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Journal of the Air Force Association

MAGAZINE

The War Against ISIS



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The 2014 AFA National Convention**



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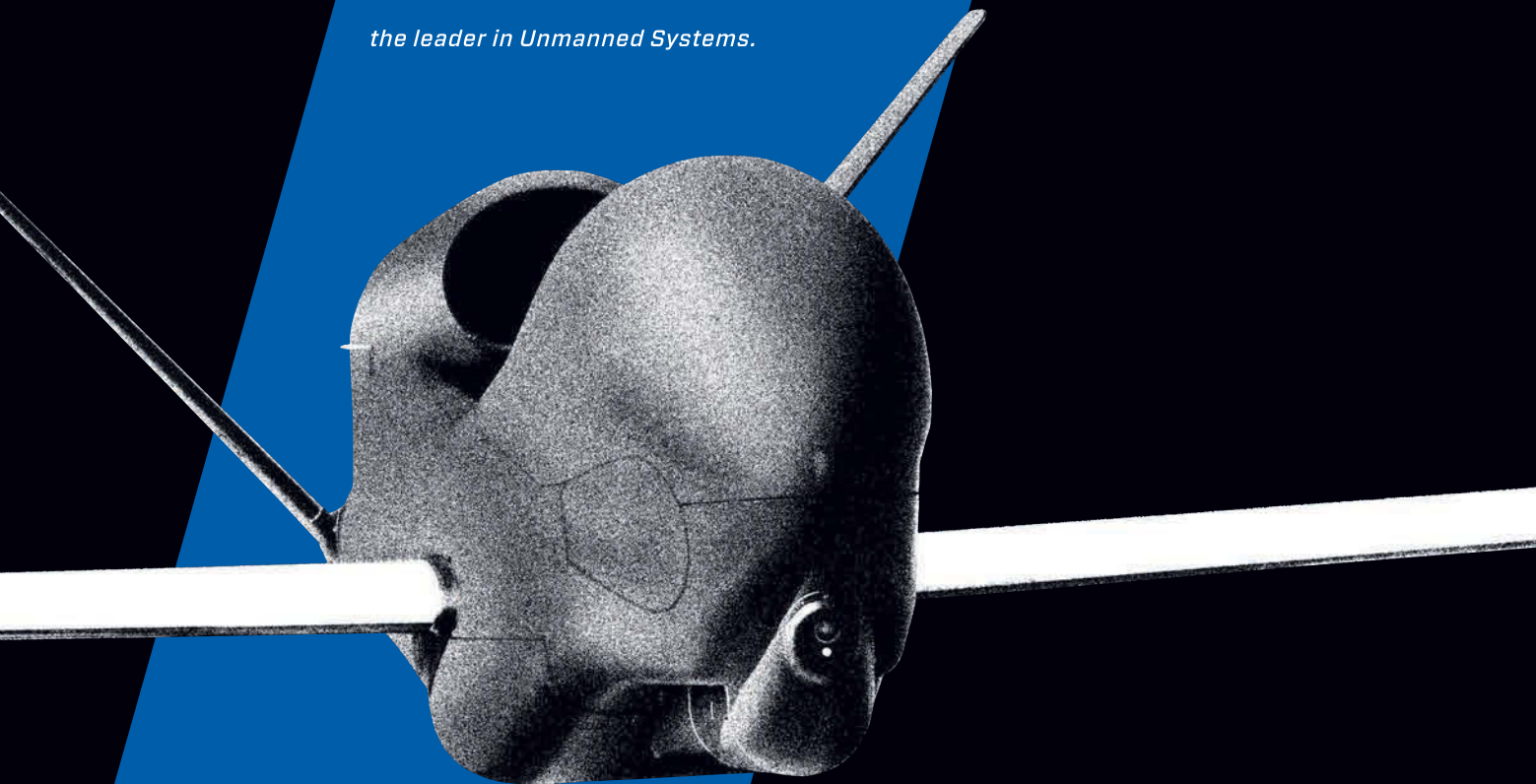
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About the cover: A B-1B Lancer hits its afterburners over Iraq after conducting air strikes in Syria. See "Targeting ISIS," p. 30. USAF photo by SrA. Matthew Bruch.



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The 2015 Statement of Policy

The strategic interests of the United States stretch across the globe. As our Armed Forces continue to shrink in an era of fiscal constraint, the capabilities of airpower to deter our adversaries and, when necessary, respond rapidly and forcefully are increasingly the principal options for our nation to protect our interests.

Our United States Air Force remains the tip of the spear for this vital capability.

With the Air Force struggling to cope with historic challenges, this Association has focused on several critical issues.

I. AIR FORCE PEOPLE

AFA believes it is imperative to recognize that military and veteran benefits are earned through years of sacrifice, service, and in many cases, grievous personal injury and disability. Any changes to the military compensation structure should be based on a holistic assessment of the total compensation package, rather than piecemeal cuts. Any changes to the current compensation and retirement system should include grandfathering the current force. The all-volunteer force has served this nation very well and any new compensation package must continue to attract quality recruits and retain them.

DOD now seeks to slow the growth of various pay and benefit categories. Officials propose to raise TRICARE fees, tighten the calculations of cost of living adjustments, limit retiree pay, and cap annual raises.

AFA is working with the Secretary of Defense's office to continue the dialogue about changes to the current system, and has testified before the Congressionally-mandated Military Compensation and Retirement Modernization Commission. It is the nation's duty to honor commitments to those serving today and to those who have served in the past.

II. VETERANS

AFA supports sufficient funding to permit the VA to support our veterans by providing expedient and accurate disability compensation processing, community-based education, employ-

ment assistance, timely access to healthcare, and greater assistance to combat homelessness during and after their transition to civilian life. We will engage to assure that pending legislation will support veterans' needs but not negatively impact the Air Force Medical Service's primary mission. AFA will also be diligent in advocating for the restoration and sustainment of the Air Force Medical Service's infrastructure to assure access to care, operational mission support, and wartime capability.

AFA believes our veterans have earned access to quality and timely

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healthcare, whether in the VA system or elsewhere.

III. FORCE STRUCTURE

Our USAF is to the point where it does not have the force structure to meet wartime requirements. AFA believes the services must be allowed to manage force structure within their means as they see fit.

AFA also supports measures such as a Base Realignment and Closure (BRAC) Commission to align installations with force structure.

IV. MODERNIZATION AND RECAPITALIZATION

AFA believes that the Air Force should not be forced to mortgage its future—not to mention the security of the nation—by relying on the aircraft of yesteryear. Recapitalization is a firm requirement if the Air Force is to prevail in future combat.

We cannot afford to bandage old airplanes as potential adversaries roll new ones off the assembly line. AFA urges the Administration and Congress to commit to keeping the F-35 program on track and, if possible, to move to

faster production to bring it into service sooner. The F-35 is a "must-have," essential in any future conflict with a foe with modern defenses.

AFA believes the KC-46A will revolutionize the air mobility mission. If anything, the number of KC-46As should be increased, given the large number of old tankers that need to be replaced.

The Air Force remains on course to acquire 179 advanced KC-46A Pegasus tankers as a first installment to replace some aged KC-135s—all of which are more than 50 years old.

AFA applauds the Administration's decision to move forward expeditiously with the bomber program and give it adequate funding even in the face of sequestration. We call on Congress to likewise support this effort.

The Air Force has the duty to maintain a modern, reliable, and highly capable strategic nuclear force to deter aggression, promote stability, and provide extended protection to our allies and friends. The new long-range strike bomber will have the ability to launch stand-off weapons as well.

AFA applauds the Air Force's effort to hold down costs while maintaining strong space capabilities. However, this Association believes it is important for the Air Force to carefully assess the use of commercial satellites for some military payloads, tapping industrial firms for space launch, and any and all other means for lowering the high cost of space power. Space capabilities are essential to the Joint Force Commander's ability to deter aggression and to execute globally the entire range of military operations.

It expects to meet these needs with the continued production of the Space-Based Infrared System and Advanced Extremely High Frequency satellites. The Air Force has now had more than 100 consecutive successful national security launches—an extraordinary achievement.

AFA believes the Air Force must continue to enhance its ISR capabilities for operations in the contested environments it will face. This will require updating the current mix of ISR assets, giving significant and sustained attention to modernizing Air Force systems and capabilities.



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ISR is a unique capability and a major asset, offering eyes and ears around the world. Thanks to a combination of aircraft, satellites, and other technologies that collect, analyze, and disseminate critical information, we can identify and assess adversary targets and vulnerabilities that could put US interests at risk.

AFA believes the Air Force must play a leadership role in ensuring US military superiority within cyberspace. We must establish and maintain a robust capability to defend our networks against cyber attack and to attack and exploit the networks of our potential adversaries when necessary.

Air Force and DOD networks face incessant attacks. US adversaries are advancing their military and economic capabilities by hacking into the nation's public and private networks, at times stealing industrial and trade secrets.

AFA strongly supports the recapitalization of the AFSOC AC/MC-130 fleet with new C-130Js.

AFSOC personnel and equipment have been the most heavily tasked and utilized forces in the current War on Terrorism. This will not change as new threats arise and continue for the foreseeable future.

AFA believes USAF needs to make continued investments in research and development in order to maintain a technological edge, given the very dynamic security environment that now exists.

The US cannot remain technologically superior if funding for R&D is continuously cut. We must remember the US Air Force dominates air, space, and cyberspace because revolutionary research led to extraordinary innovations.

AFA urges the Administration and Congress to work together to establish a strategic plan to identify the most vital elements of a robust defense industrial base and the steps needed to maintain its strength.

If this industrial base continues to shrink, the US could lose major suppliers. This would leave gaps in our supply chain, forcing the US to depend on foreign sources, which might not be reliable. This situation was seen recently, with the Russian-built RD-180 engine that powers US rockets. Russian leaders made a threat to restrict



the RD-180. While the Air Force maintains a two-year stockpile, the service is examining how to develop a new US-built engine program.

Additionally, USAF funded two secondary recapitalization programs in its latest budget request—the T-X trainer replacement program and the Joint Surveillance Target Attack Radar System (JSTARS) recapitalization. Each will be important in modernizing the

The Air Force must play a leadership role in ensuring US military superiority in cyberspace.

Service for the next decade. The T-X program will replace USAF's aged T-38 Talon trainer. The recent award for 112 Sikorsky Black Hawks, outfitted with Lockheed mission equipment, brings to a close a more than decade-long Air Force quest to purchase a replacement for its HH-60G combat search-and-rescue helicopters—a positive step forward.

V. NUCLEAR ENTERPRISE

AFA believes we must invest adequate resources to support this important mission. We must educate an entire generation that grew up hardly hearing the terms of strategic deterrence. The nuclear enterprise is the final line for strategic deterrence.

Air Force Global Strike Command continues to develop combat-ready forces for nuclear deterrence and global strike operations. USAF must recover a

system that assures integrity and strengthens the morale of the men and women who support the nuclear mission.

VI. EDUCATION FOR THE NEXT GENERATION

AFA strongly advocates for aerospace education and STEM as the foundational skills needed to sustain US airpower, national security, and economic vitality.

AFA's CyberPatriot National Youth Cyber Education Program is the most ambitious of its kind in the nation, attracting young people to STEM through an exciting competition. Each year, the program has grown more than 20 percent, and now supports K-12 cyber education, a testament to its growing popularity.

Additionally, AFA continues to partner with the Civil Air Patrol and Air Force Junior ROTC across the country, providing grants to squadrons, units, and educators to help further their initiatives to provide a more exciting and engaging curriculum.

CONCLUSION

Americans require that our armed forces will be able to defeat adversaries across all domains—air, space, cyber, sea, and land. Further, America expects its Air Force to be the best in the world. Today the Air Force is in danger of not being able to meet those expectations.

AFA firmly believes the nation must support the needs of our Airmen and their families and provide the best training and equipment possible—in sufficient quality and numbers, and at the time needed—to protect our nation. These requirements, too, are in danger.

The Air Force Association unequivocally declares that America deserves a dominant United States Air Force and a strong national defense. We stand for and respect our Airmen, their families, and our veterans, and our Air Force heritage. We pledge that we will do all that we can to guarantee that the Air Force can and will play its full and proper role to provide for the common defense of the nation we love. ★

This editorial is extracted from the Air Force Association's full 2015 Statement of Policy, which is available in its entirety at <http://www.afa.org/AFA/Publications/StatementofPolicyTopIssues>.




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AFA's Mission

Our mission is to promote a dominant United States Air Force and a strong national defense and to honor airmen and our Air Force heritage. To accomplish this, we:

Educate the public on the critical need for unmatched aerospace power and a technically superior workforce to ensure US national security.

Advocate for aerospace power and STEM education.

Support the Total Air Force family and promote aerospace education.

Let the Army Have Them

I couldn't agree more with the comments by [C. J.] Lingo and Colonel Smith in the September issue [*Letters: No A-10, Really?*] p. 8]. Clearly the best replacement for the A-10 is a 21st century version of the aircraft. If the Air Force does not want to support the A-10, perhaps it is time to transfer it to the Army and allow the Army to procure ground support aircraft in the future.

Don Chrissinger
Crofton, Md.

Policemen Don't Retire

And they say, "America can't police the world." In the very excellent article, "Out From Italy" in the September 2014 edition [p. 74], the F-16s of the 31st Fighter Wing prove otherwise. America must police the world.

For roughly a hundred years plus, since the Spanish-American War and the beginning of World War I, American sea- and airpower have been projected upon all the regions of what we would call the "Free World." Europe has sustained American military power on its soil for almost a century now, and [the host countries] approve of it.

And how appropriate this article in light of the recent slaughter of American journalists and noncombatant men, women, and children by ISIS killers in Syria and Iraq. Because we project US airpower out to Italy and beyond, the 31st FW stands ready to answer the call to action on short notice. Combat time!

With my very rough, and very rusty calculations, I projected the Aviano F-16s could reach Ar Raqqa, with three loads from the tankers en route to Syria, and dump a load of high explosives right on the ISIS commander's doorstep, today!

Shades of Rolling Thunder and North Vietnam, attacking from Thailand; my fervent hope is that the White House and the Pentagon do not attempt to micromanage the air campaign and that they allow our gallant F-16 airmen (and others) to achieve and savor victory.

ISIS must be struck down and killed, on their turf, to the last man—and not on North American soil. Let's hope we are all allowed this victory. No prisoners; remember, "Gitmo" is closed.

Michael W. Rea
Savannah, Ga.

PANAMAX 2014

Having served as an Air Force enlisted man in the Panama Canal Zone '73-78, your photo and caption coverage of PANAMAX 2014 caught my eye [*Air Force World: A Panama Chat*, September, p. 20].

I took exception to your portrayal of the exercise as focused on protection of the "Panama Canal zone." The use of the term "zone," even with a small "z," is really a misnomer.

The Panama Canal Zone passed into history in 1979 when under the terms of the Torrijos-Carter Treaties

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. (Email: 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

60 percent of the Canal Zone territory was returned to Panama. The remaining territory was known as the Canal Area. On Dec. 31, 1999, it was also returned to Panama.

Your coverage inspired me to do some research on the PANAMAX 2014 exercise. The entire exercise, save for a lone B-52 sortie, was conducted in simulation at locations in CONUS. The aircraft, with a crew of seven, departed Ellsworth AFB, S.D., and flew a 15.5-hour ISR mission to the US Southern Command area of operations. It later recovered at Barksdale AFB, La., the aircraft's home station.

Col. Bill Malec,
USAF (Ret.)
O'Fallon, Ill.

Yeah, Pretty Sure Missiles Helped

In reading the recent article by Ms. Rebecca Grant, "The Reagan Buildup," I was surprised to find out that the world was saved by single-seat fighter aircraft only [September, p. 82]. This was a shallow single-focus article that left out the "real" reasons that the Russians came to the table.

During the 1980s, for Ms. Grant's information, USAF had approximately 1,000 ICBMs that were about 30 minutes away from any soccer field in the USSR. Incidentally, the Air Force had also proven the feasibility (while not practical) of a Minuteman air-mobile platform.

To fill in some of Ms. Grant's historical gaps, during the mid-1980s a small group of Systems Command engineers along with their SAC counterparts in Southern California were developing a small ICBM that was land mobile, a rail-mobile multiple independently targetable ICBM, and fielding the Peacekeeper ICBM with 10 individually targetable warheads.

I would contend that these ICBM weapons systems were certainly more of a threat and created a little more apprehension with the Russians than single-seat fighter aircraft.

Part of the issue the Air Force suffers from today is that it can't get beyond single-seat manned aircraft, which ups the cost of the platform by some 40 percent. Sadly the Air Force then buys what it doesn't need—reference your article, same issue, "The Saga of the Spartans."

Many of us believe that the SAC ICBM force had a hand in winning the Cold War.

Col. Quentin M. Thomas,
USAF (Ret.)
Las Vegas, Nev.

Rebecca Grant did a good job of covering the aircraft developed in "The Reagan Buildup," but she never men-

tioned the most powerful Air Force weapon in that buildup, which made its first flight in June 1983 and met initial operation capability in November of 1986. It was the (MX) missile system (LGM-118A), named The Peacekeeper by President Reagan himself.

Lt. Gen. Aloysius G. Casey,
USAF (Ret.)
Redlands, Calif.

To give complete details of the subject in Rebecca Grant's latest article would perhaps require a book, so it is understandable that not all the buildup activities of the period were mentioned. That said, I submit that some important programs should have been included in the discussion.

In the mid- to late-1980s, 50 Peacekeeper intercontinental ballistic missiles were deployed in former Minuteman III ICBM silos. In that time frame the Peacekeeper rail garrison system (50 Peacekeepers in a mobile and therefore more survivable basing mode) was being developed. The small ICBM program was also underway, which would add another mobile system to our arsenal of deterrent forces.

It was said at the time that one of the key factors in the breakup of the Soviet Union was the inability of its economy to sustain the cost of its military modernization efforts. That the ICBM programs mentioned above helped drive the USSR toward more

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defense spending—and thus its demise—should have merited their mention in the article.

Lt. Col. Dennis R. Lyon,
USAF (Ret.)
Layton, Utah

The missiles on the Soesterberg F-15Cs in the lead photo were misidentified. They were AIM-9Ls and AIM-7Fs. The AIM-120s didn't show up until much later (the first few were carried by 33rd TFWF-15Cs from February 1991 during Operation Desert Storm). It is questionable if they ever armed the 32nd TFS, which disbanded in early 1994.

Maj. Jim Rotramel,
USAF (Ret.)
Lexington Park, Md.

Not Those Bad Guys, Other Bad Guys

Retired Lieutenant Colonel Sims gives his biases away at two points in his letter in the September issue [*“Not Made in Our Image,”* p. 8]. In the very first paragraph he states—as factual—that “we supported Iraq against Iran” and that “we supported the Taliban in their efforts to expel the Russians” from Afghanistan. The first assertion is questionable, as we probably supported both sides. Remember arms for hostages? But I don't think anyone can validly claim that we supported the Taliban, which was founded after the Soviet occupation ended.

The Taliban seem to be creatures of the Pakistan ISI, formed from veterans of the mujahedeen who had been supported by that agency during the Soviet occupation. The United States supported other resistance groups that also sought to expel the Soviets. The Taliban was founded in 1994 and came to power in Afghanistan several years after we unwisely left that sad country to its own devices following the Soviet withdrawal. The Taliban had to defeat those who had been supported by the US to take power. Is it likely that some members of the Taliban had been with US supported groups? Certainly, but that is not what the letter said. In fact, there was no Taliban *per se* during the period of the Soviet occupation.

Readers should remember that the Taliban assassinated their enemy and American ally Ahmad Shah Massoud on Sept. 9, 2001, as preparation for the 9/11 attacks on the United States.

But the true giveaway is the use of the term “neocons” as a pejorative in his final paragraph. Readers will probably know that this is not a term used by neutral observers.

MSgt. Bill Brockman,
USAF (Ret.)
Atlanta

Even Earlier Recon

I enjoyed John T. Correll's unusual story on Pancho Villa and the 1916 American excursion to find him [*“Chasing Pancho Villa,”* September, p. 120]. Readers might be interested to learn that a group of French aviators had visited the US as early as 1910 for a year, bringing several different types of aircraft and a number of newly breveted (licensed) pilots to demonstrate their planes to the American public at large and especially the US Army, which was putting a lot of time and effort into investigating the new vehicle's use and advantages on or above the battlefield. The French put together a train with a steam locomotive and several cars in which they placed their aircraft, living quarters and maintenance facilities. Starting in Richmond and heading south/southwest through Tennessee and Louisiana (where the group organizer and leader, John Moisant, was killed in a crash of his Bleriot in New Orleans on the last day of 1910), the group spent considerable time in Texas. They stopped at several cities, including Fort Worth, Dallas, San Antonio, and El Paso, to put on their show. One of the young pilots was Roland Garros. In four years he would put his stamp on aviation history when he attached deflectors to the propeller of his Morane-Saulnier Parasol so that he could fire a single Hotchkiss machine gun along the plane's line of flight. Garros gained three kills with his “fighter” before he was forced down and captured in 1915. He escaped in February 1918 and after making his way back to France and going through retraining, he joined a Spad XIII squadron. He got one more kill before he, himself, was killed in action, although it is not certain whether he was shot down by one of the numerous Fokker D. Vlls he was engaging, or his synchronizing gear had failed and he had simply shot off his propeller. (There was no damage to his Spad's engine.) He died a day before his 30th birthday. Although he is not the ace historians often claim (of course, you need five kills for such designation), his friends did manage to get his name applied to the major tennis stadium that hosts annual contests of international players.

At any rate, in February 1911 Garros flew some of what might be considered some of the earliest reconnaissance flights to “observe” the various groups of Mexican rebels of the time, not all of whom were directly in support of Pancho Villa but were often offshoots of his main force fighting the different warlords or chieftains who sprang

up against the Mexican government of the time. Photos of these colorful men made them look like they had stepped right out of Wallace Beery's 1934 biopic “Viva Villa.”

Cmdr. Peter B. Mersky,
USNR (Ret.)
Alexandria, Va.

Kremlin Fears

Having worked partly in the media and partly for our government on defense matters during the events of 1983, permit me to briefly annotate some of Peter Grier's assertions in his pithy article, “Able Archer” [*September, p. 106*].

First, Mr. Grier speaks of what he calls Soviet “worries” over Reagan's missile defense program (the Strategic Defense Initiative). Yet as Gorbachev's Foreign Minister Eduard Shevardnadze freely admitted after the demise of Communism and Sovietism in Russia, the Soviets had themselves violated the 1972 ABM Treaty that had forbade ABM. At that time, many years before Reagan's SDI proposal of March 1983, the Soviets had begun erecting at Krasnoyarsk an elaborate coast-to-coast “SDI” of their own. Too, the Soviets had already deployed an impressive anti-missile defense around Moscow (permitted under the treaty) while the US had built none around any of its cities. The Soviets kept upgrading their Moscow ABM.

Thus, what the Kremlin feared about SDI was that the US would get one step ahead of them in the effort to shoot down enemy missiles. Too, they feared, as some informed, retired Soviet officials admitted after 1991, that meeting the US challenge would bankrupt the already overstressed Soviet economy. It was excessively burdened with the colossal Brezhnev-Andropov military buildup and expansion of bases overseas, the biggest such expansion in modern times.

Second, Mr. Grier should have pointed out that the NATO decision to deploy Pershing II and GLCM in Western Europe in the late 1970s was in response to prior Soviet deployments of its so-called “medium-range,” nuclear-tipped SS-20 missiles. Beginning in 1976, these were being deployed in the Soviet bloc and targeted Western cities.

Third, it is not true that the Reagan Administration greatly increased defense expenditures above what President Carter's security team had projected in DOD expenditures for the coming year (1980-81)—that is, following the shocking Soviet invasion of Afghanistan in late December 1979.



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 **BOEING**

In some respects, the Carter-projected defense spending was scaled back under Reagan.

Finally, Secretary Gates is quoted in Grier's last paragraph with the cautionary statement that the "Soviets may not have believed a NATO attack was imminent in November 1983." In other words, Moscow wished to depict Washington as an aggressor. Indeed, Moscow and some Western interpreters of its behavior depict the Soviets as merely responding to US "aggressiveness." They implicitly echo the Moscow line. One prominent Stateside writer alleged that the plane could not be seen clearly by the Sukhoi (Su-15) pilot since the shutdown occurred, he falsely claimed, on a "moonless night." In fact, a nearly full, gibbous moon shown brightly that night, Sept. 1, 1983, illuminating the white fuselage of the Boeing 747-230B of Flight 007 with its 246 passengers.

2nd Lt. Albert L. Weeks,
USAF (Ret.)
Sarasota, Fla.

The Great, Greasy Ground Guys

Thank you! As a retired enlisted member of USAF, I read *Air Force Magazine* with great appreciation for the continued commitment of the Air Force airmen to keep our nation safe.

I read with interest your article, "Looking East," September [p. 32], where you reported about the forward operating base team at Lask AB, Poland. The team members were listed by career field. As a retired AGE person, I smiled and want to thank you for giving credit to the unheralded supporters of the flight line operations. If it is on the flight line and doesn't fly, it most likely will be a piece of aerospace ground equipment. This important equipment is necessary to launch, recover, service, repair, and test those aircraft that support the defense of our nation. In many articles, your photos give glimpses of this equipment being used for their intended purposes. This equipment provides the electrical power, hydraulic pressure, air pressure, heating, cooling, munitions handling, etc., for proper testing and servicing of our front line aircraft. Wherever you have aircraft or plan to have aircraft, you need to have AGE to keep that aircraft available for flight.

As a retired AGE superintendent, I want to give kudos to our unheralded men and women who for years have gotten dirty, oily, greasy, been assigned great assignments or been assigned to those austere locations like Lask AB, Poland, to provide this small but

significant task in the defense of our nation.

DINSTAAR (Danger is no stranger to an AGE ranger).

SMSGt. Robert W. Gramley,
USAF (Ret.)
Defuniak Springs, Fla.

Hats off to General Larson

It was nice to see the RC-135 finally make its way into the "Airpower Classics" section [September, p. 136]. The bird, in all its versions, has been around for a long time, yet today, still is one of the best real-time and near-real time intelligence sources available to a combat commander.

In the "Famous Fliers" section, there is one notable omission, the name of Maj. Gen. Doyle E. Larson. General Larson began his Air Force career as an enlisted Russian linguist and completed it as the USAF Security Service commander and the first Electronic Security Command commander. Before that, however, a sizable portion of General Larson's midcareer years was wrapped around the RC-135. He successively activated the 6985th Security Squadron at Eielson AFB, Alaska; the 6949th Security Squadron at Offutt AFB, Neb.; and the 6990th Security Squadron at Kadena AB, Okinawa. All three squadrons provided the mission crews for the Rivet Joint (RJ) missions. He proudly wore the red mission scarf that symbolized 100 missions on the RJ. After retirement, he was very active in the Air Force Association, serving as AFA President from 1996 to 1998 and Chairman of the Board from 1998 to 2000.

Just thought you'd like to know.
Maj. Mike Conley,
USAF (Ret.)
Cucamonga, Calif.

Correction

In the August issue, p. 7, we ran a letter entitled "Put Up or Shut Up," by James Slagle. We misstated Mr. Slagle's rank, and should have identified him as a retired colonel.—THE EDITORS

Update Your Info

This is a good time to remind our readers to make sure their member profiles are current and accurate. You may do so by contacting the membership department at 1-800-727-3337, by email at membership@afa.org, or by writing to 1501 Lee Highway, Arlington, VA 22209-1198. You may also update this information at any time under the members only area of our website, www.afa.org.

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 **BOEING**

Fix the contractor system; NATO ran out of bombs; A clear acquisition career path is sorely needed

WAY BEYOND CAMP FOLLOWERS

The use of operational contractor support has been accelerating in the last decade, ever since former Defense Secretary Donald H. Rumsfeld declared soldiers were too expensive for support functions and he only wanted “trigger pullers” in uniform. Contractor personnel have deployed in countless forward missions, from food service to armed security.

A new Defense Science Board report, however, says while the Pentagon is highly dependent on OCS for just about any mission, it has an ad hoc, inconsistent, expensive, and dangerous approach to it. There’s no formal process for identifying how much is needed, how to efficiently activate OCS for war, and how much OCS will cost.

In “Contractor Logistics in Support of Contingency Operations,” dated June but released in late summer, a DSB task force led by Ronald L. Kerber said even though OCS dates back to the Revolutionary War, Pentagon leadership still “does not yet recognize [it] as a critical component of combat readiness” and has not shown any urgency in getting a handle on it. The panel noted, “For the majority of the duration of each contingency conflict, the number of contractor personnel was equal to or larger than the deployed military personnel. At one point there were over 160,000 contingency contractor personnel in Iraq.” The report has been two years in the making.

The panel said planning for use of OCS is inadequate; the risks to OCS personnel have never been formally addressed; contingency operations contracts are often “complex and costly” for both peacetime and wartime missions; and that there’s no system to audit such contracts in a timely manner. Overall, despite the military’s profound dependency of the US military on contractors who go forward with the armed forces, management of this critical element of combat capability is haphazard.

The panel offered six “major findings” regarding OCS.

First, the panel wants DOD to formally recognize OCS for the massive role it plays in any operation and to plan for it. In previous contingencies, “success was only achieved because funding was essentially unconstrained. This will not likely be the case in future operations.” Moreover, the widespread use of OCS without effective leadership “contributed to a level of waste, fraud, and abuse seemingly without long-term consequences.” There are a number of steps underway to confront the situation, but none have yet turned into a coherent policy, the DSB panel said. “The task force commends DOD for these efforts but offers a caution not to confuse activity with results,” it said.

Second, the Pentagon needs to recognize how crucial OCS is to anything it needs to do. This reliance is driven by the decreasing size of the uniformed force, the fact that “deployment rotation periods have increased, and force numbers are routinely capped for specific missions.” Also “modern warfare will increasingly require the use of new and complex equipment to surge and shrink the force at a high operating tempo and to respond rapidly.” OCS will have to make up the shortfalls.

It’s OK to be that dependent, the task force said, but it maintained that OCS remains “inappropriate” for “actions that determine or decide national and mission policy and objectives,

actions that determine or decide the value to the nation and the dollar amount to be obligated, and combat.”

Future success depends on OCS being “integrated” into defense planning, and the panel’s third recommendation called for doing this, given the likelihood of “unintended and undesired consequences” when it’s not planned for.

Fourth, there’s been no comprehensive risk assessment for contractor personnel, especially in the later phase of an operation—“stabilizing and enabling civil authority.” That has produced “unintended consequences” that have damaged US interests and hurt mission success. Examples include the public executions of contractors, and contractors behaving badly in ways that have cost the US dearly in various conflicts.

Management of OCS has often been “fragmented, inconsistent, and at times, ineffective,” the panel said, and its fifth recommendation was that DOD train contractors on what’s expected of them when deployed, and the ramifications of how they do their jobs and how they deal with local residents. Bad behavior paints a poor picture of US stewardship of taxpayer money and can do incalculable damage to a war effort, the group said.

