camel spider paperweights for the truly brave. The unique recreation area wraps around a jogging track, soccer field, and a Canadian-built roller rink. Posters hanging on bulletin boards along

the boardwalk advertise recreational sports leagues and weekly salsa dancing nights.

Kandahar Staying Put

Six dining facilities feed the roughly 26,000 military personnel and civilian contractors who call the sprawling NATO base home. A state-of-the-art water bottling facility, which is controlled by computer from Germany, ensures everyone stays safely hydrated during Afghanistan's brutally hot summer months.

In addition, there are dormitories, a burn pit, and the infamous Kandahar "poo pond" to dispose of before the base can be handed back to the Afghans.

"From 2001, when we first arrived, it's been an amazing story," said British Group Capt. Jamie Johnston, Kandahar's deputy commander for support. "I visited [Kandahar] in 2006, 2009, and now. I thought it was big in 2006. I couldn't believe it in 2009, and I didn't even recognize it when I came back in 2013."

Unlike most of the smaller, more austere forward operating bases (FOBs), Kandahar will not close. The Afghans

have expressed an interest in expanding the existing Kandahar Airport, which is visible from the flight line on the NATO side of the base, as a means of boosting their economy after coalition forces leave. In addition, the Afghan Ministry of Defense sees Kandahar as a future Afghan Air Force base, said Johnston.

The US and coalition forces also will have a presence in Afghanistan post-2014, though the exact numbers and makeup of the force were still being worked out in July. Maj. Gen. Kenneth S. Wilsbach, commander of the 9th Air and Space Expeditionary Task Force-Afghanistan, said roughly 500 coalition air advisors will remain in theater through 2017, at which point the Afghan Air Force is expected to have at least a foundational capability and, in some cases, will be up to full operational capability.

Intelligence, surveillance, and reconnaissance will remain important as long as coalition forces continue to operate in Afghanistan, Wilsbach told *Air Force Magazine*. MQ-1 Predators and MQ-9 Reapers are assigned to Kandahar and

THE MASSIVE DRAWDOWN EFFORT IS ALREADY UNDERWAY.

USAF and Slovak explosive ordnance disposal personnel prepare for a controlled detonation near Kandahar Airfield, Afghanistan, in June.



USAF photo by Sgt. Scott Salduka

AFGHANISTAN in Retrograde

By Amy McCullough, News Editor



Dozens of mine-resistant, ambush-protected vehicles sit in the Army's redistribution property assistance team lot at Kandahar. The vehicles are stripped of all weapons, radios, and other military equipment, then cleaned and prepared for shipment back to the US.

likely will remain in some capacity after the 2014 deadline expires, said officials.

Wilsbach said there also will be “some sort of rescue capability,” in addition to air refueling, and airlift support in Afghanistan.

“The big question will be what, if anything, we will have for close air support,” he noted.

That enduring presence means coalition forces still will need access to some of the facilities at Kandahar after 2014. Of the remaining buildings, some will be transferred to the Afghans, but most will be torn down, said Johnston. The operation and maintenance cost of maintaining the buildings here is more than Afghanistan’s entire budget, he added.

“We just have to be very mindful that they may not be able to maintain some of the buildings and it may not be safe in other cases,” said Johnston.

Despite the two looming withdrawal deadlines, brand-new buildings continue to pop up across the base, including a roughly 37,000-square-foot warehouse for the 451st Expeditionary Logistics Readiness Squadron. The building, slated to open in late July, will house its Transportation Management Office (TMO) and special handling personnel. Its location next to the aerial port’s cargo yard is expected to speed up the massive retrograde and redeployment efforts, said officials.

In some respects, Kandahar will have to get bigger so everyone else can get smaller, Johnston said. The base population is expected to grow to 30,000 personnel to accommodate the extra work—up 4,000 from the numbers in mid-July.

Kandahar also is one of three hubs—in addition to Bagram Airfield in the Parwan province and Camp Bastion in Helmand—for US equipment to flow through as it leaves the country via a spoke-and-hub system. Although the numbers could change, about 40 percent of US materiel is expected to move through Kandahar,



USAF photo by SSgt. Krystie Martinaz

TSgt. Dequan Barthell, a loadmaster evaluator, counts passengers boarding a C-17 in July. The aircraft carried 137 service members out of Afghanistan.



USAF photo by Capt. Joshua Daniels

40 percent through Bagram, and the remaining 20 percent through Bastion, said Capt. Christopher Kaighen, aerial port flight commander at Kandahar.

As a result, the 451st ELRS is among those that will be growing. The squadron is expected to double in size, adding 110 personnel by the end of August, said 451st ELRS Commander Lt. Col. Paul Cornwell.

Bringing Home Materiel

"They understand the surge requirement that's going to arrive," said Cornwell. In fact, the squadron is scheduled to remain at Kandahar through 2015 to get all the retrograde materiel out. After 2015, Cornwell said, the Air Force will downsize the squadron to a flight.

The aerial port already is one of the busiest in the world. Last year, it moved 168,000 short tons of cargo—nearly equal to short tons airmen handled at Ramstein AB, Germany; Travis AFB, Calif.; and Dover AFB, Del., combined over the same time period, said Kaighen. In addition, 243,000 passengers moved through its passenger terminal last year.

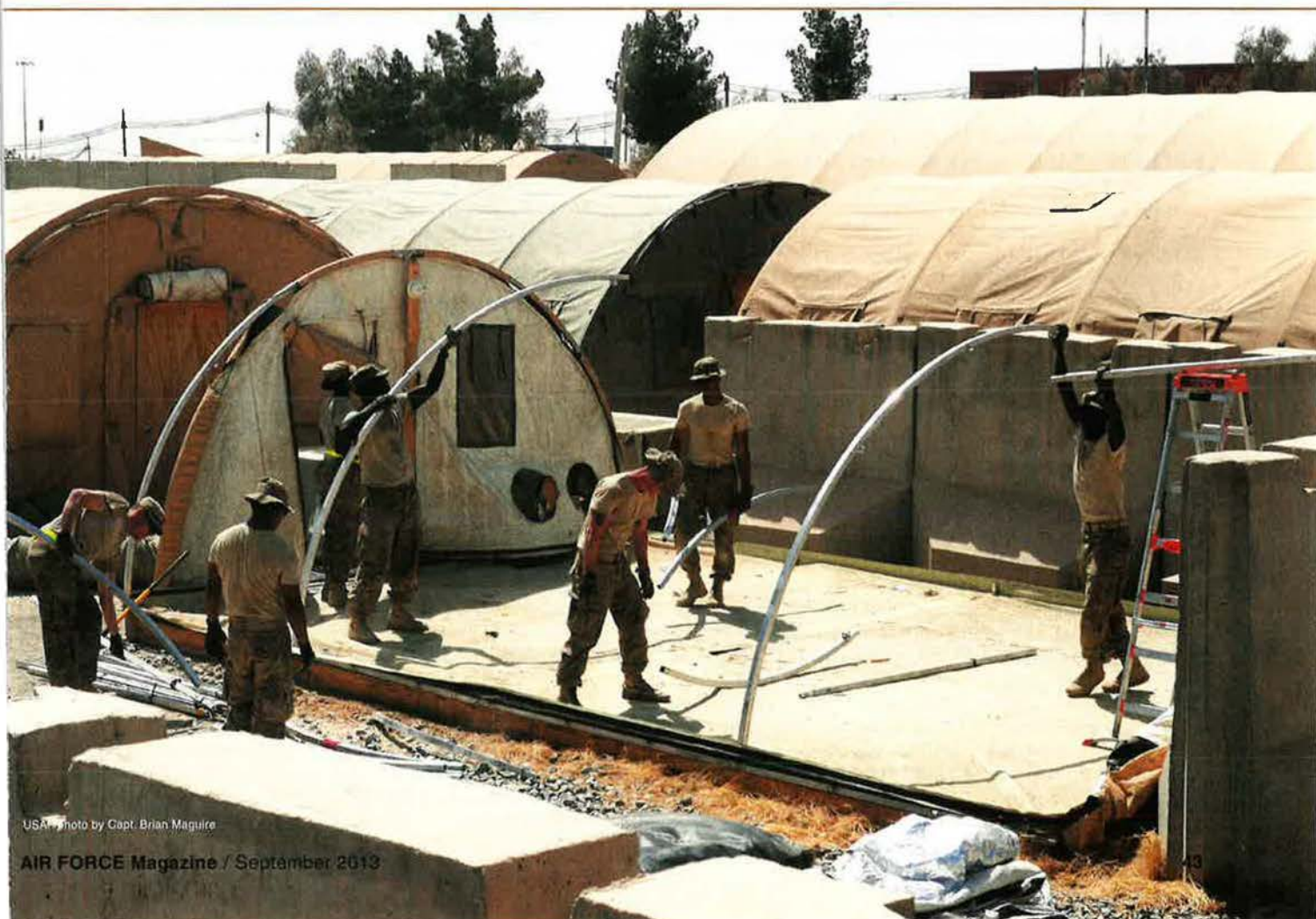
The vast majority of that cargo was dedicated to supporting troops still engaged in combat, but with the largest logistical drawdown in US history just getting underway, that workload will only increase.

As of July, the Army was pretty much on schedule with the drawdown of its forward operating bases, but just like in Iraq, soldiers were having a hard time parting with their gear before combat operations officially end. That's creating a "little bit of a bow wave of actual versus projected retrograde," Cornwell said, although it's "nothing that's causing a great amount of alarm."

To get ahead of the problem, US Central Command is sending small teams to the FOBs to help with the drawdown. The CENTCOM Materiel Recovery Element, or CMRE, is tasked with determining what materiel should be sent home, what equipment can be transferred or sold, and what is better off just being destroyed.

"We're reducing the overall amount of materiel required to be retrograded and redeployed by making commonsense

Below: US soldiers dismantle a tent at Kandahar in July as part of the footprint reduction already going on in Afghanistan.



USA photo by Capt. Brian Maguire

decisions in the field and disposing of it in the field. That's where you get into [mine-resistant, ambush-protected vehicles] being cut up," said Cornwell. "While that makes for good shock media, nobody has asked the question, 'OK, they are worth \$5 billion, how much is it going to cost for me to move them back to the States?' It's more than \$5 billion."

Cornwell said military planners really are paying attention to the minutia as they attempt to balance cost against the need to quickly get materiel elsewhere, but while cost is certainly important, especially in the era of sequestration, it's not the only thing to consider. Items that must be reset back in the US can be moved more slowly via ship—a significant savings over the cost of airlift. However, assets that must quickly be transported home are more likely to move by air.

For example, maintenance readiness spares package kits—basically an aircraft parts store—is something a unit back home will need fairly quickly in order to maintain its combat readiness status. However, the Army has significantly more vehicles, such as Strykers and MRAPs, in Afghanistan than it needs in the US to remain effective.

Rocket Attacks at Kandahar

Kandahar Airfield, Afghanistan—Security has improved dramatically in Afghanistan since the war's bloodiest days, but hostile acts are still a regular part of life here. As such, force protection will remain a top priority as US and coalition forces look to wrap up the current combat mission, officials said.

Take Kandahar, for example, where insurgents launched back-to-back rocket attacks during *Air Force Magazine's* visit in July.

The first attack occurred around 9:40 p.m. local time on Sunday, July 14. The second rocket struck roughly 10 hours later.

Sunday evening, I was sitting in my bunk working on a story when I heard a whoosh followed by a loud bang. Seconds later, a British female voice over the loudspeaker confirmed what I had feared: I had just experienced my first rocket attack.

As instructed on my arrival, I hit the deck and started counting to 200. Then I grabbed my boots, notebook, pen, and flashlight—which thankfully I had laid out right beside the bed in the event of an attack. A minute or so later, I headed to the bunker, a heavily fortified cave of thick, reinforced concrete.

Rocket attacks here remain sporadic, said my bunker mates. Sometimes, there will be weeks without an attack and then there may be some that happen back-to-back. Fortunately, the insurgents have notoriously bad aim and rarely does anyone get hurt.

Army Maj. Brooks Little, commander of the 102nd Mobile Public Affairs Detachment—one of my bunker mates—said the insurgents can have different objectives. They may carry out an attack in the evening for no other reason than to harass coalition troops, many of whom are preparing to go to sleep around that time.

As the loudspeaker came back on declaring that "the situation is ongoing"—an update given roughly every 20 minutes—the other members of the Media Support Center, where I was based, made themselves comfortable in dusty old office chairs stashed inside the bunker. Some fired up their iPads and passed the time with games of Monopoly. Others cracked open a book while the rest just chatted. Clearly they'd been through this before.

"We're all concerned. It's just something we have to deal with here," said Little. "It's easy to get relaxed about events like this, but you have to be mindful about it. You can't get

"We really do balance that out pennies to the pound," he said.

Afghanistan is a mountainous, landlocked country with extremely poor road conditions and this terrain poses a complicated set of logistical challenges. The drawdown from Iraq was much simpler logistically, thanks to the road network and access to the port in Kuwait. Still, there are lessons that can be gleaned from the 2011 withdrawal.

"Iraq was very elementary. Here, you almost have to have a master's [degree] in logistics," said Army Capt. Michael P. Zinnecker, commander of the 831st Transportation Company Detachment at Kandahar.

Zinnecker's job is to manage transportation for all Army redeployment, retrograde, and sustainment operations. Ninety-five percent of cargo that moves through the Kandahar aerial port.

"As far as [USAF's] footprint here, if Afghanistan is a beach, we are a speck of sand ... compared to the Army," said Kaighen.

From December through mid-July, Zinnecker's detachment assisted in the movement of 3,500 pieces of Army redeployment and retrograde cargo. Of that, more than 1,000 pieces moved

Continued on p. 46

comfortable with where you're at. You're in a war zone and hostile acts are routine. It only takes one time."

About an hour after the siren first sounded, the female voice came back over the loudspeaker declaring, "All clear. All clear. All clear."

The next morning, on July 15, a second rocket attack occurred—a rare occurrence in daylight. The Luxembourg, one of six dining facilities on base, was packed as coalition troops, civilians, and contractors tried to catch the tail end of breakfast. I had just finished my scrambled eggs and bacon when the same trusty British voice came over the loudspeaker once again declaring an attack.

Immediately, everyone dropped their forks, set down their trays, and hit the deck. Some troops posed for pictures under the dining tables; others patiently waited for the two minutes to pass before getting up and resuming their breakfast. Since the dining facility is a hardened shelter, a bunker run was not necessary. Twenty minutes later, the "all clear" sounded and the DFAC emptied as everyone went off to start their day.

The back-to-back rocket attacks took place less than a week after an Afghan National Security Forces member opened fire on Slovak troops, killing one and wounding several others. At the time, there were conflicting reports as to whether the incident was a "green-on-blue" attack, where Afghan forces intentionally turn their guns on coalition troops, or a negligent weapon discharge.

Either way, officials have said the Afghan was standing watch in a guard tower on the Afghan side of the base when he shot his 240B machine gun at the Slovaks who were on the coalition side of the base.

Afghan troops secured the scene and took the suspect into custody immediately following the July 9 incident, according to an ISAF release. However, a sign hanging on the famed boardwalk here warned passersby that the suspect, whose name is Lambar, escaped from Camp Hero where the Afghans were holding him pending his transfer to Kabul for further investigation.

"It was reported that Lambar, with the assistance of co-conspirators utilizing forged documents, walked out the Camp Hero jail," states the wanted sign. "Lambar and his co-conspirators have not been seen since exiting Camp Hero," it states.



Air Force Magazine News Editor Amy McCullough (c) walks through the aerial port at Kandahar with Capt. Christopher Kaighen (l), Lt. Col. Paul Cornwell (foreground), and other members of the 451st Expeditionary Logistics Readiness Squadron. Below right: The "wanted" poster for an alleged gunman in a "green-on-blue" shooting. The prisoner, Lambar, escaped from custody with the help of an Afghan military member.

USAF photo by Capt. Joshua Daniels

In an emailed response to questions, an International Security Assistance Force official confirmed that this detainee escaped the detention facility "aided by an Afghan military member in southern Afghanistan."

The incident, said the ISAF official, remained under investigation by Afghan National Security Forces and ISAF as of late July.

Immediately following the attack, the Air Force suspended all advise-and-assist missions with the Afghans for at least a week, as Air Force officials continued to assess the situation. The base also increased its force protection posture, said Capt. Brian Maguire, a spokesman with the 451st Air Expeditionary Wing here.

"We do what we can to make sure our people are safe," he said.

Curbing the green-on-blue attacks has become a top priority for coalition forces. Although the number of insider attacks has dropped significantly, Maguire said it's "always a concern because you never know what someone is going to decide to do."

There were 48 green-on-blue attacks in 2012, said the ISAF official. However, as of July there have been just six confirmed insider attacks since January 2013. Nine ISAF personnel were killed in those attacks and 28 wounded. By comparison, during the same time last year, there were 20 confirmed insider attacks resulting in 27 ISAF deaths and 57 wounded, according to ISAF figures.

Maj. Gen. Kenneth S. Wilsbach, commander of the expeditionary task force, acknowledged that air advisors are at a higher risk of insider attacks because they work with the Afghans every day.

"We do take precautions to vet the Afghans and we do many other measures to make sure that we don't interact with folks that potentially could bring harm," he said via a telephone interview from his office in Kabul.

Wilsbach said it's the coalition's responsibility to train the fledgling Afghan Air Force and immerse them in the airmen culture, but that "means spending a great deal of time with them."

Maj. Rich Zeigler, commander of the 451st Expeditionary Security Forces Squadron here, said despite the recent attacks, the security situation is actually "stronger than I figured it might be coming in."

Zeigler's unit has a diverse mission; its members are tasked with protecting US assets on base, which requires regular trips

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BE ON THE LOOK OUT

NAME: LAMBAR son of LAJBAR or son of PAMBER

SITUATION: LAMBAR was detained by ANA forces in connection with the KAF shooting on 20130709. LAMBAR was being detained at Camp Hero by GIRoA forces, pending transfer to Kabul for further investigation. On 20130714, it was reported that LUMBAR, with the assistance of co-conspirators utilizing forged documents, walked out the Camp Hero jail. LAMBAR and his co-conspirators have not been seen since exiting Camp Hero.

ACTIONS UPON CONTACT: DETATIN IMMEDIATELY AND CONTACT THE JDOC. LAMBAR IS REGISTERED AS A WATCH LIST LEVEL 2.

FOR IMMEDIATE RELEASE/WIDEST DISSEMINATION POSSIBLE

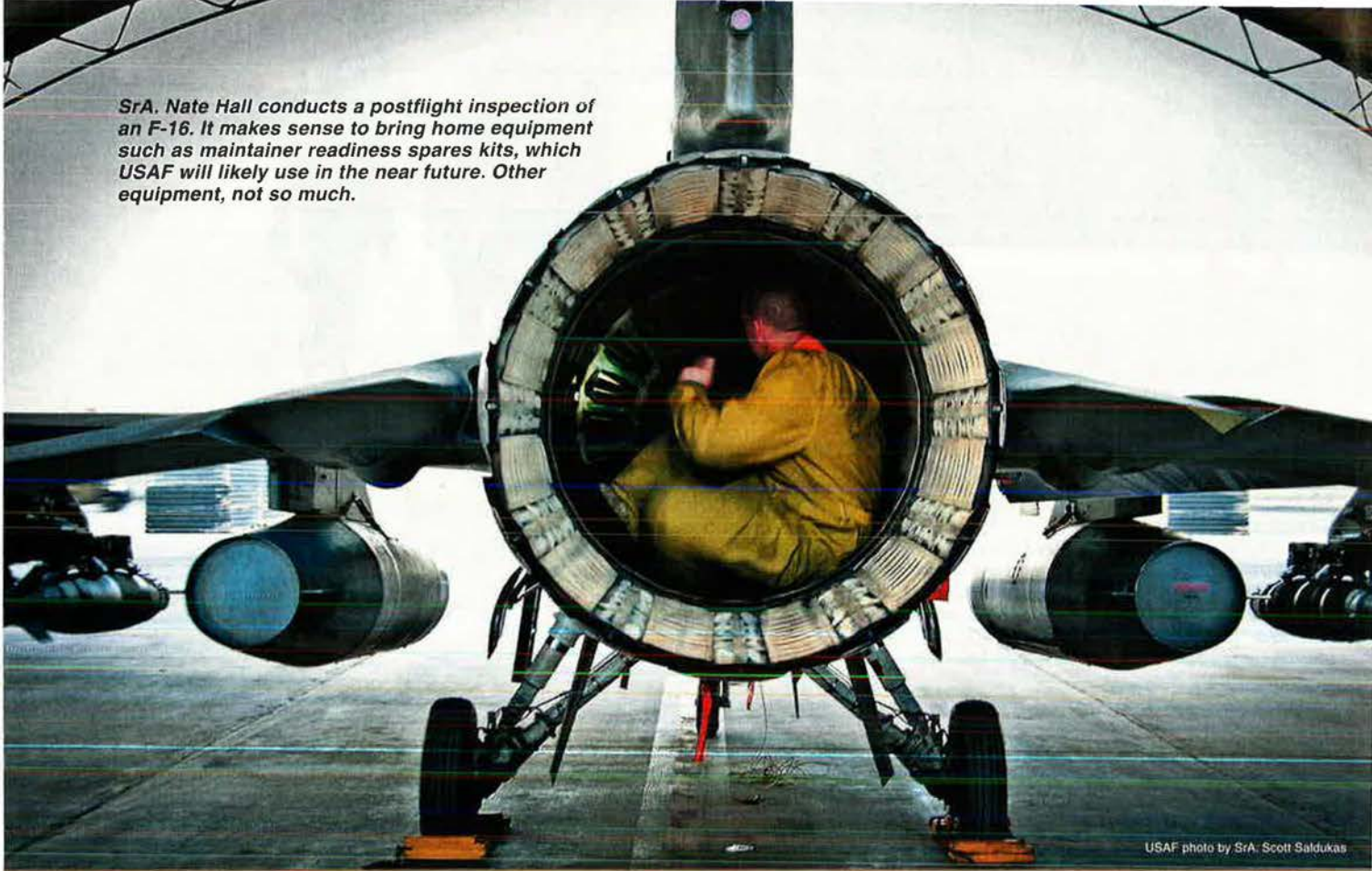
outside the wire, including both ground patrols with Afghan partners and escorts of US aircraft.

Although the frequency of trips outside the wire has temporarily come down, that has more to do with Ramadan than the July 9 attack, said Zeigler.

Some members of the 451st ESFS also served as a quick reaction force during the July 9 incident, he noted. Although he couldn't offer many details on the incident, he attributed the overall decline in insider attacks to the "awareness of our folks."

He added, "We are able to pick up on things that just don't feel right and stop something or intervene before that point."

SrA. Nate Hall conducts a postflight inspection of an F-16. It makes sense to bring home equipment such as maintainer readiness spares kits, which USAF will likely use in the near future. Other equipment, not so much.



USAF photo by SrA. Scott Saldukas

through the Pakistan ground lines of communication route straight to the Karachi port. Seven hundred pieces were multimodal (meaning more than one means of transportation was used), and more than 500 pieces moved solely through the Air Force, he said.

There are several options for shipping materiel home, but none of them are great. In Iraq, convoys could literally just drive across the border and park in Kuwait for several months until the military figured out what to do with them. Though Kuwait is still used somewhat to move equipment out of Afghanistan, it certainly is not a primary hub.

Moving equipment through Pakistan directly to Karachi is the most cost-efficient means of transporting goods out of Afghanistan. It costs about \$10,000 per 20-foot equivalent unit (TEU) to move through Pakistan. A TEU can be anything from a single container to a larger vehicle—typically any cargo exiting the country. However, that cost doubles to an estimated \$20,000 per TEU for multimodal shipments, said Zinnecker. It climbs even higher if airlift is the sole means of transportation.

But the ground lines communication route is also vulnerable to political instability. Pakistan closed the route in November 2011 after the US mistakenly killed 24 Pakistani border troops in an

air strike. It reopened several months later allowing goods once again to flow through, but not before the US racked up a hefty bill moving materiel via air or through the massive Northern Distribution Network (NDN).

Ground cargo stagnated once again this summer following escalating tensions between the US and Afghan customs officials. The dispute centered on the Afghan government's insistence on taxing US

shipping containers leaving the country. According to various media reports, the Afghans claimed the United States owed \$70 million in exit taxes—a point which US officials disputed.

Wilsbach said equipment had begun to freely flow across the border by late July after a series of “high-level” discussions. The delay, however, forced the United States to temporarily increase the amount of cargo airlifted out of theater. Though



A contractor washes an MRAP vehicle after it arrives at Kandahar. All vehicles must be thoroughly cleaned to pass through customs.

USAF photo by Capt. Joshua Daniels



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potentially costly if implemented over an extended period of time, Wilsbach said it was “a slight amount in the big scheme of things.”

The NDN is another option, though it too poses challenges.

Activated in 2009 as an alternative to moving goods through Pakistan into Afghanistan, the route winds through ports in the Baltic nations of Latvia, Lithuania, and Estonia and then over land through the Czech Republic, Slovakia, Hungary, Romania, Georgia, Azerbaijan, Kazakhstan, Uzbekistan, Kyrgyzstan, and Tajikistan. It is one of the longest military supply lines ever created.

“The Northern Distribution Network is not used as much because it’s such a long and complex network,” said Cornwell. “This stuff literally goes over the road, [by] the rail, twice the distance of the US, to Riga, Latvia, to a ship, [where] it flows somewhere. It’s slow and there are a lot of issues with that. It doesn’t have the throughput that Karachi has.”

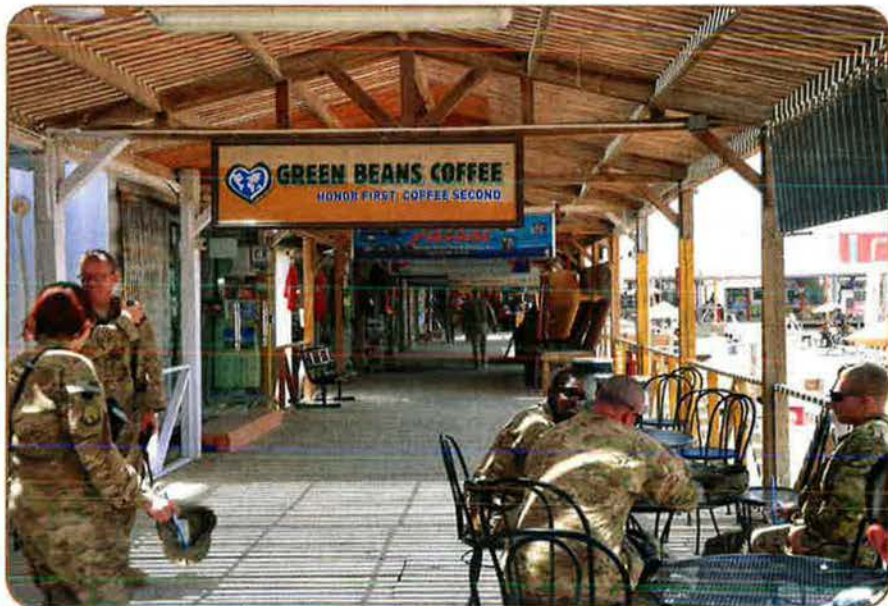
The vast majority of troops exiting the country will go through the Transit Center at Manas in Kyrgyzstan. In late June, however, the Kyrgyzstan parliament voted to close the base when its contract expires in 2014. As of July, the decision did not seem to be affecting the withdrawal efforts, but Cornwell acknowledged it could.

He said he doesn’t expect passenger movement levels to top off at Kandahar until November or December. Cargo movement, on the other hand, is expected to spike between April and June 2014.

“The difference between here and Iraq is we have time to do it right versus having to run out the door,” said Cornwell, who closed down Combat Outpost Adder in Iraq, once the largest US base in the southern part of the country and the last to close in 2011.

Although the timeline will make withdrawal easier in Afghanistan, just like in Iraq there is still the challenge of accounting for millions of pieces of equipment accumulated over the years—much of it piecemeal. After 12 years of continual six-month deployments, the Air Force is suffering from a case of what Cornwell called “rotational amnesia.” He said over the years commanders were forced to rely on the “little turnover” of information received as crews rotate in and out. The repeated handoffs resulted in “a lot of data loss,” he said.

In Iraq, it was not uncommon to open a long-forgotten container for the first time, just months before the withdrawal



Kandahar’s storied “boardwalk” wraps around a jogging track, roller rink, and soccer field. It boasts familiar US restaurants and local shopping opportunities.

deadline, only to find a bunch of brand-new AK-47s sitting in the cargo yard. Extended exposure to the sun faded the paperwork, making it extremely difficult to figure out where the weapons came from or where they were supposed to go.

“That was a research game and when you’re up against that time frame it’s just one of those ankle biters that’s going to make you bleed,” Cornwell said.

A Work in Progress

That’s exactly what he is trying to prevent from happening in Afghanistan, which is why accountability has become Cornwell’s No. 1 priority. Once he figures out exactly what the “Air Force wedge” is in the retrograde and redeployment puzzle, he will know what he has to move, when he has to move it, and where it is going.

“You have equipment we came into Afghanistan with to fight the war, then you have the 12 years of, ‘I need this, I need this,’” said Cornwell. “As things have changed, as the combat ops have worn various pieces of equipment out, we’ve adjusted fire to continue to be able to drop bombs and launch aircraft. The accountability is a huge issue I’m pushing right now.”

Once he has a better grasp of exactly what the Air Force has in theater, he’ll have a better idea of what needs to move out. That’s when the 451st ELRS will go out on the offensive.

“I’m not going to wait for the customer to come to me. I’m going to go out to the customer with my [traffic management order], my supply accountability, my aerial porters, to help them figure

out how to best build up their pallets,” he said. “I have to be in their chili way before they want me there so I can set them up for success.”

Cornwell said Iraq also taught him it’s OK to accept some risks—a lesson he tries to impart to his customers. He said it’s critical that units start getting light as quickly as possible, rather than hording all their equipment to the very end. Otherwise, they are just setting logisticians up for failure.

