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AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

**Etchberger,
Medal of
Honor**

**The Two Wars of the Air Force
Air & Space Conference 2010
Airpower Over Water**



how



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JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

November 2010, Vol. 93, No. 11



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Security Isn't Cheap

SPEAKING about the relationship between military might and economic strength in 1951, President Eisenhower said, "We must not destroy from within what we are trying to defend from without."

Defense Secretary Robert M. Gates this year added an interpretation. Said Gates of Eisenhower, "This fueled his passionate belief that the US should spend as much as necessary on national defense—but not one penny more."

Calls to cut the Pentagon's budget have been rising in intensity. Critics claiming defense spending is injurious to the US economy have repeatedly taken these two quotes out of context.

No one favors wasteful military spending, but the nation's current financial situation is now making it likely DOD will receive less than is necessary for national defense. This is not what Eisenhower had in mind, as his 1951 speech was a call to balance military and economic strength.

Today, the Pentagon budget represents a shrinking portion of federal spending and a modest part of the massive US economy. Even including war costs, military spending today represents the same share of the national economy as in 1992. Still, Adm. Michael G. Mullen, Chairman of the Joint Chiefs of Staff, concedes the pressure to cut military spending will "continue to grow."

The federal budget is seriously out of balance. For the past decade, tax cuts have overlapped with post-9/11 security demands, two wars, and ever-increasing entitlement spending, primarily on Social Security and Medicare. With the economy struggling, national debt will likely climb sharply as the nation's entitlement addiction reaches full bloom in the coming decades. Just in 2012, Mullen noted, interest on the debt will total \$600 billion, and "that's one year's worth of defense budget."

"This wave of debt" will continue to roll over from year to year, Mullen warned. If not brought under control, the Pentagon budget will have to be cut simply to service the debt.

"I think that we have to both meet the national security requirements and be very clear [about the] fiscal resources to meet the requirements, or we'll have to stop doing something," Mullen added

later. "On the other hand, we're about four percent of the gross domestic product for the country so we are by no means going to solve this problem by ourselves."

Still, ill-advised calls to cut the Pentagon budget follow as predictably as the tides. Without credible analysis of strategy or requirements, critics are once again declaring defense spending to be out of control.

Case in point: Fifty-seven members of Congress on Oct. 12 sent a letter to

There are ways to reduce defense spending, but the military cannot be asked to do what it does today with less money.

President Obama's fiscal responsibility commission, which is charged with delivering a deficit reduction plan Dec. 1. "Cutting the military budget must be part of any viable proposal" to reduce the deficit, reads the letter initiated by Rep. Barney Frank (D-Mass.), Rep. Ron Paul (R-Tex.), and Sen. Ron Wyden (D-Ore.). "We hope ... a consensus will be reached that significant cuts are necessary and can be made in a way that will not endanger national security. We strongly believe this to be the case."

Frank, Paul, and Wyden were also sponsors of the Sustainable Defense Task Force, a panel that recently advocated nearly a trillion dollars in cuts to the defense budget. The panel's report is enlightening, because it previews some likely attacks and came with a similar assurance that spending can be reduced without damaging US security.

According to whom?

The task force included longtime defense critics such as Carl Conetta of the Project on Defense Alternatives, Lawrence J. Korb of the Center for American Progress, and Winslow Wheeler of the Center for Defense Information.

Their cuts would include:

- Eliminating the bomber leg of the nuclear triad;
- Removing 200,000 personnel from the military;
- Reducing the number of troops stationed overseas by a third;

■ Retiring three more Air Force fighter wings;

■ Terminating the V-22 Osprey;

■ Ending the Air Force variant of the F-35;

■ Cutting the Navy fleet from 287 ships to 230;

■ Slashing DOD research and development funding by \$5 billion per year;

■ Delaying by five years the KC-X tanker program.

The Pentagon, on the other hand, has a sophisticated requirements process, and even a cursory look at today's force shows a military worn down by nine years of war. Today's overstretched force emerged from a decade of sharp drawdowns after the Cold War. The overambitious "peace dividend" left the military in need of a massive recapitalization program even before the wars in Afghanistan and Iraq created further wear and tear on vital equipment.

There are certainly ways to reduce defense spending, but the military cannot realistically be asked to do what it does today with less money.

The Air Force has been underfunded for years, recently gave up on an attempt to save money by cutting end strength, then sent some 250 fighter aircraft to an early retirement to free up modernization dollars. USAF's aircraft fleet is its oldest ever, several major recapitalizing efforts are long overdue, and there are entire categories of airmen who spend more time deployed than at their home bases.

Mullen said he hopes DOD is able to avoid "massive cuts" which he says "would be dangerous now, given the national security requirements that we have."

The task force touted by Frank, Paul, and Wyden says, "The savings options we have outlined promise to provide immediate fiscal relief." Proposed cuts "would help to bring the goal of meaningful deficit reduction within reach."

In reality, the Pentagon budget needs to flow from national strategy and should not be guided by the arbitrary whims of cost cutters. A well-trained, well-equipped, professional military is not cheap. If the nation wants it to cost less, the nation will probably have to ask it to do less. ■

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The End of the Road?

Richard P. Hallion certainly got it right in your October issue when he said we have reached an "inflection point" in the space race [*An Inflection Point in the Space Race*, p. 54]. After a quarter-century of disasters and false starts in human spaceflight, the Obama Administration has proposed a new approach that could signal the end of the road. The Constellation program that President Obama inherited from the Bush years may not have been imaginative, but at least it had a destination. The Obama plan lacks a clear goal.

Where Hallion goes wrong is in trying to explain what a sustainable space effort would look like. There are lots of places worth visiting by robotic means, but if our goal is to sustain a human spaceflight program with all the costs that entails, only one goal makes sense: Mars. Mars is the single place in the solar system beyond the Earth that could conceivably host a self-sustaining colony of humans, because it is on the edge of the habitability zone that begins outside the orbit of Venus and ends well inside the orbit of Jupiter. It has the right mix of gravity, water, and sunlight to make a human colony at least conceivable.

Yet Hallion says, "Dreams of Mars make little sense in a time when key space infrastructure is being closed, thousands are leaving the aerospace field, and American astronauts learn Russian so that they can ride Soyuz into space." The main reason these negative trends are unfolding is that we have not identified a credible mission to justify the vast cost of the human spaceflight program. If we are going to build a heavy-lift launch vehicle, a new crew capsule, and all the other items associated with human spaceflight, then there must be a mission that the political system can grasp. Landing astronauts on Mars around 2030 as a prelude to a permanent colony is the only rationale that works within the constraints imposed by democracy and physics.

Loren B. Thompson
Arlington, Va.

Richard Hallion's gratuitous, snide swipes at Democratic Administrations, the "left," and others in his article, "An Inflection Point in the Space Race," seriously detracted from the credibility of what could otherwise have been considered an insightful account of the genesis and evolution of US space policy. Worse, they reflect poorly on the reputation for objectivity necessary for the Air Force Association to be effective in its mission. As a retired Air Force officer, I expect better of AFA, in which I hold life membership.

Lt. Col. Stephen D. Vining,
USAF (Ret.)
Dayton, Ohio

A Backbone Needed

"The Acquisition Course Correction" [*October*, p. 30] by John A. Tirpak shows directly and by inference what is wrong with the procurement system and, further, what is wrong with the proposed solution: namely, throwing thousands of more people into the fray. There are already too many people and too many generals in the system. The problem is that the newcomers will not know how to manage large systems.

Putting stars on combat fatigues won't help unless the wearer knows what he is doing. Bringing up experienced and well-trained negotiators from the thousands of military and civilian procurement managers already available might help more. As a program manager for 15 years in both USAF and the defense industry,

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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To educate the public about the critical role of aerospace power in the defense of our nation.

To advocate aerospace power and a strong national defense.

To support the United States Air Force and the Air Force family and aerospace education.

Letters

I have witnessed the mismatch when an aerospace company manager with 30 years' experience outsmarts a general with very few years of experience in procurement, at every turn during important meetings where decisions are made.

Serious discussions I have had on the subject usually conclude that we need a backbone of dedicated, experienced, technically qualified civil service managers to complement the military managers who simply drift in and out every two or three years. Likewise, we need to support those major producers that year after year render militarily competitive weapons--and shut down those that produce junk.

Several conflicts exist. One major fact is that an aerospace company wants to generate sales dollars and does not care whether it is for delivered hardware or extended engineering sales; whereas, the military manager wants delivered hardware on schedule. The result is systems that after 20 years of development have used up all of the funds, and only a tiny few combat vehicles loaded with complex and unreliable hardware dribble out of the factory.

We need to guard against military program managers who are more concerned with getting a good job when they retire than antagonizing contractors by being tough with them, and civil service managers who overstaff to create empires and added ratings for themselves. In both cases, somebody better be watching to be sure that our beloved country comes first. I don't see that happening from what I read in the article.

Lorrin Peterson
Kerrville, Tex.

Leadership Adjustment

Your "Washington Watch" section under the title "Piecing It Together" (October, p. 10) incorrectly states the Honorable Peter B. Teets as undersecretary of the Air Force "was not replaced for the rest of the Bush Administration." Ron Sega served as USECAF and DOD executive agent for space from August 2005 through September 2007.

The Bush Administration nominated Sega, who had served as DoD director of research & engineering (DDRE) since 2001, in the summer of 2005 to be the next USECAF, DoD EA/Space, and director, NRO (DNRO). During that same time, the Bush Administration, as recommended by the 9/11 Commission, consolidated the US Intelligence Community (IC) under the newly created Office of the Director of National Intelligence (ODNI). In a political move to shore up authority for the newly established ODNI and provide greater focus on NRO organizational and programmatic issues, the newly ap-

pointed director of national intelligence, John Negroponte, and then-Secretary of Defense Donald H. Rumsfeld agreed to separate the positions of USECAF, DOD EA/Space, and DNRO. Don Kerr was appointed DNRO. The DNRO had consistently also served in the past as either USECAF or SECAF, and in an attempt to maintain some formal Air Force leadership coordination with the DNRO, Kerr was appointed as an assistant to the secretary of the Air Force for space and technology. However, integration and synergy across the US National Security Space Enterprise (NSSE) remained elusive.

Leadership of the NSSE remains fragmented. The recent Air Force study of space organizations and resultant SECAF policy memo go a long way in redefining and strengthening the Air Force position. The Air Force is getting its house in order. I do, however, respectfully disagree with the policy position that USECAF and DNRO jobs are "too big" to hold together (they have not been in the past); that said, the cultural, budgetary, and political turbulence needs to settle. All stakeholders in the NSSE would be well-advised to follow the Air Force lead and more fully define their roles, responsibilities, and equities before any more serious efforts at national integration can happen.

Lt. Col. Darren J. Buck,
USAFR
Colorado Springs, Colo.

Atomic Mission

As a career officer in the United States Air Force, I had an interest in the *Enola Gay* story simply because it is part of the history of USAF [*"Atomic Mission," October, p. 73*]. However, just over two years ago, my father (a draftee into the United States Army) told me that he was stationed on one of the outlying Japanese Islands in early August 1945 as part of the invasion force scheduled to begin the bloody battles to bring World War II to a close. The invasion never happened, specifically because of the two USAF atomic bomb missions over Japan. It was as my father told his story that the importance of the mission referenced in the article became quite clear. My immediate family of both parents, my sister, and myself quite probably owed our existence on this Earth to those two B-29 crews that dropped the atomic bombs that ended World War II. As my father told his story, the *Enola Gay* immediately came to mind—and it suddenly became deeply personal.

Those who doubt the efficacy of the use of the atomic bomb on Japan need merely look to their own personal existence to see the impact of the decision

to use the bomb and those who executed that decision. I probably owe my life to Paul Tibbets, as do many millions of other Americans.

Lt. Col. John Bredfeldt,
USAF (Ret.)
Macon, Ga.

The atomic bomb dropped on Hiroshima was described in your magazine as "the first atomic bomb."

What would you call that thing we set off at Trinity a few weeks earlier, then?

John E. Payne
Oakland, N.J.

New Dawn

I bring to your attention the centerfold shot of an F-16 from the 114th Fighter Wing "Lobos" from South Dakota loaded for bear with the C-17 on final in the background ["A New Dawn in Iraq," October, p. 46].

A very nice shot; however, the 114th FW is based in South Dakota at Joe Foss Field, Sioux Falls, S.D., [and is] named after legendary World War II Marine Corps ace and Medal of Honor recipient Brig. Gen. Joseph J. "Joe" Foss.

Sioux Gateway Airport is located in Sioux City, Iowa (84 miles south of Sioux Falls), and is home to the 185th Air Refueling Wing (KC-135).

MSgt. Michael J. Asher,
USAF (Ret.)
Des Moines, Iowa

Old Glory

I always look for my issue of *Air Force Magazine* to keep up with those serving. If I may take issue with the photo "Screenshot" of the Air Force Academy cadets at Falcon Stadium with the US flag ["Air Force World"] on p. 13 of the October issue:

I hope that someday Congress will amend the Flag Code (36 U.S.C.) with regard to what has become almost a ritual (incorrectly done) at large open air ceremonies of a patriotic nature—that is, our national flag being carried flat or horizontally, with many persons supporting the edges to keep it above ground. The Flag Code is very specific about it being carried "always aloft and free" and, therefore, not flat or horizontal.

I know that in all cases, this is being done with no disrespect to our colors; it is just a nice display—although still not in accordance with the Flag Code.

CMSgt. John E. Schmidt Jr.,
USAF (Ret.)
Tallahassee, Fla.

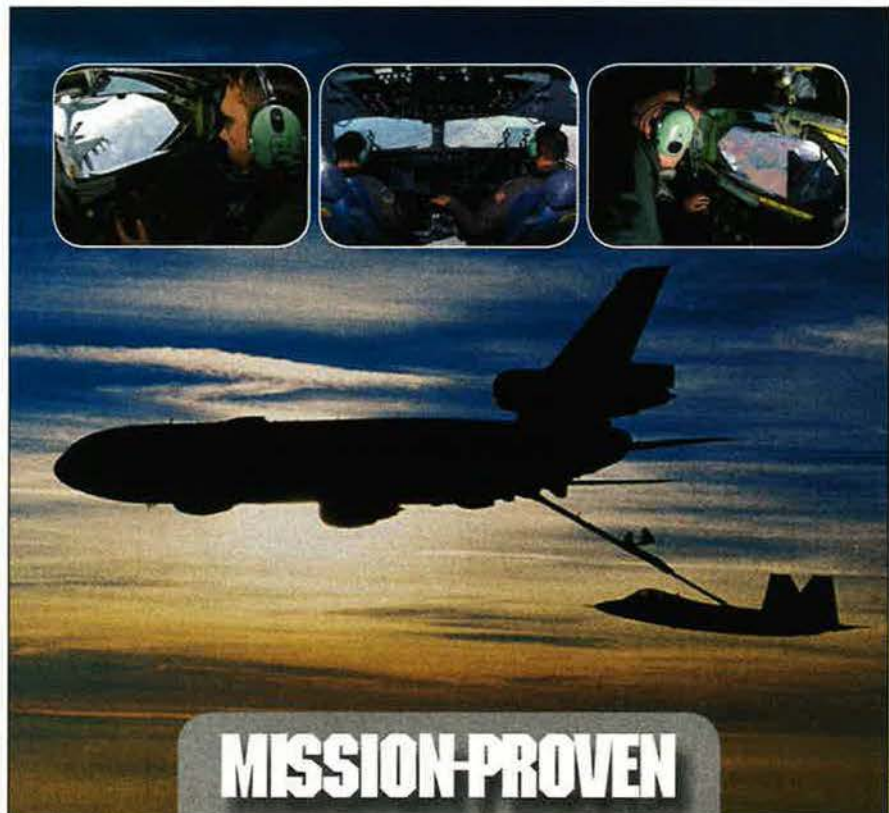
A Toss Up

MSgt. Paul Soucy in his letter (published in the September 2010 issue relative to the July *Air Force Magazine* article "Nukes For NATO") states that: "Toss bombing was established and

tested using the F-105 aircraft." However, in the summer of 1953, I worked as a team member in the Armament Division at Eglin AFB, Fla., in a program designed to deliver the Mk VII atom bomb to a target using the F-84G fighter-bomber. These Mk 7 units were complete except for the nuclear material. (Otherwise the neighbors might complain.) A TDY group of TAC personnel were in charge of the Mk 7s, while us Eglin armament people handled the GP 500-pound sand-filled "dumb" bombs (with black powder burster charge). In all test flights, a Mk 7 was carried under

the left wing to evaluate flight-handling characteristics, but was not tossed. Instead, a 500-pound dumb bomb was carried under the right wing, and that one was tossed on each test flight. These tests entailed tossing only the dumb bombs for three or four months, until the project leaders were confident that they had learned as much as they could from that phase of testing. The second phase of the project, which involved the actual tossing of the Mk 7s, did not start until around November.

Tom Blair
Garrettsville, Ohio



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Creeping obsolescence threatens bombers; “Will cost” vs. “should cost” contracting

A CHRONIC DISSIPATION

The US military’s ability to mount long-range strike missions is deteriorating and could disappear altogether unless quick action is taken, according to a new white paper published by the Center for Strategic and Budgetary Assessments.

In “Sustaining America’s Strategic Advantage in Long-Range Strike,” released in September, CSBA author Mark A. Gunzinger said the US military’s family of conventional weapons and nuclear-capable delivery systems able to hit faraway targets is “dissipating” due to “chronic underinvestment” since the 1990s. These include bombers, aircraft carriers, and cruise missiles and the electronic warfare platforms necessary to support them.

Gunzinger is also one of the authors of CSBA’s recent paper on AirSea Battle, which the Air Force and Navy are developing as an operational concept to cope independently with distant enemies.

The lack of investment and “creeping obsolescence” of current systems could lead to a future force that is “relegated to fighting on the periphery and cannot effectively penetrate anti-access/area denial (A2/AD) battle networks,” Gunzinger wrote. Without investment in the very next defense budget, “a gap is likely to emerge in which the nation could lose its conventional long-range strike advantage for a decade or more.” The US can either accept this loss or commit to modernizing its long-distance combat portfolio.

Adversary defenses have gotten a lot tougher to penetrate, and in a future conflict it may be necessary to strike a great many mobile targets. These will require both range to reach them and persistence to loiter in the target area as they are found.

Moreover, adversaries are placing their most valued fixed targets at maximum distance from coastlines and borders, hardening and deeply burying them to complicate any US effort at striking those targets.

Meanwhile, most US investment in combat aircraft since the 1990s has emphasized relatively short-range fighters. The only system truly capable of striking at great distance and successfully penetrating enemy air defenses today is the B-2 bomber, of which the US has only 20.

Broadly, the US requires land-based systems with a range of 4,600 to 5,750 miles between aerial refuelings “and persisting over target areas located in contested environments characterized by dense, modern air defense networks,” Gunzinger asserted. Because new adversary missiles will likely keep aircraft carriers as much as 1,000 miles away from their targets, the carriers, too, will need new, stealthy aircraft “with a range that is at least two to three times that of the F/A-18E/F or F-35C if carriers are to contribute meaningful strike capacity” in the early stages of a war. Because of the vulnerability of command and control and intelligence-surveillance-reconnaissance networks, all strike platforms will need to be “capable of operating effectively independent of these networks.”

Gunzinger summed up, “Simply put, the combination of range, persistence, stealth and independence of action will likely be the sine qua non for effective strike operations over the coming decades.”

He proposed a series of options that would allow the US to maintain its long-range strike capabilities, none of which are cheap and all of which contain some element of risk. Each option offered a prescription for what to do about a new penetrating aircraft; modernization of today’s standoff bombers; pursuit of new cruise missiles; carrier strike capabilities; multimission remotely piloted aircraft; and airborne electronic attack (AEA) aircraft.

Option 1 on Gunzinger’s menu would see the existing bomber force of B-1s, B-2s, and B-52s continually upgraded, while a decision on a new bomber-like aircraft would be deferred until the mid-2020s. There would also be a new cruise



USAF photo by MSGT. Val Gempis

Continual upgrades for the B-2? So says Option 1.

missile, a new long-range RPA for the Navy, and a smaller drone with electronic attack capabilities.

The main drawback of Option 1 is that while it would allow more time to develop and mature technologies for a new aircraft, there would be no work to keep design teams together in the interim.

“Option 1 would find DOD’s capability and capacity shortfalls for striking mobile, hardened, deeply buried, and geographically deep targets in progressive—and perhaps irreversible—decline,” Gunzinger said. The Pentagon would have to compensate by ordering up a huge inventory of standoff missiles.

In Option 2, Gunzinger offered that a new standoff bomber to replace the B-1 and B-52 would be developed first, with a new penetrating bomber deferred. A new AEA aircraft wouldn’t appear until the 2040s.

The disadvantages of the second approach would “far outweigh” the advantages, according to the paper. Existing bombers are already “fully paid for” and can serve as standoff systems into the 2040s. In the meantime, the US ability to directly strike deeply buried and hardened targets “would be lost for several decades.”

Option 3, which Gunzinger calls the “most balanced” approach, would put priority on fielding a new penetrating bomber first, deferring a new standoff bomber until the current ones



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wear out, and simultaneously pursuing a new standoff cruise missile, a new remotely piloted aircraft for Navy carriers, and new AEA platform.

This option would “take full advantage” of the service lives of the B-1, B-2, and B-52, and get a new aircraft capable of penetrating A2/AD systems into the force before the B-2 loses its ability to do so. A penetrating bomber would allow the US to buy precision guided gravity munitions at far lower cost than standoff missiles.

The downside of Option 3, Gunzinger said, would be that replacing the legacy bombers might have to start before the new penetrating bomber fleet is fully bought. However, the overlap would be less costly than the “bow wave” of funding demands in Option 2, and could be mitigated if DOD chooses a less stealthy variant of the penetrating bomber to replace its standoff aircraft as well.

Option 4, the most expensive approach, would replace all existing bombers as soon as possible with a new, penetrating machine while simultaneously buying new standoff missiles, a new Navy RPA, and a new AEA platform.

The downside of Option 4, Gunzinger said, is that the expense of replacing all the bombers at once could well drive the Pentagon to acquire a much smaller bomber fleet, and using superstealthy aircraft to attack targets with lesser defenses would be costly overkill.

After assessing the choices, he argued that a force of about 100 new penetrating bombers with a payload of about 20,000 pounds and a range of 4,600 to 5,750 miles should be the first priority. Whereas the Air Force has been saying it wants an aircraft that could make maximum use of offboard sensors to keep costs down—not a “lone wolf” attack airplane—Gunzinger argued that the airplane needs a full suite of onboard surveillance and self-defense capabilities precisely because it may be cut off from supporting elements in the LRS portfolio.

He also recommended buying a new standoff bomber when acquisition of the penetrating bomber is nearly completed; that the Navy develop an air refuelable stealthy RPA with a 1,700-mile range; that the Navy and Air Force jointly develop a new air- or sea-launched cruise missile; that the services develop a new longer-range AEA platform; and that the new bomber have the potential to carry nuclear weapons.

Gunzinger also suggested building an inventory of no more than 100 conventional prompt global strike systems, such as a conventionally armed ICBM, for those times when an extremely high-value target must be hit in a matter of hours at great range.

MORE WITHOUT MORE

Defense Secretary Robert M. Gates rolled out a raft of 23 new defense acquisition policies and initiatives in September, meant to help the Pentagon reach his mandated goal of saving \$100 billion over the next five years. The policies aim to introduce more sensible and less wasteful practices into Pentagon contracting, which should also have the benefit of speeding up new weapons programs.

Gates unveiled the plan at a Sept. 14 Pentagon press conference, and said the policies would go into effect immediately.

Consumers, Gates said, have become accustomed to seeing capability increases in the products they buy, even as the price of products comes down. However, “we have not seen [this] productivity growth in the defense economy.”

While consumers get more for their money every year, “taxpayers had to spend significantly more in order to get more. We need to reverse this trend.”

The objective is to find enough savings from the Pentagon’s existing spending to support a two-to-three percent annual



Gates: More sense, less waste.

DOD photo by Cherie Cullen

increase in investment in new hardware to replace systems worn out by age or war, Gates said.

Perhaps the biggest change will be a shift from “will cost” to “should cost” contracting, Pentagon acquisition, technology, and logistics chief Ashton B. Carter said at the press conference.

Gates claimed “should cost” practices on the Navy’s upcoming ballistic missile submarine program have whittled its costs down from an estimated \$7 billion per boat to \$5 billion per boat.

“The goal is a reduction of fully 27 percent in a program where total cost is expected to be more than \$100 billion,” Gates said. In general, “designing to affordability and not just desire or appetite is critical.”

Wherever possible, “real” competition will be pursued, and directed buys will be avoided. Gates said a second engine for the F-35 fighter is not “real” competition, arguing a competition has already been run for the power plant.

Wherever possible, fixed-price contracts will be used when the product is well understood. In development, incentive contracts allow government and industry to share savings from innovation. In services, time limits will be imposed so that contracts don’t continue long after their usefulness has run out.

Gates said he’s not against contractors making a profit, and the rewards will be greater for contractors who provide greater productivity, in the form of lower costs or greater capability for the same cost. Progress payments will be more closely linked with progress, and not the calendar.

“Non-value-added” procedures will be targeted within the Pentagon and industry alike, particularly reporting and oversight requirements that don’t provide meaningful benefits.

Programs will run better because of new, overarching policies, Carter said. Production rates will be stabilized, and multiyear contracts will be used whenever practical. Redundancies will be reduced or eliminated within combat portfolios, so the services won’t be buying separate systems to accomplish the same results.

Carter said DOD will “follow the Air Force lead” by establishing a program executive officer for services to focus on improving policy and practice in services contracting.

All of these initiatives should also help the defense industrial base by “sustaining investment” while nurturing new technology and finding money to buy new systems, Carter noted.

Gates said there’s good reason to believe the \$100 billion savings target will be met.

“We have established reasonable reduction targets,” he said. “We can identify the excess after an era of double-digit growth. And the President, the Congress, the Joint Chiefs, and I are all supportive of change in how we do business.” ■

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Airmen Killed in Afghanistan

SrA. Mark A. Forester, a combat controller assigned to Air Force Special Operations Command's 21st Special Tactics Squadron, Pope AFB, N.C., died Sept. 29 during combat operations in Uruzgan province, Afghanistan. Forester, from Tuscaloosa, Ala., was 29 years old.

SrA. Daniel Johnson, 23, an explosive ordnance disposal technician, was killed in action west of Kandahar, Oct. 5. An IED detonated near him as he performed his EOD duties. He was transported to

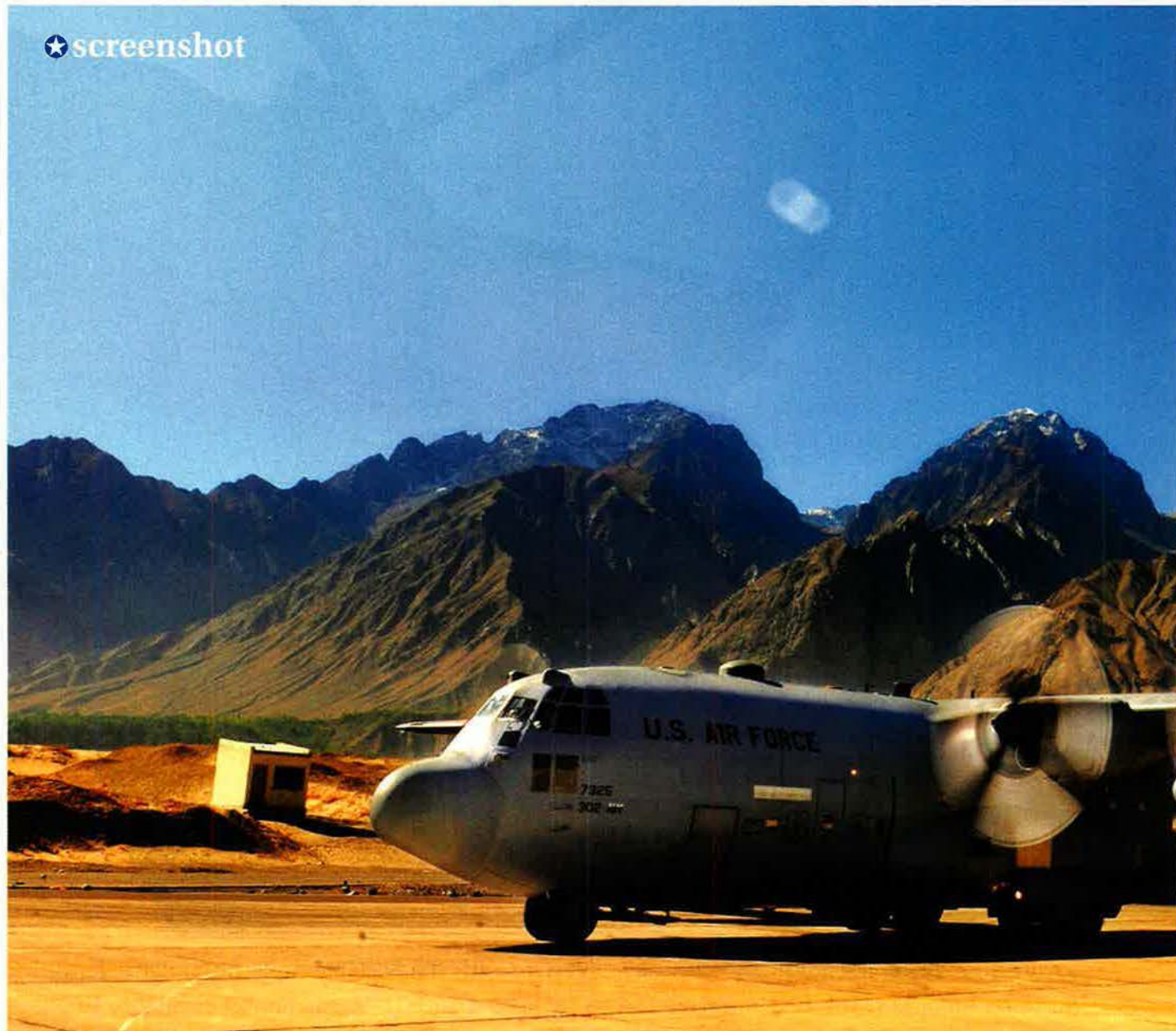
a hospital at Kandahar Airfield but died soon thereafter. Johnson was assigned to the 30th Civil Engineer Squadron's EOD flight at Vandenberg AFB, Calif.

SrA. Michael J. Buras, an explosive ordnance disposal specialist assigned to the 99th Civil Engineer Squadron at Nellis AFB, Nev., died Sept. 21 of wounds from an improvised explosive device that struck his vehicle in a convoy near Kandahar Airfield, Afghanistan. Buras, from Fitzgerald, Ga., was 23 years old.

Guardsmen Awarded for Valor

SSgt. Kenneth I. Walker, assigned to the Washington Air National Guard's 116th Air Support Operations Squadron, received the Bronze Star Medal with Valor Device for actions during a firefight on May 24, 2009, while deployed as a tactical air control party member with the 817th Expeditionary ASOS and the Army's Task Force Spader in Afghanistan.

After directing airstrikes repelling an initial attack, Walker provided covering fire to ground forces, exposing himself



repeatedly to fire. He then re-established communications with air assets and called in additional strikes that blunted a second attack and brought an end to the seven-hour engagement.

Chief of Staff Gen. Norton A. Schwartz presented the medal to Walker at the Air Force Association's Air & Space Conference near Washington, D.C. Walker was attending the conference as one of USAF's 12 Outstanding Airmen of the Year.

F-35 Lot 4 Deal Reached

The Defense Department and Lockheed Martin agreed in September to terms for the fourth low-rate production lot of F-35 Lightning II strike fighters, Defense Secretary Robert M. Gates said. The parties settled on "a fixed-price incentive fee contract" for the purchase of 30 F-35s. The deal implements changes

DOD is instituting to get more efficiency and effectiveness out of new contracts. Gates emphasized that the per-unit F-35 price in Lot 4 is 15 to 20 percent less than the cost DOD's own independent cost estimators projected earlier this year. DOD and Lockheed Martin will share in the cost of any overrun up to a "fixed ceiling." The company will share in any savings should the program come in under cost.

Last F-15s Depart Langley

After 34 years of continuous front-line service, the last two F-15s assigned to the 71st Fighter Squadron at JB Langley, Va., departed the base Sept. 1.

The F-15 arrived at Langley as the world's top fighter in 1976. Most of the F-15s are destined for service with the Air National Guard. The 71st was inactivated in September. The move is

part of an Air Force-wide drawdown of the fighter force by 250 aircraft for Fiscal 2010. F-15s began departing Langley in June.

Langley will continue to operate its 40 F-22s with its remaining two fighter squadrons. A recent realignment of resources gave Langley an additional six F-22s, which are also used by the Air National Guard at that base.

One of Langley's last F-15s will be displayed at the Virginia Air and Space Center in nearby Hampton, Va.

An Air Force Reserve C-130 prepares for a combat offload of flood relief supplies at an air strip in northern Pakistan. Between Aug. 16 and Oct. 3, C-130s and C-17s delivered nearly six million pounds of relief supplies to Pakistan at distribution centers throughout the country. USAF flood relief efforts ended in early October.



USAF photo by SSGT. Andy Kin

Senate Confirms New Vice Chief

The Senate has confirmed the nomination of Lt. Gen. Philip M. Breedlove to be promoted to four-star general and serve as USAF vice chief of staff. The Senate action on Sept. 29 allows Breedlove to succeed Gen. Carrol H. Chandler, who has been vice chief since August 2009 and is retiring after 36 years of uniformed service. Breedlove has been deputy chief of staff for operations, plans, and requirements since August 2009. Commissioned in 1977, he is a command pilot with more than 3,500 flying hours.

The Senate also approved the nomination of Lt. Gen. Herbert J. Carlisle to take over Breedlove's post on the Air Staff. Carlisle was commander, 13th Air Force, JB Pearl Harbor-Hickam, Hawaii.

Maj. Gen. Stanley T. Kresge received the Senate's blessing for promotion to

Intermodal Mobility Brings Efficiency to Deliveries

"I have to get people what they need, when they need it, at the right place, at the right time. Lives depend on it," said Gen. Raymond E. Johns Jr., commander of Air Mobility Command, at AFA's Air & Space Conference in September. "But along the way, can I do it more efficiently?"

When AMC first moved armored all-terrain vehicles (M-ATVs) to Afghanistan, C-17s took off from Charleston AFB, S.C., with three of the vehicles in the hold and would arrive in-theater some 20 hours later. "That was important, because they were saving lives," Johns said.

Once the initial vehicles were on the ground, commanders tinkered with intermodal processes to deliver more vehicles, more efficiently. One obvious assist came from sealift, which can inexpensively deliver vast quantities of materiel, albeit more slowly than airlift.

However, by shipping M-ATVs to the Persian Gulf region, the Air Force can then shuttle a C-17 to forward bases "not with three M-ATVs, but with five," Johns noted. After setting up a port operation in Bahrain, an estimated 2,439 M-ATVs moved through to Afghanistan as of Sept. 10, according to US Transportation Command figures.

Utilizing multiple transit modes, the government saved about \$116 million per 1,000 vehicles and increased airlift efficiency by 40 percent.

AP photo by Arshad Butt



Fire Strike: Pakistanis watch as oil tankers burn in Quetta, Pakistan on Oct. 6. Militants torched a dozen tankers carrying fuel to NATO troops in Afghanistan. This attack was only the latest strike against bottlenecked supply convoys headed to Afghanistan after Islamabad temporarily shut down a key border crossing to protest air strikes that killed Pakistanis.

three stars, backfilling Carlisle at 13th Air Force. Kresge is commander of the Air Force Warfare Center at Nellis AFB, Nev.

Shelton To Lead AFSPC

The Senate confirmed Lt. Gen. William L. Shelton for a fourth star and leadership of Air Force Space Command at Peterson AFB, Colo. Shelton will replace Gen. C. Robert Kehler, who is tapped to head US Strategic Command at Offutt AFB, Neb.

Shelton is assistant vice chief of staff, and was nominated to head AFSPC in September. Shelton has extensive background in space missions, including leadership of 14th Air Force at Vandenberg AFB, Calif.