The panel’s sixth major finding was that it’s urgent to develop a method to audit wartime contracts in a timely manner. Typically this is only done after contracts are completed, the panel said—too late to stop waste, fraud, or abuse in its tracks.

Eight recommendations were included in the report on how the Defense Department should establish—quickly—planning and oversight mechanisms for OCS. Among the recommendations were creating a three-star flag officer overseer for OCS. This would put the job on a par with the head of the Defense Logistics Agency.

Another recommendation urged the Secretary of Defense to recognize OCS “as part of the Total Force structure” and create a corps of specialists who know how to rapidly mobilize and contract for OCS. The remainder of the recommendations included detailed suggestions for how USD/AT&L should develop policy and tactics for use of OCS, how to implement an audit strategy, and how combatant commands should integrate OCS into their planning.

RECONNECTING AND RELOADING NATO

America’s European NATO allies ran out of munitions during the 2011 action in Libya and had to borrow from US stocks to keep the air campaign going. Since then, replenishing NATO’s air-to-ground weapons magazines has been like the old joke about the weather: Everybody talks about it, but no one seems to do anything about it.

With Crimea seized and Russian troops openly aiding pro-Moscow rebels in Ukraine, though, NATO seems to be taking the weather report seriously. In September, the head of NATO’s military committee, Danish Army Gen. Knud Bartels, told defense reporters in Washington that a Danish initiative to get NATO to pool its funds to buy weapons more cheaply and quickly has gotten traction.

Stocks are “beginning to grow,” Bartels said, and NATO nations are partnering to buy munitions in “a substantial amount.”

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Breedlove said NATO Article V plans are again made “day by day.”

This will save money, speed the restocking time, and create a “greater ability to react at short notice” to contingencies. Bartels was Chief of the Danish armed forces during the Libyan operation.

Bartels spoke shortly after the 2014 NATO Summit in Wales, which expanded on the Connected Force Initiative. CFI seeks to better integrate the NATO militaries and especially their ability to act quickly and jointly. Partners agreed on processes for linking national and NATO exercises and for involving non-NATO partners in those wargames. Sweden and Finland, for example, have signed agreements to work more closely with NATO without actually joining the alliance.

More importantly, though, the Wales summit bolstered the NATO Response Force. NATO Supreme Allied Commander, Europe, USAF Gen. Philip M. Breedlove, speaking at the Air Force Association’s Air & Space Conference in September, said NATO would reassure allies that feel “most threatened” by Russia’s recent land grabs by building up a “high-speed response” element of the NATO Response Force. It will have air, sea, and land components ready to go in five days or less. Breedlove also proposed the creation of a corps-sized element focused on defending any ally “365 days out of the year” in support of NATO’s Article V, which guarantees that an attack on one will be treated as an attack on all. This corps will be responsible for planning for “Article V ... defense actions on a day-by-day basis,” he said.

In countries most threatened, there will be a forward element of NATO planners that will think about how best NATO can defend those countries specifically, and forces will be aligned to fall in on those plans should the need arise, Breedlove reported.

However, “NATO’s budgets are challenged,” Breedlove said. “We will be challenged across the next 10 to 20 years to make the investments we really need to make.” Some of those are “desperately” needed, he said, without offering specific examples.

OUR SURVEY SAID ...

There’s long been a consensus in Washington that the Pentagon’s acquisition system—while it eventually turns out world-class gear—is too expensive and too slow. Especially in an era when the latest technology quickly turns stale, the ponderous acquisition system is increasingly viewed as a liability.

The incumbent head of defense acquisition, technology, and logistics, Frank Kendall, has rolled out a series of initiatives

dubbed “Better Buying Power” versions 1.0-3.0, each concentrating on ways to make the process more efficient. He’s on record as saying he thinks the system isn’t broken, but needs tweaking and relief from time-consuming functions that offer little added value, though they are required by law.

The Senate decided to poll acquisition experts on what they thought needs to be done. In October, the survey was published by the Homeland Security and Government Affairs’ permanent subcommittee on investigations, chaired by Sen. Carl Levin (D-Mich.), who also happens to chair the Senate Armed Services Committee. The list of 31 experts reads like a Who’s Who of Pentagon expertise, including former members of the Joint Chiefs of Staff, former heads of Pentagon acquisition, engineering or program analysis, notable program managers, and outside gurus of defense policy.

“The subcommittee offers no recommendations of its own and endorses no particular expert prescription,” the panel said in releasing the collected essays. But it did note that among the 150 pages or so of expert suggestions, some common themes emerged.

First, half the experts felt there needs to be some “cultural change” in DOD acquisition, and more than two-thirds said there have to be new incentives offered for the workforce.

Christine H. Fox, who recently stepped down as the deputy secretary of defense, noted, “There are no career incentives for acquisition managers to say ... their program is not progressing well, ... is not worth the money, and should be slowed or canceled.”

Two-thirds of the respondents said there have to be big improvements in the recruiting and training of the acquisition workforce.

Almost half said the Pentagon has to do a better job of setting requirements at the outset of a program and that requirements should be tied to expected available funds.

More than half urged stronger accountability and leadership through a weapon system’s life cycle. Several urged that the service Chiefs be further integrated into acquisition.

Another common theme is that program managers aren’t in their positions long enough to see it through to a major milestone or to its successful deployment. Acquisition management also isn’t given the same prestige or career advancement opportunity as line service. Better career paths need to be created.

Air Force acquisition executive William A. LaPlante, speaking at AFA’s Air & Space Conference, said the service’s new 20-year plan puts the service “exactly in line with all the deep thought that’s been put into this area” and indeed reflects much of what was said in the expert survey. USAF has reorganized to give program managers authority over the entire life cycle of their systems—not just procurement or sustainability, but both.

“There is a difference in mentality, when you have to live with what you’re building,” LaPlante said.

The Senate subcommittee made “two observations” about the essays. One is that cultural change “is among both the most important and the least amenable to legislation and policy changes.” Rather, it’s a function of leadership and the incentive structure.

Second, any savings deriving from implementing the suggestions are all for naught if sequestration resumes. Navy acquisition chief Sean J. Stackley said that sequestration will “undo all ... gains in productivity” from acquisition reforms. Jamie M. Morin, former Air Force comptroller and now the head of the DOD’s cost assessment and program evaluation shop, said sequestration has “impaired the stability of nearly every program and caused the department to make decisions damaging many programs both in the short run and long term.” The Pentagon has been unable to plan acquisition strategies because funding levels “continue to fluctuate unpredictably,” he said. ✪

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Action in Congress

By Megan Scully

With its refusal to retire aircraft and accept other difficult belt-tightening choices within the Defense Department's budget proposal, Congress is quickly becoming the biggest adversary in the Air Force's campaign to cut long-term costs.

Lawmakers, particularly those on the four congressional defense committees, have traditionally been loath to make painful budget decisions that affect favored programs and, in many cases, jobs in their districts and states.

But stringent budget caps—from which the department received a brief reprieve in 2014 and 2015—are expected to make a return in Fiscal 2016, further pinching the Pentagon's pocketbook.

The decisions that lawmakers make in the Fiscal 2015 budget cycle, which has yet to be completed a month into the fiscal year, will lay the foundation for spending decisions in 2016 and beyond. If Congress rejects the biggest cost-saving proposals, as it appears poised to do, the Air Force will have a more difficult budget job next year.

For example, the Air Force's decision to stand down its venerable fleet of 334 A-10 Warthogs, a move that officials estimate would save \$4.2 billion over the next five years, has fallen flat on Capitol Hill. While some key lawmakers have supported the A-10 retirement, the vast majority have voted to reject it amid concerns that the military needs to keep the close air support aircraft in service to protect troops on the ground.

"What we have said to the opponents of the proposal is, 'If we're not allowed to retire the A-10,' ... please, please, please, you must give us the money to add back,'" Air Force Secretary Deborah Lee James said June 18. "And by the way, when you find the money, please don't take it out of readiness. ... I don't know where you're going to find it."

Indeed, finding the money will be the challenge. The 2011 Budget Control Act

set strict limits on defense and nondefense discretionary spending. Late last year, Congress agreed to raise those caps for Fiscal 2014 and 2015. Absent another agreement—which so far has remained elusive—the BCA caps will go back into effect next year.

If that happens, DOD will likely be forced to propose even more drastic cuts, most of which will not be palatable on Capitol Hill. Those include the



USAF photo by SSGT. Aaron Allmon

Congress has the A-10 stuck in la-la land.

retirement of the entire KC-10 tanker fleet and Global Hawk Block 40 remotely piloted aircraft and cuts to the F-35 fighter program.

Refusal to accept the cuts already proposed for Fiscal 2015 will only exacerbate the department's long-term budgeting problem. Continued spending now increases the likelihood of indiscriminate cuts known as sequestration if the budgets for 2016 and beyond exceed the mandated BCA levels.

With its potential to save billions, the A-10 proposal has become the poster child for the budget battles playing out on both sides of the Potomac. But it is just one of many examples of Congress refusing a cut DOD says it needs to make to pay for other priorities.

Lawmakers have balked at the Air Force's proposal to retire the U-2 spy-plane, which the Pentagon requested after several failed attempts to stand down the much newer Global Hawk Block 30 surveillance aircraft, an unmanned system that offers capabilities similar to but different from the U-2. The House and Senate armed services committees have also moved to limit or block the retirements of E-3 AWACS aircraft.

Deputy Defense Secretary Robert O. Work estimates that Congress's refusal to accept DOD's proposals, including the retirements of the A-10 and the U-2, will ultimately cost the department \$70 billion.

"Do we have to reshuffle the deck to the tune of \$70 billion? I mean, this is la-la land," Work said Sept. 30. "I have never been in a situation where we are faced with such strictures on the way we should go about it."

But aircraft are not the only area where budget cuts were soundly rejected. Lawmakers have, for instance, once again refused proposals to cut the military's rising health care costs, and the Pentagon's latest request for a new base closure round fell on deaf ears.

The Air Force, which has cut the size of its fleet by 500 aircraft since the last BRAC nearly a decade ago, has been the most vocal of the military services about needing to consolidate infrastructure. But lawmakers are worried base closures could cost jobs in their home districts and say the military cannot afford the upfront costs of base closures, even if the process ultimately saves money.

Some on Capitol Hill, however, recognize the problems that Congress' reluctance will cause.

"We have got to stop saying 'no' to everything," Rep. Peter Visclosky of Indiana, the top Democrat on the House Defense Appropriations subcommittee, said on the House floor in June. "We have got to start saying 'yes' to some things." ★

Megan Scully is a reporter for CQ Roll Call.



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 **BOEING**

Three Airmen Die in Japan

Three airmen on temporary duty at Kadena Air Base on the Japanese island of Okinawa died Oct. 5. They were washed out to sea as Typhoon Phanfone raged around the island.

SMSgt. James Swartz, 51, was pronounced dead at a local hospital after the Japanese Coast Guard pulled him from the sea. He was an aerospace propulsion superintendent with the 116th Air Control Wing, Robins AFB, Ga.

HH-60s from Kadena and the Japanese Coast Guard searched for the remaining two airmen, MSgt. Daniel Paschal, 34, and SSgt. Joshua Schoenhoff, 27. Rough seas complicated the rescue efforts, but their bodies were recovered on Oct. 7 and 8. Paschal, also with the 116th Air Control Wing, was an aerospace propulsion craftsman. Schoenhoff was an instrument and flight control specialist with the 461st Air Control Wing at Robins.

Welcome Back, 19th Air Force

Air Education and Training Command reactivated 19th Air Force on Oct. 1. The new numbered air force, which had been inactivated in 2012, was brought back at the direction of Gen. Robin Rand, AETC commander, who identified a need for “realigning responsibilities to reinforce proper command relationships and training oversight,” according to an Air Force press release.

The new 19th Air Force is headquartered at JBSA-Randolph, Texas, and will include 19 training locations, 10 regular Air Force wings, six Guard and Reserve wings, approximately 32,000 personnel, and 1,350 aircraft spanning 29 different models.

Maj. Gen. Michael A. Keltz is commander of the numbered air force.

“This restructuring within AETC will move all formal aircrew flying training missions under General Keltz’s command,” said Air Force Chief of Staff Gen. Mark A. Welsh III, according to a Sept. 29 news release. “AETC has a wide range of responsibility when it comes to training and educating airmen. Our flying training mission requires a significant level of coordinated oversight to ensure our airmen in the skies remain the best in the world, and 19th Air Force will take on that responsibility.”

ISR Agency Becomes 25th Air Force

The Air Force on Sept. 29 redesignated the Air Force Intelligence, Surveillance, and Reconnaissance Agency as 25th Air Force during a ceremony at JBSA-Lackland, Texas.

The new numbered air force aligns under Air Combat Command and oversees ISR matters—analysis and production, platforms and sensors, and targeting analytics—for the combat air forces, according to a news release.

“Placing 25th Air Force under ACC is all about operations effectiveness,” said Gen. Gilmary Michael Hostage III, ACC commander, who officiated at the ceremony. “It’ll be the one-stop shop for operational ISR within the Air Force, which will streamline program accuracy and presentation by the Air Force,” he said.

Maj. Gen. John N. T. “Jack” Shanahan, who led AFISRA since June 2013, became 25th Air Force commander during the ceremony. As part of the changes, the Air Force also on

Sept. 29 realigned the 9th Reconnaissance Wing at Beale AFB, Calif., and the 55th Wing at Offutt AFB, Neb., under 25th Air Force.

★ screenshot

10.05.2014

Airmen at Robins AFB, Ga., prepare to load a C-60 Lodestar aircraft into a C-5M Super Galaxy to transport it to the Air Mobility Command Museum at Dover AFB, Del. The C-5M is USAF’s only transport capable of carrying the World War II-era aircraft.



Nuclear Airmen Get Special Duty Pay

Airmen in selected nuclear career fields are now eligible for assignment incentive pay and special duty assignment pay. Effective Oct. 1, selected officers and enlisted airmen in 11 nuclear career fields and assignment areas will receive between \$75 and \$300 per month, according to an Oct. 2 press release.

“The airmen selected for this incentive are critical members of our Air Force’s No. 1 mission,” said Col. Zannis Pappas, nuclear and missile operations career field manager on the Air Staff.

Eligible for the extra pay are command post airmen, nuclear aircraft maintainers, security forces, missile maintainers, aircraft armament systems technicians, and nuclear weapons and support personnel for ICBM complexes, among others.

It will take several months before these airmen will see the bump in their pay, but the Air Force will retroactively compensate them back to the Oct. 1 start date, states the release. Air Force Secretary Deborah Lee James unveiled this initiative in September.

Agencies Realigned Under AFMC

In a step toward the formal stand-up of the Air Force Installation and Mission Support Center in 2015, the Air Force realigned four operating agencies and two other organizations under Air Force Materiel Command.

As of Oct. 1, now under AFMC are: the Air Force Civil Engineer Center, Air Force Financial Services Center, Air Force Installation Contracting Agency, Air Force Security Forces Center, the Air Force Cost Analysis Agency’s Financial Man-



USAF photo by Greg L. Davis



agement Center of Expertise, and the Air Force Personnel Center's Services Directorate.

The Air Force activated AFIMSC in August and temporarily located it at JB Andrews, Md. The center is meant to consolidate major command-level installation and mission support activities and save the service money.

Revamped AEF Construct Launches

The Air Force launched its revamped air and space expeditionary forces construct, known as AEF Next, in October.

Under the new deployment model, airmen deploying overseas will have a more stable one-to-two split between deployment and dwell time at home station. The new construct will also keep larger groups of personnel of the same unit together during deployments.

"Previously, Air Force specialty codes played a large role in determining an airman's battle rhythm and deployment location; the redesign focuses on aligning airmen to deploy with their unit," said Col. Stephen Hart, chief of the Air Force's war planning and policy division.

The redesign will give most, but not all, airmen a standardized battle rhythm of six-month deployments separated by 12 months at home. There may still be some airmen in high-demand specialties who deploy under a different scheduling construct, stated the Sept. 5 release.

Chief of Staff Gen. Mark A. Welsh III, who approved the changes in April 2013, called the new model "a more efficient way to get the job done."

Hey, Whatcha Doin' Up There?: X-37B Orbital Test Vehicle (OTV-3), USAF's unmanned reusable spaceplane, landed at Vandenberg AFB, Calif., Oct. 17 after a 674-day mission on orbit around the Earth. The nature of the mission was not publicly announced, but the X-37B performs risk reduction, experimentation, and concept of operations development for reusable space vehicle technologies.

"Centralized management of installation support capabilities at AFIMSC affords opportunity to make strategic decisions for the Air Force on installation support, maximizing the available resources," said Gen. Janet C. Wolfenbarger, AFMC commander, in a news release.

The Air Force is scheduled to select a permanent location for the center from 10 candidate locations in early 2015.

Silveria Becomes First F-35A Qualified General Officer

Maj. Gen. Jay B. Silveria, commander of the Air Force Warfare Center at Nellis AFB, Nev., is the first general officer to qualify as an F-35A strike fighter pilot. Silveria received his qualification Sept. 26 after landing an F-35A at Eglin AFB, Fla., following a flight that completed the seven-week training program.

Silveria was chosen to receive the F-35 training due to his position at the Warfare Center. It is responsible for current and future F-35A operational testing, tactics development, and eventual advanced training exercises and weapons school, according to an Air Combat Command news release.

"The Warfare Center is so involved with the development and future of this aircraft that it was important for me to see and experience this new program at the lowest tactical level" and to bring that experience to higher level discussions, said Silveria, a veteran F-15 pilot. (See "Critical Patch, Smaller Window," p. 60).

Dover To Start Construction of New Runway

Dover AFB, Del., is preparing for the removal and reconstruction of the base's primary runway, Lt. Col. Steven Sylvester, the 436th Airlift Wing's chief of safety, told *Air Force Magazine*.

The \$98.3 million overhaul on the 69-year-old 01-19 runway will address drainage issues, cracking, and spalling of the concrete.

The 18 C-5s on base, he said, will remain operative over most of the 16 months of construction, but they will have to be temporarily relocated in early 2016 for "roughly four-to-six months." Sylvester said the location of the temporary home for the C-5s is not yet known.

The runway is estimated to be completed "mid-June of 2016."

SDB II Moves Into Low-Rate Initial Production

Raytheon and the Air Force recently completed three successful tests of the Small Diameter Bomb II Guided Test Vehicle, passing the last trials required for the start of low-rate initial production of the GTV.

In the test drops, the SDB II's tri-mode seeker guided the bombs to direct hits against both stationary and moving targets, Raytheon said. The seeker was able to use sensor data to determine whether the targeted vehicles were wheeled or tracked, enhancing target identification and prioritization, according to a Sept. 4 company news release.

The SDB II can strike targets from up to 46 miles and enables pilots to change targets after release via a secure data link.

Two live fire tests are scheduled that will use SDB IIs with live warheads and fuzes to strike tactically representative targets, Raytheon said. The Pentagon has validated SDB II as meeting a critical combat need and has invested more than \$700 million in its development.

NORAD F-15s Track Unresponsive Aircraft

Two F-15s under the direction of North American Aerospace Defense Command scrambled in early September to investigate and accompany an unresponsive aircraft flying over the Caribbean Sea.

The TBM-700 light business and utility turboprop airplane bound for Naples, Fla., crashed off the coast of Jamaica on Sept. 5. It was carrying two people.

According to a CNN report, fighter pilots tracking the airplane saw a pilot slumped over. As the aircraft entered into Cuban airspace, the F-15 escorts returned to the base for refueling, but continued to monitor the airplane's whereabouts via radar, according to NORAD updates.

Rosecrans Adds C-130H Weapons Instructor Course

The Advanced Airlift Tactics Training Center at Rosecrans Memorial Arpt., Mo., is adding a C-130H weapons instructor course to its curriculum.

Rosecrans is home of the Missouri Air National Guard's 139th Airlift Wing. The doctorate-level course is designed to teach tactics and leadership to C-130H pilots and navigators. On completion of the six-month course, they "will take key positions" in Air Guard and Air Force Reserve Command wings around the nation, "making our C-130 fleet stronger and more capable," said Army Maj. Gen. Stephen L. Danner, Missouri National Guard adjutant general.

The center will offer two WICs a year, beginning in February 2015, with each course having six students, according to an Aug. 28 press release. The center is expected to add some 30 new positions for the course.

Martinsburg Gets First C-17

The West Virginia Air National Guard's 167th Airlift Wing

I Like To Move It, Move It: SSgt. John May (l) and SrA. Alex Vincent (r), of the Kentucky Air National Guard's 123rd Contingency Response Group, carry equipment into the Joint Operations Center at Léopold Sédar Senghor Arpt., Dakar, Senegal, Oct. 5. The airmen were in Senegal for Operation United Assistance. The mission funneled humanitarian supplies and equipment into West Africa as part of the international effort to fight Ebola. DOD has committed to deploying up to 3,000 troops for the relief operation. See "Airmen Deploy to Africa for Ebola Relief Mission," p. 27.



ANG photo by Maj. Dale Greer

in Martinsburg received its first C-17 transport as part of its transition from operating C-5As to the newer airlifter.

The C-17 touched down at Eastern West Virginia Airport on Sept. 25—the same day the unit flew its final training sortie with the C-5.

“I know that [wing] members are excited to be moving to a weapons system with a strong future,” said Col. Shaun J. Perkowski, 167th Airlift Wing commander.

The 167th is slated to take delivery of its full complement of eight C-17s by July 2015. The wing is scheduled to officially introduce the C-17 in early December and then commence C-17 flying operations in January.

The wing has been operating C-5As since March 2007. Its remaining C-5s are scheduled to depart by May 2015 for retirement in the Air Force’s aircraft “Boneyard” at Davis-Monthan AFB, Ariz.

Russian Aggression Kills Vigilant Eagle

A multilateral exercise with the US, Canada, and Russia was canceled because of Russia’s continued military aggression in Ukraine, according to several news reports.

Vigilant Eagle has typically been conducted near Alaska, in August or September, since 2007. During last year’s exercise, which utilized both US and Russian airspace, Canadian CF-18s and Russian Sukhoi scrambled to identify and follow a “hijacked” aircraft. Air Force and Russian command and control aircraft also participated.

Alaska’s *News-Miner* newspaper reported that the 2014 exercise would have included the Japan Self-Defense Force for the first time.

Air National Guard Takes Part in NATO Exercise

Nearly 140 Air National Guardsmen participated in the NATO-led exercise, Steadfast Javelin II, in Eastern Europe.

The airmen from six ANG bases supported the exercise “by providing personnel air drop and air landings in support of forcible entry, force projection, and reinforcing the joint commitment,” states a Sept. 10 release.

The US supplied 10 ANG C-130 aircraft to provide airlift support. Air National Guardsmen from the 166th Airlift Wing in Delaware, California’s 146th AW, the 123rd AW from Kentucky, Missouri’s 139th AW, 182nd AW from Illinois, and the 143rd AW from Rhode Island all participated.

Steadfast Javelin II spanned Sept. 2-8 and was part of another two-week exercise, Sabre Junction, led by US Army

Sex-Assault Prevention Needs Evaluation

The Air Force has fully or partially implemented all but one of the 46 recommendations from an Air Education and Training Command report on how to prevent, investigate, and respond to sexual assaults and sexual misconduct, according to a Government Accountability Office report, released Sept. 9.

However, the service has not instituted a method to evaluate the effectiveness of its corrective actions, states the report.

“Without fully establishing an oversight framework for evaluating the effectiveness of its actions to prevent sexual assaults during basic training, the Air Force will not know whether to sustain the efforts it has implemented or undertake different actions,” states the report.

AETC ordered a command investigation in 2012 after 34 basic military training instructors at JBSA-Lackland, Texas, were implicated in sexual assaults or other improper sexual actions with recruits. The resulting report recommended 46 actions intended to stop sexual misconduct, to deal with violators, and better serve the victims.

GAO investigated the Air Force’s response and found it had fully implemented 39 of the recommendations, partially implemented six, and took no action on one. GAO recommended the Air Force establish an oversight framework to evaluate the effectiveness of its efforts.

Europe. The exercise took place over Estonia, Germany, Latvia, Lithuania, and Poland.

QF-16 Conducts Final Operational Test

The Air Force closed out the development phase of the QF-16 program on Sept. 5 when an unmanned Viper was shot down over the Gulf of Mexico.

The final operational test was a joint effort between the Test and Training Division at Eglin AFB, Fla., and the 82nd Aerial Target Squadron at Tyndall AFB, Fla.

It “was the culmination of years of planning and aircrew training specifically tailored to stand up the next generation of full-scale aerial targets,” said Lt. Col. Ryan Inman, 82nd ATRS commander.



By the Numbers

120

The number of miles of wiring in the Air Force’s KC-46A Pegasus tanker.

The War on Terrorism

Operation Enduring Freedom

Casualties

By Oct. 21, a total of 2,349 Americans had died in Operation Enduring Freedom. The total includes 2,345 troops and four Department of Defense civilians. Of these deaths, 1,804 were killed in action with the enemy while 509 died in noncombat incidents.

There have been 20,023 troops wounded in action during OEF.

Poor Communication, Mistake Led to Fratricide

Miscommunication among the US ground forces and an Air Force joint terminal attack controller's mistake about the targeting capability of a B-1B providing close air support led to the "friendly fire" incident that killed five US soldiers and one Afghan soldier June 9 in eastern Afghanistan, according to a US Central Command investigation, released Sept. 4.

"The key members executing the close air support mission collectively failed to effectively execute the fundamentals, which resulted in poor situational awareness and improper target identification," the investigating officer, Air Force Maj. Gen. Jeffrey L. Harrigan, said in the report.

"While this complex combat situation presented a challenging set of circumstances, had the team understood their system's capabilities," executed standard tactics, and communicated effectively, "this tragic incident was avoidable."

The fratricide occurred when a US-Afghan ground force took fire from insurgents and the six soldiers moved to higher ground without informing their commander. The JTAC airman and the US ground commander mistook that group's muzzle flashes for insurgents and directed the B-1 to drop two bombs on that spot. This was after the Lancer

crew told the controller it did not detect infrared strobes that would have identified friendlies. The B-1's Sniper targeting pod cannot see the strobes.

Afghan Security Agreements Signed

After months of uncertainty following a disputed election to succeed President Hamid Karzai, the newly sworn-in Afghan President Ashraf Ghani on Sept. 30 signed the long-delayed bilateral security agreement with the US as well as a follow-on status of forces agreement (SOFA) with NATO.

President Barack Obama praised the agreement. It gives both US and NATO forces the necessary legal protections to remain in country in an advise-and-assist capacity following the end of the International Security Assistance Force mission in December.

"The BSA reflects our continued commitment to support the new Afghan unity government, and we look forward to working with this new government to cement an enduring partnership that strengthens Afghan sovereignty, stability, unity, and prosperity, and that contributes to our shared goal of defeating al Qaeda and its extremist affiliates," said Obama.

Anders Fogh Rasmussen, then NATO's secretary general, said the agreements open "a new chapter for cooperation between NATO, our partners, and the Afghan National Security Forces."

The new NATO SOFA provides the legal basis for the Alliance's follow-on mission, dubbed Operation Resolute Support. It will begin on Jan. 1, 2015. Rasmussen said NATO would remain committed to help advise and assist the Afghan security forces through 2017.

The QF-16 was targeted by air-to-air missiles after an auto-takeoff from Tyndall, stated a news release.

"The aging fleet of the QF-4s and their limited capabilities against modern fighters have rendered the aerial target workhorse, Phantom II, at its technological limit," Inman said. "The QF-16 initiates the next chapter in advanced aerial targets, predominately in support of more technologically superior air-to-air weapons test and evaluation programs."

Airmen Deploy to Africa for Ebola Relief Mission

Airmen from the 633rd Medical Group at JB Langley-Eustis, Va., departed for Africa Sept. 26 to support hu-

manitarian relief operations in countries suffering Ebola outbreaks.

The airmen, accompanied by the Expeditionary Medical Support System (EMEDS), supported a 25-bed deployable hospital facility designed to treat a population of up to 6,500, according to a press release. While in Africa, the airmen will train the international health workers on the proper use and application of the medical equipment in the new pop-up facility.

Generally, EMEDS are set up for trauma care, said Navy Rear Adm. Scott Giberson, acting deputy surgeon general for the US Public Health Service. The use of an EMEDS unit for "an infectious pathogen and treatment of international health care workers" may set a precedent, he said.

C-17s Testing Tires That Can Be Retreaded

With budgets getting tighter, the Air Force is seeking to adopt a cost-saving practice the trucking industry has used for decades, putting new tread on worn-out tires instead of throwing them away.

To advance that effort, the C-17 Global Reach Integrated Test Team at Edwards AFB, Calif., has been putting new Dunlop tires through rigorous testing to ensure they can handle the widely varying runway surfaces, weather conditions, and operational considerations they will face.

"While structural integrity and load capability are tested in a laboratory, parameters such as wet-runway stopping distance and minimum aircraft turning radius have to be tested in the real world with a wet runway," said Michael

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F-22 Maintenance Consolidation Begins

The consolidation of depot maintenance for the F-22 Raptor at Hill AFB, Utah, began in September with the incremental transfer of work from a Lockheed Martin facility to Ogden Air Logistics Complex, Air Force Materiel Command announced Sept. 3.

The decision to concentrate all of the Raptor depot modification and heavy maintenance, currently split between Ogden and Lockheed's plant at Palmdale, Calif., is intended to improve efficiency and reduce cost. A comprehensive business case analysis by the F-22 System Program Office determined the consolidation could save more than \$300 million over the life of the program.

Based on those findings, the program office, Ogden, and Lockheed implemented a 21-month incremental transition plan that will require improvements at the ALC, movement of support equipment, and hiring of some 200 new workers at Ogden.

The consolidation "will create greater efficiency in the F-22 program by allowing the Air Force to cost-effectively maintain the F-22 and ensure this critical front-line weapon system is readily available to the warfighter," said Maj. Gen. H. Brent Baker Sr., Ogden ALC commander.

Ogden will add six production lines—the first opened in September—and will reach full capacity in February 2015.

Quinton, 773rd Test Squadron project engineer, according to a Sept. 10 news release.

The Dunlop tires are intended to replace the Michelin tires that have been used on C-17s. The key difference is that the Dunlops incorporate tighter geometric tolerances designed to facilitate retreading.

Hercules to Reaper

Members of the New York Air National Guard's 107th Airlift Wing at Niagara Falls Air Reserve Station flew the unit's final mission at the controls of a C-130 transport before converting to their new mission: operating MQ-9 remotely piloted aircraft.

"We are transitioning from the C-130, which we've been flying since 2008 and have become comfortable with, having deployed with it to Iraq and Afghanistan," said Col. John J. Higgins, the wing's commander, in an Oct. 1 unit release. "However, we look to the future with excitement as we take on the MQ-9 mission."

The flight took place on Sept. 25. It ended the Air Guard unit's C-130 association with Air Force Reserve Command's 914th Airlift Wing.

Members of the 107th are now training as RPA pilots, sensor operators, intelligence coordinators, and communications specialists. The unit is expected to be fully operational in the RPA mission by 2017.

The Reservists of the 914th AW will continue to fly the C-130s from Niagara.