He already has pushed all of his unit’s vehicle maintenance parts out of theater, saying he would just call them back in as needed.

“That enabled me to completely reduce my footprint,” Cornwell said.

As the drawdown efforts continue, the expeditionary standard is going to have to be adjusted.

“Truly, you are supposed to go out of the war the way you came into the war,” said Cornwell. “When we came into the war you didn’t have an aircraft parts store or all this excess. You had the bare necessities to make it happen. Getting people [out of] that comfort zone of having all these excess items is just a culture shock to them.”

Despite the emphasis on drawing down US forces, Wilsbach said it’s important to remember that 2014 really isn’t the end of operations in Afghanistan.

“We’re still kind of in the middle. For us, it’s 2017. We’ve got at least that much time ... to work with the Afghans to build their air force,” he said. “When I come to work every day, I don’t think, ‘We’re almost at the end.’ I kind of feel like we have a work in progress.” ■

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NATO's New Eyes in the Sky

By Michael C. Sirak, Executive Editor

The Alliance has long had a shortage of non-US ISR capability. Here's the plan to address that.

In 2017, NATO is scheduled to have in place its first-ever Alliance asset for collecting strategic intelligence: the Alliance Ground Surveillance system. The fleet of five Global Hawk remotely piloted aircraft will carry a sophisticated radar capable of monitoring the situation on the ground from high overhead, including the movement of objects of interest such as military vehicles.


The Global Hawks will transmit synthetic aperture radar images—which look like photographs—and tracking data on the moving objects down to NATO intelligence analysts. These specially trained personnel will then create intelligence products for the Alliance's political leadership and military commanders, down to the tactical level, quickly enough to be relevant. This information will provide insight into topics such as the position of combat forces, battle damage sustained by a target, or devastation caused by a natural disaster.

Alliance officials have said NATO's operation to protect civilians in Libya in 2011 demonstrated the importance of this situational awareness. To date, NATO has had to rely on the national assets of its members, especially the United States, for this type of capability, making the AGS acquisition truly groundbreaking.

"AGS is indeed a kind of game changer," said a NATO official during an interview at Alliance headquarters in Brussels, Belgium, in late June. "It changes the dynamic within the Alliance to have access to that kind of information."

Half of NATO's 28 members are procuring AGS: the United States, Bulgaria, Czech Republic, Denmark, Estonia, Germany, Italy, Latvia, Lithuania, Luxembourg, Norway, Romania, Slovakia, and Slovenia. Poland is poised to join this group, expected to formally become the 15th procuring nation before year's end.





All Alliance members will contribute to AGS operations and support costs—or provide some “assistance in kind” in the case of Britain and France. Over its life cycle, AGS is expected to cost Alliance members some 2.2 billion euros in base year 2011 calculations.

Rules to Respect

Every member state will also have the opportunity to contribute its nationals to the force of some 600 military and civilian personnel who will operate and maintain AGS out of Sigonella air base on Sicily in Italy and run the training schoolhouse there.

NATO has collectively procured and operated military systems before. For decades, it has operated a fleet of E-3 Airborne Early Warning and Control aircraft to watch Alliance airspace and direct defending aircraft.

However, AGS represents a new degree of capability that will require deeper integration and interoperability among Alliance members, bringing with it opportunities as well as challenges.

“The system feeds into the political-strategic level, military-strategic level, operational level, tactical level,” making connectivity between members’ militaries all the more important, said the NATO official. Accordingly, “if you want to be part of the network, there are some rules to be respected here, both in terms of security, but also in terms of interoperability.”

The Alliance leadership wants the AGS architecture to build upon the gains NATO has made in information sharing in recent years, such as the Afghanistan Mission Network that allows members’ deployed forces “to share information and intelligence up to a level that we have never done before in terms of consulting each other’s databases,” said the official. (NATO policy doesn’t allow identification of officials.)

“That, we believe, should become a permanent capability for the Alliance,” said the official. “This requires an important change of mentality, mindset, but also needs for us to put into place the procedures to do that, the technology to do that, and so on. ... The challenge will be to bring as many nations up to that level. We are not there today yet.”

The five Northrop Grumman-built Global Hawk Block 40 air vehicles will house the Multiplatform Radar Technology Insertion Program (MP-RTIP) radar sensor that will survey the ground over a wide area. While similar to the US Air Force’s Global Hawk Block 40 configuration, the AGS aircraft will have some modifications based on the US Navy’s Broad Area Maritime Surveillance model.

“The difference in configurations is due to the fact that we have different communication requirements for the NATO Global Hawks,” said the official.

Sigonella, the AGS fleet’s beddown site, is already home to US Global Hawk operations. The Italian base will also host AGS’ main ground control element, imagery exploitation center, and the training

An artist’s concept of a NATO Global Hawk—one of five NATO will operate with the MP-RTIP.

Northrop Grumman illustration

schoolhouse for the Global Hawk pilots, sensor operators, and the imagery analysts.

"We [will operate differently] from the US in the sense that everything is concentrated in a main operating base, so both launch and recovery and analytical capabilities are all concentrated, whereas in the US, there is a more decentralized system," said the NATO official.

The Global Hawks will be capable of flying for extended periods at considerable standoff distances and in any weather or light condition. They will feed their SAR imagery and data on the moving targets via line-of-sight data links or satellite connectivity into the processing, exploitation, and dissemination element at Sigonella. The analysts will then exploit the SAR imagery and ground moving target indicator (GMTI) data and channel it in near-real time through the NATO command chain.

There will also be mobile and transportable AGS elements to support the NATO Response Force or other Alliance troop packages with data-link connectivity, data processing, and exploitation capabilities.

Bringing In All 28 Nations

Those stations will "capture directly the images from the Global Hawks and do a local analysis in direct support of the deployed commander," said the official.

NATO's Supreme Allied Commander, Europe, will task the AGS assets and NATO Allied Air Command at Ramstein AB, Germany, will oversee their operations.

Northrop Grumman is expected to deliver the first AGS Global Hawks in 2016. The company is also providing the Global Hawk command and control equipment at Sigonella. AGS is scheduled to be fully operational in 2017.

European industry will supply the mobile and transportable ground elements and provide the mission operations support at Sigonella. Continental contractors include companies such as Germany's EADS Cassidian, Italy's Selex Galileo, and Norway's Kongsberg.

"This is mainly a US system we are buying, but there is also [European] industrial cooperation which may also have spin-offs in Europe later on," said the official.

The 600-member AGS force will comprise 522 military members and 78 civilians. Since only a few member countries have experience in such operations, the learning curve for some members' militaries will be steep.

"We are organizing a training program to bring those nations that don't have that experience up to speed so that they also will be in a position to provide military personnel," said the official. "We want this to be an Alliance capability to which all 28 nations can contribute."

Since NATO is adopting a Global Hawk version closely related to an already-tested US configuration, and since Global Hawks already operate from Sigonella, NATO believes the process of certifying the AGS aircraft for airworthiness will be manageable.

"We are not saying there is no challenge out there. There certainly is," said the official. To mitigate it, "we will rely as much as possible on existing procedures."

NATO intends to operate the Global Hawks in "segregated airspace," meaning separated from civil air traffic.



"Now these systems operate at 60,000 feet—well above civilian or commercial airliners—so if you manage to get it through a segregated airspace up to a certain altitude, then you deconflict with civilian traffic," said the official.

NATO expects there will be "a permanent rotation, on an annual basis, of about 90 students" who go through AGS-specific training for imagery analysis at Sigonella, "do their three- or four-year rotation at Sigonella, and then go back to a national position," said the official.

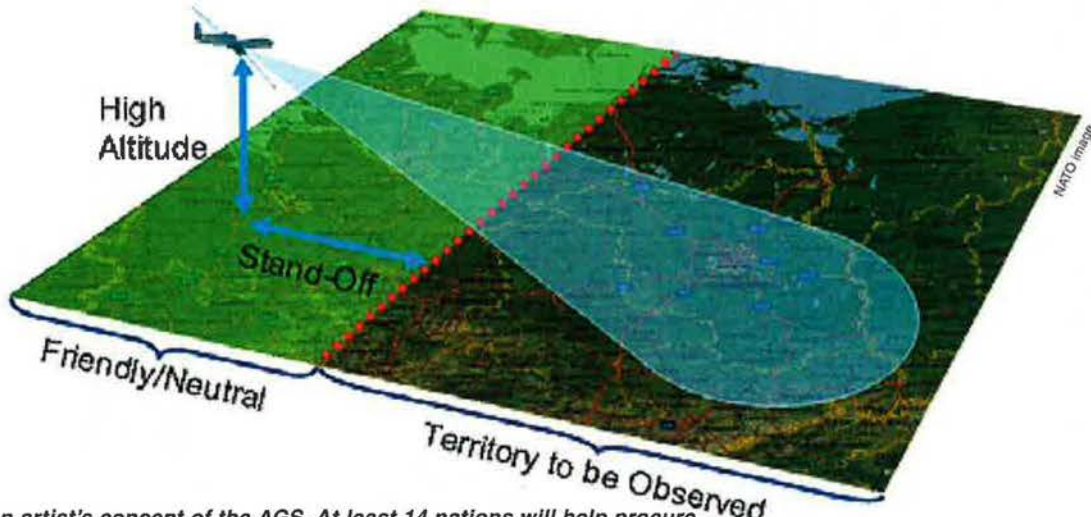
"Not many nations have the required skill sets to be able to train to synthetic aperture radar and GMTI," said a second NATO official. "So what we are trying to do is understand the training need ... and then establish in the fairly short term a training package which will be for image analysts which will bring them then to a standard which the AGS force requires."

The desire is for personnel from the member nations with more experience in this realm to train their Alliance partners, "so those nations which don't have those analysts can still be part of the AGS force," said the official.

AGS had its genesis in the early 1990s when Alliance members expressed the desire to acquire an overhead capability for joint intelligence, surveillance, and reconnaissance. In 2001, the Alliance defined a cooperative AGS program that included a mutually developed sensor called the Trans-Atlantic Cooperative AGS Radar (TCAR).

In 2004, NATO adopted a mixed-fleet approach for AGS, with Airbus A321 manned aircraft and the Global Hawk Block 40s identified to carry TCAR. However, due to declining European defense budgets, the Alliance axed the mixed-fleet idea three years later and opted to go forward with only the Global Hawks. Alliance members

An artist's concept of the fleet of AGS Global Hawks at Sigonella, Italy.



Left: An artist's concept of the AGS. At least 14 nations will help procure it, while others will give "in kind" support to the program. Above: An illustration of the AGS wide-area standoff ground surveillance capability.

also decided then to acquire the already-in-development Northrop Grumman-Raytheon MP-RTIP in place of TCAR.

In 2009, AGS program members signed the program memorandum of understanding that outlined the system's procurement. At its Lisbon summit in Portugal in 2010, NATO reaffirmed the need for AGS. In February 2012, Alliance members approved the approach to collectively cover the costs for operating AGS, paving the way for the signing of the AGS procurement contract that May on the margins of NATO's summit in Chicago. The contract is valued at 1.2 billion euros (base year 2007).

Denmark, which withdrew from the AGS program in 2010, rejoined following the contract signing, bringing the group of procuring nations back up to 14. Poland, in April of this year, announced its intent to join the AGS program and is now in the final stages of negotiating its role.

"This is a process, not just an event, because it involves discussions on industrial participation," said the first NATO official. "We believe that by October-November, Poland

will be a full member of the group of nations procuring the system."

The AGS procurement contract covers what NATO calls the AGS "core": the five Global Hawks; the Sigonella-based ground segment to operate them, capture their data, and analyze that information; the deployable processing stations; a logistical element; and the training.

The contract does not cover the AGS infrastructure—the buildings, hangars, and warehouses at Sigonella—the satellite bandwidth that AGS will require, or the costs of AGS operations and support over the system's life cycle—spare parts, fuel, and civilian manpower, for example.

All 28 Alliance members will collectively fund the infrastructure, all but France will contribute to the satellite bandwidth costs, and all but Britain and France will provide money for operations and sustainment.

In place of funding AGS operations and sustainment, Britain and France intend to provide overhead SAR/GMTI contributions-in-kind to support NATO operations. The British have said they would make their Sentinel R.1 airborne standoff radar aircraft available, while the French have yet to commit to a platform.

France does not plan to contribute to the satellite communications costs because it wants to use its own bandwidth when it contributes in kind, said the official.

The British government has yet to resolve the fate of its Sentinel fleet. Identified for retirement in Britain's 2010 defense white paper, the government is re-examining those plans after Sentinels demonstrated their worth in support of NATO operations in Libya in 2011 and, more recently, in the French military intervention in Mali.

If the British and French contributions-in-kind do not materialize, then both nations are expected to provide their share of the funds to cover AGS operations and sustainment.





US Southern Command photo.

that you make the best use of that capability if there are no ongoing operations,” said the official. “The debate has been brought to the table.”

As such decisions play out, Northrop Grumman continues development of the AGS Global Hawks to meet the schedule for first delivery in 2016. The company will produce the five air vehicles in consecutive order on its assembly line.

Northrop Grumman officials are also working with Denmark and Poland—the newest AGS member and aspirant, respectively—to identify opportunities for their industries to participate in the program. ■

Questions remain for AGS, including when the Alliance will have enough AGS hardware in place and sufficient personnel trained to declare the system initially operational.

To the Table

“We know what the end state is going to be. But the question is: At what point in time can SACEUR declare an initial operational capability and make that available to the Alliance? That is being worked on right now,” said the official. There is also the issue of whether AGS should be available to member states to support national requirements—a scenario like the French military involvement in Mali, for example—if the system is not engaged in a NATO activity.

“I think we are moving towards such ... an arrangement that will allow that,” said the official. “We have something already for AWACS where if there is a need to reinforce national air surveillance capabilities, that nation can request NATO to provide AWACS to support that event. There is a mechanism to do that.”

Use of AGS for a member’s particular national need would bring up issues, such as how to handle the imagery and data.

“Would that information also be made available to NATO as a whole or not? How would it be managed in terms of the operators, the analysts? Because you have a multinational capability doing the analytical part,” said the official.

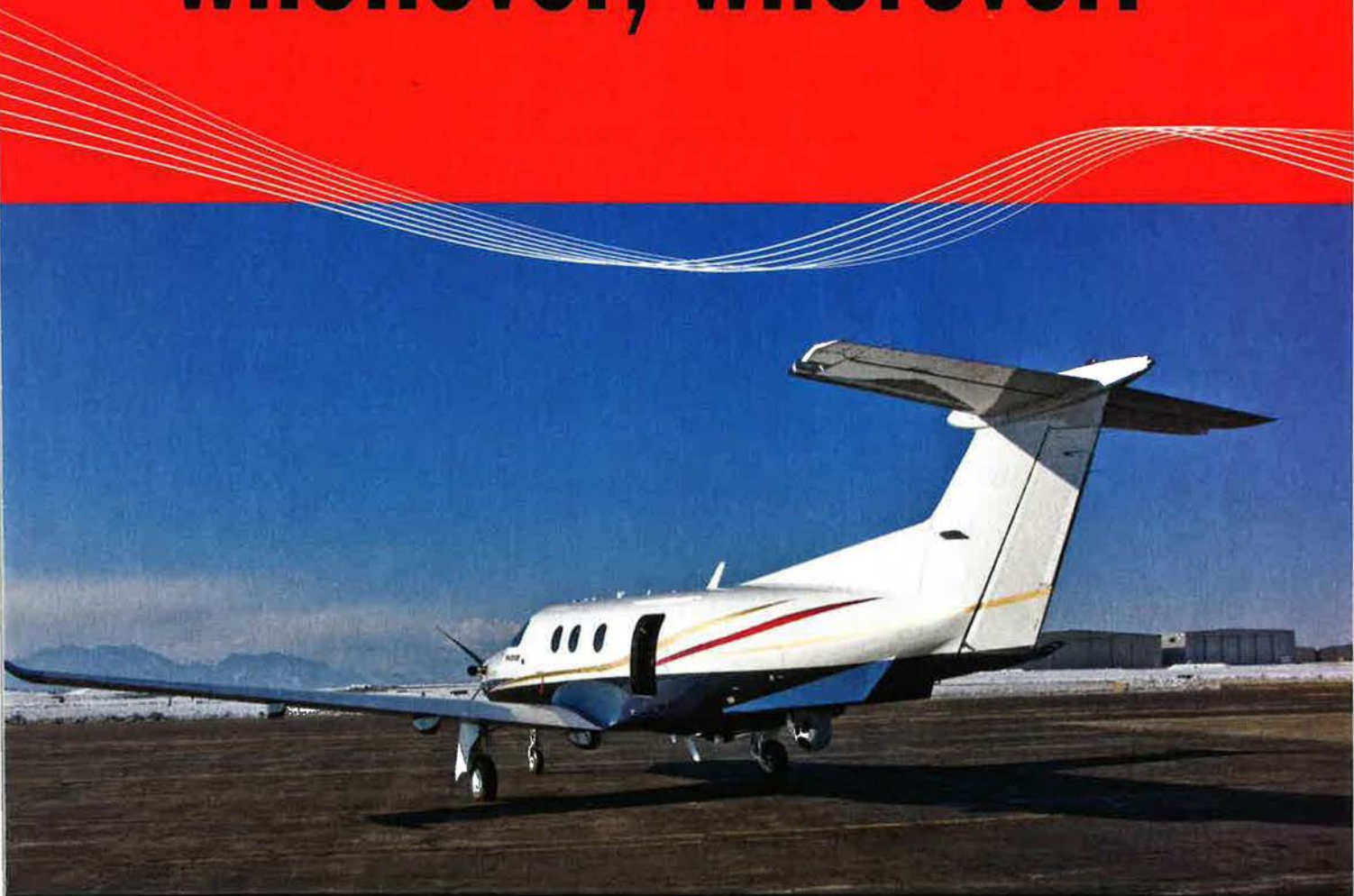
“I think it makes sense certainly in the current economic environment

Above: Imagery of the National Cathedral in Haiti, destroyed in a 2010 earthquake, taken by a USAF Global Hawk. NATO planners hope AGS Global Hawks will send back imagery like this to provide situational awareness. Below: An artist’s concept of the new system.



Illustration by Northrop Grumman and Zaur Eylanbekov

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An aerial photograph of a densely populated city, likely in the Middle East, with a reddish-brown landscape. Two fighter jets are visible: one in the upper right corner, partially cut off, and another in the lower left corner, flying towards the right. The sky is clear and blue.

EAGER LION

By Marc V. Schanz, Senior Editor

As unrest ripples across the Middle East, Jordan strengthens its ties with the US.

AT the “go” signal, the pilot and ground crew of an F-16 sprinted toward their aircraft on the ramp of a desert air base. Word came down from the Air Defense Operations Center that unidentified aircraft had appeared on radar, heading for a large populated area. Maintainers ran down preflight checks, as the pilot got the engine turning. Minutes later, checks complete, the jet taxied to the flight line, and the pilot punched the throttle and streaked off to intercept the intruder.

The drill was a basic run-through of an air defense scramble—a mission many members of the Colorado Air National Guard’s 120th Fighter Squadron watching the launch had flown countless times back at Buckley AFB, Colo.

But this particular day in June, the “Mile High Militia” was drilling far from Colorado, on the home turf of one of their closest partners. The F-16 that had just scrambled belonged to No. 6 Squadron of the Royal Jordanian Air Force, flying from Muwaffaq Salti Air Base in Azraq, Jordan, a desert hamlet some 60 miles east of the capital, Amman. The sortie was one of many simulated air defense scrambles that would take place in the coming days, as Colorado ANG and Jordanian pilots spent nearly two weeks this past June flying daily aerial exercises.

A Royal Jordanian Air Force F-16 leads another Jordanian F-16, a USAF F-16, and two US Marine Corps F/A-18s on a sortie during Eager Lion.

ANG Photo by SMSGT John P. Hohrer



ANG photos by SMSgt. John P. Bohrer

SrA. Kristen Lee and TSgt. Joshua Matthews (beneath wing) from the Colorado Air National Guard ready an F-16 for takeoff as part of a scramble competition during Eager Lion.

The pilots and crews at Azraq were not alone. US, Jordanian, and allied forces undertook a vast and complex series of air, ground, and sea exercises across Jordan during Exercise Eager Lion 2013, geared specifically to reinforce joint operations.

Making the Grade

The exercises at Salti Air Base marked the seventh iteration of an annual aerial event known as Falcon Air Meet. The FAM effort, conceived with the help of Jordan's Prince Feisal Bin Al Hussein, a lieutenant general and former Chief of Staff of the RJAF, is meant to improve cooperation and interoperability between the US, Jordan, and regional allies. Tasks range from air combat, maintenance, and munitions handling to close air support. Several friendly "graded" competitions are part of the event as well, such as the air defense scramble, weapons loading, and a bombing competition. This year, however, FAM was folded under the umbrella of Eager Lion—a more sprawling and complex exercise.

A keystone exercise of military cooperation in the region, the 2013 iteration of Eager Lion played out as regional tensions ratcheted up. At the time, the civil war in

Syria was going from bad to worse, following the arrival of Hezbollah fighters.

A Patriot air defense battery deployed to Jordan at the request of the Jordanian government just prior to the start of the exercise. After the first week of the exercise, the Department of Defense announced in a statement the Patriot battery and F-16s

deployed for exercise support would remain in the country after the conclusion of Eager Lion, to reassure allies and partners and show the US commitment to regional stability.

USAF and RJAF have longstanding ties that have grown closer in recent years. Their pilots have trained together in the



AIR FORCE Magazine / September 2013



US, in Jordan, and in exercises and operations around the world. RJAF pilots and crews flew missions in NATO's Operation Unified Protector over Libya.

This year, F-16s from the 120th FS deployed to fly alongside their counterparts in the RJAF's No. 1 and No. 6 Squadrons over the Jordanian desert. In addition to

the F-16s, the air meet featured F/A-18 Super Hornets from Marine Fighter Attack Squadron VMFA-115 and a deployment of ANG F-16s from the Ohio Guard's 112th Expeditionary Fighter Squadron. Aircraft from both the 120th FS and the 112th EFS remained in Jordan after the completion of Eager Lion activities, at the request of the Jordanians, to continue training activities.

Since 2006, the US has flown alongside the RJAF in each Falcon Air Meet. Allies such as Belgium, Pakistan, Turkey, and the United Arab Emirates also participated.

The Colorado Air Guard, the State Partnership Program affiliate of the RJAF since 2004, has been instrumental in setting up, coordinating, and officiating the series, RJAF officials noted. "It has benefited both sides, as this relationship has built up," Prince Feisal said in a brief June interview at the start of the exercise. "Many [Colorado Air Guardsmen] are here for the fourth or fifth time—it has been a fantastic partnership," he said. "It is not just a rotation; we have built up relationships over time as friends and colleagues."

Still, for the Colorado Air Guard, this year's deployment was a new experience—its first opportunity to fly in the FAM competition rather than serve solely

US marines prepare to load bombs on an F/A-18 in Jordan. Other marines worked with joint terminal attack controllers to perform close air support during Eager Lion.

as judges and organizers. For pilots familiar with air defense drills, the setting allowed some opportunities not normally afforded back home.

"It's a great opportunity. They have great airspace, with few restrictions," said Capt. Carson Brusch, with the 120th FS and one of the competitors in the air defense scramble. Pilots could take off and leave their jet in afterburner to simulate a real-life intercept, a rarity for home station sorties. In Jordan, a pilot can climb as high as he wants and go as fast as he wants, within the specified airspace, he noted.

"The intent is the simulation of a standard alert for homeland defense, just like we do in Colorado, [the Jordanians] want to [practice] it here," said Maj. Chris Southard, the chief of safety for the Colorado ANG's 140th Wing.

Southard served as the chief judge for the "white force"—the organizers for the competitive events of the FAM. But the competition made up only a small portion of the estimated 88 sorties the 120th FS pilots flew. Lt. Col. Patrick Hanlon, the 120th's commander, noted the bulk of the exercise was spent flying continuation training, a daily battery of



TSgt. Sarah McCaan (l) and other troops install a defensive perimeter fence during Eager Lion.



ANG photo by SMSgt. John P. Rohrer

sorties and scenarios that build tactics and capabilities of both US and RJAF pilots.

"The first week out here is primarily air-to-air and counterair missions with the Jordanians," Hanlon said, while the second half of the exercise refined close air support tactics, with progressively more difficult mission profiles.

The events are fun, "but the real gem is the CT, the continuation training. ... That's the true interaction with the Jordanians," Southard said.

This year's installment was much greater in scale than before due to FAM's alignment with Eager Lion. Many sorties flew in support of Eager Lion activities, and USAF and RJAF aircraft flying from Azraq were key to the success of what has become US Central Command's largest in-theater multilateral military exercise. Begun as a bilateral "proof of concept" exercise between the US and Jordan in 2011, it has grown quickly in just three iterations. According to US and Jordanian officials, this year involved some 8,000 personnel, of which approximately 3,000 belonged to the Jordanian armed forces.

In addition to tactical air exercises staged from Azraq, US and Jordanian forces spread across the country for Eager Lion drills, participating in specific scenarios from tabletop exercises aimed at the execution of humanitarian relief contingencies and crisis management to insertion of airborne forces and combined field exercises with air support.

The Navy and Marine Corps, operating in the Red Sea off the coast of Jordan's sole port of Aqaba, exercised amphibious landings, rescue operations, and insertion operations with MV-22 Ospreys, A/V-8B

Harriers, Sea Cobra attack helicopters, and other assets. Lt. Col. Michael Kerkhove, the executive officer of Marine Aircraft Group 50, said the meet is "a great chance to do interservice dissimilar training." Many younger marine pilots, in particular, don't get a chance to fly against F-16s back home.

Major Non-NATO Ally

The exposure to the RJAF's operations, tactics, and capabilities adds value, Kerkhove said, as his squadron works often with air forces in the region as part of theater security cooperation efforts. "Getting to train [with the Jordanians] is a great opportunity. ... You never know who you're going to run into again in the future," he added.

It is easy to see why security cooperation efforts with the Jordanians have expanded. Jordan's military capability is one of the more mature of US allies in CENTCOM's region—and officials on both sides have sought to deepen cooperation. Also, the US commitment in the Middle East has already shifted considerably from one built primarily to support manpower-intensive wars in Iraq and Afghanistan, giving more flexibility for CENTCOM to engage partners.

Training exchanges of pilots, soldiers, and other Jordanian officials have expanded in the past few years. Since 2009, by Defense Security Cooperation Agency estimates, Jordan has received excess US defense equipment to the tune of some \$81 million—from small arms to vehicles to aircraft improvements.

One of two Arab nations with a formal peace treaty with Israel, Jordan was dubbed

Jordanian F-16s take off during a scramble competition between Colorado ANG units and the RJAF units. Jordan has a fleet with some 70 F-16s.

a major non-NATO ally (MNNA) in 1996. This designation has allowed Jordan to receive a wider range of military support from the US—from increased training rotations to loan guarantees to finance modernization efforts.

The 120th FS has a unique perspective as the RJAF's state partner since 2004. The two organizations have participated extensively in exchanges, upgrade training, and exercises.

"This partnership has progressed well," and this was a great opportunity to deploy to Jordan, to operate in a different environment, said USAF Maj. Gen. H. Michael Edwards, the adjutant general of the Colorado National Guard, who visited Jordan during the exercises. The Colorado ANG even sent three of its own to serve as liaison officers in the RJAF's Aviano AB, Italy, operations center for NATO's Unified Protector mission over Libya.

The partnership is closely aligned with Jordan's improved air capabilities. The RJAF currently operates a modest-size fleet of approximately 70 F-16s, both older A/B models and newer variants obtained through surplus sales from European nations. Foreign military financing obtained via US aid has allowed the country to upgrade these aircraft steadily over the last decade, with features such as electronic countermeasure pods, AIM-120 Advanced Medium-Range Air-to-Air Missiles, and

SrA. Cinde Yoho aligns the suspension lugs on a Mk 82 bomb used in a bombing demonstration during Eager Lion.



the capability to carry precision guided munitions.

Jordanian officials note one of the goals of Eager Lion is to aid in the expansion of joint terminal attack controller capabilities in their military, as the country has a small cadre of certified JTACs.

Earlier this year, Colorado Air Guardsmen deployed to Jordan to certify some 10 RJAF pilots in night vision goggle operations in the F-16, said Maj. Jeremiah Tucker, an instructor pilot with the 120th FS. Members of the Colorado ANG and other Guard units trained four Jordanian instructor pilots, four flight leads, and two wingmen in NVG operations.

Those four instructors now have the certification to upgrade their own pilots

Mk 82 bombs explode during the bombing demonstration at a range near Salti AB, Jordan. Below: A C-5M Super Galaxy lands at the northern Jordanian air base during a mission for Eager Lion.



based on what they want to fly, Tucker said. In April, he said, another Colorado ANG pilot visited Jordan to help teach tactics and use of the ALQ-131 electronic countermeasure pod, which has added capability for the country's F-16s.

It is not difficult to see why these changes have grown and flourished here. Nearly landlocked, without large reserves of oil or natural gas, and with an economy largely dependent on services and tourism, Jordan needs peace and stability





ANG photo by SMSGT John M. Fournier

Jordanian and USAF F-16s and USMC F/A-18s fly over Jordan's capital city, Amman, during an Eager Lion sortie. Many of the Eager Lion sorties were staged from Salti, 60 miles east of Amman.

to prosper. Its military ties with the US and regional allies, such as the Arab gulf states, are key to keeping the kingdom's territory secure from myriad threats—particularly the raging civil war in Syria, whose border city of Daraa lies just 50 miles north of Jordan's capital.

President Obama paid a high-profile visit in March, praising Jordan as an “invaluable ally” in a joint appearance with King Abdullah II. In late April, Secretary of Defense Chuck Hagel visited, meeting with both Prince Feisal and Gen. Mashal Al-Zaben, Chairman of the Joint Chiefs of Staff of the Jordanian armed forces. The leaders discussed a decision to sustain a small contingent of US military personnel in Jordan to build on planning, improve joint readiness, and prepare for a “range of scenarios,” according to a spokesman.