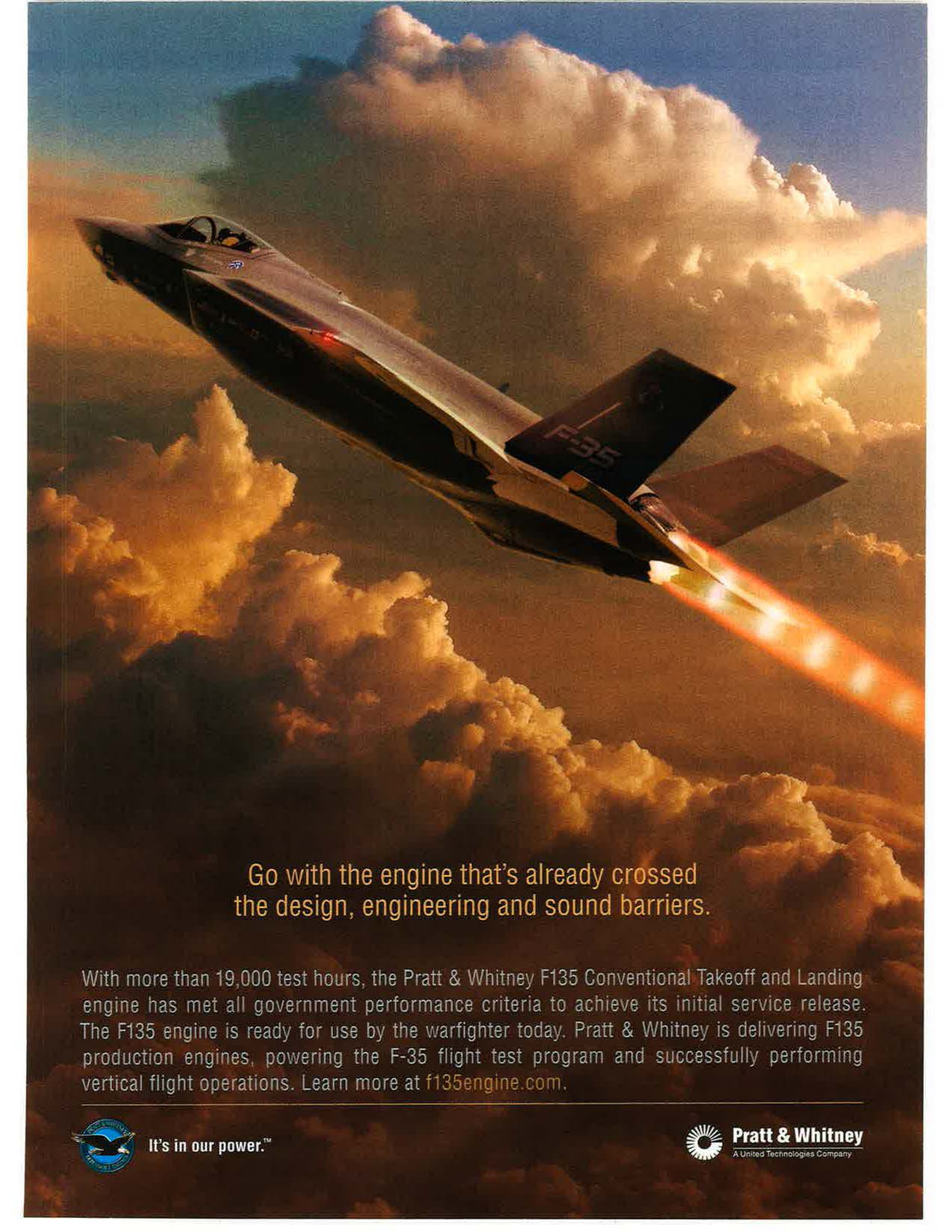
The Senate also confirmed the nomination of Lt. Gen. Richard Y. Newton III to replace Shelton as assistant vice chief. Newton has served on the Air Staff as DCS for manpower and personnel since January 2008.

Taking Newton's place will be Maj. Gen. Darrell D. Jones, confirmed for three stars, who shifts from command of the Air Force District of Washington, JB Andrews, Md.

USAF Receives Final Liberty Aircraft

The last of 37 MC-12 Liberty Project Aircraft, developed and produced to meet an urgent operational requirement, was delivered in August, prime contractor L-3 Communications announced. The delivery completes the Liberty Project Aircraft program.

On Aug. 31, the airplane was flown from the L-3 Mission Integration facility in Greenville, Tex., to the Air National Guard training facility at Key Field, Miss.



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The first MC-12 intelligence-surveillance-reconnaissance aircraft was acquired in March 2009, and since June 2009 they have been deployed to Iraq and Afghanistan. "The Air Force and L-3 completed an amazing feat," said Mark Von Schwarz, president of L-3 Mission Integration. All 37 ISR aircraft were delivered in less than 24 months, each one on or before contract deadlines, the company said.

Last T-43 Retires

The last T-43A combat systems officer training aircraft was retired in September during a ceremony at Randolph AFB, Tex. A version of Boeing's ubiquitous 737 airliner, the T-43, nicknamed "Gator," has flown as an airborne classroom since 1973, training Air Force navigators, now known as combat systems officers.

"We have put more than 20,000 aviators through the training," said Lt. Col. Peter J. Deitschel, commander of Randolph's 562nd Flying Training Squadron.

Marine Corps, Navy, and partnership student navigators have also trained in these flying classrooms during the past 37 years.

The Air Force is moving its CSO training from Randolph to NAS Pensacola, Fla., where the student navigators will train in T-1 Jayhawks and T-6 Texan IIs. A T-43 will be placed on static display at Randolph.

AFRL Studies Microwaves

The Air Force Research Laboratory's Directed Energy Directorate at Kirtland AFB, N.M., is establishing a High-Power Microwave Institute to help scientists there develop an emerging class of weapons. "High-power mi-

Global Hawk Roosts in Guam

An RQ-4 remotely piloted aircraft has arrived at Andersen AFB, Guam, to support the standup of Global Hawk operations in the Pacific. Airmen with the 12th Reconnaissance Squadron at Beale AFB, Calif., controlled the aircraft during its 18-hour flight from Beale to Andersen.

Following completion of initial operational test and evaluation, including taxi and pattern tests on the Global Hawk Block 30 configuration, Guam will become home to three Global Hawks assigned to the 9th Operations Group's Det. 3 at Andersen.

The Global Hawk's presence on Guam will give Pacific Air Forces "a high-altitude, long-range persistent [intelligence-surveillance-reconnaissance] platform" that complements the U-2s and other ISR aircraft that operate in the region, said PACAF Commander Gen. Gary L. North.

The timeline for delivery of the final two aircraft depends on the completion of operational test and evaluation and RQ-4 production rates.

For the time being, Global Hawk's physical presence allows airmen to develop tactics, techniques, and procedures for future employment within the theater, including envisaged roles such as disaster-relief support. Complementing deployment to Guam, Global Hawks are also now operating from NAS Sigonella, Italy, meaning the aircraft "will now be covering nearly every part of the globe," according to an official with Northrop Grumman, which makes the aircraft.

crowave technology can selectively degrade, disrupt, or destroy electronic systems, disperse aggressive crowds, and defeat improvised explosive devices at the speed of light, with little or no collateral effects," AFRL said in a news release.

The institute is essentially a high-performance computing center, enabling AFRL researchers to design HPM weapons virtually, significantly reducing developmental timelines and saving money in the process. Such computing tools will allow "the scientist to provide the inspiration, while the computer provides the perspiration," the news release stated.

The institute is the Air Force's third high-performance computing center,

and is funded through the Office of the Secretary of Defense.

US Aerospace KC-X: Late Is Late

The Government Accountability Office ruled in October that US Aerospace, a company offering Ukrainian aircraft for the Air Force KC-X tanker competition, has only itself to blame for its proposal being rejected as late, and the service acted properly in rejecting the bid. The Air Force will now choose solely between Boeing and EADS North America to build the new tanker.

US Aerospace complained that its courier arrived at Wright-Patterson AFB, Ohio, in time to submit its bid, but GAO said that the courier failed to go to the proper gate for nonmilitary visitors, didn't call ahead for approval to enter, and didn't obtain directions to the building where the bid was supposed to be submitted.

Although the courier was at the base before the deadline, when he reached the correct office, the bid was properly stamped as being submitted after the deadline, GAO said. The GAO had earlier ruled that the Air Force wasn't showing any Cold War bias against US Aerospace in rejecting its bid, as the company had alleged.

USAF Joins Valiant Shield

US Pacific Command held its annual 10-day exercise Valiant Shield near Guam in September. More than 150 US combat aircraft joined Marine and Navy at-sea elements to practice joint counterair and countersea concepts.

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No Rest For Small USAFE Fighter Fleet

US Air Forces in Europe fighter aircraft on Sept. 6 assumed responsibility for the Icelandic air policing mission, a mere five days after USAFE took over the Baltic air policing mission in Lithuania, at the opposite end of continent. F-15s from RAF Lakenheath, UK, were performing both air superiority missions, part of regular NATO rotations.

To achieve NATO certification for the Iceland mission, airmen with the 493rd Expeditionary Fighter Squadron had to execute four "quick reaction alert intercepts," which require an aircraft aloft within 15 minutes of an alarm. The QRA(l)s were accomplished in an average of seven minutes, USAFE officials said.

These air superiority missions show that although USAFE's fighter fleet is newly reduced, its operating tempo is not letting up. As part of this year's Combat Air Forces reduction plan, 21 F-16s were pulled from Spangdahlem AB, Germany, and reassigned to the Minnesota Air National Guard. The base was left with two fighter squadrons, one operating F-16s and one flying A-10s.

Despite the drawdown, Spangdahlem has a future as a fighter base, asserted Gen. Roger A. Brady, USAFE commander, in a September interview. Spangdahlem now houses the only squadron of F-16CJs in Europe, optimized for the suppression of enemy air defenses mission.

However, Pentagon planners should take care not to "peanut butter spread" the force in Europe and make it too thin, cautioned Brady. USAFE's fighter force is old and small by historical standards, but future F-35 allocations could go along way in revitalizing its capabilities. The general said he would like to think that as many as seven squadrons of F-35s could eventually be based on the continent.

not regularly exercise together, such as B-52 bombers and carrier strike groups," said Brig. Gen. John W. Doucette, 36th Wing commander at Andersen AFB, Guam, from which land-based aircraft operated.

The training derived from such an exercise ensures US Pacific forces are "capable of an overwhelming and decisive response" in a future regional contingency, he added.

Participating aircraft included B-52s, E-3 AWACS, F-15s, F-15Es, F-22s, HH-60 helicopters, KC-10 and KC-135 tankers, Marine Corps AV-8s, and Navy E-2s, F/A-18s, and P-3s.

Iraq Takes Over Airspace Sector

Iraqi air controllers now control all airspace above 15,000 feet in the Kirkuk sector, which represents the northern third of Iraq. Airmen in the Air Component Coordination Element-Iraq turned over the responsibility on Sept. 1.

Previously, the controllers with Iraq's Civil Aviation Authority at Baghdad Airport only controlled airspace above 24,000 feet. USAF air controllers had administered all traffic below 24,000 feet from their facility at Kirkuk Air Base.

USAF airmen and contractors have been instructing Iraqi controllers on how to manage Iraqi airspace. This month, airspace above 15,000 feet in Iraq's two other air sectors is expected to pass to Iraqi control. The

ICAA should assume control of all Iraqi airspace in 2011, following successful completion of training by Iraqi controllers.

MC-130W Modification Awarded

The Air Force has awarded L-3 Communications a \$61 million contract to add a weapons package to eight

MC-130W Combat Spear special-mission aircraft. The company will add a gunship-like attack capability to the aircraft, which will be designated MC-130W Dragon Spear. Air Force Special Operations Command is arming these aircraft to relieve the relentless operational demands on its AC-130 gunships until new AC-130J models enter the fleet. Under the terms of the deal, L-3 will provide the weapons kits, called "precision strike packages," for aircraft installation undertaken at Warner Robins ALC, Ga.

ANG Unit Activated

Officials at Tyndall AFB, Fla., marked the activation of the Florida Air National Guard's 101st Air and Space Operations Group in an August ceremony. Guardsmen of the 101st—which officially stood up in July 2009—will staff the 601st Air and Space Operation Center, tasked with threat identification and supporting air defense across the continental United States. The state-of-the-art hub monitors air traffic, identifying threats to populations and infrastructure, enabling intercept, elimination, or dissuasion of those threats.

The 101st has long supported the air defense mission, beginning as the Montgomery Air Defense Sector in 1957 and later becoming the Southeast Air Defense sector. "We have a proud heritage with the state of Florida, and a noble past with the Southeast Air Defense Sector," 101st Commander Col. Scott Barberides noted. Florida



Lights Out! The crew of an HH-60G Pave Hawk from the 33rd Expeditionary Rescue Squadron performs a brown-out landing during a pararescue training mission at Bagram Airfield, Afghanistan. Knowing how to land safely and perform rescue duties in brown-out conditions are extremely important in the dusty desert terrain.

USAF photo by SSgt. Christopher Boltz

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The War on Terrorism

Operation Enduring Freedom—Afghanistan

Casualties

By Oct. 18, a total of 1,333 Americans had died in Operation Enduring Freedom. The total includes 1,331 troops and two Department of Defense civilians. Of these deaths, 1,023 were killed in action with the enemy while 310 died in noncombat incidents.

There have been 8,706 troops wounded in action during OEF. This number includes 4,176 who were wounded and returned to duty within 72 hours and 4,530 who were unable to return to duty quickly.

USAF Breaks Airdrop Record, Again

Air Force transport aircraft dropped 3,800 container delivery system supply bundles to troops at remote forward operating bases in Southwest Asia in August, surpassing the record set earlier this year. The airdrops topped July's mark of 3,600 bundles delivered, the previous record. Mobility airmen averaged more than 99 tons delivered per day in August, equating to about six million pounds of food, water, equipment, and supplies for the month.

"These airdrops are critical to sustaining ground forces at austere locations where other means of resupply aren't feasible," said Col. David Almand, director of the Combined Air and Space Operations Center's air mobility division. The division coordinates, tasks, and executes in-theater air mobility missions for the CAOC.

Afghan Air Training Mission Rebranded

The Combined Airpower Transition Force training the fledgling Afghan Air Force since 2007 has been renamed the NATO Air Training Command-Afghanistan, or NATC-A. The new title recognizes the increasing involvement of partner countries in these activities. Britain, Croatia, the Czech Republic, and Hungary have helped the US develop the Afghan air arm over the past several years, and the number of nations stepping up to participate is increasing. The list includes Canada, Italy, Latvia, Lithuania, Portugal, and Ukraine. "While we're all interoperable, we each have a slightly different way of operating and different levels of experience," said Lt. Col. Wayne McCaskill, director of operations for the 438th Air Expeditionary Wing that oversees NATC-A. He added, "This provides the Afghan Air Force with the best opportunity to find a method that is right for them."

ANG Commander Brig. Gen. Joseph G. Balskus oversaw the changing of the flags marking the unit's transition from the Southeast Air Defense Sector to the 101st AOG.

USAF Seeks Low-Level Airspace

The Air Force is considering establishing a low-altitude tactical navigation (LATN) area in northern New Mexico and southern Colorado to provide the 27th Special Operations Wing, Cannon AFB, N.M., with more training options.

The LATN, pending final approval and an environmental impact assessment, would provide airspace for C-130s and CV-22s to conduct low-altitude tactics training. If approved, USAF would begin flying an average of three sorties per flying day, totaling about 688 throughout the year.

"The proposed LATN area in Colorado and New Mexico was selected due to the varied topography and weather, proximity to Cannon Air Force Base, and lack of large civilian populations,"

allowing aircraft to fly over mountainous terrain and as low as 200 feet, at up to 280 mph, according to a Cannon press release.

Officials are also considering an alternative proposal, involving smaller tracts of airspace.

ISR Group Activated at Fort Meade

The Air Force has activated the 659th Intelligence, Surveillance, and Reconnaissance Group at Fort Meade, Md., supporting USAF's cyber operations under the command of the Air Force ISR Agency's 70th ISR Wing, also at Fort Meade.

The group's more than 400 members perform digital network exploitation analysis and provide digital network intelligence, supporting 24th Air Force as well as the National Security Agency.

The 659th's 7th Intelligence Squadron will operate from Fort Meade, home of US Cyber Command, while the 35th IS will be located at Lackland AFB, Tex, where the Air Force ISR Agency is based.

ICBM Test Is Successful

Air Force Global Strike Command crews successfully launched an unarmed Minuteman III ICBM in September. The missile flew some 5,300 miles from Vandenberg AFB, Calif., to a predetermined aim point in the Pacific Ocean about 200 miles southwest of Guam. It was the third and final operational test launch conducted by AFGSC this year.

"The data gained from these launches allow us to maintain a high readiness



Learn To Make the Call: Capt. Jon Chango (standing) and TSgt. Matthew Muse (center) review procedures with two NATO students during a field training exercise in Germany. Both USAF airmen are with US Air Forces in Europe's Air Ground Operations School, which conducts five-week courses for US and NATO joint terminal attack controllers.

USAF photo by TSgt. Francesca Popp



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Senior Staff Changes

RETIREMENTS: Maj. Gen. Kevin J. Kennedy, Maj. Gen. K. C. McClain, Brig. Gen. Daniel R. Eagle.

NOMINATION: To be Lieutenant General: Charles R. Davis.

CHANGES: Maj. Gen. Salvatore A. Angelella, from Vice Cmdr., 5th AF, PACAF, Yokota AB, Japan, to Vice Dir., Strat. Plans & Policy, Jt. Staff, Pentagon ... Brig. Gen. Scott A. Bethel, from Dir., ISR Strategy, Integration, & Doctrine, DCS, ISR, USAF, Pentagon, to Vice Cmdr., AF ISR Agency, Ft. Meade, Md. ... Maj. Gen. Gregory A. Biscone, from C/S, SECDEF Comprehensive Review Working Group, OSD, Pentagon, to Dir., Global Ops., STRATCOM, Offutt AFB, Neb. ... Gen. (sel.) Philip M. Breedlove, from DCS, Ops., P&R, USAF, Pentagon, to Vice C/S, USAF, Pentagon ... Lt. Gen. Herbert J. Carlisle, from Cmdr., 13th AF, PACAF, JB Pearl Harbor-Hickam, Hawaii, to DCS, Ops., P&R, USAF, Pentagon ... Lt. Gen. (sel.) Charles R. Davis, from PEO, Weapons, AFMC, Eglin AFB, Fla., to Cmdr., ESC, AFMC, Hanscom AFB, Mass. ... Brig. Gen. Daniel B. Fincher, from Cmdr., AF Legal Ops. Agency, JB Bolling, D.C., to Rule of Law Dep., US Forces-Afghanistan, CENTCOM, Kabul, Afghanistan ... Brig. Gen. Scott P. Goodwin, from Dep. Dir., Ops., Natl. Mil. Command Ctr., Jt. Staff, Pentagon, to Cmdr., 21st Expeditionary Mobility Task Force, AMC, JB McGuire, N.J. ... Lt. Gen. (sel.) Susan J. Helms, from Dir., P&P, STRATCOM, Offutt AFB, Neb., to Cmdr., 14th AF, Vandenberg AFB, Calif. ... Maj. Gen. (sel.) Byron C. Hepburn, from Dep. Surgeon General, Office of the Surgeon General, USAF, JB Bolling, D.C., to Cmdr., 59th Medical Wg., Wilford Hall Med. Ctr., AETC, Lackland AFB, Tex. ... Lt. Gen. Larry D. James, from Cmdr., 14th AF, AFSPC, Vandenberg AFB, Calif., to DCS, ISR, USAF, Pentagon ... Maj. Gen. (sel.) Bruce A. Litchfield, from Cmdr., 76th Maintenance Wg., Oklahoma City ALC, AFMC, Tinker AFB, Okla., to Dir., Log., AMC, Scott AFB, Ill. ... Maj. Gen. Darren W. McDew, from Vice Dir., Strat. Plans & Policy, Jt. Staff, Pentagon, to Cmdr., AF District of Washington, JB Andrews, Md. ... Maj. Gen. Kenneth D. Merchant, from Dir., Log., AMC, Scott AFB, Ill., to Cmdr., Air Armament Ctr., AFMC, Eglin AFB, Fla. ... Lt. Gen. Richard Y. Newton III, from DCS, Manpower & Personnel, USAF, Pentagon, to Asst. Vice C/S, USAF, Pentagon ... Gen. (sel.) William L. Shelton, from Asst. Vice C/S, USAF, Pentagon, to Cmdr., AFSPC, Peterson AFB, Colo. ... Maj. Gen. Thomas W. Travis, from Cmdr., 59th Medical Wg., Wilford Hall Med. Ctr., AETC, Lackland AFB, Tex., to Dep. Surgeon General, Office of the Surgeon General, USAF, JB Bolling, D.C.

SENIOR EXECUTIVE SERVICE RETIREMENT: Bruce S. Lemkin.

SES CHANGES: Robert K. Boyles, to Dir., Contracting, Oklahoma City ALC, AFMC, Tinker AFB, Okla. ... John A. Fedrigo, to Dep. Dir., Secy. Forces, DCS, Log., Instl., & Mission Spt., USAF, Pentagon ... Jer D. Get, to Dir., Iraq Tng. & Advising Mission, Ministry of Defense, Dep. Commanding General, Advising & Tng., US Forces-Iraq, Baghdad, Iraq ... Roberto I. Guerrero, Dep. Chief, Safety, USAF, Kirtland AFB, N.M. ... Essye B. Miller, to Dir., AF Info. Mgmt., Office of the Administrative Asst. to the SECAF, Pentagon.

capability and ensure operational effectiveness of the most powerful weapons in the nation's arsenal," said Col. David Bliessner, 576th Flight Test Squadron commander. The 576th FLTS directed and conducted the missile launch, with support from the 91st Missile Wing at Minot AFB, N.D., and the 625th Strategic Operations Squadron at Offutt AFB, Neb.

Utilities Vulnerable To Cyber Attack

Critical infrastructure such as water, electricity, and sewage systems on most Air Force bases is highly vulnerable to cyber attack, Maj. Gen. Richard E. Webber, USAF's top uniformed cyber officer, said in congressional testimony in September.

"Right now, those systems are very much wide open," Webber said. "We haven't even taken the 'low-hanging-fruit' steps" to address this issue, he added. In most cases, off-site, private entities provide these utilities, said Webber.

The Air Force is, however, working with the National Laboratory to identify vulnerabilities in order to better understand infrastructure networks, he said.

NATO Reaffirms Continued Presence on US Soil

US Joint Forces Command is likely to fall victim to the Pentagon's belt-tightening, but its inactivation won't affect the US relationship with NATO. The Alliance's Allied Command Transformation (ACT) is currently the only NATO body on US soil and is co-located with JFCOM in Norfolk, Va. Dispelling concerns that DOD closures will damage US cooperation with NATO Allies, NATO Secretary General Anders Fogh Rasmussen stated, "We have no plans to move ACT. ... It makes sense to have a NATO headquarters also in the United States."

Maj. Gen. Jaap Willemsse, of the Royal Netherlands Air Force and a senior officer at ACT headquarters, underscored the importance of the Alliance's presence in the United States, adding that "it is important to understand that NATO is a trans-Atlantic organization. ... When we talk about NATO transformation, it has been key for ACT to be in the US, because no matter how you turn it, a lot is depending on the developments in the United States."

Willemsse noted that many ACT elements already operate independently of their US host, somewhat smoothing the transition.

The Navy faces the same issue. "A lot of this [infrastructure] is single source into a base," explained Vice Adm. Bernard J. McCullough III, US Fleet Cyber Command chief. "If you take that capacity away, you have some capability on backup power generation, but very little in other resources."

Allies Re-enact Market Garden

Nineteen airmen from the 37th Airlift Squadron at Ramstein AB, Germany, joined more than 1,000 allied service members in commemorating 1944's Operation Market Garden, the largest airborne assault in history.

Three of the unit's C-130Js teamed with British, Dutch, and German aircraft dropping 700 US, British, Dutch, Polish, and, notably, German paratroopers near the city of Eindhoven in the Netherlands.

Allied troops in World War II originally landed in Holland as part of the failed attempt to punch through to Berlin, hoping to hasten an Allied victory in Europe. Nearly 40,000 spectators witnessed the re-enactment.

"It was neat to be part of something that big and remembering those people who sacrificed so much," said Capt. Brent Gaylord, 37th AS commander. In Market Garden, the 37th Troop Carrier Squadron, his unit's predecessor, and British allies flew the C-47. Sixty-six years later, both are flying the C-130.

Reservists Train Uruguayans

Airmen with Air Force Reserve Command's 920th Rescue Wing at Patrick AFB, Fla., hosted 10 members of the Uruguayan armed forces in September, providing hands-on training in water rescue. Uruguayan forces participating included pilots, a loadmaster, and pararescuemen. They flew with the 920th Rescue Wing's HC-130s for

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WEIGHT - 4.2 lbs (1.9 kg)

PUMAAE

RANGE - 15 km
ENDURANCE - 2 hours
WEIGHT - 13 lbs (5.9 kg)

Changing Deployment Tempo

The Air Force has revised the standard rotational schedule of the air and space expeditionary force (AEF), changing it from 120 to 179 days for active duty airmen. In May 2008, the Air Force introduced five rotational bands for the AEF—A through E—with each band defining how long an airman would remain at home station and train following an overseas deployment.

"Since airmen in tempo band A expected to deploy for 120 days, but were frequently tasked for 179-day deployments, I saw no reason to maintain a 120-day baseline," Chief of Staff Gen. Norton A. Schwartz said in explaining the changes.

As a result, airmen formerly in tempo band A are moved to tempo band B. They will still have a one-to-four deploy-to-dwell time, but will now notionally spend six months on call for deployment, followed by 24 months at home, as opposed to the previous four-month/16-month cycle.

Tweaking the baseline will provide a single battle rhythm for all airmen, regardless of functional area, according to Air Force Personnel Center officials. The only difference now between the tempo bands is the deploy-to-dwell time, ranging from one-to-four to one-to-one. Combat Air Force units began to transition to the new baseline in September, while expeditionary combat support airmen begin the transition in January. All deployments will shift to six-month rotations by October 2012.

extended-range jump training over the Banana River, outside of Patrick.

The five-day exchange was part of an ongoing program between Uruguay and US Southern Command. Airmen of the 920th will train with in Uruguay next year.

Colors Cased, Not the Mission

Joint Task Force-Global Network Operations has been inactivated, its functions and mission now to be carried out by US Cyber Command, which will keep the organization's personnel.

The Pentagon established JTF-GNO in 2004 under US Strategic Command. The task force's mission was to direct the operations and defense of the Global Information Grid, the US military's computer network. Now that mission belongs to CYBERCOM, which stood up in May at Fort Meade, Md., as a subunified command under STRATCOM.

"Today, we are rolling the flag at JTF-GNO, but we're not rolling the mission," said Gen. Kevin P. Chilton, STRATCOM boss, during the task force's inactivation ceremony in Arlington, Va. Protecting the network will be "as essential tomorrow as it is today," he said.

Pakistan Flood Aid Successful

US military aircraft transporting humanitarian aid and supplies to Pakistan had surpassed the 14 million-pound mark by the time air operations ended in October. Aircraft including Air Force C-130 and C-17 airlifters operating as part of a US interagency task force had supported flood relief efforts in

the country since August. Fixed wing and helicopter aircrews rescued more than 21,000 Pakistanis from flood- and disease-ravaged regions of the country, according to US Central Command.

USAF's response included a 36-member team of the 621st Contingency Response Wing at JB McGuire, N.J. Operating from Pakistan Air Force Base Chaklala, wing members quickly doubled the air base's daily capacity, managing the inflow of relief supplies, and operating as the airlift hub for distribution throughout the country.

US relief efforts were operating under the coordination of the US Embassy, in cooperation with the

Pakistani military to operate fixed and rotary wing assets from three bases in Pakistan. At the Pakistani government's request, C-17 and C-30 flood relief support ended Oct. 3.

Surveillance System Launched

The first Space Based Space Surveillance satellite completed final testing in September and launched Sept. 25 from Vandenberg AFB, Calif., Air Force Space Command announced. It was originally intended to go into orbit in July, but the Air Force delayed launch after a software glitch was uncovered with the Minotaur IV launch vehicle meant to loft the system to orbit.

As the Air Force's only space-based sensor capable of monitoring orbital debris and satellites, SBSS will become a critical asset. "Every day, threats to our nation's valuable satellites and space platforms are growing," said Col. J. R. Jordan, vice commander of the Space and Superiority Systems Wing, Los Angeles AFB, Calif. "SBSS will revolutionize our ability to find and monitor objects that could harm the space assets we depend on," he added.

Talons Need Replacement

USAF must start considering a replacement for its elderly T-38 trainer that is not only economical but will successfully bridge the gap between fourth and fifth generation aircraft, Gen. Stephen R. Lorenz, commander of Air Education and Training Command, said at AFA's Air & Space Conference. "It's a solid, great trainer; however, there are issues with a 43-year-old airplane," Lorenz asserted. Of the T-38 Talon, he said, "We've updated it. We've worked on it,



Load 'er Up: SrA. Marquell Stalling drives an MJ-1 weapons loading vehicle as SSgt. Eric Venter guides an AIM-9X missile in an aircraft hangar at Keflavik, Iceland. The airmen were part of a NATO allied forces air policing mission to Iceland.

USAF photo by SrA. Stephen Larch

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but sometime in the future we need to make a decision as a nation, as the Air Force, on when we need a new trainer.” Lorenz noted that simply to bridge the vast technological gap, pilots currently training on the T-38 for aircraft such as the F-22 and F-35 are required to first transition through the F-16.

Studies seeking an alternative to the T-38 aim to look at everything from modernization of existing trainers to a potentially new “T-X” aircraft.

DOD Export Controls Streamlined

The White House has revamped controls on export of military and high-technology items, streamlining oversight. The aim is to more effectively control the most sensitive technologies, while enhancing US competitiveness in manufacturing and technology.

The Commerce and State Departments had redundant and sometimes contradictory export rules in place. Those rules will be replaced by a new system based on a three-tiered approach. The highest tier will protect items providing vital strategic advantage to the United States, including weapons of mass destruction, while the middle tier covers items of “substantial military or intelligence advantage” exclusively shared with close allies. The lowest tier will govern less sensitive technologies.



USAF photo by Gary Currell

The Fallen: Honor Guard members from Robins AFB, Ga., carry the casket of SrA. Michael Buras to a hearse waiting on the flight line. Three airmen, including Buras, were killed in Afghanistan during a two-week period in late September-early October. Also killed were SrA. Mark Forester and SrA. Daniel Johnson. See p. 12.

Obituary

Retired Maj. Gen. William E. Eubank Jr., influential in introducing the B-52 into the Air Force’s fleet, died Sept. 3 at the age of 98.

Eubank accepted the first operational B-52 in June 1955 as head of Strategic Air Command’s 93rd Bomb Wing at Castle AFB, Calif. This same unit, under

his leadership, won the MacKay Trophy for 1957 for the world’s first nonstop around-the-world jet aircraft flight. In 1958, Eubank set speed and distance records in a KC-135 tanker.

Eubank was born in Welch, W.Va., in 1912. He entered the Army Air Corps in 1936 and survived the Bataan and Corregidor battles of World War II. ■

News Notes

- Permanent-party in Southwest Asia and those deployed on one-year tours are now required to take the annual physical training test. The policy, announced by Lt. Gen. Gilmory Michael Hostage III, US Air Forces Central commander, also stipulates testing as a prerequisite to deployment.

- Canadian Defense Minister Peter MacKay announced in September that combat-ready F-35 strike fighters will be based at Canadian Forces Base Bagotville and Canadian Forces Base Cold Lake. Each base is set to receive 24 aircraft, replacing the CF-18 Hornet. The remaining 17 Canadian F-35s have not yet been assigned.

- Members of the Kansas Air National Guard assigned to 3rd Air Force in Europe assisted the Armenian military in testing its expeditionary medical capability for the first time, during a three-day exercise near Zarh, Armenia.

- During a five-hour flight over the Gulf of Mexico on Sept. 7, a B-1 from the 7th Bomb Wing, Dyess AFB, Tex., demonstrated for the first time the bomber’s ability to carry a full complement of 24 Joint Air-to-Surface Standoff Missiles.

- The Indiana Air National Guard’s 122nd Fighter Wing flew its last F-16

sortie Sept. 11, and is transitioning to the A-10 Warthog. The unit expects to be flying the first of its new aircraft this year, completing the transition within three years.

- A record 12,000 runners from all 50 states and six nations registered for the 2010 Air Force Marathon, Half-marathon, 10K, and 5K at Wright-Patterson AFB, Ohio. Capt. Brian Dumm, 27, an Air Force Academy instructor, won the Sept. 18 marathon with a time of 2:27:49.

- Boeing won an \$89 million contract Sept. 14 from Defense Advanced Research Projects Agency to demonstrate an unmanned airplane that can operate continuously on-station in the stratosphere for a period of five years. The contract was let under the agency’s Vulture II program.

- More than 85 percent of the Air Force’s fleet is now certified to operate unconstrained with a 50-50 blend of regular JP-8 jet fuel and synthetic paraffinic kerosene, according to service officials. USAF’s goal is to have the entire fleet cleared to run on this fuel mixture in 2011.

- Robins AFB, Ga., opened a new facility testing software for the C-5

transport. The C-5 Integrated Aircraft Test Environment is a 2,200-square-foot, two-story facility encompassing a salvaged C-5 cockpit, allowing tests to be run without drawing an aircraft from the operational fleet.

- The South Dakota Air National Guard’s 114th Fighter Wing, Joe Foss Field, S.D., was awarded the National Guard Bureau’s 2010 Winston P. Wilson Trophy, recognizing the Air Guard’s outstanding fighter-reconnaissance unit of the year.

- The Israeli Knesset approved the Israeli Air Force’s planned acquisition of 20 F-35 Joint Strike Fighters, clearing the way for the estimated \$2.75 billion deal to proceed with delivery slated to begin 2015. The US government has approved Israeli acquisition of as many as 75 of the advanced fighters in the future.

- The first production C-5M Super Galaxy transport made its maiden flight from Lockheed Martin’s Marietta, Ga., plant on Sept. 19. The airframe is the first low-rate production airplane to be fitted with new avionics, engines, and reliability enhancements. It was delivered to Dover AFB, Del., on Sept. 30. ■

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Even with a calmer Iraq, USAF is still at war in Afghanistan—and with its budgets.

The Two Wars of the Air Force

By John A. Tirpak, Executive Editor

USAF photo by SrA. Nancy Hooks



The conflict in Iraq has largely wound down, but the Air Force continues to battle in two other hot wars. One is the ongoing fight in Afghanistan, and the other is against costs.

For the foreseeable future, the demands of those campaigns will limit sharply how much of its aging aircraft and weapons inventory the Air Force can afford to modernize.

Such was the forecast delivered by senior Air Force and defense leaders

at the Air Force Association's annual Air & Space Conference, conducted in mid-September just outside Washington, D.C. These officials provided a snapshot of the evolving Air Force providing essential enabling capabilities to the Afghan war effort, even as the service struggles to hedge its bets and prepare for bigger threats that may one day thrust the Air Force back into the role of lead wartime service.

Vice Adm. William E. Gortney, director of the Joint Staff, spoke to the

conference on behalf of Joint Chiefs of Staff Chairman Adm. Michael G. Mullen. Gortney said the war in Afghanistan is "trending" in the right direction, but warned that a short-term resolution is doubtful.

The Afghan conflict defies traditional measures of progress, he said, and perhaps many more years of struggle lie ahead. The end will likely come not with an obvious defeat of the enemy, but as a subjective judgment call of US leaders.



USAF photo by Joe Davilla

At the same time, speakers agreed, corrosive national budget deficits make hoped-for modest increases in defense spending unlikely. The Pentagon will have to find money for needed modernization from within, by slashing overhead costs and by limiting funding only to those programs that serve immediate war needs or provide critical long-term capabilities.

Enormous Challenges Ahead

USAF Chief of Staff Gen. Norton A. Schwartz, in a forum with most of the service's four-star leaders, put the situation in perspective. He said, "People are dying, and as long as people are dying, this team ... is going to do what's necessary" to prevail in the current fight.

Addressing the conference, Schwartz said the Air Force "will find itself in an increasingly significant role in the decades that lie ahead" as the rest of the force depends on it for intelligence-surveillance-reconnaissance, precision attack, and rapid mobility. USAF will also be the guarantor of two of the three legs of the strategic triad.

However, USAF will also work to ensure that it can continue to control the high ground in air, space, and cyberspace. It will maintain or develop new means to counter increasingly tough threats posed not only by nations but nonstate actors with access to high-technology gear. The Air Force will also prepare for the day when—as was the case in Operations Desert Storm, Allied Force, or Enduring Freedom—it will be "called upon to fulfill a leading role. ... The Air Force will again see its flag on the marquee and its centrality unquestioned."

There are enormous challenges ahead, though, Schwartz said. He predicted that defense budgets will "continue to level or perhaps even decline," and that as personnel costs rise and purchasing power declines, finding a good balance between all of the demands on the Air Force will become "that much more elusive."

USAF is being forced to do some recalibration, and "we might even break some glass along the way," but "we will not shy away from difficult



USAF photo by SSgt. Linda E. Kephart

Far left: A1C Eric Sprankle and SrA. Garrett Cochran post security at Kandahar Airfield, Afghanistan. Left top: A Minuteman III launch test from Vandenberg AFB, Calif. Left: Maintainers work on F-16s in preparation for an operational readiness inspection in Des Moines, Iowa.



USAF photo by SSGT Chad Chisholm

A1C Racheal Orazine guides a K-loader into position. Her team loaded a C-130 with 16 bundles of supplies to be dropped to soldiers at remote forward operating bases throughout Afghanistan.

decisions,” Schwartz asserted. “We will work through them and any uncomfortable repercussions to do what is necessary to make our force more versatile and more ready to succeed.”

Painful Decisions

Last year, such decisions included terminating the F-22 fighter and ordering the early retirement of some 250 other fighters to free up funds to buy new F-35s and upgrade combat aircraft.

This year, the difficult decisions include scaling back a new combat search and rescue helicopter program. This is a painful decision, as CSAR personnel are already deployed roughly half the time, and the existing HH-60 aircraft are old and underperforming.

Schwartz also said that while the service is hoping for a new long-range strike platform—he used the term “penetrating bomber”—he emphasized that it will not be a lone-wolf aircraft capable of performing all conceivable missions such as electronic warfare, ISR, nuclear strike, and battlefield communications by itself. Instead, it will be part of a “family” of systems, both old and new, that will collectively allow USAF to penetrate denied or contested airspace.

“We are likely to face more sophisticated, more capable anti-access measures that are specifically designed to challenge our ability to project expeditionary power,” Schwartz warned. Anti-access or area-denial systems abroad have become “more networked, accurate, and effective,” and the Air

Force will need the tools to circumvent or defeat them. These capabilities “can compel friendly forces either to accept higher risks or be forced to operate, disadvantaged, at greater distances.”

Long-range strike “will be an evolutionary approach to balance existing, evolving, and new capabilities, not a vast and prohibitively expensive multiplatform acquisition program,” Schwartz said.

The system, along with the entire panoply of Air Force attack capabilities, must inflict a cost penalty on adversaries, Schwartz said. They must be compelled to spend inordinately on countermeasures, air defenses,

redundant systems, or by “dispersing assets or burying them ever deeper.”