More Squadron Officer Students

The Squadron Officer College at Maxwell AFB, Ala., has shortened the Squadron Officer School course from eight to five weeks to give more captains an opportunity to attend, according to a Sept. 10 Air Education and Training Command news release.

The shorter course will allow the college to increase the number of students from 3,600 to 4,700 a year and will go into effect on Oct. 1. That should enable all Active Duty captains to attend the school and open more slots for Air National Guard, Air Force Reserve, Defense Department civilians, and international officers. The change also is expected to save \$1.9 million annually.

The shorter course will be a modification of the existing curriculum that focuses on leadership, communications, warfare, the profession of arms, and international security studies.

A-29 Training Squadron Activated at Moody

The 81st Fighter Squadron at Moody AFB, Ga., formally stood up on Oct. 1. It will train Afghan pilots to fly the A-29 Super Tucano. The squadron was slated to begin training by the end of October, stated a release.

The 81st Fighter Squadron is a geographically separated unit of the 14th Flying Training Wing, based at Columbus AFB, Miss., and is responsible for training international airmen.

The squadron is expected to train 30 Afghan pilots and 90 maintainers under a requirement from the International Security Assistance Force, leader of the NATO-supported effort to support Afghanistan in its fight against the Taliban insurgency.

The A-29 light air support aircraft will replace the Mi-35 attack helicopters currently flown by the Afghan Air Force. The Tucanos will be "a monumental leap in capabilities," said Lt. Col. Jeffrey Hogan, the A-29 light air support training unit commander.

Bargain C-27s for Afghan Construction Company

Sixteen of the 20 C-27A transports the Air Force bought for the Afghan Air Force for \$486 million did not to meet operational requirements in Afghanistan and were sold as scrap for \$32,000, the Special Inspector General for Afghanistan Reconstruction said.

In letters addressed to Defense Secretary Chuck Hagel and Air Force Secretary Deborah Lee James, SIGAR John F. Sopko said the transports, also designated as G222, sat on the tarmac at Kabul Airport for a considerable time "experiencing continuous and severe operational difficulties, including a lack of spare parts," before they were sold to the Afghan construction company for six cents a pound.

The fate of the other four C-27s, currently at Ramstein AB, Germany, has not been decided. Sopko said he was "concerned the officials responsible for planning and executing the scrapping of the planes may not have considered other possible alternatives in order to salvage taxpayers' dollars."

He requested DOD and US Central Command provide all communications and documents associated with the decision to scrap the aircraft for use in his continuing investigation.

So Help Me God—Or Not

The Defense Department's general counsel has ruled that airmen may choose to omit the words "So help me God" from enlistment and officer appointment oaths.

The Air Force requested the opinion after an airman at Creech AFB, Nev., omitted the words while taking his verbal oath.

"We take any instance in which airmen report concerns regarding religious freedom seriously," said Air Force Secretary Deborah Lee James in a Sept. 17 news release. "We are making the appropriate adjustments to ensure our airmen's rights are protected." ★



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By Amy McCullough

TARGETING ISIS

The US took the fight against ISIS terrorists from Iraq into Syria in actions that included the F-22's combat debut.

By Amy McCullough, News Editor

In September, President Obama essentially declared war on a terrorist organization, known as ISIS, ISIL, or IS, that has wrought havoc in the Middle East, beheading two American journalists held hostage in Syria and posing a threat to Westerners in the Middle East, Europe, and the Western Hemisphere.

“In a region that has known so much bloodshed, these terrorists are unique in their brutality. They execute captured prisoners. They kill children. They enslave, rape, and force women into marriage. They threatened a religious minority with genocide. And in acts of barbarism, they took the lives of two American journalists—Jim Foley and Steven Sotloff,” said Obama in a Sept. 10 address to the nation.

“So ISIL poses a threat to the people of Iraq and Syria, and the broader Middle East, including American citizens, personnel, and facilities. If left unchecked,

these terrorists could pose a growing threat beyond that region, including to the United States.”

That’s why, roughly one month after the US began conducting “targeted air strikes” against ISIS forces in Iraq, Obama outlined a four-point strategy to “degrade and ultimately destroy” the terrorist network.

First, said Obama, the “systematic campaign of air strikes” will continue. At the same time, the US will work with the newly established Iraqi government to “expand our efforts ... so that we’re hitting ISIL targets as Iraqi forces go on [the] offense.”

The second part of the strategy, he said, is the addition of 475 service members in Iraq to support “forces fighting these terrorists on the ground.”

Third, the US will “redouble” its “efforts to cut off” ISIS funding; “im-

prove our intelligence; strengthen our defenses; counter [ISIS’] warped ideology; and stem the flow of foreign fighters into and out of the Middle East.”

Finally, the US will continue providing humanitarian aid to civilians “displaced” by ISIS.

By early October, US Air Force C-130s and C-17s had dropped thousands of gallons of water and tons of food to “as many as 20,000 Yazidis,” a mostly Kurdish-speaking minority, who were stranded on Mount Sinjar in northern Iraq. “And our mobility forces will likely be called ... again in the future,” said Air Force Secretary Deborah Lee James in her address at the Air Force Association’s Air & Space Conference in National Harbor, Md., in September.

As air strikes continued against tactical targets in Iraq, military planners were hard at work preparing a strategic air campaign against ISIS command and

control, financial, and support facilities in Syria.

Obama made it clear he would “not hesitate to take action against ISIL in Syria, as well as Iraq,” but first he needed to build a broad coalition of support, particularly among the Gulf nations.

On Sept. 22, US and partner aircraft, cruise missiles, and US naval vessels launched the first strikes on ISIS targets in Syria. Combat aircraft included the US Air Force’s F-22 Raptor in its combat debut.

Bahrain, Jordan, Qatar, Saudi Arabia, and the United Arab Emirates also participated in the assault, later dubbed by Lt. Gen. William C. Mayville Jr., the Joint Staff director of operations, as a “credible and sustainable, persistent” air campaign. More than 40 additional countries “have offered help” in the battle against ISIS, the President said.

The coalition also is growing in Iraq: Belgium, Britain, Denmark, and the Netherlands have agreed to join the US and France in the air campaign in Iraq, said Secretary of Defense Chuck Hagel in late September.

“The strength of this coalition makes it clear to the world that this is not America’s fight alone,” said Obama on Sept. 23. “Above all, the people and governments in the Middle East are rejecting ISIL and standing up for the peace and security that the people of the region and the world deserve.”

Although intelligence reports have not indicated any specific ISIS plots against

the US, Obama noted the growing number of foreigners, “including Europeans and some Americans,” who have joined ISIS in Iraq and Syria.

He cited intelligence estimates of more than 15,000 foreign fighters from 80 nations who have traveled to Syria since the civil war broke out there three years ago. Many of those fighters have joined ISIS.

Obama and other national security leaders, including Hagel and Homeland Security Secretary Jeh C. Johnson, said the possibility that these fighters could return to their home countries to carry out deadly attacks is a very real threat.

“This is not the end of the story,” and the nation needs to remain vigilant, cautioned Johnson during the AFA conference.

RAPTORS READY

Johnson said ISIS is not only a terrorist organization; it is an insurgent army that brings in more than \$1 million per day in revenue—and occupies large parts of Iraq and Syria.

“We know [ISIS] is capable of, and has, killed Americans in a depraved manner just because they were Americans,” he said.

Although Pentagon leaders said the mission cannot be accomplished by airpower alone, there is no doubt it is the vital component. James said airpower will help to “secure the battlefield as we eradicate over time this cancerous terrorist network.” Airpower also will

help “roll back ISIL advances and create space on the ground for Iraqi and Kurdish forces to go on the offense,” she added.

Since the operation began in Iraq on Aug. 8, airmen have “conducted the lion’s share of the air strikes in northern Iraq, always in partnership with our naval aircraft partners, and we’ve also led approximately 30 refueling sorties per day in order to sustain those operations,” said James.

“We’ve been working with our coalition partners and sister services for years to develop the full array of airpower capabilities we are bringing to this fight,” Maj. Gen. Jeffrey L. Harrigian, assistant deputy chief of staff for operations, plans, and requirements on the Air Staff, said at the Pentagon on Sept. 29.

In their first combat role, F-22s took out an ISIS command and control center in Ar Raqqa, Syria, located along the Euphrates River some 75 miles from the Turkish border. The flight of F-22s, assigned to the 1st Fighter Wing at JB Langley-Eustis, Va., and deployed to the Persian Gulf region, used GPS-guided munitions to target “only the right side of the building” where the command and control center was located, said Mayville.

Officials familiar with the program told *Air Force Magazine* the Raptors dropped 1,000-pound Joint Direct Attack Munitions. USAF F-22s can carry two such bombs. Some also are equipped to carry eight Small Diameter Bombs, though

Left: An F-22 takes on fuel from a KC-10 before strike operations in Syria on Sept. 27. Here: Maj. Gena Fedoruk (l) and 1st Lt. Marcel Trott take off from an air base in the CENTCOM area of operations on a refueling mission for air strikes on Syria, Sept. 23.



USAF photo by S/A. Matthew Bruch

F-22 DEBUT

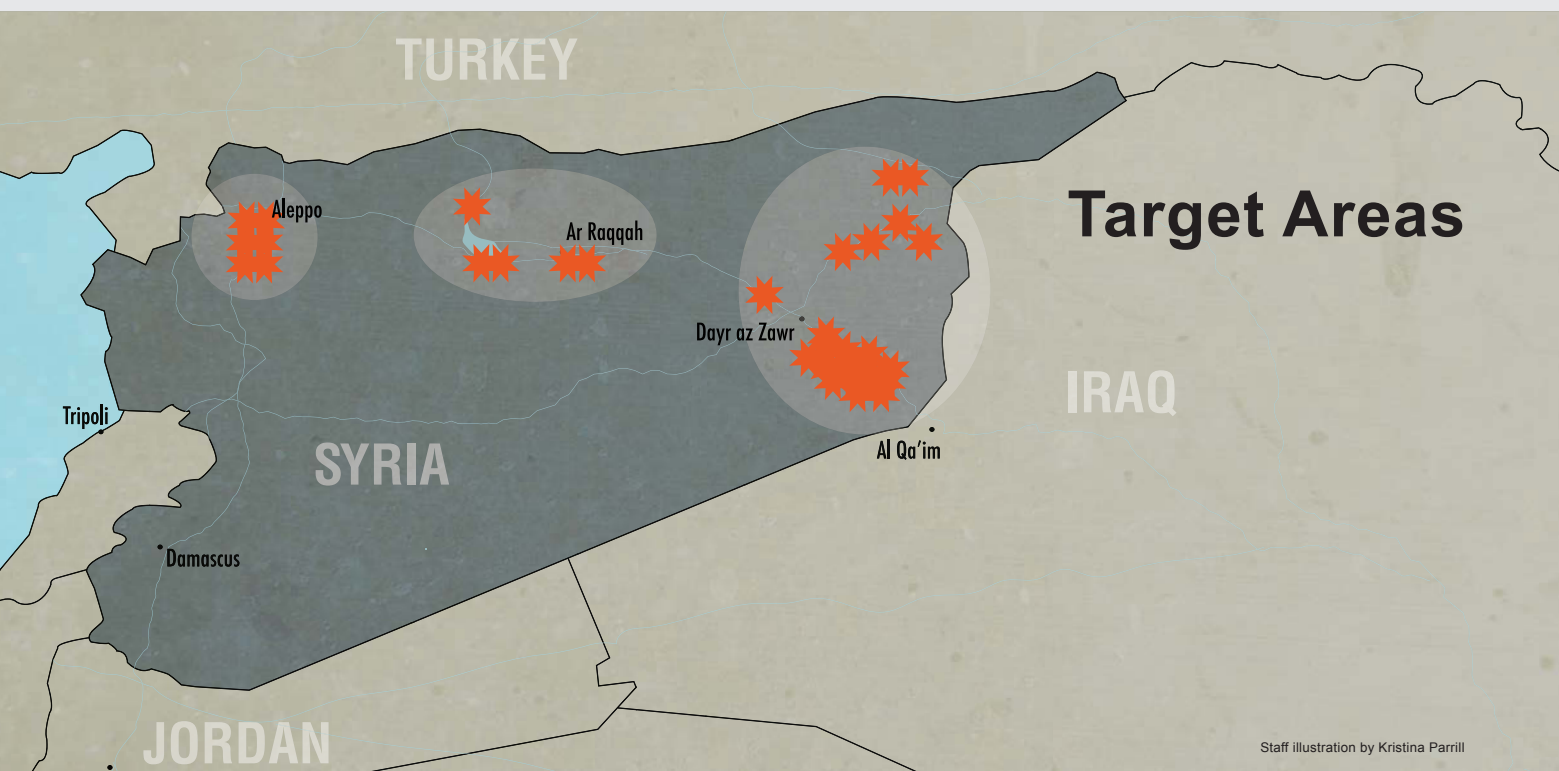
Breaking down the initial air assault in Syria

The United States and its Gulf partners launched an air campaign Sept. 22 against ISIS terrorists based in Syria. During these strikes, F-22 Raptors, deployed to the Persian Gulf region from the 1st Fighter Wing at JB Langley-Eustis, Va., struck an ISIS command and control facility in Ar Raqqah, located in northern Syria.

This was the first time the Raptor was used in combat. Other US platforms making strikes included Air Force F-15E Strike Eagles, F-16s, B-1B bombers, as well as Navy Tomahawk Land

Attack Missiles, F/A-18s, EA-6B Prowlers, and unidentified “drones,” said Army Lt. Gen. William C. Mayville Jr., Joint Staff director of operations, on Sept. 23. USS *Arleigh Burke*, USS *Phillippine Sea*, and USS *George H. W. Bush* also participated in the strikes, which were launched in three waves.

Bahrain, Jordana, Qatar, Saudi Arabia, and the United Arab Emirates either launched aircraft or “supported” the strikes in the second and third waves. The majority of partner participation took place in the third wave, said Mayville.



Staff illustration by Kristina Parrill

1

The first wave began around 8:30 p.m. EST on Sept. 22. USS *Arleigh Burke*, operating in the Red Sea, and USS *Phillippine Sea*, operating in the Persian Gulf, launched more than 40 TLAMs at targets in Aleppo and Ar Raqqah in eastern and northern Syria. Most of the cruise missiles targeted Khorasan group compounds, manufacturing workshops, and training camps.

2

The F-22 made its combat debut in the second wave of strikes, which began around 9 p.m. EST, taking out an ISIS command and control center in Ar Raqqah. F-15Es, F-16s, B-1B bombers, and remotely piloted aircraft also participated in the second wave.

3

The final wave began just after midnight EST on Sept. 23. Regionally based F-16s and F/A-18s, launched from USS *George H. W. Bush* in the northern Persian Gulf, “among others,” attacked ISIS training camps and combat vehicles, mostly in the far east near Dayr az Zawr.



Above: Rear Adm. John Kirby, the Pentagon press secretary, on Sept. 25 briefs reporters on the air strikes. He said the US seeks to disrupt the ISIS organization's infrastructure, while preserving enough to aid Syrian opposition forces. **Above right:** Maj. Gen. Jeffrey Harrigian, assistant deputy chief of staff for operations, plans, and requirements, holds a press briefing at the Pentagon on Sept. 29. Harrigian said the airpower used against ISIS is a culmination of years of work with coalition partners and sister services.



officials said the ones operating in the Middle East are not.

In addition to stealth and speed, the F-22's "greatest capability" is its "integrated" and "fused" avionics, which can be used to improve situational awareness, said Harrigian. He said USAF had performed 74 percent of the strike sorties in Iraq and Syria.

As the fight continues, USAF's intelligence, reconnaissance, and surveillance

network—to include space and cyber assets—will be called on to build situational awareness for the primarily local forces fighting on the ground.

"Airmen have already used remotely piloted aircraft and precision guided munitions to execute pinpoint strikes on ISIL targets surrounding the Mosul Dam, which allowed Iraqi and Kurdish forces to retake those vital assets," said James in September. "Airmen in ISR will

be equally important as the operation to cut ISIL's network grows."

In addition, USAF intelligence specialists interact daily with the other services to provide the information necessary to stop ISIS.

"So for all the talk that we go through in terms of boots on the ground, how many, and what will they do, I for one thank God every day that we have so many US airmen boots in the air," said James in reference to Obama's promise not to put US ground forces on Syrian soil.

That includes joint terminal attack controllers, said Mayville. He acknowledged, however, that military planners would of course "prefer" to have some-

WHO ARE THOSE GUYS?

When news broke in late September of a potential terrorist plot against the US by an organization known as the "Khorasan Group," most Americans were left scratching their heads.

Army Lt. Gen. William C. Mayville Jr., director of operations on the Joint Staff, said the group was in the "final stages of plans to execute major attacks against Western targets and potentially the US homeland."

But until that week, most Americans had never heard of the al Qaeda offshoot. So who are these terrorists? Where did they come from?

"These are al Qaeda veterans who have established a safe haven in Syria to develop and plan external attacks in addition to construct and test improvised explosive devices and to recruit Westerners for external operations," said a White House official, speaking on background with reporters on Sept. 23. "These are operatives who are quite seasoned; who are, in the

view of the counterterrorism and national security community, very dangerous; who fought and lived together in Afghanistan, Pakistan, and other areas in the Middle East—Iraq, Iran, Yemen, and other places."

The group operated in relative obscurity before the US attacks in Syria. White House, State Department, and Defense Department officials had never publically mentioned the organization in speeches, briefings, or during testimony on Capitol Hill, though Mayville said, "We've been watching this group closely for some time."

Mayville said the Khorasan is "establishing roots" in northwest Syria but is not focused on Syrian President Bashar al-Assad's regime or the Syrian people. The group's primary focus is advancing attacks against Westerners.

When asked if the air attacks prevented any threats to the US, Mayville said DOD was still assessing the operation.



USAF photo by SrA. Matthew Bruch

Two USAF F-15Es fly over northern Iraq Sept. 23 after striking ISIS targets in Syria.

one on the ground to limit the potential for collateral damage, especially in confined environments.

Adding the F-22 to the mix makes the other participating US assets, including F-15E Strike Eagles, F-16s, F/A-18s, B-1B bombers, and unidentified remotely piloted aircraft more lethal and survivable.

“It is not just for the pilot in the airplane, but really for the entire package that is going to execute the mission,” Harrigian stated.

The air campaign had five days earlier involved US, Saudi Arabia, and the United Arab Emirates fighter jets and remotely piloted aircraft striking 12 “small-scale” oil refineries controlled by the terrorist organization. As of late September, officials said they were still assessing the battle damage of all the strikes, though initial reports indicated a success.

The refineries—located in remote areas of eastern Syria—were known to produce 300 to 500 barrels of refined petroleum per day generating as much as \$2 million per day to fund the organization’s terrorist activities.

Pentagon spokesman Rear Adm. John Kirby said the air strikes did not completely destroy the oil refineries, but they did degrade the organization’s ability to use them to support their forces and to fund their black market activities. He later told reporters the US is hoping to disrupt the ISIS organization while also preserving some infrastructure for the Syrian opposition to use once its government stabilizes.

Still, Kirby assured, “They’re not going to be using these refineries for some time.”

Of the 16 fighter aircraft participating in the Sept. 24 strikes, 10 belonged to the UAE and Saudi Arabia and six were US aircraft. No F-22s participated, said Kirby. A total of 41 precision munitions, ranging from 250-pound to 1,000-pound bombs, were used in the strikes; UAE or RSAF aircraft dropped 23.

LONG ROAD

As of Sept. 26, the US and its Arab partners had conducted 43 air strikes in Syria. The US and France had launched more than 200 air strikes in Iraq, said Hagel.

USAF conducted 70 percent of the more than 3,800 sorties flown in Iraq and Syria, said Harrigian. The Air Force also has conducted 95 percent of the almost 1,300 tanker sorties and 700 intelligence, surveillance, and reconnaissance sorties for the operation.

Military leaders have repeatedly emphasized that at no time has there been any effort to “coordinate” strikes with the Bashar al-Assad government, though they also said the United Nations ambassador did inform the Syrian government of the upcoming air campaign.

To date, no US aircraft have been lost in the campaign, despite Syria’s well-known anti-aircraft weapons. Mayville suggested the Syrian government offered no resistance to the air strikes, saying only that coalition aircraft were detected by radar, but it was “passive.”

He declined to elaborate.

Leaders have cautioned they are just beginning to implement the strategy to destroy ISIS.

The objectives are clear. US and coalition forces will continue efforts to degrade ISIS’ capabilities and network in both Syria and Iraq. They will continue building the coalition through regional partnerships. They will assist Iraqi and Peshmerga forces as they go on the offensive against ISIS extremists who have taken control of their land. They will continue to work diplomatic options. And they will move forward with the Syrian train and equip mission, though it could take up to a year to see the first vetted fighters on the battlefield.

The US Congress, often gridlocked by partisan politics, approved a measure to arm and train Syrian opposition forces with a bipartisan majority in mid-September. Obama said the move “shows the world that Americans are united in confronting the threat” from ISIS.

The United Nations Security Council on Sept. 24 unanimously approved a resolution to confront the growing threat of foreign terrorist fighters. And the US Treasury Department is leading an effort to cut off the organization’s financing.

“Sustaining our broad diplomatic, economic, and military campaign will require a long-term commitment from the United States and all of our partners and allies,” said Hagel on Sept. 26. “This will not be an easy or brief effort. We are at the beginning, not the end.”



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Although the Air Force is hard-pressed to keep its edge as it navigates a prolonged period of tight budgets—which have already produced deep cuts in personnel, weapons, and readiness—new technologies offer leap-ahead capabilities which might offset some of the damage. To take advantage, though, USAF will have to efficiently harness industrial innovations and push its acquisition system to respond faster to stiff competition from world adversaries.

Top Air Force, defense, and industry leaders at the Air Force Association's 2014 Air & Space Conference, held in National Harbor, Md., in September said USAF has never been smaller, even as the number of world conflicts multiplies and the tech challenge grows ever more formidable. However, they

offered optimism that critical programs remain largely on track and that new game-changing technologies are near at hand. With quicker, more cost-effective acquisition, and steps to keep the industrial base healthy, the challenge is manageable, they said.

"The Air Force's charge today is to ensure that America's airpower is unrivaled for the next generation, and to do so with fewer resources, but more numerous and more sophisticated competitors," Pentagon acquisition, technology, and logistics chief Frank Kendall said in his speech at the conference.

Kendall said China and Russia are making "long-term investments strategically focused on military modernization," and these investments "appear tailored to counter the air, space, and cyber superiority that the Air Force

provides and that enables America to project power across the globe." Competitors are building new, more lethal "anti-ship, anti-air, and counterspace weapons," as well as advanced cyber, electronic warfare, and special operations capabilities, Kendall stated. New foreign precision weapons are making "our air bases, our aircraft carriers, and our logistics nodes increasingly vulnerable."

Meanwhile, the Air Force's fleet continues to age.

"We now have the oldest Air Force fleet in history, subsisting on capital investments that were made in much earlier Administrations," he said.

If sequester resumes in Fiscal 2016, it will further beat down USAF's readiness, "which has taken too many blows already," Kendall asserted. Meanwhile, adversaries have sharply increased their

Technological Turning Point

By John A. Tirpak, Editorial Director

At AFA's 2014 Air & Space Conference, top USAF leaders stressed the importance of preserving the service's tech edge.

Boeing artist's illustration

flying hours as USAF's have fallen. This "traditional advantage you have enjoyed ... is eroding," Kendall said. "There are limits" to what airmen can be asked to do with "quick fixes and stopgap measures. ... You deserve better."

CHANGING LOOK

Kendall, speaking on behalf of Defense Secretary Chuck Hagel, said the Pentagon leadership is committed to modernizing the service and protecting USAF's top three acquisition programs: the F-35 fighter, KC-46 tanker, and Long-Range Strike Bomber. Hagel had been scheduled to speak, but at the last minute traveled to US Central Command headquarters at MacDill Air Force Base in Tampa, Fla., to meet with CENTCOM officials and President Obama about the war against ISIS militants.

Air Force Secretary Deborah Lee James said USAF "will be bold" and is committed to "the change that must occur in the years to come." The Air Force, she said, will certainly "not look the same" in the next 30 years as it did in its last 67. Given that USAF "is already smaller," it will depend more on the Guard and Reserve, she said. "Basically, we traded off people and force structure ... for increased readiness and protecting of modernization."

USAF's "technological edge" will have to make up the deficit.

"We must be able to adapt faster ... than our adversaries," she said, forecasting that much will depend on "how we leverage new technologies that could well be game-changing for us, such as hypersonics and directed energy."

Future investments, she said, will focus on intelligence, surveillance,

and reconnaissance, remotely piloted aircraft, "stand-off and long-range weapons, space and cyberspace systems," and directed energy and hypersonic speed.

She also pledged to "improve the dialog that we have with our industry partners" toward jointly identifying "solutions to challenges that could help us bend the cost curve and also to deliver capability sooner" to combat airmen.

The Air Force will push to build "modularity into our systems and also to gain access in commercial technology based on robotic computing, biotechnology, nano-technology, and similar capabilities, all of which are developing very, very quickly outside ... of the defense industrial base," James said.

In his speech, USAF Chief of Staff Gen. Mark A. Welsh III cautioned



An artist's illustration of the KC-46 tanker—one of USAF's top modernization priorities. The first flight of a fully configured KC-46 is slated for April 2015.



USAF photo by Michael J. Pausic



Above left: Frank Kendall, undersecretary of defense for acquisition, technology, and logistics, said China and Russia are making long-term investments to modernize their militaries. Above right: William LaPlante, USAF assistant secretary for acquisition, said the average wait for a contract award is 17 months. He wants that number down to a single digit.

that it's not enough to develop new equipment.

"All that innovation doesn't help you if you're not agile enough to take advantage of it," he said. The trick will be to get new capabilities into the hands of combat forces as quickly as possible and let them figure out how to best use it.

Welsh repeated that the F-35, KC-46, and LRS-B are "our must-haves to be viable in the future," but closely behind them are a new combat rescue helicopter, a replacement for the E-8 JSTARS radar surveillance jet aircraft, and the T-X trainer, which will replace the T-38.

He also said there are "some modernization programs that keep our legacy fleets viable," and "we have to continue to keep those on track or we won't be able to continue to fight."

Air Combat Command chief Gen. Gilmary Michael Hostage III said those "legacy" upgrades will have to be highly selective.

In the "zero-sum game," Hostage said during the Four-Star Forum, "we had to choose either recapitalization or refurbishment." Given that modernization isn't negotiable, Hostage said, "I've had to sacrifice the refurbishment of the legacy fleet." It's "not a matter of one or the other" because the number of

fifth generation F-22s and F-35s will be too small to do the job and must be complemented by fourth generation fighters, he said.

Upgrading some portion of the F-15 fleet, with new radars and some other capabilities, is needed because "we have a very limited number of assets to produce air superiority." Unfortunately, the service life extension of the F-16 fleet has taken "some pretty heavy hits."

Recapitalization must be the top priority, he said.

AGING AIRCRAFT

"Airplanes are falling apart. I don't care if it's B-1 oil flanges that are breaking and starting fires, or F-16 canopies cracking. There are just too many things ... happening because our fleets are too old. They're just flat too old," Welsh lamented.

One offset will be to rely more on cyber offensive operations.

"We need to start thinking about what cyber does for the air component

SrA. Paul Swanson marshals an F-35 at Luke AFB, Ariz., in May. The strike fighter, due to reach initial operational capability for USAF in 2016, is the service's top modernization priority.

... in the big war," he said, adding that what ACC needs is for an air component commander, "when the big fight starts, [to] hit the cyber 'easy' button and watch the enemy RPAs pool at his feet. Or when the enemy starts to shoot missiles toward friendly forces, employ a tool that allows these missiles to sit and sizzle on the pad or go halfway, turn around, and go home."

In his A&SC press conference, Hostage said that cyber operations are becoming so lethal they're unsafe to



USAF photo by SrA. Jason Colbert



USAF photo by SSgt. Anthony Nelson Jr.

The Top Modernization Priorities

The Air Force's top three acquisition programs—the F-35 fighter, the KC-46 tanker, and the Long-Range Strike Bomber (LRS-B)—are all progressing well. They are overcoming challenges and moving toward operational status on predicted time lines, program and USAF acquisition officials said at the Air Force Association's 2014 Air & Space Conference.

F-35 JOINT STRIKE FIGHTER:

The F-35 should achieve initial operating capability with the Marine Corps in 2015, Air Force Lt. Gen. Christopher C. Bogdan, the program executive officer, said, though there is potential for delay in modifying the jet aircraft—which have been produced in several different configurations—to the final version.

The Air Force, due for IOC in 2016 “is in even better shape,” and he assesses the risk to the operational schedule as being “low risk, quite frankly.”

The Navy, too, should see its IOC date of 2018 fulfilled.

The biggest pressing issue on the F-35 right now is determining a fix for an engine problem that caused a fire in a training jet aircraft in June. Bogdan said the problem is well-understood, that several fixes are being reviewed, and that Pratt & Whitney, maker of the F-35 engine, has agreed to bear the costs of correcting the problem.

Bogdan reported high confidence that any technical issue on the program can be solved. Previous challenges—a balky helmet, a tailhook redesign, a fuel dump problem, and certification for flying in lightning—“those are all past problems,” Bogdan said. “We have solutions for those. Some are already in place.” Collectively, they are “in the rearview mirror.”

The bigger challenges will be to keep the procurement numbers stable—since numbers drive 80 percent of the fighter's cost—and software. The program still has a margin on the software, even though five of six months of cushion have been used.

Bogdan also said he continues to see price declines with every lot of F-35s and believes the fighter will be priced comparably to fourth generation competitors in only a few years' time.

KC-46 TANKER:

Tanker Program Executive Officer Maj. Gen. John F. Thompson reported that since the KC-46 award, when he needs to make periodic reports on program changes and cost increases, he's been able to submit forms that say, “None.”

Boeing discovered during an FAA inspection that it has put redundant wiring too close together and is redesigning and rewiring the initial four jet aircraft at its own cost, Thompson said. The program is actually running a little ahead, in that the Pentagon accelerated some aircraft that were to have been bought in the 2020s to early lots. He expects first flight of the baseline “green airplane” this month and the first flight of a fully configured test KC-46 in April of next year.

LRS-B:

Air Force acquisition executive William A. LaPlante offered “nothing new” on the classified Long-Range Strike Bomber program. “We're in the competitive phase,” he said, noting that requests for proposals were issued in late spring and he expects a winner to be announced in “the first quarter of next year.” Requirements have not changed, but the aircraft will be built in a “modular” fashion with adaptability to a range of missions. In Fiscal 2010 dollars, the goal remains to build 80 to 100 aircraft at a flyaway cost of \$550 million each.

E-8 JSTARS REPLACEMENT:

Ranked fourth among the Air Force's top-priority acquisitions, the service plans to remove some E-8 JSTARS aircraft from service and apply the savings toward buying a replacement capability. It will use “mature technology” and “replicate the performance, more or less,” of the jet airplanes now in service, LaPlante said. Contractors at the ASC tech expo showed off replacement concepts based on smaller, business-type jet aircraft. The JSTARS airframes are “on average 45 years old, so it's something we're just going to have to do,” LaPlante asserted.