In April, Hagel confirmed the US had delivered more than \$70 million in aid to the Jordanian military for equipment and training to detect and mitigate any “chemical weapons transfers” along its border with Syria and aid the ability to secure chemical weapons.

The Jordanian and US effort to expand multilateral Middle East regional security cooperation is reflected in the rapid expansion of Eager Lion. Nineteen countries either participated or sent observers this year, including regional allies Bahrain, Egypt, Kuwait, Lebanon, Qatar, Saudi Arabia, Turkey, the United Arab Emirates, and Yemen. While only 500 non-Jordanian troops participated in drills, both Jordanian

and US officials noted that many observers of the exercise have indicated their countries are interested in future participation.

An Eye on Syria

The 2013 installment emphasized “unconventional warfare,” to include air and missile defense, disaster relief, special operations, counterterror response, and integration with nongovernment organizations, Army Maj. Gen. Awni Al-Adwan, chief of staff for operations of the Jordanian armed forces, said in June. For Jordanian participants, especially those who have seen the growth of Falcon Air Meet, Eager Lion has added a whole new dimension.

In other years, Jordan had its own training areas for F-16s and other fighters, said RJAF Maj. Ali Shabana, a flight commander in Jordan's No. 1 Squadron. “Now, [with Eager Lion this year] the whole country of Jordan is our training area. ... We have more ranges, bigger areas. It stretched our exercise and scenario more ... on the air and on the ground.”

RJAF pilots flew air-to-air exercises with Marine F/A-18s, then close air support with Air Guard F-16s. US and RJAF assets participated in a full scale combat search and rescue exercise with US tactical fighters alongside Jordanian AS 332 Super Puma and AH-1 Cobra attack helicopters at the close of Eager Lion. “It's more

challenging,” Shabana said. There are more spaces; there are more aircraft but it stretches the pilots and gives the confidence, he said.

US and Jordanian officials repeatedly emphasized they were practicing nuts and bolts of air-to-air engagement in the first week of sorties, particularly “defensive counterair”—or DCA to pilots. Jordan's air defenses are of paramount concern to the country's leadership, and as they have improved, RJAF and USAF pilots wanted to push their tactics and skills.

While Washington strenuously delinked Eager Lion activities from events in neighboring Syria, the scenarios flown by many pilots reflected the very real worries of Jordanian and US officials. Air Guard, Marine Corps, and RJAF pilots repeatedly flew tactical intercepts against a range of targets during the air combat portion of the exercise against representative threats. For example, pilots simulated responding to MiG-29 incursions—the Fulcrum being one of the more capable airframes currently operated by the Syrian Air Force.

Given the short distances between population centers such as Amman and the Syrian border, a prime focus was defense of Jordanian airspace. Practicing counterair fundamentals was key to the

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first week, Hanlon said of the exercises. "We want to drill on procedures for intercepts, defending air space, timing, and how to work with recognizing threats."

The Jordanians are also practicing responses to "defector profiles"—the ability to determine if an aircraft is entering your airspace with the intent to defect, not attack. It's a particularly difficult part of air combat, Southard noted. "[It's] what we call 'combat ID,' ... figuring out who is good and who is bad," and quickly. The inclusion of defector scenarios in the exercise is a reflection of real-world concerns. "We change the scenarios according to the situations around the world, and this year we have a defector scenario" to practice, based on what was learned in recent conflicts, Shabana said. He noted RJAF pilots flew sorties in Libya during OUP, a conflict that saw several aerial defectors. These

remain a concern for Jordanian officials in light of developments in Syria.

"There are signals you need to know, how to decelerate, look for lowered landing gears, ... hand signals to let pilots know where to go and what to do," Shabana said. Getting a defector safely on the ground lies in practicing a range of nonverbal communications and being able to recognize and respond accordingly, he added.

"We don't know what their intent is, and until we do we have to be careful and treat that aircraft as hostile until proven otherwise," Southard said of defector profiles.

For both Jordanian and US pilots, the lessons from Libya are still fresh. Flying out of Aviano from March to October 2011, six RJAF F-16s escorted humanitarian aid flights and carried out combat air patrols during NATO operations. This

marked the first time the country's tactical fighters had deployed in a multinational air campaign. "It was an eye opener for us," said Shabana, who flew Unified Protector sorties. "It was surprisingly easy for us in many ways. We had been to a lot of exercises. ... Our lieutenants said, 'Hey, we have done that before.' ... They had more confidence."

USAF Lt. Col. William E. Orton, the 140th Operations Support Squadron commander, was one of the Colorado Guard's liaison officers during OUP and said the experience was a key part of the growing bond between the Colorado Air Guard and the RJAF. "We got to know how we worked, how we each flew," he said. "We have relationships built over time. ... There is a good deal of trust between us."

There is a great value in training events like Falcon Air Meet and Eager Lion, Orton said, as Operation Unified Protector



Col. Floyd Dunstan (center) greets Lt. Col. Patrick Hanlon as Hanlon arrives at Salti, in northern Jordan, to take part in Eager Lion.

demonstrated. The Jordanians supported operations with NATO, the United Arab Emirates, Qatar, and others. They learned a lot in the operation, such as air refueling in combat, Orton stated.

"If you are working alone, you know you're the bad guy," Shabana said with a laugh. "Events like these help all work together, it makes our crew pilots, more prepared to fly. Not just around the world."

Jordanian officials expect that other countries will participate in the future. Several sent representatives to boot



Capt. James Edwards readies for takeoff prior to a scramble. US and Jordanian aircrews flew many air defense drills during the nearly two-week exercise.

Azraq and other locations in Jordan to observe activities. Shabana noted Jordan was hosting observers from the Moroccan military for the first time. Their air force has recently acquired F-16s, and they expressed interest in participating in future air meets and Eager Lion.

"When you look at the world and the changes that are happening, we are finding we are serving side by side more often," Prince Feisal commented. "We will be better prepared as partners. ... It is important we learn how to work together at this phase, instead of when the bullets start flying."

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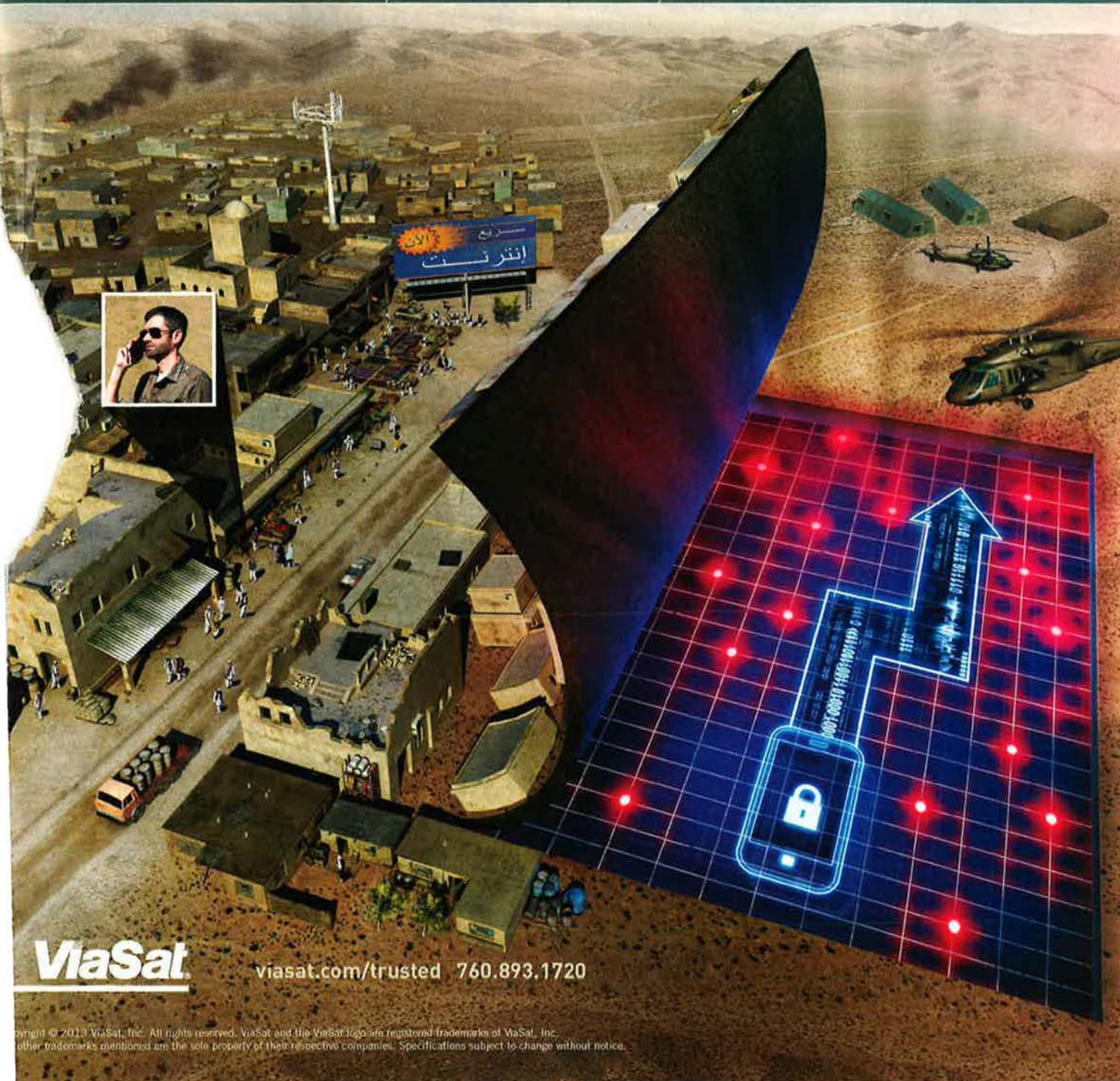
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Massive Retaliation

President Eisenhower entered office convinced the USSR was seeking to bankrupt the US by fanning local wars against US allies. After a year, Secretary of State John Foster Dulles announced a major shift of policy. It was unwise, he said, to "permanently commit US land forces" in Korea, Europe, and elsewhere and "become permanently committed to military expenditures so vast that they lead to 'practical bankruptcy.'" Instead, the US would use a "deterrent of massive retaliatory power" to protect allies. He never directly mentioned nuclear weapons, but his point was made. Thus was born one of the most famous of Cold War terms—massive retaliation.

The Soviet communists are planning for what they call "an entire historical era," and we should do the same. They seek, through many types of maneuvers, gradually to divide and weaken the free nations by overextending them in efforts which, as [Vladimir] Lenin put it, are "beyond their strength, so that they come to practical bankruptcy."

Then, said Lenin, "our victory is assured." Then, said [Joseph] Stalin, will be "the moment for the decisive blow."

In the face of this strategy, measures cannot be judged adequate merely because they ward off an immediate danger. It is essential to do this, but it is also essential to do so without exhausting ourselves. When the Eisenhower Administration applied this test, we felt that some transformations were needed.

It is not sound military strategy permanently to commit US land forces to Asia to a degree that leaves us no strategic reserves. It is not sound economics, or good foreign policy, to support permanently other countries; for in the long run, that creates as much ill will as good will. Also, it is not sound to become permanently committed to military expenditures so vast that they lead to "practical bankruptcy."

Change was imperative to assure the stamina needed for permanent security... We need allies and collective security. Our purpose is to make these relations more effective, less costly. This can be done by placing more reliance on deterrent power and less dependence on local defensive power. ... We want, for ourselves and the other free nations, a maximum deterrent at a bearable cost. Local defense will always be important. But there is no local defense which alone will contain the mighty landpower of the communist world.

Local defenses must be reinforced by the further deterrent of massive retaliatory power. A potential aggressor must know that he cannot always prescribe battle conditions that suit him.

Photo via Wikipedia



Eisenhower and Dulles in the Oval Office.

Otherwise, for example, a potential aggressor, who is glutted with manpower, might be tempted to attack in confidence that resistance would be confined to manpower. He might be tempted to attack in places where his superiority was decisive.

The way to deter aggression is for the free community to be willing and able to resist vigorously at places and by means of its own choice.

So long as our basic concepts were unclear, military leaders could not be selective in building our military power. If an enemy could pick his time and place and method of warfare—and if our policy was to remain the traditional one of meeting aggression by direct and local opposition—then we needed to be ready to fight in the Arctic and in the tropics; in Asia, the Near East, and in Europe; by sea, by land, and by air; with old weapons and with new weapons. ... Before military planning could be changed, the President and his advisors, as represented by the National

Security Council, had to take some basic policy decisions. This has been done. The basic decision was to depend primarily upon a great capacity to retaliate, instantly, by means and at places of our choosing.

Now the Department of Defense and the Joint Chiefs of Staff can shape our military establishment to fit what is our policy, instead of having to try to be ready to meet the enemy's many choices. That permits of a selection of military means instead of a multiplication of means. As a result, it is now possible to get, and share, more basic security at less cost. ■

The Evolution of Foreign Policy

Secretary of State John Foster Dulles
Council on Foreign Relations
New York
Jan. 12, 1954

Find the full text on the
Air Force Magazine website
www.airforcemag.com
"Keeper File"

An MQ-9 Reaper aircraft is shown in flight against a backdrop of a blue sky with scattered clouds and a hazy, brownish landscape below. The aircraft is a high-wing, V-shaped aircraft with a large fuselage and a tail section. It is flying from left to right.

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Welcome to the Hollow Force

By John A. Tirpak, Executive Editor

Grounded units, canceled exercises, and a deepening maintenance backlog make everything the Air Force does more difficult.

The March deployment of stealthy F-22s and B-2s to South Korea was an effective use of airpower—North Korea's belligerent tone softened suddenly and considerably in the following days and weeks—but it also highlighted how complex air operations can be and why readiness is so critical.

"Think about putting together a mission that starts in the United States and goes literally halfway around the world," said Lt. Gen. Burton M. Field of the 37-hour B-2 roundtrip to South Korea. "Do it in a couple of days, ... do it at night, and do it so nobody knows about it until you want them to know about it. That's not an easy thing."

Field, USAF's deputy chief of staff for operations, plans, and requirements,

observed that "having a problem in the middle of the Pacific Ocean, in the middle of the night, in the middle of weather, is not something you want untrained crews to be doing."

Unfortunately, because of the government's budget sequestration, many Air Force crews are falling out of proficiency, and fewer units are ready and available for short-notice operations. This is the new hollow force, and it's going to be with us for a while.

The Air Force's readiness hit rock bottom early this summer, due to the sequester's effect on flying hours. More than 30 squadrons had been grounded since April, while some others flew only enough to maintain the most basic proficiency. Pilot, aircrew, and maintainer skills decayed, and remain precarious: The service's top

leaders say their options are limited if a new war breaks out. If Congress won't reverse the budget sequester before the end of this month, the situation will likely get much, much worse.

The sequester has been "everything we've been telling everybody it was going to be," Air Force Chief of Staff Gen. Mark A. Welsh III said in June. Speaking at a seminar in Arlington, Va., Welsh said, "We have 33 squadrons not flying. There are ... 12 combat-coded squadrons that are not turning a wheel."

Among the canceled and grounded: a weapons school class, a Red Flag exercise, international exercises, Aggressor units that train other pilots in air-to-air combat, and even the Thunderbirds aerial demonstration team. Civilian Air Force employees—everyone from analysts to grounds-



The shadow of an E-3 AWACS stretches across a closed hangar at Tinker AFB, Okla. The budget sequester has sharply degraded the readiness of many Air Force flying units.

ers to those who repair parts—have
ed unpaid furloughs. By mid-June,
maintenance of 84 engines and 24
had been indefinitely postponed,
ded facilities maintenance across
of the service was canceled.

ile some units were put back in the
ter July 15 when Congress granted
mission for USAF to reprogram some
its funds, most grounded units were
not so lucky. Aircrews are trying to
gainful use of the unexpected downtime,
but service officials admit that some of
the activities arranged for them amount to
busywork, as their fighting skills atrophy.
“It’s ugly, right now,” Welsh said.

Michael B. Donley, in an interview
shortly before his June retirement as
Air Force Secretary, said the situation
is nothing less than “a readiness crisis”
from which it will take many months to
recover, even if the sequester is halted
before a new fiscal year begins next month.

“Air Force readiness levels have declined steadily since 2003,” Welsh said in a late May press conference. “We’ve been forced to put full-spectrum training on the back burner to support the current fight. And we’ve also been trading readiness for modernization for the past several years.” The Budget Control Act of 2011—which created the sequester—“has driven us over the readiness cliff.”

Asked, in a June interview, if the Air Force has fallen back to the days of the “hollow force,” Welsh answered, “I think we’re there, now.”

Everything Short

Sequestration took away 30 percent of the Air Force’s remaining Fiscal 2013 flying hour funding. It also obliged the service to slash other operating expenses and reduce the support it can give regional combatant commanders, all of whom have been asked to accept fewer assets and take bigger risks in their theaters of operation.

“We would like to be at a readiness level of ... 80 percent,” Field said in an interview. Instead, by mid-June, less than 50 percent of the Air Force’s “primary fighting forces”—fighter, bomber, intelligence-surveillance-reconnaissance units, and command and control capabilities—were operating at desired readiness levels.

“Combatant commanders are not receiving all the forces they think they need in order to provide stabilizing presence in their regions,” he noted, adding, it’s a “constant negotiation” with the COCOMs to see what requirements they can overlook.

“Our readiness posture was not that great going into the sequester,” Field said. For some time, there haven’t been enough airmen to populate units to 100

percent manning, “so I don’t have the required number of airmen on the flight line that have the required skills levels” to marshal, handle, and repair aircraft. “I don’t have the right amount of flight leads and instructor pilots, aircraft commanders, or instructors in the squadrons.”

When the sequester hit, the priority was to ensure that those forces either in combat or slated to deploy to Afghanistan or several other key areas overseas got top priority, according to Air Combat Command chief Gen. G. Michael Hostage III.

“The strategy we took ... was to first look at the ... Global Force Management Plan and see what it takes to meet all of the operational requirements” of regional COCOMs. These included “named operations” such as Operation Enduring Freedom in Afghanistan, the nuclear mission, aerospace control alert in the US, as well as units deployed in Korea and Japan.

It turned out, Hostage said, “we were short, and we had to go back to the Air Staff and say, ‘You’ve got to give us a little more money so I can at least meet’ the Global Force Management Allocation Plan. Planners found the money, “but I really don’t have anything beyond the GFMAP,” he admitted.

ACC has taken on risk in possible contingency operations, Hostage explained.



USAF photo by S/A Benjamin Stratton

"If Syria blows up, or Iran blows up, or North Korea blows up, I don't have a bunch of excess forces I can immediately shift to that conflict. I'm going to have to pull them from other places."

The Air National Guard and the Air Force Reserve are flying nearly their full planned flying hour program because Congress allowed them the flexibility to reprogram funds within the overall budget reduction. The Total Force units took money out of base operating support and depot maintenance in order to keep flying, according to a Guard Bureau spokeswoman.

The Active Duty USAF, however, had no such flexibility at the outset and was compelled by Congress to lop at least 10 percent off almost every account. But sequestration demanded a full year's spending cuts after half the fiscal year had already passed, and USAF had already been shorted \$1.8 billion in funds to pay for its Afghanistan operations—money it had already been forced to rob from other accounts. The 10 percent cut to flying operations thus quickly ballooned to a 30 percent reduction.

USAF was later allowed to reprogram some of the base budget funds. It put \$413 million toward flying hours, but heavy damage had already been done.

Hostage said he's not relying on the Air Guard for his contingency capability. "What we are doing is looking at using mobilization authority to have greater access to Guard and Reserve forces," he said. That is "very expensive," though, and "if sustained over a long period of time, we'll likely have some political and economic

Ground crews fix a B-1B's blown tire at a forward location in July. Crews either in or preparing to go to combat were spared readiness cuts; others flew minimally or not at all.

ramifications that may make it hard to continue that." Nevertheless, "we're going to give that a try because I fundamentally don't have enough Active Duty operational forces to meet the requirement."

Operational testing has also stopped on everything except the F-22 and F-35. "You can't sacrifice the future completely," Hostage said, and part of his job is ensuring "there's a future out there" for American airpower. In the meantime, certification of new weapons and software for the legacy fleet will languish.

Welsh said the reprogramming authority could get seven squadrons flying at bare minimum rates back up to combat-ready status.

"If you're going to do a no-fly zone anywhere, you're probably going to want your Air Force suppression of enemy air defenses aircraft ready to go," Welsh said. "But we have some of them that have been parked since April. So if you want options, you better bring some of the readiness back up on line." Hostage concurred that SEAD capability, in the form of F-16 Block 50s, must be one of the first capabilities fished out of the sequester barrel.

"There was a lot of pressure to not stand down any units," Hostage said. "I was told, 'Hey, just fly them a little bit, fly them once or twice a month. That'll be OK.' I said, 'No. That's not safe.'"

There are only three categories of readiness, he insisted: Air Force combat squadrons are either "combat mission ready, basic mission capable [or] ... grounded."

"To try to fly the whole force on the limited dollars that we had left meant I would be flying somewhere well below [basic mission currency] across the fleet. That's ... a completely unsafe way to business."

Consequently, Hostage decided the right thing to do was to keep a fraction of his force ready and ground down the rest. The Air Force has before used this approach, commonly referred to as "tiered readiness," Hostage believed it was the only acceptable option.

USAF photo by MSgt. Kevin Wallace



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Cope Nor

Photography by Jim Haseltine, Text by Brandon Conradis



Pacific Air Forces drilled in February with airmen from Japan and Australia in this two-week exercise.

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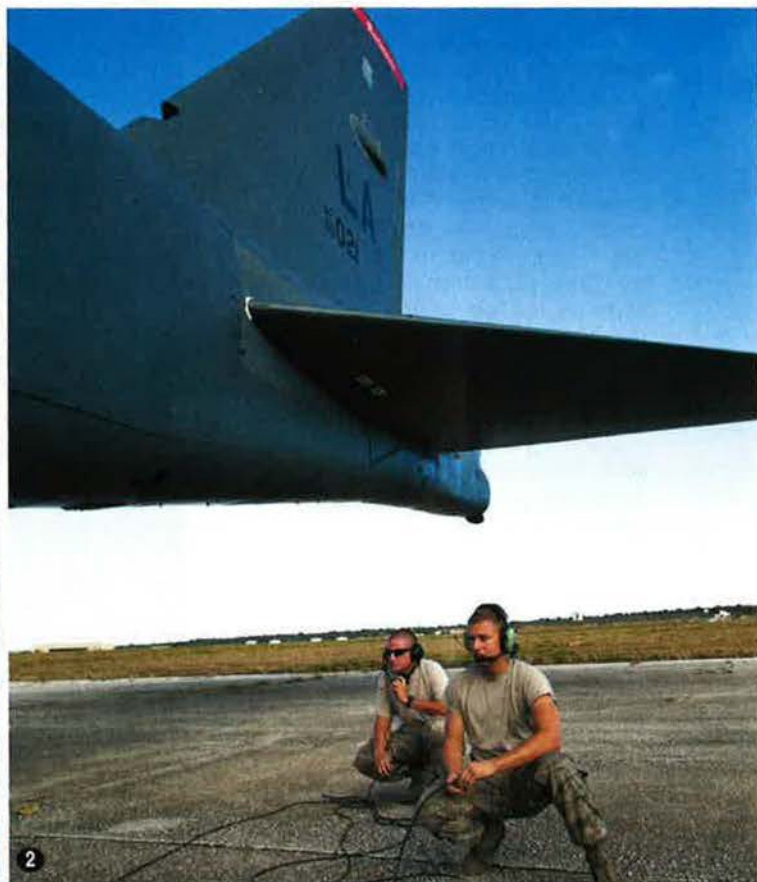
During a Red Air mission at Cope North, Lt. Col. Doug Kline of the 18th Aggressor Squadron maneuvers an F-16. It carries a range instrumentation pod, an ALQ-188, an inert AIM-9M, and two 370-gallon fuel tanks.

In February, members of the US Air Force, the Japan Air Self-Defense Force, and the Royal Australian Air Force convened on the Pacific island of Guam for Exercise Cope North. The two-week exercise, staged out of Andersen Air Force Base, focused on air combat operations, humanitarian aid, and disaster relief. Since 1978, Cope North has served to strengthen ties between the US and its primary Pacific allies, Japan and Australia. For the first time, South Korea sent observers. More than 1,700 airmen participated in the exercise, hosted by Pacific Air Forces.

1 Japanese F-15Js acquire fuel from the JASD's KC-767A tanker. This was the first time Japan supplied air refueling aircraft to Cope North.



2 SSgt. Justin Phillips, SrA. Casey Darnell, A1C Derek Cubrera, and SrA. Luis Sanchez (l-r) prepare to install a laser guided seeker on an inert bomb. **3** 96th Expeditionary Bomb Squadron B-52 pilots—Capt. Robert Jeffrey (left) and 1st Lt. Kyle Fluker—return to Andersen after a sortie. **4** Maj. David Graham, an 18th AGRS F-16 pilot, scans the horizon for his adversary in an air-to-air engagement.



111 A B-52H from the 96th EBS patrols the Pacific Ocean. The squadron deployed to Andersen in October 2012 as part of US Pacific Command's continuous bomber presence. The unit returned to Barksdale AFB, La., two months after Cope North. 121 Two 96th EBS crew chiefs, A1C Dylan Drake (left) and A1C Jeremy Gorman, monitor an engine start-up. 131 Capt. Michael Hansen, a radar navigator from the 96th EBS, searches for targets using the Litening targeting pod. 141 SSgt. Alexander Wheeler, A1C Anthony Rodriguez, SrA. Daniel Babis, and A1C Zachary Christy (l-r) begin loading an AGM-158 JASSM missile onto a B-52. 151 JASDF crew members get ready to refuel an F-2 fighter after a mission.

111 A Japanese E-2C Hawkeye patrols near Guam. The turboprop airborne early warning and control (AEW&C) aircraft was one of three types used to provide the air picture of the area during Cope North.

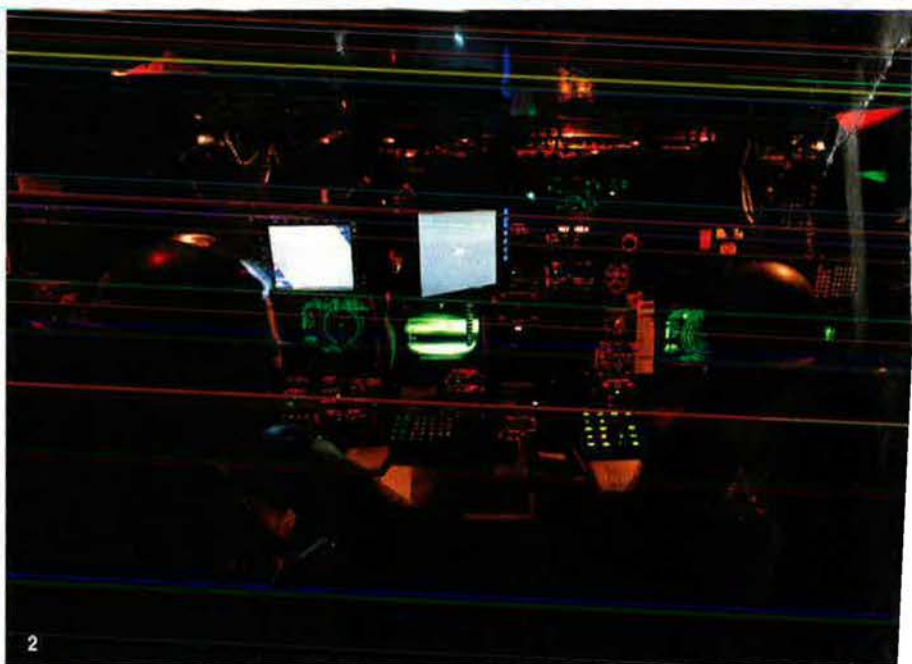
121 Hansen (left) and Capt. Daniel Dukes helped the B-52s get to the target and acquire it. Here, they are at work in the navigators' station during the mission phase of an exercise. 131 The RAAF KC-30 tanker refueled Australian F-18A+ aircraft in the exercise. 141 An RAAF E-9 AEW&C aircraft awaits its next sortie. 151 In preparation for the day's mission, SrA. Ian McMilan (left) and SSgt. Kristopher Woodhull, both from Eielson AFB, Alaska, review paperwork for an F-16.



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111 Fluker of the 96th EBS in a B-52 cockpit. 121 Radar navigator Hansen checks over a Litening targeting pod. Manufactured by Northrop Grumman, the Litening system uses laser imaging sensors, superior image processing, and digital video output to provide aircrews with an effective way to spot targets at long ranges during any time of the day. 131 Several 18th AGRS F-16s line up on the ramp, the first two preparing for takeoff. The F-16 has proved itself as a powerful and effective weapon in multiple roles: air-to-air combat, suppression of enemy air defenses, and air-to-ground attack.



111 A JASDF F-2 and F-15J steer away from each other. The product of a joint Japan-US development program, the single-engine F-2 carries bombs and missiles among its armament. Barely visible on the F-15J's left wing: an air-to-air missile. The JASDF debuted its F-15J in 1981. 121 Capt. Jake Whitlock, an electronic warfare officer from the 96th EBS, prepares for another sortie while working with one of the B-52's onboard computers. 131 A US Navy EA-18G Growler breaks away from a 44th Fighter Squadron F-15C based at Kadena AB, Japan. The F-15C carries an inert AMRAAM. 141 During his preflight walk around, Maj. David Graham from the 18th AGRS installs the puck into his range instrumentation pod.