Air Force Secretary Michael B. Donley, in his speech, said the bomber should have the ability to “range the planet,” but must not “repeat the painful experience” of previous failed programs that reached too far, technologically, or were too narrow in what they could do, or too expensive to buy in required numbers. These problems have historically led to “cancellations or low inventories.” The Air Force wants a new bomber fleet size that it can operate for 30 years at an affordable cost, and unit cost will be “a key factor.”

Donley said the LRS aircraft will be oriented toward the conventional mission in its first iteration, since that is the chief role bombers have served in during the last 20 years.

However, Schwartz also acknowledged that at the top level of the Pentagon, which is taking a big role in defining the LRS platform to ensure that it fits in with what the other services are doing, the debate “rages on” about exactly what capabilities it should have, and resolution of the controversy may not come quickly—perhaps not even in time for the Fiscal 2012 budget request.

Essential Core Functions

The Air Force is working with the Navy on the new AirSea Battle concept of operations that will allow the two services to share capabilities, Schwartz said. “We cannot just pursue increasingly expensive advanced technologies,”



USAF photo by TSgt. Rennil Thornton

CMSAF James Roy (in dark glasses at left) visits Qalat, Afghanistan, accompanied by members of the American Provincial Reconstruction Team in Zabul.

he insisted, explaining that by pooling resources where it makes sense to do so, the Navy and Air Force can control air, space, and cyber "more efficiently and more effectively."

AirSea Battle "must develop into a permanent, well-institutionalized" organization with operational concepts and acquisition strategies, he asserted.

Donley said he and Schwartz are building an Air Force program that can be fulfilled—eliminating the waste of setting unreasonable expectations that don't pan out after vast amounts are spent pursuing them.

The Air Force has marching orders not to "get overextended with more programs and resource commitments than we can afford," Donley said. The service is concentrating on "the top few acquisition modernization programs essential to each core function," and on providing the funds necessary to ensure success.

"Broken, underfunded" programs won't be kicked down the road to the next budget cycle but will be fixed or terminated. He promised not to break programs to fix other programs (by robbing one to pay for another), and pledged to "make the hard choices now."

The Air Force is on a campaign to improve its acquisition system, Donley reported, from improving the value obtained to getting speedier results. He pointed out that the Big Safari program has been successful in delivering quick-turn capabilities such as today's MC-12 program, and the streamlined acquisition approach used to obtain the F-117 attack aircraft in the 1980s is still pursued by the Rapid Capabilities Office. USAF's Operationally Responsive Space Office, he said, is developing both satellites and launch systems that can quickly reconstitute or augment space systems "at the speed of need."

USAF is also doing a broad study of the way it maintains its equipment for the long term to see if it needs to reinvent that system to lower costs, especially since the service is keeping its gear longer than expected.

Schwartz asked industry attendees to expend maximum effort to lower system costs and innovate to provide better equipment at a faster rate. The challenges facing USAF demand "unity" between the service and its vendors, he said.

"We cannot afford 'business as usual,'" Schwartz observed, asking

Air Force Cyber Mission Accelerates Quickly

By Michael C. Sirak, Executive Editor

In January, a group of airmen are slated to begin the first-ever Network Warfare Operations weapons instructor course at the US Air Force Warfare Center at Nellis AFB, Nev. This new start may seem inconsequential, but to Air Force Space Command's Gen. C. Robert Kehler, it could turn out to be one of the most important steps in cementing the nascent cyber mission in day-to-day operations.

In years past, starting a similar class for space at the warfare center was "the single most important thing" in integrating space forces with the overall force, Kehler asserted during his Sept. 14 remarks at AFA's Air & Space Conference at National Harbor, Md.

"It is not a hard sell to convince me and others that we need to do the same thing for cyber," he explained.

The airmen in that inaugural cyber class will become the cadre of instructors for subsequent students, said Kehler.

Cyber is still a growing and evolving mission for the Air Force and military overall. Over the past year, the Air Force has made tremendous strides, including the standup of 24th Air Force, its new cyber operations arm headquartered at Lackland AFB, Tex., and aligned under AFSPC.

"I am very ... comfortable and pleased with [how far] we have come in a very short time regarding cyber. ... I think we've positioned ourselves very well," said Kehler.

However, he acknowledged that the entire process is still a learning experience.

"I think that the standup of the 24th is helping us understand a lot more about what cyberspace really is—and what it isn't," said Kehler. "We know changes will have to be made. We know that we will evolve as time goes by."

More airmen are joining the cyber mission each day, he said, noting that the Air Force's first undergraduate cyber training class will graduate in December from six months of instruction at Keesler AFB, Miss.

Over time, the Air Force leadership might realize that the current organizational setup for cyber is not ideal, said Kehler.

"We'll have to see how this goes as we evolve and get smarter," he said. "I don't know five years from now what Air Force Space Command looks like." Once all of the cyber pieces are up and running, Kehler said, "it will be a great time for us to sit and look at whether ... we are positioned the right way organizationally."

For now, having cyber and space, two of USAF's three operational domains (air is the third) situated under Space Command doesn't feel overwhelming, he said.

The cyber-security picture for the nation, as a whole, is less settled, according to two retired Air Force generals who also spoke at the conference. Protecting the nation's cyber networks is a daunting task, and one that is fragmented and lacking cohesion. For some, there are also concerns over the US military's role.

"Defense is very, very dominant in this cyber domain," said retired USAF Gen. Michael V. Hayden, former CIA director, but America's "political culture is having a great deal of difficulty in getting comfortable with defense dominance."

The Department of Defense established US Cyber Command at Fort Meade, Md., in May to oversee the US military's networks. CYBERCOM is a subunified command that reports to STRATCOM.

The thought of the military potentially exercising an active defense of the networks—and intruding into the civil-commercial realm—strikes some inside and outside of the US government enterprise as worrisome, said Hayden. After all, the United States is still "adrift" when it comes an overarching cyber policy, he said. "We don't have the big ideas settled yet," he said.

There's not even a standard definition for what constitutes a cyber attack, said retired Gen. Ronald E. Keys, former head of Air Combat Command.

"If you come in my house at midnight and the alarm goes off, I'm coming down the stairs with a loaded shotgun. [If] you come into my computer at midnight, even if an alarm goes off, nothing's going to happen," said Keys.

He said the "return on investment is very high" for cyber attackers who face essentially "no penalty" for their misdeeds. Accordingly, he called for changing that calculus by making it "hard" and "dangerous" for them to act. "We have to make it clear that there is a penalty when you're caught," said Keys. ■



SSgt. John Signorelli attaches an air cart hose to an RQ-4 Global Hawk at Beale AFB, Calif. The cart provides air to the starter for launch.

contractors to take “a longer view of promise and likely reward” versus “the vagaries of the quarterly board report.”

Ashton B. Carter, undersecretary of defense for acquisition, technology, and logistics, said the Pentagon is “in a new era, and we need to manage to that new reality.”

Addressing the conference, Carter said it will be impossible to provide US troops the equipment they need “unless we learn to deliver better value” with the defense dollars available.

He described a new Pentagon plan to find \$100 billion in savings from overhead costs. This is money the services would be allowed to keep and plow back into modernization programs “so that we do in essence have continuous growth in the part of the budget that really matters.” He described the figure as “a reasonable goal,” based on the assumption that after nearly a decade of unquestioned and growing defense budget, “some fat” has crept into it.

Carter lauded the Air Force for a number of initiatives that lead the way in acquisition reform and set an example for the other services. He said USAF is improving its acquisition “tracraft” by establishing program executive officers for the purchase of services, an effort that has “already delivered great results.” He also cheered the Air Force’s drive to save money through performance-based logistics contracts and in cutting “unproductive processes and bureaucracy.”

Toward that end, Carter said the LRS program will reflect lessons learned

on the Navy’s next generation ballistic missile submarine. DOD was “able to trade inessential capability for cost,” and on a \$100 billion program, “this is nontrivial,” Carter noted.

The LRS “has to be done the same way, where we embark on something that we’re going to actually be able to afford to have. Otherwise, we’re planting the seeds of disappointment.”

The National Interest

Carter said a “technologically healthy and financially attractive defense industry is in the national interest,” and that profit is reasonable. The Pentagon, he said, is moving toward contracts that better reward good performance on the contractor’s part, and aim for lower costs on the DOD side with less reporting and unnecessary red tape.

Carter also lauded the Air Force’s pursuit of higher standards in the nuclear mission, saying that it had been stabilized and “put ... on a steady course” after years when it drifted without support “for anything.” The Nuclear Posture Review has set a departmentwide course, and “the logjam is broken” on the way ahead for the nuclear missions, he said.

It is a “fiduciary duty of the department to make sure that it hands on to the future a vibrant technology base,” Carter asserted, explaining that “I don’t mean jobs. I mean skills.” The skills of aerospace design and manufacturing, “if we allow them to erode, will be difficult to recreate and ... cannot be found in the commercial economy.”

He said that termination of the Air Force’s last next generation bomber ef-

fort caused the Pentagon concern about the industrial base. Carter’s office is working with USAF to find ways to keep “key technical areas” of industry engaged in productive work until the LRS program really gets going.

Marion C. Blakey, president and CEO of the Aerospace Industries Association, also voiced concern about the health of the industrial base. Addressing the conference, Blakey said that although commercial and civil aviation is “on the rebound,” AIA’s members are concerned a downturn in defense could “drive down the entire aerospace industry.”

In the budget deliberations ahead, Blakey said, the industrial base must be a principal consideration of defense officials because US leadership in the global industry is at risk.

“The stakes are very high,” Blakey asserted.

She also said that if economic considerations must be paramount, it’s worth noting that aerospace enjoys the highest positive balance of trade—\$56 billion last year—of any US industry, making its health key to the nation’s economic well-being.

In a presentation on the health of the industrial base, industry panelists noted the US now has no new combat aircraft in development for the first time since the dawn of military aviation.

Christopher M. Hernandez of Northrop Grumman said he’d like to see the Pentagon keep contractor design skills alive with “X-plane” contracts to explore futuristic technologies that would actually be built and flown. Darryl W. Davis of Boeing said his company is pursuing some design work on its own, but can’t do that forever if the Defense Department doesn’t make clear there could be a business payoff in the future.

At a time of stiff constraints on defense spending, the Air National Guard continues to provide an amazing return in investment, said Gen. Craig R. McKinley, head of the National Guard Bureau.

When Air Guardsmen are mobilized, they cost the same as active duty airmen, but over a career, they provide strategic depth at a cost of about 15 percent versus a career active duty airman, he said.

The Guard has also gotten the message on costs, he said. Whereas “four or five years ago,” state Air Guard units would have “fought to the death” to



An artist's conception of the future long-range strike system. USAF Chief of Staff Gen. Norton Schwartz says the service needs a "penetrating bomber."

preserve some flying missions deemed unaffordable, they now see a future in new missions such as cyber and remotely piloted aircraft operations. Guardsmen are doing their part to pick up expertise in these areas while helping the Air Force determine an affordable approach to these missions.

McKinley said there are some who would like to see the National Guard focus almost exclusively on homeland defense missions, but that would result in it being a "constabulary force," ill-suited to backing up active forces in war.

One area that should be largely immune from the constraints of tight budgets is strategic nuclear deterrence, US Strategic Command chief Gen. Kevin P. Chilton told the conference.

"Numbers should follow strategy; strategy should not be built around numbers," Chilton said. He said a strategy-driven approach to nuclear deterrence was pushed by STRATCOM and adopted in the Nuclear Posture Review.

A Changing Workforce

However, it's time to "reverse a 15-plus-year trend of benign neglect" of the nation's strategic forces, Chilton said. He noted that the Space Based Infrared System, which he was assured in 2008 would be launched soon, is now a further two-and-a-half years late and may not launch until next spring or later.

"It is past time to mitigate the risk to our deterrent posture in this first

critical element of missile warning and attribution," he said. More resources need to be applied to redundant satellite, airborne, and ground communications, he said. While these are the "least sexy" elements of deterrence, they are essential and must not be allowed to erode to a condition where they are in any doubt at all.

Chilton said it's time to get going on a replacement for the Minuteman III ICBM. It will take an acquisition cycle of 10 to 12 years to develop a missile, plus a preamble of several years for an analysis of alternatives.

That means that if the Minuteman is to be replaced starting in 2025—and completely phased out by 2030—there's no time to lose.

Finally, Chilton said the basic infrastructure of designing, developing, and testing nuclear weapons needs continuous attention, and "a lot of investment is required." It will still be necessary to have facilities that can process plutonium and uranium, and "you take care" of the people who know how to do these jobs, or the skills will perish.

Gen. C. Robert Kehler, head of Air Force Space Command (and nominated to replace Chilton at STRATCOM), said his organization is conducting its own review of wartime space and cyber lessons to see if there are ways to improve combat support. The Air Force must get more value out of the space assets it has, rather than simply demand more platforms, and it will strive to continue to be innovative in squeezing more capability from them, Kehler said.

He also is concerned that the nature of the workforce in space and cyber is changing. After years of outsourcing, the service is once again "insourcing," and there is a challenge of assigning civilian people to do these critical missions when they often have to go to forward areas alongside their uniformed counterparts. It is an issue that "is getting worked hard," Kehler reported.

Asked by a reporter whether his remarks—and those of other USAF leaders at the conference—were meant to send the message that the Air Force of the past is gone and not coming back, Schwartz said he was addressing himself to those who worry about the Air Force's role in the future. "I'm no Pollyanna," Schwartz said. "These are tough times. And we will get through this. That was the message." ■

Airpower, While It Lasts

"The post-World War II world has been one shaped in no small measure by the power of the US Air Force. To lose air dominance through a series of budget cuts would change nearly every calculation made by our leaders in trying to keep peace in the world. ... American air forces may keep their superiority for another decade or two, but without a comprehensive commitment to maintaining air superiority, US soldiers, sailors, and marines may one day no longer operate under friendly skies."—**Michael Auslin, American Enterprise Institute, Fox News, Aug. 19.**

Ellsberg's Hero

"He's a hero to me. I haven't seen someone make an unauthorized disclosure on this scale, that would lead to serious charges, for 40 years. It seems he believed, as I did, the stakes involved justified that kind of risk."—**Daniel Ellsberg, who leaked the Pentagon Papers in 1971, on Pfc. Bradley E. Manning, arrested in the disclosure of 76,000 classified documents to WikiLeaks, Washington Post, Aug. 14.**

The Right To Publish

"The government has no business going after third parties that obtain secret information without committing theft. Media outlets do not have a legal duty to abide by the government's secrecy demands."—**Washington Post editorial in defense of WikiLeaks, Aug. 18.**

The Right To Lie

"We have no doubt that society would be better off if Alvarez would stop spreading worthless, ridiculous, and offensive untruths. But, given our historical skepticism of permitting the government to police the line between truth and falsity, and between valuable speech and drivel, we presumptively protect all speech, including false statements, in order that clearly protected speech may flower in the shelter of the First Amendment."—**9th Circuit US Court of Appeals, Aug. 17, ruling unconstitutional the "Stolen Valor" case against former California politician Xavier Alvarez, who claimed to be a retired marine and a recipient of the Medal of Honor.**

Top National Security Threat

"The most significant threat to our national security is our debt. And the reason I say that is because the ability for our country to resource our military—and I have a pretty good feeling and understanding about what our national security requirements are—is going to be directly proportional—over time, not next year or the year after, but over time—to help our economy."—**Adm. Michael G. Mullen, Chairman of the Joint Chiefs of Staff, CNN, Aug. 27.**

Not Cutting Carriers

"In the Navy League speech, I probably—in trying to be provocative—I probably contributed to a misunderstanding of what I was trying to say, which was—you know, I'm not going to cut any aircraft carriers—[but] you've got to think differently about how you're going to use aircraft carriers."—**Secretary of Defense Robert M. Gates, ForeignPolicy.com interview, Aug. 16, on his question in a May 3 speech to the Navy League of whether the US needs 11 carriers when no other nation has more than two.**

Not Cutting Marines, Either

"The Pacific campaign of World War II was the only period of history when the exclusive focus of the Marine Corps was on amphibious assault. Yet, fundamentally, the Marines do not want to be, nor does America need, another land army. ... The Marines' unique ability to project combat forces from the sea under uncertain circumstances—forces quickly able to protect and sustain themselves—is a capability America has needed in this past decade, and will require in the future. ... Ultimately, the maritime soul of the Marine Corps needs to be preserved, notwithstanding the imperatives of today's wars."—**Gates, speech in San Francisco, Aug. 12.**

Academy Faculty Accessible

"Most of us remember that particular high school or college teacher who made a difference in our lives by demonstrating how much they cared. The Air Force Academy is full of such instructors."—**Brig. Gen. Dana H. Born, dean of the faculty, on recognition, for the fifth year in a row, by the Princeton Review of the nation's best colleges, of Air Force Academy professors as**

among the most accessible in the nation to students, Aug. 3.

Active Cyber Defense

"The National Security Agency has pioneered systems that, using warnings provided by US intelligence capabilities, automatically deploy defenses to counter intrusions in real time. Part sensor, part sentry, part sharpshooter, these active defense systems represent a fundamental shift in the US approach to network defense. They work by placing scanning technology at the interface of military networks and the open Internet to detect and stop malicious code before it passes into military networks. Active defenses now protect all defense and intelligence networks in the '.mil' domain."—**William J. Lynn III, deputy secretary of defense, Foreign Affairs, September-October.**

Change From Air and Space

"Today, unlike the contests of the past, our joint forces go into combat with more information about the threat they face, provided in near real-time. And they get that information ... from air and space. Today, unlike the past, our joint task forces are able to operate with much smaller numbers, across great distances and inhospitable terrain, because they can be sustained over the long haul ... by air."—**Retired Air Force Lt. Gen. David A. Deptula, Danger Room (Wired.com), Aug. 30.**

A Job for Afghans

"I said, 'General Petraeus, winning the hearts and minds of the Afghans is not the job of a soldier. That's the job of an Afghan.'"—**Mohammad Umer Daudzai, chief of staff to Afghan President Hamid Karzai, on US strategy emphasis on active role with local communities, Washington Post, Aug. 29.**

Defense Industry Braced

"Military contractors have been through cost-cutting campaigns before, and they know how the best intentions of political leaders can become pretexts for destructive behavior in the bureaucracy. They also know that the last thing likely to be cut is the bureaucracy itself, even though that is where much of the waste occurs."—**Loren B. Thompson, Lexington Institute, Aug. 4.**



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Airmen deployed from Little Rock AFB, Ark., change a brake assembly on a C-130 at Kandahar Airfield, Afghanistan.

At AFA's Air & Space Conference, top officials discuss the constant challenge of doing more with less.

An Expeditionary Force Searches for Balance

By Marc V. Schanz, Senior Editor

The expeditionary Air Force has experienced momentous shifts in the last year, the service's senior leadership told attendees at AFA's 2010 Air & Space Conference in September.

USAF surged forces to meet contingencies in Haiti, Pakistan, and elsewhere while removing forces from Iraq and repositioning much of its combat power

to support the expanded war in Afghanistan. The expeditionary Air Force today, however, is severely strained after years of war. With the completion of the recent reduction of legacy fighter aircraft, it is a force flying expanding missions with significantly fewer combat aircraft.

The fatigued mood of the service's senior leadership was inadvertently

illustrated by Lt. Gen. Harry M. Wyatt III, director of the Air National Guard, who didn't skip a beat when asked where he would make additional cuts in his force structure if told to do so.

"I'd probably take the cut on my wrist," Wyatt replied wearily, generating awkward laughter. "I'm at that point, at least in the Air National Guard, where



I don't know that we can take any more cuts without sacrificing some capability or capacity." Without getting specific, Wyatt said the Air Guard would have to "step back" from a given mission or look for better and more efficient ways to carry it out.

"I think that's kind of where we're going to be coming to anyway with the fiscal situation like it is," he added.

Wyatt's view was echoed by several other senior leaders and combatant commanders. The service, like the rest of the military, is in the midst of balancing its assets and missions while moving as much combat power into Southwest Asia as possible. The service is making serious choices about its posture and composition in a time of war.

"We are about at a crossroads here again, as we try to terminate a couple of major combat operations," said Gen. Roger A. Brady, commander of US Air Forces in Europe, referring to Iraq and the desired future drawdown in Afghanistan. "We will have a considerable debate, ... and as senior leaders, we need to make sure that the debate is shaped in the terms of our strategy and what we want to be in the world."

USAF pressed assets rapidly into combat in Iraq and Afghanistan. The reduction of approximately 250 legacy fighter aircraft freed up funds to invest in existing force structure, buy new munitions and modernization efforts, and acquire intelligence-surveillance-reconnaissance aircraft such as the MC-12 Liberty Project Aircraft, said Gen. William M. Fraser III, head of Air Combat Command.

The push is having an effect, as approximately 9,700 ISR sorties were

flown over Afghanistan from January to July, according to USAF figures. (Barely 3,600 sorties were flown in the same period in 2009.) Troops needing airborne ISR can thank Liberty Project Aircraft and the Predator and Reaper drones pouring into theater.

Fraser said all 37 MC-12s had been delivered to the Air Force by September. Thirty are forward deployed to Southwest Asia to aid USAF's buildup to the equivalent of 50 remotely piloted aircraft combat air patrols by the end of 2011.

The Air Force will continue to surge ISR assets to Afghanistan after 50 CAPs are in place, he added, with an eventual goal of 65 CAPs in theater. (The force is on track to hit this goal by 2013.)

A Significant Need for Resources

The assets are making a real difference. Lt. Gen. Donald C. Wurster, commander of Air Force Special Operations Command, singled out the "remarkable accomplishments" his airmen have achieved with the development and expansion of airborne special operations assets, such as the Reapers of the 33rd Special Operations Squadron and the addition of a second dissemination and analysis squadron, the 56th Intelligence Squadron. Air commandos are leveraging these tools to kill or capture many high-value terrorist and militant targets.

New capabilities for AFSOC must be adaptable and scalable to various scenarios, Wurster said, but the com-

A B-2 comes in for a landing at Andersen AFB, Guam. B-2s deploy to Guam as part of a continuous bomber presence in the Pacific region.





An HH-60G lands at Kandahar. Pave Hawks are being pushed hard in Operation Enduring Freedom.

mand will still pursue force modernization where appropriate. He noted the first AFSOC MC-130J was in production in September, destined to replace Vietnam-era MC-130Es and Ps.

New equipment has been slow to arrive, however, and the strain on existing forces is beginning to show.

Wyatt said it is difficult to see how the Air Guard can recapitalize its elderly F-16 Block 30 fleet before the aircraft reach the end of their service lives—making it essential for ANG to examine service life extension program options in the Fiscal 2012 budget. Wyatt said the fighters, which populate the bulk of the Guard’s 16 air sovereignty alert sites, could last four to five years longer with lower wing skin replacements. If the F-16 program office confirms a SLEP could provide even more life (10 years or so), the case for upgrading radars, command and control, and avionics improves as well.

The strain is not just limited to the fighter force, said Fraser, pointing out that the service’s fleet of HH-60 Pave Hawk rescue helicopters is being driven hard in combat.

“When I was there, I was starting to see cracks, and we haven’t seen cracks before, in some of the bulkheads,” Fraser said of his visits to deployed rescue units.

Wurster said the system holding down the highest crew deployments currently is AFSOC’s fleet of MC-130P Combat Shadows, as the wing box repairs on the MC-130E/H fleet have pressed the remaining Shadows

and MC-130W Combat Spear aircraft into service more frequently. MC-130Ws have been shifted to missions such as battlefield overwatch, Wurster noted, and limited strike roles. Some are now equipped with a basic strike package, a “gunship minus” upgrade, as he called it, leaving the tanker fleet to supply airlift.

In the next few years, the Air Force is also steering precious investment dollars into its nuclear enterprise, particularly assets now under Air Force Global Strike Command. Lt. Gen. Frank G. Klotz, Global Strike commander, and other USAF leaders involved in nuclear matters said much nuclear force

investment and detail work remains. About 2,500 additional personnel have been moved into the nuclear enterprise, said Maj. Gen. William A. Chambers, head of strategic deterrence and nuclear integration on the Air Staff. But several of the systems now managed by AFGSC need a “significant influx of resources,” he said. The personnel managing and maintaining the nation’s fleet of nuclear weapons and delivery vehicles also need to be preserved.

Klotz anticipates a nuclear force funding increase over the next several years, to focus on efforts such as the modernization of B-52 components and life extension of the ICBM fleet. Other areas needing attention include the nation’s missile field infrastructure, Klotz said—such as security systems, revetments, and silos—and a replacement program for the command’s small fleet of UH-1 Huey helicopters.

While deliberations with Congress continue, Klotz told *Air Force Magazine* he expects a replacement program sooner rather than later—in the 2015 to 2018 timeframe.

The New START

Pentagon leadership has also pressed the Air Force to begin an analysis of alternatives next year on a successor to the fleet of AGM-86 Air Launched Cruise Missiles, the B-52’s sole nuclear-capable cruise missile in the active inventory. The ALCM is due to leave service by 2020.

The Air Force’s ICBM and bomber fleet will change in composition in the



Capt. Jason Ruiz runs through a preflight checklist on an MQ-1B Predator at JB Balad, Iraq, before a “push off” mission in August. His unit launched the aircraft, then handed over operational control of the Predator to a unit back in the US.



A C-5 takes off from Al Asad AB, Iraq. The Galaxy transported vehicles and equipment from the Iraq theater of operations as part of the drawdown.

coming years—especially if the New Strategic Arms Reduction Treaty is approved, Klotz said.

To conform to New START limits, the US will maintain up to 60 nuclear bombers and 420 ICBMs. Klotz said he believes USAF can achieve this with little trouble. The command is still working on recommendations for managing the portion of the B-52 fleet that is to lose the nuclear mission and perform conventional tasks only (at least 36 of the USAF's 76 B-52s), but he said a final construct is being worked out within the Defense Department.

"I think we have a very good approach, which will have minimal impact on the training and operations of the B-52 force," Klotz told reporters.

The Air Force's mobility forces have been heavily involved in Afghanistan operations, and were crucial to the final stages of combat operations in Iraq and the transition of forces to the Afghan theater. Operations in and around Afghanistan have fully ramped up since President Obama ordered an additional 30,000 troops into the country in December 2009—and a drawdown of 80,000 troops from Iraq by Aug. 31. At the highest levels of DOD, said US Transportation Command's Gen. Duncan J. McNabb, the pressure to hit the August deadline to "close" out of Iraq was intense.

The combined efforts of Air Mobility Command and the other components of TRANSCOM pulled it off, McNabb said. "If we hadn't, I wouldn't have shown up here today," he joked in his presentation.

Beginning in December 2009, teams from TRANSCOM visited key transit

nodes in Southwest Asia, from Kuwait to Bahrain to forward airstrips such as Camp Bastion in Afghanistan and the airport at Mazar-e Sharif. They looked for ways to improve throughput of aircraft such as C-17s to rapidly offload cargo—sometimes within 30 minutes of landing—and take off again. To get supplies and materiel to forward bases, different air-drop techniques were used, such as high-altitude container delivery system drops and low-altitude, high-speed passes.

Praise for the Super Galaxys

The shift, with thousands of personnel and tons of materiel moving from the US, Iraq, and other points into Afghanistan, was difficult enough—but 2010 was an exceptionally busy year for air mobility. In January, mobility

forces surged to the Caribbean to support relief efforts for the Haitian earthquake.

In February, a coup occurred in Kyrgyzstan, spurring TRANSCOM to suspend air tanker operations at the Manas airfield and reposition assets within 72 hours.

Tanker support to operations in the theater continued largely uninterrupted, McNabb noted, and was moved back after the situation had stabilized.

In April, Iceland's Eyjafjallajökull volcano erupted and shut down European airspace for three weeks, affecting 423 total missions. Airmen acted quickly to reposition key medical evacuation routes from Germany to Spain, Iraq, and other stops that were not affected by the ash cloud.

July saw mobility forces move again, to support flood relief operations in Pakistan, as airmen helped set up distribution points and aircrews delivered food, water, and shelter supplies.

Much like the combat air forces, the mobility force is putting in hard hours in operations across Southwest Asia, and its equipment composition is on average slightly newer and healthier. With C-17 production slated to end at 223 airframes for the Air Force, Gen. Raymond E. Johns Jr., AMC commander, told reporters in September the command is going to push to bring all of its C-17s up to current production line standard, the Block 18.

This will improve the process of doling out missions to the fleet, since they will all have similar range and performance capabilities. Earlier aircraft will receive extended range fuel tanks,



An MC-130 Combat Shadow from the 17th Special Operations Squadron, Kadena AB, Japan, takes off from Udon Thani, Thailand. Combat Shadow crews are among the most heavily deployed in the Air Force.



new computers, and other improvements standard on late model C-17s.

Once the fleet is up to the Block 18 standard, the command will start exploring fleetwide upgrades for an improvement program.

Johns also praised the performance of the three C-5M Super Galaxys currently in service, equipped with new engines and avionics. They are now able to deliver equipment to ground troops in Afghanistan via stops such as Rota, Spain. Before, use of the C-5 would have been limited in this type of mission, Johns said, because of reliability issues with earlier configurations. Crews told Johns, however, that when it comes to the Super Galaxys, "the airplane doesn't break."

In Europe and the Pacific

With severe fiscal limitations now a reality and an expanded Afghan campaign under way, the military's global posture and forward basing is getting a hard look. USAF assets in Europe and the Pacific are in the mix, senior leaders noted.

Forces in both the Pacific and Europe deploy frequently to operations in Afghanistan, in addition to supporting treaty allies and partnership building exercises with other militaries—and any reduction of forward presence would affect these activities.

"I'm worried about it, and no, we can't handle it with [US-based] forces,"

said Brady, when asked if USAFE force structure could be filled by Guard and Reserve deployments.

"You get a lot out of forward forces," Brady said. In addition to building partnerships (such as the recent deployment of F-15s from RAF Lakenheath, UK, to support Baltic air policing efforts in Lithuania), forward forces from Europe are more readily positioned to assist in Afghanistan.

Fifty of USAFE's 148 fighters have been deployed to Southwest Asia in the past few months, Brady said in

An F-22 Raptor intercepts a "hijacked" Gulfstream 4 aircraft over Alaska during Vigilant Eagle, an anti-terrorism exercise in August put on by NORAD and Russia.

September, and in Afghanistan, more than 39,000 coalition troops are from NATO or European allies. "When we go to war, we go with our European allies," he added. "I think we do need to have a credible discussion about what the nature of our engagement overseas is going to be." Further erosion of forward presence will mean fewer



An HH-60G Pave Hawk crew performs munitions training at Moody AFB, Ga. The pilots took turns flying tactical maneuvers during the mission.

training events and fewer opportunities to develop partner capability and capacity.

In the Pacific, however, activity has spiked in the last year. In response to the sinking of a South Korean frigate in March and rising tensions with North Korea, South Korean and US forces staged the Invincible Spirit combined air and maritime exercise on the peninsula and the Sea of Japan. Invincible Spirit featured the combat exercise debut of the F-22 Raptor in South Korea. Gen. Gary L. North, Pacific Air Forces commander, said in September.

Equipment upgrades are coming as well. Osan AB, South Korea, will soon be equipped with A-10C—the modernized version of the Warthog—with the 25th Fighter Squadron scheduled to receive its last C model in February 2011. This will provide a huge improvement in the air-to-ground combat capability on the peninsula, North added.

PACAF is seeing a great deal of investment, with a third Pacific squadron transitioning to F-22s. At JB Pearl Harbor-Hickam, Hawaii, the Air National Guard accepted its first F-22s in July, and will eventually build to a total of 20 aircraft.

Basing the Global Hawk on Guam will help intelligence sharing partnerships, North noted. The 36th Wing at Andersen Air Force Base received the RQ-4 on Sept. 20.

Cooperation with the world's largest democracy—India—is “very comprehensive,” North said. PACAF seeks more opportunity to build ties, as India continues to modernize its air forces. The nation will soon select an advanced new fighter, and has declared its intent to acquire C-17s. Despite the demands for forward presence over long distances within their own command, about 2,500 PACAF airmen are also consistently deployed to Afghanistan, North said, adding that two of his C-130s from Yokota AB, Japan, are consistently supporting CENTCOM operations.

Despite the tension created by expanding missions in conjunction with shrinking force structure, senior leadership needs to keep national strategy and goals in perspective while examining operations, Brady added.

“The budget will affect what we can do with the strategy, but we owe it to Americans to at least know what the right answer is and let other people figure out whether or not we can afford it,” he said. ■

A Scourge of Suicide in the Ranks

By Amy McCullough, Senior Editor

The number of airmen committing suicide has risen nearly 50 percent in just the last year, the Air Force's top enlisted leaders said at AFA's Air & Space Conference in September.

There were 71 airman suicides through mid-September, up from 56 through the same time last year. “The fact is, we're ... at an all-time high,” said CMSAF James A. Roy. “No one is exempt from this—young airmen, very senior airmen.”

The spike in suicides has caught officials' attention across the Air Force, and senior officers and enlisted leaders are trying to tackle the problem. A panel of command chief master sergeants from Air Force Global Strike Command, Air Force Reserve Command, Air Force Space Command, Air Combat Command, and US Air Forces in Europe all agreed they need to take action because even one suicide is too many.

“We have the highest quality of recruits in the history of the United States Air Force, especially if you test it by the [Armed Services Vocational Aptitude Battery test],” noted Gen. Stephen R. Lorenz, AETC commander. “The law says we have to have at least 60 percent” from the top three categories on that test. On average, historically, USAF has about 80 percent. “Today, recruits coming in, 98 percent of them are in the top three categories. The quality is absolutely phenomenal.”

ACC has adopted an approach dubbed the Comprehensive Airman Fitness program to keep the force healthy. It is based on four pillars: physical, emotional, and spiritual health and social fitness.

“We believe that if we have airmen operating within those pillars, then we will have some connected airmen, and they will feel like they are part of the team,” CMSgt. Martin S. Klukas, ACC command chief, said. “We feel like we can reduce suicides on that front.”

Every command also has adopted the wingman program, which encourages airmen throughout the ranks to look for signs of distress amongst their peers.

Some commands, such as USAFE, even stand down a couple times a year so they can spend time letting airmen and their families vent. The small group sessions give leaders a chance to see what's on airmen's minds. It also gives them new ideas for attacking the problem, said CMSgt. Pamela A. Derrow, USAFE command chief.

“The key is, give them the tools before they need them. It cannot be just another program. It has to be heartfelt,” Roy said. “We have to instill resiliency.”

Building resiliency also can help airmen deal with the long-term stress that comes with fighting two wars, Roy said. For some airmen, the deployment-to-dwell ratio has dipped below one-to-one, meaning they are deployed for six months and then are home for less than half a year. In high-demand career fields, such as “defenders” and special tactics personnel, airmen typically see their home time cut short, as training for the next deployment ramps up, he said.

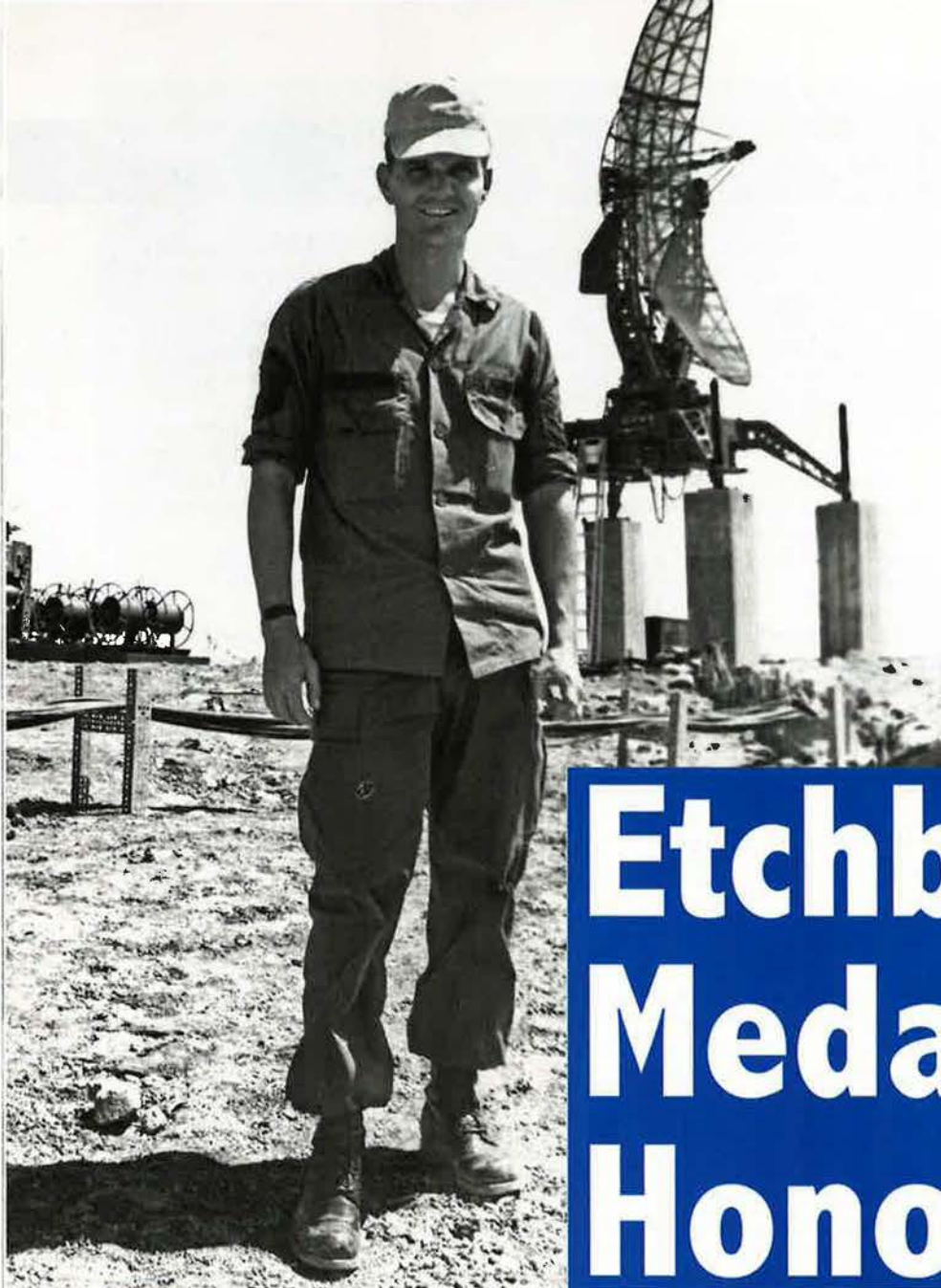
Lt. Gen. Donald C. Wurster, commander of Air Force Special Operations Command, said high optempo is one of AFSOC's biggest challenges. Wurster said he tracks, by name, the airmen who are nearly continuously deployed.