T-X TRAINER:

This replacement for the 52-year-old T-38 Talon will be started “nominally in about Fiscal Year '17,” LaPlante said, “although we're wrapping up requirements now.” He said the project will be “nondevelopmental”—based on “existing planes and systems that are out there.” Seed money is in the Fiscal 2016 budget, he said.

practice in big wargames like USAF's Red Flag exercises and must be rehearsed in simulations instead. If cyber forces were unleashed at the outset of a wargame, “somebody's going to get hurt,” Hostage said.

Cyber warriors can “blind” an adversary and make his aircraft “run together,” Hostage said. Their more comprehensive inclusion in future “LVC”—for live, virtual, and constructive exercises—will “let the aviators learn the impact, the strength of what [space and cyber] can do.”



Developing Airmen

The Air Force recently began making sweeping changes to the enlisted airmen's evaluation and promotion systems. In late July, the service announced that it would undergo a major overhaul of the enlisted evaluation system and the weighted airman promotion system, or WAPS. This is something that it hasn't done in nearly 45 years, said CMSgt. Brandy Petzel, chief of enlisted force policy in the Air Staff's A1 manpower, personnel, and services office. Airmen should expect to see more emphasis on performance than on any other factors, she explained at the Air Force Association's Air & Space Conference in September.

Changes will come incrementally over the next two years, but the Air Force has begun its first phase of implementation in August for Active Duty junior enlisted airmen. Tech sergeants, the first ones affected, were notified that their static close-out date, which will now be tied to their promotion eligibility cut-off date, will be Nov. 30.

"We want to make sure performance is the most important thing in every aspect of an airman's career, so the evaluation process is going to measure performance [and] the promotion system is going to emphasize performance," said Air Force Secretary Deborah Lee James in July.

Changes to the enlisted evaluation systems will be a Total Force initiative while changes to the promotion system will only affect Active Duty airmen, said Petzel. It will take about 18 months to implement changes for Active Duty airmen. For the reserve component, it will take up to 30 months.

Enlisted performance reports (EPRs) will be "weighted more heavily than anything else" in WAPS, said Petzel. The way airmen receive EPR points and how the points are calculated will all change, she said.

Commanders will have to "take bold leadership to 'rack and stack' " their airmen in the new system, she went on, because it will be a challenge to rank same-grade airmen. However, doing so will help ensure that performance remains stellar, she said.

The service may appear to be throwing "a hurdle" at the enlisted corps, but "this is the right thing to do for our Air Force," she said.

Airmen need to remember that "the enlisted force is the power of the Air Force," said Gen. John E. Hyten, commander of Air Force Space Command, during the conference. "That has been the most important lesson I've learned my entire life." If "you trust the senior [noncommissioned officers], they will lead their airmen."

During the conference, several commanders of major commands offered advice to the airmen in attendance. The head of Air Force Reserve Command, Lt. Gen. James "J. J." Jackson, encouraged people to push their personal boundaries. Jackson told airmen to "get out of your comfort zone [at] every [available] opportunity." Only then can you achieve things you never thought you would, he said.

—June L. Kim, Associate Editor

A strong partnership with industry is key to maintaining the tech edge, Hostage said.

"Our adversaries are aware of our historical tendency to surge from behind and are countering this by developing technologies and tactics to get inside any surge time-window, effectively negating the historical pattern." The Air Force "cannot afford to lose our organic industry. The capability to develop and produce game-changing technologies is vital to national defense."

Besides looking for better ways to include companies in USAF's plans, the Air Force will look to its industry partners "to supply better, faster, and cheaper solutions to our existing capability gaps."

What Hostage wants is for "future adversaries to spend a million bucks to counter a \$5 weapon. We can't af-

ford to be on the opposite side of that equation."

William A. LaPlante, assistant secretary of the Air Force for acquisition, said such a partnership has become the focus of his shop and Kendall's, both. "We're in this together," he said to industry representatives in the audience. "It's not government versus industry."

LaPlante said the Air Force acquisition office—now at full strength "for the first time in five years"—is moving briskly to put into effect new acquisition philosophies put forward under the various "Better Buying Power" initiatives from Kendall's shop.

Under Air Force Materiel Command chief Gen. Janet C. Wolfenbarger, the service's various buying specialists have been reorganized so that program executive officers "own the life cycle sustainment for their systems," LaPlante said. That will ensure that the cost and



ease of keeping a system will be an important consideration "up front" when systems are chosen, he said.

"That's a very important thing," he said, "a difference in mentality, culture, outlook ... when you have to live with what you've built." The Air Force AQ shop in the Pentagon will soon be reorganized along similar lines, he said.

The shift aligns acquisition with the new USAF 30-year strategy, ensuring that "we don't start a program we can't afford."

He is focused on getting programs "right, particularly early on," maintaining "transparency" in dealing with industry, users, and Congress, and "getting back to adaptability"—building systems that will be useful and changeable to meet a wide range of contingencies.

Still fairly new on the job, LaPlante said he's been pleasantly surprised to learn that some perceptions of USAF acquisition are "really not true." He said the notion that USAF contract methodologies don't hold up and are thrown out in protests is a myth.

"Out of 110,000 awards" last year, he said, "there were about 140 protests and [only about] four of them were successful." Having an award thrown out "just doesn't happen; it's statistically very rare." Likewise, he said, the notion that programs take a lot longer than they used to is also a myth.

Programs do take longer, but the additional time is "small. Only about six months to a year. It's not like we were great at it" in the 1980s.

However part of transparency is being honest, LaPlante said, and it must be admitted that acquisition programs "take too long. We plan on a five-year



USAF photo by Jason Gutierrez

USAF Chief of Staff Gen. Mark Welsh speaks to cadets during a recent week-long visit to the Air Force Academy. Welsh told AFA's Air & Space conference attendees that innovation doesn't help if the service doesn't have the agility to take advantage of it.

there are potential risks of industry being involved too early in the process—that they might steer a program to their own capabilities or that their participation might keep them out of the later competition—the “downside of not doing it is too great,” LaPlante asserted.

Should-cost efforts—wherein “the program office works with the contractor and attacks” the cost—is paying big dividends, especially since savings are plowed “back into that portfolio.” This is allowing more gear to be bought and more capability to be added, LaPlante reported.

Kendall released “Better Buying Power 3.0” during the conference, and LaPlante said it aims to keep industry vital by providing for continuous experimentation and prototyping. There will also be a push toward “frequent block upgrades” on a regular timetable. “If your improvement is not mature enough to make it into the next block, wait for the next train,” he said. It will be AQ’s job to “make sure there is a next train” and not “hold the train up for a passenger. If you don’t make it onto this block, you’ll have to wait 18 months.”

LaPlante said in the modular systems of the future, new capabilities “have to earn their way on,” and the platforms must have an “open architecture” to accommodate new sensors, weapons, and other capabilities.”

“This is where we need to go,” he said.

Experimentation will also have to be accompanied by a high tolerance for failure, according to Air Force Research Lab chief, Maj. Gen. Thomas J. Masiello. In his speech, Masiello said the culture of expecting everything to work perfectly—especially when funds are so scarce—has to be set aside so that engineers and scientists can be free to learn from mistakes. Otherwise, the Air Force will “not be pushing” the edges of technology.

Masiello said hypersonics and directed energy laser systems have long been “overpromised and underdelivered.” However, now they are both “real” and will be inducted into “programs of record” to deliver fielded weapon systems in the near future.

The X-51 Waverider program, which achieved 200 seconds of hypersonic flight

after the previous record of just seven seconds, “put us on the map,” Masiello said, and demonstrated that sustained hypersonic flight is feasible. The AFRL roadmap anticipates a hypersonic cruise missile in the 2020 time frame, followed by a weapon for “deep strike against high-value targets” circa 2030, and a “reusable, persistent” platform for strike or ISR—possibly manned—circa 2040.

“This is not just a PowerPoint” slide, he asserted.

In lasers, Masiello said the Air Force has parted company with the “flying HAZMAT approach” of the canceled Airborne Laser—which carried tons of toxic chemicals to achieve high-megawatt power—moving toward electric lasers in the 100 kilowatt class in the near future. A podded system with “tens of kilowatts”—which can do “militarily useful” damage—could be flying on an F-15 in the 2020s, and a sixth generation fighter could be flying with a 100 kw system by 2029.

A missile that can deliver a precision-targeted electromagnetic pulse, knocking out all the electronics in a blockhouse or weapons factory or command and control node has already been tested, and “if the decision was made today” to go ahead with it, “we could field it in a fairly low-risk acquisition program” in the early 2020s, Masiello reported.

All together, AFRL has about \$2 billion in its portfolio—with about \$800 million of those funds going to air vehicles, engines, hypersonics, directed energy, and related pursuits. Space and nuclear deterrence gets about \$327 million; ISR gets \$263 million; and \$225 million goes for command, control, cyber, and communications. The balance funds diverse accounts ranging from affordability and sustainment to electronic warfare to human factors and automation research.

Looking ahead to what may happen to USAF’s technology push if sequester remains in effect and kicks in again next year, Hostage, in his speech, said the “worst-case scenario” is that Congress won’t let USAF adjust force structure to pay for modernization. “And then, my choice is either kill off future investment or attack readiness.” If forced to pick, Hostage said he’d opt to let readiness slip even further to preserve future technology.

“Going after our future potential,” Hostage asserted, “borders on the existential, and that’s an unacceptable path. Taking the hit in readiness is taking risk, but it’s potentially a survivable risk, if the adversary doesn’t call our bluff.”

development, and we end up executing a seven-year development”—numbers that are also true for the other services.

He said, “That’s not good” and adds cost because “that’s, in some cases, two years of a ‘standing army’” of engineers and administrators doing nothing but waiting. He told industry reps that they will get attention from him “if you’re pushing a program that’s going to get done in three years.” However, “know the track record. ... Plan for five, deliver in seven.”

He’s heard the complaints of industry that it takes too long to get contracts awarded; the average wait is 17 months.

DEFENDING AGAINST CREEP

“That’s unsatisfactory,” he said. “That’s money.” The goal is to award contracts in “single digits” of months.

Another myth is that there’s a “debate” over whether fixed-price contracting or cost-plus saves more money. “They actually perform the same,” he said, but there is a “statistical difference” in contracts using incentive fees versus award fees. Incentive-fee contracts produce better performance, and the Air Force is going to use them more.

Toward its “bend the cost curve” mantra, the Air Force is looking to include contractors in setting requirements as early as possible. The process of establishing what a combat commander “wants to pay for and will pay for” is thought to be done in preprogram analyses of alternatives, or AOAs.

However, “it’s not done in AOAs. If you don’t get the requirements nailed down so they’re firm and you can keep them firm, and defend them against creep, you’re doomed,” LaPlante said. Though

Air Force leaders urged new approaches to commanding and controlling forces in combat, a mission that stretches across the service's core missions.

The Chief of Staff and Secretary of the Air Force, operational commanders, and retired leaders all agree that command and control (C2) and battle management of air, space, and cyber forces needs a refresh, they contended

at the Air Force Association's Air & Space Conference in September. Speakers said effective C2 underpins some of USAF's thorniest operational problems, from linking up fifth generation fighters to older aircraft, to enabling better intelligence, surveillance, and reconnaissance collection and analysis, as well as fighting in denied, degraded, and anti-access scenarios.

To improve C2, the service and the defense industry must embrace new

constructs and tools such as a self-healing information "combat cloud" to forge effective and survivable connections between newer fifth generation aircraft and older assets to push and pull information to where it is needed most.

Today's combined air and space operations centers (CAOCs) employ tools and processes largely unchanged since the early 1990s.

The very concept of a CAOC came out of the lessons learned from the first

By Marc V. Schanz, Senior Editor

COMMANDING CONTROL

A smaller force, growing demand, and evolving threats are forcing the Air Force to re-examine C2.

Gulf War, where precision weapons, stealth, and effects-based planning won the day. But since then, US operations have mostly been conducted in lightly contested environments, and the process of tasking targets is far different.

Unlike the first Gulf War, fighter aircraft rarely leave on sorties knowing what they will target with their linked ISR pods.

Modern air and space operations, even in relatively uncontested environments,

suggest profound implications for the future—especially in regions such as the Asia-Pacific. “Potential adversaries have studied the American way of war and have based their strategies on keeping us out of their neighborhood,” said retired Lt. Gen. David A. Deptula, dean of AFA’s Mitchell Institute for Aerospace Studies.

American C2 networks and communications centers are now the targets of cyber attacks and ballistic missiles. As

a result, the 21st century battlefield is increasingly shaping into a competition over who can use and deny information to a potential adversary, said retired USAF Col. David Fahrenkrug, the former senior military advisor to Andrew W. Marshall, director of the Pentagon’s Office of Net Assessment. In the Pacific alone, “China has determined information superiority is critical to winning future conflicts,” Fahrenkrug said. “And they are determined to pass us and win.”



The CAOC at Al Udeid AB, Qatar. From this bustling facility, USAF and partner nation airmen monitor and control air operations over the Middle East.

While USAF aircraft and systems are all connected to networks, from data links to gateways to global positioning satellites, they are in conflict or incompatible with each other in many instances—and with the networks of other services.

“We are working on this,” said Pacific Air Forces’ Gen. Herbert J. “Hawk” Carlisle, “but we can’t build the right plumbing if we don’t agree.” The Air Force and the Navy, he said, are not yet “on the same sheet of music” in developing resilient linkages between aircraft and commanders and vice versa. The Navy has pushed forward with the Naval Integrated Fire Control-Counter Air (NIFC-CA) concept, but the Air Force has pursued other programs for other assets, such as the Intraflight Data Link and the Multi-function Advanced Data Link (MADL). Carlisle said, “We’ve got to think about how we get to the next level”—how the US military will conduct command and control between services in a denied and disrupted environment—“and we’re not there yet.”

The problems have as much to do with culture and training as technology, said Lt. Gen. Russell J. Handy, commander of 11th Air Force at JB Elmendorf-Richardson, Alaska. Handy, who worked as the director of plans and programs at PACAF prior to his move to Alaska last year, told the AFA audience that US Pacific Command boss Adm. Samuel J. Locklear III ordered a look at how C2 would work in the Asia-Pacific. This involved exercising a variety of theater scenarios, conducting command and control in denied and degraded environments, and making choices on what decisions and authorities would remain centralized and what could

be dispersed to component commanders or joint commanders.

Handy said USAF and military leaders learned that in the Pacific, C2 across the theater has to be capable at all levels and expand and contract as needed. “The concept where we present forces in this area is evolving” away from big bases and garrisons to smaller dispersed units and expeditionary deployments. Future wars will no longer be a “push environment,” where tasks flow out from CAOCs and commanders, but “more important, is bringing data back from employed forces. ... We need to think about those type of forces and how they send information back to commanders.”

CONNECT THE FLEET

The problems confronted by commanders in the Asia-Pacific have profound implications for missions across the globe—from air superiority to nuclear deterrence. In response, USAF must make investments in C2 platforms and technologies and rethink operational concepts, training, and long-held battle management practices.

Air Combat Command’s Gen. Gilmary Michael Hostage III said that when he flew his first fighter, an F-16A, he could see out ahead maybe 12 miles on a good day and relied on radios a great deal to get information. Today, if a two-ship of F-22s is well-briefed before departing, the pilots may never even talk with one another, due to the sensors and avionics capabilities of the jet. “They are doing a higher level battle operation than any fourth generation fighter,” Hostage said. The “fusion capacity” of fifth generation aircraft is

the defining characteristic of F-22s and the F-35, he declared, and will greatly influence combat in the future. “Stealth is just one of those things that came along with it,” he said, adding that the ability to pass sensor data between F-22s makes them revolutionary assets.

However, USAF has a difficult task ahead on its fifth generation fleet: linking its F-22s with F-35s, and with the rest of the force, to ensure survival in high-intensity combat. Raptor pilots can share information with one another via their own data link, but can’t share with anyone else unless the pilot gets on a radio and begins transmitting, Hostage lamented.

The F-35, when operational, will initially suffer from the same limitation. Because of this, the outgoing ACC commander said he has pushed his planners and industry to deploy secure and effective data links to get USAF’s fifth generation fleet connected with fourth generation technology. Although they are both fifth generation fighters, “F-35s don’t talk to F-22s,” Hostage said. “Don’t get me started” about how that happened, “but we are where we are.”

The Air Force will need a large portion of its legacy fleet for years to come, so leveraging the power of F-22 and F-35 sensor and information fusion will “fundamentally [be] the only way we will survive in the latter half of the next decade,” Hostage said. But even then, he noted, this will only solve part of the problem. “I need to leverage that fusion capacity, but I’m just linking tactical platforms,” Hostage said. The next step, for the Air Force, is how to “pull” data at the

(Continued on p. 49)

Two F-22s during a Red Flag exercise. Raptors are so well-linked by sensors and avionics that pilots seldom need to speak to one another during a well-briefed mission.



USAF photo by SrA. Zachary Perras



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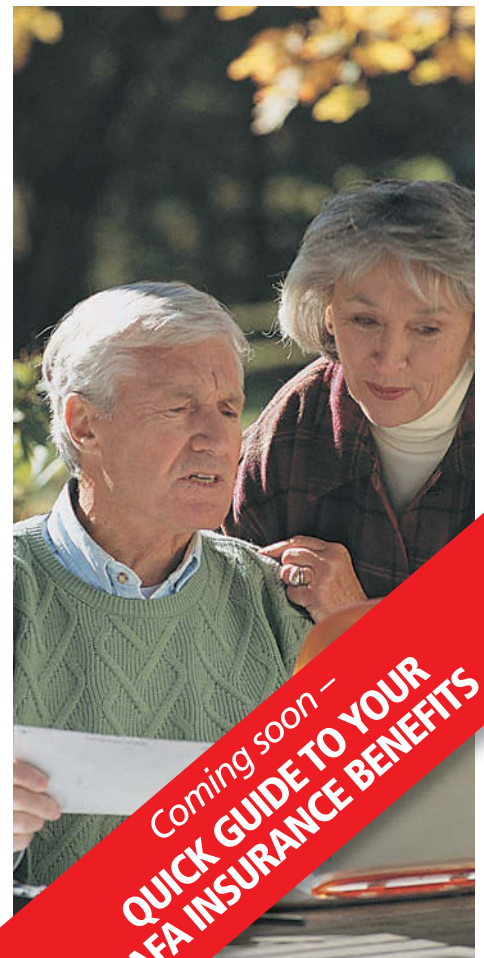
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command level, from CAOC floors for example, and do it from multiple platforms. Even with fourth-to-fifth generation data links, a single link remains vulnerable in a contested environment, while a “cloud” approach to certain data and information could be more survivable.

“When we talk about the Internet, it’s data that just lives out there, it’s constantly refreshed and available any time,” Hostage said. While it is nearly impossible for a combat cloud construct to be as pervasive as commercial cloud technology in a high-end combat scenario, such an approach to C2 and data management would reduce risk in future operations. “I need certainty and availability, and that is the challenge with tactical links. If you break it, ... you lose it,” he said. But even with a “gracefully degradable” cloud with lower level of connectivity in some areas, Hostage said, another platform—such as an E-3 AWACS or an E-8 JSTARS—can fill the gap, should connections with the operations center become compromised.

Nuclear command and control and communications for USAF’s strategic forces is also a top modernization priority. Air Force Global Strike Command’s Lt. Gen. Stephen W. “Seve” Wilson said nuclear C2 demands some broader thinking, noting that AFGSC planners had talked with industry recently to make sure its bombers could connect to the AEHF satellite constellation and could receive and maintain wideband communications as well as narrow band connectivity anywhere.

But Wilson also said USAF’s nuclear forces look to make their air-breathing

USAF photo by Michael J. Pausic



Gen. Hawk Carlisle said USAF must focus on the next level of communications capability and interoperability. This is particularly important in a denied or disrupted environment.

C2 processes more robust, in a nod to space vulnerabilities. “What can we do incrementally over time, and how do we also have a non-space-based option capability out there for the bomber force?” he asked rhetorically.

Cross-domain thinking—across missions—is essential to the service’s future, senior leaders declared. Chief of Staff Gen. Mark A. Welsh III said USAF cannot afford to think in domain stovepipes

anymore and must leverage aircraft such as the F-35, tools such as cyberspace, and the next generation JSTARS in ways airmen could not have imagined even 20 years ago.

Cyber command and control could have far-reaching effects in combat. Welsh said he wants to see the cyber mission employed to greater effect to aid the air component in “the big war,” not just supporting signals intelligence tasks at the National Security Agency or supporting other missions at US Cyber Command.

“When the enemy starts to shoot missiles toward friendly forces, [we should] employ a tool that allows these missiles to sit and sizzle on the pad or go halfway, turn around, and go home,” Welsh said. “How do we expand that thinking into our Air Force in a big way?”

As one solution, Welsh wants to send cyber airmen to operations centers in ACC or PACAF or Air Mobility Command, helping planners figure out how to perform their mission better “in, through, or from the cyber domain.” Airmen must understand that all of the

An F-22 and an F-35 turn toward the runway at Eglin AFB, Fla. The two new fighters cannot yet “talk” to one another via data links.

USAF photo by MSgt. Jeremy T. Lock





USAF photo by SSgt. Angellita Lawrence

MSgt. William Taylor, JSTARS flight engineer, completes a checklist before a mission in Southwest Asia. Recapitalization of the JSTARS fleet is a top USAF priority.

service's traditional operating domains are "growing, changing, becoming more contested, more congested," Welsh said. As a service, USAF has to get better at integrating and synchronizing effects through these domains "in every one of our mission areas."

Secretary of the Air Force Deborah Lee James said as the Air Force modernizes, it must focus closely on being able to "achieve objectives through ways that we have not previously explored." This means a "multidomain approach" that will demand more investment and focus on how the service uses ISR, space, cyber, and information.

USAF's space-driven C2 vulnerabilities also impel modernization priorities. Barriers to space capability are lower than ever, and the technology to threaten space assets has become more readily available, James said. Because of this, USAF is evaluating its concepts for space mission assurance—building resilient systems, being able to replace assets on orbit quickly, and disaggregating space assets so it has fewer points of weaknesses where an adversary could catastrophically affect USAF air and space operations.

Information is so important to future operations that Welsh declared his personal belief that USAF will one day establish a major command dedicated to it. "It is the coin of the realm. And it will become more and more and more so in the future," he said.

Maj. Gen. Linda R. Urrutia-Varhall, the assistant deputy chief of staff for

ISR on the Air Staff, said USAF must move to embrace a more scalable model for analyzing and disseminating C2 and ISR information—as supply of data has vastly outstripped the ability to process, exploit, and disseminate it. Air Force units, she said, consume enormous volumes of imagery to support operations, more than 1,600 hours of video on average every day.

PLANNERS AND DOERS

In 2016, if existing tools and processes remain in place, USAF could need more than 100,000 people to keep up with projected demand. Enabling a cloud approach to ISR, where cleared airmen can analyze and access tagged data, will become an operational necessity as USAF adapts for anti-access and area-denial combat in the future.

The importance of command and control resilience is one of the main reasons recapitalizing the E-8 JSTARS fleet is a top Air Force priority. JSTARS aircraft, while few in number, have performed an outside role in the last decade of conflict—as their ability to track moving targets, send imagery, and link ground and air assets has proved invaluable in Iraq and Afghanistan.

ACC, this September, approved the capabilities document that will dictate the tools, capabilities, and size of the new aircraft (which USAF aims to have operational by 2022), said Col. Henry L. Cyr, commander of the 461st Air Control Wing at Robins AFB, Ga. Unlike the aircraft currently flying, a future

JSTARS fleet would feature greater capability, fewer crew members, and fit in a smaller business-class jet, such as a Gulfstream 550 or Boeing 737.

Though USAF has pushed to recapitalize JSTARS, a capability in great demand across the military, Cyr said its mission is "not well-understood"—and this applies to command and control across the military. "It is a diverse mission set when compared to air superiority, or mobility," he said. "A layman could describe what global attack is, ... but even in the military, describing command and control, you get a different perspective depending on who you ask." Much like the different data links between the combat air force, C2 is a joint effort with varied definitions in the services.

He said JSTARS is "a platform that merges the operational and tactical level of war," linking the general officers, who are planning, with the captains and sergeants, "who are doing." USAF presses the JSTARS program, and seeks support from the other services, to make sure those links remain resilient, survivable, and adaptable.

Several leaders noted some good news in the works, on solving connectivity problems within USAF's combat fleet. Work between PACAF and PACOM, Hostage said, has led to a Joint Urgent Operational Need (JUON) statement being prepared. This will push DOD to produce an initial fifth-to-fourth generation aircraft link on the Talon HATE program. With Talon HATE, Boeing endeavors to combine fighter data networks, ground stations, national networks, and joint C2 assets to speed information sharing and prevent choke points vulnerable to attack. The prototype is carried on a pod already tested on an F-15. However, the program is not yet a "volume solution," Hostage said. "It will show us the way, but it's not going to give us a significant tactical capability across the fleet."

Though the problem set sounds theoretical, Carlisle stressed command and control challenges are not limited to high-end combat and can arise at any time.

He cited the east Japan earthquake in March 2011, when the CAOC at Osan AB, South Korea, was cut off from the network. This happened not because of an adversary attack but because the quake had damaged or snapped undersea fiber-optic cables leading to the combined command center.

Scenarios such as this have served to accelerate and raise the profile of the command and control problems USAF must solve in the coming years. ★

RD-180—OR BUST?

By Autumn A. Arnett, Associate Editor

The United States' sustained access to space is in question. Heavily reliant on the Russian-made Energomash RD-180 engine to power its launches, US military space personnel are looking for a replacement because of the tense and uncertain status of American and Russian relations.

Funds are already being appropriated for research and development of a new engine, but Gen. John E. Hyten, commander of Air Force Space Command, considers the issue to be urgent. He told reporters at the Air Force Association's Air & Space Conference in National Harbor, Md., in September that he'd like to have a US alternative to the RD-180 "yesterday."

"Every time I look at [the Atlas V], it's the most beautiful rocket that I've ever seen. It's gorgeous. Then as it lifts ... I look and I see a Russian engine on the bottom," he said. "And it just doesn't seem right. I would prefer that there not be a Russian engine on the bottom of it, but there is."

But how does the Air Force replace the Russian engine that propels the Atlas V?

There is not yet an answer, Hyten said. A wide range of experts—from the Air Force to industry—is looking for solutions. "We don't know how the restrictions are going to come out. We don't know how the relationship with Russia's going to come out. So we're looking at everything, [including] potentially moving satellites from Atlas to Delta."

One recent development in which Hyten sees potential is the recently announced partnership between United Launch Alliance and Blue Origin to develop the BE-4, a liquid oxygen/liquefied natural gas-powered engine many are hoping will replace the RD-180.

Blue Origin, headed by Amazon.com founder Jeff Bezos, has been working on research and development and risk analysis for three years. Hyten admits

he doesn't really know what that R&D amounts to, but said he is hopeful the partnership will mean a new engine on the market soon.

"Three years of development is better than starting at ground zero," Hyten said.

"If we start at ground zero to build a new engine in the hydrocarbon technology area we're five years away from production, roughly, maybe four, maybe six. The one thing you would have to do is spend the next year or two driving down the technology risk so you can actually build that."

The space chief went on to say the possibility of a natural gas-powered engine is exciting, primarily because of the "ease of acquiring, supporting, and operating" the new technology, in addition to the potential propulsion capabilities.

"That kind of technology has been exciting to me personally for a long time. ... Nobody's been able to make it real yet, not at the scale they're looking at."

Another group, Aerojet Rocketdyne and Dynetics, is engaged in a risk reduction program with NASA and would also vie for eventual launch contracts.

William A. LaPlante, assistant secretary of the Air Force for acquisition, said the field is wide open. Calling the matter of deciding on a new engine type "the \$64 million question," LaPlante said, "We deliberately kept it not restricted to a certain engine type. We'll look at solids, look at liquid hydrogen, we'll look at [liquid-oxygen]/hydrocarbon."

LaPlante said the Pentagon is operating on an "accelerated acquisition strategy" to find an engine replacement, but that looking ahead to Fiscal 2015, he would like to have established, at minimum, a plan for risk mitigation and an actual acquisition strategy. "I think one way or the other, in about a year from now, we're going to need to have in place this strategy ... so it's a pretty rapid thing that we have to do."

As it stands, the US could sustain its manifest for two years with the current supply of RD-180 engines. But a new engine could take seven or more years to be operational, making LaPlante's "\$64 million question" a "hydra-headed monster," in the words of former AFSPC Commander Gen. William L. Shelton.

"I don't think we build the world's best rocket engine," Shelton said last July. "I would love for us as a nation to regain the lead in liquid rocket propulsion."

Both LaPlante and Hyten are proponents of the United States continuing to fund research and development of a new engine type, regardless of the relationship with Russia.

"The United States should lead the world in every engine technology there is," said Hyten, who said he believes the US has achieved this in both solid and liquid-oxygen/hydrogen engine types. "But in hydrocarbon technology, the Russians have the best engine in the world. I think that we ought to have the best engine in the world, so I think we ought to have a technology program that looks into that and builds an engine to do that," he said.

LaPlante said there could be policy implications of moving forward with production of another engine, given that the delivery of the RD-180s has not been interrupted. Still, "before we even get to that point, we have to see what we can do" to assure access to space. ✪

A gas generator for Aerojet Rocketdyne and Dynetics is tested at NASA's Marshall Space Flight Center, Huntsville, Ala.