111 An Air National Guard C-5 from Martinsburg, W.Va. (left), and a C-17 from JB Pearl Harbor-Hickam, Hawaii, are prepped on the ramp at Andersen for their next flights. 121 Jeffrey, the B-52 pilot from the 96th EBS, goes down the preflight checklist for his mission. 131 A1C Robert Knife, A1C Charles Ezeike, and SSgt. Billy Campbell (l-r) load a drag chute into a B-52. 141 Awaiting its next mission, an E-3 AWACS from Kadena sits next to an E-3 from JB Elmendorf-Richardson, Alaska.



As the US refocuses and bolsters its military efforts in the Pacific, the importance of Exercise Cope North continues to grow. ■

Outstanding **AIRMEN OF THE YEAR**

TSGT. JASON D. PAYNE

Combat Control Craftsman, Red Troop, 24th Special Tactics Squadron
24th Special Operations Wing (Air Force Special Operations Command)
Pope Field, N.C.
Home of Record: Pensacola, Fla.

Payne deployed most recently as the sole combat controller with a 50-man US Navy SEAL team in Afghanistan, directing close air support during 31 high-risk missions with zero losses. He helped conduct operations that led to the killing or capturing of 44 enemy fighters. He participated in a successful rescue of a US hostage that required quietly infiltrating an insurgent stronghold after a grueling six-mile journey and then guiding shooters onto enemy positions and personally killing seven enemy fighters. During one mission, he stood exposed in open terrain to survey and secure a hot landing zone to quickly evacuate a wounded SEAL. Payne also served with a national crisis response force where he was the lead CCT with an elite Special Operations Forces team.



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SSGT. LAUREN A. EVERETT

Aerospace Medical Service Journeyman, 48th Inpatient Squadron
48th Fighter Wing (US Air Forces in Europe-Air Forces Africa)
RAF Lakenheath, United Kingdom
Home of Record: Jackson, Mo.

On a Provincial Reconstruction Team in Afghanistan, Everett conducted lifesaving medical procedures while under enemy attack, gathered intelligence, and augmented forward operating base security forces. She received both the Army Commendation Medal and Army Combat Medic Badge. She was the lead combat lifesaver instructor, illustrating tactics to multinational personnel. As one of the few trained to detect traumatic brain injury, she made early identification in 51 cases, securing treatment and ensuring their successful return to duty. Additionally, she coordinated medical care for more than 100 civilians and contractors, assessed numerous trauma patients, and supported nearly 100 outside-the-wire missions.

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SSGT. JOSHUA L. HANNA

Explosive Ordnance Disposal Journeyman, 36th Civil Engineer Squadron
36th Wing (Pacific Air Forces)
Andersen AFB, Guam
Home of Record: Bellwood, Pa.

On his most recent deployment to Afghanistan, Hanna executed 151 joint combat missions and received the Air Force Combat Action Medal. He trained 347 coalition troops on improvised explosive device search techniques and mentored 10 Afghan IED technicians, preparing for the coalition drawdown. He cleared a 15-square-mile area of IEDs and supported 23 Army dismount operations, working with Quick Reaction Forces during enemy contact. He helped sanitize a remotely piloted vehicle crash site. He mitigated an imminent explosive threat, removing munitions from a burning facility after an attack. He also certified personnel on range clearance equipment and led robotic operations during 65 IED responses.



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SSGT. JOSEPH C. SENTENO

Financial Analysis Technician, 2nd Comptroller Squadron
2nd Bomb Wing (Air Force Global Strike Command)
Barksdale AFB, La.
Home of Record: Carlsbad, Calif.

Senteno excelled in managing the wing's second largest account, one previously maintained by a seasoned NCO, and continued to thrive when asked to handle a second high-profile account during a co-worker's deployment. He received a below-the-zone promotion to senior airman and was selected to present a distinguished visitor briefing to the Secretary of Defense, who "coined" him for his excellent presentation. Senteno's efforts included recapturing some \$13 million in overestimated procurement costs and streamlining processes, such as developing an obligation balance tracker that is considered a commandwide benchmark. He also was able to accelerate fund certification, obligating \$2.3 million within hours of receipt and averting possible mission stoppage. Senteno has completed a bachelor's degree in economics and accounting.



SRA. CASEY L. ANDERSON

Mental Health Technician, 59th Mental Health Squadron
59th Medical Wing (Air Education and Training Command)
JBSA-Lackland, Tex.
Home of Record: New Brighton, Pa.

Before enlisting in the Air Force, Anderson received a bachelor's degree in sociology and worked four years as a civilian with Air Force Services in Hawaii. At her first Active Duty assignment, she has consistently performed above her pay grade. The Air Force Medical Operations Agency picked Anderson as a site officer to help determine suitability for a new brain study. She trained 30 psychology residents and numerous other staff members and served as wing predeployment stress instructor and squadron instructor for bystander intervention, basic lifesaving support, and physical fitness training. She also conducted nearly 1,000 post-traumatic stress disorder assessments, saving hundreds of provider hours.



SRA. STEVEN C. HEDGEPEETH

Contracting Specialist, 772nd Enterprise Sourcing Squadron
Enterprise Sourcing Group (Air Force Materiel Command)
JBSA-Lackland, Tex.
Home of Record: Sioux Falls, S.D.

Hedgepeeth was selected below-the-zone for senior airman for cumulative actions that included providing upgrade training and direct contracting support to the Air Force Civil Engineering Center for construction requirements to support operations in Afghanistan. Over one year, he executed 278 contract actions covering three contingencies and touching six countries. He also cleared \$5.7 million in contractor claims. He supported a \$2 million electrical systems upgrade contract for Kabul International Airport in Afghanistan. He also revamped the Afghan Air Force headquarters project, rectifying a four-week delay and recouping \$5 million. During a volunteer 83-day temporary duty at Offutt AFB, Neb., he completed 264 contract actions for DOD and other federal agency customers.

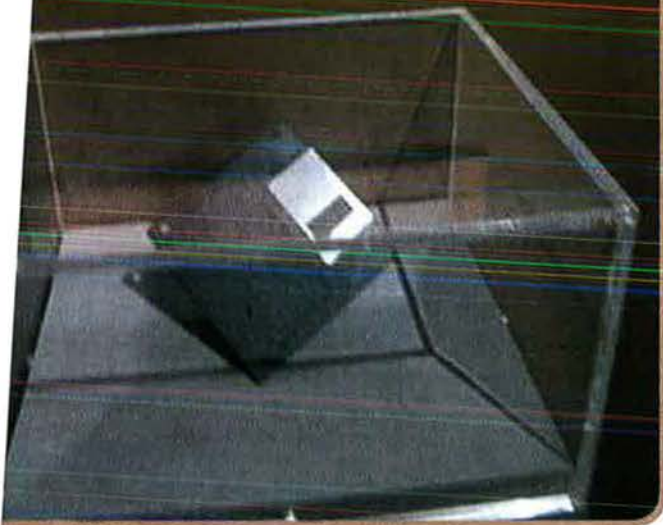


The Morris Internet Worm source code

This disk contains the complete source code of the Morris Internet worm program. This tiny, 99-line program brought large pieces of the Internet to a standstill on November 2nd, 1988.

The worm was the first of many intrusive programs that use the Internet to spread.

The Computer History Museum



Museum: cf Science photo via Wikipedia

Above: The disk containing the 99 lines of code comprising the Morris worm. Right: Frostburg, a supercomputer programmed to perform higher-level mathematical calculations for the National Security Agency, operated from 1991 to 1997.

Valley briefed Air Force Chief Scientist Louis N. Ridenour, who then persuaded MIT President James R. Killian Jr. to establish a new laboratory at MIT and use Air Force money on air defense research. They also hoped to stimulate the information electronics industry.

SAGE was a unique step toward cyberspace because the system was conceived from the beginning as an information architecture. "SAGE was one of the first systems to include immediate, interactive man-machine communication via displays, light guns, and switches," noted a 1974 RAND report on future USAF command and control software requirements.

To work, SAGE needed computers with memory, digital relays linking radar sites to command and control nodes, and systems engineering to bring them together.

Air Force requisites for SAGE carved out many of the tools for cyberspace. First was a fast computer with programmable memory. The MIT campus had a computer known as Whirlwind that could

receive radar data and respond with an intercept path in real-time, thanks to its nascent electrostatic random access memory and programmable read-only memory. The Air Force took over funding of the computer from the Office of Naval Research.

Digital computer maturation in the SAGE project "laid the foundation for a revolution in digital computing, which subsequently had a profound impact on the modern world," summed up MIT's official history. To boost performance, researchers developed magnetic core memory and bolted it on to Whirlwind. Magnetic core memory became the industry standard for the next 20 years.

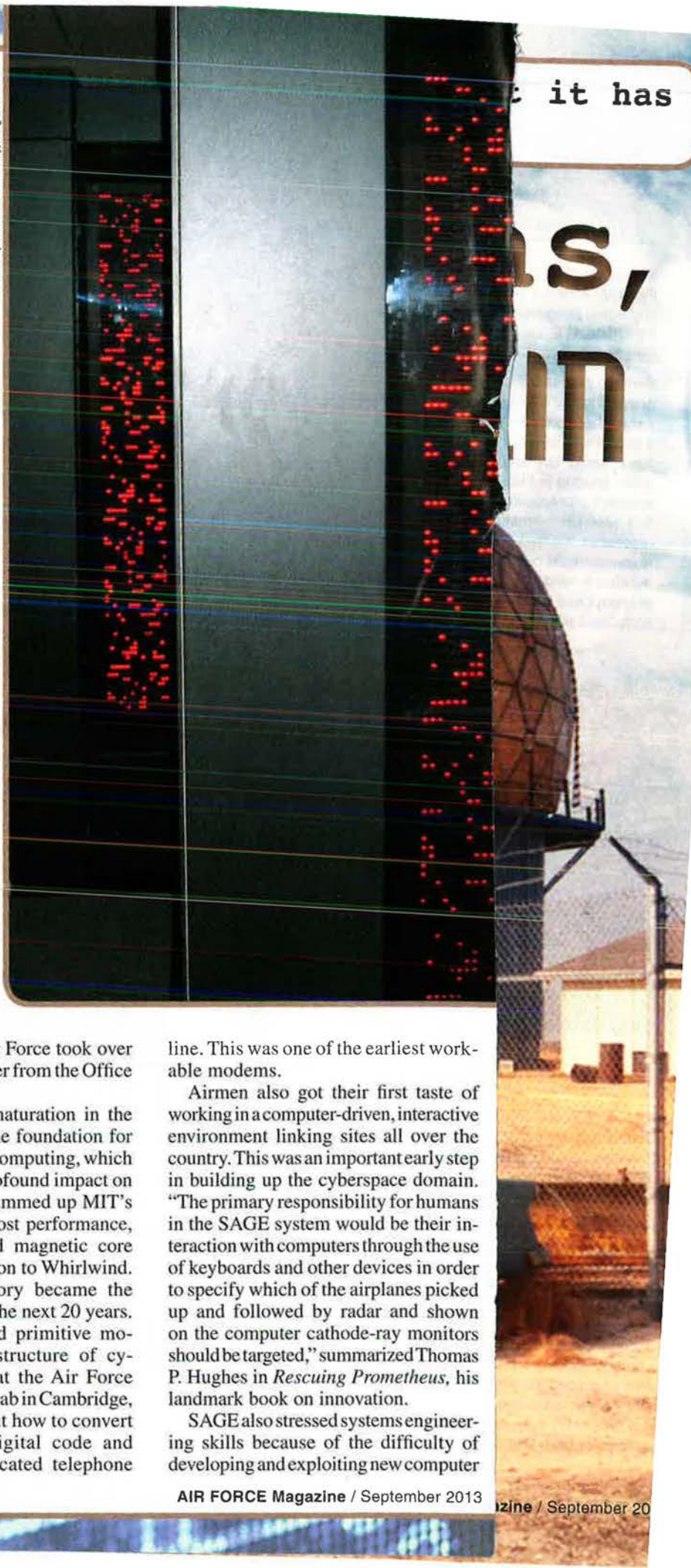
SAGE also utilized primitive modems—the skeletal structure of cyberspace. Scientists at the Air Force Cambridge Research Lab in Cambridge, Mass., also figured out how to convert analog radar into digital code and transmit over a dedicated telephone

line. This was one of the earliest workable modems.

Airmen also got their first taste of working in a computer-driven, interactive environment linking sites all over the country. This was an important early step in building up the cyberspace domain. "The primary responsibility for humans in the SAGE system would be their interaction with computers through the use of keyboards and other devices in order to specify which of the airplanes picked up and followed by radar and shown on the computer cathode-ray monitors should be targeted," summarized Thomas P. Hughes in *Rescuing Prometheus*, his landmark book on innovation.

SAGE also stressed systems engineering skills because of the difficulty of developing and exploiting new computer

Austin Mills photo via National Cryptologic Museum



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and communications technology. In retrospect, “the military requirements for SAGE system placed it beyond the leading edge of software technology,” noted a 1974 RAND report.

It took until 1958 for SAGE to become fully operational. By then, it was also obsolete. Still, SAGE marked the first major commitment of USAF dollars and expertise and provided components of the future cyberspace domain.

One of SAGE’s flaws was its hierarchical communications design. What if a Soviet attack wiped out communications links and blinded SAGE and its successor air defense systems? Survivability of command and control in time of nuclear attack was a big preoccupation in the 1960s as the Soviet Union increased its bomber and missile forces.

A RAND Project Air Force researcher named Paul Baran took on the problem and ended up with another big push in the development of cyberspace—a theory of distributed communications.

Baran saw right away that accurate Soviet intercontinental ballistic missiles spelled big trouble for the current system.

“The proven development of the small [circular error probable] ICBM must evoke a major change of concepts of air defense,” he wrote in a December 1960 report that was classified for decades. “Our communications systems are for the most part conceived upon the model of hierarchical networks. An entire network may be made inoperable at the cost of a few missiles cleverly directed against a few switching center targets.”

What did a superbly hardened command center matter if the links to the air defense sectors and missile fields were destroyed?

The SAGE network was a case in point, according to Baran. Each hierarchical node fed a central control point. The central control points then retransmitted to a central station. Wiping out the key links would shut down command and control.

Instead, Baran envisioned a series of backup centers with commanders. As long as they all had good information, nearly any one of the senior military officers in charge of the set of centers could make a good decision on how to cope with incoming attacks. Baran described potential non-hierarchical network formats starting with a simple “round robin” network. The key was “distributed computation, or totally independent apparatus at each node” providing such routing “without reliance upon a vulnerable central computer.”

In Baran’s concept, the message would travel over the shortest path, carry a security tag, and have its geographical point of origin authenticated. The system as a whole would be set up to identify malfunctions right away. Baran’s work on Strategic Air Command’s nuclear command and control problem laid out a crucial turn in the roots of networking and the Internet to come.

Platform via ARPAnet

By the 1970s, much of the groundbreaking work in cyberspace was tucked under the Pentagon’s Advanced Research Projects Agency. ARPAnet was not conceived as a military communications project. Instead, the main motivation was to facilitate time-sharing by linking together powerful computers that were geographically separated. Computers at major USAF research centers such as RAND and Lincoln Labs were on the net by April 1971.

ARPAnet connected only big computers hosted at universities and companies.

The National Security Agency went off and built its own version of the ARPAnet called Platform.

For the Air Force, this had two cyber implications. Cyberspace would grow in deep secrecy at NSA as signals and intelligence analysis became closer entwined with the cyber world. Airmen would be closely involved in that work, too.

However, cyberspace would also grow from the worlds of education and business. With commercial companies producing faster, more capable computers, USAF turned its focus to tactical applications for information technology.

Air Force Systems Command commissioned a study in March 1971 titled “Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s.” Its purpose was to scope the information processing technology anticipated for command and control of Air Force combat units in the next decade.

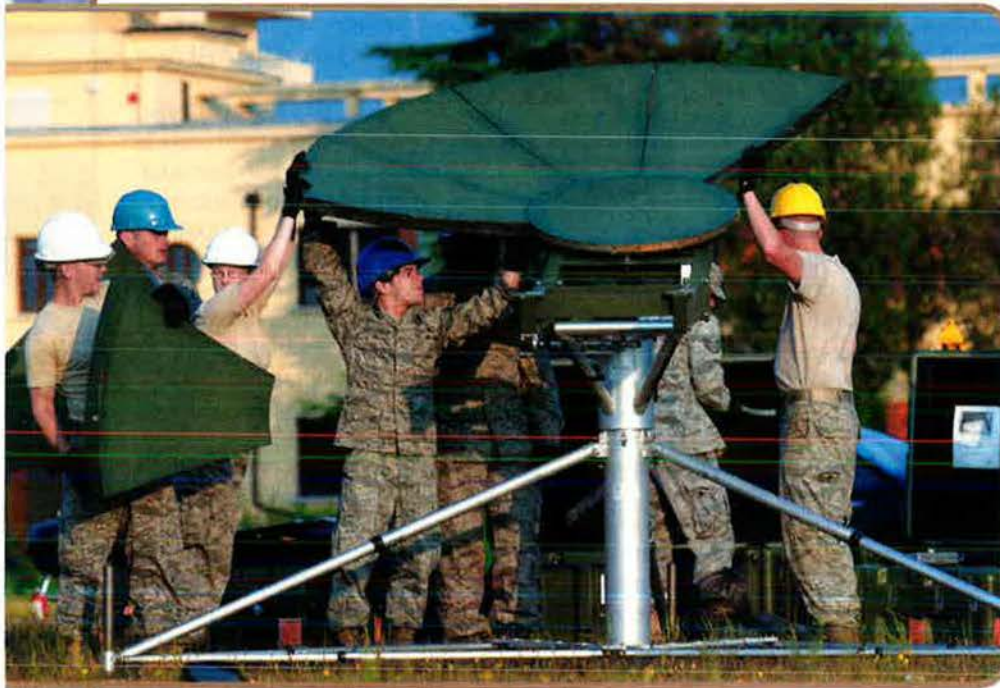
Software was becoming the problem of the 1970s; USAF was already spending almost \$1.25 billion per year on software—three times more than hardware spending for automatic data processing. And software progress was already attracting complaints. “Software has yet to live up to its potential in [command and control] systems,” noted the 1974 RAND report.

However, heavy investment in software spread online systems throughout Air Force major commands. Systems such as the Strategic Air Command Automated Total Information (SATIN IV), the Military Airlift Command Informa-



USAF photo by TSgt. Cohen Young

Then-Secretary of the Air Force Michael Wynne announced in 2006 that USAF would create a cyberspace major command. USAF pulled back and made 24th Air Force the cyber component, under Air Force Space Command authority.



USAF photo by SSGT. Patrick Dixon

Airmen set up a satellite dish in 2009 at Aviano AB, Italy.

tion Management System (MACIMS) scheduler, and others were “online to dozens or hundreds of interactive users, processing several jobs or transactions simultaneously.”

By the 1970s, USAF was also routinely exploiting the online environment for data management and display. In the future, the Air Force planned to extend real-time scenarios and online command decision aids. Based on the use of ARPAnet, Air Force leadership also concluded that real-time digital communications processing would be fully available to the Air Force of the 1980s.

With the advent of the 1980s, USAF completed the shift from technology innovator to customer. In early 1982, the Air Staff looked at the growth of information technology and concluded that the Air Force was no longer a leader in this area, per a study prepared for Chief of Staff Gen. Charles A. Gabriel.

Nor was USAF footing the development bill. Commercial hardware and software dominated—and would lead to new problems.

For the moment, it was the fastest path to changing the information environment for airmen. The 1980s marked a period when the user became a communicator, as one Air Force history put it. Gone were the days of limited

access to computers and networked systems. The 1980s brought desktop applications to Air Force offices and command posts. Military nodes on the ARPAnet expanded, as did local area networks.

Tactics and exploitation of the information domain were about to become big challenges. The late 1980s demonstrated to all the inherent vulnerability in the medium.

In 1986 a hacker from West Germany named Markus Hess carried out a much more cautious and deliberate program of espionage. The Air Force was also involved, via agent Jim Christy of the Office of Special Investigations.

The case began when a systems administrator in California named Clifford Stoll was asked to investigate a tiny unpaid bill of 75 cents—an anomaly in the Lawrence Berkeley Laboratory system. For Stoll, that anomaly began

a trail that led ultimately to Hess, who was conducting computer espionage for the KGB.

“The intruder was impressively persistent and patient,” observed Stoll in his 1988 article, “The Wily Hacker,” Hess attempted to hack 450 different systems. To enter the computers, he exploited weaknesses such as a program called GNU Emacs that allowed mail users system administrator privileges under certain conditions. Hess then searched root directories for files with words like nuclear, SDI, NORAD, or KH-11, one of a family of high-resolution clandestine satellites.

Stoll started a log of the hacker’s activity and kept online to trace him. Soon he was sure the hacker was spying.

“With thousands of military computers attached, the MILNet [an early network] might seem inviting,” Stoll conjectured. No classified computers were connected to the net, but there were treasures to be had, such as access to abstracts of nuclear, biological, and chemical warfare plans pertaining to Europe.

Now Stoll had to get someone to take seriously his report of a wily intruder on the loose. One of the first to encourage him was Christy.

The office was already handling computer crime, and Christy immediately understood the need to let the hacker keep operating as he electronically waltzed from Army computers to the White Sands Missile Range, N.M., to Ramstein AB, West Germany. Tracking Hess was one of the earliest efforts at data forensics—soon to become an essential tool of operations in cyberspace. In fact, Air Force OSI was later designated executive agent for Pentagon cyber crime and forensics.

The Hess case crystallized with a telephone trace. It turned out Hess was accessing US sites through a West

A1C Corey Frey disassembles a computer tower at Ellsworth AFB, S.D. Client systems technicians such as Frey provide account support and troubleshoot computer problems for on-base clients.

USAF photo by A1C Kara Thornton



German telecom provider. Stoll and the FBI created dummy files to entice Hess to linger long enough for a definitive phone trace. It worked.

Hess spent an hour perusing one set of files and was traced to the University of Bremen in West Germany. He was later convicted of spying for the KGB by the German authorities, who put Hess and his accomplices on trial in 1990. They received sentences of up to two years and, later, probation.

Then, on Nov. 2, 1988, 23-year-old Robert T. Morris placed a self-replicating worm on the Internet designed to multiply and seek out other hosts. The Morris worm overtasked computers, by one estimate crashing 6,000 of the 60,000 Internet hosts. DARPA formed its first computer emergency response team (CERT) during the Morris incident.

By the 1990s, the targets for cyber war were changing. Desktop machines, email, online connections, and Internet browsers surpassed the architecture of the 1980s and brought unprecedented access to data. Linked systems with many portals presented fruitful targets for attack.

Hack Attacks

For the Air Force, computer network defense became an essential for theater warfare. In the lead was the 609th Information Warfare Squadron established by Lt. Gen. John P. Jumper at 9th Air Force in 1995. This was the first effort to “conceive, develop, and field IW [information warfare] combat capabilities in support of a numbered air force,” noted the unit’s history.

The Air Force in the 1990s opted for the term “information warfare” to signify a greater mission than the operations of computers, networks, and routers. Information warfare carried the full set of cyber missions and activities, to include reconnaissance, defensive operations, offense, and exploitation. The 609th was “the first of its kind designed to counter the increasing threat to Air Force information systems,” read its initial tasking.

“It was a combination of past warfighters, J-3 types, a lot of communications people, and a smattering of intelligence and planning people,” said now-retired Col. Walter Rhoads, the first commander of the unit. The 609th made its mark during a Blue Flag exercise in 1996. “We had control of the Blue Force air tasking order,” he recalled.

Rhoads estimated the 609th spent 70 percent of its time on offensive



Cyber airmen work at the 624th Operations Center at Joint Base San Antonio-Lackland in Texas. The 624th is part of 24th Air Force, USAF’s cyber component.

operations. The other 30 percent was defending networks by blocking hostile IP addresses and taking other actions. Eventually, the mission of the 609th extended to defending networks in the US Central Command area of responsibility. The initial split of offensive and defensive operations was mirrored at the national level with the task forces of the Defense Information Systems Agency or DISA.

The 609th IWS faced a major test in February 1998. Hackers launched a month-long offensive against DOD networks and Air Force and Navy bases, but no breaches occurred at installations defended by the 609th.

By 1999, the information warfare mission had grown so big that USAF moved the 609th mission into the larger Air Intelligence Agency. Detachments from the 609th would help defend numbered air forces.

At the turn of the century, cyberspace gained national prominence during the Y2K drama. The White House announced a new national cyber security strategy in February 2003, as well, and by the mid-2000s, US Strategic Command had gained a wider global role, which included responsibility for computer network defense and offense under its mission set.

But was USAF’s late 1990s decision to tie cyber to the air operations centers and to the larger intelligence apparatus

still sufficient in the 21st century? Not quite, senior leaders concluded. With a solid foundation already in place, the Air Force moved to embrace the cyber domain as a formal part of its mission.

In 2005, Secretary of the Air Force Michael W. Wynne listed cyberspace operations as one of the “sovereign options” provided by USAF for the nation.

Wynne followed up in November 2006 by designating 8th Air Force as the command responsible for cyber operations. But USAF pulled back, canceling the proposed stand-up of a service cyber command in 2008. Later, the Air Force created 24th Air Force as its cyber component and placed it under Air Force Space Command’s authority.

For the Air Force, now the question remains how much the service should invest in creating cyber capabilities for use in the joint environment, especially as sequestration pressures mount.

“The US Air Force has a longer, more distinguished heritage in the cyber domain than any other military in the world,” wrote Healey.

Airmen will be expected to deliver their best in the cyber realm, and history suggests requirements will change—and change fast. Cyberspace is a domain that rewards the proactive.

Perhaps the old motto of the 609th Information Warfare Squadron says it best—Anticipate or Perish. ■

Rebecca Grant is president of IRIS Independent Research. Her most recent article for Air Force Magazine was “The Rover” in the August issue.

Into the Ring



National Archives photo via wikipedia.org



Sugar Ray Robinson



Photo via boxer: nrm

In 1943, a military photographer snapped this photo of Sgt. George Dudley Wilson (l) and Pvt. Walker Smith Jr. These two airmen served in the same aviation squadron (according to the National Archives) at the US Army Air Forces' Mitchel Field on Long Island. They were famous—not in the military, but in the world of professional boxing, and under different names. Wilson, a silver medalist in the 1936 Berlin Olympics, was a welterweight who used the ring name "California Jackie Wilson." Smith was the one and only "Sugar Ray Robinson," thought by some (including Muhammad Ali) to be the best pound-for-pound boxer who ever lived. When the picture was taken, California Jackie was 25; Sugar Ray was 22. They knew each other well, having just fought a brutal 10-rounder in Madison Square Garden. Coming into that fight, Wilson—who had already enlisted and took furlough for the match—had a 47-4-2 record. Sugar Ray was 40-1-0. Sugar Ray won the bout in a majority decision, with one judge scoring it as a tie. Soon, they both were wearing the uniform of a nation at war.

California Jackie Wilson

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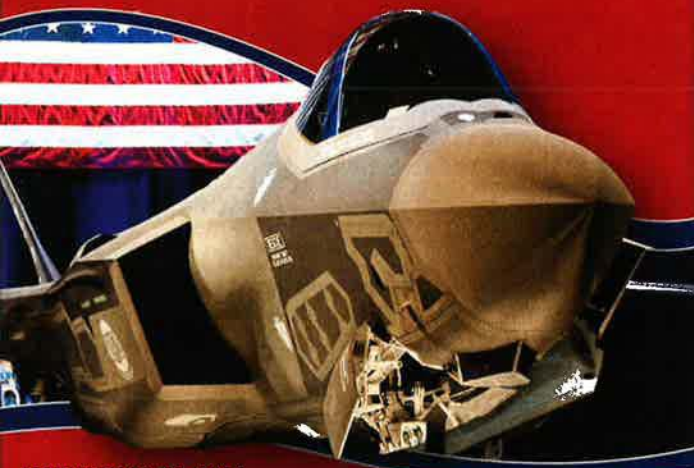
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COIN rose and fell in Vietnam, then returned 40 years later as the main mission in Iraq and Afghanistan.

THE SECOND COMING OF COUNTERINSURGENCY

By John T. Correll

In 1961, the new gospel of counterinsurgency swept like wildfire through the US armed forces, ignited by the personal enthusiasm of President John F. Kennedy. His long-standing interest in what he called “limited brushfire wars” took on additional urgency when Soviet leader Nikita Khrushchev pledged support for socialist “wars of national liberation” in the Third World.

Two weeks after Kennedy’s inauguration, the White House sent a National Security Action Memorandum to the Pentagon directing more emphasis be put on the development of counter-guerrilla forces. It was the first of 23 Kennedy NSAMs on the subject.

The President lavished particular attention on the Army Special Forces. On a visit to the Special Warfare Center at Fort Bragg, N.C., he took conspicuous pleasure in authorizing wear of the green beret, banned previously by Army leaders as elitist.

All of the services jumped on the counterinsurgency bandwagon. The Air Force organized a “Jungle Jim” squadron with vintage aircraft that could operate from remote, primitive bases and established the Special Air Warfare Center at Eglin AFB, Fla., with the 1st Air Commando Group as its primary mission element.

Kennedy recalled former Army Chief of Staff Gen. Maxwell D. Taylor to Active Duty and made him Chairman of the Joint Chiefs. Taylor, who had argued for “flexible response” and less reliance on strategic airpower, had retired in protest and vented his disgruntlement in *The Uncertain Trumpet*. Kennedy read it with approval.

The venue for testing the new doctrine would be Vietnam, where communist insurgents had ousted the French colonial powers and were attempting to overthrow the pro-Western regime of Ngo Dinh Diem in Saigon.

In October 1961, Army Special Forces at Fort Bragg put on a demonstration of capabilities for the White House press corps. Among those attending was Francis Lara of Agence France-Presse, who had covered the French war in Indochina. “All of this looks very impressive, doesn’t it?” Lara said to Tom Wicker of the *New York Times*. “Funny, none of it worked for us when we tried it in 1951.”