The 2011 Noncommissioned Officer Retraining Program, which is intended to fill stressed career fields, should help repair some of these imbalances in the force. Mandatory retraining for some airmen began in September, and the program will push more than 350 airmen into new career fields in the next few months, Roy said.

The chiefs also fielded several questions from the audience about the Air Force's new physical fitness program, implemented July 1. The chiefs acknowledged that building a new culture of fitness won't happen overnight, but all said it was a priority.

Space Command had an 82 percent pass rate in the first two months after the new fitness program was implemented. The 18 percent failure rate means there is plenty of room for improvement, but AFSPC's CMSgt. Richard T. Small, the command chief, said he is encouraged by the fact that Air Force-wide, the number of airmen who scored excellent on their physical training test has nearly doubled—jumping from the low 20 percents to the high 30 percents.

“That's a message that's not coming through,” Small said. “This is about getting on board. Fitness is ... about capability. It's a credibility issue with the joint team, and when I go to war with the joint team, I want them to know they can rely on me.” ■



With the other members of his team dead or wounded, Etchberger held the enemy at bay with his M-16 rifle.

Etchberger's defense against the North Vietnamese sappers saved his companions, but he was mortally wounded on the rescue helicopter.

Etchberger, Medal of Honor

By John T. Correll

The 19 Americans on the mountain top in Laos were in grave danger. Most of them were technicians, operating a top secret radar site deep in what was effectively enemy territory, just 15 miles from the North Vietnam border. They were lightly armed, with only 10 M-16 rifles shared among them. The mountain—Phou Pha Thi, which rose almost 6,000 feet above the valley below—was defended by 1,000 Hmong irregulars and US airpower.

The drop on three sides was nearly vertical and the fourth side was fortified. The assumption was that it would be impossible for attackers to climb the sheer face of the mountain. On March 10, 1968, that proposition was about to be tested. A force consisting of between

five and seven North Vietnamese and Pathet Lao battalions had the mountain surrounded.

The mountain was not impregnable after all. In the long night that followed, North Vietnamese sappers, covered by mortar, artillery, and rocket fire, scaled the perpendicular cliffs and overran the radar site. Only seven of the Americans got away alive, three of them because of the heroic actions of CMSgt. Richard L. Etchberger, who was himself killed during the last moments of the evacuation.

What happened at Lima Site 85 on Phou Pha Thi was shrouded in official secrecy for decades. It would be 42 years before Etchberger received full and public acknowledgment for saving the lives of his colleagues, but on Sept. 21,

2010, his three sons were presented the Medal of Honor, awarded posthumously to their father, by President Obama at the White House.

On the advice of the CIA, the US ambassador in Vientiane, who was head of the "Country Team" in Laos, had warned that the small contingent on the mountaintop could not hold out and proposed sending helicopters to extricate them. Seventh Air Force in Saigon, which depended on the radar to guide bombers over North Vietnam, disagreed and insisted that the site remain in operation unless "capture appeared imminent."

The radar site on the mountain was a secret because the Americans were not supposed to be there. By the terms of a 1962 Geneva agreement, Laos

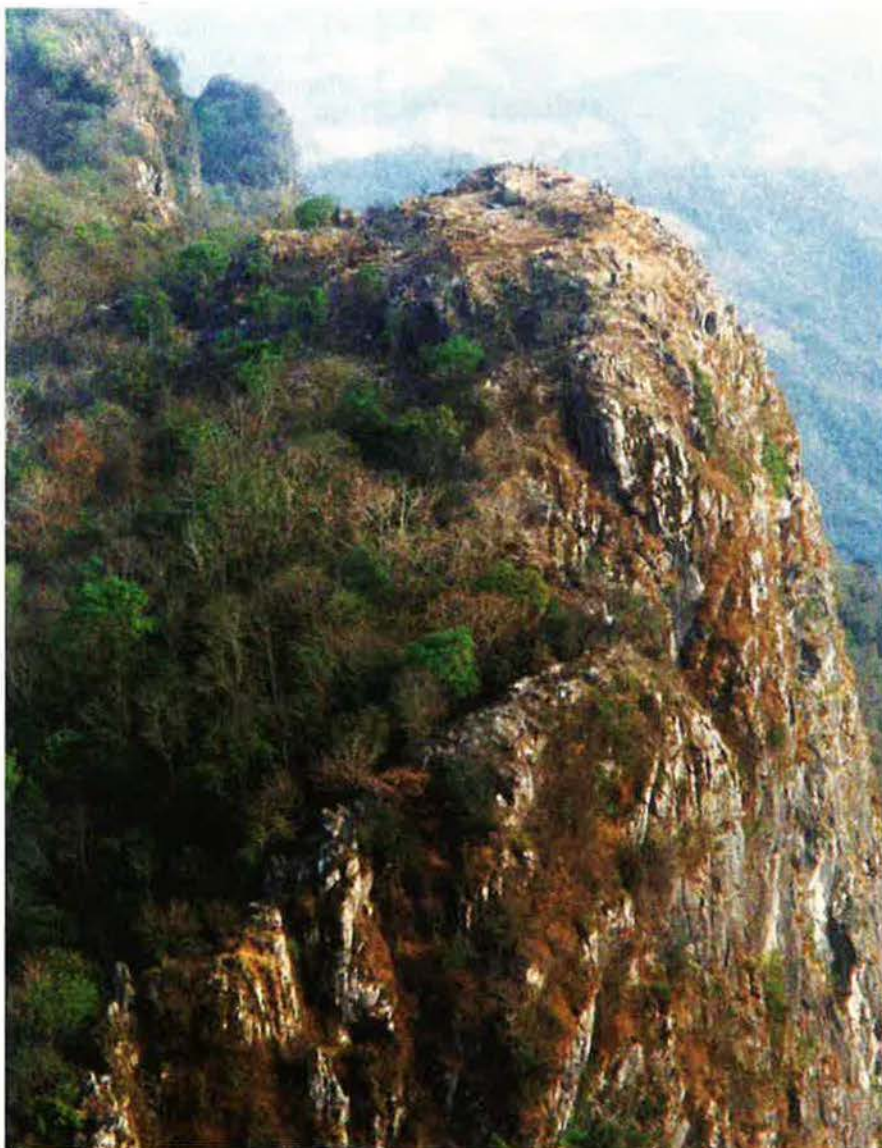
was neutral. No foreign troops were permitted.

The United States had withdrawn its forces. North Vietnam did not. But by 1968, both countries were again active in Laos, backing different sides in the ongoing civil war.

Sheep Dipped

The Air Force's Rolling Thunder air campaign against North Vietnam was severely hampered by bad weather, especially during the northeast monsoon between October and April. The Combat Skyspot radar bombing system offered a partial solution. It guided aircraft to a precise point in the sky from which ordnance could be released at predetermined coordinates.

The catch was that the Combat Skyspot radar had to be within 175 miles, line of sight, of the bomb drop point. Phou Pha Thi, one of the tallest



Three sides of Phou Pha Thi were nearly vertical, and the fourth was heavily fortified. The sappers were able to scale the mountain, above.

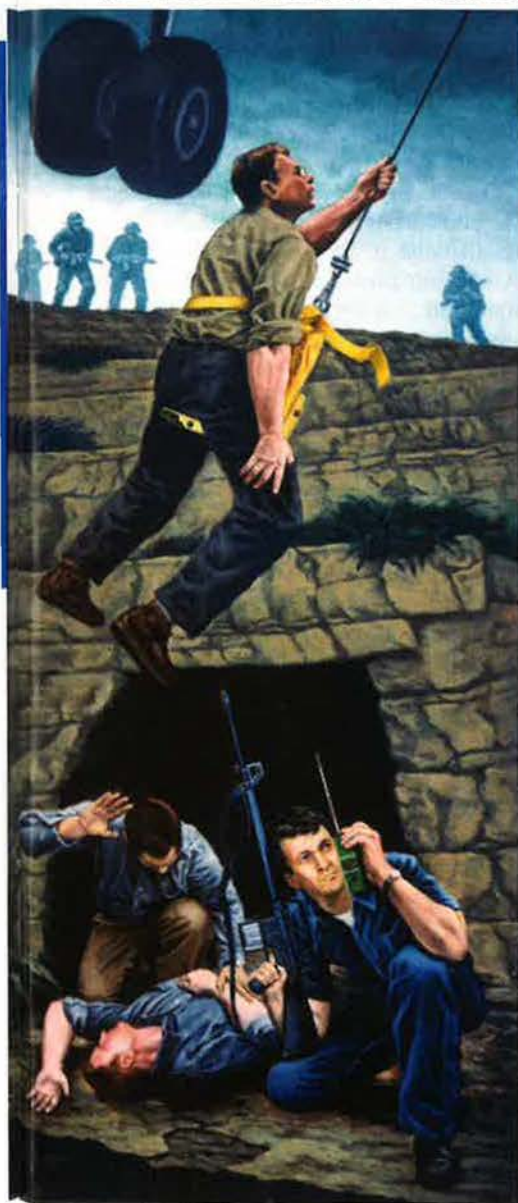


Photo via Etchberger family

In John Witt's painting for the Air Force Art Collection (l), an Air Force helicopter lifts wounded survivors off the cliff, while Etchberger (with M-16) directs the air support. Above: President Obama presents the Medal of Honor to Etchberger's three sons: (l-r) Steve Wilson, Cory Etchberger, and Richard Etchberger.



Etchberger was considered "one hell of an NCO" and "the consummate professional" by his crew.

mountains in Laos and 160 miles west of Hanoi, fit the bill. The Air Force already had a tactical air navigation system beacon there.

The mountain was known to airmen as Lima Site 85, after a rough landing strip on the southeastern flank, operated by the CIA's proprietary airline, Air America.

The Air Force could not openly deploy airmen to Lima Site 85 and it was unwilling to send them into Laos with fraudulent identities. If captured while pretending to be civilians, they would have no protection as prisoners of war under the Geneva Convention. It was decided that they would be—in the vernacular of covert operations—"sheep dipped." They would be discharged from the Air Force, hired by Lockheed Aircraft Service Corp., a subsidiary of Lockheed Aircraft, and go to Laos as employees. When their mission was over, they would be welcomed back into the Air Force.

The project was called Heavy Green. The teams to conduct the operation were drawn from the 1st Combat Evaluation Group, which ran the Strategic Air Command radar bomb scoring system, on which Combat Skyspot was based. Heavy Green would take over the TACAN as well. In September 1967, after listening to the classified briefing and offer, 48

Skyspot-qualified airmen and a dozen TACAN technicians signed the agreement. Their wives were briefed on the program—at least some of it—and sworn to secrecy.

The 44 enlisted Skyspot people and four officers selected all knew each other, having served together for years in SAC. Among them was Etchberger, 35, of Hamburg, Pa. His leadership abilities were evident early on.

Etchberger was president of his senior graduating class at Hamburg High School. He joined the Air Force in 1951 and qualified as a radar operator. During the 1960s, he was based at the 1st Combat Evaluation detachment at Bismarck, N.D., where he helped develop and improve the capabilities of the radar bomb scoring system. One of his officers at Bismarck had been Capt. Stanley J. Sliz, who was also chosen for Heavy

Green. In April 1967, Etchberger was promoted to chief master sergeant, USAF's highest enlisted grade.

Eighteen Weeks

The installation team went in first, placing a TSQ-81 radar, a mobile variant of the Combat Skyspot system, and other facilities on the mountaintop in August. Living and working space at the site, which was only 150 feet long, was crowded with the radar, TACAN, operations vans, generator, bunkers, and metal huts.

The Heavy Green operators deployed to Udorn Air Base in northern Thailand in October, setting up shop in the Air America compound, although the airmen—now civilians—lived in rented housing off base. When at Udorn, they wore uniforms and carried military ID as a cover role. For their two-week rotational duty tours to the mountain, they wore civilian clothes and carried Lockheed ID. The boss, Col. Gerald H. Clayton, was manager of the Lockheed field services group at Lockheed.

Heavy Green did not completely cut ties with the Air Force. Clayton was also commander of Det. 1, 1043rd Radar Evaluation Squadron, which had headquarters at Bolling Air Force Base in Washington, D.C. The site was operational on Nov. 1.

The radar operators were divided into teams, one of them headed by

Sliz, with Etchberger as crew chief. John G. Daniel was the board operator and the radar technicians were Donald K. Springsteadah and Henry G. Gish.

Etchberger "was one hell of an NCO," said Daniel, a sheep-dipped staff sergeant. "He knew the equipment. ... He knew how to handle people. ... He knew what to do and how to do it. You were eager to follow the man, to do what he wanted you to do." Sliz described Etchberger as "the consummate professional. He stood up above everybody else." In a letter to a friend back in the United States, Etchberger said, "I hate to be away from home, but I believe in the job. It is the most challenging job I'll ever have in my life."

Lima Site 85 was in northeastern Laos, the stronghold of the Communist Pathet Lao. Part of the security was the mountain itself. At the higher reaches, the sheer face of the cliffs rose at angles of 80 and 90 degrees on the north, south, and west sides. About 1,000 Hmong tribesmen, known as fierce fighters, and some Thai special forces were expected to hold the eastern slope.

The enemy had long since discovered the site and had made several attempts to dislodge it, including an attack by An-2 Colt biplanes using improvised munitions. US airpower was increasingly used to disperse enemy troops moving into the vicinity. A combat controller had been sent to direct local air strikes.

The US ambassador, William H. Sullivan, was opposed to arming Heavy Green personnel but, about a week before the attack in March, approved giving them a limited number of M-16s. The airmen had no real training with the weapons, only a general familiarization and the opportunity for some informal firing.

By March 10, the radar on Phou Pha Thi had been operational for 18 weeks. That day, a Sunday, mortar, artillery, and rocket rounds began falling on the mountaintop around 6 p.m. The barrage ceased at 7:45 p.m., but the Hmong were engaged in heavy fighting at lower elevations.

About 9 p.m., Ambassador Sullivan decided evacuation would begin the next morning, despite Air Force reluctance to close the site. There were 19 Americans on the mountain: 16 Heavy Green operators and support personnel, a combat controller, and two CIA paramilitary officers.

After the initial shelling, Sliz's team went to get some rest while another team took the duty. Around 8 p.m., Daniel

and Springsteadah took their sleeping bags and went down to a ledge on the western slope, which was less exposed to bombardment than their quarters. The ledge was about 20 feet below the top of the mountain. A path led down to it, but beyond that, the mountain dropped sharply for several thousand feet. Sliz, Etchberger, and Gish remained in the vicinity of the vans.

During the night, a North Vietnamese sapper team that had trained for months for the mission climbed the western slope, the one unguarded by the Hmong, and reached the summit. The sappers waited in hiding until 3 a.m., then began moving toward the Heavy Green facilities. Detected by a guard, they opened fire.

"As the technicians came running out of the operations structure, they were met with a hail of small-arms weapons fire from close range," a subsequent Air Force report said. Several Americans were killed, including the leader of the radar team on duty.

Awakened by the shooting, Sliz, Etchberger, and Gish made their way down the path and joined Daniel and Springsteadah on the ledge.

Five or six of the enemy began walking down the trail. Etchberger, at the direction of Sliz, opened up on them with his M-16 and they retreated. For reasons unknown, the enemy did not press the attack down the path, but brought the ledge under fire with small arms and grenades from the top of the cliff. Gish was killed in the first burst of fire, and Springsteadah shortly thereafter. Sliz and Daniel were struck by shrapnel and bullets. A rocky overhang, about five feet deep and five feet wide, offered some protection. Two people could squeeze underneath it.

The Americans on the ledge had only three M-16s. Sliz took Gish's rifle when Gish was killed. They had plenty of ammunition, though, having taken along a box of extra clips. They also had signal flares and a survival radio, which were in Sliz's survival vest.

The sappers continued tossing grenades from the top of the cliff. Sliz and Daniel had limited mobility, but were able to knock some of the grenades away. "If I could reach them, I'd pick them up and throw them back on top of the hill," said Daniel. "If I couldn't reach them, I'd take the butt of my rifle and kick them off over the edge of the mountain." When one grenade landed outside their reach, Daniel and

Sliz rolled the body of a dead comrade on top of it.

Sliz and Daniel, weakened by loss of blood, were not able to help much with the defense, but the attackers "weren't able to get closer because of Etch firing at them," said Sliz.

"Despite having received little or no combat training, Chief Etchberger single-handedly held off the enemy with an M-16, while simultaneously directing air strikes into the area and calling for air rescue," said the citation to Etchberger's Medal of Honor. "Because of his fierce defense and heroic and selfless actions, he was able to deny the enemy access to his position and save the lives of his remaining crew."

Etchberger Bars the Way

Etchberger kept the sappers at bay until help arrived at daybreak. Two A-1 Skyraiders from Nakhon Phanom Air Base on the Thai border roared over the mountain, strafing the North Vietnamese. That had limited effect, but on the next pass, they dropped cluster bombs, which cleared the area momentarily.

A Huey helicopter from the Air America base at Long Tieng approached, hovered, and dropped a jungle penetrator with rescue slings in which the survivors could ride.

Of the five men who had taken shelter on the ledge, only Etchberger remained untouched by enemy fire. He had repeatedly exposed himself to hostile fire, both while holding the enemy back and as

he placed his wounded teammates on the hoist. He sent Daniel up first, then loaded Sliz on the lift when it came back down. The cable, swaying in the wind, banged Sliz against the side of the cliff, but he was still conscious when the helicopter crew pulled him aboard.

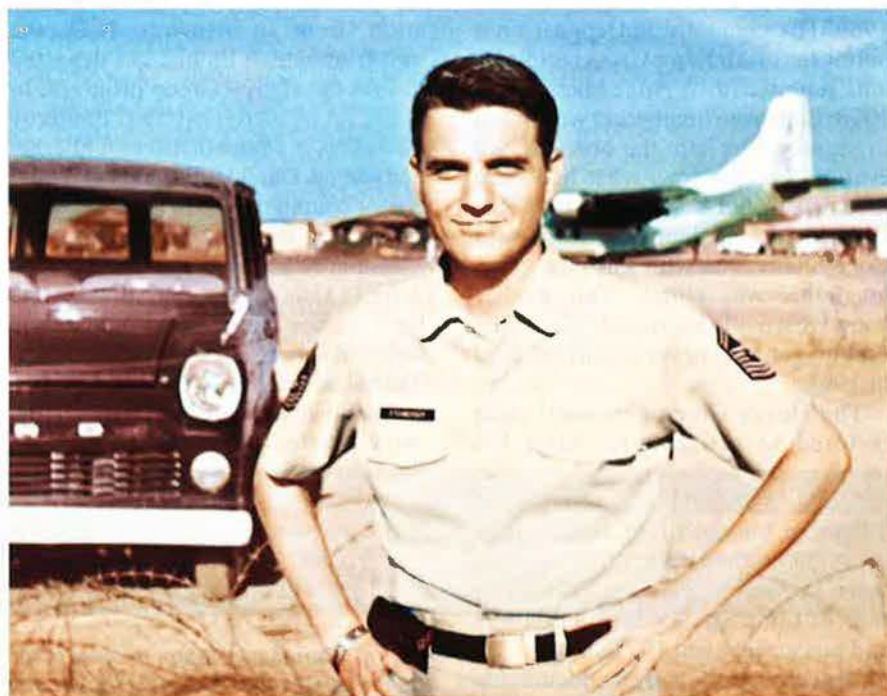
At that point, Bill Husband, the generator repairman, came running. He was in bad shape with hip-to-head shrapnel wounds, but Etchberger got him on the lift. As Husband and Etchberger rose up together on the third hoist, the helicopter began taking fire from below.

After they climbed aboard the Huey, one of the rounds punched through the floor of the helicopter and hit Etchberger, who was sitting on the jump seat of the helicopter. He died minutes later.

Between them, the Air America and USAF helicopters brought out seven US survivors and some of the Thai and Hmong wounded. The other 12 Americans were known or presumed to be dead. About 30 of the Hmong and Thai were killed.

Twenty days after the attack, the White House declared a bombing halt north of the 20th parallel, which included the part of North Vietnam into which Lima Site 85 had been directing strikes.

Etchberger was nominated for the Medal of Honor by CMSgt. Frank Roura, first sergeant and chief of admin for the 1043rd Radar Evaluation Squadron at Udorn. Numerous accounts blame President Lyndon Johnson for



CMSgt. Richard Etchberger at Udorn Air Base in Thailand, a few months before the firefight at Lima Site 85.

downgrading the award, but the decision was made by Gen. John D. Ryan, the Air Force vice chief of staff, who was the USAF approving authority for top awards. In a letter to *Air Force Magazine* in 2006, retired Col. Ruffin W. Gray, who was Ryan's executive officer in 1968, explained what happened:

"After reading all the supporting documentation, I went into General Ryan's office and told him that as far as I was concerned, this had every element for the Congressional Medal of Honor rather than the Air Force Cross," Gray said. "After reading all the supporting documents, General Ryan said that he agreed. However, we had to consider that the Congressional medal could not be awarded without national news attention. Due to the sensitivity of Lima Site 85's location, the circumstances surrounding its role, and the subsequent loss, these factors could not be revealed. We could, however, fly the Etchberger family to Washington and in a quiet, appropriate ceremony award the Air Force Cross without national fanfare."

Etchberger's records were supposed to be flagged and reviewed periodically so that when circumstances permitted, "the Air Force Cross could be rescinded and the Congressional medal awarded," Gray said, but "it must have fallen through a crack somewhere along the line."

The Air Force Cross was awarded posthumously to Etchberger in a closed presentation at the Pentagon Jan. 15, 1969. His name did not appear on a public list of Air Force Cross recipients until reported in *Air Force Magazine* in 1998. Catherine Etchberger was sworn to secrecy. She kept the promise, not even telling her sons what had been revealed to her. "We were told that he died in a helicopter crash," said Cory Etchberger, who was nine when his father was killed. "Our mother knew what really happened." Catherine Etchberger, who never remarried, died in 1994.

The Heavy Green personnel were restored to active duty. After US involvement in the war in Laos was revealed in 1970, the families were told more, but not all, of the details of the night on the mountain. The cover story was maintained for years. The saga of Lima Site 85 emerged in bits and pieces between 1977 and 1995 as information from various documents and reports was declassified. The most extensive account was in 1999



USAF photo by Andy Morlaya

L-r: CMSAF James Roy, Secretary of the Air Force Michael Donley, Cory Etchberger, and Air Force Chief of Staff Gen. Norton Schwartz display a framed copy of Etchberger's Medal of Honor citation at the Pentagon Hall of Heroes induction ceremony.

by Timothy N. Castle in his book, *One Day Too Long*.

The title came from Ambassador Sullivan's cable of March 11, 1968, to Secretary of State Dean Rusk in which he said, "It appears we may have pushed our luck one day too long in attempting to keep this facility in operation."

Finally, the Medal of Honor

Retired MSgt. Robert L. Dilley had never known Etchberger, but he had served with the 1st Combat Evaluation Group in Bismarck, N.D., the unit from which Etchberger departed to join the Heavy Green program. In 2004, he wrote to Rep. Earl Pomeroy (D-N.D.), in whose district Etchberger had served. Daniel, Sliz, and the Heavy Green commander, Clayton, provided supporting information.

Pomeroy got language into the 2009 defense authorization bill to waive the limit on how much time could elapse before the award of a Medal of Honor. The bill, adopted by Congress and signed by President Bush in 2008, "authorized and requested" the President to award the Medal of Honor to Etchberger.

After a favorable USAF personnel board review, Secretary of the Air Force Michael B. Donley nominated Etchberger for the higher award.

President Obama telephoned Cory Etchberger July 7, 2010, to tell him the Medal of Honor had been approved.

The Medal of Honor was awarded at the White House to Etchberger's three sons: Richard Etchberger of Vernal, Utah, Cory Etchberger of Schwenksville, Pa., and Steve Wilson of Redlands, Calif. Also there was Chief Etchberger's brother, Robert Etchberger, 81, of Summerfield, Fla.

The next day at the Pentagon, Etchberger was inducted into the Hall of Heroes. "Valor has no expiration date," Gen. Norton A. Schwartz, Air Force Chief of Staff, said at the induction. "The discovery of truth, no matter how long it is delayed, sets the record straight."

John Daniel, 71, who now lives in La Junta, Colo., came to Washington for the award ceremonies. The other survivor from the ledge, Stanley Sliz, 78, lives in Huntington Beach, Calif., but was unable to make the trip.

Both Daniel and Sliz still carry shrapnel from Lima Site 85. Both think often of Etchberger.

"He should have a 55-gallon drum full of medals. I wouldn't be alive without him," Daniel said, but "42-plus years too goddamn late. It should have happened 42-plus-years ago." ■

John T. Correll was editor in chief of Air Force Magazine for 18 years and is now a contributing editor. His most recent article, "The Atomic Mission," appeared in the October issue. For additional information, see "The Fall of Lima Site 85" in the April 2006 issue.

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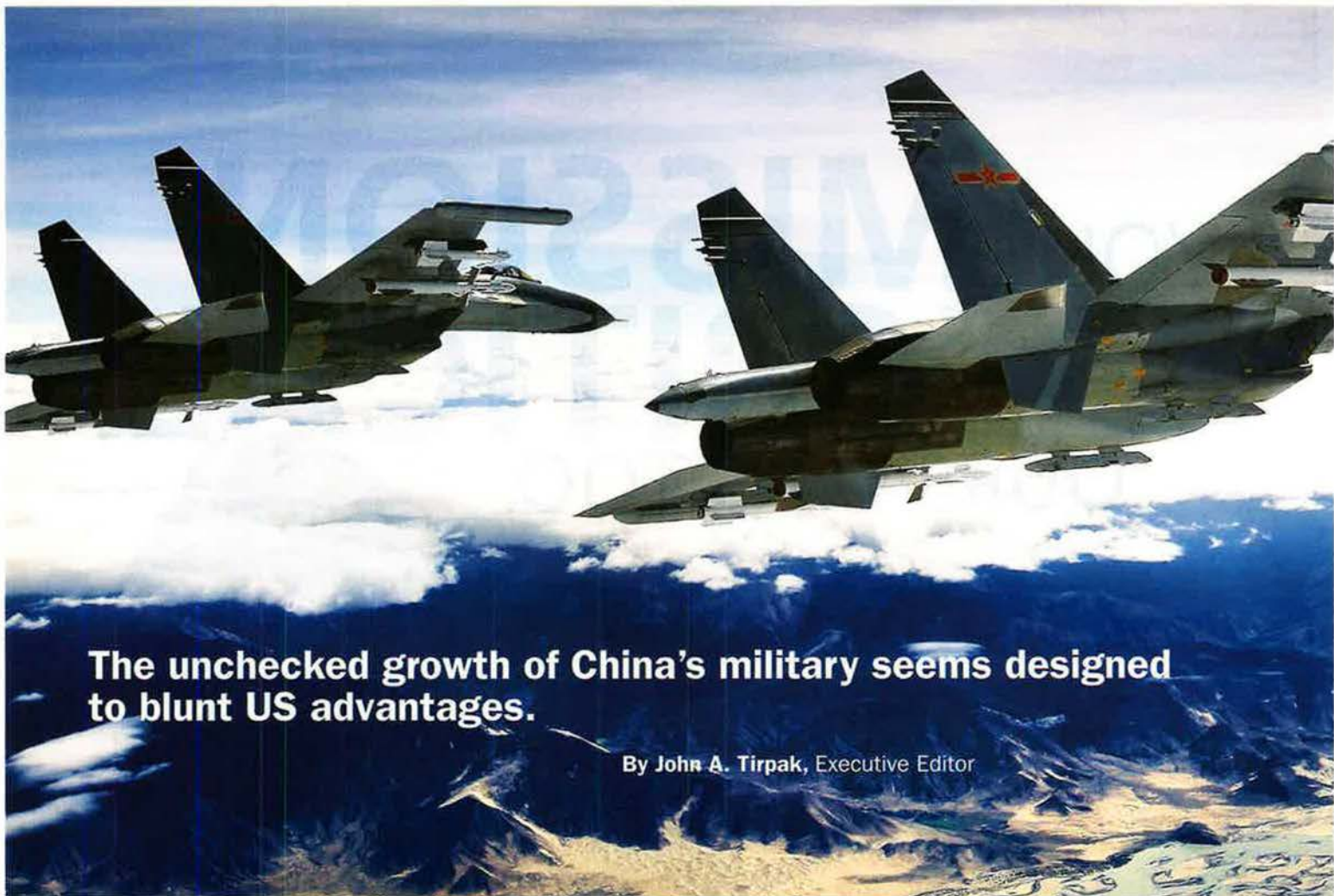
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The unchecked growth of China's military seems designed to blunt US advantages.

By John A. Tirpak, Executive Editor

From “Curious” to

The Pentagon says China's military power is growing far beyond that necessary for self-defense, and that its new capabilities are aimed squarely at blunting or defeating the strengths of the United States in the Pacific. However, a new Pentagon report offers little comment about what the United States should do in response.

The annual report on China's military is required by law and was released in August. It catalogs the “long-term, comprehensive transformation” of China's military into a first-rate power, detailing advances in everything from cruise and ballistic missiles to submarines and fighter aircraft.

Collectively, China is building a strong hand for power projection well outside its immediate area, plus “anti-access/area denial” capabilities that could limit US military options in a Pacific conflict. China is modernizing its martial culture from one of conscriptive forces to a professional military.

Previously called “Military Power of the People's Republic of China”—and patterned after the Cold War-era “Soviet Military Power”—the document this year was presented as “Military and Security Developments Involving the People's Republic of China.”

The report follows two significant warnings about China. In July, a bipartisan commission offering an alternative assessment of the Quadrennial Defense Review said the US must build up its forces in the Pacific region, particularly to counter a rising Chinese threat. In the spring, the Center for Strategic and Budgetary Assessments also proposed stronger forces to counter China's growing military power. It offered a strategy called AirSea Battle as the framework for preparing for a potential armed conflict with China that emphasized ships and long-range aircraft.

Both the independent QDR panel and CSBA indicated the US would take a beating in the opening rounds of an armed clash with China, given existing forces and those

forecast over the next 20 years. They urged the Pentagon take steps now to mitigate that situation.

The Pentagon report itself echoes an assessment offered by Joint Chiefs of Staff Chairman Adm. Michael G. Mullen, who said recently his attitude toward China's military buildup has shifted from “being curious to being genuinely concerned.”

China has been extremely vague about its long-term military ambitions, Mullen said, and this lack of transparency could result in misinterpretation or “miscalculation” between the two countries.

Despite clashing interests, the Pentagon report said war with China is not inevitable, provided that China shows more “transparency” about the military it is building and what it means to do with it. However, the Defense Department admitted in the report that, so far, China remains coy about its intentions.

Other key points in the Pentagon analysis:

- Much of China's military power continues to be focused opposite Taiwan,



AP photo by Liu Yinghua

and China is positioning itself to be able to seize that island as it holds US reinforcements at bay.

■ China openly seeks to neutralize American military power, pursuing asymmetric strategies where it cannot challenge the US directly, while broadly emulating the design and capability of US armed forces in its long-term development.

A senior defense official, in a background briefing for reporters at the Pentagon, said the report was a whole-of-government assessment of China's military capability, potential, and strategy, not just a simple military size-up.

It's an analysis "that we view as being very factual in nature," the official asserted. "It's not intended to get into a deep and serious discussion of policy per se." However, utmost effort was made to "be very, very straightforward, factual, descriptive, and analytical and ... to let the facts speak for themselves."

Those facts paint a picture of a Chinese military continuing to improve at a rapid rate. China has "the most active land-based ballistic and cruise missile program in the world," and is developing or building a dizzying array of missiles for every application. It is fielding new and improved nuclear ballistic missiles now comfortably able to reach most targets

in the continental US, exploring a road-mobile ICBM, and developing defenses against ballistic missile attack.

"Peaceful Co-Prosperity"

By the end of 2009, China had deployed up to 1,150 short-range ballistic missiles "opposite Taiwan." Although that number hasn't grown as fast as it had in recent years, the defense official said the quality and capability of the missiles has improved. Those missiles now or soon will have the ability to find US aircraft carriers at long range—some 900 miles from China's borders—and inflict crippling damage on them.

Communist China considers democratic Taiwan to be a breakaway province, and has repeatedly warned that it will not tolerate a declaration of that island's independence. China is rapidly expanding its inventory of amphibious assault vessels, and its surface-to-air missile systems, called "the best in the world," were bought or copied from Russian systems. They now have the range to target aircraft over Taiwan itself.

China has blown hot and cold about military-to-military exchanges with the US meant to build a relationship and reduce mutual suspicion. In the last few months, China has canceled high-level visits by American military officials after taking advantage of opportunities to visit American facilities.

In an Aug. 18 statement issued through its Xinhua news service, China criticized the Pentagon report as exaggerating its military strength, which it claimed is entirely defensive, and said its goal remains "peaceful development" aimed at a stable, cooperative, and prosperous Asia-Pacific region.

The Pentagon estimates that China spent about \$150 billion on its military in 2009, an increase of 7.5 percent over the previous year. That growth rate was slightly less than in recent years, but for nearly two decades, China's real growth in defense spending rose by double digit percentages.

The Pentagon report said China's military development is predictable and natural given its growing economic importance, and China's likely concern is that it may have to guarantee access to oil, coal, and other imported raw materials through military coercion. A strong military gives China "options for using military force to gain diplomatic advantage or resolve disputes in its favor."

While the US "welcomes" China acquiring the means to help out with international peacekeeping duties and responding to humanitarian crises, the Pentagon noted

"Concerned"



AP photo by Zhou kun qd

Top: Chinese J-11 fighters—which are improved versions of license-built Russian Su-27s—participate in live ammunition training over Tibet in July. Above: Chinese troops on parade.

that China's weapons program and stated strategy are aimed "beyond China's immediate territorial interests."

In aircraft, the People's Liberation Army Air Force is swiftly transitioning from an inventory of obsolete Cold War designs to modernized aircraft with the latest avionics and weaponry. It is fielding its own, indigenously produced F-16-comparable fighter, the J-10, and is making its own improvements to license-built Russian Su-27-style fighters, which China calls the J-11. Beijing is also upgrading older fighters with new gear, extending their useful lives.

"The PLAAF continues its conversion from a force for limited territorial defense to a more flexible and agile force able to operate offshore in both offensive and defensive roles, using the US and Russian Air Forces as models," the Pentagon said.

A consensus has been built in China, the Pentagon said, that protecting its global interests will demand "an increase in the PLAAF's long-range transportation and logistics capabilities," such as long-range airlift. USAF leaders who dispatched C-17s full of relief aid to China in the aftermath of a powerful earthquake reported that PLAAF officers were studying those operations intently, and taking notes.

The Pentagon said China's Air Force—for the near future—will probably not seek globe-girdling offensive aircraft capabilities. The PLAAF's "primary focus for the coming decade" will continue to be building "a credible military threat to Taiwan and US forces in East Asia," deterring Taiwanese independence, or influencing Taiwan to "settle the dispute on Beijing's terms."

The primary immediate handicap in China's aviation industry is that it remains semidependent on foreign suppliers for engines and electronics, and would have a hard time surging aircraft production in wartime.

China has an aggressive shipbuilding program, bringing on a wide variety of both surface combatants and submarines, both diesel and nuclear. China is getting more "comfortable" operating farther from its littoral waters, said a senior DOD official, and has fitted its fleet with modern missiles.

China's submarine fleet has advanced more rapidly than any other aspect of its armed forces, and by 2009, the Pentagon deemed fully half the submarine fleet as "modern." China sees submarines and ballistic missiles as its best long-range means to prevent the US Navy from operating anywhere close to the Chinese sphere of influence.

Moreover, China continues to refit a secondhand Russian aircraft carrier for eventual service, has practiced carrier-like operations at land bases, and plans to build a handful of aircraft carriers in the next two decades or so.

Chinese strategists refer to information warfare—encompassing cyber attacks, psychological operations, media influence, electronic attacks, etc.—as "informatized" operations, a term that also includes the products of intelligence-surveillance-reconnaissance systems. Informatized operations are considered central to all Chinese military capabilities, and the People's Liberation Army sees them as a great equalizer to the US and a means to asymmetrically offset US strengths.

The PLA sees space as "central to enabling modern ... warfare," the Pentagon report said. Like informatized operations, space is seen not as an isolated campaign but part of a larger whole, underlying everything else.

A Mutual Blinding Campaign

Because China knows the US is heavily dependent on space-based capabilities, it is "developing the ability to attack an adversary's space assets, accelerating the militarization of space." Strategy papers from the PLA emphasize the importance of "destroying, damaging, and interfering with the enemy's reconnaissance ... and communications satellites," according to the report.

When CSBA rolled out its AirSea Battle white paper, it postulated that any armed conflict between the US and China would begin with a mutual "blinding" campaign, in which both sides would seek to neutralize or destroy the other's ISR capabilities. CSBA suggested the US should build heavy redundancy and self-healing qualities in its sensor platforms and networks, the better to absorb damage and get back up and running as quickly as possible.