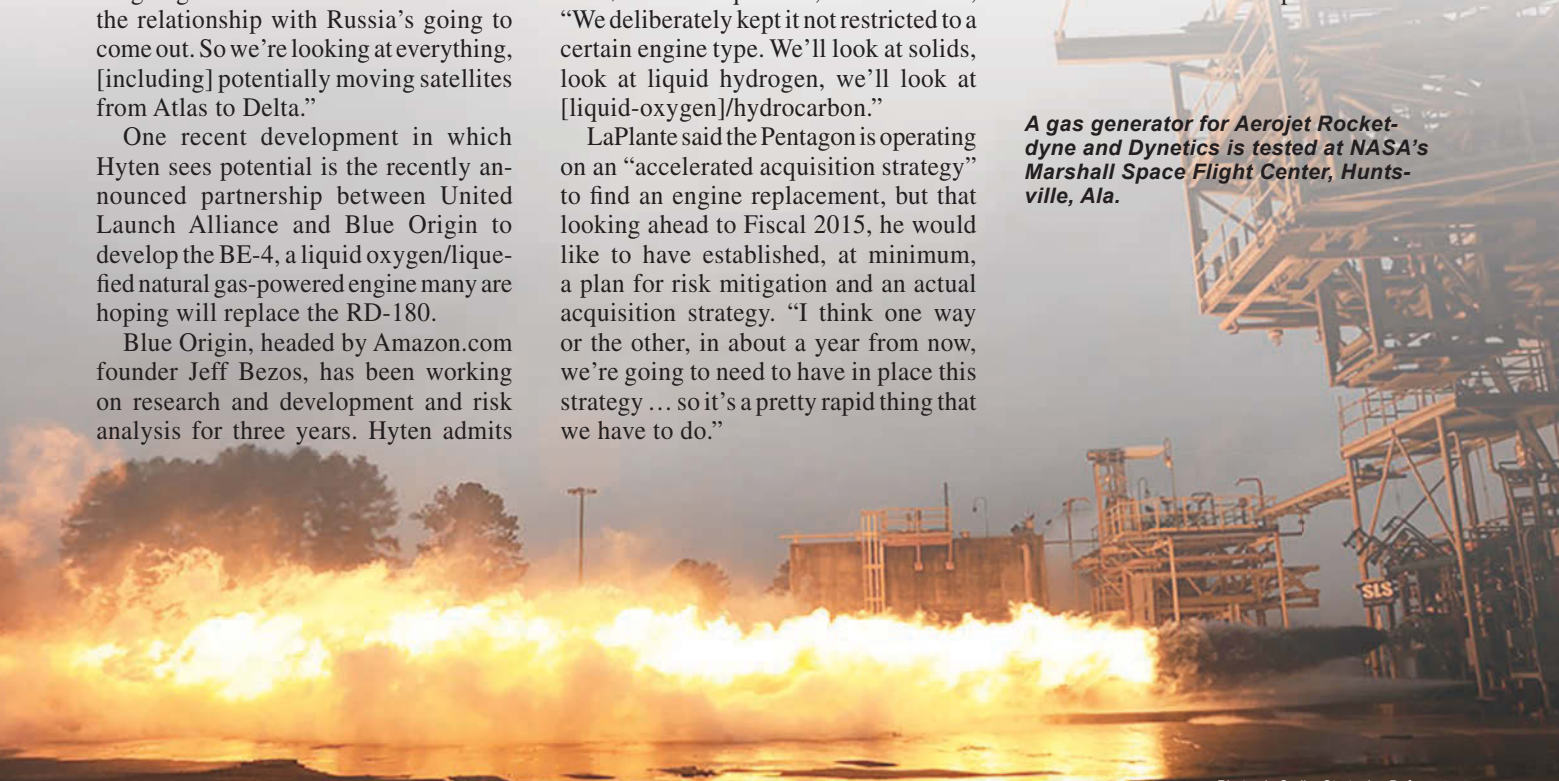


Photo via Scribe Strategies Defense

Air Commandos: Dial Up Somebody Special

By Michael C. Sirak, Special Content Director

Air commandos are in high demand today across the globe. They'll likely be engaged at such pressing tempos for years to come as the United States battles terror groups such as the Islamic State of Iraq and Syria, said Lt. Gen. Bradley A. Heithold, head of Air Force Special Operations Command.

"Suffice it to say that when you have a campaign against violent extremist organizations, ... the capabilities I bring to the fight are applicable," Heithold told reporters in September at the Air Force Association's Air & Space Conference in National Harbor, Md.

AFSOC is recapitalizing its legacy gunships and penetrating infiltration aircraft and seeks to acquire new types of manned and remotely piloted platforms for intelligence, surveillance, and reconnaissance tasks, he said. It is interested in ISR airplanes that have greater range and endurance to operate in places like Africa where "the tyranny of distance is certainly a problem."

AFSOC fielded many of its current ISR aircraft "for specific actions in Iraq and Afghanistan," where distances are not as great, he said.

As new AC-130J gunships, MC-130 special-mission airplanes, and CV-22 tilt-rotor insertion aircraft continue to enter the fleet, Heithold said the command is also focused on its training apparatus to ensure that its airmen are ready for the difficult missions they are called on to execute.

"We are going to shoot more, we are going to fly more, and we are going to train harder than anybody else in the United States Air Force," he said. "I've got to make sure that when we dial up an air commando, that you truly get somebody special."

The Defense Department has protected funding levels for special operations forces in recent years. This has left AFSOC in a relatively good position, said Heithold, who's led the command since July.

"We are right-sized for the conflict that we have going forward," he said. AFSOC doesn't need to grow in size, he said.

"If we got bigger, I can't afford to shoot more, fly more, train harder," he said. "We'd rather be way ready than way big."

Today, the command has approximately 19,000 Active Duty, Air National Guard, Air Force Reserve, and civilian professionals.

USAF photo by A1C Ericka Engblom

It invests a lot of time and resources into cultivating its cadre of battlefield airmen. These groups of elite, highly skilled personnel—combat controllers, pararescuemen, combat weathermen, among them—are able to "move quickly on the battlefield from one target to another" in support of the geographic combatant commanders, said Heithold.

If budget sequestration returns in Fiscal 2016, he said he'd be most concerned about protecting readiness and end strength. Maintaining "a persistent campaign against violent extremism," including the training of partner nations' forces, requires a two-to-one ratio of time personnel spend at home station versus deployed downrange, he said.

Heithold said he continues to explore new ways to pair with the Air Guard and Reserve. "There are plenty of opportunities out there for me to lean on them to assist AFSOC," he said. The processing, exploiting, and disseminating of intelligence information is one potential area of greater cooperation, he said.

To upgrade its ISR fleet for missions in permissive airspace, AFSOC is interested in acquiring the MC-12W manned surveillance airplanes that Air Combat Command is divesting, said Heithold. Operating the twin-engined MC-12s would allow AFSOC to retire its fleet of single-engined U-28As.

"I think it is a wise thing to do at this point," he said.

Although the U-28s are "very capable" and have been "very reliable," the MC-12s offer "more endurance on the target" and offer the safety of having two engines. As of late September, Congress had not signed off on the plan.

AFSOC is also interested in the extended-range variant of its MQ-9 Reaper remotely piloted aircraft, said Heithold. "We certainly are looking at [that]."

The CV-22 "is performing well" and is "all that we asked it to be," he noted.

AFSOC is fielding lightweight armor for the aircraft to provide better protection for crew members and passengers in the airplane's aft section. The command is also looking for a forward-firing gun for protection during landings in hostile areas, he said. The Osprey carries an aft gun today.

While the CV-22 program of record calls for 50 airframes, Heithold would like to see AFSOC acquire three or four additional aircraft before the production line shutters. They'd constitute an attrition reserve.

Heithold said he finds the idea of an airborne directed energy weapon "intriguing" for nonlethal uses. Given advances in small laser and microwave technology, he is weighing the option of including a program to integrate a DE weapon on the AC-130J in the command's Fiscal 2017 program objective memorandum, which AFSOC will start building shortly.

"We ought to have that discussion," he said. ✪



Top: SSgt. Douglas Freeman uses thermal night vision goggles during training at Cannon AFB, N.M. Here: An AFSOC AC-130W fires its weapons over Melrose Air Force Range, N.M.

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It was Japan's intention on Dec. 7, 1941, to notify the United States 30 minutes before the attack on Pearl Harbor began that it was breaking off diplomatic negotiations. However, because of mishandled communications between Tokyo and Washington, the message was not delivered until nearly an hour after the first bombs fell in Hawaii.

The Japanese declaration of war was published in Tokyo later that day. Almost 75 years have passed but Japan still carries the stigma of a "sneak attack" on Pearl Harbor.

It was a time when wars—the ones between major powers, at least—were undertaken with formality and protocols. The Hague Convention of 1907 had prescribed the declaration of war before the beginning of hostilities, but the practice dates back in military custom to the Roman empire.

Since World War II, formal declarations of war have fallen into disuse, although there are exceptions. In 2012, for example, Sudan declared war on South Sudan.

That does not mean wars no longer happen. According to researchers at the University of Warwick in England and Humboldt University in Berlin, the frequency of "pairwise conflicts"—meaning independent states fighting each other—continues to increase steadily. Excitable commentators see an alarming increase in wars.

Closer examination reveals a more complex picture. The number of small conflicts is indeed increasing, but the number of wars—defined by the researchers as conflicts in which 1,000 or more lives are lost a year—is decreasing. Large nations avoid going to war with each other. The so-called "Long Peace"

in Europe since 1945 is the longest such interval since the Middle Ages.

The main factor in raising the threshold of war was nuclear weapons and their potential to wipe combatant nations out of existence. The net effect was to establish two different thresholds, a very high one for nuclear war and a lower one for lesser conflicts. Even so, the nuclear-armed nations were careful to keep the smaller engagements from escalating to the nuclear level.

The question of when and how to enter armed conflict persists. No nation has agonized about it more than the United States, which has been chronically ambivalent about escaping its role as the world's policeman. For better or worse, others are swept along by where the United States sets the threshold of war for itself.

An additional dimension of the problem is the proliferation of nuclear weapons among nations that may be tempted to

Adjusting the Threshold of War

By John T. Correll

Big wars do not occur as often as they once did, but small conflicts are more frequent.

use them. “The evidence suggests that the once strong firebreaks between nuclear and conventional conflict are narrowing and the taboo against nuclear use is growing weaker rather than stronger,” says Barry D. Watts of the Center for Strategic and Budgetary Assessments.

WINDS OF CHANGE

Prior to the 20th century, most of the world’s power was concentrated in the hands of large nations and empires. Smaller states were relegated to the status of colonies or clients, or else existed in the spheres of influence of the great powers.

World War I marked the end of the Hapsburg, Ottoman, and Romanov empires. After World War II, the European colonial powers withdrew from Asia and Africa. This brought about sweeping gains in self-determination—but with a

corresponding loss in the stability that the old regimes had enforced.

“In 1870, the world contained fewer than 50 independent states. By the end of the 20th century, there were more than 180,” says the report from Warwick and Humboldt universities. “As a result, the total number of possible country pairs in the world between whom relations of peace or war could exist grew from around one thousand to over 17,000.”

The United Nations, created in 1945, gave the new nations a voice in world affairs and a share of the political power. The emerging nations found frequent cause to use military force against external adversaries as well as rival factions within their own borders.

According to the latest report from Uppsala University in Sweden, which keeps track of the number of wars, there were 33 active conflicts causing at least

25 battle-related deaths in 2013, but that “conflicts claiming more than 1,000 lives, defined as wars, have declined by more than 50 percent, from 15 in the early 1990s to seven in 2013.”

Death and destruction from these conflicts does not approach the scale of the world wars. Total casualties for conflicts in 2012 were just short of 38,000, of which the civil war in Syria accounted for 14,700, almost 40 percent. Uppsala has not posted casualty numbers for 2013, citing a shortage of reliable information.

THE NUCLEAR FIREBREAK

The US monopoly on nuclear weapons did not last long. The Soviet Union had the atomic bomb by 1949 and the hydrogen bomb in 1953. The mutual danger set up what strategic theorist Herman Kahn described as “large and very clear firebreaks between nuclear and conventional war.”



A terrific explosion rocks the destroyer Shaw as her magazine explodes during the Japanese attack on Pearl Harbor Dec. 7, 1941. Japan still carries the stigma of a “sneak attack” on Pearl Harbor. However, since World War II, formal declarations of war have fallen into disuse.

“War” became a loaded term. In June 1950, President Truman insisted that the US was “not at war” in Korea and that the combat operation there was a “police action” against a “bunch of bandits.” Truman did not seek any form of congressional authorization and committed US forces under the aegis of the United Nations.

At first, the atomic bomb was regarded as a weapon that could be used. Truman said there was “active consideration” of employing it in Korea. President Eisenhower’s “New Look” strategy in 1953 said that nuclear weapons were “as available for use as other munitions.” In practice, both Truman and Eisenhower were far more reluctant to initiate use of nuclear weapons than their statements would suggest.

Throughout the Cold War, both superpowers were constantly aware of the danger of escalation. In 1962, Soviet Premier Nikita Khrushchev pulled his missiles out of Cuba, fearing that a nuclear exchange could destroy his country whereas the United States would survive, even though sustaining millions of casualties.

The old rules for declaring war no longer applied. A nuclear war would begin and be over too fast for that, especially after the introduction of ballistic missiles. ICBMs set a hair trigger for crossing the threshold of war. It was called “Launch on Warning,” adopted by both sides. Let one’s missiles be caught on the ground by an attack, they would be launched while the enemy’s missiles were still in the air. There was a constant risk that a false warning of attack might lead to war. Both sides experienced such miscues during the Cold War but fortunately discovered the mistakes in time.

In the 1980s, activists in Europe and the United States clamored for NATO to adopt a “No First Use” policy on nuclear weapons. NATO had already renounced first use of any weapon, but not specifically the first use of nuclear weapons, an option needed to defeat (and deter) a large-scale attack by Warsaw Pact conventional forces, which greatly outnumbered NATO. A “No First Use” nuclear guarantee would have decoupled NATO from the extended protection of the US nuclear deterrent and removed any existential risk to the Soviet Union for sponsoring a conventional attack in western Europe.

Mutual nuclear deterrence was not a perfect strategy, but it worked well enough

ISIS militants parade through the streets of a Syrian village. Most violent armed conflicts today are those waged by nonstate organizations and insurgents.



A USAF F-100 leaves the target area after dropping napalm on a suspected Viet Cong target in March 1966. The death of 58,000 Americans in Vietnam led to a reconsideration of the threshold of conventional war.

to keep the peace between the superpowers until the Cold War ended in 1991.

WEINBERGER DEBUNKERS

The “Weinberger Doctrine” led to a reconsideration of the threshold of conventional war. In Vietnam, more than 58,000 Americans had died in a war the United States did not regard as important enough to fight to win.

The point was underscored by the terrorist truck bombing in Beirut in 1983 that killed 241 US marines, who had no defined military objective in Lebanon and no mission there except for providing “presence.”

In his landmark speech in November 1984, Defense Secretary Caspar Weinberger listed a series of tests to be applied

before US forces were committed to combat abroad. They should not go unless a vital national interest was at stake, clear military and political objectives had been established, and the nation was prepared to commit sufficient force to win.

Among those disagreeing with Weinberger was Secretary of State George P. Shultz, who said the US could not be “the Hamlet of nations, worrying endlessly over whether and how to respond.” Then and now, those who favor a foreign policy of interventionism assail Weinberger as being too reluctant to engage.

Weinberger’s critics often miss a critical point: He made no judgment about the interests or provocations for which the United States should cross the threshold



of war, only that they be vitally important and that the nation be truly committed.

In his memoirs, President Ronald Reagan listed a set of principles “to guide America in application of military force abroad.” They are a close paraphrase of the Weinberger Doctrine.

The Gulf War of 1991 met every condition of the Weinberger Doctrine.

The Clinton Administration, which took office in 1993, did not agree with the restraints of the Weinberger Doctrine. Les Aspin, the new Defense Secretary, had been chairman of the House Armed Services Committee and rejected what he called the “All-or-Nothing” school of thought on the use of military force. Aspin was in favor of a “Limited Objectives” school.

On Aspin’s watch in 1993, 18 American soldiers were killed in the notorious “Black Hawk Down” incident in Somalia, trying to capture a local warlord who was riding around in US aircraft two months later.

Madeleine Albright, ambassador to the UN and later Secretary of State, asked Gen. Colin Powell, Chairman of the Joint Chiefs of Staff, “What’s the point of having this superb military that you’re always talking about if we can’t use it?”

In 1998, referring to possible strikes against Iraq, Albright said, “We are talking about using military force, but we are not talking about war.”

In his annual report for Fiscal Year 1995, Secretary of Defense William J. Perry said that US forces could be used if “the United States has important, but not vital, national interests” at stake. In 1996, National Security Advisor Anthony Lake announced a list of circumstances in which military force could be used, including “to preserve, promote, and defend democracy.”

BUSH AND PRE-EMPTION

George W. Bush began his presidency in 2001 promising an end to “vague, aimless, and endless deployments” to “places like Kosovo and Bosnia.” He said that, “We will not be permanent peacekeepers, dividing warring parties. This is not our strength or our calling.”

Before the year was out, though, the perspective changed. Airlines hijacked by terrorists were flown into New York City’s World Trade Center, the Pentagon, and a field in Shanksville, Pa., and suddenly the United States was in the midst of a new and difficult kind of war. The initial US military response was in Afghanistan, but Bush, convinced that Afghanistan was only part of the problem, persuaded Congress and a coalition of allies to broaden the effort to Iraq.

War Powers

The power to declare war is vested in Congress by Article One of the US Constitution. It has done so only 11 times in five different wars (the War of 1812, the Mexican War, the Spanish-American War, and the two World Wars), the last declaration being against Romania in June 1942.

However, the United States has used military power abroad much more frequently than that, including 167 instances prior to World War II. These were mostly small actions, such as the suppression of the Barbary pirates in the early 1800s and protection of the foreign legations during the Boxer Rebellion in China in 1900.

Furthermore, Congress has on numerous occasions authorized the use of military power without declaring war. The first of these was in 1798, when President John Adams was given authority to resist seizure of American commercial ships by the French navy. Other examples are the Gulf War of 1991 and the operations against terrorism in Afghanistan and Iraq.

The Vietnam War was a sore point. The only authorization ever given was the Tonkin Gulf Resolution in 1964, which empowered President Lyndon B. Johnson to “take all necessary measures” to repel attacks and prevent further aggression. Evidence from the Tonkin Gulf incident was weak but Johnson declined to seek further approval.

In reaction to the Vietnam War, which dragged on and on, Congress enacted—over President Nixon’s veto—the War Powers Resolution of 1973, commonly referred to as “the War Powers Act.”

It is still in effect. The President can send US troops into action in a national emergency or in case of an attack on the United States but unless Congress gives specific authorization, the commitment must terminate within 60 days. A 30-day extension is possible for “unavoidable military necessity.”

“No longer would a President be able to conduct a war, such as the ones in Korea and Vietnam, without specific approval,” said longtime Washington journalist Marvin L. Kalb.

The Act requires a report from the President whenever the emergency powers are used. There have been more than 135 such reports so far, ranging from participation in UN peacekeeping operations to the anti-terrorism campaigns in Afghanistan. Obama sent Congress a War Powers Resolution report on Iraq Sept. 1, 2014.

Despite their general compliance, Presidents have taken consistent objection to the War Powers Act as an undue infringement on executive branch authority. In 1981, for example, President Reagan declined to submit a report when he sent US military advisors to El Salvador. More recently, President Obama exercised the right to use airpower in Libya in 2011 without restrictions from the War Powers Act, because the involvement fell short of full-blown hostilities.

Speaking at the West Point commencement in 2002, Bush announced a strategy of “Pre-emption,” with resounding consequences for the threshold of war. “If we wait for threats to fully materialize, we will have waited too long,” Bush said. “Our security will require all Americans to be forward-looking and resolute, to be ready for pre-emptive action when necessary to defend our liberty and to defend our lives.”

Pre-emption for defensive purposes was not a not an unprecedented idea. The most famous example is the Israeli air strike that took out Iraq’s nuclear reactor at Osirak in 1981. The United States had considered strategic pre-emption at various times in the past and had used it in tactical and operational situations in the course of wars already begun. However, pre-emption was not US national strategic policy until Bush made it so.

Bush first applied pre-emption in Operation Iraqi Freedom in March 2003. It soon ousted dictator Saddam Hussein

but not without serious and longstanding side effects. The main justification given for the initial invasion was the belief that Saddam had weapons of mass destruction. That assumption turned out to be unfounded and the pre-emptive strategy lost much of its credibility.

US operations in Iraq and Afghanistan drifted on longer than expected and turned toward loosely defined objectives of nation building and counterinsurgency.

OBAMA: RESET AND REVERSAL

When President Barack Obama took office in 2009, he shifted the emphasis to international solutions and a reduced role abroad for the United States. He sped up the withdrawal of US forces abroad, first from Iraq and then from Afghanistan. In 2010, he announced a “reset” in relations with Russia. In 2011, he declared that “the tide of war is receding.”

None of this has worked out as Obama hoped. Foes of the United States gained ground in Iraq and Afghanistan. Russia



AP photo by Manuel Balcace Geneta

Scientist Lawrence Krauss (l) and Thomas Pickering, former US ambassador to the United Nations, with the “Doomsday Clock,” currently set at five minutes to midnight, indicating the potential for nuclear weapons use in the Middle East or Asia.

did not reciprocate on the reset and the main result was to embolden the aggressiveness of Russian President Vladimir Putin.

As civil war engulfed Syria, Obama set a “red line” against the use of chemical weapons by the Bashar Assad regime. When challenged, he backed away from the red line, claiming that it had been set by “the world,” not by him.

In May 2014, Obama codified his rules for going to war in a speech at the West Point commencement, the same venue at which Bush had proclaimed the pre-emption strategy in 2002. “The United States will use military force, unilaterally if necessary, when our core interests demand it—when our people are threatened; when our livelihoods are at stake; when the security of our allies is in danger,” he said.

“On the other hand,” he added, “when issues of global concern do not pose a direct threat to the United States, when such issues are at stake, when crises arise that stir our conscience or push the world in a more dangerous direction but do not directly threaten us, then the threshold for military action must be higher. In such instance, we should not go it alone. Instead, we must mobilize allies and partners to take collective action.”

The United States should strike “only when we facing a continuing, imminent threat and only when there is near certainty of no civilian casualties,” he said.

A month after Obama’s West Point speech, radical insurgents known variously as ISIS and ISIL pushed a large-scale offensive into Iraq and proclaimed an independent nation.

“Mr. Obama’s decision to stand back from Syria and Iraq has done much to create the present threat to the United States,” said an editorial in the *Wash-*

ington Post, which takes Obama’s side on most issues. “Continued passivity will only make it worse.”

Former Vice President Dick Cheney and his daughter Liz attacked “the collapsing Obama Doctrine” in a widely cited *Wall Street Journal* column. “Weakness and retreat are provocative,” they said. “US withdrawal from the world is disastrous and puts our own security at risk.” Neoconservative commentator Robert Kagan said “superpowers don’t get to retire.”

There was, however, a somewhat supporting view from an unexpected source. “Many of those clamoring for military action now are the same people who made every false assumption imaginable about the cost, challenge, and purpose of the Iraq war,” said Sen. Rand Paul (R-Ky.), one of the most conservative politicians in the nation. “They have been so wrong for so long. Why should we listen to them again?”

Obama has virtually nothing to show for his efforts to let the international community take a leading role in preserving peace. The state of world conflict is, if anything, worse than in 2008 and global stability has deteriorated. Three months ago, in early August, an anguished Obama authorized “targeted air strikes” in northern Iraq but limited them to protecting American diplomats and advisors and a “humanitarian effort” to save civilians in Kurdistan endangered by the ISIL advance.

In late August, Obama admitted that “we don’t have a strategy yet.” Not until September did he acknowledge a threat to the United States and state an objective to “degrade and destroy ISIL.”

THE FADING NUCLEAR TABOO

The “Doomsday Clock,” maintained by the Bulletin of the Atomic Scientists,

purports to indicate the relative danger of nuclear war in terms of “minutes to midnight.” The first posting in June 1946 set the clock at seven minutes to midnight. The setting has been as short as two minutes (in 1953) and as long as 17 minutes (in 1991). The current setting is five minutes to midnight with the notation that “the potential for nuclear weapons use in regional conflicts in the Middle East, Northeast Asia, and South Asia are alarming.”

Almost everyone recognizes that the Doomsday Clock is a gimmick to promote a political point of view, but the rising danger of local nuclear war is widely regarded as fact.

Former US presidents, notably Jimmy Carter and Ronald Reagan, had expressed their desire to get rid of nuclear weapons, but in 2009, Obama made it official US policy, announcing a commitment “to seek the peace and security of a world without nuclear weapons.” In 2010, overruling his own Secretary of Defense, Obama said the United States would not develop any new nuclear weapons.

Putin saw Obama’s policy as an opportunity for Russia to improve its position in the strategic relationship. Noting in 2012 that the Americans “have yet to modernize their nuclear arsenal,” Putin said that Russia plans to develop and deploy “an entirely new generation of nuclear weapons and delivery systems.”

This year, Putin raised Russian aggression to the highest level since the Cold War by annexing Crimea and invading Ukraine. Obama said, “We are not taking military action to solve the Ukrainian problem,” but set another one of his red lines some distance away, promising that the US would meet its “solemn duty” under NATO Article Five (an attack on one is an attack on all) should a NATO member be invaded.

Even so, the most immediate nuclear concern is that smaller states may be inclined to use tactical nuclear weapons in limited or local situations. Pakistan is reported to be ready to respond with a short-range nuclear missile if war should again break out with India. North Korea has threatened several times to use its nuclear weapons, and the high-strung regime in Iran seems likely to join the club of nuclear nations.

So far, the threshold for major global conflict remains high, but for other kinds of conflict—including local nuclear wars—the threshold is precariously low, with no shortage of belligerents prepared to charge across it. ★

By Robert S. Dudley

Too Late

"I take the position that, when you're Commander in Chief, you oughta keep all options on the table ... to be able to have the flexibility to do what is necessary in order to defeat the enemy. ... He [President Obama] has made the decision to put troops on the ground in Iraq, to try to help the security forces. He's made the decision to arm and train rebel forces in Syria. And he's made the decision to conduct air attacks [against ISIS forces]. So in many ways he's made the right decisions now. I think those decisions should've been made two years ago."—*Former Secretary of Defense Leon E. Panetta, interview with CNN, Oct. 7.*

Staying Power

"There is no reason that airpower ... cannot be successful against the terrorists of the Islamic State in both Iraq and Syria. But the American public must understand one thing: As in Afghanistan, there won't be a simple black-and-white, win-or-lose outcome. Nor is it a binary question of either having boots on the ground on one hand or using only airpower on the other. Both the mission and the objective are far more complex than that. ... The American population has become war weary, we're told. True or not, that weariness is usually the result of continued ground operations demanding thousands of troops—like Vietnam, Iraq, and Afghanistan. Yet the American public has demonstrated a high tolerance for sustained, long-term airpower missions."—*Retired USAF Gen. Charles F. Wald, who ran the early air war in Afghanistan, op-ed in Politico.com, Oct. 1.*

Welsh on The Problem

"I see the Air Force changing over the next 10 to 15 years. The world's changing around us. ... The thing we're most worried about is the rate of change. Technological change, demographic change, ideological change, and you see it in the world every day in the headlines. To be successful as a military force, we have to be able to operate ahead of that rate of change, which means we can't be slow and lethargic and hesitant to adjust ourselves. ... It's back to being willing to look in the mirror and be honest with ourselves, and not

hang on to the things that are nice to have or we want to have, but maintain those things and improve those things that are absolutely must haves to do the job for the nation. That's going to be the biggest problem."—*Gen. Mark A. Welsh III, USAF Chief of Staff, remarks at the Air Force Academy, Sept. 29.*

Cyber Drunks

"I liken them a bit to a drunk burglar. They're kickin' in the front door, knocking over the vase, while they're walking out with your television set. They're just prolific. Their strategy seems to be: We'll just be everywhere all the time. And there's no way they can stop us."—*FBI Director James B. Comey, describing Chinese cyber criminals and spies, interview on CBS's "60 Minutes" program, Oct. 5.*

The Lost Cause

"It is clear that Russia did not accept the outcome of the Cold War. That is what all this is about. This will last a long, long time."—*Recently retired NATO Secretary General Anders Fogh Rasmussen, on what engenders Russian aggression, interview with New York Times, Oct. 5.*

Netanyahu at the Bat

"Iran's nuclear weapons capability must be fully dismantled. To defeat ISIS and leave Iran as a threshold nuclear power is to win the battle and lose the war. ... To say Iran doesn't practice terrorism is like saying Derek Jeter didn't play shortstop for the New York Yankees."—*Israeli Prime Minister Benjamin Netanyahu, address to UN General Assembly, Sept. 29.*

Other Nondecisive Services

"[Critics say] strategic bombing did not achieve the promises of Giulio Douhet and Billy Mitchell, therefore get rid of the Air Force. Such a critique is logically absurd because it sets a standard for the Air Force that is ... not [required] of the Army or Navy. If the same standard of success were required of the other services, they too should be on the chopping block. After more than a decade of Army-led operations in Afghanistan ... and Iraq, ... we have not achieved the desired end-state, therefore get rid of the Army. Somali pirates

continue to attack merchant ships in the Indian Ocean, therefore get rid of the Navy. After all, John C. McManus and other land power advocates argue that wars are won on the ground, yet the Army cannot beat the Taliban. Alfred Thayer Mahan wrote about the war winning importance of seapower, yet the Navy's multibillion dollar ships cannot stop the scourge of gun-toting illiterate Somalis in fishing boats."—*Adam Lowther, research professor, Air Force Research Institute, writing in The National Interest, Sept. 30.*

We've Seen This Before

"Whether [by] putting boots on the ground or relying on missiles from above, ... US efforts to promote stability [in the Greater Middle East] have tended to produce just the opposite. Part of the problem is that American policymakers have repeatedly given in to the temptation to unleash a bit of near-term chaos, betting that longer-term order will emerge on the other end. Back in Vietnam, this was known as burning down the village to save it."—*Retired US Army Col. Andrew J. Bacevich, fellow at Columbia University, op-ed in Washington Post, Oct. 3.*

I Got Bad Intelligence ...

"Jim Clapper [the US director of national intelligence] has acknowledged that, I think, they underestimated what had been taking place in Syria."—*President Obama, suggesting he was given faulty intelligence about the rise of ISIS, CBS's "60 Minutes," Sept. 28.*

McCain's Advice

"I wish the President would stop saying we're not going to have combat troops on the ground [in Syria and Iraq]. In support roles, in special forces roles, intelligence, and particularly (in) target acquisition, we can have people there. ... If you said, 'We're going to send the 82nd Airborne and you're going to see Iraq and Afghanistan all over again,' then, no. But if you said, 'We're going to send in support troops that can give vital information so that we can successfully carry out an air campaign, not put Americans into combat' then ... I think you could convince them."—*Sen. John McCain, interview with USA Today, Sept. 29.*

CRITICAL "PATCH," SMALLER

In the spring of 2013, faced with the double whammy of budget cuts and sequestration, the Air Force announced it would, reluctantly, cancel one of its USAF Weapons School classes at Nellis AFB, Nev. Service leaders said the move would have long-term ramifications, eliminating an entire cohort from its future operational-level-of-war expertise.

Nellis has since changed the way it does business. The school has launched an ambitious overhaul of its curriculum. The course is now two weeks shorter, the integration portion has been revamped, and content has been refocused.

With a shorter, more intense curriculum, the Weapons School aims to build graduates who can adeptly integrate aerospace power effects in a joint environment and also mentor their peers.

In an April 2013 speech in Washington, D.C., the chief of Air Combat Command, Gen. Gilmary Michael Hostage III, announced that Weapons School Class 13 Alpha would be cut short, and the group would graduate without conducting the capstone large-force exercise. A second class would be canceled outright. The closure of the school would "affect the Air Force for years," Hostage said.

Weapons School graduates—known as "patch wearers" because of the flight suit patches they are awarded on graduation—would be in short supply until their year group aged out of the service.

The Weapons School is critical to refreshing the tactical and operational expertise of the Air Force, service leaders said, and has served as the nerve center of the service dating back to its

days as the Aircraft Gunnery School, established in 1949.

Of all the eligible instructors in USAF, only about five percent are admitted to each Weapons School course after a daunting application process requiring recommendations, endorsements, and sterling service records. Candidates must also already be certified instructors. Every six months, the school graduates some 120 weapons officers and specialists from the 24 courses conducted at its 18 weapons squadrons.