The Call to COIN

The United States had some historical precedent for commando and expeditionary operations, dating back to Robert Rogers and his Rangers in the French and Indian War. However, these actions were peripheral and could scarcely be categorized as counterinsurgency.

The European colonial powers dealt with insurgency in Africa, the Middle East, and Asia, but the United States had limited experience. There was some resemblance to counterinsurgency in fighting the Apaches in Arizona and New Mexico, but a closer fit was US suppression of the Moro insurrection in the Philippines in the early 1900s.

The term “counterinsurgency”—instantly abbreviated to COIN—did not come into widespread use until the 1960s, and there are various opinions on how to define it. In general, it refers to countering armed revolution by irregular forces employing Mao Zedong’s hit-and-run tactics from the

1930s: “The enemy advances, we retreat; the enemy camps, we harass; the enemy tires, we attack; the enemy retreats, we pursue.”

In the 1960s and later, the model cited most often for successful counterinsurgency was the British suppression of communist guerrillas in Malaya between 1948 and 1954. But most of the Malayan rebels were ethnic Chinese—a minority group in the country—which made it easier to isolate and target them.

In a phrase that would resonate for the rest of the century, Gen. Gerald Templer, the British high commissioner in Malaya, said, “The answer lies not in pouring more troops into the jungle, but in the hearts and minds of the people.” The basic strategy, developed by Robert Thompson, an officer on Templer’s operations staff, was “Clear and Hold”—clearing an area of insurgents and then keeping it clear. It went considerably beyond the winning of hearts and minds. More than 400,000 Chinese villagers were forcibly resettled to separate them from the guerrillas, who could not sustain themselves in the jungle without help. Substantial numbers of insurgents were killed by direct military action.

Thompson led a British advisory team to South Vietnam from 1960 to 1965. At his suggestion, Ngo Dinh Diem relocated rural villagers into more than 3,000 fortified “Strategic Hamlets” between 1961 and 1963. The idea was to separate the peasants from the insurgents, but the main effect was to alienate the villagers. The experiment was dropped after the death of Diem in 1963. Afterward, Thompson wrote a book, *Defeating Communist Insurgency: The Lessons of Malaya and*

Vietnam, which is still regarded as the classic text on counterinsurgency.

The Experiment Falls Short

Army Special Forces and Air Force air commando squadrons deployed to Vietnam, initially in a training and advisory capacity but gradually evolving to participation in combat. The Central Intelligence Agency, continuing the swashbuckling tradition of its World War II predecessor, the Office of Strategic Services (OSS), had been in Southeast Asia since the 1950s, engaged in covert actions and intelligence gathering.

By 1965, the Army had 60 Special Forces camps in Vietnam. Counterinsurgency played well in news reports back

home, but its effectiveness in Vietnam was minimal.

Vietnam was different from Malaya in several key respects. Malaya was an indigenous, homegrown insurgency with no significant support from outside. The war in South Vietnam was instigated, directed, and sustained from North Vietnam. In Malaya, the British were the sovereign authority, in full control of both the fighting and domestic policymaking. In Vietnam, progress in counterinsurgency was undercut by a balky and corrupt government that had little interest in correcting the root causes of dissent.

Kennedy said more than once, "It's their war, we can't win it for them," but when President Lyndon B. Johnson took over,

President John Kennedy speaks with Army Brig. Gen. William Yarborough at Fort Bragg, N.C., in 1961. Kennedy took pleasure in reinstating the Green Berets.





he introduced US forces in large numbers and made it his war—and America's. Army Gen. William C. Westmoreland, commander of Military Assistance Command Vietnam (MACV), dispensed with the "Enclave Strategy"—which was supposed to keep Viet Cong insurgents out of secure populated areas—and replaced it with "Search and Destroy."

"By late 1966, the war in Vietnam clearly had escalated to a conventional level with US forces heavily committed to combat," said Lt. Col. David J. Dean in an article for *Air University Review*. "The air commandos were not involved in counterinsurgency operations but mostly flew close air support missions."

Counterinsurgency continued in such endeavors as Operation Phoenix, conducted by Army Special Forces and the CIA to identify and aggressively "neutralize" what was called the "Viet Cong infrastructure" in villages. The winning hearts and minds phrase sometimes reduced to the cynical acronym "WHAM"—was heard mostly in jokes until it was brought back in the COIN revival of the 2000s.

Not everyone agreed that counterinsurgency had failed in Vietnam. Gen. Creighton W. Abrams Jr., who followed Westmoreland at MACV, switched from "Search and Destroy" back to "Clear and Hold" with emphasis on protecting the population. Military historian Lewis Sorely, who admires Abrams, said the war was essentially won by 1970, when some 90 percent of the population had been brought under government control.

Gen. Vo Nguyen Giap, commander of the North Vietnamese Army, had never fundamentally regarded the conflict as an insurgency. He believed that guerilla operations were useful in the beginning but

that the final outcome would be decided by the regular army. In the end, Giap was right. When Saigon fell in 1975, it was to 18 main force divisions of the North Vietnamese Army, not to insurgents.

COIN in Disrepute

The prevailing opinion among US military leaders was that counterinsurgency had been discredited in Vietnam. In the years that followed, the word almost disappeared from joint usage and doctrine. The preferred term was "Foreign Internal Defense," which covered a range of unconventional warfare activities.

US special operations forces shifted their focus to raids, rescues, and commando missions. Some special operations capabilities, such as the firepower of Air Force gunships, were prized for their value at all levels of conflict.

The new threat of the 1970s was left-wing terrorism in Europe, the Middle East, and Latin America. In the most notorious incident, 11 Israeli athletes were taken hostage and killed by the Palestinian group Black September at the 1972 Olympics in Munich, Germany. However, terrorism seldom presented a military target or a military solution, so counterterrorism was generally treated as a matter for law enforcement.

The spectacular failure of "Desert One," the April 1980 military mission to rescue Americans held hostage in Iran, raised big questions about the structure and capabilities of US special operations forces. When the hastily planned mission went wrong, several aircraft were lost and eight US servicemen were killed in a swirling sandstorm at a covert refueling site inside Iran. At congressional insistence, the budget for special operations forces was

quadrupled. The Joint Special Operations Command—pulling together the Army's Delta Force, the Navy's SEAL Team 6, the Air Force's 24th Special Tactics Squadron, and other units with "unique and specialized skills"—was created in 1980 to conduct secretive, high-risk operations.

Congress was still not satisfied, and despite the objection of the Joint Chiefs of Staff, the powerful US Special Operations Command (SOCOM) was established in 1987. A proposal in the House of Representatives to make SOCOM the equivalent of a fifth armed service did not pass.



Anti-American Iraqi insurgents pose with their weapons. After the coalition deposed dictator Saddam Hussein, a sectarian civil war flared.

After additional congressional pressure, the Army-Air Force Center for Low-Intensity Conflict was established. Doctrine writers divided military operations up into war and Military Operations Other Than War, or MOOTW—pronounced “Mootwah” by its detractors. A further division made a distinction between combat and noncombat Mootwah. The ridicule proved too much to withstand. Army Gen. John M. Shalikashvili, Chairman of the Joint Chiefs of Staff, said that “real men don’t do Mootwah.” MOOTW fell by the wayside and the Center for Low-Intensity Conflict was shut down.

The Gulf War and other regional conflicts of the 1990s were showcases for airpower, which threatened the prestige and budgets of the ground forces. Any notion that the relative roles of the services had changed was shouted down by advocates of “boots on the ground” in the Pentagon. The Marine Corps expounded on “the Three-Block War,” and there was renewed interest in counterinsurgency, especially

in the West Point Department of Social Sciences—widely known as “Sosh.”

Nation Building

The debate abruptly changed Sept. 11, 2001, when airliners hijacked by terrorists crashed into the World Trade Center, the Pentagon, and a field in rural Pennsylvania. The initial response concentrated on Afghanistan, which had served as a training base and headquarters for al Qaeda terrorists. Over the next three months, Afghan irregulars, supported by US airpower and other forces, seized control of the country and drove al Qaeda into retreat and hiding.

In the aftermath, the United States made radical revisions to its defense plans and strategies. President George W. Bush was convinced that the terrorists in Afghanistan were only part of a broader “Axis of Evil” in Asia and the Middle East. He persuaded Congress and a coalition of allies to take pre-emptive action against Iraq, which intelligence reports said, erroneously, possessed weapons of mass destruction and was likely to use them. Saddam Hussein’s regime in Iraq was promptly ousted by conventional military operations.

The coalition then turned to what it perceived as an insurgency in Iraq by terrorists and others. In what critics described as “mission creep,” the operation morphed into nation building, reminiscent of the early Army Special Forces efforts in Vietnam. This was all the more amazing because in the 2000 election campaign, Bush had been adamant that US troops

should not be used for nation building. In February 2003, he committed the United States to “rebuilding Iraq” and said we would stay there “as long as necessary.”

In 2005, Secretary of State Condoleezza Rice announced in testimony to the Senate that the US strategy in Iraq was “Clear, Hold, and Build,” which combined Robert Thompson’s “Clear and Hold” concept from Malaya with Bush’s recent conversion to nation building. Secretary of Defense Donald H. Rumsfeld declared his surprise and disagreement, but Bush confirmed what Rice had said. The new policy was drawn from the flourishing counterinsurgency movement in the Army, imported to the White House through National Security Council and State Department channels.

The catch was that the problem in Iraq was not an insurgency in any classic sense of the word. It was a sectarian civil war between the Shiite majority and the Sunni and Kurdish minorities. It broke loose in 2003 after a fateful decision by the Coalition Provisional Authority to disband the Iraqi military, which left a power vacuum and no indigenous infrastructure to help maintain order.

The new US National Defense Strategy in March 2005 said irregular warfare—terrorism, insurgency, and other forms of nonconventional conflict—was the dominant form of war facing the United States and its allies. Secretary of Defense Robert M. Gates talked constantly of the importance of fighting irregular wars and said that “the Army will not repeat the mistakes of the past, where irregular warfare was shunted to the side after Vietnam.” The main job of the Air Force was explained as supporting the ground forces in these endeavors.

Despite its concentration on Iraq, the US was committed to establishing a stable government in Afghanistan as well. “Afghanistan was the ultimate nation building mission,” Bush said in his memoir, *Decision Points*.

The Age of Petraeus

The most influential figure in the second coming of counterinsurgency was David H. Petraeus, an Army infantry officer whose Ph.D. dissertation at Princeton—“The American Military and the Lessons of Vietnam”—called for a renewal of Army interest in counterinsurgency and low-intensity conflict. As an assistant professor of international relations in the West Point Social Sciences department in the 1980s, Major Petraeus developed lasting contacts with others of similar persuasion.

As commander of the 101st Airborne Division in Iraq in 2003, Major General

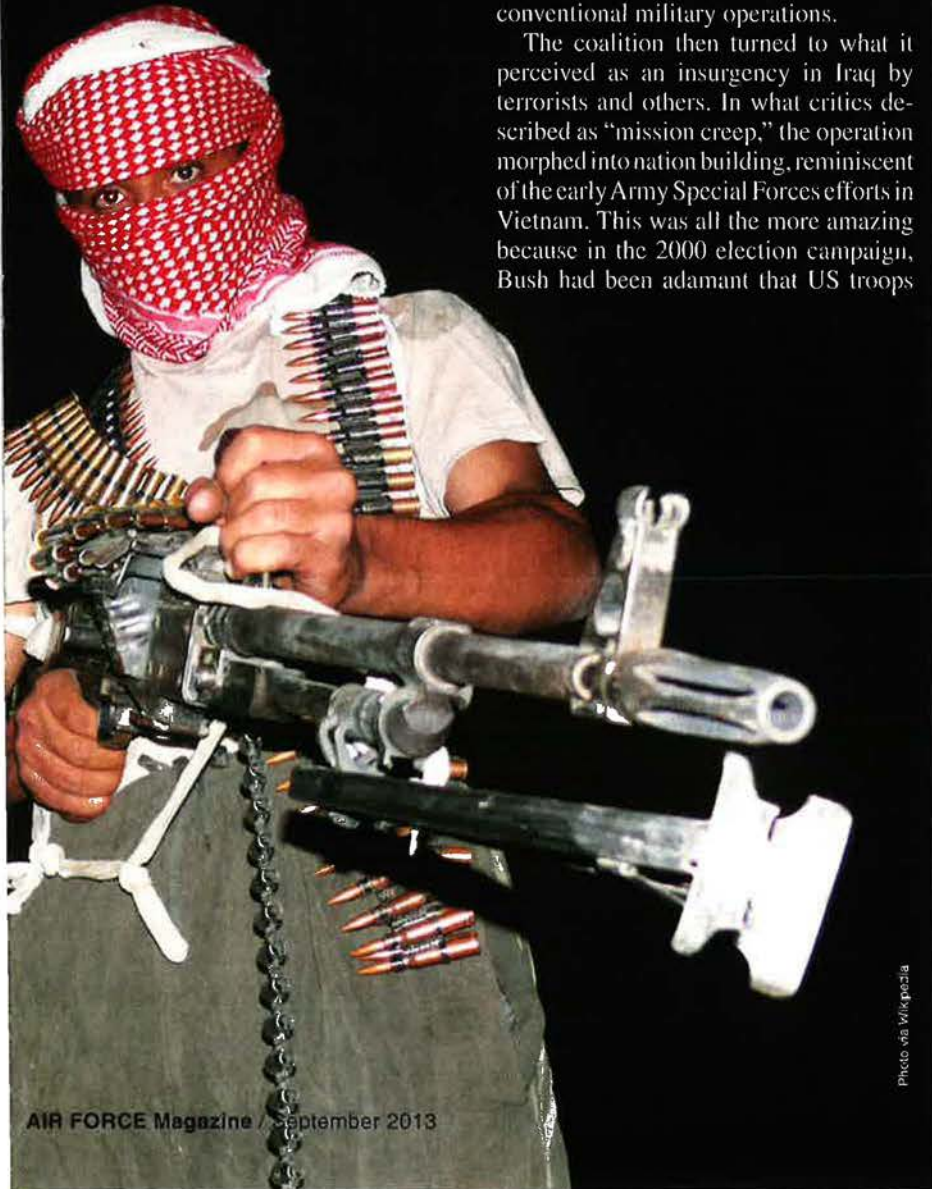
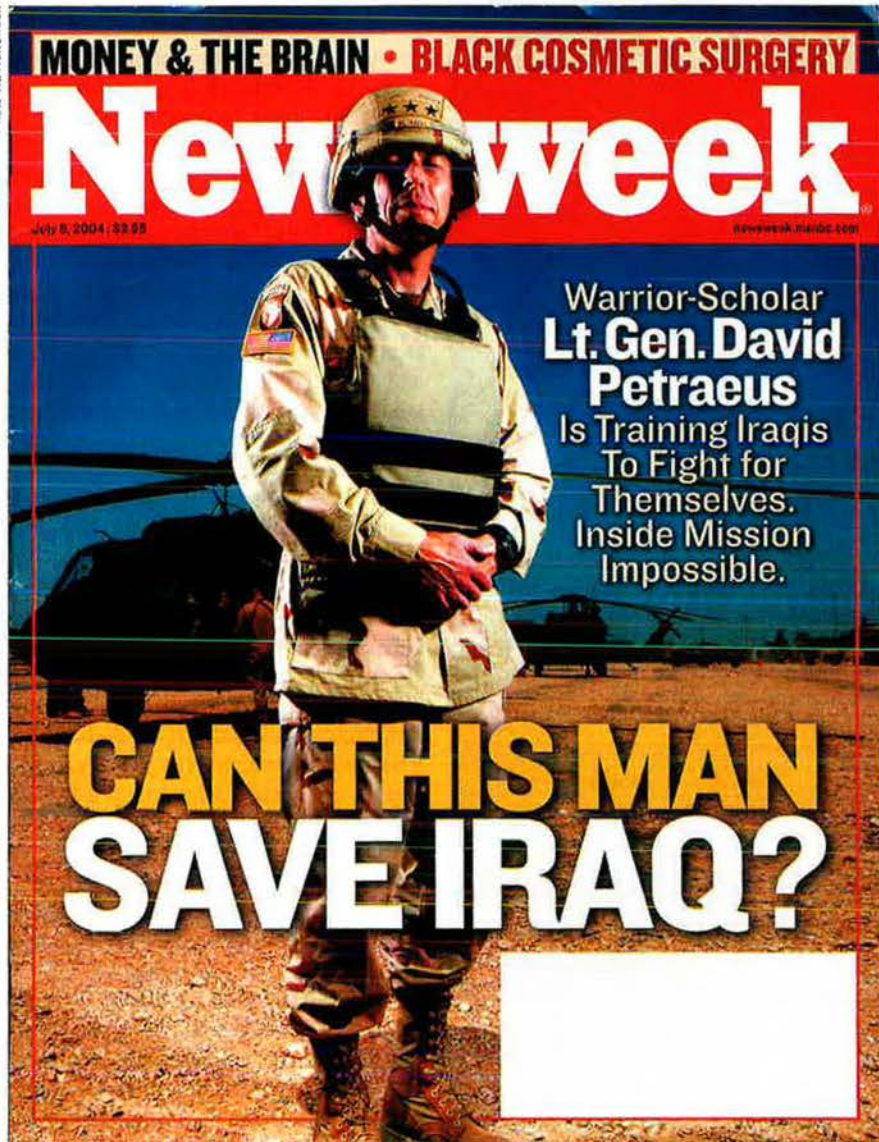


Photo via Viki pedia



David Petraeus graced the cover of *Newsweek* magazine as the head of the Multinational Security Transition Command, which aimed to win Iraqi hearts and minds.

Petraeus achieved remarkable success with classic counterinsurgency and protection of neighborhoods around Mosul. Posters encouraged the troops to “Win Iraqi Hearts and Minds.” On his second tour in Iraq in 2004, Petraeus—now a lieutenant general and head of the Multinational Security Transition Command—appeared on the cover of *Newsweek* with large type asking, “Can This Man Save Iraq?”

Army Col. H. R. McMaster got comparable results with COIN in Tal Afar in northwest Iraq, where he protected the citizens from insurgents, restored basic services, and kept his soldiers circulating among the population. Unfortunately, the effects in Mosul and Tal Afar were local and temporary. They did not last when Petraeus and McMaster left.

Petraeus returned to the United States in 2005 as commander of the Combined Arms Center at Fort Leavenworth, Kan., where the Army composed its doctrines.

He made it his top priority to rewrite the field manual on counterinsurgency and to help him do it he called upon a diverse group of military and civilian advisors and contributors, including colleagues from Iraq and “Sosh” department alumni. He gathered in academicians and journalists, many of them favorably disposed toward COIN as an alternative to lethality in military operations. Sarah Sewall, director of Harvard’s Carr Center for Human Rights Policy, co-sponsored a workshop on COIN with Petraeus at Leavenworth.

Field Manual 3-24, Counterinsurgency, came out to great acclaim in December 2006, issued concurrently as Marine Corps Warfighting Publication 3-33.5. It was written in an informal, sometimes breezy style (“Remember, small is beautiful”), stating that “soldiers and marines are expected to be nation builders as well as warriors.” FM 3-24 set the standard for “effective counterinsurgency” at 20

counterinsurgents per 1,000 citizens in the population. For Iraq in 2006, that meant a combined coalition-Iraqi force of 614,000.

Petraeus was awarded his fourth star and went back to Iraq, this time as Multinational Force-Iraq commander, in 2007. His deputy was Lt. Gen. Raymond T. Odierno, the officer who two years previously had furnished Condoleezza Rice the “Clear, Hold, and Build” concept and suggested language for her testimony.

A surge of 30,000 additional US troops, ordered by Bush over objections from the Pentagon, enabled Petraeus to establish protection for more parts of the country. The level of violence dropped sharply. Argument continues about how much of this was due to the surge and COIN and how much to other factors, such as a rift between the Sunni tribal chiefs and al Qaeda. For a while, the Sunnis joined in the effort to eject the al Qaeda terrorists. In October 2008, Petraeus became commander of US Central Command, the most famous and influential general of his generation.

COIN was on a roll, but at some cost to the orientation and alignment of the force. “Nation building, rather than fighting, has become the core function of the US Army,” said Army Col. Gian P. Gentile, director of the military history program at West Point and a veteran of the war in Iraq.

The Last Stand

President Barack Obama, taking office in 2009, shifted the emphasis of US military power from Iraq to Afghanistan, declaring that “the focus over the past seven years, I think, has been lost.” He proceeded with reducing the force in Iraq but approved the full Pentagon recommendation for an increase of 22,000 troops in Afghanistan, in addition to the 38,000 already there. The strategy was “Clear, Hold, Build, and Transfer,” meaning that the job would be turned over to Afghan authorities as soon as possible.

Army Gen. Stanley A. McChrystal, the new commander of coalition forces in Afghanistan, immediately upped the ante. He wanted 40,000 more troops in addition to those Obama had already approved, but said that force level would enable only a partial counterinsurgency. It would leave gaps between the protected areas and it would not close off access routes from al Qaeda sanctuaries in Pakistan. Obama finally agreed to an addition of 30,000 but stipulated that transfer of forces out of Afghanistan would begin in 2011. “Don’t clear and hold what you cannot transfer,” he said.

USN photo by Petty Officer 1st Class Mark O'Donoghue



Army Gen. Stanley McChrystal is briefed by Lt. Col. Calvert Worth, the commanding officer of the 1st Battalion, 6th Marine Regiment, in Afghanistan. McChrystal's ouster as allied commander paved the way for Petraeus to attempt his brand of COIN.

McChrystal was second to none in his zeal to employ COIN. He put primary importance on avoiding civilian casualties, even if it meant less security for his own forces. He tightened restrictions on the use of airpower and firefights by ground forces. "I recognize that the carefully controlled and disciplined employment of force entails risk to our troops," he said, "but excessive use of force resulting in an alienated population will produce far greater risks."

He did not gain much from his policy of restraint. In April 2010, McChrystal acknowledged that not even one Afghan army company was yet ready to accept transfer of responsibility. His troubled tour came to a sudden end with a *Rolling Stone* interview in which McChrystal and his aides ridiculed Obama and the White House staff for their conduct of the war. Obama fired McChrystal in June and sent Petraeus to take over personally in Afghanistan.

Petraeus moderated the rigid use-of-force rules, but counterinsurgency would not take root in Afghanistan. As in Vietnam, a major problem was that the host nation government was not sufficiently committed to or capable of making it work.

The most effective results against al Qaeda terrorists were from attacks by CIA drones against sanctuaries in Pakistan and by the Joint Special Operations Command, operating under an executive order from Bush that authorized covert strikes and raids whenever necessary. In May 2011,

a Navy SEAL team, working with the CIA and other special operations forces, killed Osama bin Laden at his secret base in Pakistan. The consensus was that counterinsurgency failed in Afghanistan. Petraeus did not become Chairman of the Joint Chiefs of Staff, as his admirers had hoped. Instead, he retired and was appointed director of the CIA.

In revised defense guidance in January 2012, Obama proclaimed "the end of long-term nation building with large military footprints." Secretary of Defense Leon E. Panetta said that "US forces will no longer be sized to conduct large-scale, prolonged stability operations." This effectively put an end to the decade-long resurgence of counterinsurgency. "Hearts and minds have been replaced by drones and SEALs," observed Michael Crowley in *Time* magazine. "Afghanistan was COIN's Waterloo," said Fred M. Kaplan, who had presented a sympathetic interpretation of Petraeus and his objectives in his book, *The Insurgents*.

Reappraisal and Rebound

"After the early deployment of force in both Iraq and Afghanistan to achieve critical national security objectives, mission creep—and the 'group think' of counterinsurgency doctrine—captured Pentagon leadership," said retired Air Force Lt. Gen. David A. Deptula in an

article for AOL Defense. "This led to committing resources to what had then become contingencies of choice rather than necessity."

The last US troops withdrew from Iraq in 2011 and today the plan is to leave only a small contingent—mostly advisors and Army Special Forces—in Afghanistan after 2014. As in Vietnam, the effectiveness of COIN was limited to regional and temporary results.

The Army is rewriting the FM 3-24 counterinsurgency manual. Last year, the Combined Arms Center at Fort Leavenworth revised its estimate of forces required for a successful COIN campaign, recommending 40 counterinsurgents for every 1,000 citizens in the population. That is double the Petraeus rule of thumb of 20 and would, for example, size a force for Afghanistan at a knee-bending 1.4 million. The new FM 3-24 is due out in December 2013, but the latest draft has dropped the force-sizing ratio altogether.

Belief in the COIN concept persists. Odierno, deputy to Petraeus in Iraq and his successor in command there, is now the Army Chief of Staff. In an article in *Foreign Affairs* in 2012, he said that the Army must "preserve the intellectual and organizational knowledge it has gained about counterinsurgency, stability operations, and advise-and-assist missions. This expertise has come at a very high price that is etched into the hearts and minds of all of us who have worn the Army uniform over the last 10 years, and we will not dishonor our fallen comrades by allowing it to atrophy."

Col. Michael J. Meese, head of the Social Sciences department at West Point and a former advisor to Petraeus in Baghdad and Kabul, said COIN "was largely successful in being able to have the Iraqis govern themselves."

Gentile, whose affiliation at West Point is through the History Department rather than "Sosh," takes the opposite view. He has emerged as the foremost critic of counterinsurgency within the Army. He said the Army had become "so tactically oriented toward population-centric counterinsurgency that it [could not] think of doing anything else."

Counterinsurgency, Gentile said, is "not worth the effort." It might ultimately have worked in Afghanistan but only if the United States had been willing to stay there for generations. "I'm talking 70, 80, 90 years," he said. ■

John T. Correll was editor in chief of Air Force Magazine for 18 years and is now a contributor. His most recent article, "The Decade of Detente," appeared in the August issue.

Associated Press photo



USAF photo



its military, political, and economic engagement with China, particularly with the People's Liberation Army.

A June 2012 report from the nonpartisan Congressional Research Service in Washington concluded, "Thailand's reliability as a partner, and its ability to be a regional leader, are uncertain."

Moreover, the report said that when the Obama Administration published its plans to "rebalance" US foreign policy priorities in late 2011, "new moves in the US-Thailand alliance were notably lacking."

More recently, Secretary of Defense Chuck Hagel indicated US displeasure with Thailand during the Shangri-La Dialogue, the annual summit meeting of defense officials and civilian specialists sponsored by the International Institute of Security Studies in Singapore. On the sidelines, Hagel met with senior officials from allies Japan, South Korea, the Philippines, and Australia, plus partners and potential partners from Singapore, Indonesia,

Malaysia, and Vietnam. But notably absent from that lineup was anyone from Thailand.

JUSMAGTHAI

In joint training besides Cobra Gold and Cope Tiger, Thailand is host to 40 other military drills with the United States. Those exercises are arranged and supervised by the Joint US Military Advisory Group Thailand, or JUSMAGTHAI, that is separate from the US Embassy in Bangkok. JUSMAGTHAI is, in effect, the US Embassy to the Royal Thai Armed Forces.

A key tenet of the AirSea Battle concept being developed by USAF and the US Navy is a greater reliance on allies for forces, support, and financial backing as well as for access to air bases, naval ports, and training sites. Thus, Thailand fills the bill on many counts.

Contemporary US-Thai security relations began during the Korean War of 1950 to 1953, when Bangkok

sent combat troops to join the United Nations Command in Korea. In a continuing campaign to stem the spread of communism in Asia, Thailand was among the founding nations of the Southeast Asia Treaty Organization (SEATO).

President Kennedy deployed troops to Thailand in 1962 to prevent communist forces in Laos from spilling over into northeast Thailand. That same year, Secretary of State Dean Rusk and Thai Foreign Minister Thanat Khoman issued a communiqué in which the US committed itself to "the preservation of the independence and integrity of Thailand as vital to the national interest of the United States." That statement has been the basis of US-Thai military relations ever since.

During the Vietnam War, Thailand sent troops to Vietnam but, more importantly, permitted the US to use its bases to launch B-52s, F-105s, and other aircraft on bombing and attack missions over North and South Vietnam. The B-52s were based at U Tapao Royal Thai Air Base, and their operations included the Linebacker II campaign in December 1972.

Elsewhere in Thailand, USAF fighters were based at Korat, Takhli, and Ubon; reconnaissance aircraft were at Udorn; special operations units operated from Nakhon Phanom; and combat support was based at Don Muang, near Bangkok.

Part of the appeal of a US relationship with Thailand is geographic. Thailand is perched alongside the South China Sea, the most heavily traveled waterway in the modern world as it connects the Pacific and Indian Oceans. US Navy vessels use the sea to transit between the two oceans, and the South China Sea carries more commercial traffic than the Suez and Panama Canals combined.

USAF photo by TSgt. Keith Brown



A1C Victor Reynosa waits for an engine start up on a C-130 before a 2006 Cope Tiger mission at Korat RTAB, Thailand.