China's military is taking another page from the US playbook and is trying to develop better capability at joint operations among its forces, the Pentagon said. So far, the various branches of the PLA have worked in isolation, and joint exercises have tended to be simply simultaneous activities rather than genuinely integrated operations. However, China understands the need to get its services to be more interdependent and has added more joint courses to its professional military syllabi—and is requiring more of its officers to do tours with different branches.

China is taking tentative steps to reach far beyond its borders in ways that are not

threatening. There are some 12,000 Chinese troops engaged in various United Nations peacekeeping operations worldwide. China has been more active in rendering humanitarian assistance through military means, and China last year participated in multinational anti-piracy operations around the Horn of Africa near Somalia and Yemen. The Pentagon report said, however, that these long-distance deployments will be exceptional for the next few years at least, and China will likely continue to keep its military forces concentrated near to its coastlines.

Some Senators felt the report's delay (it was delivered five months late) was a sign the Administration did not wish to upset China. In late July, shortly before the report was released, Sen. John McCain (R-Ariz.), Sen. John Cornyn (R-Tex.), Sen. James Risch (R-Idaho), Sen. Pat Roberts (R-Kans.), and Sen. James Inhofe (R-Okla.) wrote to Defense Secretary Robert M. Gates, demanding the overdue report be issued at once.

"China's extensive military buildup is alarming," the Senators wrote, "as are its potential implications for US national security." The PLA "has undertaken a military modernization program, supported by a military budget that has experienced double-digit-percentage annual increases for more than two decades."

The Senators said they had been told the completed report was being withheld.

They asked Gates for his "assurance that White House political appointees at the National Security Council or other agencies have not been allowed to alter the substance of the report in an effort to avoid angering China. The annual report is designed to provide Congress with a candid, objective assessment of the facts. Anything less would risk undermining its very credibility."

After the report's release, the conservative Heritage Foundation released a paper that was complimentary of the report for its comprehensive account of China's growing military strength.

Heritage said the report is "replete with information that should alarm anyone concerned about Taiwan's diplomatic space and ability to defend itself if necessary. Yet the obvious strategic conclusions to be drawn from this information are left to the reader."

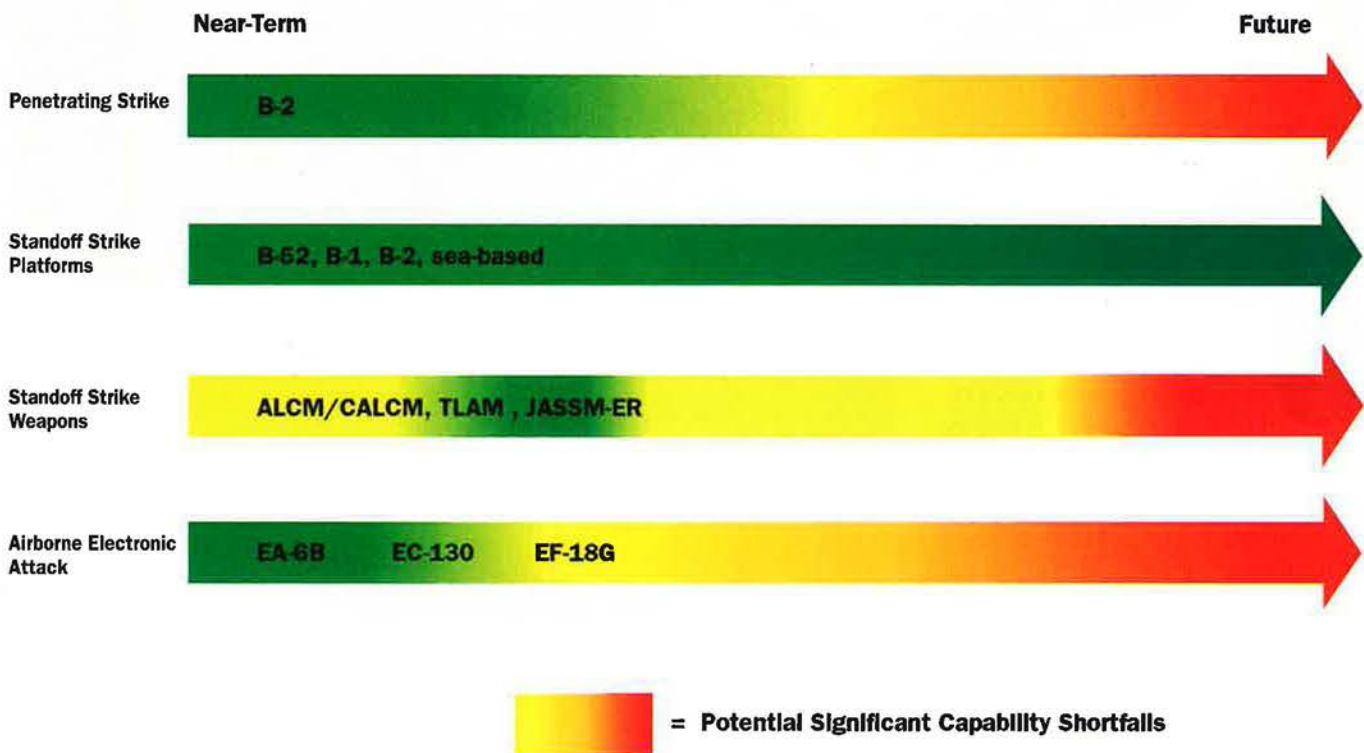
House Armed Services Committee Chairman Ike Skelton (D-Mo.), in a statement regarding the Pentagon's report, said China doesn't need to view the US as a threat. However, "conflict between our nations remains a possibility, and we must remain prepared for whatever the future holds." ■

Bleak Future for Long-Range Strike

America's ability to conduct large-scale, long-range strike operations has long given it a military edge. It's now in danger, warns the Center for Strategic and Budgetary Assessments. CSBA says, "The Department of Defense's current program of record is insufficient to sustain the US military's long-range strike strategic advantage." Among the problems: The bomber force has minimal power to penetrate high-threat

air defenses; carrier wings lack range, persistence, and survivability; aircraft aren't able to strike large sets of mobile, relocatable, hardened, and deeply buried targets; longer-range cruise missiles are getting old; and airborne electronic attack platforms lack needed range and survivability. As seen here, LRS forces face a bleak future in three of four areas. For more information, see "Washington Watch," p. 8.

Problems With the LRS Program of Record



"Source: "Sustaining America's Strategic Advantage in Long-Range Strike," report and briefing by Mark A. Gunzinger, Center for Strategic and Budgetary Assessments, Washington, D.C., Sept. 14, 2010.

Airpower Over Water

The mission spent the 1990s adrift, but aircraft are again seen as a prime way to track and target threats at sea.



By Rebecca Grant

USAF photo by SrA Christopher Bush

Once upon a time, airpower earned its spurs over water. Maritime interdiction—attack of ships—was a major mission for decades. From Billy Mitchell's sinking of *Ostfriesland* to the Battle of Midway in 1942, the use of airpower over water made for some dramatic turning points.

During the Cold War, USAF bombers trained to seek and sink warships of the Soviet fleet. Then the Cold War ended and so did open-ocean exercises. The US Navy switched its focus to littoral operations where threats were no greater in size than Iranian coastal patrol boats.

Over the past few years, trends in homeland defense, AirSea Battle, and other operational concepts have brought back the overwater mission's import. This time, the tasks include long-range surveillance, reconnaissance, and incident response as well as deterrence and strike.

Since 9/11, the threat of terrorist attacks against targets along the US coastline has simmered. The 2008 attacks in Mumbai, India, were another reminder terrorists



Boeing photo

Top: A B-52 lines up under the boom of a KC-135 over the Pacific Ocean. Above: The ScanEagle is a small, portable UAV originally designed for commercial maritime work, and now is seeing service in Southwest Asia.



The Navy's P-8A maritime patrol and reconnaissance aircraft, shown here flying alongside a P-3 Orion (r) on a test flight, is only one of the new aircraft being developed for the maritime interdiction mission.

could exploit relatively open harbors to wreak havoc.

"I don't think there is a generally held consensus about what constitutes an adequate maritime security regime in a postwar, post-9/11 environment," then-Coast Guard Commandant Adm. Thad Allen said in a 2009 interview with the *Christian Science Monitor*.

While US air defense has been reconfigured over the last decade, maritime surveillance and security for the 95,000 miles of coastline remains a challenge. Part of the difficulty centers on close-in work, such as detailed mapping of ports and detection of possible threats close to shore. The Coast Guard maintains the Nationwide Automatic Identification System to monitor commercial vessels approaching the coast. Based on an international collision-avoidance system, commercial ships over a certain gross tonnage carry transponders broadcasting the ship name, location, and heading. More than 50 nations share automated identification data via the Web to form a global maritime surveillance system.

For the US, VHF monitoring sites keep track of vessels nearing 58 major US ports. The system receives transmissions at a range of 58 miles and transmits up to 28 miles. Most close-in threats are easily handled by ships and helicopters. The Coast Guard also maintains a fleet of HC-130J and HC-130H aircraft. They provide a key framework for maritime domain awareness, but the Coast Guard is not always enough to sort out the status of suspicious vessels.

Detecting and intercepting such vessels hundreds of miles out to sea is another matter. The worst-case scenarios are sobering: A renegade vessel might pose as

a container ship but carry a pod of cruise missiles for launch at US coastal targets, for example. Those missiles might be armed with weapons of mass destruction to target American cities. In this case, action must be taken out at sea—before the vessel closes to within launch distance. This could be several hundred miles from shore.

The Most Effective Tool, for Now

The first role for airpower over water is assisting with detection at much greater ranges. "We now are using B-52s for homeland defense," said retired Lt. Gen. Robert J. Elder, who commanded USAF's 8th Air Force. An electro-optical pod enables the B-52 to pick up extremely high-resolution pictures and to follow a target for considerable time. "We go out with some broad area surveillance platforms, and the Navy gives us a ship to

locate, based on a signature. We've gone out a thousand nautical miles or more off the coast and we find the ship, we put the pod on it, [and] take pictures."

Once identified, what is the potential response? So far, it's a question that has come up only in exercises. But there's a real prospect of having to converge on a vessel and halt it.

The ideal response is for a US Coast Guard cutter or Navy ship to intercept and board a suspect vessel. But ships at sea are limited by speed and manpower. In a major threat scenario with large areas to search, the problem could quickly get out of hand, as Lt. Col. Alexis G. Grynkewich pointed out in a 2007 article for *Air and Space Power Journal*. Flaws in specific intelligence could compel sea-based forces to board and inspect multiple targets, thereby eating up time.

Intercepts hundreds of miles from the US coast could require direct action by land-based fighters, bombers, or even gunships. One tactic is to halt a suspicious vessel by disabling its screw propeller, for example.

"Aircraft on combat air patrol (CAP) could rapidly engage vessels that emerge as threats as they approach or enter US ports. Command authorities can stand aircraft CAPs up or down and move them to different geographic locations as the threat dictates. Intelligence would determine which ports to defend and how long to maintain the CAP," wrote Grynkewich.

Ultimately, nonlethal solutions with slower moving platforms such as helicopters or unmanned aerial vehicles would be preferred, according to Grynkewich. In the interim, land-based interceptors might be the only effective tool at hand.



AC-130s, such as this one, may be called on to aid the offshore interdiction mission. The gunship carries three discrete sensor systems, including the strike radar.



By no means are US coastlines the only hotspots for maritime action. In fact, other areas from the Arctic to the Strait of Malacca are worrying, too. "Once the threat to shipping was submarines; now it's high-speed boats manned with [rocket-propelled-grenade]-toting pirates and terrorists seizing unarmed merchant shipping," noted commentator Alan J. Simpson.

There are several types of potential dustups at sea: defense of territorial waters, access to shipping lanes, protection of diminishing fishing resources, and piracy. "We may be dealing with a 17th century crime, but we need to bring 21st century solutions to bear," Secretary of State Hillary Rodham Clinton said of counterpiracy efforts.

All responses begin with tracking rogue ships, and this is where USAF airpower can provide the most immediate help. Maritime surveillance was set on the back burner when the Cold War ended. Now, several nations around the world are enhancing maritime surveillance and upgrading their suite of weapons for anti-ship strikes.

The Strait of Malacca is a constant concern for anti-piracy efforts. The 550-mile strait sees more than 50,000 ships transiting through annually, carrying 40 percent of global shipping trade. Among the most precious commodities are nearly 90 percent of Japan's crude oil supply and as much as 80 percent of China's.

The strait is a key chokepoint for the US and allies such as Australia, too. "The strait is a vital sea-lane for the US Navy, which sent warships to Taiwan via the Malacca Strait at a time of heightened tensions between China and Taiwan in 1996," noted Asia expert Bill Tarrant of Reuters.

For now, Singapore, Malaysia, and Indonesia are the primary keepers of peace in the Strait of Malacca. In 2005, those nations launched a successful airborne maritime surveillance program known

Above: The Coast Guard uses HC-130Js like the one flying below the HC-130 for maritime domain awareness. Right: In 2006, armed pirates in the international waters off Somalia watch as US gunships approach their skiff for boarding. The pirates fired on the US ships, and were captured after one pirate was killed.



USN photo

as Eyes in the Sky. Aircraft such as a C-130, with a combined Malaysian and Singaporean crew, took up the maritime patrol job. Surveillance programs helped downgrade war and piracy risks. "It proves the point that [the characteristics of] airpower can still be effective against nontraditional threats, and combined with proper coordination with civil agencies, can be a very formidable one," said Malaysian Defense Minister Datuk Seri Ahmad Zahid Hamidi at a 2009 air chiefs conference in the region.

The Withering Mission

Eyes in the Sky "demonstrates how regional airpower collaboration can make a decisive impact" on counterpiracy operations, said Jill Lim, spokesman for the Republic of Singapore Air Force.

Many of the surveillance technologies for anti-piracy and other maritime patrol missions fit neatly into bigger contingencies, too. Development of airborne surveillance with inverse synthetic aperture radar (ISAR) is a big help. Inverse SAR uses the movement of the target itself to punch up higher quality resolution, turning a ship from a bright dot to a distinguishable target. ISAR is a main feature of Global Hawks modified for maritime surveillance.

Those same capabilities could come in handy as maritime control and strike

again become primary missions for airpower.

Other nations have already embraced maritime strike, whether to deter or prevail, especially in the Asia-Pacific region. Australia underlined a role for maritime strike in its landmark 2009 defense white paper.

For its part, the US is fully engaged with Air Force and Navy teams working all aspects of the new AirSea Battle concept of operations. Fulfilling the maritime control mission has led to a bumper crop of new overwater surveillance aircraft, most operated by the US Navy. The Navy P-8 Poseidon, currently in flight test, will replace its P-3 Orion patrol airplanes. Global Hawk unmanned high-altitude air-

craft with sensors modified for overwater operations will join the fleet for the Broad Area Maritime Surveillance mission, also known as BAMS. Smaller UAVs such as ScanEagle already supplement maritime surveillance.

The question of how to best attack ships has returned to the front and center after being headline news in the 1980s. In the Falklands War of 1982, Britain's Royal Navy lost two warships. HMS *Sheffield* was felled by an Exocet anti-ship missile, and HMS *Coventry* succumbed to bomb attack. Several other ships were damaged by cannon fire, bombs, and missiles. Several were later sunk or scrapped.

Also in the 1980s, a new emphasis on defeating the Soviet fleet led to fresh Air Force and Navy cooperation. Navy Secretary John F. Lehman welcomed the Air Force to the mission of destroying the Soviet fleet. Soviet Backfire bombers routinely buzzed carriers at sea, so the enthusiasm was real.

War with the Soviets would bring the B-52s and E-3 AWACS together with US Navy ships and aircraft to locate and destroy the Soviet blue water fleet. Ultimately, USAF modified B-52G bombers to carry the Harpoon anti-ship missile.

"Aerospace maritime operations may consist of counterair operations, aerial mine laying, reconnaissance and surveillance, and interdiction of enemy naval

surface and subsurface forces, port facilities, and shipping,” stated Air Force doctrine of 1984.

For its part, the Navy experienced ship attack when an Exocet hit USS *Stark* in May 1987. The next year, US carrier aircraft sunk an Iranian speed boat in Operation Praying Mantis and assisted with sinking a frigate.

By the early 1990s, the ship attack mission withered. The Navy turned away from blue water threats and emphasized brown water, littoral operations, and forward presence from the early 1990s onward.

By the 21st century, observers documented a slow but steady rise in China’s naval presence and overall defense ambitions. Possible interdiction of ships at sea moved up the roster again. Granted, the strategic context was different. Action centered on the Pacific, and US forces expected to face aggressive, land-based air defenses, fighters, and submarine threats. Attack scenarios, however, weren’t about taking out an entire fleet, but targeting hostile vessels attempting to disrupt operations.

For all the emphasis on precision attack, the delicate art of targeting ships at sea had turned into a backwater. The US and NATO partners adopted the Norwegian-designed Penguin missile for launch by helicopters. A new version of the classic Harpoon also debuted.

But the real question was whether precision weapons, stars of land attack, could do the job over water as well. The sequence of events in targeting ships has changed little. Step 1 is to locate the target, and Step 2 is to launch a weapon that will hit it. For weapons launch, the problem is how to ensure the right trajectory to hit a moving target. Larger bombers traditionally did it with accurate bursts causing direct hits or, more often, close hits that cavitating the water around the ship, creating a vacuum pocket followed by a crushing pressure wave. Agile dive-bombers such as those of the US Navy in World War II hit Japanese ships through extreme low-altitude attacks.

Modern day aircrews can rely on far more capable tools. Like the attack of targets on land, the aircrews assigned to find and attack a ship at sea work within a network of reconnaissance, surveillance, and sensor aircraft that perform precision fire-control tracking and pass data to both aircraft and weapons in flight.

USAF put those capabilities to the test dramatically six years ago with the sinking of the decommissioned naval ship *Schenectady* during the exercise Resultant Fury. The two-day exercise in November



USAF photo by TSgt. Richard Frelund

USS Schenectady, a decommissioned tank landing ship, founders after being struck by JDAMs during the exercise Resultant Fury in 2004.

2004 tested the ability of long-range aircraft to find and track multiple ships while under way.

Resultant Fury was about proof of concept—with a little signaling to potential adversaries thrown in. The joint exercise was designed to validate the capability to engage and disable ships under way, providing combatant commanders an airpower ability to rapidly conduct maritime interdiction against enemies, Gen. Paul V. Hester, who was Pacific Air Forces commander, said at the time.

The Pacific’s Big Picture

Scanning the ocean for moving targets fell to the Air Force’s E-8C JSTARS aircraft. In the Resultant Fury concept, JSTARS flew orbits to provide the correct angles to establish a targeting track. The track data were handed off via command and control networks to attack aircraft in the area. Resultant Fury tested the ability to detect towed targets and make the handoff to Air Force bombers or Navy F/A-18s. The finale came on Day 2 of the test. A B-52 conducted live fire against a former landing ship, tank—or LST—craft.

“This was the first time ever a B-52 has gone out and dropped self-designated, laser guided weapons on a moving ship,” Maj. Terry Christiansen, who was the B-52 aircraft commander, told the *Shreveport (La.) Times*. “It’s pretty significant.”

Christiansen described the moment when munitions were propelled off their external rails. “Since we ended up releasing all four simultaneously, 8,000 pounds

of weight came off at the same time,” he said. “You feel it.”

Capt. Ronald Wheeler, radar navigator on the same B-52, told the newspaper: “We took off from Barksdale, flew a 20-hour mission, got to the target area on time, and accomplished our objective, which was to sink the ship.”

“To see the LST through the targeting pod I was using to ‘laze’ the ship, to see it blow up in real time, was pretty exciting,” Wheeler added. “Any hostile surface vessel should take heed.”

Bombers are now continuously forward deployed to Guam to deter potential adversaries and reassure allies. “B-52s, B-1s, and B-2s have each taken turns as a continuous sentinel for the Pacific Theater,” said Col. Charles Patnaude, as bombers from 5th Bomb Wing, Minot AFB, N.D., were preparing to deploy in summer 2010.

The big picture in the Pacific centers on China’s 260-ship Navy, which includes 75 warships and about 60 submarines. “China has invested decades in a patient and aggressive campaign to slowly push other countries out of the East China Sea and South China Sea,” said James Kraska in *The Diplomat* in spring 2010. Confrontations at sea over rocky islands and reefs have been occurring since the 1970s, and there are many recorded incidents of Chinese ships harassing US and allied vessels.

Finding, tracking, and attacking ships remains a key deterrent ability. For its part, the US Air Force will be providing the long-range surveillance and striking power over water for the foreseeable future. ■

Rebecca Grant is president of IRIS Independent Research. She has written extensively on airpower and serves as director, Mitchell Institute, for AFA. Her most recent articles for Air Force Magazine are “Omar Bradley’s View of Airpower,” in October’s issue, and “One-Man Air Force,” p. 60.

The Air Guardsmen performing AFSOC's broadcast operations see a wider mission in contingency operations worldwide.



The New Way of Ps

By Marc V. Schanz, Senior Editor

Several Air National Guardsmen of the 193rd Special Operations Wing at Harrisburg Airport in Middletown, Pa., gathered at the edge of the tarmac, bidding farewell to their families before deploying on an unnamed mission one recent Wednesday in August.

These airmen were not off to bomb Taliban militants or refuel fighters. However, the 1,800 Air Guardsmen and 450 technicians who support their operations daily are among some of the most in-demand assets in the Air Force and US Special Operations Command. They conduct information operations, civil affairs, electronic warfare, and their primary task: military information support operations.

Better known by its former definition of "psychological operations," information support is the mysterious military art of influence through electronic media broadcasts. Nine years after 9/11, the unit's missions are expanding and changing as Air Force Special Operations Command is utilizing the unit's broad knowledge and experience in ever more scenarios.

"We have [areas] that might not be as relevant as they have been in the past [in our mission], and we are focusing on areas that are more important," said Brig. Gen. Eric G. Weller, the 193rd SOW's commander and a veteran EC-130 navigator. The wing, which flies a mix of heavily modified EC-130Js and "slick" C-130Js, is a frequent participant in missions ranging from airdrop for special operations forces and parachute

exercises to electronic warfare and information operations.

"The wing does its own research and development, by and large," Weller added. "We go from one mission into additional missions without missing much."

The wing's go-to capability, however, is its incredible onboard broadcast equipment for television, radio, and other communications over long distances. The capability is hinted at by the unique appearance of the wing's EC-130Js, studded with antennas, vents, pods, and broadcast nodes hiding extendable cables.

The Clipper

On the flight line with a visitor, SMSgt. Michael S. Kovach inspected an EC-130J, one of only three Commando Solo aircraft in the world. A layman might mistake the pods outboard from the engines for fuel tanks, but they are packed with VHF and UHF broadcasting equipment providing professional-grade television transmissions, said Kovach, the wing's electronic communications systems section supervisor. With approximately 10,000 watts of television transmission power on the aircraft, for example, the broadcast strength of the signal is amplified by the special antennae and the altitude of the aircraft—something a ground station is unable to do.

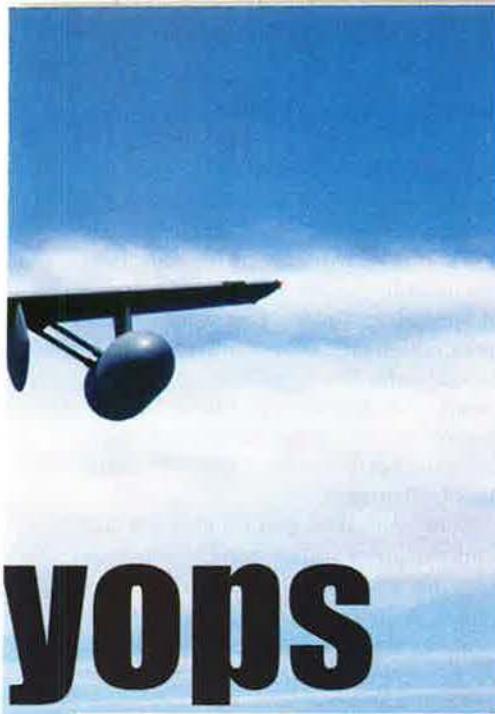
Maj. Roger Kay, a former F/A-18 pilot who joined the Air Guard after his Navy service, jokes about flying other C-130s after performing sorties on "The Clipper"—his nickname for

the jam-packed Commando Solo. He needs "a few more procedures" and more space to get the aircraft up in the air, he said, while going over a checklist in the cockpit of one of the wing's Solos. "But it oozes off the runway." A plain C-130 "practically jumps off the ground after you fly these."

All of this equipment (the Solo weighs in at 164,000 pounds) is not easy to keep up. Due to the sensitivity of the equipment, the maintainers discourage the crews from performing troubleshooting on electronics during sorties. The amount of electronics on board requires a 200,000 BTU air-conditioner to run during operations. This is solely for the purpose of cooling the electronics, not the crew.

The systems are a mix. Some are old and some are new, said A1C Bryan Summy, a technician in the wing's mission systems shop, a building filled with old and new panels, boxes, and components from the aircraft. New digital technology is often right next to large cylindrical vacuum tubes still used in television amplifiers. "We are the ones who have to fix things as they come up. ... We're technically our own depot, most days," since the 193rd is the only unit performing this mission.

Still, the operators praise the maintainers' efforts, noting mission success rates are often exceptional. In 2001, following the 9/11 terror attacks, two EC-130s flew 307 consecutive missions, broadcasting over Afghanistan. They pulled off a 100 percent mission success rate, Kovach



yops

noted. “That’s the caliber of folks we have here,” he said.

It wasn’t long ago (up until the end of the Cold War) that the sorties of Commando Solo were largely “in the black world,” said Col. John J. Dickinson, the 193rd Operations Group commander.

An airborne radio and television transmission mission was first identified as a needed capability after the Cuban Missile Crisis. This led to the EC-121 Coronet Solo, a capability the Department of Defense decided to put in the ANG for several reasons.

Left: An EC-130J Commando Solo in flight. Below: A Pennsylvania ANG crew, including (l-r) MSgt. Aaron Harman, SMSgt. Frank Enterline (sitting), and SMSgt. James Pace, transmits a Voice of America broadcast to the people of Haiti during the US earthquake relief effort.



USAF photo by TSgt. Victoria Meyer

DOD needed institutional knowledge, less turnover, and a developed cadre of operators, Dickinson said. “It just fit better ... in the Air Guard.”

Since the Vietnam War, the 193rd SOW has performed admirably in a long list of military actions: in 1983, broadcasting signals into Grenada; in 1989, coordinating psychological operations against the Manuel Noriega regime; and in 1990 and 1991, helping serve as the “Voice of the Gulf” and broadcasting other programs to help urge the surrender of thousands of Iraqi soldiers prior to the liberation of Kuwait.

Many Unique Missions

Crews are uniquely trained for the mission, said Kovach, and with the wide range of systems on the aircraft, crew members must be able to work interchangeably.

“We send guys to tech school, then ... there are about 270 days of [initial qualification training], then a check ride,” he said of the process to qualify a systems operator for the several workstations inside the aircraft. This includes the mission systems officer, a sort of broadcast director for a given sortie, sitting by the back door.

It is a crowded space in the back of a Commando Solo, filled with banks of transmission equipment, monitors, amplifiers, and other broadcast gear one would normally associate with a major television network. “All of my operators are proficient in all the stations,” Kovach said, from TV to shortwave radio. “We try to get our operators as familiar as possible with our equipment. Most of these guys are here for most of their career. ... They’ve built up incredible knowledge.”

The Air Guardsmen of the 193rd SOW are often called into action on short notice to bring their tools to bear in missions with global implications.

In 1994, the Commando Solo played a crucial role in Operation Uphold Democracy, where a US-led coalition helped reinstate ousted Haitian President Jean-Bertrand Aristide. EC-130 aircraft helped broadcast messages from Aristide, leading to the downfall of the military junta and the slowing of refugees fleeing the country for the US.

Earlier this year, a detachment of three aircraft and more than 50 airmen from the wing returned to Haiti—deploying on Jan. 14, 2010, to Puerto Rico for Operation Unified Response, the recovery mission following the devastating 7.0-magnitude earthquake. The shock had knocked out



An aircrew readies a Commando Solo on the ramp in Puerto Rico for a 14-hour mission to Haiti earlier this year. The crew broadcast public service announcements and safety information to the people on the beleaguered island.

nearly all broadcasting capability on the island, and the need to get word out about relief operations was pressing. “We were [practically] the only game in town after the earthquake,” Kovach recalled.

“I remember we got a verbal deployment order the Friday after the earthquake, and we were on the way to Puerto Rico,” recalled Capt. Kathleen Pearson, a weapon systems officer with the 193rd SOW. Pearson, as the WSO, served as the broadcast director on sorties, coordinating with the crew, supervising the operation of broadcasts, and coordinating aerial refueling activities, among other tasks.

Running a real-time relay link with broadcasts of Voice of America updates and bulletins from the Haitian government, the EC-130J broadcast to the devastated island on AM and FM channels, on five different frequencies.

In the early going, there was a serious threat Toussaint Louverture Airport in Port-au-Prince would be swamped, and the operation was hanging by a thread. “We broadcast that if the airport was overwhelmed, relief operations could ground to a halt,” Kovach said.

“Thanks to our broadcasts, we were told, much of what was feared never came to pass.”

The 193rd SOW is at the tip of the military’s “psyops” spear, delivering message and information support for US operations around the world. The 4th Psychological Operations Group at Fort Bragg, N.C., the Army’s only active duty psyops unit, often develops messages and programs. Though there is no direct collaboration between the units, they have what wing officials call a “technological relationship”—as 193rd SOW aircraft and crews will visit Fort Bragg about twice a year to have exchanges, update Army personnel on

the aircraft’s transmission capabilities, and familiarize them with the systems.

Over the last few years, the Commando Solo’s secondary missions have been called upon as well, utilizing its unique capabilities for the purposes of electronic attack and information operations. In Southwest Asia, since 9/11, Commando Solo aircraft have been deployed for operations in both Iraq and Afghanistan—filling in capabilities similar to the EC-130 Compass Call electronic attack aircraft.

Now, it’s MISO

It doesn’t take much to get the reverse effect—you’re basically flipping a switch from transmit to jam, Kovach said.

The traditional mission of psychological operations got a facelift in June, when SOCOM and Pentagon leadership decided to change the term psychological operations to military information support operations (MISO). DOD wanted to build recognition and understanding of information and influence activities. MISO now describes everything intended to influence foreign audiences, according to department directives.

The change hasn’t affected much at the 193rd SOW, where officials note they simply deliver the messages, and only three of seven C-130s are Commando Solos.

The wing’s remaining four aircraft are C-130Js, and it is these aircraft that SOCOM is pressing into use more frequently.

By April of next year, the wing hopes to have tested a “plug-and-play” system for its C-130s, a palletized roll-on-and-off system giving the aircraft command and control tools, intelligence-surveillance-reconnaissance capability, and some limited MISO tools as a mission dictates, Weller said. “This is where our mission

flexibility comes in,” he said. The effort is much like SOCOM’s push to develop a modular gun package for its MC-130 special ops transports, to help meet the surging demand for gunships in theater.

The unit is involved with high-altitude, low-opening parachute jumps, airlift of special operations forces personnel, information operations, and other tasks, Kovach said. The wing’s last two deployments to Southwest Asia have been in support of electronic attack activities, normally performed by EC-130H Compass Call aircraft.

Many missions don’t call for a full Commando Solo, he added, which is why the wing is working on a concept called a “palletized-broadcast kit,” a modular element that could be installed on a regular C-130 and taken out as demand warrants.

“This is a quick reaction capability,” Pearson said. “Say you had a leaflet drop in the morning; you come back, the pallet rolls on with broadcast equipment, and later in the day you’re up and sending signals.”

Think of it as a “Mr. Potato Head approach” to the wing’s future missions and flexibility, Pearson added with a laugh.

Despite all of its overseas success, Commando Solo has yet to support domestic disaster response operations, but more than likely will in the future. The homeland defense capabilities of EC-130J began getting more attention after Hurricane Katrina devastated the Gulf Coast, wing officials noted. At the time, the 193rd was tasked with airlift but not MISO broadcasting.

Over the summer, an EC-130J participated in a disaster relief drill off the coast of New Jersey, testing the ability to put radio and TV back on the air after a hurricane, while coordinating with state officials and the Federal Emergency Management Agency. “We got some attention for that; people are finding out what we can do” in a homeland defense capacity, Kovach noted.

“We are stretching our resources,” and the Guard is finding ways to get more cost-effective, Dickinson said.

He added, without elaborating, that the future of the wing lies in exploring the growth of information operations, networks, and utilizing technology in new ways—beyond TV and radio messaging. “I think you’re going to see growth in the information operations area,” he said. Much of the detail on these types of missions remains classified, but “we are well-positioned to be a part of this,” he said. ■

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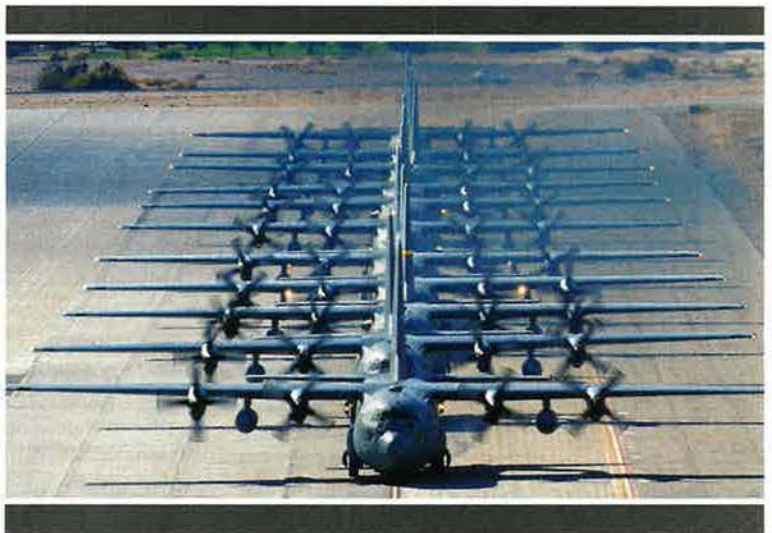
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For 30 minutes, James H. Howard single-handedly fought off marauding German fighters to defend the B-17s of 401st Bomb Group. For that, he received the Medal of Honor.

One-Man Air Force

By Rebecca Grant



Tuesday, Jan. 11, 1944, was a rough day for the B-17Gs of the 401st Bomb Group. It was their 14th mission, but the first one on which they took heavy losses—four aircraft missing in action after bombing Me 110 fighter production plants at Oschersleben and Halberstadt, Germany.

Turning for home, they witnessed an amazing sight: A single P-51 stayed with them for an incredible 30 minutes on egress, chasing off German fighters attempting to hack away at the bombers. A “one-man Air Force,” said Maj. Allison C. Brooks, group leader for the 401st’s mission.

Extraordinary valor was needed in the skies over Germany, as Eighth Air Force began its long-range attacks

on Nazi aircraft and fuel production. Devastating missions to targets such as Ploesti in Romania had already produced Medal of Honor recipients. Many were awarded posthumously, and nearly all went to bomber crewmen. Waist gunners, pilots, and navigators—all were carrying out heroic acts in the face of the enemy.

The lone P-51 pilot on this bombing run would, in fact, become the only fighter pilot awarded the Medal of Honor in World War II’s European Theater. “With utter disregard for his own safety, he immediately pressed home determined attacks,” the citation read in part.

In the teamwork environment of aerial combat, this was a rare example of one man braving enemy fire repeatedly to save others. “Who was that

Mustang pilot who took on the German Air Force single-handedly, and saved our 401st Bomb Group from disaster?” wondered Col. Harold Bowman, the unit’s commander.

Soon the bomber pilots knew—and so did those back home.

“Maj. James H. Howard was identified today as the lone United States fighter pilot who for more than 30 minutes fought off about 30 German fighters trying to attack Eighth Air Force B-17 formations returning from Oschersleben and Halberstadt in Germany,” reported the *New York Times* on Jan. 19, 1944.

Howard was a tall, quiet squadron commander from the 354th Fighter Group. He had a reputation for doing things his way. One reporter termed him “as American as the Jeep,” but the reality was more complicated. Howard was born in China, where his father,

a prominent eye surgeon, had spent several years on a university exchange. He left China at age 14 and finished high school in St. Louis before earning a degree at Pomona College in California. Lured away from medical studies by a Navy recruiter, he'd started his aviation career as Ensign Howard, flying Grumman F3F-2 fighters off the aircraft carrier USS *Enterprise*.

But impatient Howard had a yearning for adventure and combat. In 1941, he joined the American Volunteer Group, better known as the Flying Tigers, and journeyed back to China. Howard took quickly to AVG head Claire L. Chennault, particularly for P-40 fighter tactics. In January 1942, he became an ace, "an arbitrary title which is supposed to distinguish a fighter pilot who has achieved a high level of success," he wrote in his 1991 autobiography, *Roar of the Tiger*.

Under Chennault, Howard also demonstrated leadership qualities, rising to become a squadron commander, then group operations officer and head of the AVG's confirmation board, which officially credited pilots with their proven kills of Japanese aircraft. Fourteen months of action also left him with a debilitating case of dengue fever. He turned down a direct commission in the US Army Air Forces when the AVG disbanded and headed home to St. Louis to recuperate for the remainder of 1942.

Offers of flying jobs from both the Navy and Army awaited him there. Eventually Howard traveled out to see old Navy friends at North Island, in San Diego, Calif. Cold-shouldered by an officious Navy base commander, Howard revolted and accepted the Army's commission offer.

Within weeks he was at Muroc Dry Lake (now Edwards AFB, Calif.) flying the P-38, though he was leery of the aircraft. "There were so many problems with the P-38, it was cynically called the engineer's dream—as opposed to a pilot's dream," he recalled.