Attendees are already of superior quality, and graduates are fast-tracked into key leadership and positions in their career. These graduates return to their units to serve as weapons and tactics officers, and then continue on to a tour at a group or wing position. They will return to the school as an instructor before moving on to a "tier three" billet at an air and space operations center or a major command staff job. There they will advise senior leaders on operational matters. Last year's class cancellation, senior Nellis officials said, arrested this progression across all USAF career fields.

"The real impact of something like this is in the medium and the long term," said Maj. Gen. Jay B. Silveria, commander of the US Air Force Warfare Center at Nellis, the parent organization of the Weapons School. The center supervises the development of advanced training, tactics, and capabilities Air Force-wide.

"That's 120 graduates we did not graduate last year," Silveria said. "They have specific and crucial roles ... across the combat air forces—mobility, strike—[and] everyone who uses graduates will now have less of them."

The timing compounds the problem. The Air Force is retooling and adjusting priorities after a decade of supporting irregular warfare and counterinsurgency operations in Iraq and Afghanistan. The Warfare Center and the Weapons School have switched gears and are again focused on improving training for high-end combat. Having Weapons School graduates newly updated in these skills is vital to the effort.

The school is also working to integrate and nurture emerging and high-demand courses for systems such as the MQ-9 Reaper; offensive and defensive cyber warfare capabilities; and the integration of fourth and fifth generation aircraft. The health of the Weapons School and the quality of its graduates is closely linked with USAF's ability to be ready to fight against a modernized, well-trained adversary.

After the 2013 cancellation, the Weapons School set out to develop a long-term plan that would maintain the high standards and integrity of the school, keep production levels of top-shelf patch wearers consistent, and do so at less cost. School officials took a "deep dive" into every one of the school's classes and the goals set out for each, said Weapons School Commandant Col. Adrian Spain.

This allowed them to "look at the valuable things, and keep them, and where we could, merge some aspects with others and add value to other skill sets," he said.

"When the Weapons School redid the various syllabi, [tactical expertise] is still emphasized, but I think the perspective is that it will be in the context of other systems and capabilities," Silveria said. "Just knowing your own capability is not enough; you have to know it in context."





By Marc V. Schanz, Senior Editor

This meant reassessing the knowledge and training students, known as weapons undergraduates (or “WUGs”), are expected to have when arriving at Nellis.

Silveria said Weapons School instructors went out across the force to speak with operations and group commanders in the months after the 2013 cancellation, to discuss what they needed, discover what skills are taught at the unit level, and learn what the operational force needed from Weapons School graduates.

WHEN GAPS EMERGE

In June, the revamped curriculum made its debut at Nellis. Now a 150-day course instead of 165, significant changes are evident in the Core I and Core II blocks of academics, in each weapons instructor course (WIC), and in a new, three-tier integration phase that now bookends the class.

The Core I portion for each student provides system-specific training to build expert practitioners in a given aircraft or capability and emphasizes fundamentals, such as briefing and debriefing, communication skills, and academics on systems such as radars, command and control tools, data links, and stealth. A WIC will also begin small-scale integration activities to prep students for the more complex portion of the course to come.

With more emphasis on integration, single-system activities were whittled down at the beginning of the course to make room at the back end.

Lt. Col. Richard Borquin commands the 328th Weapons Squadron (WPS), which oversees the school’s space and cyber superiority courses. As the new curriculum now focuses on improving combined

effects and synthesis, cross-mission some of the early academics in the old course format have fallen “off the table” and are addressed by three-week “spin-up courses” for WUGs before they arrive at Nellis, he said. For space instructors, this occurs at Peterson AFB, Colo., while cyber airmen spin up at the intermediate training hub: the 39th Information Operations Squadron at Hurlburt Field, Fla.

Now, Nellis WIC instructors “have to assume the student comes with as much knowledge as possible,” Borquin said, and when gaps emerge in the course they are addressed on a “case by case basis.”

The second block, Core II, stresses the academics of integration and mission planning drills for students, to prepare them for the exercise and live-fly portion of the course. These skills involve the missions and tactical challenges graduates will face in combat, such as defensive and offensive counterair, electronic attack, suppression of enemy air defenses, and nuclear scenarios. Mission planning exercises that will inform advanced integration activities now follow the academic blocks.

Each of the school’s WICs has dealt with the changes in different ways. “You can’t get integration in your own piece of the world,” said Lt. Col. Tom Bladen, commander of the 433rd WPS, the unit that trains air dominance instructors in both the F-15 and F-22. To make ends meet, the 433rd didn’t cut anything out of its Raptor course, but made some early activities optional.

“We did that strategically,” Bladen said, so that maybe they could revisit them later on. From a flying perspective, for example,

the F-22 course had three live-fly events, all involving students shooting live ordnance: one, a gun run at an aerial target; another, an instrumented missile; and the last, a bomb.

“While those things are important and they give a lot of confidence in the airplane to do what it is you are asking it to do, we felt like the act of actually doing that didn’t warrant an entire week and all the money with it,” he said.

Simulation, as a result, is now much more pronounced in the Weapons School curriculum. For the F-22 course, the number of events in the simulator—located in Marietta, Ga.—is up from 10 to 14, Bladen said. This saves valuable flight hours and lessens airspace competition at Nellis’ ranges.

When asked about the differences between flying and simulation, Bladen explained that with the simulator, “the computer generates a solution, ... you hit the pickle button, and based on that, we judge it a hit or a miss.” Over the Nellis ranges, more often than not, it’s “electrons across the sky, so not actual iron.” Students can make mistakes in the simulator and improve the learning curve for less cost in sorties that don’t require actual flight. “What we’ve seen is, a certain type of [live flight] would be ‘fails’ three times,” he said. “Now, [a student] only fails zero or once.”

The school is trying to build expertise in emergent systems—cyber, for example—at the same time it builds knowledge about how those capabilities fit into the overall effort.

Maj. Douglas Medley, 328th WPS director of operations for cyber instruction, arrived at Nellis in 2010 as one of the

Sequestration forced the cancellation of a 2013 class, but the USAF Weapons School is back in business with a tighter curriculum.

An A-10 flies a mission for the USAF Weapons School at Nellis AFB, Nev.



USAF photo by SrA. Matthew Bruch



USAF photo by SrA. Matthew Bruch



USAF photo by MSgt. Kevin J. Gruenwald

initial cadre of cyber operators, to build USAF's brand-new cyber course. The first cyber WIC class graduated in 2012, and today there are 26 cyber patch wearers in the service.

"There were concerns we would be the kid in the corner," he said. "But it was the opposite. Cyber became a hot button in 2012, and now ... everyone wants to know what we can do." The Air Force has seven cyber weapon systems, and students arrive at Nellis with real experience in only one, Medley said.

"We give them exposure to six that they don't have exposure to," he said.

In the shorter program, the WIC will break out a few missions for building collaboration early on, such as pairing cyber airmen with the 8th WPS to fly a few missions earlier in the course. There, cyber effects join with EC-130 Compass Call, E-8 JSTARS, and other crews, Medley said, but skills are built up in a more "stepping stone" manner.

The biggest change to the course is how the Weapons School brings its various squadrons and capabilities together in a three-week integration phase, leading up

to graduation. Many of the cuts made early on in the course were specifically designed to allow for space in this portion of the curriculum, Spain said. It comes after students have learned the academics of airpower integration in the Core II section.

The integration phase takes the place of a 40-day period formerly known as mission employment (ME), building up to a large-force engagement. Integration now lasts three weeks, emphasizing specific objectives in specific scenarios. Previously, students would have performed a stand-alone mission, such as with other F-15s or F-16s, Spain said. Now they will operate with other programs earlier on, much like Medley's cyber warriors working with electronic attack aircraft.

INTEGRATION

The first phase focuses on simple mission integration, combined with advanced tactics and intelligence preparation. This gets students ready for missions such as offensive counterair, air interdiction, and bomber and nuclear scenarios.

The intermediate phase ratchets up and includes more complex scenarios:

Above left: Capt. David Vincent gives a weather briefing to F-15 pilots before a training mission at the Weapons School. Above: An F-22 and an F-15 fly in formation over the Grand Canyon on a Weapons School mission. The school has increased simulator time for F-22 pilots as a way to cope with the course's telescoped time frame.

combat search and rescue, collaboration with special operations forces, and night strike operations.

By week three of integration, students are ready for large-scale collaboration and integration, in events like joint forcible entry sorties, with mobility and strike forces, and distributed and dynamic targeting. These activities were associated with the skills and mission profiles once taught under the ME phase.

By the time advanced integration comes along, students have moved beyond just exercising maneuvers, said Lt. Col. Shawn Serfass, commander of the 57th WPS. The unit oversees the C-17 WIC from JB McGuire-Dix-Lakehurst, N.J.

In advanced integration, students must employ tactics against difficult missions: a contested noncombatant evacuation,



for example, or an on-call airdrop. “Not only do you need to be an expert, but you need to link up with [contingency response groups], a variety of Army personnel, and other Air Force platforms,” Serfass said. Students get that last week of growth by dealing with “massive movements of iron.”

Despite the shortened curriculum, instructors at Nellis said the compressed time frame has had the desired effect. “The irony is, out of necessity comes great ideas,” Bladen said. “My [F-22] students now know more about cyber in air superiority than I ever did.”

Instructors can’t make integration experts out of students in five months, he said, but the new integration phase reinforces basic concepts. “This is about ... building the process in their minds, so when they don’t understand something, they know how to ask for it.”

A Weapons School grad, already a sought-after and limited commodity, has become even more valuable. Serfass said the C-17 field has manned about 85 to 90 percent of its Weapons School instructor billets in the past. After force shaping cuts, last year’s cancellation, and the need to move instructors on to other assignments, line units now expect manning to dip to 65 percent for several years. Serfass doesn’t expect to get manning back up to proper levels across the force until 2017—at the earliest.

For Lt. Col. Bryan Callahan, commander of the 26th WPS, the squeeze comes on both ends for his MQ-9 Reaper students.

The remotely piloted aircraft WIC at Nellis, only running since 2009, has experienced constant pressures—both from the demand of combatant commands drawing on pilots and crew and from the lack of career development in a field on a constant war footing. After retooling the course, planners cut back on some earlier

WIC RPA sorties—such as extra training in combat search and rescue packages and strike coordination and reconnaissance training—to preserve integration sorties later on.

The Reaper field is now also transitioning from fighter aircraft pilots to younger crews coming through the new RPA undergraduate pilot training program, Callahan added. The new pilots don’t necessarily have basic skills like debriefing or as much tactical background as someone who grew up in fighters, said Callahan, and thus need extra help on the front end of the course. Students arrive “fresh out of combat” where they flew ISR orbits and some close air support.

Callahan said while USAF is drawing back from its Afghanistan mission, the demand for RPA crews, and patch wearers, is only going up—as the MQ-9 becomes the go-to platform to support special operations around the world.

“My weapon system will never be at peace—ever,” he said bluntly. Teaching students how to flow assets behind RPAs, or to work in two-ships of MQ-9s, for example, is critical to improving operations across USAF mission areas—and something absolutely vital for all Weapons School graduates to understand, as they will need to share that knowledge with their peers.

Callahan wants students to understand “this is not a tactics course; it’s a leadership course. ... My community is so desperate for leadership, ... everyone ... is counting on [weapons officers] to lead them through the next tactical problem,” to recognize when effects are needed.

Lt. Col. Michael Walters, commander of the 325th WPS at Whiteman AFB, Mo., echoed Callahan’s comment on leadership. Walters supervises the training of the B-2 WIC. “The leadership portion of this is huge,” he said. “I can get a guy who’s

Above left: F-15 Aggressors launch flares over the Nellis range. Above: Maj. Gen. Jay Silveria, commander of the US Air Force Warfare Center, connects his oxygen mask before his final qualifying flight in the F-35. Silveria on Sept. 26 became the first DOD general officer to qualify in the joint strike fighter.

wicked smart, can drop bombs, but if he’s not humble, not approachable, then I only have one-third of the pie.”

Weapons School graduates, Walters said, not only elevate their peers but must be able to explain tactics and think dynamically at the highest levels of the US military later in their careers. B-2 patch wearers, for instance, must know how to explain contested and degraded environments or acceptable and preferred courses of action when dealing with the strengths and weaknesses of an enemy air defense system.

This aspect of the Weapons School can never be undervalued, Walters said, as it dictates how decision-makers perceive and understand airpower. He said that if he gives a critical problem to a B-2 patch, “I expect him to take the marker, and take the white board, and tear it apart.”

With the new curriculum—and some creative personnel management—both the 325th WPS and other squadrons will be able to recover their manning levels in a few years, Walters said. He has tapped some Weapons School instructors who are attached to Whiteman’s Air National Guard squadron, the 110th Bomb Squadron, to fill some staffing gaps where they can.

“I think [the cancellation] is something that slowed us down, but what you [see] is that we are still producing great [graduates] and how that critical thinking was put to work,” he said. “I think it was pretty impressive, and nobody is panicking.”



A series of 1960 congressional hearings were a turning point in Air Force airlift.



The Hearings That Revolutionized Airlift

By Robert C. Owen

Military airlift strategy—never the stuff to fire up the American imagination—has made the evening news only once. In the spring of 1960, generals, congressmen, and captains of industry gathered on Capitol Hill to settle the details of a new model of airlift organization and strategy. Before them was the choice of sticking with Military Air Transport Service as a modestly equipped organization focused on supporting strategic bomber deployments or expanding it profoundly to enable worldwide air deployments of air and ground combat forces in all kinds of wars.

The Army, endorsing a new strategy called Flexible Response, wanted the nation to develop military forces to fight all types of wars. Most senior Air Force officers preferred to stick with the Eisenhower Administration's New Look strategy: relying on allies to fight their own wars while the US military focused on preparing for a general nuclear war with the Soviet Union. Airlift was a criti-

cal sidebar to this broader debate, since the Army would need a lot of it to get to future wars in a timely manner. Thus, a commitment to expand the airlift force would mean explicit national endorsement of Flexible Response and a large, costly shift in military force structure and a change in the bureaucratic power of each service. From March to April of that year, major magazines and even prime-time TV carried accounts of the hearings. They comprised a turning point in American national defense.

THE ARMY NEEDS A RIDE

MATS held the spotlight because it was the nation's sole long-range military airlift arm and there was dispute over how it should be organized and equipped. Its charter documents established the command as a common-user organization available to all the services. But in keeping with DOD's nuclear war focus and the budgetary conservatism of New Look, the Air Force had tailored MATS to serve the transportation needs

of Strategic Air Command in the early days of a nuclear conflict.

This left the Army without a ride to the fight, since SAC's need to move personnel, light vehicles, aircraft support equipment, and nuclear weapons was tiny in relation to the challenge of moving whole divisions of personnel, tanks, artillery, engineering equipment, and other heavy gear. To move those, the Army needed a MATS equipped with more, larger, and faster aircraft than required by SAC.

Despite the growing debate around it, MATS itself was in good shape. Under the leadership of Lt. Gen. Joseph Smith since 1951, the command had grown into the largest military air transport arm in the world. It had a global network of bases and routes and codified standards of reliability, safety, and even peacetime passenger service rivaling those of contemporary airlines.

The core of the fleet consisted of two Douglas aircraft derived from airliner designs: about 280 C-124 Globemaster IIs and just over 100 C-118 Liftmasters. They



Far left: An airman marshals a C-124 from the 50th Military Airlift Squadron after a long over-ocean flight. Center: Pictured are Rep. L. Mendel Rivers (l), Lt. Gen. William Tunner (c), and Gen. Thomas White. The dignitaries had gathered at Scott AFB, Ill., for the presentation of the Distinguished Service Medal to Tunner. Left: Lt. Gen. Joseph Smith, commander of MATS, in 1954. Smith felt that the primary function and responsibility of MATS was supporting SAC, not carrying soldiers.



Small fleets of C-121 Super Constellations (such as this one), C-97s, and C-133s augmented the MATS core fleet of C-124s and C-118s.

were the “Mutt and Jeff” of airlift. The big, slab-sided Globemaster (nicknamed “Old Shaky”) was a substantially modified derivative of a World War II unpressurized airliner. It cruised at a ponderous 200 mph, had an alarming way of shuddering and groaning in flight, but could carry a maximum of 35 tons of cargo. It also could move about 20 tons over the California-Hawaii route, the longest overwater leg in the MATS system without intermediate stopping points.

The C-118 was a virtually unmodified version of the commercial DC-6A. It cruised at about 307 mph while carrying around 75 passengers—or 13 tons—between California and Hawaii.

Augmenting these aircraft were small fleets—some derived from other commercial designs: Boeing C-97s, Lockheed C-121s, and Douglas C-133s to cover VIP and other specialized missions. Finally, in an emergency, MATS could call on a host

of nonscheduled cargo carriers and scheduled passenger airlines for augmentation.

In its fleet and operations, MATS gave the Pentagon and USAF reason to be satisfied—it could do its job at minimal expense.

In the early days of nuclear conflict, doing its job meant supporting the SAC “reconstitution” missions. In peacetime and under warnings of potential conflicts, that meant supporting the deployment of SAC units to forward airbases. Moving the forward echelons of a wing of 45 B-47s, for example, involved the transportation of some 1,756 personnel and at least 253 tons of cargo. In the event of a surprise attack, even as bombers might be en route to their initial targets, SAC support personnel would load up on arriving MATS transports as fast as they came in and then depart for forward bases where the bombers would recover. There, they would meet whatever bombers limped in

from their first strikes and reconstitute them for subsequent missions.

The C-124/C-118 team was well-designed for that task, with vehicles, equipment, and bombs going on the slower aircraft, while personnel, baggage, and toolboxes sped ahead in C-118s to get to the recovery bases as quickly as possible. Indeed, in 1956 testimony, Smith revealed that his fleet was sized almost exactly to make the reconstitution move in a single sortie by each aircraft in MATS. Moreover, based as it was on older airliner designs, the MATS fleet also was about as cheap to acquire and operate as was possible.

The Army was less impressed by MATS. C-118s, -124s, and the other transports in the MATS fleet might have been cost-effective mobility platforms for SAC, but they offered little to ground commanders. None of them could carry heavy equipment, such as tanks and mechanized artillery. In theory, the C-124 could carry something like the 24-ton M41 light tank and towed artillery. But the Army really didn’t know that, since MATS exercised only with SAC. In any case, even over the relatively narrow Atlantic, the entire fleet of lumbering C-124s would take weeks to generate the thousands of missions needed to move a single infantry division.

Such a move over the Pacific would have been preposterous. This was a huge concern for the Army, since its studies revealed that airlift support would be vital to its ability to fight under the threat or reality of nuclear combat.

Contemplating the obvious needs to get to future battlefields and then move quickly on them, Army and Air Force leaders since World War II had recommended keeping enough air transports on hand to move an entire corps anywhere on Earth in a matter of days or weeks. Addressing the battlefield mobility issue, the Army’s Project Vista study estimated in 1954 that a single corps maneuvering on a nuclear battlefield would require the support of 1,200 Air Force transports.

Several years later Gen. Maxwell D. Taylor, who had resigned as Army Chief of Staff over the refusal of the Defense

Department to endorse a strategy more flexible than New Look, wrote, "Our [defense] program must provide for mobile, ready forces prepared for rapid movement to areas of strategic importance overseas."

Future Secretary of State Henry A. Kissinger wrote, "The tactics for limited nuclear war should be based on small, highly mobile, self-contained units, relying on air transport, even within the combat zone." Undoubtedly, by the late 1950s, influential people throughout government, the military, and academia got the message: Army effectiveness in future conflicts would depend on the availability of a continuum of airlift support, from the homeland to its most forward positions.

The Air Force seemed intent on increasing the Army's anxiety. USAF leaders never missed an opportunity to reiterate that they would accept no dilution of SAC's pre-eminent claim on MATS support. "The MATS charter," reported Smith not long after taking over the command—and quoting the 1948 document—"excludes ... the responsibility for the tactical air transportation of airborne troops ... [or] the initial supply ... of units in forward combat areas."

As late as 1958, the Air Force vice chief of staff and immediate past commander of SAC, Gen. Curtis E. LeMay, told Congress that any money appropriated for new jet transports would be spent on tankers for SAC instead. This statement must have galled Army generals, since fast, high-capacity jet transports were just what they needed to plan large unit moves involving heavy equipment and hundreds of sorties.

Driving more nails into the coffin of Army mobility aspirations, the Air Force kept the MATS fleet focused on airliner designs. In 1954 it sparked furious protests by Army supporters with an announcement that it was transferring funds allocated for C-124s, which had some utility to the Army, to purchase more C-118s, which didn't.

A few years later the Air Force canceled the C-132 project that could have produced an aircraft capable of carrying a tank. The air service also reduced the number of C-133s procured and slow-rolled proposals to build a new jet transport. In any case, the jet aircraft proposed by Smith would have been too small for Army use. By 1959, then, there could be little doubt that the Air Force was not eager to provide airlift for the Army unless someone forced it to.

Congressional efforts to coax the Air Force into changing its stance on airlift began in 1956, triggered by the Air Force's proposal to buy more C-118s instead of C-124s. Prior to that year, the Army and

its various supporters were content to write reports and articles to make the case for additional airlift. Thereafter, several senior Army commanders made their concerns public, while a series of congressional hearings that year and in 1958 and 1959 explored the details of the issues involved.

The hearings had mixed results. Overall, they had only an indirect impact on national strategy, given the Administration's resistance to costly force structure investments that implied endorsement of Flexible Response. The hearings did, however, illuminate—and then sideline—several secondary issues. These included proposals by the major airlines and their congressional supporters to disband MATS and perform its missions by commercial contract. There also were discussions about assigning the transoceanic airlift mission to the troop carrier forces assigned to Tactical Air Command and overseas commands and providing short-range theater airlift.

RETURN OF M. R. AIRLIFT

In the first case, most involved, except the airlines themselves, soon recognized that commercial carriers could not do hard-core military missions—those requiring instant readiness, aircraft specialized for military cargo, and flying into a combat zone.

In the second case, organizing and equipping troop carriers to do the transoceanic mission would simply have replicated MATS under a different name.

By settling these issues, the 1958-59 airlift hearings cleared the question of whether MATS should be strengthened to provide mobility for the Army.

By 1959, bureaucratic and political power had shifted in favor of expanding MATS' mission. Most importantly, airlift had captured the attention of a group of Democratic congressmen interested in moving the country toward Flexible Response. This so-called Congressional Reform Movement included the enormously powerful Rep. Carl Vinson (D-Ga.), chair of the House Armed Services Committee, and his point man on airlift issues, Rep. L. Mendel Rivers (D-S.C.). Among supporters were Sen. Dennis Chavez (D-N.M.), Chairman of the Senate Appropriations Committee Sen. Strom Thurmond (R-S.C.), Sen. Lyndon B. Johnson (D-Texas), and Sen. John F. Kennedy (D-Mass.). All wanted more non-nuclear force funding to give the United States more diplomatic and military flexibility and credibility.

Pressured by this group and fully aware of the implications of growing Soviet nuclear capabilities, the Eisenhower Administration had begun to explore ways

to gain greater military flexibility. Eisenhower chartered a major study of military airlift for release in early 1960.

In July 1958, as the airlift debate heated up, USAF inserted a change agent into the process. It plunked Lt. Gen. William H. Tunner into the melee, as the new commander of MATS. Tunner had been away from airlift for seven years, after seeing Smith selected to run MATS instead of him. He was so incensed by that event he did not even mention it in his memoirs. His main biographer, Robert A. Slayton, later surmised that Tunner had been sent into exile by Air Force enemies fed up with his constant calls for the modernization and expansion of all airlift forces under a single command. But in reality, the jobs Tunner got during his "exile" were career builders—deputy commander of Air Materiel Command, commander of US Air Forces in Europe, and then Air Force deputy chief of staff for operations.

When "Mr. Airlift" returned to MATS, he had broad credibility and the Air Force Chief of Staff, Gen. Thomas D. White, gave him a free hand to work with Congress to conduct decisive hearings on the future of MATS.

Tunner wasted no time. In November 1958 he successfully lobbied the Army for a commitment of 18,500 troops to participate in a major airlift test from the US mainland to Puerto Rico. Tunner got the Air Force to pony up \$10.5 million to pay for it. Meanwhile, he and Rivers began planning for major hearings on airlift in early 1960. Then, when Eisenhower chartered his airlift study, Tunner and Rivers made sure a MATS civil servant, John F. Shea, was on the team.

Shea had been in airlift since 1943, and Tunner trusted him to express doctrines and strategic concepts of what he sometimes called "Big Airlift." Shea shaped the President's and other DOD studies on the issue and worked with Rivers' general counsel, Robert Smart, to set the agenda and prepare evidence and testimony at the forthcoming hearings.

Rivers opened the national airlift hearings on March 8, 1960, with some warnings. Speaking mainly to representatives of the commercial carriers, he announced that the purpose of the hearings would be "to give the military the best thing they can get." He went on to say he was willing to usurp the prerogatives of the Executive Branch, if necessary, by requesting funding for specific military aircraft for delivery at specific times.

In other words, if the Air Force balked again at developing or buying modern

transports, he would jam airlift modernization down its throat.

Rivers' confidence reflected his sense that the policy deck was now stacked in his favor. Most importantly, the Pentagon had just released a report, "The Role of Military Air Transport Service in Peace and War," encapsulating the outcome of Eisenhower's airlift study, in the form of "Nine Presidentially Approved Courses of Action." These actions included military and civil reserve airlift modernization and increased emphasis on civil contract carriers in peacetime. They also protected MATS and military reserve airlift component readiness, to perform hardcore missions.

Shea and Smart had set a hearing agenda and witness list guaranteed to present airlift expansion in its best light, with little opportunity for naysayers to make their cases.

Consequently, Phase 1 of the hearings was something of a love fest for airlift reformers. Tunner and the Army Chief of Staff, Gen. Lyman L. Lemnitzer, were the senior military witnesses until the last hearing day, when Air Force Chief of Staff White appeared to endorse the President's courses of action. Things started well for the reformers when the new deputy secretary of defense and one-time deputy chief of staff for the World War II Air Transport Command, James H. Douglas, revealed that, henceforth, limited war would receive coequal consideration with general war in airlift planning.

Following this lead, Lemnitzer reaffirmed a long-standing Army requirement to move two infantry divisions by air to any point on the planet in four weeks—a move involving something like 25,000 troops and 40,000 tons of cargo. Facing the obvious, the Air Force plans director, Maj. Gen. Hewitt T. Wheless, flatly stated USAF could not make such a move to Korea.

Thus, as never before in an unclassified forum, the inadequacies of the national airlift program were on display.

Between the first and second phases of the hearings, the airlift exercise to Puerto Rico drove home the point that airlift forces were inadequate to needs.

Beginning on March 14, a hodgepodge fleet of MATS transports rumbled into the air from 14 bases and turned toward Puerto Rico. Creaking C-124s, sleeker C-118s, humpbacked C-121s, and a handful of C-133s—477 aircraft in all—pushed east in the kind of rhythmic stream that Tunner had refined to an art over the India-China Hump in World War II and during the Berlin Airlift. Mechanics, cargo handlers,

security policemen, and drivers—the whole airlift system—shifted to 84-hour work weeks to keep that stream flowing. Aircrew worked duty periods as long as 35 hours to fly units from all over the US. When the weather didn't cooperate, they pressed on through squall lines and heavy turbulence with cargo straining against straps and soldiers clinging to their seats and filling their airsickness bags.

Finally, after two weeks, the exercise ended with MATS personnel and the aircraft fleet on the verge of breakdown. Their unsustainable level of effort, however, had produced 50,496 hours, 1,263 individual missions, and lifted more than 29,000 troops and nearly 11,000 tons of materiel into and out of Puerto Rico.

Tunner made sure that all of these shortfalls and work-arounds entered the airlift debate. Military leaders by the dozen, planeloads of congressmen and senators, and 352 reporters—Tunner invited anyone he thought might influence the course of airlift events or public opinion. The event generated more than 33,000 column inches of newspaper coverage, and virtually all articles and reports written on the exercise came to the conclusion that MATS was woefully inadequate and needed immediate modernization. In the view of Tunner's publicity officer, this event was "the most spectacularly successful failure in the history of military training."

BRINGING UP PUERTO RICO

In the final phase of the hearings, MATS and the Army came in to brief the results and implications of the Puerto Rico exercise. Emphasizing the unavoidable artificialities of the exercise, given the limited capabilities of MATS aircraft, Maj. Gen. Ben Harrell, Continental Army Command's (CONARC) deputy chief of staff for operations, pointed out that troops and cargo had not even been delivered to secure bases and were not fully equipped or supplied for combat. Even ammunition and gas masks were left behind to lighten the load. Bringing in a fully prepared force, he said, would have required more than 300 additional sorties and four more days.

Tunner followed to point out that MATS and CONARC had months, instead of days, to plan the operation. Also, by working his airplanes and people at an unsupportable pace, he reported that "the trend [of readiness] was definitely downward" in

the last days of the exercise. People were simply exhausted and spare parts were running out.

The final recommendations of the national hearings were a triumph for airlift reformers and advocates of Flexible Response. On April 30, Rivers requested \$335 million for 50 interim civil-type jet transports and 50 long-range C-130Es. Rivers liked the latter aircraft because it was built in the home district of his boss, Vinson, and it was the only new military-type transport immediately available with transoceanic range.

Congress ultimately appropriated \$310 million to fund development of a new jet transport that became the C-141, plus 50 C-130Es and 30 C-135Bs (up-engined versions of the Boeing KC-135A tanker).

Later developments included funding for the CX-4 aircraft—producing the C-5A Galaxy—the transfer of several wings of C-97s and C-124s to the Air National Guard and Air Force Reserve, and expansion of MATS peacetime flight hours and training activities.

Rivers held other airlift hearings from 1963 to 1975. They recast the Civil Reserve Airlift Fleet as a more flexible tool and got the Air Force to rename MATS as Military Airlift Command—in reflection of its strategic importance and expanded combat mobility role. Thus, until the C-17 Globemaster III replaced the C-141s in the early 2000s, the hearings organized by Rivers and Tunner set the composition and capacity of the core military airlift fleet and funded the development of important aircraft that remain in service today.

In a broader sense, the national airlift hearings revealed something interesting about how senior Air Force leaders handled unorthodox ideas and outspoken internal critics at the time. At least in the case of Tunner, service leaders seemed willing to keep him around, even to give him a series of jobs that established his credibility as a senior commander. When the flow of strategic events gave credence to his ideas, the Air Force pulled Tunner out of the headquarters staff, dusted him off, and put him at the point of a transformational process that would change fundamental elements of the national defense.

After the hearings, having suffered a heart condition for several years, Tunner retired from the Air Force but spoke and wrote frequently about airlift affairs until his death in 1983. ✪

Robert C. Owen is a professor of aeronautical science at Embry-Riddle Aeronautical University. He is a former C-130 pilot and was dean of USAF's School of Advanced Air and Space Studies at Maxwell AFB, Ala. This is his first article for Air Force Magazine. It is based on his 2013 book, Air Mobility.