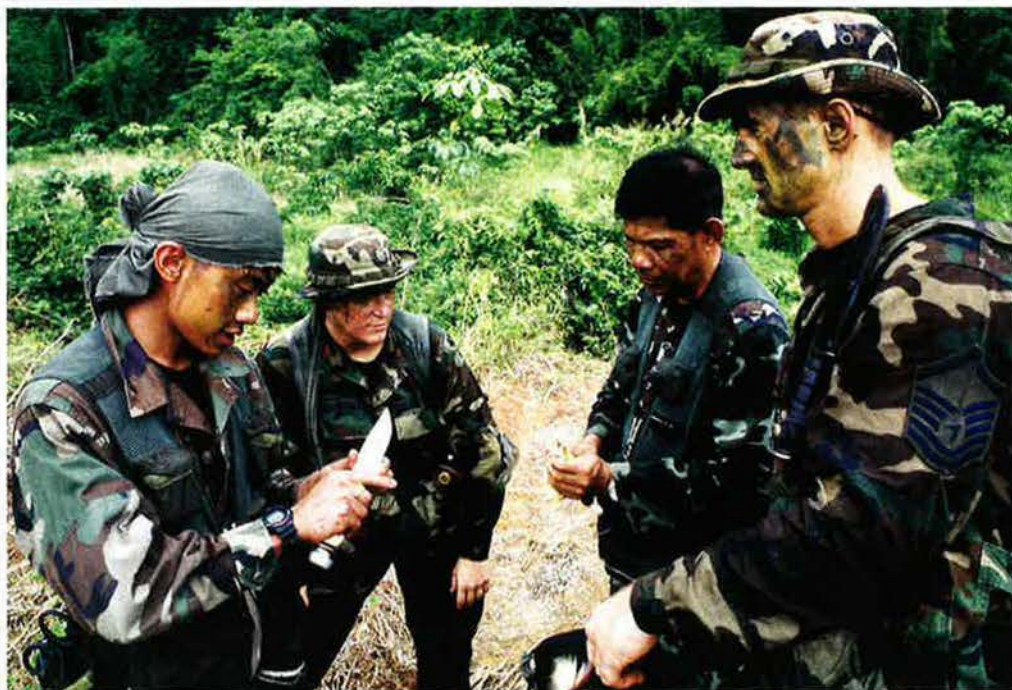


USAF photo



Left: French Premier Georges Pompidou (r) addresses the 1963 opening session of the Southeast Asia Treaty Organization, an international alliance for collective defense of Southeast Asia, as US Secretary of State Dean Rusk (l), British Foreign Secretary Alexander Douglas-Home, Thai Foreign Minister Thanat Khoman listen. Center: An F-105 with the 561st Tactical Fighter Squadron at Korat. Right: A B-52 lands at U Tapao RTAB, Thailand, in 1972, after a combat mission over Vietnam.

DOD photo by Petty Officer 2nd Class Gloria J. Barry



RTAF Sgt. Suttiphon Jankeeree (l) and Sgt. Khvunchi Pinij show USAF Maj. Jean Trakinat (second from left) and MSGt. Joe Sitterly (r) the edible part of a plant during a search and rescue training mission in a 1996 Cobra Gold exercise. The 32nd Cobra Gold was this year.

As a treaty ally, Thailand offers a critical advantage for the US over other nations on the shores of the South China Sea. Thailand is also not engaged in territorial disputes with China over islands, shoals, or the sea itself.

China has claimed much of the South China Sea as territorial waters. Beijing is keenly aware of its vulnerability in the South China Sea, seeing it as a choke point that could strangle the flow of most of its imported oil. China also has long historical ties to Southeast Asia, having at times occupied large parts of Vietnam and holding other states, including Thailand, as vassals. Large numbers of Chinese have emigrated to Thailand and continue to maintain personal and political ties with China.

After the end of the war in Vietnam, Thailand began to expand its military relations with China. According to the CRS study, "Bangkok pursued a strategic realignment with Beijing in order to contain Vietnamese influence in neighboring Cambodia." The Thais established diplomatic ties with Beijing in 1975, well before other Southeast Asian nations did the same.

The Stockholm International Peace Research Institute (SIPRI) reports that Bangkok went on an arms buying spree in China in the 1980s and '90s. Thailand acquired ship-to-ship and surface-to-air missiles, frigates, radar for fire control, and 500 tanks and 1,260 armored personnel carriers.

That military spending dropped off after the Asian financial crisis hit in the late 1990s and has not picked up since. Trade and investment, however, have gone up sharply, much of it carried on by ethnic Chinese in Thailand.

After the 9/11 terrorist attacks in New York and Washington, Thailand allowed the US access to U Tapao and other airfields as stopovers for flights into Iraq and Afghanistan. Thailand also sent 130 soldier-engineers to construct a runway at Bagram Air Base, situated some 25 miles northeast of Kabul. To help with reconstruction in Iraq, Thailand sent 450 medics and engineers after the US invasion. U Tapao was especially useful in the US disaster relief efforts in the region after the 2004 Indian Ocean earthquake and in subsequent calamities.

Relations have not always been rosy.

In 2006, the Thai Army staged a bloodless coup—the 18th since a constitutional monarchy was proclaimed in 1932—to oust Prime Minister Thaksin Shinawatra and declare martial law. The US expressed its disapproval by suspending several foreign assistance programs worth \$29 million, including those providing for defense procurement, professional military education, and training for peacekeeping operations. Those funds were restored in 2008, as an uneasy political stability returned to Bangkok.

Photochart of USAF Leadership

An Air Force Magazine Directory
By Chequita Wood, Media Research Editor

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Lt. Gen. Robert P. Otto



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A10 Strategic Deterrence & Nuclear Integration



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Air Forces Central
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Southwest Asia

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Nellis AFB, Nev.

Air Education and Training Command

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Air Force Recruiting Service
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JBSA-Randolph, Tex.

Air University
Lt. Gen. David S. Fadok
Maxwell AFB, Ala.

Air Force Global Strike Command

Hq. Barksdale AFB, La.



Commander
Lt. Gen. James M. Kowalski



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Maj. Gen. Jack Weinstein



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Master Sergeant**
CMSgt. Brian S. Hornback

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Barksdale AFB, La.

20th Air Force
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Air Force Research Laboratory
Maj. Gen. Thomas J. Masiello
Wright-Patterson AFB, Ohio

Air Force Sustainment Center
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Tinker AFB, Okla.

Air Force Test Center
Maj. Gen. Arnold W. Bunch Jr.
Edwards AFB, Calif.

National Museum of the US Air Force
John L. Hudson
Wright-Patterson AFB, Ohio

Air Force Reserve Command

Hq. Robins AFB, Ga.



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Lt. Gen. James F. Jackson



Vice Commander
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**Command Chief
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10th Air Force
Maj. Gen. William B. Binger
NAS Fort Worth JRB, Tex.

22nd Air Force
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Lt. Gen. John E. Hyten



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Master Sergeant**
CMSgt. Douglas I. McIntyre

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24th Air Force
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Schriever AFB, Colo.

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Hq. Hurlburt Field, Fla.



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Vice Commander
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Hurlburt Field, Fla.

24th Special Operations Wing
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27th Special Operations Wing
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Auxiliary

Civil Air Patrol-USAF

Maxwell AFB, Ala.



Commander

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Civil Air Patrol

Maxwell AFB, Ala.



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Gen. Mark A. Welsh III

Chief of Staff, United States Air Force
Pentagon



US Strategic Command

Gen. C. Robert Kehler

Commander
Offutt AFB, Neb.



US European Command/NATO

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Commander, and NATO Supreme Allied
Commander, Europe
SHAPE, Belgium



US Transportation Command

Gen. William M. Fraser III

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Commander, Allied Air Command
Ramstein AB, Germany



US Pacific Command

Gen. Herbert J. Carlisle

Air Component Commander
JB Pearl Harbor-Hickam, Hawaii



Piotrowski

By John Lowery

At dusk, two heavily armed AT-28s scrambled from the 3,300-foot runway at the Bien Hoa, South Vietnam, military encampment. It was January 1962. The Air Force “air commando” pilots launched to support US Army Special Forces embedded with an Army of the Republic of Vietnam (ARVN) company under attack.

On reaching the target area, the airmen found the Viet Cong had started grass fires, creating dense gray smoke. In the fading light this significantly reduced visibility, making the mission especially difficult. The ARVN soldiers were located in a triangular-shaped fort designed to protect an adjoining village. To point out the enemy’s location, one of the soldiers marked the attackers’ location with a white phosphorous rocket. Then, in a series of passes, the two AT-28s delivered four cans of

napalm and raked the target area with machine gunfire.

The pilots later learned they had saved both the fort and village.

It was the first taste of combat for Capt. John L. Piotrowski and his fellow air commandos, with much more to come. He and the other airmen learned quickly that counterinsurgency warfare was a different kind of war, as it was conducted largely in secret and involved major political as well as military considerations.

Their operations were covert, so the pilots could not receive credit for combat missions nor coveted combat flight time. Instead, each flight was logged as “combat support” or a training sortie.

For Piotrowski the successful mission from Bien Hoa was the beginning of a long, clandestine presence in Southeast Asia.

The son of Polish immigrants, Piotrowski graduated as class valedictorian from Henry Ford Trade School in Dearborn, Mich. This unique high school not only taught teenage students marketable toolmaker skills, its academic curriculum prepared them for admission to a university.

With the Korean War raging, on his 18th birthday, Feb. 17, 1952, Piotrowski registered for the draft. On Sept. 2, 1952, he enlisted in the United States Air Force, scoring 100 percent on mental and aptitude tests.

After boot camp, he was assigned to Keesler AFB, Miss., to a basic electronics course, followed by radar repair school. Then, while checking the weekend duty roster he noticed a letter requesting volunteers for flight training as a pilot or navigator. The applicant had to take a college equivalency test and a Stanine psychomotor test to qualify. Piotrowski immediately volunteered.

After easily passing the tests, he told the interviewer he wanted pilot training.

First generation American John Piotrowski began as an enlisted radio repairman and became Air Force vice chief of staff. He lived the American dream.

Right: Lt. Gen. John Piotrowski in the cockpit of an F-16 during his time as commander of 9th Air Force.



But he was told of a two-year delay for a pilot training class; a navigator class was available in just a couple of weeks. Piotrowski responded, "Sir, you just got yourself a navigator."

Previous electronics and radar training provided an ideal background for this navigation cadet. On Aug. 11, 1954, as one of five distinguished graduates, 20-year-old Piotrowski received the silver wings of an Air Force navigator and was commissioned a second lieutenant.

He was assigned to Japan and the 67th Tactical Reconnaissance Wing and began flying RB-26s on eight-hour weather reconnaissance sorties, forecasting the Korean peninsula's weather patterns. This, along with night college courses, kept him occupied through the two-year assignment.

Jungle Jim

Promoted to first lieutenant and contemplating his return to the US, he requested and was accepted for pilot training. As a member of Pilot Training Class 58-M, he excelled—graduating as top student pilot and awarded the Commander's Trophy. He chose combat crew training in the F-86F Sabre at Williams AFB, Ariz., an assignment that led to a very beneficial career redirection.

On graduating from F-86F crew training, his entire class received orders to Strategic Air Command to become copilots on B-47 bombers. As a newly minted fighter pilot, Piotrowski appealed the assignment to the wing commander. Because of his electronics and radar background, he was offered an opening at Williams as an electronics maintenance officer.

He quickly agreed and the job proved a good fit, as he excelled at improving the fighters' fire-control and radar systems. Concurrently he averaged 90 hours a month flying both jet fighters and the base's C-47 and C-45 transports. Soon he was promoted to captain.

A couple years later he received an unusual interview for a special assignment. A general asked him three questions: "Are you willing to fly obsolete airplanes?" Since Piotrowski was already doing just that,

he responded he was. Was he willing to fly combat missions? As he was a military pilot, again the obvious answer was yes. The final question was more unusual: "If sent into combat and captured are you willing to be disowned by the government?" This required more thought: Eventually, Piotrowski answered, "Yes, sir!"

He shortly thereafter received secret orders to Project Jungle Jim, which later became the 1st Air Commando Wing. The clandestine organization began gestating in the spring of 1961, with President Kennedy's authorization on Oct. 11, 1961, "for the initial purpose of training Vietnamese forces," per the President's national security memorandum.

Piotrowski was to report May 7, 1961, to Eglin Air Force Auxiliary Field No. 9—Hurlburt Field, Fla. The new unit would be equipped with the Navy T-28B trainers and A-26 light attack bombers (later redesignated B-26). Despite experience flying both aircraft, he was assigned as an armament and munitions officer. Still, he felt certain there would be flying involved.





USAF photos

He expressed concern that his munitions experience was limited to training ammunition. His boss, a World War II veteran, just happened to have copies of two important Army Air Corps field manuals, "Bombs for Aircraft" and "Ammunition for Aircraft." He gave both to Piotrowski.

On the long overland trip to Hurlburt Field, Piotrowski memorized the contents of both manuals. Arriving at his new assignment, he proved to be unique—a jet-age pilot and munitions officer with in-depth knowledge of World War II weapons. The combination made him an indispensable asset for the budding air commando operation. He quickly became the go-to man in his unit for getting tasks accomplished, a tag that would follow him the rest of his career.

In early September 1961, Piotrowski proposed marriage to Sheila Fredrickson, and they decided on early December nuptials. Their plans were dashed later that month by a sudden clandestine assignment to Southeast Asia—so secret he couldn't tell his betrothed where he was going or whether he would be able to write or call. Subsequently, with their pastor's indulgence, they managed a late December wedding via telephone from Taiwan and Fort Walton Beach, Fla. The honeymoon would come later.

Piotrowski's assignment was to take six B-26s from storage at the CIA's Air





Above left: USAF airmen train South Vietnamese pilots at Bien Hoa AB, South Vietnam, in 1961. Plotrowski was based there as an air commando. Left: Plotrowski got his fourth star in 1985. Assignments as vice chief of staff, NORAD commander, and head of US Space Command would follow. Above: Airmen load bombs on a B-26 in South Korea in December 1952. Plotrowski came up with the idea of adding wing-mounted pylons on the aircraft to increase the munitions load.

Asia facility at Tainan, Taiwan, and get them combat ready and in place for the budding air commando detachment at the then-primitive South Vietnamese base at Bien Hoa. The aircraft had been loaned to the French in their fight with the Viet Minh. Following the French defeat at Dien Bien Phu, they had been in storage for more than seven years—since the spring of 1954.

Working on Weapons

Piotrowski's idea of wing-mounted weapons pylons for the B-26 came to be during this refurbishing and overhaul process. As configured, the B-26 could carry only bombs of various sizes in the internal bomb bay. The thin-skinned napalm tanks couldn't be safely dropped from a bomb bay, nor could rocket pods be mounted on the wing. With the wing pylon stations the aircraft could carry rockets, bombs, and napalm.

Once the six bombers were delivered to Bien Hoa, he was in and out of combat over the next three years while also involved with new weapons development.

Piotrowski was asked to testify before the US Army's Howze Board, which was evaluating Air Force close air support of engaged ground forces. He later testified before the Senate Armed Services subcommittee on preparedness, regarding the reliability and utility of counterinsurgency aircraft.

Thanks to the Air Force's Operation Bootstrap program, he enjoyed a six-month sabbatical in 1965 to finish his college degree at the University of Nebraska's Omaha campus. He graduated with honors and a perfect 4.0 grade point average. He went back to the 1st Air Commando Wing, this time as an instructor pilot rather than armament and munitions officer.

Later that year, Piotrowski was sent to the Fighter Weapons School

at Nellis AFB, Nev., for more education, studying the F-100 fire-control system, radar, and its M39 20 mm cannon. He was soon permanently assigned as part of a weapons school team conducting one-week training programs in conventional weapons, tactics, and employment for Air Force general officers on their way to Vietnam. The assignment also put him in the F-4C Phantom II.

Once qualified in the Phantom, Piotrowski had a full plate of duties—with responsibility for the senior officers' course, classroom instruction on weapon systems for FWS students, and flying as instructor pilot in the aircraft. It was during this assignment that he fathered night interdiction and close air support by jet fighters, using flares suspended by parachute. The technique was perfected by the air commandos in their AT-28s and B-26s.

In June 1966, Piotrowski helped devise techniques for employing the Navy-developed AGM-62 Walleye, an electro-optical guided glide bomb.

Piotrowski and the major assisting him completed their development work and were sent to the 8th Tactical Fighter Wing at Ubon RTAB, Thailand, to introduce the Walleye into combat.



A KC-10 refuels an E-3 aircraft. The AWACS' future was being debated in Congress until Piotrowski recognized the potential of the concept to direct and control friendly aircraft and pushed hard to keep the airplane in the fleet.

Using newer avionics in the F-4D, the weapon proved very effective.

Piotrowski had a series of staff and educational assignments and, as a colonel, was named commander of the 40th Tactical Group at Aviano AB, Italy. After two years of his leadership, the group was rated "Best in the Air Force" by the Air Force Inspector General.

Piotrowski assumed command of the newly redesignated 552nd Airborne Warning and Control Wing at Tinker AFB, Okla., in 1976. The wing was equipped with the E-3A Sentry, a specially modified Boeing 707 airliner, conceptualized for the continental US air defense early warning system. Yet, because of cost overruns, Congress was debating the efficacy of the aircraft.

Piotrowski—now a brigadier general—recognized the E-3A concept as having greater mission potential and wanted it deployed to control the air assets in tactical warfare situations. He made his point by taking key officials on worldwide deployments, while demonstrating the aircraft's usefulness in both tactical and air defense missions. Subsequently the airborne command and control concept became a part of USAF doctrine and has been repeatedly proved in combat.

Lieutenant General Piotrowski assumed command of 9th Air Force at Shaw AFB, S.C., in 1982. While visiting his new units in Europe and the Middle East, he stopped at Port Sudan on the Red Sea coast of Sudan

to check on the Air Force detachment maintaining pre-positioned US military equipment and war reserve assets stored in warehouses leased from the Sudanese government. During the visit he was once again called on for a unique mission.

Winning a War, Singlehandedly

He was approached, about mid-day the first day of his visit, by the Sudanese Army's regional defense commander who informed Piotrowski he was to depart immediately for Khartoum to meet with the Sudanese First Vice President Omar Muhammad al Tayib. The US Embassy sanctioned the request, and Piotrowski departed in his T-39 Sabreliner.

After landing, and dressed in a business suit, he entered the open door of one of several waiting black limos. Now seated beside the US Chief of Mission, he was informed Ethiopia had attacked Sudan that morning and was overwhelming Sudanese forces near the border. The embassy staff, in concert with the Sudanese leadership, wanted Piotrowski to meet publicly with Sudan's first vice president, for TV cameras.

This involved a salute, handshake, an embrace, and then an entrance into the palace. Following 30 minutes of conversation indoors, the departure routine outside would be a repeat of the arrival scenario for the TV cameras.

On the country's only TV channel, that night the English subtitles announced, "American general with responsibility for the defense of Sudan visits the area to look over the situation and take necessary action."

The "one-day war" was over later that night, as Ethiopian forces withdrew behind their own border.

Piotrowski was promoted to general in August 1985 and became Air Force vice chief of staff. In February 1987 he assumed command of the North American Aerospace Defense Command and US Space Command. He held these critical posts for three years as the Cold War unexpectedly ended, before retiring in 1990.

Piotrowski's life story represents a classic example of the American experience. The son of Polish immigrants progressed from airman basic to the peak of rank and authority in the US military with intelligence, drive, and courage. ■

John Lowery is a veteran Air Force fighter pilot and freelance writer. He is author of five books on aircraft performance and aviation safety. His most recent article for Air Force Magazine, "Lt. No," appeared in the July 2012 issue.

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AFA Almanac

By Frances McKenney, Assistant Managing Editor

Chapters of the Year

Year	Recipient(s)	Year	Recipient(s)	Year	Recipient(s)
1953	San Francisco Chapter	1975	Alamo Chapter (Tex.) and San Bernardino Area Chapter (Calif.)	1993	Green Valley Chapter (Ariz.)
1954	Santa Monica Area Chapter (Calif.)	1976	Scott Memorial Chapter (Ill.)	1994	Langley Chapter (Va.)
1955	San Fernando Valley Chapter (Calif.)	1977	Thomas B. McGuire Jr. Chapter (N.J.)	1995	Baton Rouge Chapter (La.)
1956	Utah State AFA	1978	Thomas B. McGuire Jr. Chapter (N.J.)	1996	Montgomery Chapter (Ala.)
1957	H. H. Arnold Chapter (N.Y.)	1979	Brig. Gen. Robert F. Travis Chapter (Calif.)	1997	Central Florida Chapter
1958	San Diego Chapter	1980	Central Oklahoma (Gerrity) Chapter	1998	Ark-La-Tex Chapter (La.)
1959	Cleveland Chapter	1981	Alamo Chapter (Tex.)	1999	Hurlburt Chapter (Fla.)
1960	San Diego Chapter	1982	Chicagoland-O'Hare Chapter (Ill.)	2000	Wright Memorial Chapter (Ohio)
1961	Chico Chapter (Calif.)	1983	Charles A. Lindbergh Chapter (Conn.)	2001	Lance P. Sijan Chapter (Colo.)
1962	Fort Worth Chapter (Tex.)	1984	Scott Memorial Chapter (Ill.) and Colorado Springs/Lance Sijan Chapter (Colo.)	2002	Eglin Chapter (Fla.)
1963	Colin P. Kelly Chapter (N.Y.)	1985	Cape Canaveral Chapter (Fla.)	2003	Hurlburt Chapter (Fla.)
1964	Utah State AFA	1986	Charles A. Lindbergh Chapter (Conn.)	2004	Carl Vinson Memorial Chapter (Ga.)
1965	Idaho State AFA	1987	Carl Vinson Memorial Chapter (Ga.)	2005	Central Florida Chapter
1966	New York State AFA	1988	Gen. David C. Jones Chapter (N.D.)	2006	Enid Chapter (Okla.)
1967	Utah State AFA	1989	Thomas B. McGuire Jr. Chapter (N.J.)	2007	Central Oklahoma (Gerrity) Chapter
1968	Utah State AFA	1990	Gen. E. W. Rawlings Chapter (Minn.)	2008	Lance P. Sijan Chapter (Colo.)
1969	(no presentation)	1991	Paul Revere Chapter (Mass.)	2009	Paul Revere Chapter (Mass.)
1970	Georgia State AFA	1992	Central Florida Chapter and Langley Chapter (Va.)	2010	C. Farinha Gold Rush Chapter (Calif.)
1971	Middle Georgia Chapter			2011	Lance P. Sijan Chapter (Colo.)
1972	Utah State AFA			2012	Hurlburt Chapter (Fla.)
1973	Langley Chapter (Va.)			2013	Paul Revere Chapter (Mass.)
1974	Texas State AFA				

AFA Membership

Year	Total	Life Members	Year	Total	Life Members
1946	51,243	32	1980	156,394	2,477
1947	104,750	55	1981	170,240	3,515
1948	56,464	68	1982	179,149	7,381
1949	43,801	70	1983	198,563	13,763
1950	38,948	79	1984	218,512	18,012
1951	34,393	81	1985	228,621	23,234
1952	30,716	356	1986	232,722	27,985
1953	30,392	431	1987	237,279	30,099
1954	34,486	435	1988	219,195	32,234
1955	40,812	442	1989	204,309	34,182
1956	46,250	446	1990	199,851	35,952
1957	51,328	453	1991	194,312	37,561
1958	48,026	456	1992	191,588	37,869
1959	50,538	458	1993	181,624	38,604
1960	54,923	464	1994	175,122	39,593
1961	60,506	466	1995	170,881	39,286
1962	64,336	485	1996	161,384	39,896
1963	78,034	408	1997	157,862	41,170
1964	80,295	504	1998	152,330	41,673
1965	82,464	514	1999	148,534	42,237
1966	85,013	523	2000	147,336	42,434
1967	88,995	548	2001	143,407	42,865
1968	97,959	583	2002	141,117	43,389
1969	104,886	604	2003	137,035	42,730
1970	104,878	636	2004	133,812	42,767
1971	97,639	674	2005	131,481	43,094
1972	109,776	765	2006	127,749	43,266
1973	114,894	804	2007	125,076	43,256
1974	128,995	837	2008	123,304	43,557
1975	139,168	898	2009	120,507	43,782
1976	148,202	975	2010	117,480	43,954
1977	155,850	1,218	2011	111,479	44,182
1978	148,711	1,541	2012	106,780	43,686
1979	147,136	1,869	2013	102,540	43,851

Profiles of AFA Membership

As of June 2013 (Total 102,540)

40%	One-year members
18%	Three-year members
43%	Life members
15%	Active duty military
52%	Retired military
14%	Former service
5%	Guard and Reserve
9%	No military service
4%	Cadet
2%	Spouse/widow(er)

Of AFA's service members who list their rank:

65% are officers
29% are enlisted

Of AFA's retired military members who list their rank:

53% are officers
26% are enlisted

AFA Chairman's Aerospace Education Award

2009 ExxonMobil Foundation

2010 USA Today

2011 The National Science Foundation

2012 The Military Channel

2013 The Civil Air Patrol Aerospace Education Program

H. H. Arnold Award Recipients

Named for the World War II leader of the Army Air Forces, the H. H. Arnold Award has been presented annually in recognition of the most outstanding contributions in the field of aerospace activity. Since 1986, the Arnold Award has been AFA's highest honor to a member of the armed forces in the field of national security.

1948	W. Stuart Symington, Secretary of the Air Force	1980	Gen. Richard H. Ellis, USAF, CINC, SAC
1949	Maj. Gen. William H. Tunner and the men of the Berlin Airlift	1981	Gen. David C. Jones, USAF, Chm., Joint Chiefs of Staff
1950	Airmen of the United Nations in the Far East	1982	Gen. Lew Allen Jr. (Ret.), former Chief of Staff, USAF
1951	Gen. Curtis E. LeMay and the personnel of Strategic Air Command	1983	Ronald W. Reagan, President of the United States
1952	Sens. Lyndon B. Johnson and Joseph C. O'Mahoney	1984	The President's Commission on Strategic Forces (the Scowcroft Commission)
1953	Gen. Hoyt S. Vandenberg, former Chief of Staff, USAF	1985	Gen. Bernard W. Rogers, USA, SACEUR
1954	John Foster Dulles, Secretary of State	1986	Gen. Charles A. Gabriel (Ret.), former Chief of Staff, USAF
1955	Gen. Nathan F. Twining, Chief of Staff, USAF	1987	Adm. William J. Crowe Jr., USN, Chm., Joint Chiefs of Staff
1956	Sen. W. Stuart Symington	1988	Men and women of the Ground-Launched Cruise Missile team
1957	Edward P. Curtis, special assistant to the President	1989	Gen. Larry D. Welch, Chief of Staff, USAF
1958	Maj. Gen. Bernard A. Schriever, Cmdr., Ballistic Missile Div., ARDC	1990	Gen. John T. Chain, CINC, SAC
1959	Gen. Thomas S. Power, CINC, SAC	1991	Lt. Gen. Charles A. Horner, Cmdr., CENTCOM Air Forces and 9th Air Force
1960	Gen. Thomas D. White, Chief of Staff, USAF	1992	Gen. Colin L. Powell, USA, Chm., Joint Chiefs of Staff
1961	Lyle S. Garlock, Assistant Secretary of the Air Force	1993	Gen. Merrill A. McPeak, Chief of Staff, USAF
1962	A. C. Dickieson and John R. Pierce, Bell Telephone Laboratories	1994	Gen. John Michael Loh, Cmdr., Air Combat Command
1963	The 363rd Tactical Recon. Wing and the 4080th Strategic Wing	1995	World War II Army Air Forces veterans
1964	Gen. Curtis E. LeMay, Chief of Staff, USAF	1996	Gen. Ronald R. Fogleman, Chief of Staff, USAF
1965	The 2nd Air Division, PACAF	1997	Men and women of the United States Air Force
1966	The 8th, 12th, 355th, 366th, and 388th Tactical Fighter Wings and the 432nd and 460th TRWs	1998	Gen. Richard E. Hawley, Cmdr., ACC
1967	Gen. William W. Momyer, Cmdr., 7th Air Force, PACAF	1999	Lt. Gen. Michael C. Short, Cmdr., Allied Air Forces Southern Europe
1968	Col. Frank Borman, USAF; Capt. James Lovell, USN; and Lt. Col. William Anders, USAF, Apollo 8 crew	2000	Gen. Michael E. Ryan, Chief of Staff, USAF
1969	(No presentation)	2001	Gen. Joseph W. Ralston, CINC, EUCOM
1970	Apollo 11 team (J. L. Atwood; Lt. Gen. S. C. Phillips, USAF; and astronauts Neil Armstrong and USAF Cols. Buzz Aldrin and Michael Collins)	2002	Gen. Richard B. Myers, USAF, Chm., Joint Chiefs of Staff
1971	John S. Foster Jr., Dir. of Defense Research and Engineering	2003	Lt. Gen. T. Michael Moseley, Cmdr., air component, CENTCOM, and 9th Air Force
1972	Air units of the Allied Forces in Southeast Asia (Air Force, Navy, Army, Marine Corps, and the Vietnamese Air Force)	2004	Gen. John P. Jumper, Chief of Staff, USAF
1973	Gen. John D. Ryan (Ret.), former Chief of Staff, USAF	2005	Gen. Gregory S. Martin, Cmdr., AFMC
1974	Gen. George S. Brown, USAF, Chm., Joint Chiefs of Staff	2006	Gen. Lance W. Lord, Cmdr., AFSPC
1975	James R. Schlesinger, Secretary of Defense	2007	Gen. Ronald E. Keys, Cmdr., ACC
1976	Sen. Barry M. Goldwater	2008	Gen. Bruce Carlson, Cmdr., AFMC
1977	Sen. Howard W. Cannon	2009	Gen. John D. W. Corley, Cmdr., ACC
1978	Gen. Alexander M. Haig Jr., USA, Supreme Allied Commander, Europe	2010	Lt. Gen. David A. Deptula, USAF Deputy Chief of Staff, ISR
1979	Sen. John C. Stennis	2011	Gen. Duncan J. McNabb, Cmdr., TRANSCOM
		2012	Gen. Norton A. Schwartz, Chief of Staff, USAF
		2013	Gen. Douglas M. Fraser (Ret.), former Cmdr., SOUTHCOM

John R. Alison Award Recipients

AFA's highest honor for industrial leadership.