A Pilot's Dream

Howard was happier back in the P-47 with Fourth Air Force. He rose quickly to squadron command, and the summer of 1943 found him preparing a new squadron for assignment to Europe.

The bomber offensive in the winter of 1943 to 1944 was at its peak. In August, the massed missions to Schweinfurt and Regensburg had claimed horrific losses.

Eighth Air Force, in the fall of 1943, either confined itself to targets in France and the Low Countries within the combat radius of the fighters, or took the losses for deep attacks, as at Schweinfurt. With attrition often greater than 10 percent, the deep strike missions could not be sustained unless something changed.

There was only so much the fighter pilots could do. Lacking range, the P-47s and P-38s could only provide limited assistance to the bombers. The Luftwaffe was still at full strength. Not until March 1944 did the shortages in aviation gas and trained pilots begin to seriously affect the Luftwaffe. The last three months of 1943 saw the German Air Force fighter pilots holding a slight edge as they struggled desperately to defend German industry against daylight bombing.

"All the German fighters had to do was to wait until the last escort fighters turned back and then pounce on the bombers," Howard summed up.

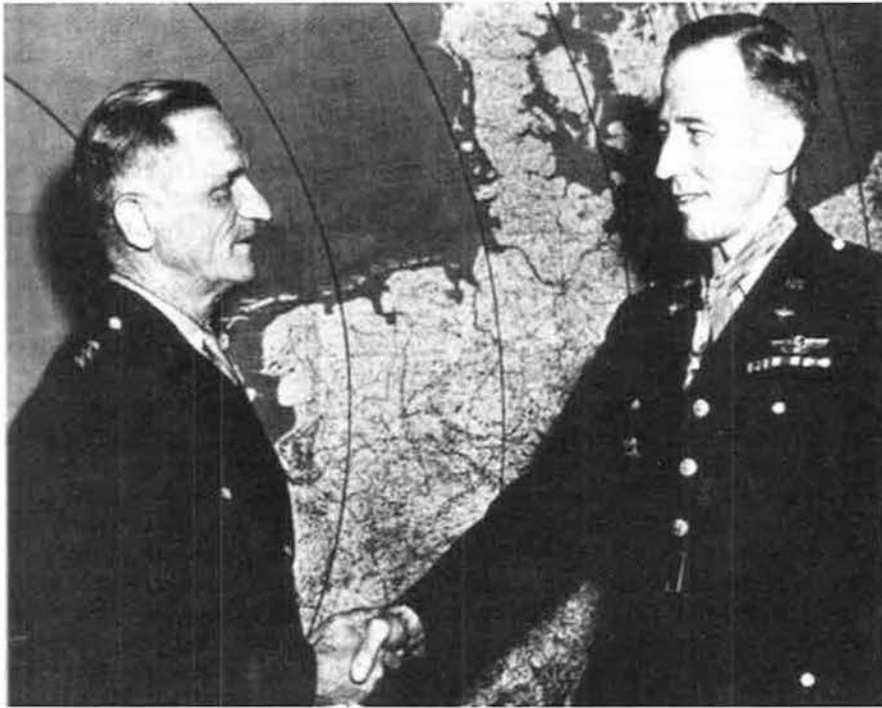
Howard was stepping in to a brand-new mission—long-range fighter escort—when the 354th arrived in England. Arriving with no inkling of what aircraft they would operate, the pilots were delighted to learn they'd be the first unit assigned to Ninth Air Force to fly the P-51B Mustang.

"All of the advance rumors of the P-51's excellence proved true," said Howard. "It was a fighter pilot's dream."

The P-51B Mustangs, with improved Merlin engines and extra fuel capacity, began to arrive in England in late 1943.

Left: Howard in his P-51, dubbed Ding Hao! (Chinese for "Very Good"). Below: A German fighter attacks a damaged B-17 over Bremen in December 1943.





Lt. Gen. Carl Spaatz (left) presented the Medal of Honor to Howard in London in June 1944.

With drop tanks, the combat radius of the P-51B exceeded 880 miles. These “little friends” could fly from England to rendezvous with bomber formations over their targets deep in Germany, and help bring them home.

“The only limitation of the P-51, if you could call it one, was the pilot,” said Howard. Six-hour missions and the multitasking demands of flying, navigating, and tuning out German radar and jamming could be a strain.

Air tactics were about to change. With P-51s, fighter cover could be provided over the target as well as on ingress and egress. The relatively small numbers of P-51Bs in theater were responsible for validating the disputed theory that long-range fighters could give cover to bombers at long distances from their bases. To Howard, the extra fuel of the P-51B answered the need, and none questioned the Mustang’s superior aerodynamic performance.

The purpose of the Mustang was to defend what fighter pilots called “big friends”: the B-17 Flying Fortresses and B-24 Liberators.

Dispatching hundreds of bombers to targets deep in Germany was no easy task.

Bombers flew in formations, staggered lead, middle, and rear by distance, and stacked low and high by altitude. In formation, the main pre-occupation of the B-17 gunners was spotting enemy fighters. Bomber crews

started scanning the skies as soon as they crossed the English Channel. Fighters assisted the formations in relays, with groups covering assigned sections of the route. The fast silver flash of P-47s was a welcome sight, meaning relief from the incessant attacks was at hand.

The bomber escort mission was not like the wild flying Howard knew from his days in China. Air discipline was everything. “If you’re out hound-dogging it alone, you’re asking for it because a formation of [Me] 109s who’ve spotted you from above will certainly make mincemeat of you,” Howard told his pilots.

500 German Fighters

As 1944 began, the Luftwaffe was throwing everything it had at Allied bombers. Bombers faced lethal layers: Fighters on the way in, flak over the target, then more fighters on the way out. Lead formations took the onslaught, and low bomber boxes in rear formations earned the nickname “Purple Heart Corner.” Sprays of .50-caliber fire from bombers in formation could sometimes drive off German fighters, sometimes not. If the bombers closed up tight for mass protection, Ju 88s stood off at 1,000 yards or more, out of B-17 gun range, and lobbed in rockets.

Egress from the target was especially dangerous, with German fighter control

fully alerted and formations by now struggling to stay together. The favorite prey of Luftwaffe pilots was a lone bomber that broke from the formation, perhaps crippled by flak or flying too slow, with a feathered engine.

The “best place to find German fighters was in the vicinity of struggling Forts—they were like honey to the bee,” observed Howard.

Howard’s 354th Fighter Group was tutored by the legendary Lt. Col. Donald J. M. Blakeslee. They learned to rendezvous with the bomber streams at 22,000 feet and got experience with missions to targets such as Kiel and Bremen, Germany. Howard found his 60 combat hours with the Flying Tigers served him well.

By early December, Blakeslee deemed the 354th ready to operate on its own. Under the system of rotating combat operations leads used by bomber and fighter groups, Howard and group commander Col. Kenneth R. Martin took turns as combat lead.

Howard’s experience was about to be tested as the new P-51Bs allowed Eighth Air Force to resume deep strikes on Germany industry. The mission to Oschersleben and Halberstadt—about 100 miles southwest of Berlin—was a return to the long-range bombing of aircraft production plants so vital to the Allied strategy.

Gaining air superiority was the precondition for an invasion of France, and the Luftwaffe fighters had to be whittled down. Targets included the A.G.O Flugzeugwerke, the principal center of FW 190 fighter production after the Marienburg plant had been destroyed in October, and the Junkers plant at Halberstadt, manufacturing wings for Ju 88s, according to the Army Air Forces’ official history.

Eighth Air Force sent up 525 B-17s and 138 B-24s to hit the aviation targets near Oschersleben and Halberstadt on Jan. 11, 1944—of which 60 would not return.

The plan called for P-47s to escort in and P-51s to pick up support over the target, while fresh P-47s met the formation on its return. But deteriorating winter weather in England led to a recall order, which some P-47s obeyed.

Flying in the bomber stream that day was a group embarking on its 14th combat mission. Combat operations for the 401st Bomb Group began on Nov. 26, 1943. So far, they’d lost only one aircraft in combat, to flak on Dec. 30. Oschersleben would change this.

On that day, Luftwaffe fighters put up the stiffest battle since Schweinfurt and Regensburg. The German pilots had also updated their tactics. Belly tanks enabled German fighters to wait out the P-47 and P-38 relays, then commence large attacks on the relatively unprotected AAF formations.

Howard's 354th Fighter Group launched 49 P-51s and planned to split up to meet the bombers at both target areas. Flying in over the Netherlands, the whine in their radio headsets indicated German radar had acquired them. Howard was combat lead, so he vectored off a few two-ship elements to tackle fighters en route, but pressed his main force toward the rendezvous with the bombers.

The bombers had completed their target runs and were already in trouble when Howard spotted them. "As we reached the bomber stream, I discovered it was under intense attack by dozens of enemy fighters," Howard recalled.

Eighth Air Force headquarters estimated 500 German fighters were swarming the bombers.

Howard sent his two other squadron commanders to the middle and rear formations, where they'd break out flights to cover the bomber boxes. He took his own squadron to the head of the stream.

Suddenly an Me 110 moved up right in front of Howard and headed for the lead B-17s. "I waited until his wingspan filled my gun sight and opened up with a four-second burst," said Howard. The Me 110 began smoking, dove, and its wings split off. He then raked an Me 109 headed the same way. Next an FW 190 crossed his path. Howard took off after it, only to see the German pilot bail out.

Now Howard was alone. His wingman had filtered back to the rear bomber groups, and Howard was preparing to do the same. Then he noticed the bomber group he was protecting "seemed to have more than its share of enemy fighters," so he decided "to stick around."

Howard throttled back to stay even with the slower cruising speed of the bombers. He kept well away from the waist and turret gunners who were still new to distinguishing the Mustang's silhouette from that of the Me 109. For a moment, he was close enough to see the faces of the pilots of one of the 401st's B-17s.

Soon, more fighters came. Howard gunned his engine and fired at an Me 110, which was soon smoking toward

Earth. "It wasn't long before I saw another Me 109 tooling up behind the formation," said Howard. The Me 109 spotted Howard and dove, but Howard chased and fired, pulling up 3,000 feet later, after the Me 109's smoke turned into a steady column. In came another Me 109 from the side, and Howard dove again.

Too much gravity pressure had jammed the ammunition feed to all but one of his guns. Howard thought he'd been with the bombers for 30 minutes, but was disappointed there were still enemy aircraft around.

Excitement Filled the Room

Heading in to the bombers was a twin-engine Ju 88. "I decided to bluff my way by making feints in their direction to scare them off," he recalled. He drove off the Ju 88, but it climbed up again. Several times more, he batted off the same Ju 88. Soon, things quieted down. Seeing no more fighters, Howard waggled his wings, collected three stray P-51s, and headed back to his base at Boxted, England.

"When our bomber crews landed, a high-pitched excitement filled the briefing room," recalled 401st Bomb Group commander Bowman. Debriefings yielded 16 accounts from 401st crews about the actions of the lone P-51.

Brooks had led the 401st that day. "He was all over the wing, across it and around it," Brooks reported. "For sheer determination and guts, it was the greatest exhibition I'd ever seen."

Bowman collected the debriefings and sent them to Maj. Gen. Jimmy Doolittle at Eighth Air Force headquarters. Meanwhile, Howard had filled out his report of kills and probable kills. Crews unloaded the film of his mission from the wing-mounted gun camera, standard on all fighters, and sent it up to headquarters for processing.

Headquarters narrowed the possible identity down to two pilots, finally naming Howard.

Howard was credited with four kills for the day. It was time to take the wraps off the secret of the P-51B and its long-range prowess. Good news stories of the air war were few and far between, and the tale of the "lone wolf" P-51 was genuine gold. Howard

soon found himself in front of 100 war correspondents, recounting the mission. They were awed—he was not.

One reporter asked why he'd risked his neck. "I fixed my eyes on the simpleminded questioner and replied facetiously, 'I seen my duty and I done it.'" Of course, this was the headline.

Less than two weeks later, Howard was back from a brief London leave and leading fighter escort for a mission to Frankfurt. Eighth Air Force plunged into Big Week, a series of massed bombing raids on German industrial targets. Spring found them switching to missions against targets in France and Germany to hinder German response to the upcoming invasion of Normandy.

The fate of the individual 401st Bomb Group crews that marveled at Howard that day put the brutal dangers of the air war in perspective. Of the 25 crews from the 401st Bomb Group that survived Jan. 11, eight were lost before the June 6, 1944, Normandy landings. German fighters destroyed six, with two more lost to flak.

Capt. R. W. Beers' B-17 went down over Frankfurt on Jan. 29.

German fighters again claimed B-17Gs from the 401st over Leipzig on Feb. 20, Frankfurt again on March 2, Marienburg on April 9, Oschersleben again in May, and at Dessau on May 28.

Some crew members bailed out and were taken prisoner, but many were killed in action.

Howard himself went on to fly more missions and help plan close air support for the Normandy landings. He was promoted to colonel in 1945 and retired from the Air Force Reserve in 1966 as a brigadier general. After the war, he founded a defense systems engineering corporation working on the Navy Polaris program and later merged it with Control Data Corp.

Jan. 11, 1944, was not forgotten, though. The 401st Bomb Group received a Presidential Unit Citation for its mission, and unit histories after the war called that mission "one of the greatest air battles of World War II."

"War is not a feast of excitement, but a series of cruel episodes that do not always end in glory," Howard concluded 50 years later. He died on March 18, 1995, at the age of 81. ■

Rebecca Grant is president of IRIS Independent Research. She has written extensively on airpower and serves as director, Mitchell Institute, for AFA. Her most recent articles for Air Force Magazine are "Omar Bradley's View of Airpower," in the October issue, and "Airpower Over Water," p. 52.

OUTSTANDING AIRMEN OF THE YEAR



SSGT. JOSEPH R. ATON

Tactical Air Control Party
11th Air Support Operations Squadron (Air Combat Command)
Fort Hood, Tex.

Home of Record: Roseville, Calif.

Directed aircraft delivery of 27,000 pounds of weapons to support 60 troops-in-contact actions and killed 42 enemy forces, during 180-day deployment to a remote forward operating base in Afghanistan. ... Determined origin of enemy fires, exposing his position, to enable precise close air support (CAS) strikes. ... Controlled simultaneously B-1 and MQ-1 aircraft while tracking eight individuals emplacing improvised explosive devices (IEDs), resulting in all insurgents being neutralized. ... Prepared a response team and controlled an AC-130 gunship during a successful rescue of an isolated soldier. ... Led recovery team digging out a soldier trapped in building collapse, saving five lives and ensuring evacuation of wounded. ... Created 10 hours of CAS courseware, helping instruct dozens of Army joint fires officers.

SSGT. ZULLY M. BIRKBECK (FORMERLY RENON)

Financial Management Journeyman
56th Comptroller Sq. (Air Education and Training Command)
Luke AFB, Ariz.

Home of Record: Lazaro Cardenas, Mexico

Instrumental to the \$134 million operations and maintenance budget program execution at Luke Air Force Base. ... Selected as Air Force Financial Management Airman of the Year for 2009. ... Oversaw \$26 million in funding and helped provide contingency operations financial guidance during deployment to Central Command theater of operations. ... Certified 117 documents—error free—worth about \$19 million. ... Trained other airmen on new way to handle unsettled orders, cutting the list by 95 percent in three months and prompting CENTCOM-wide adoption of her strategy. ... Worked on teaming with vendors outside the wire, speeding delivery of supplies from two months to just one week.



TSGT. ANTHONY G. GRAHAM

Flight Line Production Expeditor
18th Aircraft Maintenance Unit (Pacific Air Forces)
Eielson AFB, Alaska

Home of Record: Tellico Plains, Tenn.

Led maintenance on USAF's oldest active duty F-16s, overseeing 4,056 scheduled maintenance actions and 230 repairs. ... Guided 38 maintainers who generated 2,892 sorties and 5,026 flight hours to complete wing's annual flying hour program. ... Supervised 55 airmen and 15 aircraft for a Red Flag exercise that produced 247 sorties and verified combat skills of more than 20 pilots. ... Created cannibalization procedures and targeted 56 tasks and 12 high-fail areas which increased on-time aircraft maintenance to 93 percent. ... Readied his organization for a 10-aircraft, multisite deployment with 100 passengers and 41 short tons of cargo that met all maintenance metrics over the course of 245 sorties.





The Air Force Outstanding Airman program annually recognizes 12 enlisted members for superior leadership, job performance, community involvement, and personal achievements.

The program was initiated at the Air Force Association's 10th annual National Convention, held in New Orleans in 1956. The selection board comprises the Chief Master Sergeant of the Air Force and the command chief master sergeants from each USAF major command. The selections are reviewed by the Air Force Chief of Staff.

The 12 selectees are awarded the Outstanding Airman of the Year Ribbon with the bronze service star device and wear the Outstanding Airman badge for one year.



SSGT. ROBERT GUTIERREZ JR.

Combat Control Craftsman
21st Special Tactics Sq. (Air Force Special Operations Command)
Pope AFB, N.C.

Home of Record: Chula Vista, Calif.

Directed and controlled more than 40 CAS strikes and strafing runs while under intense enemy fire against a well-trained insurgent force estimated to be 200 strong. ... Controlled air strikes and medical evacuations that eventually led to the successful extraction of all team members and casualties. ... Served 90 days in western Afghanistan before being wounded in the chest during a battle with Taliban forces. ... Continued in action, killing his attacker and directing CAS strikes within 30 meters of his location. ... Curtailed convalescent leave to serve as a joint terminal attack controller (JTAC) instructor.

SMSGT. STEVEN HIGGINS

Wing Inspections, Readiness, and Exercises Superintendent
48th Fighter Wing (US Air Forces in Europe)
RAF Lakenheath, England

Home of Record: San Francisco

Deployed to Iraq for six months as a counter radio-controlled IED electronic warfare instructor, serving as the electronic warfare senior enlisted leader with an Army unit. ... Led 52 field site electronic warfare technicians. ... Commanded 10 outside-the-wire missions. ... Helped ensure more than a hundred soldiers were mission ready again in less than 24 hours after a convoy attack. ... Found and cleared 110 RCIEDs. ... Executed more than 300 system precombat checks, identifying and replacing 50 faulty systems that protected 200 vehicles and 700 people. ... Oversaw more than 300 maintenance actions and 131 threat updates.



TSGT. STEPHEN R. HUNTER JR.

Explosive Ordnance Disposal Craftsman
944th Civil Engineer Sq. (Air Force Reserve Command)
Luke AFB, Ariz.

Home of Record: St. Petersburg, Fla.

Completed 107 combat missions, destroying 29 IEDs and clearing 3,000 kilometers of critical supply routes while on a short-notice mobilization—his second six-month deployment to Iraq. ... Volunteered to help manpower-strapped active duty counterpart squadron, training seven regular Air Force counterparts and certifying explosive ordnance disposal (EOD) technicians on vital range tasks and critical war skills. ... Swept 70,000-plus acres of Goldwater Range, disposing of more than 4,000 items of unexploded ordnance and recycling 548 tons of scrap metal. ... Considered a top tactical range operations EOD instructor. ... Developed an inventory system that achieved 100 percent accountability and doubled user productivity.



MSGT. JAMES P. MOGREN

Security Forces Craftsman
72nd Security Forces Sq. (Air Force Materiel Command)
Tinker AFB, Okla.
Home of Record: Wheatridge, Colo.

Provided command and control after explosive device detonation on deployment to a provincial reconstruction team in Afghanistan. ... Maintained security and aided the injured, resulting in award of Bronze Star Medal. ... Led security operations for 95 convoys that enabled quality assessments on 27 projects valued at \$3.2 million. ... Planned and executed numerous joint missions with coalition forces, including working with French forces to secure volatile valleys in the area. ... Conducted 60 critical meetings with Afghan government officials, building trust and teamwork that impacted daily lives of some 350,000 people. ... Supervised 13 humanitarian assistance actions that delivered 20,000 tons of aid to 3,600 Afghan families. ... Detailed security specifications for construction projects, working to NATO standards.



SRA. CHERYL A. MOORE

Multisource Analyst
8th Intelligence Sq. (Air Force Intelligence, Surveillance, Reconnaissance Agency)
JB Pearl Harbor-Hickam, Hawaii
Home of Record: Portland, Ore.

Earned one of only two instructor rated officer certifications given so far in USAF for the multisource analyst position. ... Analyzed Predator video, enabling compound Hellfire strikes on enemy forces in CENTCOM theater of operations. ... Warned combat units of imminent threats and protected forces against snipers, IEDs, and ambushes. ... Worked outside her specialty and excelled in combat with minimal training or supervision. ... Led intelligence fusion for 120 remotely piloted aircraft missions with 1,300 hours on target giving critical situational awareness for 240 combat operations. ... Instructed nine analysts on innovative exploitation techniques, increasing ISR reporting in-theater by 23 percent.

SRA. RYAN D. PFEIFER

Security Forces Journeyman
791st Missile Security Forces Sq. (Air Force Global Strike Command)
Minot AFB, N.D.
Home of Record: Aurora, Colo.

Executed three emergency deviations to convoy routes, enabling forward units to meet convoy commander's intent and uphold nuclear weapons security. ... Improved convoy briefing creation and distribution process, saving two hours on each convoy and more than 200 man-hours annually. ... Served as a heavy weapons team leader for 120 convoys, up 50 percent from the previous year's total and all conducted without incident. ... Led security teams for 49 nuclear system movements. ... Performed 72 hours as a security escort team leader for increased mission operations, allowing three missile sequence code changes to be accomplished without delay. ... Selected to aid group conducting nuclear systems route vulnerability study, helping verify and mitigate 300 routes.



A1C SAMUEL A. SIEWERT

Fire Protection Journeyman
437th Civil Engineer Sq. (Air Mobility Command)
JB Charleston, S.C.

Home of Record: Oconomowoc, Wis.

Extracted a cardiac arrest patient from a civilian aircraft, enabling first responders to revive the patient and save his life. ... Recognized immediately that a routine medical call was in fact a suicide attempt, providing correct care for patient survival. ... Applied advanced life-saving techniques to twice revive a patient who had been ejected from a car. ... Recalled to duty to help battle a raging fire in military housing, following up by helping the victim with relocation. ... Rescued an individual pinned by two cars, stabilizing a broken leg and treating internal injuries—patient recovered. ... Controlled a C-17 aircraft fire to the point of origin, securing a pathway for 13 individuals on board and helping save a multimillion dollar aircraft.



MSGT. SARAH A. SPARKS

Supply Manager
Hq. Logistics, Installation, and Support Division (Air Force Space Command)
Peterson AFB, Colo.

Home of Record: Taos, N.M.

Served one-year deployment as a logistics advisor for the Afghan National Security Forces, advising the Afghan two-star logistics and materiel readiness director and synchronizing efforts across the Ministry of Defense. ... Led 225 convoys and ensured safety of 1,400 passengers along 1,600 miles with no mishaps. ... Managed Afghan National Army (ANA) depot capability for 134,000 soldiers, 11,000 weapons, a \$350 million vehicle fleet, and \$65 million worth of radio equipment. ... Spearheaded a total review of national Afghan logistics policies and procedures, slashing expected rewrite time from 18 months to four months. ... Facilitated \$13.7 million supply warehouse upgrade at ANA national depot. ... Led Air Force Global Logistics Supply Center review for AFSPC, identifying and resolving nine critical and six major logistics concerns.

SSGT. KENNETH I. WALKER III

Tactical Air Control Party Journeyman
116th ASOS (Air National Guard)
Camp Murray, Wash.

Home of Record: El Paso, Tex.

Supported four JTACs at five forward operating bases, working with the Army's 3rd Brigade Combat Team, on his fifth deployment to CENTCOM theater of operations. ... Led CAS missions for nine named operations. ... Spent more than 135 hours on combat patrols. ... Directed 18 precision strikes, employing more than 48,000 pounds of ordnance. ... Controlled more than 1,600 rounds of ordnance during 88 troops-in-contact situations, inflicting 33 enemy kills. ... Directed strikes and returned small-arms fire, saving numerous US and coalition lives, after dismounting a vehicle struck by a rocket-propelled grenade. ... Led CAS missions during a 40-hour firefight, destroying an enemy bunker and saving some 200 coalition forces. ... Provided armed CAS overwatch for a critical medical outreach mission, ensuring safety of more than 100 local nationals and helping build indigenous support. ... Spearheaded CAS support for an eight-hour search mission, neutralizing the enemy threat and providing safe passage for some 100 US and Afghan forces.





Air Force Association **National**



Convention 2010

By Aaron Church, Associate Editor



A crowd of nearly 6,000 attendees packed September's Air Force Association Air & Space Conference and Technology Exposition, which featured a wide range of speakers, presentations, and exhibits from industry and USAF leadership.

The conference took place Sept. 13-15, again at the Gaylord National Resort and Convention Center, located just outside Washington, D.C., at National Harbor, Md. The roomy venue offered space for an expanded array of presentations—nearly 22 percent more than last year. The accompanying technology exposition also covered more floor space than the previous year.

Chief of Staff Gen. Norton A. Schwartz opened the conference Monday morning, Sept. 13, and was joined by Air Force Secretary Michael B. Donley to present some of AFA's Citations of Honor, Individual, Crew, Team, Air National Guard, Reserve, and other awards.

For the sixth year, 350 students from the Air Command and Staff College, Maxwell AFB, Ala., attended the conference and technology exposition, thanks again to the generous support of Boeing. Students and visitors alike enjoyed the conference's 45 briefings, presentations, and professional development seminars, as well as the exhibition hall's 124 corporate and military technology displays. The Air & Space Conference and Technology Exposition attracted some 80 reporters. More than 60 Air Force public affairs staff attended the event as well.

Early Sunday morning, Sept. 12, association members joined family and friends for a memorial service honoring fallen AFA members. Usually held at the Air Force Memorial, this year's service took place at the Gaylord, due to inclement weather. AFA National Chaplain Donald J. Harlin delivered the homily, with Donley, CMSAF James A. Roy, and AFA Chairman of the Board Joseph E. Sutter laying the memorial wreath. The Memorial Tribute listing the names of the departed was read by Sutter; James R. Lauducci, Vice Chair-

Air Force Chief of Staff Gen. Norton Schwartz delivers an Air Force update to the delegates and guests at AFA's Air & Space Conference and Technology Exposition.

Photo by Chris Cross



in Congress, and toured the Pentagon and other national sites throughout the week.

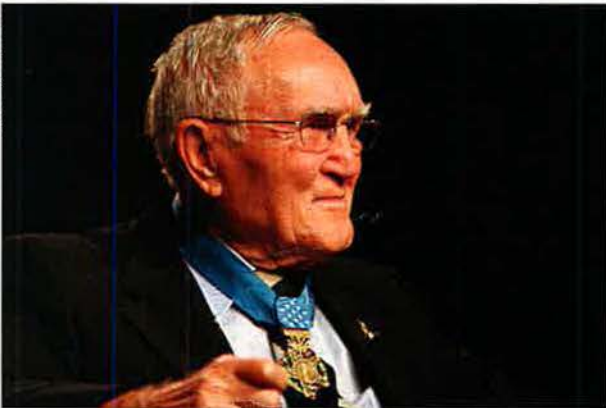
The Air Force Anniversary Dinner, sponsored by Lockheed Martin, was held Sept. 15, saluting the contributions of AFA members and of leaders in the aerospace community. Dinner guests were treated to entertainment by Frank Busso Music, and Patrick Coulter was master of ceremonies for the evening's awards and events. Honorees at the dinner included:

- Lt. Gen. David A. Deptula, deputy chief of staff, intelligence, surveillance, and reconnaissance, who received the H. H. Arnold Award, recognizing the year's most significant contribution to national

man of the Board for Field Operations; and S. Sanford Schlitt, Vice Chairman of the Board for Aerospace Education.

AFA celebrated the Air Force's "Golden Dozen"—the 12 Outstanding Airmen of the Year—with an evening soiree Sept. 13. One of the 12, SSgt. Kenneth I. Walker III, received the Bronze Star Medal with Valor Device during the conference. The reception was sponsored by Northrop Grumman.

Gen. Carrol H. Chandler, Air Force Vice Chief of Staff, addressed the airmen and guests. Roy served as master of ceremonies, and the United States Air Force band provided musical entertainment. Supported by ATK Corp., the Outstanding Airmen of the Year visited the White House, met their Representatives



Top: Air Force Secretary Michael Donley meets SSgt. Robert Gutierrez Jr. and his wife, Julie, during a reception for the 12 Outstanding Airmen of the Year. **Center:** Incoming Chairman of the Board S. Sanford Schlitt addresses conferees. **Clockwise from top left** are the three USAF Medal of Honor recipients who participated in a panel discussion: retired Col. George Day, retired Col. Leo Thorsness, and retired Col. Joe Jackson.



Left: Mitchell Institute Director Rebecca Grant (l), retired Lt. Gen. Robert Elder Jr. (c), and Mark Gunzinger of the Center for Strategic and Budgetary Assessments, formed a panel on long-range strike. Center: Christina Olds, daughter of legendary USAF ace Robin Olds, speaks with an Embry-Riddle University cadet at her book display. Bottom: Brig. Gen. Everett Thomas, commander of the USAF Nuclear Weapons Center, joined a panel on the nuclear enterprise.

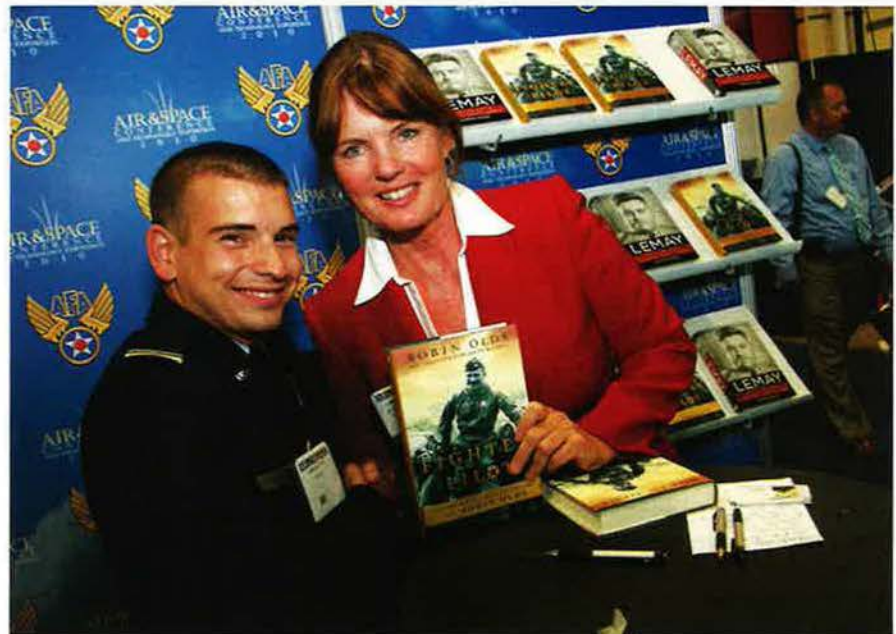
security by a member of the military.

■ John J. Hamre, president and chief executive officer, Center for Strategic & International Studies, who received the W. Stuart Symington Award, recognizing the year's top contribution by a civilian in the field of national defense.

■ Raytheon, receiving the John R. Alison Award for the top industrial contribution to national defense.

■ *USA TODAY*, presented with the AFA Chairman's Aerospace Education Award, for its long-term commitment to aerospace education.

■ The Women Airforce Service Pilots (WASPs); retired Col. Walter J. Boyne, author and former director of the Smithsonian National Air and Space Museum; Andrew W. Marshall, director of the DOD Office of Net Assessment; and retired Gen. Lawrence A. Skantze,



former commander of Air Force Systems Command, all receiving AFA Lifetime Achievement Awards.

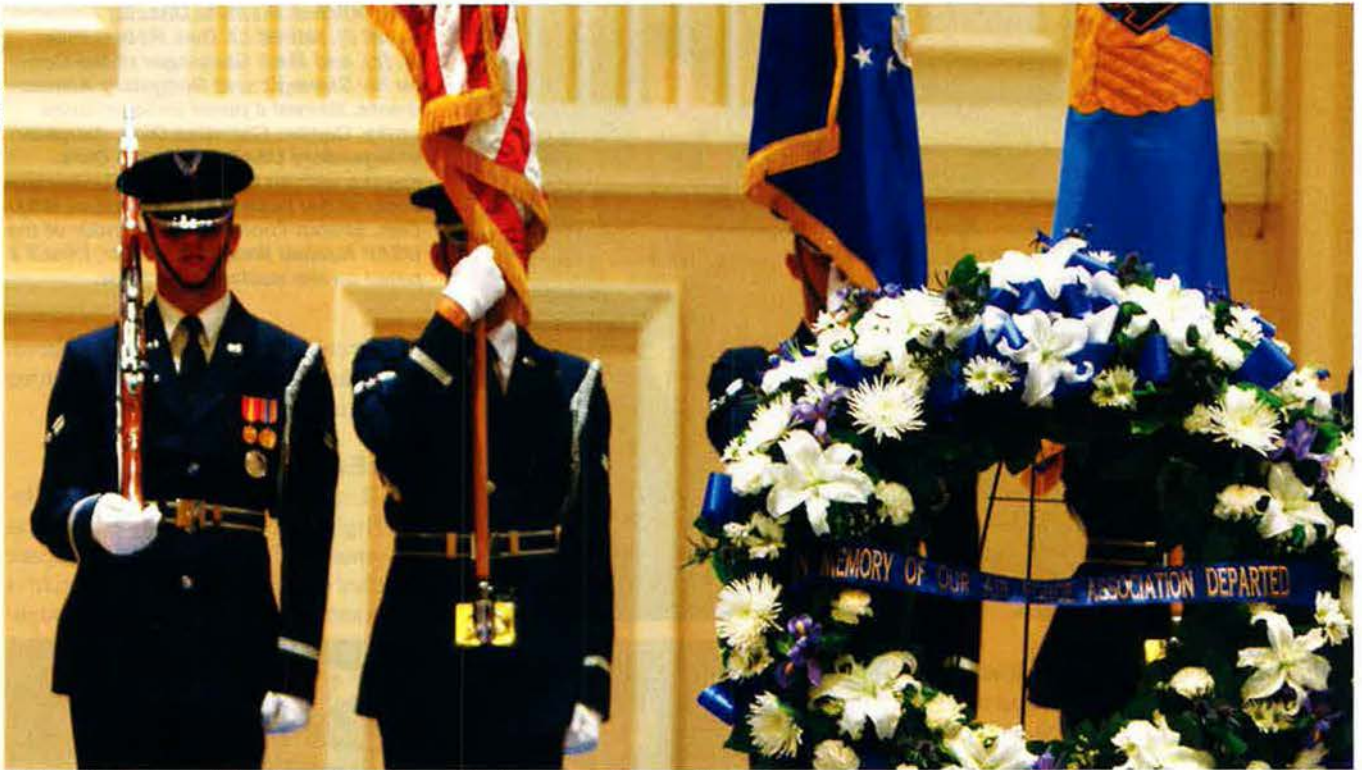
AFA Education Award

Allen Robnett, a teacher at Gallatin High School, Gallatin, Tenn., was presented AFA's National Aerospace Teacher of the Year award. The prize is given annually to an elementary-through-

high school teacher for excellence in encouraging students in science, technology, engineering, and mathematics.

Air Force Leaders Attending

The conference was well-attended by top Air Force leaders and decision-makers. Among those making speeches or presentations were Donley, Schwartz, Deptula, Roy, and Gen. Roger A. Brady, commander, US Air Forces in Europe; Gen. Kevin P. Chilton, commander, US Strategic Command; Gen. William M. Fraser III, commander, Air Combat Command; Gen. Donald J. Hoffman, commander, Air Force Materiel Command; Gen. Raymond E. Johns Jr., commander, Air Mobility Command; Gen. C. Robert Kehler, commander, Air Force Space Command; Gen. Stephen



A USAF color guard stands at attention during the memorial wreath-laying ceremony, which honors those who have died during the year.

R. Lorenz, commander, Air Education and Training Command; Gen. Craig R. McKinley, chief, National Guard Bureau; Gen. Duncan J. McNabb, commander, US Transportation Command; Gen. Gary L. North, commander, Pacific Air Forces; Lt. Gen. Donald C. Wurster, commander, Air Force Special Operations Command; Lt. Gen. Frank G. Klotz, commander, Air Force Global Strike Command; Lt. Gen. Charles E. Stenner Jr., commander, Air Force Reserve Command; Lt. Gen. Harry M. Wyatt II, director, Air National Guard; Maj. Gen. C. Donald Alston, commander, 20th Air Force; Maj. Gen. Floyd L. Carpenter, commander, 8th Air Force; Maj. Gen. William A. Chambers, assistant chief of staff, strategic deterrence and nuclear integration; and Brig. Gen. Everett H. Thomas, commander, Air Force Nuclear Weapons Center.

Election of AFA Officers

S. Sanford Schlitt, Sarasota, Fla., was elected for a first term as Chairman of the Board. Justin M. Faiferlick, Fort Dodge, Iowa, was elected for a first term as Vice Chairman of the Board, Field Operations. George K. Muellner, Huntington Beach, Calif., was elected for a first term as Vice Chairman of the Board, Aerospace Education. Joan Sell, Colorado Springs, Colo., was re-elected AFA National Secretary for a second term. Leonard R. Vernamon, Clinton,

Miss., was elected AFA National Treasurer for a first term.

Other AFA Elections

John Timothy Brock, Oviedo, Fla., and Angela Dupont, Haverhill, Mass., were elected Directors at Large, and Marvin L. Tooman, West Des Moines, Iowa, was elected National Director, Central Region. William R. Grider was elected Great Lakes Region President. Mike Cook was elected Midwest Region President. Eric P. Taylor was elected Northeast Region President. Rick Sine was elected Northwest Region President. Thomas Gwaltney was elected South Central Region President. David A.

Klinkicht was elected Southeast Region President.

AFA Business

Registered delegates numbered 237, representing 42 states and the District of Columbia, at this year's AFA National Convention, Sept. 11-12.