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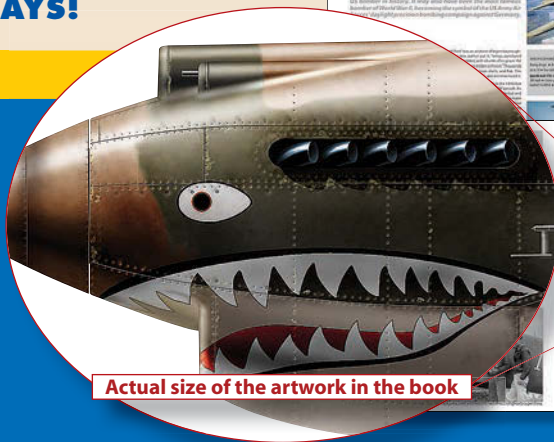
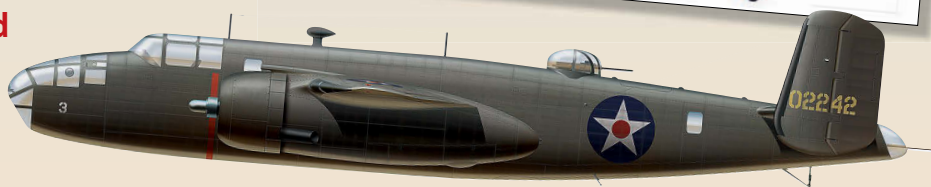
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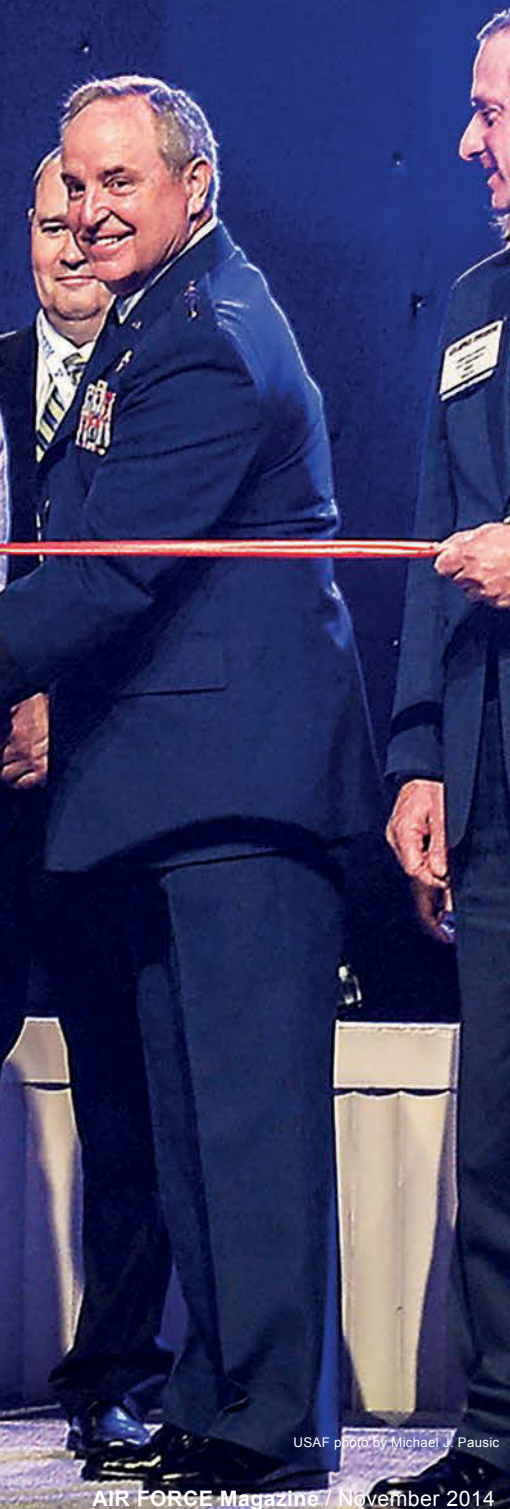


Air Force Association **National**

Dignitaries including AFA Chairman of the Board George Muellner (front left), Secretary of the Air Force Deborah Lee James, Air Force Chief of Staff Gen. Mark Welsh (right), CMSAF James Cody (far left), and industry executives formally open the Air Force Association's Technology Exposition at the Gaylord National Resort and Convention Center, National Harbor, Md.



Convention 2014



USAF photo by Michael J. Pausic

More than 6,500 attendees gathered for the 2014 Air Force Association National Convention and the Air & Space Conference and Technology Exposition, dedicating time to better understand Air Force issues.

Top USAF leaders, such as Secretary of the Air Force Deborah Lee James, Chief of Staff Gen. Mark A. Welsh III, and CMSAF James A. Cody, took the stage at the Gaylord National Resort and Convention Center in National Harbor, Md., just outside Washington, D.C. Secretary of Homeland Security Jeh C. Johnson, who was DOD general counsel from 2009 to 2012, and Frank Kendall, undersecretary of defense for acquisition, technology, and logistics both gave A&SC keynote addresses. All speakers shared with audiences their present challenges as well as their visions for the Air Force's future.

The 66th annual AFA National Convention began Saturday, Sept. 13, with two days of AFA business, followed by three days of conference activity, filled with 50 speaker sessions.

The conference commenced with welcoming remarks by Welsh and an awards ceremony highlighting more than 40 individuals and groups for their contributions to the aerospace community. James, Welsh, and major command leaders presented citations of honor and Air Force crew and team awards, Air National Guard and Air Force Reserve awards, and professional, civilian, education, management, and environmental awards. Additionally, James and Welsh presented AFA's outgoing Chairman of the Board, George K. Muellner, with the Distinguished Public Service Award.

AFA formally honored the Air Force's 12 Outstanding Airmen of the Year with a ceremonial dinner following a reception sponsored by Northrop Grumman on Sept. 15. Cody congratulated the 12 airmen during his keynote address at the dinner ceremony. MSgt. Tessa M. Fontaine, one of the 2013 Outstanding Airmen of the Year, acted as master of ceremonies, and Chaplain William Evans led the gathering in prayer. The US Air Force Honor Guard presented the colors and the US

Air Force Band provided entertainment during the evening's festivities.

Thanks to financial support from Lockheed Martin, the 12 Outstanding Airmen attended events in and around Washington, D.C., throughout the conference. The "golden dozen" toured Capitol Hill and Arlington National Cemetery and visited the Pentagon.

The conference acknowledged the profound challenges facing today's US defense complex and celebrated the achievements of the airmen operating within it. The event concentrated its focus via military leaders and national defense and policy experts on subjects ranging from cyber, space, intelligence, surveillance, and reconnaissance to nuclear and energy issues. The first day of the conference, Monday, saw much focus on European affairs as they affect USAF. Tuesday was heavy on the force's modern obstacles and challenges.

Twelve senior leaders discussed everything from training to innovation during the Four-Star Forum. At the Command Chief Master Sergeants Forum, leaders addressed areas such as professional development, readiness, resiliency, and force management, offering insight into what affects airmen.

James, joined on the main stage by Welsh, Cody, AFA leaders, and AFA industry supporters, snipped the ceremonial red ribbon with oversized scissors—a sign of the official opening of the technology exposition—on Sept. 15. More than 100 exhibitors showcased their products. Highlights included dogs with the Warrior Canine Connection, a program that provides therapy dogs to help vets with post-traumatic stress disorder.

The event also celebrated Air Force heritage. On Friday evening in Arlington, Va., convention guests held a ceremony naming AFA headquarters as the James H. Doolittle Building. Medal of Honor recipient Jimmy Doolittle was AFA's first president. His granddaughter, Jonna Doolittle Hoppes, helped unveil the building's name plaque at the Sept. 12 commemoration.

A wreath-laying ceremony took place Sunday morning, Sept. 14, at the Air



Photos by Dan Higgins



USAF Chief of Staff Gen. Mark Welsh (l) and Air Force Secretary Deborah Lee James (r) were key speakers at AFA's Air & Space Conference.

Force Memorial. Muellner paid tribute to the lives and contributions of AFA members and friends who have died in the last year, and he encouraged the audience to honor them by carrying on their work. Retired Maj. Gen. William J. Dendinger, AFA's national chaplain, conducted the invocation, homily, and benediction for the event. Muellner read a memorial tribute list of the deceased, along with Scott P. Van Cleef, Vice Chairman of the Board for Field Operations, and Jerry E. White, Vice Chairman of the Board for Aerospace Education. Assistant Vice Chief of Staff Lt. Gen. Stephen L. Hoog, Cody, and Muellner closed the ceremony, laying a ceremonial wreath in memory of and in honor of all Air Force Association members and supporters who have passed away in the last year.

AFA's Air Force Anniversary Gala toasted the service's 67th anniversary on Sept. 17. Kenneth Goss served as master of ceremonies. During the event, the following were saluted with national aerospace awards:

- Retired Gen. C. Robert "Bob" Kehler, former commander, US Strategic Command, with the H. H. Arnold Award, recognizing the most significant contribution to national security by a member of the military;
- Ashton B. Carter, former Deputy Secretary of Defense, with the W. Stuart Symington Award, recognizing the top contribution by a civilian in the field of national defense;
- Boeing's C-17 Globemaster III, with the John R. Alison Award, for the

CMSAF James Cody entitled his conference presentation "The Enlisted Perspective." He also delivered the keynote address at the Outstanding Airmen of the Year banquet.

most outstanding contribution by industrial leadership to national defense;

- The DOD STARBASE program, recognized with the AFA Chairman's Aerospace Education Award, for long-term commitment to aerospace education with a significant nationwide impact.

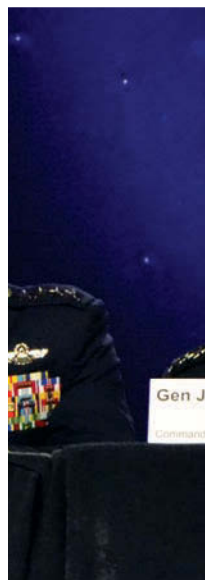
AFA Lifetime Achievement Awards were presented to: retired Brig. Gen. James A. McDivitt; the Civil Air Patrol for its contributions during World War II; and American Fighter Aces.

This year's annual Spouse and Family Forum focused on the resiliency of our Air Force families. After hearing from James, Welsh, and Cody, attendees participated in interactive resiliency training with Ottis West and learned about suicide prevention, intervention, and postintervention with Mary Bartlett. Frank Beatty, Betty Welsh, and Athena Cody—spouses

of Deborah Lee James, Gen. Mark A. Welsh III, and CMSAF James A. Cody, respectively—shared personal stories of resiliency and the issues they focus on in meetings with Air Force families around the world. A working lunch followed, with a closing by speaker Dan Clark, after which attendees toured the new Airmen & Family Programs Pavilion, now part of the Technology Exposition. The program exhibited tools and resources families can use in recovering from deployments, injuries, or day-to-day realities.

AWARDING EDUCATION

Kaci Heins, a teacher at Northland Preparatory Academy in Flagstaff, Ariz., was honored as the 29th recipient of AFA's National Aerospace Teacher of the Year Award. Heins distinguished herself by integrating aerospace into her classroom,





Staff photo by Kristina Parrill



Photo by Dan Higgins

school, and community. Her entire science curriculum has NASA and science, technology, engineering, and mathematics challenges integrated to provide hands-on and real-world experiences for her sixth-grade students. The award recognizes educators for their accomplishments and achievements in promoting and engaging today's youth in STEM. As AFA's top teacher, Heins received a \$3,000 cash award and plaque.

In addition, AFA honored Ken Steffey from Winter Park, Fla., as the CyberPatriot VI Coach of the Year. Ron Woerner, of Bellevue, Neb., was named CyberPatriot VI's Mentor of the Year. CyberPatriot, AFA's flagship STEM program, is the nation's largest youth cyber education program.

AFA BUSINESS

Forty-five state delegations with 203 authorized delegates attended the National Convention where they conducted AFA business, including elections and program

Above left: Barbara Taylor, managing director of the Air Force Memorial, speaks with airmen at the technology exposition. Above right: Nora Ruebrook (l), who was elected AFA National Treasurer during the convention, catches up with retired Gen. John Shaud, former AFA executive director and now senior advisor.

management. In concert with AFA's mission to educate, advocate, and support, the delegates approved a Statement of Policy and Top Issues for 2015, a document that represents AFA's position on topics of importance to the Total Force, veterans and retirees, and Air Force civilians, as well as key modernization and national security issues.

AFA ELECTIONS

In national officer elections, Scott P. Van Cleef, of Fincastle, Va., was elected for a first term as Chairman of the Board. David A. Dietsch, of Arlington, Texas, was elected for a first term as Vice Chairman of the Board for Field Operations. Jerry E. White, of Colorado Springs, Colo., was re-elected for a third term as Vice Chairman of the Board for Aerospace Education.

Marvin L. Tooman, of West Des Moines, Iowa, was elected for a second term as National Secretary. Nora Ruebrook, of Honolulu, was elected for a first term as National Treasurer.

In other elections, national directors elected for a three-year term were: Kevin L. Jackson, of Washington, D.C., East Area Director; Gary L. North, of Fort Worth, Texas, Director at Large; and Kent D. Owlesley, of Dayton, Ohio, Director at Large.

Newly elected Region Presidents are: Lee Barnby, Far West; Paul Lyons, Great Lakes; Russell Klatt, Midwest; Ron Adams, New England; and Bob George, Rocky Mountain.

DOD AND USAF LEADERS

Many Air Force leaders participated in the conference as presenters and session



The Four-Star Forum included (l-r) Gen. Janet Wolfenbarger, Gen. Hawk Carlisle, Gen. Robin Rand, and Gen. Darren McDew, among other senior leaders. The panel took questions from attendees, with Welsh as moderator.



AFA National Director Gil Petrina and his sister Lt. Col. Julie Petrina Curlin, a national director emeritus, attended many events.

Photos by Dan Higgins



Betty Welsh, spouse of USAF Chief of Staff Gen. Mark Welsh, spoke at the Spouse and Family Forum.

attendees. Many senior Air Force leaders also took part in media-only sessions.

Senior Air Force, DOD, and government leadership speaking at the conference included Johnson, Kendall, James, Welsh, and Cody. Other high-level leaders included Undersecretary of the Air Force Eric Fanning; Assistant Secretary of the Air Force for Acquisition William A. LaPlante; Gen. Philip M. Breedlove, Supreme Allied Commander, Europe; Gen. Herbert J. “Hawk” Carlisle, commander, Pacific Air Forces; Gen. Gilmary Michael Hostage III, commander, Air Combat Command; Gen. Robin Rand, commander, Air Education and Training Command; Gen. Darren W. McDew, commander, Air Mobility Command; Gen. John E. Hyten, commander, Air Force Space Command; and Gen. Frank Gorenc, commander, US Air Forces in Europe-Air Forces Africa.

AFA hosted NATO Air Chiefs from various countries, who offered their insight during sessions and panels: Brig. Gen. Dražen Scuri, Commander, Croatian Air Force and Air Defense; Brig. Gen. Libor Stefanik, Commander, Czech Air Force; Maj. Gen. Max A. L. T. Nielsen, Commander, Tactical Air Command Denmark; Col. Jaak Tarien, Commander, Estonian Air Force; Lt. Gen. Evangelos Tournas, Hellenic Air Force General Chief of Staff; Brig. Gen. Albert Sáfár, Hungarian Air Force Chief; Col. Aivars Mezors, Commander, Latvian Air Force; Col. Audronis Navickas, Commander, Lithuanian Air Force; Lt. Gen. Alexander Schnitger, Commander, Royal Netherlands Air Force; Maj. Gen. Per Egil Rygg, Inspector General, Royal Norwegian Air Force; Maj. Gen. Jan Sliwka, Inspector, Polish Air Force; Maj. Gen. Laurian Anastasof, Romanian Air Force Chief of Staff; Brig. Gen. Dobran Božic, Slovenian Armed Forces Chief



State flags, in a presentation of the colors, were part of the Air and Space Conference's opening ceremonies.

of General Staff; Gen. del Aire F. Javier García Arnaiz, Spanish Air Force Chief of Staff; Gen. Akin Öztürk, Commander, Turkish Air Force.

A number of other senior officers took part in the conference: Lt. Gen. Christopher C. Bogdan, F-35 program executive officer; Vice Adm. Mark D. Harnitchek, commander, Defense Logistics Agency; Lt. Gen. Stanley E. Clarke III, director, Air National Guard; Lt. Gen. James “JJ” Jackson, commander, Air Force Reserve Command; Lt. Gen. Stephen W. “Seve” Wilson, commander, Air Force Global Strike Command; Lt. Gen. Bruce A. Litchfield, commander, Air Force Sustainment Center; Lt. Gen. Russell J. Handy, commander, 11th Air Force; Maj. Gen. Sandra E. Finan, commander, Air Force Nuclear Weapons Center; Maj. Gen. Garrett Harencak, assistant chief of staff, strategic deterrence and nuclear integration; Maj. Gen. Thomas J. Masiello, commander, Air Force Research Laboratory; Maj. Gen. John F. Thompson, program executive officer for tankers, Air Force Life Cycle Management Center; Maj. Gen.

Michael S. Stough, director, strategic plans, requirements, and programs, Air Mobility Command; and Maj. Gen. Linda R. Urrutia-Varhall, assistant deputy chief of staff, intelligence, surveillance, and reconnaissance.

ACKNOWLEDGEMENTS

The Air Force Association thanks supporting partners Northrop Grumman, Airbus Group, Lockheed Martin, BAE Systems, The Boeing Company, L-3 Communications, Pratt and Whitney, SES Government Solutions, Team T-100, URS, AAFMAA, Aurora Flight Sciences, Bombardier, Elbit Systems, General Atomics, IBM, Leidos, and MBDA for making this year’s conference possible.

AFA National Convention Parliamentarian was David T. Buckwalter, AFA’s former executive vice president. Inspectors of Elections were George L. Castle (chairman), F. Gavin MacAloon, James W. Simons, and Wayne R. Kauffman. Mark L. Tarpley chaired the Credentials Committee, serving with Michael Cooper, Karel J. Toohey, and Sharon White. ✪

TOP ISSUES FOR 2015

This Association is especially proud of Air Force men and women—Active, Guard, Reserve, Civilian, Retirees, and Veterans—for their sacrifices on behalf of our nation.

PREPARING AND SUPPORTING AIRMEN; CARING FOR VETERANS & RETIREES

- Recognize military and veteran benefits are earned through years of service, sacrifice, and in many cases, personal injury and disability. TRICARE for Life is a national obligation to retirees, long ago promised.
- Support our veterans by providing expedient and accurate disability compensation processing, community-based education, employment assistance, timely access to healthcare, and greater assistance to combat homelessness during and after their transition to civilian life.
- AFA applauds Air Force leadership for taking the sexual assault issue head on and supports its constant vigilance.

REBUILD FULL COMBAT READINESS

- Encourage Congress to end sequestration and strengthen USAF air, space, and cyber forces.
- Provide the Air Force the ability to make and implement strategic choices in force structure and installations to consolidate resources and protect a quality force.
- To return to full-spectrum readiness we must fund necessary readiness components, such as flying hours, weapons system sustainment, and training like Red Flag.

INVESTING IN AIRPOWER

- Promote early and continued education in science, technology, engineering, and math to stimulate the development of the next generation of aerospace engineers, scientists, and technicians conducting future research and development.
- Support science and technology funding necessary to support a robust industrial base.
- Continue efforts to maintain a robust defense industrial base necessary for meeting national defense objectives.
- Encourage strong aviation capabilities in our partner nations to enable successful, sustainable security within their borders and contribute to regional stability.

RECAPITALIZE THE AGING FLEET

- Recognize the vital nature of the KC-46A program and give it unqualified support to ensure prompt fielding in sufficient quantity.
- Acquire the new long-range strike bomber that can penetrate, survive, and engage adversary systems as soon as they are located.
- Urge the Administration and Congress to commit to keeping the F-35 program on track and, if possible, move to a faster and more efficient production rate.

SECURING SPACE AND CYBERSPACE

- Secure the Air Force role in gaining and maintaining cyber superiority by ensuring access and freedom of maneuver in cyberspace.
- Invest steadily and strategically in space capabilities and recognize the US must retain clear superiority in this critical mission area.

STRENGTHEN THE NUCLEAR MISSION

- Urge our national leaders to support programs and policies for future improvement of our nuclear deterrent.
- Sustain delivery systems and warheads for the foreseeable future, but just as importantly, the nuclear support equipment and infrastructure.
- Improve the culture for personnel within the ICBM force by making changes in training, testing, and accountability within the missile community





Air Force Association **Technol**

With more exhibitors, higher attendance, and more visits from Air Force general officers, the Air Force Association's 2014 Technology Exposition bustled with activity. Corporate exhibitors displayed their technology solutions to some of USAF's most urgent needs, and Air Force partners and organizations presented their contributions to national defense. **1** Sikorsky's "Defiant" model helicopter builds on a flying demonstrator and is a coaxial rotorcraft with a pusher prop, adding high speed to its potential utility functions. **2** A trio of full-scale Joint Direct Attack Munitions and a Small Diameter Bomb formed a centerpiece at Boeing's pavilion. **3** Air Force Chief of Staff Gen. Mark Welsh chats with Benjamin Lambeth of RAND Corp. Betty Welsh is in the background. **4** Pratt & Whitney showed off a cutaway of the PW 4062 engine that will power the KC-46A tanker. Jack Swift of P&W stands by to answer questions.

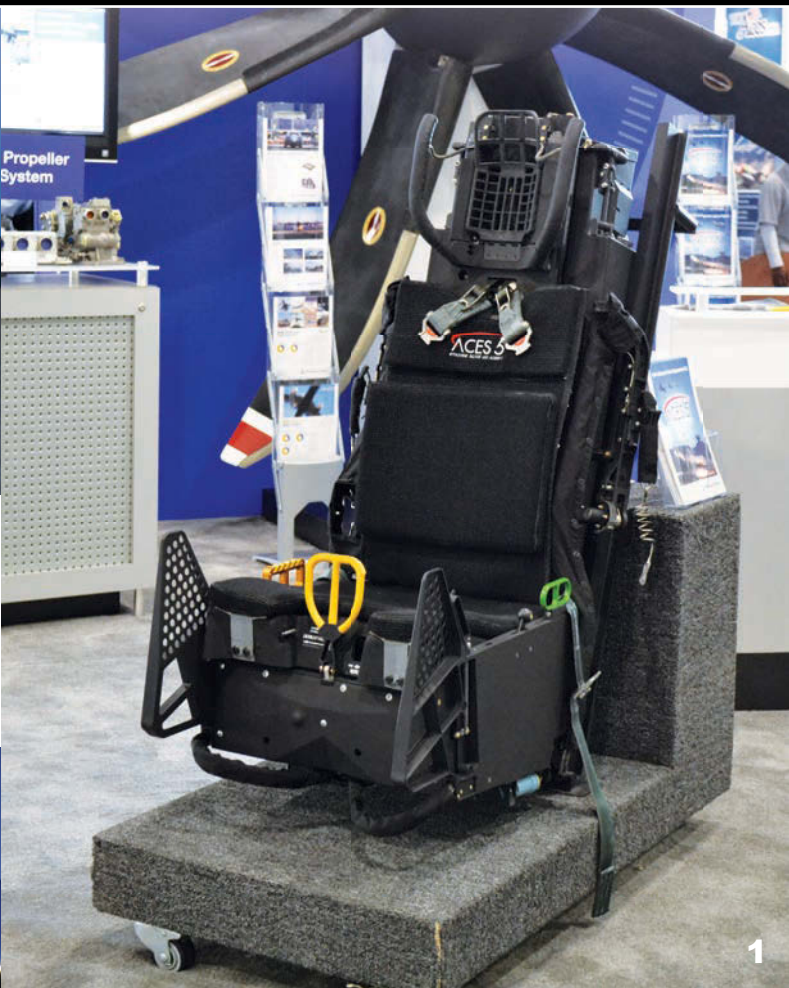


Aerospace technology of the highest order was on display at AFA's annual showcase.



ogy Exposition 2014

Staff photography by Kristina Parrill



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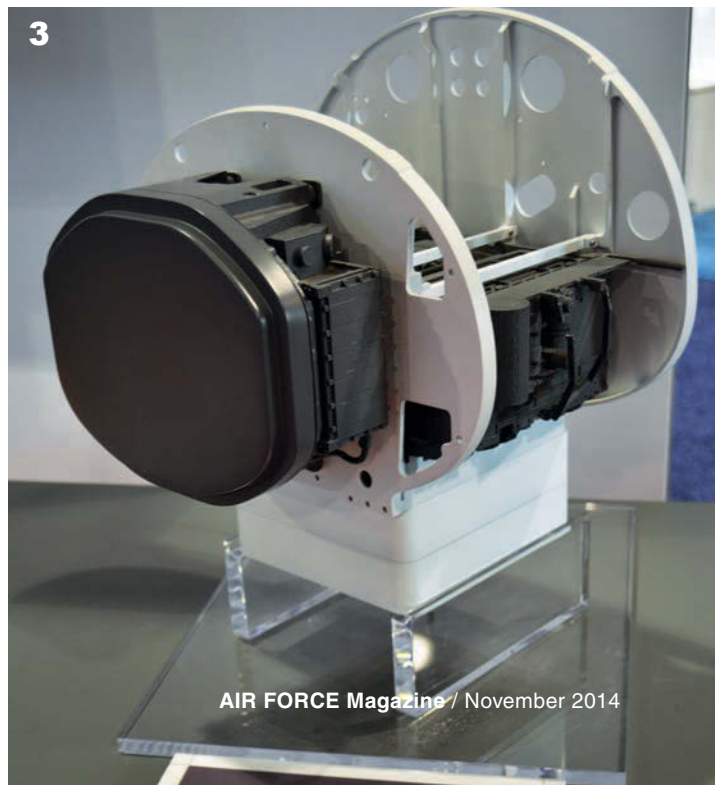


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111 An Aces 5 ejection seat and a Hamilton Standard C-130J propeller dominated the United Technologies display. **121** A full-scale GBU-44 Viper-E standoff weapon menaced visitors from the MBDA booth. **131** Northrop Grumman may offer this Gulfstream bizjet, fitted with a large radar sensor, for replacement of its E-8 JSTARS. **141** Lockheed Martin displayed an interesting model of a potential future airlifter with a blended wing body and unducted props. **151** Maj. Gen. Sandra Finan, head of the Air Force Nuclear Weapons Center at Kirtland AFB, N.M., makes a new friend from Warrior Canine Connection. The program provides therapy to veterans by teaching them to train working dogs to help other vets.



111 Elbit's Joint Helmet-Mounted Cueing System headgear sparkles in the exhibit hall. The helmets are used on Air Force F-16s to give pilots better situational awareness and the ability to select targets merely by looking in their direction. 121 This Wideband Gapfiller satellite model orbited above Boeing's booth. 131 Raytheon displayed an Advanced Combat Radar, one of a number of active electronically scanned array radars for a possible F-16 upgrade. 141 CMSAF James Cody (left) talks with Col. Jaak Tarien of the Estonian air force. Air Chiefs from 18 countries attended the ASC 2014 Tech Expo. Tensions in Europe and the Middle East seemed to spark serious interest among foreign visitors.





111 The centerpiece of Lockheed Martin's booth was these large-scale models of the F-35 Lightning II (rear) and the T-50 trainer that the company will offer for the T-X competition. Lockheed developed the F-16-like T-50 in partnership with Korean-Aerospace Industries. 121 Airbus displayed a large model of its UH-72 Lakota, offered for several Air Force missions, such as replacement of aging UH-1s used for support of ICBM launch facilities. The Lakota does light utility work for the Army. 131 Rockwell Collins displayed a large model of Aurora Flight Sciences' Centaur optionally manned ISR aircraft, for which it makes autopilot systems. 141 This full-scale rocket engine commanded attention at Aerojet Rocketdyne's booth.

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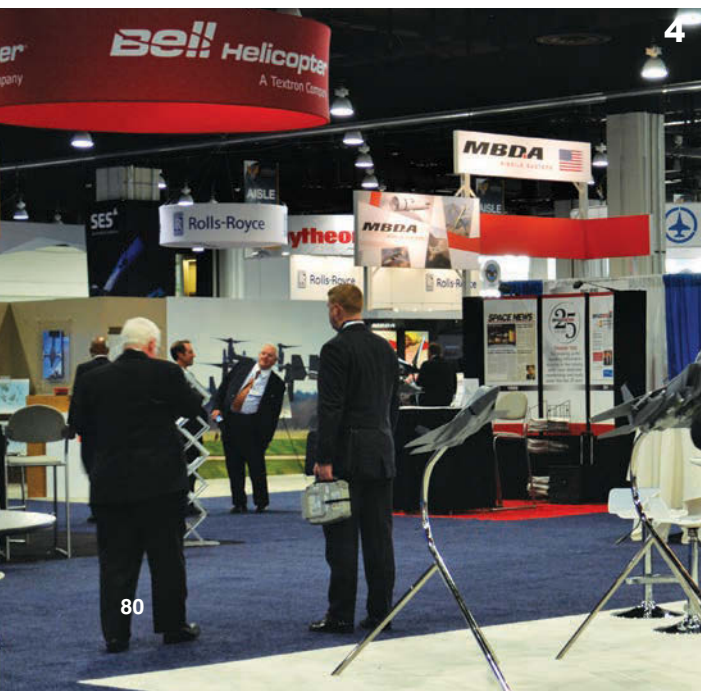
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111 Bombardier's Global 6000 business jet, fitted with a canoe radar, is one option to replace USAF's E-8 JSTARS aircraft. 121 MBDA's Meteor is a possible future add to USAF's lineup of air-to-air missiles. With ramjet propulsion, it may be faster than USAF's current inventory of dogfight missiles. 131 Textron's Scorpion concept aims to fill the niche of a low-cost jet trainer, light attack jet, adversary, or ISR platform. 141 Many exhibitors offered the "high sign" to help visitors find them faster. 151 Kevin Jackson of Saab and AFA's Nation's Capitol Chapter—elected at the convention to be an AFA National Director—goes over some points with USAFE-AFAFRICA Commander Gen. Frank Gorenc.





111 Top Aces USA and 121 Draken International featured colorful models of their private fleets of combat aircraft available for use in Aggressor-type and other kinds of training. The companies offer to provide services such as electronic warfare targets and combat air controller training at a cost lower than the military services can organically. 131 Aurora Flight Sciences showcased its Skate man-launched, micro, remotely piloted aircraft. The 2.2-pound vehicle is being used in Afghanistan for squad-level aerial overviews of the battlefield. 141 The center of Boeing's pavilion included models of the KC-46A tanker (foreground), the F-15C—this model loaded up as a missileer with 16 AIM-120 AMRAAMs—and a CV-22 (rear). A Boeing "Integrator" RPA cruised overhead. In the background, ROTC students in the Arnold Air Society visit with a Boeing rep at the booth. Exhibitors reported good traffic and keen interest from USAF leaders who took the time to take numerous briefings in the exhibit hall, making the 2014 Technological Exposition a resounding success. 🌟



Air Force Association National Awards 2014

NATIONAL AEROSPACE AWARDS

H. H. Arnold Award

For the most significant contribution by a military member to national defense

Gen. C. Robert "Bob" Kehler, USAF (Ret.), Former Commander, US Strategic Command

W. Stuart Symington Award

For the most significant contribution by a civilian in the field of national defense

Ashton B. Carter, Former Deputy Secretary of Defense

John R. Alison Award

For the most outstanding contribution by industrial leadership to national defense

The Boeing C-17 Globemaster III

AFA Chairman's Aerospace Education Award

For long-term commitment to aerospace education, making a significant impact across the nation

Department of Defense STARBASE program

David C. Schilling Award

Outstanding contribution in the field of flight
319th Special Operations Squadron, Hurlburt Field, Fla.