1992	Norman R. Augustine, Chairman, Martin Marietta
1993	Daniel M. Tellep, Chm. and CEO, Lockheed
1994	Kent Kresa, CEO, Northrop Grumman
1995	C. Michael Armstrong, Chm. and CEO, Hughes Aircraft
1996	Harry Stonecipher, Pres. and CEO, McDonnell Douglas
1997	Dennis J. Picard, Chm. and CEO, Raytheon
1998	Philip M. Condit, Chm. and CEO, Boeing
1999	Sam B. Williams, Chm. and CEO, Williams International
2000	Simon Ramo and Dean E. Wooldridge, missile pioneers
2001	George David, Chm. and CEO, United Technologies
2002	Sydney Gillibrand, Chm., AMEC; and Jerry Morgensen, Pres. and CEO, Hensel Phelps Construction
2003	Joint Direct Attack Munition Industry Team, Boeing
2004	Thomas J. Cassidy Jr., Pres. and CEO, General Atomics Aeronautical Systems
2005	Richard Branson, Chm., Virgin Atlantic Airways and Virgin Galactic
2006	Ronald D. Sugar, Chm. and CEO, Northrop Grumman
2007	Boeing and Lockheed Martin
2008	Bell Boeing CV-22 Team, Bell Helicopter Textron, and Boeing
2009	General Atomics Aeronautical Systems Inc.
2010	Raytheon
2011	United Launch Alliance
2012	Boeing
2013	X-51A WaveRider Program, Boeing, Aerojet Rocketdyne, and Air Force Research Laboratory

W. Stuart Symington Award Recipients

AFA's highest honor to a civilian in the field of national security, the award is named for the first Secretary of the Air Force.

1986	Caspar W. Weinberger, Secretary of Defense
1987	Edward C. Aldridge Jr., Secretary of the Air Force
1988	George P. Schultz, Secretary of State
1989	Ronald W. Reagan, former President of the United States
1990	John J. Welch, Asst. SECAF (Acquisition)
1991	George Bush, President of the United States
1992	Donald B. Rice, Secretary of the Air Force
1993	Sen. John McCain (R-Ariz.)
1994	Rep. Ike Skelton (D-Mo.)
1995	Sheila E. Widnall, Secretary of the Air Force
1996	Sen. Ted Stevens (R-Alaska)
1997	William Perry, former Secretary of Defense
1998	Rep. Saxby Chambliss (R-Ga.) and Rep. Norman D. Dicks (D-Wash.)
1999	F. Whitten Peters, Secretary of the Air Force
2000	Rep. Floyd Spence (R-S.C.)
2001	Sen. Michael Enzi (R-Wyo.) and Rep. Cliff Stearns (R-Fla.)
2002	Rep. James V. Hansen (R-Utah)
2003	James G. Roche, Secretary of the Air Force
2004	Peter B. Teets, Undersecretary of the Air Force
2005	Rep. Duncan Hunter (R-Calif.)
2007	Michael W. Wynne, Secretary of the Air Force
2008	Gen. Barry R. McCaffrey, USA (Ret.)
2009	Sen. Orrin G. Hatch (R-Utah)
2010	John J. Hamre, Center for Strategic & International Studies
2011	Rep. C. W. "Bill" Young (R-Fla.)
2012	Gen. James L. Jones, USMC (Ret.)
2013	Michael B. Donley, Secretary of the Air Force

AFA Lifetime Achievement Award Recipients

The award recognizes a lifetime of work in the advancement of aerospace.

2003	Maj. Gen. John R. Alison, USAF (Ret.); Sen. John H. Glenn Jr.; Maj. Gen. Jeanne M. Holm, USAF (Ret.); Col. Charles E. McGee, USAF (Ret.); and Gen. Bernard A. Schriever, USAF (Ret.)	2009	Doolittle Raiders, Tuskegee Airmen, and James R. Schlosinger
2004	Gen. Russell E. Dougherty, USAF (Ret.), and Fiorene Miller Watson	2010	Col. Walter J. Boyne, USAF (Ret.); Andrew W. Marshall; Gen. Lawrence A. Skantze, USAF (Ret.); and Women Airforce Service Pilots Natalie W. Crawford; Lt. Gen. Thomas P. Stafford, USAF (Ret.); Gen. Larry D. Welch, USAF (Ret.); Heavy Bombardment Crews of WWII; and Commando Sabre Operation-Call Sign Misty
2005	Sen. Daniel K. Inouye; William J. Perry; and Patty Wagstaff	2012	Gen. James P. McCarthy, USAF (Ret.); Vietnam War POWs; Berlin Airlift Aircrews; Korean War Airmen; Fighter Pilots of World War II
2007	CMSAF Paul W. Airey, USAF (Ret.)	2013	Maj. Gen. Joe H. Engle, USAF (Ret.); US Rep. Sam Johnson; The Arlington Committee of the Air Force Officers' Wives' Club—"The Arlington Ladies"
2008	Col. George E. Day, USAF (Ret.); Gen. David C. Jones, USAF (Ret.); and Harold Brown		

Gold Life Member Card Recipients

Awarded to members whose AFA record, production, and accomplishment on a national level have been outstanding over a period of years.

Name	Year	Card No.	Name	Year	Card No.
Gill Robb Wilson	1957	1	Martin H. Harris	1988	11
Jimmy Doolittle	1959	2	Sam E. Keith Jr.	1990	12
Arthur C. Storz Sr.	1961	3	Edward A. Stearn	1992	13
Julian B. Rosenthal	1962	4	Dorothy L. Flanagan	1994	14
Jack B. Gross	1964	5	John O. Gray	1996	15
George D. Hardy	1965	6	Jack C. Price	1997	16
Jess Larson	1967	7	Nathan H. Mazer	2002	17
Robert W. Smart	1968	8	John R. Alison	2004	18
Martin M. Ostrow	1973	9	Donald J. Harlin	2009	19
James H. Straubel	1980	10	James M. McCoy	2013	20

Dottie Flanagan Staff Award of the Year

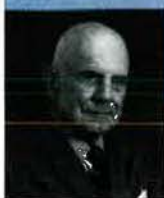
A donation from the late Jack B. Gross, national director emeritus, enables AFA to honor staff members each quarter. Those members become eligible for the staff award of the year.

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	Kalie Doyle
2002	Jeneathia Wright
2003	Jim Brown
2004	Pearlie Draughn
2005	Ursula Smith
2006	Susan Rubel
2007	Ed Cook
2008	Michael Davis
2009	Chris Saik
2010	Bridget Wagner
2011	Merri Shaffer
2012	Caitie Craumer

The Twelve Founders

John S. Allard , Bronxville, N.Y.	W. Deering Howe , New York	James M. Stewart , Beverly Hills, Calif.
Everett R. Cook , Memphis, Tenn.	Rufus Rand , Sarasota, Fla.	Lowell P. Weicker , New York
Edward P. Curtis , Rochester, N.Y.	Sol A. Rosenblatt , New York	Cornelius Vanderbilt Whitney , New York
Jimmy Doolittle , Los Angeles	Julian B. Rosenthal , New York	John Hay Whitney , New York

AFA Chairmen of the Board and National Presidents



Jimmy Doolittle
President, 1946-47
Chairman, 1947-49



Edward P. Curtis
Chairman, 1946-47



Thomas G. Lanphier Jr.
President, 1947-48
Chairman, 1951-52



C. R. Smith
President, 1948-49
Chairman, 1949-50



Robert S. Johnson
President, 1949-51



Carl A. Spaatz
Chairman, 1950-51



Harold C. Stuart
President, 1951-52
Chairman, 1952-53



Arthur F. Kelly
President, 1952-53
Chairman, 1953-54



George C. Kenney
President, 1953-54
Chairman, 1954-55



John R. Alison
President, 1954-55
Chairman, 1955-56



Gill Robb Wilson
President, 1955-56
Chairman, 1956-57



John P. Henebry
President, 1956-57
Chairman, 1957-58



Peter J. Schenk
President, 1957-59



James M. Trail
Chairman, 1958-59

AFA Chairmen of the Board and National Presidents (cont.)



Howard T. Markey
President, 1959-60
Chairman, 1960-61



Julian B. Rosenthal
Chairman, 1959-60



Thos. F. Stack
President, 1960-61
Chairman, 1961-62



Joe Foss
President, 1961-62
Chairman, 1962-63



John B. Montgomery
President, 1962-63



W. Randolph Lovelace II
President, 1963-64
Chairman, 1964-65



Jack B. Gross
Chairman, 1963-64



Jess Larson
President, 1964-67
Chairman, 1967-71



Robert W. Smart
President, 1967-69



George D. Hardy
President, 1969-71
Chairman, 1966-67
Chairman, 1971-72



Martin M. Ostrow
President, 1971-73
Chairman, 1973-75



Joe L. Shosid
President, 1973-75
Chairman, 1972-73
Chairman, 1975-76



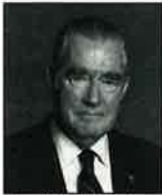
George M. Douglas
President, 1975-77
Chairman, 1977-79



Gerald V. Hasler
President, 1977-79
Chairman, 1976-77



Victor R. Kregel
President, 1979-81
Chairman, 1981-82



Daniel F. Callahan
Chairman, 1979-81



John G. Brosky
President, 1981-82
Chairman, 1982-84



David L. Blankenship
President, 1982-84
Chairman, 1984-85



Edward A. Stearn
Chairman, 1985-86



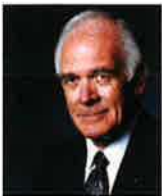
Martin H. Harris
President, 1984-86
Chairman, 1986-88



Sam E. Keith Jr.
President, 1986-88
Chairman, 1988-90



Jack C. Price
President, 1988-90
Chairman, 1990-92



Oliver R. Crawford
President, 1990-92
Chairman, 1992-94



James M. McCoy
President, 1992-94
Chairman, 1994-96



Gene Smith
President, 1994-96
Chairman, 1996-98



Doyle E. Larson
President, 1996-98
Chairman, 1998-2000



Thomas J. McKee
President, 1998-2000
Chairman, 2000-02



John J. Politi
President, 2000-02
Chairman, 2002-04



Stephen P. Condon
President, 2002-04
Chairman, 2004-06



Robert E. Largent
President, 2004-06^a
Chairman, 2006-08^b



Joseph E. Suttler
Chairman, 2008-10



S. Sanford Schlitt
Chairman, 2010-12



George K. Muellner
Chairman, 2012-

^a The office of National President, an elected position, was disestablished in 2006.

^b AFA's Chairman of the Board also serves as Chairman of both AFA affiliates, the AFA Veteran Benefits Association and the Air Force Memorial Foundation.

Vice Chairmen for Field Operations

Joseph E. Sutter	2006-08
James R. Lauducci	2008-10
Justin M. Faiferlick	2010-12
Scott P. Van Cleaf	2012-

Vice Chairmen for Aerospace Education

L. Boyd Anderson	2006-07
S. Sanford Schlitt	2007-10
George K. Muellner	2010-12
Jerry E. White	2012-

National Treasurers

W. Deering Howe	1946-47
G. Warfield Hobbs	1947-49
Benjamin Brinton	1949-52
George H. Haddock	1952-53
Samuel M. Hecht	1953-57
Jack B. Gross	1957-62
Paul S. Zuckerman	1962-66
Jack B. Gross	1966-81
George H. Chabbott	1981-87
William N. Webb	1987-95
Charles H. Church Jr.	1995-2000
Charles A. Nelson	2000-05
Steven R. Lundgren	2005-10
Leonard R. Vernamonti	2010-

National Secretaries

Sol A. Rosenblatt	1946-47
Julian B. Rosenthal	1947-59
George D. Hardy	1959-66
Joseph L. Hodges	1966-68
Glenn D. Mishler	1968-70
Nathan H. Mazer	1970-72
Martin H. Harris	1972-76
Jack C. Price	1976-79
Earl D. Clark Jr.	1979-82
Sherman W. Wilkins	1982-85
A. A. "Bud" West	1985-87
Thomas J. McKee	1987-90
Thomas W. Henderson	1990-91
Mary Ann Seibel	1991-94
Mary Anne Thompson	1994-97
William D. Croom Jr.	1997-2000
Daniel C. Hendrickson	2000-03
Thomas J. Kemp	2003-06
Judy K. Church	2006-09
Joan Sell	2009-11
Edward W. Garland	2011-

AFA Executive Directors/President-CEOs



Willis S. Fitch
Executive Director
1946-47



James H. Straubel
Executive Director
1948-80



Russell E. Dougherty
Executive Director
1980-86



David L. Gray
Executive Director
1986-87



John O. Gray
Executive Director
1987-88
1989-90



Charles L. Donnelly Jr.
Executive Director
1988-89



Monroe W. Hatch Jr.
Executive Director
1990-95



John A. Shaud
Executive Director
1995-2002



Donald L. Peterson
Executive Director
2002-06*
President-CEO
2006-07



Michael M. Dunn
President-CEO
2007-12



Craig R. McKinley
President
2012-

* The position of Executive Director was replaced in 2006 by President-CEO. In 2012, the position was redesignated President.

AFA's Regions, States, and Chapters

These figures indicate the number of affiliated members as of June 30, 2013. Listed below the name of each region is the region president.

CENTRAL EAST REGION	10,895	GREAT LAKES REGION	7,177
Joseph L. Hardy		Kent D. Owsley	
Delaware	459	Indiana	1,322
Brig. Gen. Bill Spruance	128	Central Indiana	376
Delaware Galaxy	331	Columbus-Bakalar	92
		Fort Wayne	204
District of Columbia	505	Grissom Memorial	227
Nation's Capital	505	Lawrence D. Bell Museum	185
		Southern Indiana	238
Maryland	2,078	Kentucky	658
Baltimore*	653	Gen. Russell E. Dougherty	393
Central Maryland	357	Lexington	265
Thomas W. Anthony	1,068		
Virginia	7,598	Michigan	1,486
Danville	41	Battle Creek	80
Donald W. Steele Sr.		Lake Superior Northland	125
Memorial	3,640	Lloyd R. Leavitt Jr.	320
Gen. Charles A. Gabriel	1,137	Mount Clemens	961
Langley	1,287		
Leigh Wade	158	Ohio	3,711
Northern Shenandoah Valley	225	Capt. Eddie Rickenbacker	
Richmond	525	Memorial*	533
Roanoke	290	Frank P. Lahm	435
Tidewater	295	Gen. Joseph W. Ralston	309
		North Coast*	217
West Virginia	255	Steel Valley	117
Chuck Yeager	255	Wright Memorial*	2,100
		MIDWEST REGION	6,363
		John D. Daly	
FAR WEST REGION	9,453		
Richard C. Taubinger		Illinois	2,436
		Chicagoland-O'Hare	948
California	8,768	Heart of Illinois	191
Bob Hope	631	Land of Lincoln	261
Brig. Gen. Robert F. Travis	654	Scott Memorial	1,036
C. Farinha Gold Rush	1,116		
Charles Hudson	77	Iowa	561
David J. Price/Beale	332	Fort Dodge	48
Fresno*	280	Gen. Charles A. Horner	200
Gen. B. A. Schriever		Northeast Iowa	204
Los Angeles	449	Richard D. Kising	109
General Doolittle			
Los Angeles Area*	1,163	Kansas	593
Golden Gate*	478	Lt. Erwin R. Bleckley	395
High Desert	164	Maj. Gen. Edward R. Fry	198
Maj. Gen. Charles I. Bennett Jr.	235		
Orange County/Gen. Curtis		Missouri	1,516
C. LeMay	580	Whiteman	435
Palm Springs	343	Harry S. Truman	485
Robert H. Goddard	532	Spirit of St. Louis	596
San Diego	679		
Stan Hryn Monterey Bay	172	Nebraska	1,257
Tennessee Ernie Ford	539	Ak-Sar-Ben	1,032
William J. "Pete" Knight	344	Lincoln	225
Hawaii	685	NEW ENGLAND REGION	3,306
Hawaii*	685	Robert Wilkinson	
		Connecticut	628
FLORIDA REGION	8,731	Flying Yankees/Gen. George C. Ken-	392
Dann D. Mattiza		ney	236
		Lindbergh/Sikorsky	236
Florida	8,731	Massachusetts	1,628
Brig. Gen. James R. McCarthy	284	Minuteman	279
Cape Canaveral	942	Otis	227
Central Florida	1,123	Paul Revere	819
Col. H. M. "Bud" West	254	Pioneer Valley	303
Col. Loren D. Evenson	379		
Eglin	1,171	New Hampshire	660
Falcon	443	Brig. Gen. Harrison R. Thyng	660
Florida Highlands	276		
Gold Coast	590	Rhode Island	202
Hurlburt	769	Metro Rhode Island	160
Miami-Homestead	446	Newport Blue & Gold	42
Red Tail Memorial	532		
Sarasota-Manatee	305	Vermont	188
Waterman-Twining	1,217	Green Mountain	188

NORTH CENTRAL REGION 3,089
James W. Simons

Minnesota 1,063
Gen. E. W. Rawlings..... 876
Richard I. Bong..... 187

Montana 368
Big Sky..... 271
Bozeman..... 97

North Dakota 368
Gen. David C. Jones..... 161
Happy Hooligan..... 107
Red River Valley..... 100

South Dakota 426
Dacotah..... 222
Rushmore..... 204

Wisconsin 864
Billy Mitchell..... 864

NORTHEAST REGION 6,269
Eric P. Taylor

New Jersey 1,548
Brig. Gen. Frederick W. Castle..... 285
Hangar One..... 149
Highpoint..... 79
Mercer County..... 145
Sal Capriglione..... 264
Shooting Star..... 202
Thomas B. McGuire Jr..... 424

New York 2,302
Albany-Hudson Valley*..... 756
Chautauqua..... 51
Gen. Carl A. "Tooley" Spaatz..... 175
Genesee Valley..... 188
Iron Gate..... 160
L. D. Bell-Niagara Frontier..... 298
Long Island..... 674

Pennsylvania 2,419
Altoona..... 116
Joe Walker-Mon Valley..... 224
Lehigh Valley..... 179
Liberty Bell..... 572
Lt. Col. B. D. "Buzz" Wagner..... 138
Mifflin County*..... 127
Olmsted..... 296
Pocono Northeast..... 198
Total Force..... 315
York-Lancaster..... 254

NORTHWEST REGION 4,628
Mary J. Mayer

Alaska 656
Edward J. Monaghan..... 493
Fairbanks Midnight Sun..... 163

Idaho 424
Snake River Valley..... 424

Oregon 953
Bill Harris..... 232
Columbia Gorge*..... 721

Washington 2,595
Greater Seattle..... 815
Inland Empire..... 684
McChord Field..... 1,096

ROCKY MOUNTAIN REGION 5,411
Gayle C. White

Colorado 3,872
Gen. Robert E. Huyser..... 119
Lance P. Sijan..... 2,192
Mel Harmon..... 160
Mile High..... 1,401

Utah 1,194
Northern Utah..... 486
Salt Lake..... 342
Ute-Rocky Mountain..... 366

Wyoming 345
Cheyenne Cowboy..... 345

SOUTH CENTRAL REGION 7,017
Thomas W. Gwaltney

Alabama 2,323
Birmingham..... 353
Montgomery..... 1,212
South Alabama..... 280
Tennessee Valley..... 478

Arkansas 913
David D. Terry Jr..... 561
Lewis E. Lyle..... 352

Louisiana 1,025
Ark-La-Tex..... 583
Maj. Gen. Oris B. Johnson..... 442

Mississippi 1,156
Golden Triangle..... 292
John C. Stennis..... 655
Meridian..... 209

Tennessee 1,600
Chattanooga..... 128
Everett R. Cook..... 357
Gen. Bruce K. Holloway..... 574
H. H. Arnold Memorial..... 129
Maj. Gen. Dan F. Callahan..... 412

SOUTHEAST REGION 7,118
John R. Allen Jr.

Georgia 3,072
Carl Vinson Memorial..... 1,079
Dobbins..... 1,446
Savannah..... 315
South Georgia..... 232

North Carolina 2,316
Blue Ridge..... 478
Cape Fear..... 222
Kitty Hawk..... 69
Pope..... 581
Scott Berkeley..... 346
Tarheel..... 620

South Carolina 1,730
Charleston..... 506
Columbia Palmetto..... 381
Strom Thurmond..... 376
Swamp Fox..... 467

SOUTHWEST REGION 6,393
John A. Toohey

Arizona 3,454
Cochise..... 97
Frank Luke..... 1,845
Prescott/Goldwater..... 366
Tucson..... 1,146

Nevada 1,513
Thunderbird..... 1,513

New Mexico 1,426
Albuquerque..... 936
Fran Parker..... 316
Llano Estacado..... 174

TEXOMA REGION 11,960
Robert L. Slaughter

Oklahoma 1,899
Altus..... 193
Central Oklahoma (Gerrity)..... 1,132
Enid..... 243
Tulsa..... 331

Texas 10,061
Abilene..... 408
Aggieland..... 180
Alamo..... 3,605
Austin..... 1,112
Concho..... 230
Del Rio..... 179
Denton..... 471

Fort Worth..... 1,452
Gen. Charles L. Donnelly Jr..... 238
Northeast Texas..... 412
San Jacinto..... 965
Seidel-AFA Dallas..... 809

AFA's Overseas Chapters

CHAPTER	LOCATION
United States Air Forces in Europe-Air Forces Africa	
Charlemagne.....	Geilenkirchen, Germany
Dolomiti.....	Aviano AB, Italy
Lufbery-Campbell.....	Ramstein AB, Germany
Spangdahlem.....	Spangdahlem AB, Germany
United Kingdom.....	Lakenheath, UK
Pacific Air Forces	
Keystone.....	Kadena AB, Japan
MiG Alley.....	Osan AB, South Korea
Tokyo.....	Tokyo, Japan

AFA Member of the Year Award Recipients

Year	Recipient(s)	Year	Recipient(s)
1953	Julian B. Rosenthal (N.Y.)	1986	John P. E. Kruse (N.J.)
1954	George A. Anderl (Ill.)	1987	Jack K. Westbrook (Tenn.)
1955	Arthur C. Storz (Neb.)	1988	Charles G. Durazo (Va.)
1956	Thos. F. Stack (Calif.)	1989	Oliver R. Crawford (Tex.)
1957	George D. Hardy (Md.)	1990	Cecil H. Hopper (Ohio)
1958	Jack B. Gross (Pa.)	1991	George M. Douglas (Colo.)
1959	Carl J. Long (Pa.)	1992	Jack C. Price (Utah)
1960	O. Donald Olson (Colo.)	1993	Lt. Col. James G. Clark (D.C.)
1961	Robert P. Stewart (Utah)	1994	William A. Lafferty (Ariz.)
1962	(no presentation)	1995	William N. Webb (Okla.)
1963	N. W. DeBerardinis (La.) and Joe L. Shosid (Tex.)	1996	Tommy G. Harrison (Fla.)
1964	Maxwell A. Kriendler (N.Y.)	1997	James M. McCoy (Neb.)
1965	Milton Caniff (N.Y.)	1998	Ivan L. McKinney (La.)
1966	William W. Spruance (Del.)	1999	Jack H. Steed (Ga.)
1967	Sam E. Keith Jr. (Tex.)	2000	Mary Anne Thompson (Va.)
1968	Marjorie O. Hunt (Mich.)	2001	Charles H. Church Jr. (Kan.)
1969	(no presentation)	2002	Thomas J. Kemp (Tex.)
1970	Lester C. Curl (Fla.)	2003	W. Ron Goerges (Ohio)
1971	Paul W. Gaillard (Neb.)	2004	Doyle E. Larson (Minn.)
1972	J. Raymond Bell (N.Y.) and Martin H. Harris (Fla.)	2005	Charles A. Nelson (S.D.)
1973	Joe Higgins (Calif.)	2006	Craig E. Allen (Utah)
1974	Howard T. Markey (D.C.)	2007	William D. Croom Jr. (Tex.)
1975	Martin M. Ostrow (Calif.)	2008	John J. Politi (Tex.)
1976	Victor R. Kregel (Tex.)	2009	David R. Cummock (Fla.)
1977	Edward A. Stearn (Calif.)	2010	L. Boyd Anderson (Utah)
1978	William J. Demas (N.J.)	2011	Steven R. Lundgren (Alaska)
1979	Alexander C. Field Jr. (Ill.)	2012	S. Sanford Schiilt (Fla.)
1980	David C. Noerr (Calif.)	2013	Tim Brock (Fla.)
1981	Daniel F. Callahan (Fla.)		
1982	Thomas W. Anthony (Md.)		
1983	Richard H. Becker (Ill.)		
1984	Earl D. Clark Jr. (Kan.)		
1985	George H. Chabbot (Del.) and Hugh L. Enyart (Ill.)		

State names refer to recipient's home state at the time of the award.

*These chapters were chartered prior to Dec. 31, 1948, and are considered original charter chapters; the North Coast Chapter of Ohio was formerly the Cleveland Chapter; and the Columbia Gorge Chapter of Oregon was formerly the Portland Chapter.

Gen. Henry H. "Hap" Arnold is best known as the commander of the US Army Air Forces during World War II, where he represented the AAF at the highest levels of military and political command. His civilian counterpart, Assistant Secretary of War for Air Robert A. Lovett, knew Arnold as well as any of his associates.

Lovett was not an outspoken leader but a political operator whose efforts smoothed the rough edges between industry and government and facilitated Arnold's strongest qualities.

Lovett described Arnold as a man of "profound optimism, of absolute certainty of victory in the future, of dedication to [the] effective use of airpower."

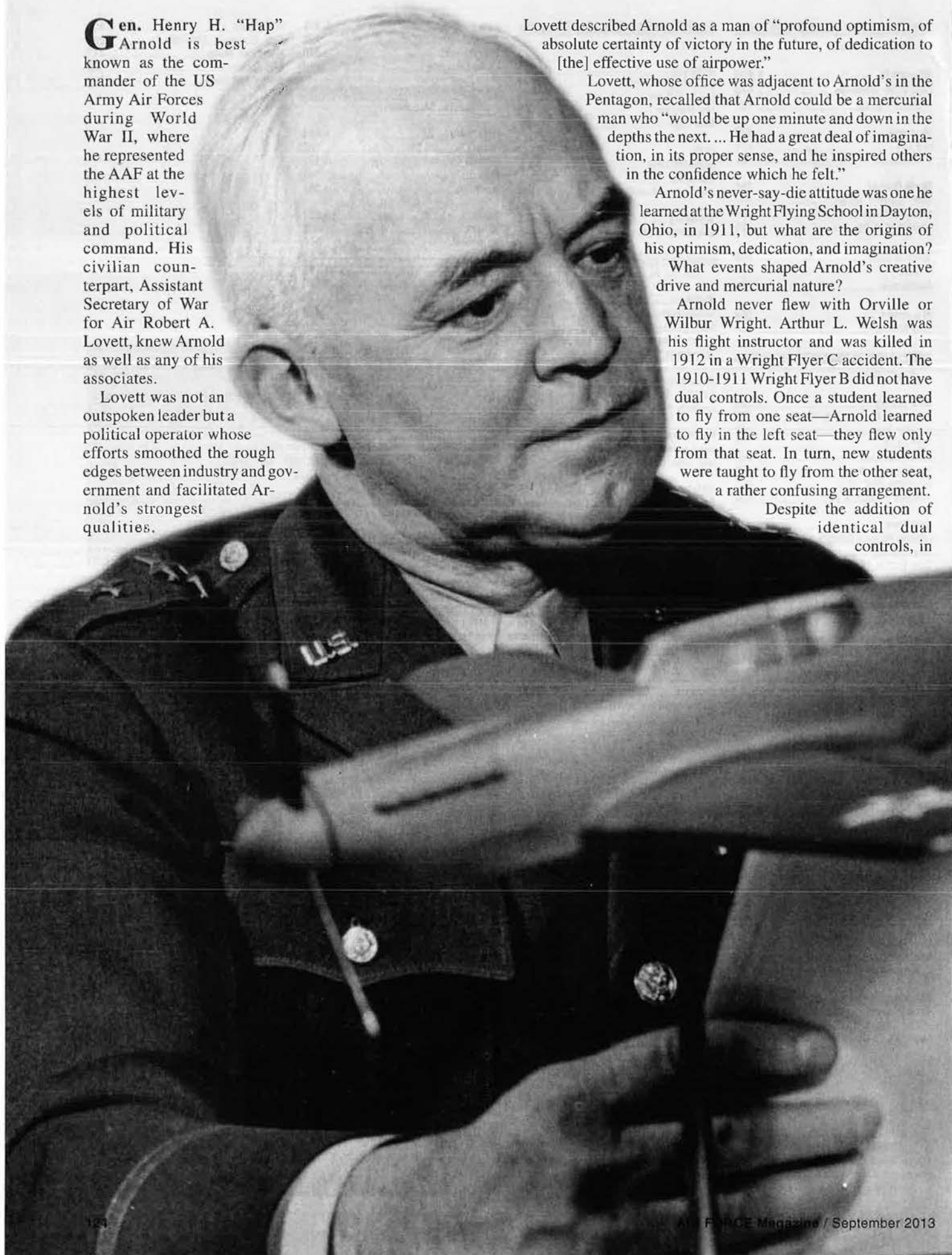
Lovett, whose office was adjacent to Arnold's in the Pentagon, recalled that Arnold could be a mercurial man who "would be up one minute and down in the depths the next. ... He had a great deal of imagination, in its proper sense, and he inspired others in the confidence which he felt."

Arnold's never-say-die attitude was one he learned at the Wright Flying School in Dayton, Ohio, in 1911, but what are the origins of his optimism, dedication, and imagination?

What events shaped Arnold's creative drive and mercurial nature?

Arnold never flew with Orville or Wilbur Wright. Arthur L. Welsh was his flight instructor and was killed in 1912 in a Wright Flyer C accident. The 1910-1911 Wright Flyer B did not have dual controls. Once a student learned to fly from one seat—Arnold learned to fly in the left seat—they flew only from that seat. In turn, new students were taught to fly from the other seat, a rather confusing arrangement.

Despite the addition of identical dual controls, in



1911 no flight was routine. There were no ground or flight checklists. Only common sense, experience, judgment, and a little luck prevented accidents. Military pilot trainees wore civilian attire at the Wright school and hats were simply donned backward to keep them from blowing off the pilots' heads. During one flight Arnold took a bug square in the eye. After successful removal of the bug's wings from Arnold's eye, goggles became a standard piece of Army flying gear.

Thomas D. Milling, Arnold's classmate at the Wright Flying School, recalled that "when the plane was tuned up ... [the airplane was] like a drum—if you touched it with your fingers, you'd see the cloth and everything had to be tight, and the wires had to be a certain tension, and you could test it by the sound." Plucking a support wire resonated like the sound made by plucking a thick grand piano wire.