Briefings were given on the topics of the AFA CyberPatriot program, the Arnold Air Society and Silver Wings STEM (Science, Technology, Engineering, and Mathematics) Orientation Program, and the 2011-15 AFA Strategic Plan. Delegates heard a recorded message by the co-chairman of the House Air Force Caucus, Rep. Clifford Stearns (R-Fla.).



Vice Adm. William Gortney, director of the Joint Staff, gave the keynote address. "In joint doctrine, balance permeates everything," said Gortney.



Left: Justin Faiferlick was elected for a first term as Vice President, Field Operations. Below: George Muellner, who was elected for a first term as Vice Chairman of the Board, Aerospace Education, speaks with Gen. Donald Hoffman, head of Air Force Materiel Command. Bottom: Schlitt congratulates Angela Dupont on being elected as an AFA Director at Large. Three new National Directors and six new Region Presidents were elected.

AFA status report briefs were delivered by Sutter, Lauducci, and Treasurer Steven R. Lundgren.

Delegates approved a field resolution, submitted by the Midwest Region, which launched an ad hoc study by the Chairman of the Board into decoupling AFA's National Convention from the Air & Space Conference. The study will investigate the potential to move the convention to a venue more centrally located, better facilitating broad attendance by delegates in the future.

AFA's 2011 Statement of Policy and Top Issues was reviewed and unanimously approved, as modified.

The Air Force's Air National Guard Council, Company Grade Officers Council, Enlisted Council, and Reserve Advisory Council held meetings.

Acknowledgments

The Air Force Association thanks supporting partners Boeing, Lockheed



Martin, Northrop Grumman, Alenia North America, ATK, BAE Systems, EADS North America, Elbit Systems of America, L-3 Communications, In-Space 21, SES World Skies, Bombardier, Dell, and IBM for making this year's conference possible.

AFA National Convention parliamentarian was Joan L. Blankenship. Inspectors of elections were James



F. Diehl, Chairman; Kent D. Owsley; and Ronald L. Garcia. Mary J. Mayer chaired the Credentials Committee, serving with Dee Cox and Joyce W. Feuerstein.

The Air Force Association is indebted to the work of its volunteers assisting the staff throughout the convention and conference: Lt. Col. Dan Twomey, Capt. Bob Wray, MSgt. Jessica Slaughter, TSgt. Stephen Preisch, SSgt. Corenthia Fennell, SSgt. Victoria Herron, SSgt. John Kowalczyk, Sgt. Jonathon Hays, SrA. Shanara Greiner, SrA. Giovannachastine Mendoza, SrA. Lakearea L. Toney, Patrick Coulter, Loren Farnam, Paul Griffith, Debbie Snyder, Charlie Tippet, and Leola Wall. ■



Air Force Association **Top Issues for 2011**

The following recommendations for the federal government are drawn from the Air Force Association's 2011 Statement of Policy, "An Air Force at the Edge," adopted by the delegates to the AFA National Convention on Sept. 12, 2010, in National Harbor, Md. The full text is available at www.afa.org/AboutUs/PolicyIssues.asp.

1

SUPPORTING OUR AIRMEN

- The strength of the Air Force is found in the men and women who serve. The Air Force Association supports them and honors their service.
- AFA is especially proud of Air Force men and women—active, Guard, Reserve, and civilian—for their sacrifices on behalf of our nation.

2

CARING FOR VETERANS AND RETIREES

- Tricare is an earned benefit that meets the unique demands of military service. As a nation, we must always maintain our promise to care for those who served.

3

RECAPITALIZING THE AGING FLEET

- Make a swift and binding decision to allow rapid production of new tankers.
- Continue modification of the C-5B/Cs; gain the flexibility to retire the older C-5As; keep the C-17 production line open.
- Make a full commitment to the F-35 program, ensuring a rapid production rate.
- Develop procedures for Remotely Piloted Aircraft on their eventual beddown and operations within the US.
- Develop and acquire new long-range strike assets by 2020.
- Retain CSAR as a core Air Force mission and field a replacement CSAR helicopter.

4

SECURING SPACE AND CYBERSPACE

- Fully fund and support space situational awareness, space protection programs, and assured access to space.
- Invest steadily and strategically in space capabilities and recognize the US must retain clear superiority in this critical mission area.
- Focus on developing the next generation of cyber security experts and capabilities and be able to quickly inject new technologies into key enclaves to secure the network and support the mission.

5

STRENGTHENING THE NUCLEAR MISSION

- Provide life extension programs that ensure safe, reliable, and secure nuclear weapons and maintain the responsive production infrastructure to deter, assure, and provide stability.
- Sustain delivery systems and warheads for the foreseeable future, but just as importantly, nuclear support equipment and infrastructure.

6

INVESTING IN AIRPOWER

- Develop a national industrial policy to attract and maintain an experienced workforce.
- Promote early learning in foundational studies, including science and math, to stimulate development of the next generation of engineers, scientists, and technicians.



Air Force Councils

Air National Guard Council



Maj. Gen. Fred R. Sloan, ANG (Ret.) (Chair)

Brig. Gen. Hugh T. Broomall
 MSgt. Jessica Brown
 Maj. Gen. Michael J. Haugen, ANG (Ret.)
 Maj. Gen. William B. Lynch, ANG (Ret.)
 SMSgt. John Lyon
 CMSgt. Andrew Stadler
 Co. James Vogel
 Maj. Gen. Mason C. Whitney, ANG (Ret.)
 Maj. Stacy Williamson
 MSgt. Tracy Talbert (Liaison)

Company Grade Officers Council



Capt. David J. Gaulin (Chair)

Capt. Raj Agrawal
 Capt. Earl J. Alexander II
 Capt. Isaac T. Bell
 Capt. David J. Blair
 Capt. Ryan A. Bodge
 Capt. Edith D. Coon
 Capt. Brandon L. Davenport
 Capt. Robert J. Fekete
 Capt. Amy R. Grant
 Capt. Stephanie K. Harley

Capt. Erika C. Leach
 Capt. Tiffany D. Madison
 1st Lt. Ty B. McKeever
 Capt. Genevieve N. Minzyk
 Capt. Jerry C. Owens
 Capt. Philip S. Postell
 1st Lt. Nichole Reigelman
 Capt. Brendan Simison
 Capt. Douglas A. Hickey (Liaison)

Enlisted Council



MSgt. Jason D. Hughes (Chair)

SSgt. Joseph R. Aton
 SSgt. Zully M. Birkbeck
 TSgt. Anthony G. Graham
 SSgt. Robert Gutierrez Jr.
 SMSgt. Steven Higgins
 MSgt. Stephen R. Hunter Jr.
 MSgt. James P. Mogren
 SSgt. Cheryl A. Moore
 SSgt. Ryan D. Pfeifer
 SrA. Samuel A. Siewert
 SMSgt. Sarah A. Sparks
 SSgt. Kenneth I. Walker III
 MSgt. John T. Carter (Liaison)

Reserve Advisory Council



Brig. Gen. William B. Binger (Chair)

SMSgt. Ronald A. Colaninno
 SMSgt. Airton D. Dapaixao
 Maj. Amanda J. S. Finerty
 TSgt. Matthew A. Harding
 Lt. Col. John W. Heck
 CMSgt. Cameron B. Kirksey
 SMSgt. Christopher D. Neitzel
 MSgt. David P. Noblit
 Lt. Col. Adam E. Torem
 CMSgt. David Conaway (Liaison)
 Col. Mark A. Ross (Liaison)

Veterans/Retiree Council



Walter S. Hogle Jr. (Chair)

Charles Baldwin
 Rodney Ellison
 Kevin Estrem
 Richard E. Fitzhugh
 Russell W. Mank
 Donald Taylor
 Elia T. Vasilopoulos
 Maria T. Vinup
 Thomas G. Wozniak



AFA

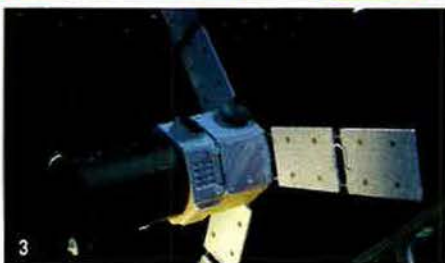


Air Force Association **Technology**

Aerospace technology of the highest order was on display at AFA's annual showcase.



The 2010 AFA Technology Exposition was one of the best-attended in recent years, showcasing equipment geared to the Air Force's anticipated needs. 111 Top USAF leaders cut the ribbon to open the exhibit. At left, visitors swarm the exhibit hall. 121 Booths represented companies producing aircraft, spacecraft, vehicles, ordnance, communications gear, consulting services, uniforms, small arms, publications, and insurance, as well as numerous USAF organizations on hand to explain their missions. 131 An ORS Sat-1 satellite model keeps watch from overhead at the Goodrich Aerospace booth. 141 A pair of F-22 models ride high at Lockheed Martin's booth. 151 FLIR Government Systems showed off some of its sensor equipment. 161 A CV-22 tilt-rotor model at the Bell Helicopter Textron booth shows off the unique configuration of the special operations version.



Exposition 2010

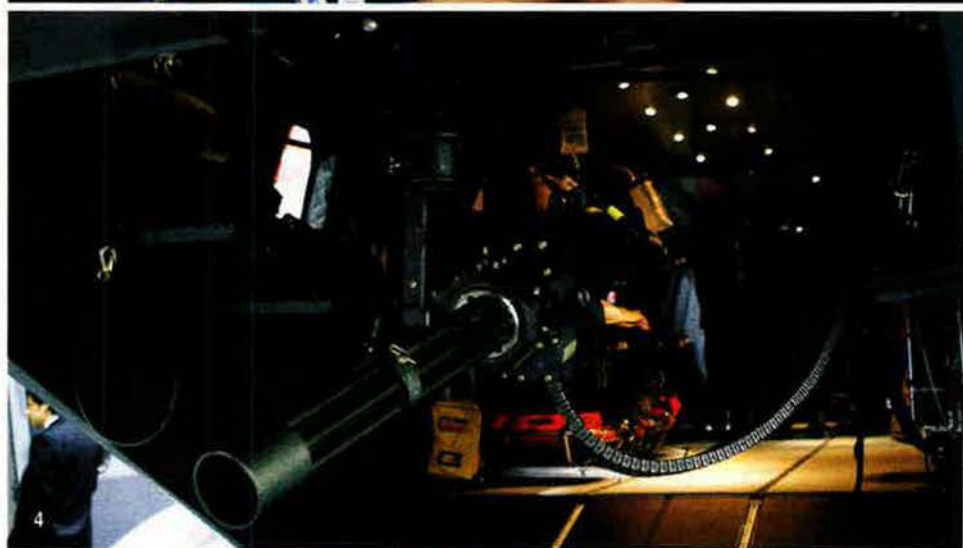
Photos by Guy Aceto



11 Visitors to the Boeing display wear special glasses to view a 3-D movie featuring C-17 crews and aircraft performing rescue missions. **12** Special guests included Women Airforce Service Pilots vets. Here, Bee Falk Haydu takes the stick at an Air Force Research Lab hands-on display, while Elaine Harmon watches. **13** A C-27 model comes in for a landing at Alenia's booth. **14** Boeing's notional Joint Dual Role Air Dominance Missile towers over its display. The Air Force is putting a high priority on the air-to-air and air-to-ground missile.

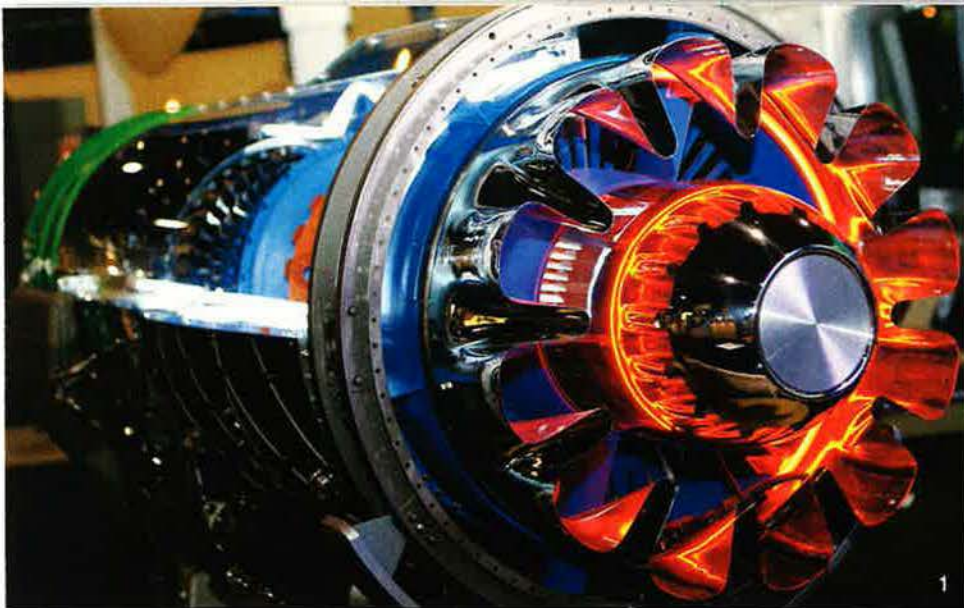


111 Gen. C. Robert Kehler, head of Air Force Space Command, chats with college students at the CyberPatriot demonstration. From left to right are Arnold Air Society and Silver Wing members Kerrienne Gordon-Davy, Kayley Squire, and Kiu Lee. CyberPatriot is AFA's cyber defense competition, underwritten by Northrop Grumman, to stimulate high school and college-level interest in pursuing careers in cyber defense. 121 Lockheed Martin's Joint Air-to-Surface Standoff Missile, in model form.



131 Maj. Gen. Suzanne Vautrinot, director of plans and policy for US Cyber Command, tours the booths. 141 AgustaWestland brought a mockup of its AW101 combat rescue helicopter's interior. 151 Active electronically scanned array (AESA) radars, in this Raytheon display, offer fighter aircraft superior situational awareness. 161 An EC-130H model, wired with antennae, seems to swoop over visitors at the BAE Systems booth.





111 Honeywell's F124 turbofan engine powers light combat and trainer aircraft. 121 At AFRL's exhibit (left to right) A1C Thaddeus Majtyka, A1C Drake Solomon, and SrA. Maria Carlson, all crew chiefs, get briefed on the Small Diameter Bomb. 131 Boeing's F-15E shows off its ability to carry 20 Small Diameter Bombs, plus sensors and air-to-air missiles. Many models evidenced the trend toward smaller, more accurate weapons. 141 A trio of F-35 models, representing the Air Force, Navy, and Marine Corps versions, show off their ability to carry external stores and internal weapons payloads. 151 Maj. Amy Nesbitt (r), from Air Force Headquarters at the Pentagon,

gingerly handles some nonlethal defensive technology, as Maj. Jennifer Berenger, an Air Command and Staff College student, watches. The Technology Expo continues to offer one of the best all-in-one-place venues in the world to learn about

the Air Force's current and future hardware. ■



Air Force Association National Awards 2010

National Aerospace Awards

Award

H. H. Arnold Award

AFA's highest honor in national security to a member of the armed forces

W. Stuart Symington Award

AFA's highest honor in national security to a civilian

John R. Alison Award

AFA's highest honor for industrial leadership

AFA Chairman's Aerospace Education Award

For long-term commitment to aerospace education

Lt. Gen. Claire L. Chennault Award

Outstanding performance in aerial warfare tactics

David C. Schilling Award

Outstanding contribution advancing flight activity

Theodore von Karman Award

Outstanding contribution in science and engineering

Gill Robb Wilson Award

Outstanding contribution in arts and letters

Hoyt S. Vandenberg Award

Outstanding contribution in aerospace education

Thomas P. Gerrity Award

Outstanding contribution in systems and logistics

Gen. Larry D. Welch Award

Significant impact on USAF's nuclear enterprise

Department of Veterans Affairs Employee of the Year

Outstanding performance by VA employee

Recipients

Lt. Gen. David A. Deptula, DCS, Intelligence, Surveillance, Reconnaissance

Dr. John J. Hamre, President and CEO, Center for Strategic and International Studies

Raytheon Co.

USA TODAY

Capt. Colby B. Edwards, 31st Fighter Wing, Aviano AB, Italy

Battlefield Airmen and Security Forces

Airborne Laser Test Bed

Col. John Andreas Olsen, Royal Norwegian Air Force

CyberPatriot, Center for Infrastructure Assurance and Security (UTSA), Science Applications International Corp., and Northrop Grumman

Lt. Col. Danny P. Johnson, 75th Logistics Readiness Squadron, Hill AFB, Utah

SMSgt. John M. Oblinger, Directorate of Security Forces, Deputy Chief of Staff, Logistics, Installations, and Mission Support, USAF, Pentagon

Dr. Irene Trowell-Harris (retired USAF major general), Center for Women Veterans, Washington, D.C.

Professional, Management, Civilian, Environmental, and Safety Awards

Gen. Billy Mitchell Award for C4 Excellence; MSgt. Robert L. Hopkins, 24th Special Tactics Sq. (AFSOC), Pope AFB, N.C.

Gen. George C. Kenney Award; Sentinel Focus Project Team, 480th ISR Wing, JB Langley, Va.

CMSAF Thomas N. Barnes Award; SSgt. Damon T. Thurman, 56th AMXS, 56th Fighter Wing, Luke AFB, Ariz.

Paul W. Myers Award for Physicians; Lt. Col. Christopher P. Paulson, 51st Medical Group, Osan AB, South Korea

Verne Orr Award for Human Resources; 1st Helicopter Sq., 316th Wing, JB Andrews, Md.

Juanita Redmond Award for Nursing; Capt. Gary C. Webb, 10th Medical Group, US Air Force Academy, Colo.

Stuart R. Reichart Award for Lawyers; Col. Tonya Hagmaier, Crndt., Judge Advocate General School, Maxwell AFB, Ala.

Civilian Wage Employee of the Year*; Eric W. Straight, 1st Special Ops Equipment Mx Sq., Hurlburt Field, Fla.

Civilian Program Specialist of the Year*; Christopher J. Deanes, 24th STS (AFSOC), Pope AFB, N.C.

Civilian Program Manager of the Year*; Gary D. Strickland, Chief, Airman & Family Readiness Center, Mountain Home AFB, Idaho

Civilian Senior Manager of the Year; David L. Dias, Chief, Logistics Technology Integration Division, Scott AFB, Ill.

AFROTC Cadet of the Year; Andrew Swisshelm, Purdue University, West Lafayette, Ind.

CAP Aerospace Education Cadet of the Year; Alexa Solorio, Santa Cruz County Composite Sq., Arizona, Civil Air Patrol

Joan Orr Award for Air Force Spouse of the Year; Mara C. Wight, Spangdahlem AB, Germany

Air Force Chaplain Corps Award; Capt. James W. Galyon, 7th Bomb Wing, Dyess AFB, Tex.

AFMC Management Award—Executive Division; Scott E. Farnsworth, 653rd Electronic Systems Group, Hanscom AFB, Mass.

AFMC Management Award—Middle Division*; Darrell B. Moore, 735th Supply Chain Mgmt. Group, JB Langley, Va.

AFMC Management Award—Junior Division*; Capt. Robert D. Carden, 308th Armament Systems Wing, Eglin AFB, Fla.

Gen. E. W. Rawlings Environmental Award—Mgmt.*; Tammie L. Boyd, 10th Medical Group, US Air Force Academy, Colo.

Gen. E. W. Rawlings Environmental Award—Tech.*; Mark A. Ross, 75th Civil Engineer Sq., Hill AFB, Utah

SECAF Safety Award—Category I; Air Mobility Command, headquartered at Scott AFB, Ill.

SECAF Safety Award—Category II; US Air Force Academy, Colo.

**Presented at recipient's location*



Photo by Guy Aceto

Women Airforce Service Pilot Lorraine Rodgers acknowledges salutes snapped by the commanders of USAF's major commands. The WASPs received an AFA Lifetime Achievement award.



Photo by Chris Cross

Left: Andrew Marshall (left), director of DOD's Office of Net Assessment, receives the AFA Lifetime Achievement Award, presented by AFA Board Chairman Joesph Sutter.

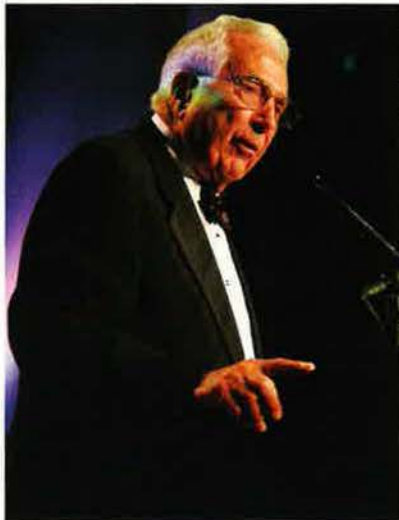


Photo by Guy Aceto

Right: Walter Boyne, aviation historian, writer, and former director of the Smithsonian's National Air and Space Museum, accepts his AFA Lifetime Achievement Award.



Photo by Guy Aceto

Lt. Gen. David Deptula (left), deputy chief of staff for intelligence, surveillance, and reconnaissance, is presented with the H. H. Arnold Award by Sutter.



Photo by Guy Aceto

William Swanson, chairman and CEO of Raytheon (left), accepts the John R. Alison Award for industrial leadership on behalf of his company. Presenting the award are John Alison (center) and Sutter.



Photo by Chris Cross

John Hamre (left) was honored with the W. Stuart Symington Award for contributions to national security. Retired Gen. Lawrence Skantze (right), former head of Air Force Systems Command, received an AFA Lifetime Achievement Award.

Crew and Team Awards

Airborne Battle Management Crew; Crew 4, 12th Airborne Command & Control Sq., 116th Air Control Wing, Robins AFB, Ga. Best airborne battle management crew.

Brig. Gen. Ross G. Hoyt Award; Crew of DADDY 05, 711th Special Operations Sq., 919th Special Operations Wing (AFRC), Eglin AFB, Fla. Best air refueling crew.

Gen. Curtis E. LeMay Award; Crew of BONE 21, 37th Bomb Sq., 28th Bomb Wing, Ellsworth AFB, S.D. Best bomber aircrew.

Gen. Jerome F. O'Malley Award; Crew of TORA 62, 55th Wing, Offutt AFB, Neb. Best reconnaissance crew.

Gen. Thomas S. Power Award; Capt. Hameer H. Thalte and Capt. Adrian A. Zollinger, 91st Operations Support Sq., 91st Missile Wing, Minot AFB, N.D. Best missile combat crew.

Best Space Operations Crew; GPS IIR-21 Operations Crew, 45th Space Wing, Cape Canaveral AFS, Fla. Best space operations crew.

Lt. Gen. William H. Tunner Award; Crew of DADDY 05, 711th SOS, 919th SOW (AFRC), Eglin AFB, Fla. Best airlift aircrew.

Lt. Gen. Howard W. Leaf Award; Electronic Warfare Test Division, 28th Test & Evaluation Sq., 53rd Wing, Eglin AFB, Fla. Best test team.

Citations of Honor

For the outstanding contribution of an individual or organization to the development of aerospace power.

Recipients	Achievement
Air Force Research Institute, Maxwell AFB, Ala.	Helped improve USAF, joint, and allied combat capability through independent research, studies and analyses, and outreach and engagement through domestic and international conferences.
Air Force Tactical Exploitation of National Capabilities (TENCAP), Schriever AFB, Colo.	Produced 46 projects enabling \$69.7 million worth of combat capabilities, including development of a unique high-value target tracking method that has been adopted by the National Security Agency as a new national standard.
Project Liberty Team, Majors Field, Greenville, Tex.	Managed the monumental acquisition effort to rapidly field a fleet of specialized intelligence-surveillance-reconnaissance aircraft (MC-12W) in Southwest Asia, where, in their first eight months, they logged more than 14,600 combat hours.
SOF-CSAR Fixed Wing Aircraft Sustainment Team, Warner Robins ALC, Robins AFB, Ga.	Provided rapid solutions for four urgent operational needs: deploying data links on HC-130 rescue tankers, developing a networking suite for the CV-22, fielding an overt marking laser on the AC-130 gunship, and equipping the MC-130W for armed surveillance missions.
55th Electronic Combat Group, Davis-Monthan AFB, Ariz.	Delivered nonkinetic offensive electronic strikes for operations in Afghanistan and Iraq, surpassing 41,200 flying hours and 6,400 combat missions with 14 EC-130 aircraft—Air Combat Command's most deployed fixed wing group.
Charles R. Henderson, deputy assistant chief of staff, strategic deterrence and nuclear integration, USAF, Pentagon	Led strategic deterrence and nuclear revitalization efforts, with stewardship of more than 1,500 critical tasks, and drove planning for the stand-up of Air Force Global Strike Command.

Air National Guard and Air Force Reserve Command Awards

Award	Recipient	Achievement/Employer
CMSgt. Dick Red Award	CMSgt. Anthony M. Palla Jr., 130th Aircraft Maintenance Sq., West Virginia ANG	Best ANG maintainer
Earl T. Ricks Award	Not awarded for 2010	Best ANG unit airmanship
Outstanding ANG Unit	176th Operations Group, Kulis ANGB, Alaska	Top ANG unit of the year
George W. Bush Award, Officer	Not awarded for 2010	
George W. Bush Award, Enlisted	MSgt. Peter N. Vatisas, 157th Security Forces Sq., New Hampshire ANG	Tyco Electronics Subsea Communications, headquartered at Morristown, N.J.
President's Award for AFRC	Crew of PISTN 52, 927th Air Refueling Wing, MacDill AFB, Fla.	Best AFRC aircrew of the year
AFRC Unit Award	916th Air Refueling Wing, Seymour Johnson AFB, N.C.	Best AFRC unit of the year
AFRC Citizen Airman Award, Officer	Lt. Col. Brent E. French, 6th SFS, MacDill AFB, Fla.	Lexmark Intl., US headquarters in Lexington, Ky.
AFRC Citizen Airman Award, Enlisted	SMSgt. Darren A. Thews, 945th AMXS, Travis AFB, Calif.	United Airlines, headquartered in Chicago

2010 AFA Membership and Activity Awards

AFA Member of the Year



Photo by Chris Cross

L. Boyd Anderson (center) was named AFA Member of the Year. Congratulating him are Sutter (left) and James Lauducci, AFA Vice Chairman of the Board, Field Operations.

D. W. Steele Sr. Memorial Award

(AFA Unit of the Year: C. Farinha Gold Rush, Calif.)



Photo by Chris Cross

Richard Stultz, president of the C. Farinha Gold Rush Chapter, wears the Unit of the Year award patch on his blazer.

2010 AFA Membership and Activity Awards (cont.)

Arthur C. Storz Sr. Membership Award

Presented to the AFA chapter or individual member producing the highest number of new members during the 12-month period ending June 30, 2010, as a percentage of total chapter membership as of July 1, 2009.

Chapter Award

Fort Dodge, Iowa
President Luke T. Ascherl

Individual Award

Richard Ortega,
Florida

AFA National Aerospace Teacher of the Year

Allen Robnett
Gallatin, Tenn.



Jack Gross Awards

Presented to the chapter in each size category with the highest number of new members as a percentage of chapter size at the beginning of the membership year. A minimum of 10 is required.

Small Chapter

Fort Dodge, Iowa
President Luke T. Ascherl

Medium Chapter

Gen. David C. Jones, N.D.
President James Bowman

Large Chapter

Gen. B. A. Schriever-LA, Calif.
President Nancy Fitzgerald

Extra Large Chapter

Montgomery, Ala.
President James E. Dotherow

Chapter Larger Than 1,500

Lance P. Sijan, Colo.
President Kevin D. Estrem

EDUCATION AWARDS

Aerospace Education Excellence Award

Presented to one chapter in each of the AFA size categories annually for excellence in aerospace education programming. To qualify, a chapter must have received the Aerospace Education Achievement Award this year.

Small Chapter

Fort Dodge, Iowa

Medium Chapter

Lincoln, Neb.

Large Chapter

Swamp Fox, S.C.

Extra Large Chapter

Montgomery, Ala.
Wright Memorial, Ohio

Aerospace Education Achievement Award

Presented to chapters for outstanding achievement in aerospace education programming.

Albuquerque, N.M.
Blue Ridge, N.C.
C. Farinha Gold Rush, Calif.
Central Florida, Fla.
Fort Dodge, Iowa
Gen. David C. Jones, N.D.
Hurlburt, Fla.
Langley, Va.
Lincoln, Neb.
McChord, Wash.
Montgomery, Ala.
Swamp Fox, S.C.
Thomas W. Anthony, Md.
Wright Memorial, Ohio

Outstanding State Organization

Florida

President James B. Connors

Outstanding Chapters by Size

Small Chapter

(20-200 members)
Fort Dodge, Iowa
President Luke Ascherl

Medium Chapter

(201-400 members)
Altus, Okla.
President Richard Baldwin

Large Chapter

(401-900 members)
Hurlburt, Fla.
President Dann D. Mattiza

Extra Large Chapter

(901+ members)
Langley, Va.
President John Murphy

Unit Exceptional Service Awards

Best Single Program

Paul Revere, Mass.
President Joseph Magnone

Communications

Central Florida, Fla.
President William Yucuis

Community Partners

Leigh Wade, Va.
President Gary Metzinger

Community Relations

Eglin, Fla.
President Jeffrey L. Fanto

Overall Programming

Hurlburt, Fla.
President Dann D. Mattiza

Veterans' Affairs

Altus, Okla.
President Richard Baldwin

Special Recognition—Sustained New Member Recruitment

Ninety-eight chapters have attained the quarterly new member recruitment goal for three consecutive quarters, extending from October 2009 to June 2010. The full listing can be found online at www.afa.org/members/mawds.asp.

Special Recognition—State Growth

Seventeen states have realized a growth in total membership from June 2009 to June 2010. The full listing can be found online at www.afa.org/members/mawds.asp.

Special Recognition—Chapter Growth

Eighty-six chapters have realized a growth in total membership from June 2009 to June 2010. The full listing can be found online at www.afa.org/members/mawds.asp.

Special Recognition—Region Growth

Eight regions have realized a growth in total membership from June 2009 to June 2010. The full listing can be found online at www.afa.org/members/mawds.asp.

MEMBERSHIP AWARDS

Community Partner Membership Awards

Gold Award

Presented in the field to chapters whose Community Partners represent at least six percent of overall chapter membership, with a minimum number of Community Partners.

- | | |
|------------------------------------|----------------------------------|
| Altus, Okla. | Leigh Wade, Va. |
| Chautauqua, N.Y. | Lloyd R. Leavitt Jr., Mich. |
| Cheyenne Cowboy, Wyo. | McChord Field, Wash. |
| Col. H. M. "Bud" West, Fla. | Mercer County, N.J. |
| Enid, Okla. | Meridian, Miss. |
| Fairbanks Midnight Sun, Alaska | MiG Alley, South Korea |
| Fort Dodge, Iowa | Northeast Texas, Tex. |
| Fort Wayne, Ind. | Steel Valley, Ohio |
| Gen. Charles L. Donnelly Jr., Tex. | Swamp Fox, S.C. |
| Gen. David C. Jones, N.D. | Ute-Rocky Mountain, Utah |
| Golden Triangle, Miss. | William J. "Pete" Knight, Calif. |
| Happy Hooligan, N.D. | |

Achievement Award

Presented in the field to chapters whose Community Partners represent at least three percent of overall chapter membership, with a minimum number of Community Partners.

- | | |
|-----------------------------------|-------------------------|
| Central Oklahoma (Gerrity), Okla. | Shooting Star, N.J. |
| Cochise, Ariz. | Red Tail Memorial, Fla. |
| Florida Highlands, Fla. | Total Force, Pa. |
| Gen. B. A. Schriever-LA, Calif. | |
| Highpoint, N.J. | |
| Hurlburt, Fla. | |
| Joe Walker-Mon Valley, Pa. | |
| Lance P. Sijan, Colo. | |
| Lt. Col. B. D. "Buzz" Wagner, Pa. | |
| Mel Harmon, Colo. | |
| Montgomery, Ala. | |
| Paul Revere, Mass. | |
| Richard D. Kisling, Iowa | |
| Robert H. Goddard, Calif. | |

Individual Awards

Presented for outstanding service.

Chairman's Citation

- | | |
|------------------------|--------------------|
| Mark Dierlam, Ala. | Alan Berg, Va. |
| Ross Lampert, Ariz. | Harold Barton, Va. |
| Bill Duncan, N.C. | Peter Jones, Va. |
| Joyce Feuerstein, N.C. | |
| James Fultz, Ind. | |
| Jim Hannam, Va. | |
| Kent Owsley, Ohio | |
| Joe Tucker, Wash. | |

Central East Region

- Medal of Merit**
 Kay Bailey, Del.
 Kevin Lewis, Va.
 Gavin MacAloon, Va.
 Cheryl Nagel, Md.
 Michele Powell, Va.
 Jimmy Ruth, Va.
 Lawrence Ryan, D.C.
 Edwin Spencer, Va.
- Exceptional Service Award**
 Nicholas Abate, Va.
 John Murphy, Va.

Far West Region

- Medal of Merit**
 Ray Coughlin, Calif.
 Jean Fontenot, Hawaii
 Shirley Powell, Calif.
 John Ransome, Calif.
 Richard Stultz, Calif.
 Joel Stucky, Calif.
 Glen Walder, Calif.
- Exceptional Service Award**
 Jan Clawson, Calif.
 Ron Azarcon, Calif.

Florida Region

- Medal of Merit**
 Robert Eshleman, Fla.
 Thomas Hull, Fla.
 John Jogerst, Fla.

- Candace Lovell, Fla.
 Mary McNatt, Fla.
 Steve Murray, Fla.
 Fran Shaw, Fla.
- Exceptional Service Award**
 Jim Callahan, Fla.
 Marguerite Cummock, Fla.
 Jeff Fanto, Fla.
 Jerry Nabors, Fla.

Great Lakes Region

- Medal of Merit**
 Dee Cox, Ohio
 Cynthia Joyce, Ind.
 John Kirkwood, Ind.
 Paul Lyons, Ind.
 Mike Malast, Ind.
 Brian Wright, Ind.
- Exceptional Service Award**
 Robert Goedl, Ind.
 John McCance, Ohio
 Sharon Murner, Ohio

Midwest Region

- Medal of Merit**
 Robert Athan, Neb.
 Ron Major, Iowa
 Richard McDowell, Ill.
 Kathryn Millwood, Neb.
 Warder Shires, Neb.
- Exceptional Service Award**
 Deann Faiferlick, Iowa
 James Thomas, Neb.

New England Region

- Medal of Merit**
 Tripp Alyn, R.I.
 Heidi Aronofsky, Mass.
 Irene Biddy, Mass.
 Lori Casucci, R.I.
 Scott Crossman, Mass.
 Amanda Gustafson, Mass.
 Max Lantz, Mass.
 Brendan Simison, Mass.
- Exceptional Service Award**
 Joe Magnone, Mass.
 Marian McGovern, Mass.
 Keith Taylor, Mass.

North Central Region

- Medal of Merit**
 James Bowman, N.D.
 Ralph Delperdang, Minn.
 George Masters, N.D.
 Vic Johnson, Wis.
 Larry Sagstetter, Minn.

Northeast Region

- Medal of Merit**
 William Gray, N.J.
 Jaclyn Gyger, Pa.
 Susanna Gyger, Pa.
 Frank Joslin, N.J.
 Jared Kleiman, N.J.
- Exceptional Service Award**
 Murlin Lower, N.J.
 Robert Rutledge, Pa.
 Edward Shallenberger, Pa.

Northwest Region

- Medal of Merit**
 Francis Cantwell, Wash.
 Tommy Carson, Wash.
 Rodney Lewis, Wash.

- Fran McGregor, Wash.
 Dennis Primoli, Wash.
 Michael Warden, Wash.
- Exceptional Service Award**
 Mary Mayer, Ore.
 Art Mussman, Wash.
 Rick Sine, Wash.

Rocky Mountain Region

- Medal of Merit**
 Mary Carol, Wyo.
 Gaylene Dizmang, Wyo.
 Robert George, Utah
 Sherry Shadday, Utah
 Brandon Strong, Utah
 Leslie Swidecki, Wyo.
- Exceptional Service Award**
 Jeanin Damery, Colo.
 Grant Hicinbothem, Utah
 Jay Moseley, Utah

South Central Region

- Medal of Merit**
 David Bird, La.
 Rick Driesbach, Ala.
 Janet Haug, Miss.
 Paul LaFlame, La.
 Russell Lewey, Ala.
 Lynda Nuzzo, Miss.
 Tony Wolf, La.
- Exceptional Service Award**
 Skip Dotherow, Ala.
 John Harris, Ala.

Southeast Region

- Medal of Merit**
 Brent Bracewell, Ga.
 Gerald Murray, Ga.
 Angela Tristan, N.C.
 Kenneth Walters, N.C.
- Exceptional Service Award**
 David Klunkicht, N.C.
 Don Michels, Ga.

Southwest Region

- Medal of Merit**
 Mads Brandt, Ariz.
 Morgan Crowder, Ariz.
 Phillip Frazee, N.M.
 Robert Hudson, N.M.
 Joseph Marvin, Ariz.
 Gary Phillips, Ariz.
 John Toohey, N.M.

Texoma Region

- Medal of Merit**
 Doug Chown, Okla.
 Earle Collins, Tex.
 Gary Copsey, Tex.
 Gina McKeen, Tex.
 Jerry McMahan, Okla.
 John Schroyer, Tex.
 Tommy Thompson, Tex.
 Ricky Williams, Tex.
- Exceptional Service Award**
 Dave Dietsch, Tex.
 Dan Ohnesorge, Okla.