In July 1912, Arnold and Roy C. Kirtland crashed just off the coast of Plymouth, Mass., in a new "tractor" seaplane. Arnold lacerated his chin dur-

The damage done was very slight." One pontoon was wrecked, the propeller was destroyed, and one wingtip was crumpled.

No Contest

Shortly after the incident at Plymouth, Arnold won the inaugural Mackay Trophy for the most significant flight of the year. The challenge was to fly a triangular route between Fort Meyer, Va., College Park, Md., and Washington, D.C., locating a "troop concentration" hidden in some trees somewhere along the flight path.

The "contest" was really not a contest at all. Milling, the only other participant, had aircraft problems that kept him grounded. Perhaps because of these circumstances Arnold did not take himself or his accomplishment too seriously. "It [the trophy] certainly is handsome. I figure that it will hold about four gallons so I cannot see how you can fill it with anything but beer," Arnold wrote afterward.

On the heels of winning the Mackay Trophy, Arnold was nearly killed in a

can get in a machine with safety for the next month or two."

Arnold's near-death experience occurred at the end of the mission. He was approaching the airfield for landing and had initiated a steep turn maneuver using 45 degrees of bank with an elevator controlling the turn.

Having plenty of speed in the overpowered Wright C, Arnold's natural tendency was to pull back on the elevator control in an effort to control the uncommanded dive that resulted from the induced stalled condition. The stall was caused by control inputs that exceeded the physical performance capability of the airplane, not by inadequate speed. By applying too much back pressure, Arnold generated what is commonly known today as an accelerated stall and not a spin.

The circular motion described by Arnold was a result of having begun the spiral pattern for landing. It was by luck, rather than skill, that Arnold avoided becoming one of the many fatalities of early military flying.

The stresses of early aviation, includ-

THE LEGENDARY AIRMAN

ARNOLD'S EVOLUTION

By Dik A. Daso

DREW INSPIRATION FROM MANY PLACES.

ing the wreck, receiving the distinctive scar seen in most of his portraits.

Tractors had a motor and propellers in the front of the airplane. Initial assessments of its performance were excellent. Perhaps expecting more performance than the machine could deliver, Arnold attempted to take off carrying excessively heavy baggage onboard. The winds that day were light and variable and although he was able to raise the craft out of the water by taking off facing into the wind, as soon as he turned the craft he lost the advantage of the headwind. "Then I did not have anything to support me and," Arnold recalled, "down I dropped.

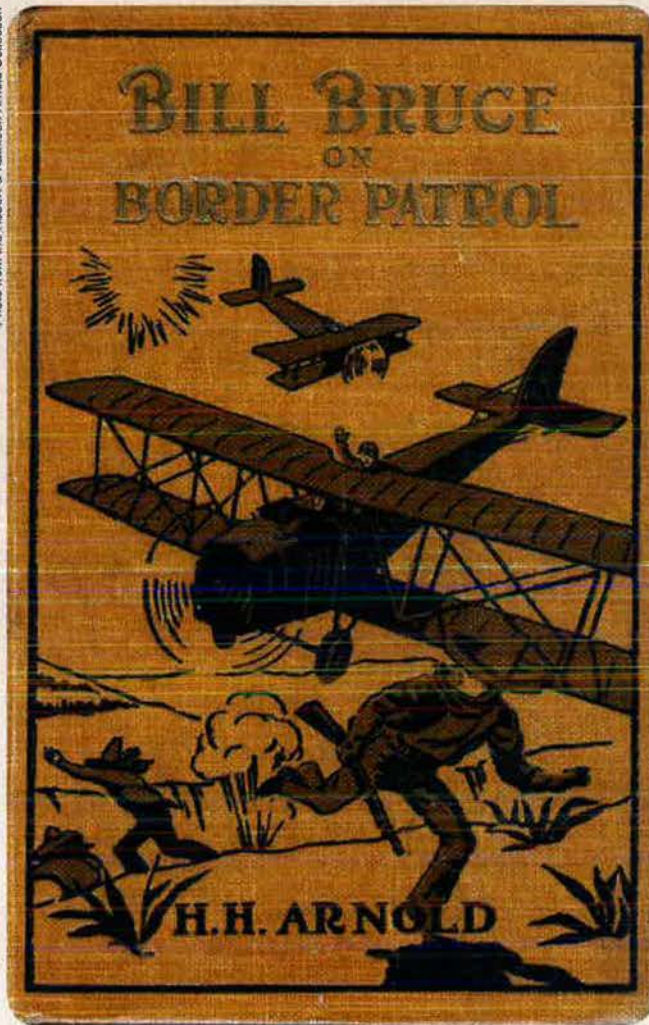
Lt. Gen. Hap Arnold—note the scar just beneath his lip, a souvenir of a 1912 airplane crash near Plymouth, Mass.

Wright Flyer C during live-fire artillery spotting exercises at Fort Riley, Kan.

Arnold and his observer were inexplicably thrown toward the ground. Arnold miraculously righted the craft and missed a violent crash by only a few seconds. "I am unable to account for it," he admitted to Capt. C. DeForest Chandler, his commanding officer at the Signal Corps Aviation School. The onboard altitude measuring device, a barograph, clearly recorded a drop of 300 feet in 10 seconds, ending up just above the ground-zero line. Arnold was so shook up he walked back to the airfield and immediately requested three weeks' leave and temporarily removed himself from flying status. "From the way I feel now," he explained, "I do not see how I

ing the ever-present possibility of near-instant death, coupled with the "tough guy" culture of the early 20th century Army, often led to smoking as a form of relaxation and stress release. Arnold was not immune. He was a habitual tobacco smoker until the mid-1920s. After suffering from severe ulcers, his smoking habit was curtailed but never fully eliminated. It is likely that smoking contributed to his deteriorating health, which included a series of heart-related problems during World War II and eventually caused his death in 1950, at age 63.

Arnold's War Department duties included oversight of a secret project officially known as the Liberty Eagle, an unpowered bomb built into a small gyroscopically controlled biplane.



Above: Arnold wrote six *Bill Bruce* adventure stories. The series was named after his third son. **Right:** Arnold (r) flew his first 28 sorties with Arthur Welsh (l), his instructor. Welsh was killed in a 1912 crash of a Wright Flyer C.

suddenly died. It was later determined that he had suffered a ruptured appendix.

The death struck the Arnolds with tremendous force. Arnold had his work to occupy his time and mind, but Bee had the children and they were her life.

Eventually, John Linton's death was too much for Bee to handle on her own. By May 1924, she had retreated to the family home in Ardmore, Pa., to recover psychologically from the loss of her child.

It took almost a full year before Arnold could face his own feeling of loss. On June 2, 1924, he wrote to his wife. "We all miss you very much [Beadle] and in addition I, somehow now more than for some time, miss the presence of John Linton's sunny smile."

Arnold, with the expert help of a nursemaid, kept the other children out in California allowing Bee to recuperate in peace.

Shortly thereafter, he wrote and published several boys adventure books about pilots and flying and named the hero after his middle son. In all, he wrote six "Bill Bruce" books, from 1926 to 1928, and earned about \$200 for each one. He also wrote books for his other two living sons—Henry H. Jr. and David—that were never published.

Arnold made important contributions to the ground forces during this time at Fort Riley by indoctrinating cavalry offi-

cers in the potential of airpower. While serving at the Cavalry School at Riley, Arnold decided to commit to Army life despite becoming eligible to retire after 20 years of military service. The crumbling economy may have influenced his final decision, as the global depression precipitated a second personal tragedy in the Arnold family.

Economic pressures on Arnold's parents, Daddy Doc and Gangy, had become overwhelming. Their life savings were lost when banks collapsed in 1929.

Sunday morning, Jan. 18, 1931, at 7 a.m., Gangy woke as usual but soon experienced severe chest pain. She alerted Daddy Doc to her deteriorating condition, but even his expertise as a physician could not save her. By 7:20 a.m., she lay dead, stricken by a massive heart attack.

Arnold, feeling tremendous guilt that he had missed his parents' golden wedding anniversary the previous spring, rushed to his father's side. After the funeral, Daddy Doc fell into a deep depression and never recovered from his wife's sudden death.

Arnold's mother's death had a deep and lasting impact. In the months following her death, the letters to and from his wife changed. Beadle, recognizing that the nickname Sunny would be a constant reminder of his mother's death, changed his nickname to "Hap"—an abbreviation of "Happy." Only after Arnold's mother died in January 1931 does "Hap" appear in his daily correspondence, establishing the nickname he carried for the rest of his life.

By May 1931, Arnold had altered his personal signature from Harley "Sunny" Arnold to "Hap" Arnold. As with other traumatic events in Arnold's life, he never spoke of it openly.

The year 1934 brought new highs in his military flight accomplishments. Arnold led a flight of new Martin B-10 bombers that flew round-trip from Washington, D.C., to Fairbanks, Alaska. The first all-metal, low-wing, retractable



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gear monoplane, the B-10 was the most technologically advanced aircraft in the Air Corps inventory.

The expedition staged sporadic photo operations out of Fairbanks and Anchorage for two weeks. Arnold even found a few hours to lay over in Juneau to accept a totem pole from the mayor of the city. Additionally, the aviators successfully photographed a sizeable portion of the Alaskan Territory, including the archipelago, despite clouds and low ceilings. The only glitch in the mission occurred on a flight out of Anchorage.

On the morning of Aug. 3, rain clouds broke and an opportunity to photograph some terrain presented itself. Arnold recounted the events of the day to Beadle.

"Everything went along well until Bobzien [a member of the photo team, not one of the regular crew] took off. His engines both quit soon after takeoff and he landed in Cook Inlet. No damage to the plane other than saltwater or injury to personnel other than a good wetting. [However, Arnold later found out that Sergeant Bush had broken his leg in the ditching.] We are salvaging the plane now. However, I doubt if the plane will ever be used again on account of the saltwater bath."

The pilot had mishandled the fuel control switches and cut off the fuel to the engines. The decision to allow

a pilot from outside the mission team fly the B-10 was one Arnold regretted and took responsibility for. Nowhere in Arnold's correspondence did he lay blame elsewhere for the accident, not even upon the inexperienced pilot.

The working airplanes returned to Fairbanks to complete their photo mission, and Arnold left a mechanical crew in Anchorage to get the damaged airplane in working order if possible. The ditched B-10 rejoined the rest of the contingent at Fairbanks one week later.

DFC and Mackay No. 2

The mechanics had not only saved Arnold's reputation after he had made a bad decision, but had also saved the Army Air Corps considerable public embarrassment. To Arnold, those young men were heroes in more ways than one. With one month's preparation, Arnold had taken his aircraft nearly 8,000 miles, in constant radio contact with the ground, with only one major foul up, and no aircraft losses along the way. The round-trip distance to Alaska was 7,360 miles, but aerial mapping missions were flown while deployed there, in addition to a flight to March Field, Calif., and then back to New York shortly after their return to Washington. The total mileage flown on the mission, according to Arnold's trip diary, was 18,010 flight miles at an average speed of 168 miles per hour.

The success of the mission earned Arnold the Distinguished Flying Cross and a second Mackay Trophy, and it proved long-range bombers could threaten once impenetrable and isolated territorial boundaries.

President Roosevelt wanted to see Arnold afterward, so Hap hurried to the White House. During the 10-minute meeting, FDR offered congratulations on the success of the Alaska mission and asked a hundred questions about the Yukon.

The meeting was Arnold's first alone with the President. Feeling proud and relieved, and with brand-new B-10s under his command, Arnold returned to March Field.

Arnold's flight experience began almost as early as the very first flying machine. His life spanned the evolution of American airpower through the development of the first jet fighters.

He lost friends to flying accidents and aerial combat. He lost his toddler son to a medical condition that went undetected by medical tools of the times. The same was true when his mother suffered a heart attack. His understanding and belief in the positive aspects of technological change was far beyond the reach of most of his Army contemporaries. A tremendous catalyst to this process was his close personal association with America's scientific, industrial, and academic communities.

At times, he placed too much faith in the possibilities of science and on more than one occasion hung his hopes on pipe-dream technology, but more often than not, his imaginative ideas were realized.

Theodore von Kármán, the man Arnold had personally selected to lead the AAF into the technological future as head of the Scientific Advisory Board, wrote on the occasion of Arnold's military retirement: "You certainly know that I always admired your imagination and judgment, and I believe that you are one of the few men I have met who have the format to have at the same time your feet on the ground and your head over the clouds—even on days when the ceiling is rather high."

Arnold's dedication to scientific knowledge and pursuit of technological development was the product of a lifetime of operational flying experience. Yet he realized that making decisions regarding science and technology required careful thought and was a by-product of all of life's experiences. Arnold made it perfectly clear that even possessing the finest of mental or physical qualities could not guarantee success in operations or command.

In 1947 he wrote, "When it comes right down to 'brass tacks,' however, in the military field, as well as in other fields, it would seem to be a man's native ability that spells the difference between failure and mediocrity, between mediocrity and success. Two men may work equally hard toward a common goal; one will have just that 'something' the other lacks. That puts him at the top."

Arnold realized that he, among a fortunate few, had one quality that could not be learned or taught. Hap Arnold described it as "the intangible—the spirit of a man." ■



Photo via Library of Congress

Dik A. Daso is a retired F-15, RF-4, and T-38 pilot and former curator of modern military aircraft at the Smithsonian's National Air and Space Museum. This article is derived from his book, Hap Arnold and the Evolution of American Airpower. Daso's most recent article for Air Force Magazine, "The Red Baron," appeared in the March 2012 issue.

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AFA National Report

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By Frances McKenney, Assistant Managing Editor

“Low-Cost, High-Impact”

The cause is dear to his heart. Robert E. Wiggins, New Jersey's longtime **Thomas B. McGuire Jr. Chapter** member, has been regularly donating books on airpower topics to libraries and schools. His aim has always been to promote the professional development of airmen.

On one of his recent donation drop-offs to the library at JB McGuire-Dix-Lakehurst, N.J.—a two-hour drive from his home in Pennsylvania, by the way—he began chatting with a library staff member about the effects of sequestration. He learned that the staff worried about their ability to maintain their inventory of books on the Air Force Chief of Staff's Reading List.

According to SMSgt. William J. Horay Jr., chapter president, Wiggins then did something typical for him: He spoke up at a chapter meeting, describing with passion the library's need for more funds.

Horay immediately pegged Wiggins' idea as a “low-cost, high-impact” project, quite doable. The chapter pulled together some \$250, including donations from individual members.

The funds will cover one complete set of books on the 2013 Chief of Staff's Reading List, Horay explained. It will help replace some of the books that have been on the list for several years and suffered wear and tear, and library officials said they can now invest in e-book versions that the airmen have been requesting.

For his part, Wiggins has continued to telephone military and news organizations, spreading the word about the need for books for the base libraries.

For The Next Generation of Cadets

When reveille sounded at 5 a.m., several cadets at Delaware's AFJROTC Summer Leadership School could blame—or thank?—the **Delaware Galaxy Chapter**.

Led by President William F. Oldham, the chapter donated funds to help eight students attend the annual school, held at the Delaware National Guard Bethany Beach Training Site. Six more chapter members stepped forward to donate additional funds to sponsor more cadets.

For the 10th year, retired Maj. John K. Murphy, Dover High School AFJROTC instructor and also the Galaxy Chapter's treasurer, served as the leadership school's commandant.

The seven days of training involved 115 cadets from six AFJROTC programs. Delaware Air National Guardsmen taught them land and water survival. The students also worked on academics, physical fitness, drills, and dormitory and personal inspection topics—“hospital corners on the beds,” as Murphy explained it—and the proper wearing of their uniforms.

Central East Region President Joseph L. Hardy was the reviewing official for the graduation pass in review. He pointed out that he has attended several JROTC events and has been impressed by the “number of graduates from these programs who return voluntarily, often at their own expense, to serve as cadre for the next generation of cadets.”

For this session, in fact, four of the half-dozen second lieutenants and AFROTC cadets who volunteered as Cadet Training Advisors were themselves graduates of this leadership school.



McGuire Chapter President SMSgt. Bill Horay gives Mimi Cirillo, library director, a donation for books. This donation was the idea of Bob Wiggins, second from left.

USAF photo by Russ Meseroll



Mike Peters and Don Steed (right) take a breather at the C. Farinha Gold Rush Chapter's Wings of Hope Golf Classic fund-raiser in California.

Photo by Duncan Watrop



Retired Col. Mitch Berger (back row) of the Delaware Galaxy Chapter and Cadet Training Advisors at the AFJROTC leadership school.



Supervised by retired Col. Mitch L. Berger of the Galaxy Chapter, the advisors trained the senior-cadet cadre and even chaperoned the students in the barracks. "We couldn't run the school without the CTAs," Berger commented.

The CTA volunteers (in the photo with Berger) were, left to right: 2nd Lt. Rebecca Haggerty, 2nd Lt. Steven Nardone, and 2nd Lt. Alex Williams; AFROTC cadets Amy Maycut and Dennis Wilcutts II; and West Point cadet Natalia Drew.

Anxiety, Toil, Success

Does this sound familiar?

Writing about the **Gen. B. A. Schriever Los Angeles Chapter's** annual Salute to Space and Missile Systems Center, Chapter President Edwin W. A. Peura described "the usual anxiety over slow table sales," "the toll" of rounding up award nominations, and the "tough job" of evaluating them.

Hopefully, the outcome sounds familiar, too: Everything fell into place for a successful awards banquet.

US Sen. Heidi Heitkamp (D-N.D.) held a roundtable discussion with (l-r) Ken Fox, president of the Gen. David C. Jones Chapter; North Central Region President and State President Jim Simons; former Region President Ron Garcia; and State Treasurer Bob Herrington. Topics covered: the suicide rate of veterans, claims processing at the Department of Veterans Affairs, and lengthy travel times to reach the nearest VA Medical Center.

Retired Gen. David C. Jones, for whom the North Dakota chapter is named, died Aug. 10 at age 92. More information will follow in Air Force Magazine's October issue.



Lt. Gen. Ellen Pawlikowski accepts a space leadership award from Ed Peura, the Gen. B. A. Schriever Los Angeles Area Chapter president (left), and Chapter Board Chairman Tav Taverney.



Photo by Sarah Corrice

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AFA's Airmen and Family Programs Director Paula Roy (left) presents Stefanie Howell with an AFA Spouse Scholarship at a Donald W. Steele Sr. Memorial Chapter event. At right: Kevin Lewis, chapter VP. Howell is working on a Ph.D. at George Mason University in Virginia. AFA awarded a dozen \$2,500 Spouse Scholarships for 2013.



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Promoting Air Force Airpower

Some 340 guests attended the 39th Salute to SMC, held at the LA Airport Marriott. Awards went to 13 personnel from Los Angeles Air Force Base, and the Military Satellite Communications Systems Directorate was named Outstanding Unit.

Lt. Gen. Ellen M. Pawlikowski received the chapter's Gen. Bernard A. Schriever Space Leadership Award, recognition for her role as SMC commander for the past two years. In addition, the chapter named David W. Madden as a Gen. Bernard A. Schriever Fellow. Madden is SMC executive director and head of its Milsatcom Directorate.

Earlier that day, the chapter hosted its annual Executive Forum, with some 30 industry representatives and 20 senior leaders from SMC. Discussion centered on two themes: opportunities and challenges with satellite ground systems and how to lower indirect costs and overhead.

More Chapter News

■ The **Eglin Chapter (Fla.)** led four other organizations in carrying out a luncheon featuring US Rep. Jeff Miller (R-Fla.) at the Bob Hope Village in Shalimar. Miller chairs the Veterans' Affairs Committee and serves on the Armed Services Committee. At the Florida gathering, he devoted most of his time fielding audience questions, reported Chapter President Shannon M. Farrell. Chapter Treasurer Steve Czonstka arranged the event, catered by a Community Partner, Classic Catering.

■ In Minot, N.D., the **Gen. David C. Jones Chapter's** 32nd Annual Awards Banquet brought some 270 people to the Grand Hotel to celebrate outstanding performers from each group and squadron at Minot Air Force Base, plus the Civil Air Patrol, JROTC, and Air Force recruiting office—40 awardees in all. AFA Executive Vice President Richard Y. Newton was guest speaker, and staff members from the offices of US Sen. Mary Kathryn "Heidi" Heitkamp (D-N.D.) and US Rep. Kevin Cramer (R-N.D.) read letters from their bosses. Paul J. Goldschmidt and Bonnie M. Goldschmidt, both members of the **Gen.**

AFA Conventions

Sept. 14-15 **AFA National Convention**, National Harbor, Md.

Sept. 16-18 **AFA Air & Space Conference**, National Harbor, Md.

Oct. 17 **Texas State Convention**, Austin, Tex.



US Rep. Jeff Miller (R-Fla.) addresses the Eglin Professional Consortium, led by the Eglin Chapter.



Green Mountain Chapter's Jamie Navarro and President Ray Tanguay (both far right) and Vermont's Champlain Valley Union High School CyberPatriot team.



Genesee Valley Chapter's Kyle Mullen (r) names Marilia O'Duffy as New York State and Chapter Teacher of the Year. She teaches at School No. 39 in Rochester. Chapter President Alfred Smith is at left.



Lewis E. Lyle Chapter's secretary, Morris Cash (left), and President Larry Loudon (right) present Nicholas Seward with the Chapter High School Teacher of the Year award. Seward teaches computer science at the Arkansas School for Mathematics, Sciences, and the Arts in Hot Springs.

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David C. Jones Chapter, headed the awards banquet committee.

■ James E. Fultz, a longtime Great Lakes Region, Indiana state, and **Southern Indiana Chapter** leader, died May 12. He was 81 years old. He served in the Air Force from 1954 to 1966, rising to the rank of captain. According to biographical information he provided to AFA, he considered his assignment with the 1861st AACS in Japan as the most memorable time during his years of service. ■

US Rep. Howard "Buck" McKeon receives the **Distinguished American Award** at the **Nation's Capital Chapter's dinner** in July. With him are (l-r): **USAF Chief of Staff Gen. Mark Welsh III**, **Chapter President Kevin Jackson**, and **AFA President Craig McKinley**.



At **Marquette University** in **Milwaukee**, **AFROTC cadet James Fehrenbach** received the **AFA Sword Award** from **Billy Mitchell Chapter President Victor Johnson** (right). **Fehrenbach** is now in pilot training.

Also at **Marquette's All-Service Awards Ceremony**, **Johnson** presented **Andrew Giaimo** with an **AFA Silver Medal**. The award goes to the outstanding junior-year cadet in an **AFROTC detachment**.



A week later, **Johnson** traveled to the **University of Wisconsin, Madison**, to present **Megan Ritzert** (center) with an **AFA Silver Medal and Certificate**. At left is **Det. 925 commander, Lt. Col. Todd Borge**.



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12th Tactical Fighter Wg, Vietnam, **12th Fighter Escort Wg/Strategic Fighter Wg**, Korea, **12th TFW**, Randolph AFB, TX, **479th & 306th Flying Tng Gp**, Pensacola, FL, & **306th FTG**, US Air Force Academy. April 23-26, 2014, in Pensacola. **Contact:** E. J. Sherwood (480-396-4681) (ej12ftw@cox.net).

40th Fighter/40th Flight Test Sq (1939-present). Oct. 3-6 at Homewood Suites in Fairborn, OH. **Contact:** Bill Highfield (770-229-4297) (reddevil40@bellsouth.net).

377th Security Police Sq, Tan Son Nhut AB, Vietnam. April 24-27, 2014, Crowne

Plaza Hotel, Wilmington, DE. **Contact:** Tim Clifford (724-742-0180) (tjcliff@consolidated.net).

Aviation Cadet Pilot Tng Class 55-J. Oct. 8-11 at Best Western Hondo Inn in Hondo, TX. **Contacts:** Tom Bailey (618-544-9599) (tomandpauline@frontier.com) or Jim Gibler (806-771-5018) (jgibler@nts-online-net).

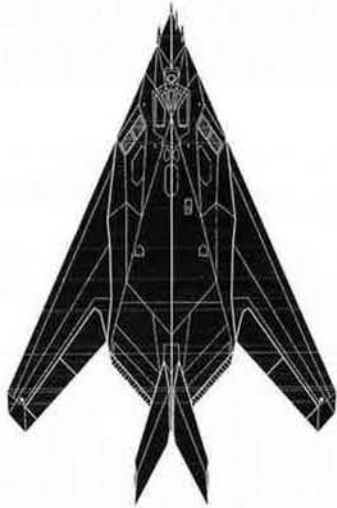
USAF Pilot Tng Class 62-A. Nov. 5-11 at the Alex Park Resort, Las Vegas. **Contact:** David Tippett, 227 Forest Creek Dr., Bozeman, MT 59718 (406-570-8290) (dave.tippett@gmail.com).

Pilot Tng Class 70-03, Reese AFB in November 2014. **Contact:** Johannes Korver (exlowflyer@cox.net).

UPT Class 73-09, Williams AFB, AZ, in Phoenix. **Contact:** Jim Evans (480-831-1364) (kc135ejim@aol.com). ■

E-mail unit reunion notices four months ahead of the event to reunions@afa.org, or mail notices 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.

F-117 Nighthawk



The F-117A Nighthawk, the world's first operational stealth combat aircraft, was one of history's best-kept military secrets. Lockheed's single-seat, twin-engine ground-attack fighter was conceived in 1975, first flew in 1981, and became operational in 1983, but it was not made public until 1988. Developed to meet a USAF need to attack high-value targets without being detected by enemy radar, "the Black Jet" became world famous for its work in the 1991 Gulf War.

The F-117 was of conventional aluminum construction, with a specially designed canopy and precisely serrated edges on doors and panels. It achieved stealth principally by deflecting radar returns and using radar-absorbent material, but the design also suppressed infrared signals from its engines and exhausts. It was painted black and

flew only at night. F-117 designers relied heavily on stock parts, and its development phase was especially short. The first YF-117A, serial #79-0780, made its maiden flight only 31 months after the full-scale development decision.

The F-117 was not "invisible" to radar, and could be detected, but it was extremely difficult to track. In fact, some believe the Iraqis never successfully tracked it in 1991. The F-117 performed brilliantly in Desert Storm, flying unseen and untouched through the fire-hose shower of Iraqi anti-aircraft fire in the war's early days, although one was shot down during Operation Allied Force in 1999.

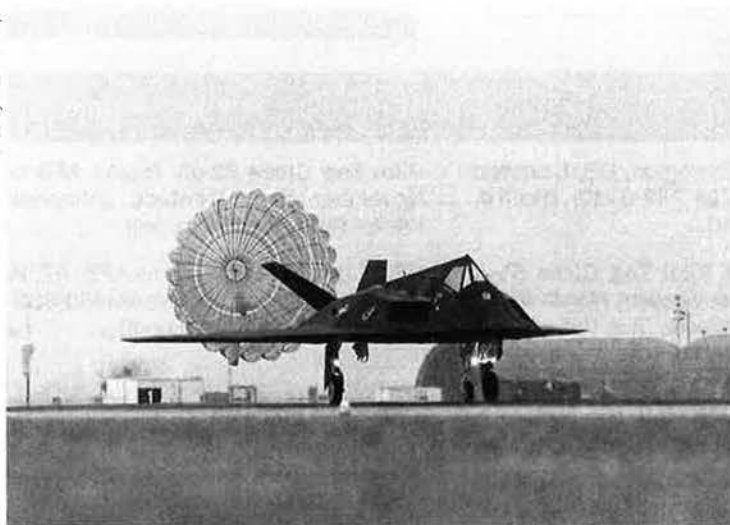
It was retired in 2008, not for loss of capability but mostly because of cost.

—Walter J. Boyne

This aircraft: USAF F-117 Nighthawk—#85-0825—as it looked in 1991 when assigned to the 415th Tactical Fighter Squadron, based at Tonopah Test Range Arpt., Nev.



Photo by SrA, Mitch Fuqua



An F-117 Nighthawk stealth fighter touches down at Aviano AB, Italy, Feb. 21, 1999.

In Brief

Designed, built by Lockheed ★ first flight June 18, 1981 ★ number built 64 [five demonstrators] ★ crew of one ★ two General Electric F404 engines. **Specific to F-117A:** armament none ★ load up to 5,000 lb of a variety of munitions (Mk 84, GBU-10, GBU-12, GBU-27, GBU-31, BLU-109, WCMD, AGM-154 JSOW, AGM-158) ★ max speed 617 mph ★ cruise speed 550 mph ★ max range 930 mi ★ weight (loaded) 52,500 lb ★ span 43 ft 4 in ★ length 65 ft 11 in ★ height 12 ft 5 in.

Famous Fliers

Notables: James Allen, Bruce Carlson, Howell Estes III, Greg Feest, Ralph Getchell, Ward Juedeman, Bryan Knight, Bill Lake, Kenneth Levens, Chuck Link, Roger Locher, John Mills, Ross Mulhare, Lloyd Newton, Michael Short, Michael Stewart, A. J. Tolin, Alton Whitley, Dale Zelko. **Test pilots:** Harold Farley, Dave Ferguson, Skip Holm, Tom Morgenfeld.

Interesting Facts

Exhibited radar cross section of only .269 sq ft ★ stemmed from faceted-panel stealth theory concept of Pyotr Ufimtsev, a Soviet mathematician ★ carried no radar of its own ★ given call sign "Bandit," leading F-117 pilots to call themselves "Bandits" ★ flown by 558 pilots, each with his own "Bandit" number ★ saw first combat in 1989 in Operation Just Cause, Panama ★ in Gulf War, flew 1,271 sorties, dropped 2,000 tons of bombs, and struck 1,669 targets ★ shot down only once, over Yugoslavia on March 27, 1999 ★ nicknamed "Black Jet" by USAF pilots and "Shaba" (Arabic for "ghost") by Saudi airmen ★ featured in films "Interceptor" (1993), "Executive Decision" (1996).



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