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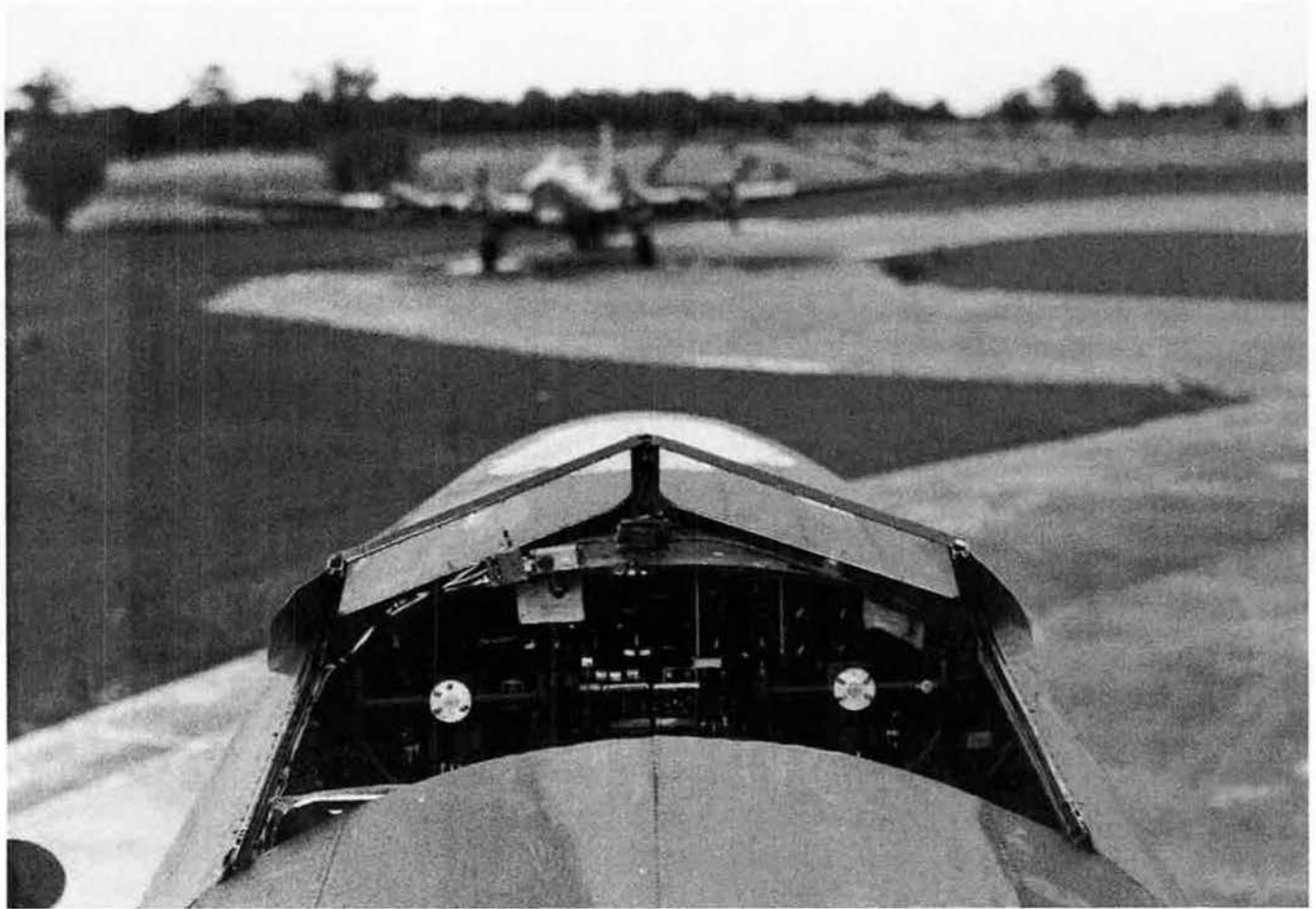
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MULTI V I E W





In the waning days of World War II, the US turned worn-out bombers into missiles targeting Germany. It didn't go well.

The Remote Control Bombers

By Walter J. Boyne



The United States Army Air Forces dominated the skies over Germany in 1944 with conventional weaponry. However, a late-war spurt in German scientific activity inspired a futuristic American response: The US would use remotely piloted bombers, loaded with explosives, to target hardened German targets.

The result was a pair of top-secret programs, the AAF's Aphrodite and the Navy's Anvil. War-weary B-17, B-24, and PB4Y-1 bombers were stripped of standard equipment and laden with explosives, so that they could be guided by a "mother plane" to dive into a heavily defended target.

It seemed like a good idea at the time, but failed badly in practice. The effort is today remembered largely for killing Navy Lt. Joseph P. Kennedy Jr., the son of the former ambassador to Great Britain and the brother of future President of the United States John F. Kennedy.

Aphrodite and Anvil came about through a combination of desire to match advanced weapons being employed by Germany, to equal contemporary British advances, and to thriftily employ bombers that were no longer suitable for routine combat missions.

Lt. Gen. Jimmy Doolittle was then commanding Eighth Air Force. He approved the Aphrodite project in June 1944, and the Navy's Anvil was developed along a parallel path.

By that date, Nazi Germany was facing defeat on every front. In desperation, it sought to change the course of the war with the introduction of spectacular new weapons.

The greatest Nazi successes were to come with the crude but relatively effective V-1, a pulse-jet cruise missile with a 1,900-pound warhead, and the radical V-2, the first ballistic missile. (The V-2 was far more expensive and carried roughly the same size warhead, but could not be defeated in flight.) Both missiles caused extensive British civilian casualties and were a heavy burden on morale for a nation engaged in its fifth year of World War II.

The Allies were therefore conducting preventive attacks under Operation Crossbow, intending to forestall deployment of both the V-1 buzz bomb and the V-2 ballistic missile. Crossbow was intended to destroy German long-range weapons by every means, including the destruction of factories, launching sites, and of course, missiles in flight. Concern about

Left: A converted B-17 used in Aphrodite and a sequence of photos from a test of the remotely controlled bomber.



A B-17 before it was stripped of all nonessential parts and made into a flying bomb. This aircraft fell short of its target during its Aphrodite flight.

British losses and the adverse effect of the V-weapons on British morale was so great that Gen. Dwight D. Eisenhower, supreme allied commander, directed Crossbow have absolute priority over all other air operations, against the strong advice of Lt. Gen. Carl A. Spaatz, commander of US Strategic Air Forces in Europe.

Assault Drones

Spaatz was convinced the bombing operations being conducted under Crossbow were ineffective in that the typical target size of a V-1 or V-2 launching area did not warrant the massive expenditure of bombs being used. Later, Crossbow was recognized as a failure in its efforts to reduce German V-1 and V-2 launches, even though it consumed almost 21 percent of the Allied strategic bombing effort during its course. Spaatz proposed that attacks should be concentrated on major targets, such as the Pas-de-Calais electrical grid, and the development of a new bombing technique against hardened targets.

Under his urging, Gen. Henry H. "Hap" Arnold directed Brig. Gen. Grandison

Gardner to begin experiments with explosive-packed bombers flying under radio control. At the same time, Spaatz initiated an in-theater experiment, which became known as Aphrodite (sometimes coded with other names such as Anvil or Castor) to use radio-controlled bombers as guided missiles.

What we now call unmanned aerial vehicles or remotely piloted aircraft were earlier simply called pilotless aircraft. They were of immediate interest to the American military services. Considerable effort was made with autonomous cruise missiles presaging the Nazi V-1 as early as World War I, when the famous Kettering Bug was built and tested.

In the post World War I years, both the US and Great Britain experimented with full-size aircraft flown under remote control, but the most successful efforts were those inspired by the Hollywood character actor Reginald Denny, whose line of radio-controlled target drones frustrated American gunners for years. His Radioplane firm manufactured more than 17,000 target drones, all flown with



A pilot with the Aphrodite project sits inside one of the stripped-down bombers. Once airborne, the crew had to bail out.

reasonable precision under radio control from the ground. The US Navy conducted radio-control experiments during the 1930s, during which the aircraft, a Curtiss N2C-2, was controlled from the air by a mother aircraft. The AAF adopted the concept and subsequently flew Culver PQ-8 and PQ-14 target drones usually flown from a Beech C-45 mothership.

Thus it was not completely extraordinary that someone should suggest that war-weary B-17s and B-24s could be adapted for this purpose.

Things moved swiftly during World War II, and after Doolittle approved the plan on June 26, the 562nd Bomb Squadron began work. In a parallel effort, the US Navy began to modify Consolidated PB4Y-1s to become assault drones, under Anvil.

The 562nd quickly stripped worn-out Flying Fortresses of all nonessential equipment, and tried to make the cockpit as easy as possible for a volunteer pilot and flight engineer crew to both use. Here was the trick: The pilot and flight engineer would get the stripped-down bomb trucks airborne, and then they had to bail out.

Two television cameras were set up to allow a view of the main instrument panel and the ground to be transmitted to the mother ship, and radio remote-control equipment developed for the Azon guided bomb was installed. The entire aircraft was then packed with 20,000 pounds of the powerful British Torpex explosive. This changed the center of gravity and the flying characteristics of the drone.

The operational concept called for the drone to take off and fly to an altitude of 2,000 feet, where control would pass to the mother ship. It was at this point that the crew would bail out.

Ideally, the mother ship would then fly the drone to the target area, where it would attack through the enemy defenses, bringing a huge weight of explosives on an important target. Each mission was a major effort, as escort aircraft, observation aircraft, and decoy aircraft were all employed to cover the mother ships and their drone "babies."

In an incredibly short time, the 562nd had prepared 10 drones plus four mother ships—and completed training for the volunteer crews.

The first Aphrodite mission came on Aug. 4, 1944. It was an utter failure, as were the next 18 attacks. On most missions, control failures caused the drones to crash, usually into the sea. Sometimes the bomb-laden drones fell back on English soil. More rarely, they hit somewhat near an intended target.

In their initial operations, a rivalry developed in which both the AAF and the Navy teams kept their methods private, not sharing all the information that they might have. Neither team had the expertise on hand to evaluate their instructions on how to load, wire, arm, and successfully detonate the huge loads of Torpex. The Torpex went aboard the aircraft in individual boxes weighing about 60 pounds. These had to be stored, stacked, and wired in such a way that they detonated simultaneously on impact.

The AAF apparently followed traditional means in both arming and detonation techniques. Operation Aphrodite might well have been forgotten by now, if the Navy had done the same.

Instead, a new electronic safety device was incorporated in the Navy arming system. According to the accounts in *Aphrodite: Desperation Mission*, by Jack Olsen, essential ground personnel were aware of a fatal flaw in the system that could allow movement of the control switch to not only arm but detonate the explosive. When the vital discrepancy was pointed out, the official Navy reaction was that the device had been designed by experts and was not to be altered in the field.

Joe Kennedy Jr., Aphrodite Pilot

On Aug. 12, 1944, a single drone aircraft of the Navy's Anvil program was assigned to attack the already destroyed site at Mimoyecques in France. Unfortunately, the former AAF B-24, converted first to Navy PB4Y-1 designation, and then given the drone designation BQ-8, exploded over the Blyth Estuary in Britain. Two men were killed in the premature explosion, Lt. Wilford J. Willy and Lt. Joseph P. Kennedy Jr.

Kennedy was on his second combat tour as the pilot of a PB4Y-1 on anti-submarine patrol, and might have chosen to return home. However he was intrigued by Anvil and volunteered to fly the takeoff and hand-over of the BQ-8. Each of the converted aircraft was essentially an experiment, in which new equipment and new explosive mechanisms were integrated with the wiring of the drones. Kennedy's aircraft was packed with 21,700 pounds of Torpex.

There was an amazing political juxtaposition at play, as Kennedy's BQ-8 was followed in flight by a de Havilland Mosquito carrying another prominent

American, Col. Elliot Roosevelt, the son of the US President. (Roosevelt specialized in reconnaissance work and ended the war with 300 combat missions and a Distinguished Flying Cross.)

Anticipating bailout in about 10 minutes, Kennedy turned control of the BQ-8 over to the mother ship, which had completed one turn by remote control when something detonated the Torpex. The BQ-8 and its crew disappeared in a blinding flash of light, with scattered wreckage falling over Blythburgh, in Suffolk. More than 50 people were injured on the ground.

Spaatz, Doolittle, and Arnold were all too aware of the political sensitivity of the incident as Roosevelt's Mosquito returned, damaged, to base. The Navy launched a board of review. The possibility that Kennedy had caused the explosion by prematurely arming the system was rejected, and he was posthumously awarded the Navy Cross, the Distinguished Flying Cross, and the Air Medal. Willy received the Navy Cross.

What caused the explosion may never be known, but given the complexity of wiring new radio control equipment into a war-weary airplane, and the well-known assessments of the arming system by Navy personnel, it is probable that the controls Kennedy operated while preparing to bail out somehow triggered the explosion.

Despite the lack of success, the members of the Aphrodite team were undeterred by their succession of failures and pressed to have the concept developed for the conclusion of the war against Germany and for introduction into the war against Japan. Their enthusiasm was not dampened by the discovery that attacks on well-defended targets such as the submarine pens at the German archipelago Heligoland were costly failures.

The entire Aphrodite experience of playing catch-up with British and German science was in fact a naïve tribute to the iron clad security and true nature of US science at the time.

The full weight of American (and emigrant) science and industry and about \$5 billion had been devoted to the Manhattan Project to develop the atom bomb, and to the Boeing B-29 to deliver it. These programs reduced primitive experiments such as Aphrodite to footnotes in history. ■

Walter J. Boyne, former director of the National Air and Space Museum in Washington, D.C., is a retired Air Force colonel and author. He has written more than 600 articles about aviation topics and 40 books, the most recent of which is Hypersonic Thunder. His most recent article for Air Force Magazine, "Weyland's Wars," appeared in the August issue.

AFA National Report

natrep@afa.org

By Frances McKenney, Assistant Managing Editor

AFA's National Teacher of the Year

The Air Force Association's 25th recipient of the National Aerospace Teacher of the Year Award received honors at AFA's National Convention, at the Gaylord National Resort and Convention Center near Washington, D.C., on Sept. 11.

Allen Robnett teaches physics, aviation, astronomy, and college-level algebra classes at Gallatin High School in Gallatin, Tenn., and was originally nominated by the **Maj. Gen. Dan F. Callahan Chapter (Tenn.)**.

After earning degrees in electrical engineering from Princeton in 1956 and from the University of New Mexico in 1962, Robnett began teaching at Sandia National Laboratories. He has taught at Gallatin High School for 29 years, with an 11-year break for a stint as a computer consultant.

Robnett has generated an interest in science at his school in several



Allen Robnett, AFA's National Aerospace Teacher of the Year, whirls student James Jackson in a swivel chair to demonstrate gyroscopic effects. At age 76, Robnett says, "I am having too much fun to retire."

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ways: He built a small observatory on its rooftop. The nine-foot-diameter structure has a rotating dome and is outfitted with a telescope one foot in diameter. He painted two classroom walls with black paint and glow-in-the-dark spots to create a miniature planetarium. He rounded up 12 flight simulator stations to teach aviation theory. To draw attention to his math and science courses, he lets his students ride a leaf blower-driven hovercraft that glides around the cafeteria floor.

And don't forget the paperwork: In establishing new courses at Gallatin, Robnett had to write the standards of learning and manuals for them.

The second- and third-place runners up for national-level teacher of the year were Carolyn Bushman of Utah and Cyndi Stone of Florida.

Clear Winners From Clearfield

Computers and cooking: Two entirely different skills, but Clearfield High School AFJROTC cadets in Utah excel in both.

In February, they won the *Cyber-Patriot II* championship at AFA's Air Warfare Symposium in Orlando, Fla. Then in September, they won two of four categories in the **Northern Utah Chapter's** chili cook-off.

For both events, the Clearfield senior aerospace science instructor, retired

Maj. Kit K. Workman, was at the helm. He was also AFA Utah state president at the time.

The chili contest took place outside the Hill Aerospace Museum, on Hill Air Force Base near Ogden. It was part of Food for Life Day, when the museum collects nonperishable food donations.

Six teams entered this 16th annual chili cook-off. The spouses of some of Hill's deployed airmen served as judges, picking winners in four categories.

Chapter President Robert George presented Certificates of Bragging Rights to Clearfield, voted No. 1 in the People's Choice and Best Chili-Military categories. The secret to award-winning chili? All Workman would reveal was: "a variety of meats," including steak, "a variety of beans," and "good fresh vegetables."

A Northrop Grumman team from the ICBM division wore matching aprons proclaiming that they were "Go1ng Ballistic." They cooked the best chili in the nonmilitary category. The company's "Wings" team wore cowboy hats, bandanas, and jeans to win top votes for best presentation.

Chapter Vice President James D. Aadland said the cook-off raised \$2,000 for the Hill Airman and Family Readiness Center.

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Field Visit

In North Dakota in June, the **Red River Valley Chapter** hosted the AFA state meeting, with James R. Lauducci, then AFA's vice chairman of the board for field operations, as principal guest speaker.

Daniel J. Becker, who was chapter president at the time, reported that Lauducci visited the 319th Air Refueling Wing at Grand Forks Air Force Base, since he was in the area. Col. Donald L. Shaffer, the wing commander, spoke to Lauducci about the unit's transition from KC-135s to remotely piloted aircraft. Lauducci, in turn, described some of AFA's programs, including the *CyberPatriot* high school cyber security competition.

Later that day, the North Dakota AFA meeting took place at the University of North Dakota's Army ROTC Armory. In attendance were AFA officials James Simons, North Central Region president; Ron Garcia, North Dakota state president; and AFA chapter leaders from the **Gen. David C. Jones Chapter** at Minot Air Force Base and the **Happy Hooligan Chapter** from Fargo.

Becker said that in the training session, Lauducci presented an overview of AFA's programs and successes and stressed the need for new ideas and chapter growth.

The gathering provided a chance for AFA chapter members to network with AFROTC cadets and instructors from the University of North Dakota

and North Dakota State University and with local Civil Air Patrol leaders.

Eagles in Alabama

The **Montgomery Chapter** in Alabama hosted its premier annual event, the Gathering of Eagles brunch, in June.

It's a time when the chapter honors those who contributed significantly to the history of air, space, and cyberspace. It also marks graduation for Air Command and Staff College students, at Maxwell Air Force Base, who hold Gathering of Eagles seminars all week long. And it's a time when the chapter jams the local golf and country club with a sell-out crowd for the brunch that brings them together in an informal setting.

This year was no exception.

Eagles on hand for the brunch were: retired Col. John T. Carney Jr., "father of Air Force Special Operations"; Chief Warrant Officer 5 David Cooper; Violet Cowden, a World War II Women Airforce Service Pilot; retired Col. George E. Day and retired Col. Joe M. Jackson, both Vietnam War Medal of Honor recipients; retired Col. Billy G. Edens, retired Lt. Gen. Charles G. Cleveland, and retired Col. Charles B. DeBellevue, who are aces from World War II, Korea, and Vietnam, respectively; Maj. Gen. Gregory A. Feest, then 19th Air Force commander at Randolph AFB, Tex.; Cmdr. Kenny Fields, author; and retired Lt. Col. Alexander Jefferson, a Tuskegee Airman.

Assistant Marine Corps Commandant Gen. John F. Amos—recently confirmed as the next Commandant—and retired Navy captain and astronaut John Young were also named Eagles.

Chapter Communications VP Joseph A. Panza Jr. wrote that the brunch concluded with an audio-visual presentation that depicted aircraft associated



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Reunions

Pilot Tng Class 54-G. April 12-15, 2011, in Phoenix. **Contact:** John Schaefer (623-561-5000) (johntomoko@cox.net).

Super Sabre Society. April 12-15, 2011, at the Gold Coast Hotel in Las Vegas. **Contact:** Les Frazier (512-930-3066) (supersabresociety@suddenlink.net). ■

E-mail unit reunion notices four months ahead of the event to reunions@afa.org, or mail notices to "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.

with the 2010 Eagles. He added that the ACSC commandant, Brig. Gen. Anthony J. Rock, commenting on the brunch, said, "This is a magnificent way to conclude a memorable week none of us will ever forget."

More Chapter News

■ The **Swamp Fox Chapter's** August dinner meeting featured Maj. Gen. Mark W. Graper, assistant deputy commander of US Air Forces Central at Shaw AFB, S.C. Graper, who is also assistant vice commander of the 9th Air Expeditionary Task Force, was a follow-up to the chapter's March guest speaker, Maj. Gen. William L. Holland, at the time 9th Air Force commander. The bottom line, wrote Chapter President David Hanson, is that between the two meetings, the chapter members received a high-level update on the organizational split between CENTAF and 9th Air Force.

■ In Minnesota, **Richard I. Bong Chapter** members listened to a presentation by one of their own, ANG SMSgt. Kelvin R. McCuskey of the 148th Fighter Wing at Duluth Arpt., Minn. He is an emergency management flight chief with more than two decades of service and recently returned from deployment to Bagram Airfield, Afghanistan. He spoke to the chapter about his unit's security and emergency management tasks at the base, located 35 miles north of Kabul. McCuskey covered the challenges he faced, such as fuel spills, an aircraft crash, rocket and ground attacks on the airfield, caring for earthquake victims, and training local citizens.

■ Instead of the usual label of "quarterly meeting," the **Southern Indiana Chapter** is considering nicknaming its meeting featuring AFROTC cadets as "Youth Night." Every year, Indiana University cadets attend the chapter's meeting in the fall, to make short presentations about the summer orientation programs they have completed at different Air Force bases. "America and the future of the Air Force are in good hands," said Chapter President James E. Fultz, commenting after hearing the cadets' talks. The meeting also saluted the Chapter and State Teacher of the Year, Scott R. Wallace, a chemistry and algebra teacher for 10th graders at New Technology High School in Bloomington, Ind. Then-State President William Grider, who is also president of the **Grissom Memorial Chapter** in Kokomo, joined Fultz in presenting Wallace with his awards.

■ The **Steel Valley Chapter** in Youngstown, Ohio, held its annual picnic for



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PARTNERS WITH ONE GOAL



cadets—and their families—from Kent State University AFROTC Det. 630; the Trumbull Career and Technical Center of Warren, Ohio; and the local Civil Air Patrol unit. Some 70 people gathered at Youngstown ARS, Ohio, for the August picnic that Chapter VP Fred Kubli Jr. called "a summer highlight," unique for including the students' families. Although billed as a "bring a covered dish" affair, the chapter provided hamburgers, hotdogs, and fixings. Joining Kubli at the picnic were chapter officers Secretary Lori Stone and Treasurer Amy Cervone.

■ The **Hawaii Chapter** sent member Richard C. Jackson to the National

POW/MIA Recognition Day Ceremony, held Sept. 17 at Honolulu's National Memorial Cemetery of the Pacific. Jackson helped present a wreath on behalf of AFA. Joining him were chapter members Col. Sam C. Barrett, the commander of 15th Wing at JB Pearl Harbor-Hickam, Hawaii, and the wing command chief, CMSgt. Craig S. Recker. The Joint POW/MIA Accounting Command organized the commemoration, noting that there are some 84,000 unaccounted-for Americans from World War II, the Korean War, the Vietnam War, and the Cold War. ■

**Air Force Association/AFA Veteran Benefits Association
Air Force Memorial Foundation
Consolidated Statement of Activities**

Year Ended Dec. 31, 2009

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue				
Contributions:				
Calendar	\$188,522	\$0	\$0	\$188,522
General	543,178	40,000	17,327	600,505
Air Force Memorial Foundation	464,921	0	0	464,921
Lapel Pin	267,497	0	0	267,497
Mailing Labels	201,927	0	0	201,927
Visions	110,318	0	0	110,318
Decals	126,829	0	0	126,829
Los Angeles Ball	41,258	0	0	41,258
Fellowships	<u>25,400</u>	<u>0</u>	<u>0</u>	<u>25,400</u>
Total Contributions	1,969,850	40,000	17,327	2,027,177
Investment Earnings	194,750	41,755	0	236,505
Aerospace Technology Expo & Conference	3,622,553	0	0	3,622,553
Membership Dues	2,279,865	0	0	2,279,865
Member Group Insurance Programs	1,869,112	0	0	1,869,112
Magazine	1,483,772	0	0	1,483,772
Building Operations	1,780,246	0	0	1,780,246
Royalties	786,051	0	0	786,051
Symposia	613,162	0	0	613,162
Industrial Associates	14,900	0	0	14,900
Other	131,484	0	0	131,484
Net Assets Released From Restrictions	<u>1,110,784</u>	<u>(1,110,784)</u>	<u>0</u>	<u>-</u>
Total Revenue and Support	15,856,529	(1,029,029)	17,327	14,844,827
Expenses				
Program Services:				
Membership	2,737,852	0	0	2,737,852
Member Group Insurance Programs	1,126,312	0	0	1,126,312
Professional Development	1,626,026	0	0	1,626,026
Magazine	3,989,137	0	0	3,989,137
Aerospace Technology Expo & Conference	670,878	0	0	670,878
Aerospace Education	542,597	0	0	542,597
Field Operations and Communications	796,971	0	0	796,971
Industrial Associates	4,707	0	0	4,707
CyberPatriot	25,368	0	0	25,368
Mitchell Institute	120,340	0	0	120,340
Air Force Memorial	<u>374,710</u>	<u>0</u>	<u>0</u>	<u>374,710</u>
Total Program Services Expenses	12,014,898	0	0	12,014,898
Supporting Services:				
Building Operations	2,042,803	0	0	2,042,803
General and Administrative	<u>1,454,443</u>	<u>0</u>	<u>0</u>	<u>1,454,443</u>
Total Supporting Services Expenses	3,497,246	0	0	3,497,246
Fundraising Expenses	<u>1,009,138</u>	<u>0</u>	<u>0</u>	<u>1,009,138</u>
Total Expenses	16,521,282	-	-	16,521,282
Change in Net Assets Before Other Items	(664,753)	(1,029,029)	17,327	(1,676,455)
Cumulative Effect of Change in Accounting Principle-FAS 158	-	0	0	-
Change in Pension Liability	1,003,888	0	0	1,003,888
Unrealized Gain on Marketable Securities	2,446,775	167,226	0	2,614,001
Fair Value Loss on Interest Rate Swap Agreement	310,002	0	0	310,002
Capital Additions: Life Memberships Granted, Net	270,475	0	0	270,475
Change in Net Assets	3,366,387	(861,803)	17,327	2,521,911
Net Assets - Beginning of Year	<u>21,446,644</u>	<u>1,418,296</u>	<u>853,996</u>	<u>23,718,936</u>
Net Assets - End of Year	<u>\$24,813,031</u>	<u>\$556,493</u>	<u>\$871,323</u>	<u>\$26,240,847</u>

**Air Force Association/AFA
Veteran Benefits Association Air
Force Memorial Foundation Con-
solidated Statement of Financial
Position**

**Dec. 31, 2009
Assets**

Cash and Investments	
Cash and Cash Equivalents	\$3,745,109
Certificates of Deposit	1,220,000
Marketable Securities:	
Debt Securities	6,632,483
Equity Securities	11,503,906
Total Marketable Securities	<u>18,136,389</u>
Total Cash and Investments	23,101,498
Receivables	
Trade, Net of Allowance for Doubtful Accounts of \$4,029	339,971
Pledges Receivable	407,054
Premium Refunds	911,755
Accrued Interest	126,993
Other	-
Total Accounts Receivable	1,845,773
Prepaid Expenses	311,565
Inventory	57,608
Property and Equipment	
Land	929,491
Building and Improvements	21,148,739
Furniture and Equipment	<u>1,519,729</u>
	23,597,959
Less Accumulated Depreciation	<u>10,111,665</u>
Total Property and Equipment	13,486,294
Other Assets	1,674,568
Total Assets	<u>\$40,477,306</u>

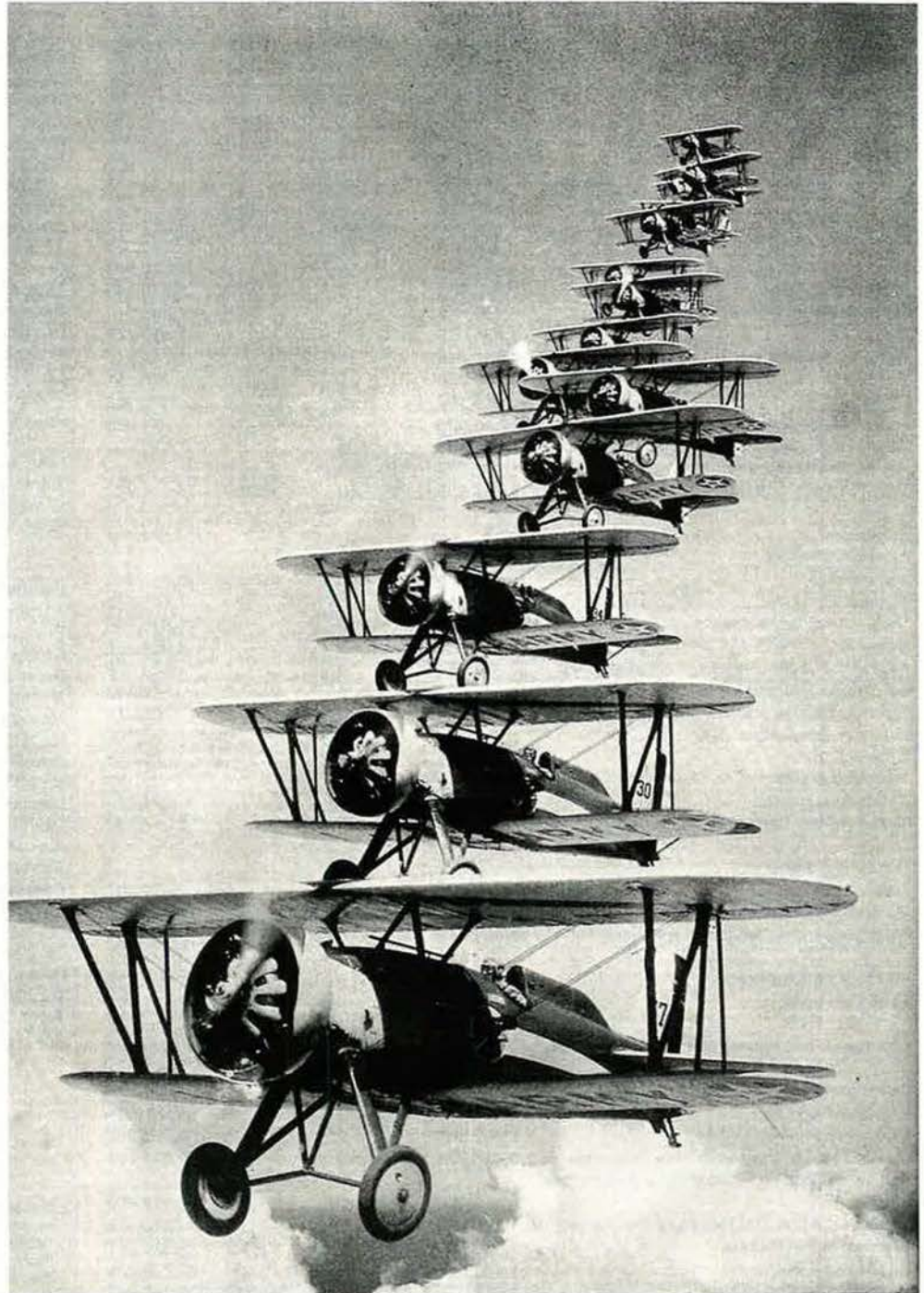
Liabilities and Net Assets

Liabilities	
Accounts Payable	\$1,642,331
Premium Refund Payable	245,000
Accrued Expenses	529,876
Deferred Revenue:	
Membership Dues	916,157
Magazine Subscriptions	81,884
Meeting	442,004
Total Deferred Revenue	<u>1,440,045</u>
Note Payable	<u>6,589,689</u>
Capital Lease Obligation	77,400
Interest Rate Swap Agreement	268,957
Accrued Pension Liability	<u>3,443,161</u>
Total Liabilities	<u>14,236,459</u>
Commitments	
Net Assets	
Unrestricted	24,813,031
Temporarily Restricted	556,493
Permanently Restricted	<u>871,323</u>
Total Net Assets	<u>26,240,847</u>
Total Liabilities and Net Assets	<u>\$40,477,306</u>

Treasurer's Note: The statements presented here consolidate the financial activities of AFA, VBA, and the Air Force Memorial Foundation. While the three organizations operate as separate entities, their financial activity is required to be consolidated since they share a common Board of Directors. The consolidated format is in compliance with SOP 93, Reporting of Related Entities by Not for Profit Organizations.

Sky Stack

In this striking photo, 14 Army Air Corps P-12 pursuit aircraft of the 1930s form up in echelon for the camera. The shot has preserved a glimpse of the open-cockpit, helmet-and-goggles era of military flying. The P-12, which had no nickname, boasted a 30-foot wing span and could cruise at 150 mph. The first P-12 was delivered by Boeing on Feb. 26, 1929, to Air Corps Capt. Ira C. Eaker. In 1941, the Army phased out the P-12, the last of the service's bi-plane fighters.





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Artwork by Zaur Eylanbekov

B-26 Marauder



The B-26 Marauder was a stalwart of World War II. The medium bomber, designed by Martin, was flown in combat by air forces of the US, Britain, Free France, Australia, South Africa, and Canada, mainly in support of Allied ground forces. Early problems produced negative press and unflattering nicknames, but the B-26 overcame all to post the lowest per-sortie loss rate (less than one-half of one percent) of any Allied bomber.

There were no B-26 prototypes; it was ordered into production right off the drawing board. The aircraft had a radically new, streamlined shape and was produced by means of the latest manufacturing technology. The Marauder boasted a huge bomb bay, tricycle landing gear, powered gun turret, and more. Its high wing loading coupled with inadequate training led early on

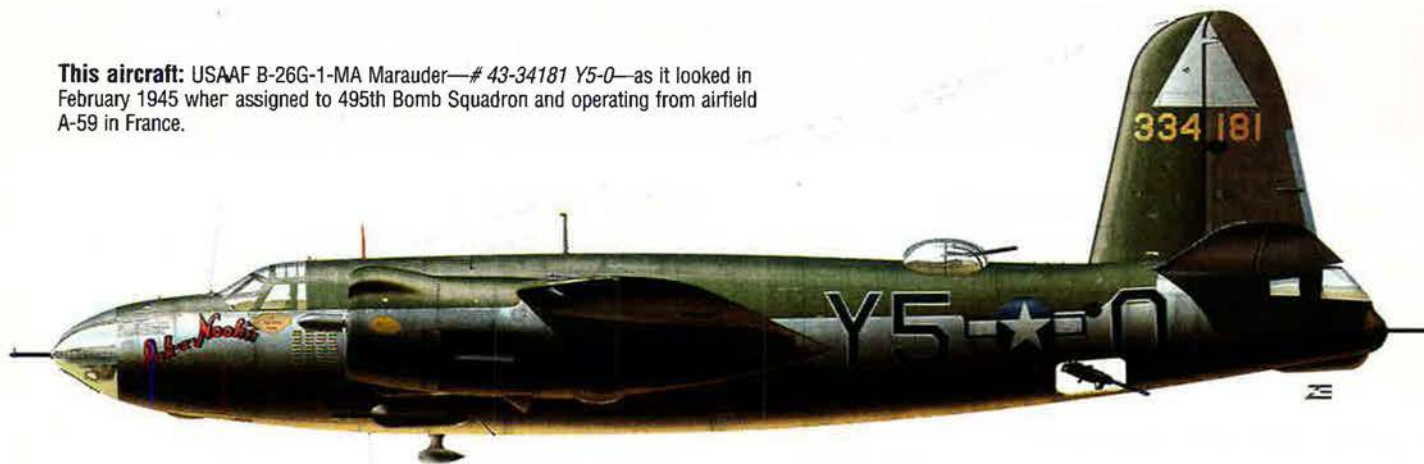
to a high accident rate, but deficiencies were soon corrected.

Early Marauder models entered combat in New Guinea in April 1942, and they subsequently saw action in most theaters of war. The bulk of the new bombers were sent to the European Theater, where the B-26's speed, firepower, and rugged construction served it well. The closing months of the war saw Marauders attack German rocket sites, airfields, and communications centers in France and the Low Countries. By the end of World War II, B-26s had posted more than 110,000 combat sorties and had dropped 150,000 tons of bombs.

The Martin B-26 was retired quickly after the end of the war, and the B-26 designation was reassigned to the unrelated Douglas A-26 Invader.

—Walter J. Boyne

This aircraft: USAAF B-26G-1-MA Marauder—# 43-34181 Y5-0—as it looked in February 1945 when assigned to 495th Bomb Squadron and operating from airfield A-59 in France.



The Marauder was a bomber of radical new design.

In Brief

Designed, built by Martin ★ first flight Nov. 25, 1940 ★ crew of seven (two pilots, bombardier, nav/radio operator, three gunners) ★ number built 5,266 ★ **Specific to B-26C:** two Pratt & Whitney R-2800 radial engines ★ max speed 282 mph ★ cruise speed 214 mph ★ max range 1,150 miles ★ armament, 12 .50 cal machine guns ★ bomb load, up to 3,000 lb ★ weight (loaded) 38,200 lb ★ span 71 ft ★ length 58 ft 3 in ★ height 21 ft 6 in.

Famous Fliers

Medal of Honor: Jimmy Doolittle, Darrell Lindsey. **Test Pilots:** Ken Ebel, Vincent Burnett. **Other notables:** John Moench, Henry Newcomer, David Tallichet, Paul Tibbets Jr., Kermit Weeks Jr.

Interesting Facts

Got its name "Marauder" from RAF ★ built in numbers greater than any Martin aircraft ★ set single American aircraft sortie record in Europe (207, by B-26B *Flak Bait*) ★ flown by Doolittle in loop and roll with only one engine ★ became only USAAF bomber to drop torpedoes ★ ordered in large numbers (1,000) before first flight ★ was tagged with such pejorative nicknames as Widow-Maker, Flying Coffin, B-Dash-Crash, Martin Murderer, Flying Prostitute ★ used ammo transfer tracks built by Lionel Trains.



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