Theodore von Karman Award

Outstanding contribution in science and engineering

Counter-IED Team, Hanscom AFB, Mass.

Gill Robb Wilson Award

Outstanding contribution in arts and letters

Maj. Brandon J. Lingle, Chief of Public Affairs, Travis AFB, Calif.

Hoyt S. Vandenberg Award

Outstanding contribution in aerospace education

The Los Angeles Unified School District, "Beyond the Bell" Branch

Thomas P. Gerrity Award

Outstanding contribution in systems and logistics

Lt. Col. Michael J. Colvard, 28th Aircraft Maintenance Squadron, Ellsworth AFB, S.D.

Department of Veterans Affairs Employee of the Year

Outstanding performance by VA employee
James Burks, Intermediate Care Technician, Ambulance Coordinator Emergency Department, Cincinnati Veterans Affairs Medical Center, Cincinnati

Gen. George C. Kenney Award

Outstanding contribution in lessons learned

Aerial Delivery Mission Planning Team, 15th Special Operations Squadron, Hurlburt Field, Fla.

Lt. Gen. Claire L. Chennault Award

Outstanding aerial warfare tactician

Capt. Patrick R. Parrish, 75th Fighter Squadron, Moody AFB, Ga.

Gen. Larry D. Welch Award

Outstanding contribution toward the nuclear mission

Capt. Jeffrey P. Hill, 576th Flight Test Squadron, Vandenberg AFB, Calif.

CMSAF Thomas N. Barnes Award

Most outstanding crew chief in the Air Force

SSgt. Jared T. Kuhm, 801st Special Operations Aircraft Maintenance Squadron, Hurlburt Field, Fla.

Gen. Billy Mitchell Award for C4 Excellence

Outstanding contribution toward warfighting capability

Capt. Kyle B. Bressette, 19th Weapons Squadron, Nellis AFB, Nev.

PROFESSIONAL, CIVILIAN, EDUCATION, MANAGEMENT, AND ENVIRONMENTAL AWARDS

AFMC Management Award—Executive Division

Patrick K. Fillingim, Air Force Life Cycle Management Center, Wright-Patterson AFB, Ohio

AFMC Management Award—Middle Division*

Maj. Michael P. Ballak, Air Force Life Cycle Management Center, Englewood, Colo.

AFMC Management Award—Junior Division*

Capt. Stacy M. Baber, Air Force Test Center, Edwards AFB, Calif.

AFROTC Cadet of the Year

Cadet 1st Lt. Dylan J. Meador, Det. 847, Angelo State University, San Angelo, Texas

CAP Aerospace Education Cadet of the Year:

Cadet 2nd Lt. James E. Gardner Jr., Sacramento Composite Squadron 14, Elk Grove, Calif.

Chaplain Corps Award

MSgt. Sadie L. Chambers, Chapel Operations, 48th Fighter Wing, RAF Lakenheath, UK

Civilian Program Manager of the Year*:

Nicholas Davenport, Air Force Network Integration Center, Scott AFB, Ill.

Civilian Program Specialist of the Year*:

Nancy A. Hansen, 59th Dental Training Squadron, JBSA-Lackland, Texas

Civilian Senior Manager of the Year:

Daryl R. Kitchen, Air Force Life Cycle Management Center, Wright-Patterson AFB, Ohio

Civilian Wage Employee of the Year*:

Jerry M. Britt Jr., 341st Training Squadron, JBSA-Lackland, Texas

Gen. Edwin W. Rawlings Award—Management*

Valentine C. Sackman, 75th Civil Engineering Squadron, Hill AFB, Utah

Joan Orr Award for Air Force Spouse of the Year:

Susan Reynolds, Pope AAF, N.C.

Juanita Redmond Award for Nursing:

1st Lt. Stephanie Doane, Urgent Care Center, Mountain Home AFB, Idaho

Paul W. Myers Award for Physicians:

Lt. Col. Vikhyat S. Bebarta, Director, Enroute Care Research Center, Fort Sam Houston, Texas

Stuart R. Reichart Award for Lawyers:

Scott R. Martin, HQ, USAF, Washington, D.C.

Verne Orr Award for Effective Utilization of Human Resources:

982nd Training Group, Sheppard AFB, Texas

*presented at recipient's location



Air Force Association Chairman of the Board George Muellner (l) presented the Gen. H. H. Arnold Award for most significant contribution by a military member to national defense to retired Gen. C. Robert "Bob" Kehler, former commander of US Strategic Command.



The W. Stuart Symington Award for most significant contribution by a civilian in the field of national defense was presented to former Deputy Secretary of Defense Ashton Carter.

Photos by Dan Higgins

AFA LIFETIME ACHIEVEMENT AWARD

Recognizing a lifetime of work in the advancement of aerospace.

Brig. Gen. James A. McDivitt, USAF (Ret.)

McDivitt flew 145 combat missions during the Korean War and served as an experimental test pilot. He was selected to become an astronaut in 1962. McDivitt was the program manager for Apollo 12, 13, 14, 15, and 16. He retired from USAF and left NASA in June 1972. In 2014, McDivitt was inducted into the National Aviation Hall of Fame.

Civil Air Patrol—"Our Congressional Gold Medal Journey"

As the auxiliary force of the Army Air Forces, by World War II's end, CAP volunteers had flown more than 750,000 hours and were heavily involved in coastal operations off the Atlantic and Gulf coasts. Additionally, more than 80,000 young Americans served in CAP, providing the Army Air Forces with a pool of pilots and aircrew.

The American Fighter Aces

An American fighter ace is a fighter pilot who has served honorably in a United States military service and who has destroyed five or more confirmed enemy aircraft in aerial combat during a war or conflict in which American armed forces have participated. Of more than 60,000 US military fighter pilots, less than 1,500 have become fighter aces. They are one of the most decorated groups in military history.



Muellner and Lt. Gen. Bradley Heithold (r), commander of Air Force Special Operations Command, present the CMSAF Thomas N. Barnes Award for USAF's most outstanding crew chief to SSgt. Jared Kuhn.



Honored as a group with an AFA Lifetime Achievement Award was Civil Air Patrol. The award was accepted by CAP Brig. Gen. Larry Myrick, Civil Air Patrol national vice commander.



American fighter aces—some 1,500 of them—received an AFA Lifetime Achievement Award. Retired Lt. Gen. Charles Cleveland (c) and retired Col. Charles DeBellevue (r) accepted the award. The third Lifetime Achievement Award recipient, retired Brig. Gen. James McDivitt, was unable to attend the ceremony.

CITATIONS OF HONOR

Outstanding contribution of an individual or organization to the development of aerospace power.

Recipients and Achievements

3rd Special Operations Squadron, Cannon AFB, N.M.

The squadron flew over 2,500 combat sorties, amassing 33,500 hours during continuous and uninterrupted combat flying operations for a 12-month period. As the unblinking eye of the nation's elite Special Forces, the 3rd SOS supported 113 assaults leading to the elimination or capture of 421 insurgents including 12 al Qaeda and Taliban leaders.

5th Combat Communications Group, Robins AFB, Ga.

The 5th Combat Communications Group deployed 186 airmen to 27 geographically separated sites supporting five combatant commanders, contingency and humanitarian relief operations, and numerous joint exercises. In addition, members of the group provided critical communications at three locations crucial to the presidential Inauguration, State of the Union, and the United Nations General Assembly, ensuring the protection of the President of the United States and 193 heads of state.

849th Aircraft Maintenance Squadron, Holloman AFB, N.M.

The squadron's 367 airmen exceeded the requirements of the Air Force's largest formal training unit, enabling the graduation of 527 MQ-1 and MQ-9 pilots and sensor operators in response to the Secretary of Defense's mandated remotely piloted aircraft combat air patrol surge. Additionally,

the squadron's airmen deployed around the globe for a total of over 11,000 man-days in support of multiple combatant commander requirements.

962nd Airborne Air Control Squadron, JB Elmendorf-Richardson, Alaska

The unit maintained 127 days in elevated alert posture supporting the Alaskan North American Aerospace Defense Region. It launched eight long-range aviation missions which resulted in the identification and tracking of eight tracks of interest, preventing potential unauthorized border crossing events. The unit provided command, control, and battle management for six multinational exercises, nine months of Operation Enduring Freedom operations, and 201 training sorties.

ICBMSD, Hill AFB, Utah

The directorate was the only program office responsible for true cradle-to-grave life cycle management of intercontinental ballistic missiles. The directorate was instrumental in delivering on the Chief of Staff of the Air Force's No. 1 priority to continue to strengthen the nuclear triad. Its steadfast support provided 90 percent of the nation's day-to-day strategic alert force at a 99 percent operational alert rate.

CREW AND TEAM AWARDS

Airborne Battle Management Crew for best airborne battle management crew: 7th Expeditionary Airborne Command and Control Squadron, Combat Crew 2, 12th Airborne Command and Control Squadron, Robins AFB, Ga.

Brig. Gen. Ross G. Hoyt Award for best air refueling crew: Agile 21 Flight, 9th Special Operations Squadron, Hurlburt Field, Fla.

Gen. Curtis E. LeMay Award for best bomber aircrew: Solve 13, 509th Operations Group, Whiteman AFB, Mo.

Gen. Jerome F. O'Malley Award for best reconnaissance crew: Lt. Col. Luke S. Lokowich, Maj. Ricardo M. Diaz, 5th Reconnaissance Squadron, Beale AFB, Calif.

Gen. Thomas S. Power Award for best missile combat crew: Capt. Sterling D. Williams, 1st Lt. Jennifer E. Leute, 90th Missile Wing, F. E. Warren AFB, Wyo.

Best Space Operations Crew for best space operations: Rotation Team 9, 76th Space Control Squadron, 21st Operations Group, Peterson AFB, Colo.

Lt. Gen. William H. Tunner Award for best airlift aircrew: Anvil 41, 15th Special Operations Squadron, Hurlburt Field, Fla.

Lt. Gen. Howard W. Leaf Award for best test team: Cobra Judy Replacement Surveillance Radar Ship, Det. 4, Air Force Operational Test & Evaluation Center, Det. 4, Peterson AFB, Colo.

Gen. John P. Jumper Award for best remotely piloted aircraft crew in USAF: Pilot: Maj. Kevin P. Auger, 33rd Special Operations Squadron, Cannon AFB, N.M.; Sensor Operator: TSgt. Alan J. Scobel, 33rd Special Operations Squadron, Cannon AFB, N.M.; Mission Intelligence Coordinator: SSgt. Patrick D. Moore, 432nd Attack Squadron, Ellsworth AFB, S.D.

AIR NATIONAL GUARD AND AIR FORCE RESERVE COMMAND AWARDS

CMSgt. Dick Red Award

Best ANG maintainer

SMSgt. Robert B. Wheaton Jr., 157th Aircraft Maintenance Squadron, Pease Intl. Tradeport ANGS, N.H.

Earl T. Ricks Award

Outstanding ANG airmanship

Crew of Elite 40, 128th Air Refueling Wing, Wisconsin ANG

Outstanding ANG Unit

Best ANG unit airmanship

131st Bomb Wing, Missouri ANG

George W. Bush Award—Enlisted

Outstanding Civilian Employer and Enlisted Member

Amy Dempsey, Faith Technologies Inc., Menasha, Wis.
SMSgt. Mike A. Schmaling, 128th Air Refueling Wing, Wisconsin ANG

President's Award for AFRC

Best AFRC flying unit or individual of the year

Lt. Col. Todd D. Hegy, 312th Airlift Squadron, Travis AFB, Calif.

AFRC Unit Award

Best AFRC wing of the year

452nd Air Mobility Wing, March ARB, Calif.

AFRC Citizen Airman Award—Officer

Outstanding Civilian Employer and Officer Member

Booz Allen Hamilton, Greenwood Village, Colo.
Maj. Johan Y. Lee, 8th Space Warning Squadron, Buckley AFB, Colo.

2014 AFA FIELD AWARDS

Donald W. Steele Sr. Memorial Award

AFA Unit of the Year: **Donald W. Steele Sr. Memorial Chapter, Va.**
President Kevin Lewis



Board Chairman George Muellner (l) and Vice Chairman of the Board for Field Operations Scott Van Cleef (r) present the Unit of the Year Award to the Donald W. Steele Sr. Memorial Chapter, represented by Kevin Lewis, chapter president.

Outstanding State Organization

Florida—President Dann Mattiza

Outstanding Chapters by Size

Medium Chapter

Gen. B. A. Schriever Chapter, Calif.
President Edwin Peura

Large Chapter

Robert H. Goddard Chapter, Calif.
President Juan Cruz

Unit Exceptional Service Awards

Best Single Program (Joint)

Donald W. Steele Sr. Memorial Chapter, Va.
President Kevin Lewis

Gen. Charles A. Gabriel Chapter, Va.
President John Kennedy

Thomas W. Anthony Chapter, Md.
President John Huggins Jr.

Nation's Capital Chapter, D.C.
President Bruce VanSkiver

Communications

Hurlburt Chapter, Fla.
President Frederick Gross

Extra Large Chapter

Paul Revere Chapter, Mass.
President Paul Zauner

Community Partners

Enid Chapter, Okla.
President George Pankonin

Community Relations

Cheyenne Cowboy Chapter, Wyo.
President Irene Johnigan

Overall Programming

Central Florida Chapter, Fla.
President William Palmbly

Veterans Affairs

Paul Revere Chapter, Mass.
President Paul Zauner

Aerospace Education Achievement Award

Presented to chapters for outstanding achievement in aerospace education programming.

Albuquerque Chapter, N.M.

Blue Ridge Chapter, N.C.

Central Florida Chapter, Fla.

C. Farinha Gold Rush Chapter, Calif.

Cheyenne Cowboy Chapter, Wyo.

Gen. Charles A. Gabriel Chapter, Va.

Leigh Wade Chapter, Va.

Lincoln Chapter, Neb.

Montgomery Chapter, Ala.

Roanoke Chapter, Va.

Tennessee Valley Chapter, Ala.

Tidewater Chapter, Va.

Wright Memorial Chapter, Ohio

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.

Medium Chapter

Tidewater Chapter, Va. President Steve Turner

Large Chapter

Tennessee Valley Chapter, Ala. President Frederick Driesbach

Extra Large Chapter

Wright Memorial Chapter, Ohio President W. T. Koogler

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, 2014, as a percentage of total chapter membership as of July 1, 2013. This award is based on both the quantity of new members as well as sustained new member recruitment.

Chapter Award

Leigh Wade Chapter, Va.
President Gary Metzinger

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 number of 10 is required.

Small Chapter

Dolomiti Chapter, Italy
President Shaun Spencer

Medium Chapter

Big Sky Chapter, Mo.
President Lee Feldhausen

Large Chapter

Robert H. Goddard Chapter, Calif.
President Juan Cruz

Extra Large Chapter

Paul Revere Chapter, Mass.
President Paul Zauner

Chapter Larger Than 1,100

Frank Luke Chapter, Ariz.
President Bruce Thompson

AFA Gold Card Recipient

George M. Douglas
Colorado Springs, Colo.

Member of the Year

James Simons
Minot, N.D.

Chairman's Citation

Jim Hannam, Va.
Wayne Kauffman, Calif.
Jim Lauducci, Va.
Bryan Paul, Fla.
Maxine Donnelly Rauch, N.Y.
Don Taylor, Ill.

Individual Awards by Region

Presented for outstanding service.

Central East Region

Medal of Merit

Harper Alford, Va.
Jonathan Dagle, Va.
Rick Jones, Va.
Scott McClean, Va.
Paul Richardson, Va.
William Rushing, Va.

Exceptional Service Award

J. J. Blessing, Va.
Christof Paul Cordes, Va.
Gerald L. Hovatter, Va.
Michelle Ryan, Va.
Bruce VanSkiver, D.C.

Far West Region

Medal of Merit

Juan E. Cruz, Calif.
Richard T. Jeffreys, Calif.
Ed Peura, Calif.
Harry A. Talbot, Calif.
Timothy J. Tichawa, Calif.

Exceptional Service Award

Lee Barnby, Calif.
Nancy Driscoll, Calif.
Thomas D. Taverney, Calif.

Florida Region

Medal of Merit

Todd Freece
Virginia Montalvo
Joseph Roberts
Milt Markowitz
Gary A. Lehmann

Exceptional Service Award

James B. Connors
John Jogerst
Danny Webb
Ran Meriam

Great Lakes Region

Medal of Merit

Milford E. Compo, Ind.
Richard Hughes, Ohio
John W. Peyton, Ind.

Exceptional Service Award

Jessica Derr, Ohio
Vita Eonta, Ohio

Midwest Region

Medal of Merit

Robert Athan, Neb.
Timothy Adam, Neb.
Richard Holdcroft, Neb.

New England Region

Medal of Merit

Devon L. Messecar, Mass.
Emily C. Shay, Mass.
James A. Thurber, Mass.

Exceptional Service Award

Max E. Lantz II, Mass.
Jenny Hopewell, Mass.
Joseph C. Moynihan, Mass.

North Central Region

Medal of Merit

Donald Andrews, N.D.
Lee R. Feldhausen, Mont.
Michael Nelson, N.D.
Mario M. Saenz, Mont.

Northeast Region

Medal of Merit

William M. Fosina, N.J.
Aaron Garber, N.Y.
Tobia F. Terranova, N.J.

Exceptional Service Award

Susan Loricchio, N.J.

Northwest Region

Medal of Merit

Mary F. Bell, Ore.
Mark Horace, Wash.

Exceptional Service Award

William Streigel, Wash.

Rocky Mountain Region

Medal of Merit

Dorothy Christensen, Utah
Gaylene Dizmang, Wyo.
Howard Hayden, Colo.
Mickey McPartland, Utah
David K. Shiller, Colo.
Sharon White, Colo.

Exceptional Service Award

Jeri A. Andrews, Colo.
Lacy Bizios, Utah
Richard C. Follmar, Colo.
Jay Mosley, Utah
Stephan A. Pappas, Wyo.
Leslie Swidecki, Wyo.

South Central Region

Medal of Merit

Teresa M. Anderson, Miss.
Michael E. Bullington, Miss.
Jim D. Porter, Ala.
Chris Robertson, Ark.
Derick Seaton, Tenn.

Exceptional Service Award

James Van Eynde, Tenn.

Southeast Region

Medal of Merit

Louis S. Bodony, S.C.
Joyce W. Feuerstein, N.C.
Arthur J. Rooney Jr., S.C.
Helen H. Rooney, S.C.

Exceptional Service Award

Alicia L. Hughes, N.C.
Linda J. Sturgeon, S.C.

Southwest Region

Medal of Merit

Ray Belcher, Ariz.
Doris Goetz, Ariz.
Dan Guilmette, Ariz.
Mark E. Koechle, Ariz.

Exceptional Service Award

Harry H. Bailey, Ariz.
Robert Cunningham, Nev.
Sharon Marvin, Ariz.

Texoma Region

Medal of Merit

Alan K. Beaty, Ariz.
Damon Bowling, Okla.
Charles B. DeBellevue, Okla.
Thomas Johnson III, Texas
Deborah A. Landry, Texas
Charles Meador, Texas
Cecelia Nguyen, Okla.
Angela L. Peterson, Okla.
Terry Thomas, Texas
Sharon Trojan, Okla.
James Whitmore, Texas

Exceptional Service Award

Mary Feightner, Okla.
Stan Grell, Okla.
Tangie Pappo, Okla.
Dave Pope, Texas

Overseas Region

Medal of Merit

David T. Gouin, Europe
Michael P. Nishimuta, Europe

Community Partner Membership Awards

GOLD AWARD

Presented to chapters whose Community Partners represent at least six percent of overall chapter membership, with a minimum number of Community Partners. The minimum number is determined by chapter size.

Altus Chapter, Okla.
Cheyenne Cowboy Chapter, Wyo.
Enid Chapter, Okla.
Fairbanks Midnight Sun Chapter, Alaska
Fort Dodge Chapter, Iowa
Fort Wayne Chapter, Ind.
Gen. Bruce K. Holloway Chapter, Tenn.
Gen. David C. Jones Chapter, N.D.
Hurlburt Chapter, Fla.
Lance P. Sijan Chapter, Colo.
Leigh Wade Chapter, Va.
McChord Field Chapter, Wash.

Mel Harmon Chapter, Colo.
Mercer County Chapter, N.J.
Meridian Chapter, Miss.
Montgomery Chapter, Ala.
Northeast Texas Chapter, Texas
Paul Revere Chapter, Mass.
Robert H. Goddard Chapter, Calif.
Swamp Fox Chapter, S.C.
Steel Valley Chapter, Pa.
Tennessee Valley Chapter, Ala.
Ute-Rocky Mountain Chapter, Utah
William J. "Pete" Knight Chapter, Calif.

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. The minimum number is determined by chapter size.

Central Oklahoma (Gerrity) Chapter, Okla.
David D. Terry Jr. Chapter, Ark.
Eglin Chapter, Fla.
Gen. B. A. Schriever Chapter, Calif.
Gen. E. W. Rawlings Chapter, Minn.

Golden Triangle Chapter, Miss.
Sarasota-Manatee Chapter, Fla.
Shooting Star Chapter, N.J.
Stan Hryn Monterey Bay Chapter, Calif.
Wright Memorial Chapter, Ohio

Special Recognition

SUSTAINED NEW MEMBER RECRUITMENT

These chapters have attained the quarterly new member recruitment goal for three consecutive quarters, extending from October 2013 to June 2014.

- Donald W. Steele Sr. Memorial Chapter, Va.
- Frank Luke Chapter, Ariz.
- Langley Chapter, Va.
- Leigh Wade Chapter, Va.
- Montgomery Chapter, Ala.
- Paul Revere Chapter, Mass.
- Robert H. Goddard Chapter, Calif.

REGION GROWTH

These regions have realized a growth in total membership from June 2013 to June 2014.

- Europe
- Pacific

STATE GROWTH

These states have realized a growth in total membership from June 2013 to June 2014.

- Wyoming

CHAPTER GROWTH

These chapters have realized a growth in total membership from June 2013 to June 2014.

- Big Sky Chapter, Mont.
- Cheyenne Cowboy Chapter, Wyo.
- Cochise Chapter, Ariz.
- Dolomiti Chapter, Italy
- Gen. Bruce K. Holloway Chapter, Tenn.
- Gen. Charles A. Horner Chapter, Iowa
- Golden Triangle Chapter, Miss.
- Leigh Wade Chapter, Va.
- Lehigh Valley Chapter, Pa.
- Northern Shenandoah Chapter, Va.
- Red Tail Memorial Chapter, Fla.

Chapter Retention Awards

Overall Retention Award

Small Chapter

Fort Wayne Chapter, Ind.
President Brandon Monticue

Medium Chapter

Tulsa Chapter, Okla.
President Damon Bowling

Large Chapter

Snake River Valley Chapter, Idaho
President Zachary Maurer

Extra Large Chapter

Billy Mitchell Chapter, Wis.
President Victor Johnson

Chapter Larger than 1,100

Thunderbird Chapter, Nev.
President Robert Cunningham

First Year Retention Award

Small Chapter

Danville Chapter, Va.
President Gerald Hovatter

Medium Chapter

Joe Walker-Mon Valley Chapter, Pa.
President Patrick Kon

Large Chapter

Strom Thurmond Chapter, S.C.
President James Dowis

Extra Large Chapter

Siedel Chapter, Texas
President John Tannehill

Chapter Larger than 1,100

General Doolittle Los Angeles Area Chapter, Calif.
President Harry Talbot

CyberPatriot Coach and Mentor of the Year

Coach of the Year

Ken Steffey
Centurion Battalion, Winter Park, Fla.

Mentor of the Year

Ron Woerner,
Bellevue East High School, Bellevue, Neb.



L-r: AFA Board Chairman George Mueller, Cyberpatriot Coach of the Year award recipient Ken Steffey, AFA Vice Chairman of the Board for Aerospace Education Jerry White, and AFA Vice Chairman of the Board for Field Operations Scott Van Cleef.



L-r: AFA Board Chairman George Mueller, Cyberpatriot Mentor of the Year award recipient Ron Woerner, AFA Vice Chairman of the Board for Aerospace Education Jerry White, and AFA Vice Chairman of the Board for Field Operations Scott Van Cleef.

Photos by Dan Higgins

By Frances McKenney, Assistant Managing Editor



Emerging Leaders

The Air Force Association established the Emerging Leaders Program in 2013 as a way to prepare volunteers for future AFA leadership roles. Emerging Leaders serve for a year. They participate on a national-level council, attend national leader orientations, and serve as National Convention delegates.

The Emerging Leaders for 2015 are: Emilie S. Boschert, Shannon M. Farrell, Deborah A. Landry, Mike Liquori, Emily C. Shay, Christopher M. Talbot, James A. Thurber, Jeremy Trotter, Eric J. Van Der Heide, and Daniel Whalen.

Here's the first profile in AFA's second group of Emerging Leaders.

Capt. Emilie S. Boschert

Home State: Colorado.

Chapter: Mile High.

Joined AFA: 2007.

AFA Offices: State Secretary and Chapter VP for Aerospace Education. Formerly Chapter Secretary.

Military Service: Two years Active Duty. Now a traditional Guardsman.

Occupation: M.A. candidate, Josef Korbel School of International Studies, University of Denver. In the ANG: space and missile warning officer, 137th Space Warning Squadron, Greeley ANG, Colo.

Education: B.A., University of Northern Colorado.

Q&A

How did you first learn of AFA? "Through Silver Wings. ... When I was elected the chapter president, our outgoing region president gave me the contact for the Mile High Chapter and said, 'Get in touch with them. They're having a golf tournament, and you can use it for fund-raising.'"

What made you retain AFA membership? "The camaraderie and the mentorship and the leadership opportunities extended to me."

Do you have new ideas for boosting AFA membership? "I think the Emerging Leaders Program is a great start to encourage younger membership and younger people to be active."

When not busy with her family, Boschert goes rock climbing—in this photo at North Table Mountain in Golden, Colo.



Kaci Heins took a student experiment on fabric absorbercy onto NASA's Zero G airplane last year. The aircraft's maneuvers allowed Heins and other teachers to experience weightlessness for 30 seconds at a time. Here, she uses stuffed toys to demonstrate Newton's Laws of Motion.



Photo courtesy of Kaci Heins

AFA's National Teacher of the Year

A sixth-grade science teacher from Arizona—originally the Prescott/Goldwater Chapter's top educator—received the Air Force Association's 2014 National Aerospace Teacher of the Year award at AFA's National Convention in National Harbor, Md., in September.

Kaci A. Heins, from the public charter school Northland Preparatory Academy in Flagstaff, received the honor at the Saturday evening AFA Field Awards Dinner. The photo of AFA Chairman of the Board George K. Muellner, the incoming COB Scott P. Van Cleef, and the Vice COB for Aerospace Education Jerry E. White presenting the honor quickly appeared on Northland Preparatory's Web page.

"I eat, sleep, and breathe STEM," Heins had written in her Teacher of the Year application, referring to science, technology, engineering, and mathematics, "because if I'm excited when I walk in my classroom, then my students feel that energy and they will get excited as well."

In a speech at the AFA convention, Heins explained how she generates enthusiasm for STEM. Her approach encompasses such hands-on projects as making solar ovens and Lego robots.

One experiment devised by Northland Preparatory students was delivered to the International Space Station in July. The science project, on onion cell replication and mutation, represented a step in determining how food grows in space—useful to know for lengthy space journeys. But to earn a place in the payload on the Orbital Sciences Corp. rocket launch from Wallops Island, Va., to the ISS, the students had to raise a \$21,500 fee. Heins led the fund-raising, collecting half from community donations. Flagstaff's W. L. Gore & Associates provided the other half.

Heins spent five days at the AFA convention. She went to the Friday night US Air Force Band concert at the Air Force Memorial. She attended the Sunday morning memorial service paying tribute to AFA members and supporters who have died in the past year. Later that day, she "flew" the flight simulators during the delegates' tour of the Lockheed Martin Fighter Demonstration Center.

Summing up her involvement with the convention, Heins wrote on her school's Web page: "I had a wonderful time."

At right: Bellbrook High School AFJROTC cadet Taylor Carter offers a nutritional gel packet to Air Force Marathon runners.



Photo via Tony Chittwood

Air Force Marathon: Can't Run it Without the Cadets

Another record-breaking crowd of athletes—this time 15,000 registered competitors—ran the US Air Force Marathon, Half-Marathon, 10K, or 5K in September in Ohio, with cadets organized by the **Wright Memorial Chapter** providing support services.

The chapter operated a hydration stop between Mile 7 and 8 on the 26.2-mile marathon course through Wright-Patterson Air Force Base and the adjacent city of Fairborn. Chapter officer Everett G. Odgers supervised the station for the fifth time.

Chapter member retired Lt. Col. Eugene A. Longo provided manpower for the station, mustering some 70 of his AFJROTC cadets from Bellbrook High School at 4:30 a.m. on race day, for the bus ride to Wright-Patt. Odgers said that as in the past years, he does the initial water stop setup, but then “60 to 80 kids roll in and take over.”

He explained that his first mass of cadet volunteers always hand out packets of nutritional gel—thick and gooey—to the runners, then several yards later, another group hands out the water to wash it down. The chapter has taken the lead on this and other tasks since 2007.

Does it take 70 volunteers to man one station? Consider the number of athletes on the course. Odgers said, “At times, we had streets full of them.”

The 18th annual Air Force Marathon’s overall winner was Steve Chu from Colorado Springs, Colo., who finished in two hours, 28 minutes. The first-place military winner was USAF MSgt. Juanjose Moran from Clovis, N.M., at 2:37. He placed third overall. Nicola Holdsworth of Columbus, Ohio, finished first among women, at 2:56. The first military women’s finisher was USAF Capt. Jackie Marotta of Newport News, Va., at 3:14.



Photo by Antonio G. Ruiz

AFJROTC cadets from Tecumseh High School manned this food tent at the marathon. Wright Memorial Chapter members retired Col. Fred Schuster and retired MSgt. Antonio Ruiz lead their cadets in this annual volunteer project.

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Transitioning to the Civilian World

“Nothing beats your network,” said Christof P. Cordes, secretary of Virginia’s **Donald W. Steele Sr. Memorial Chapter**.

The idea has guided his chapter, the **Nation’s Capital Chapter** in Washington, D.C., and American Corporate Partners in helping military personnel transition from the service.

The three entities have joined forces to hold no-host receptions, where soon-to-be veterans network with AFA and other business people.

The New York-based ACP brings to the relationship an established mentorship program specifically for vets. In 2014, according to its website, it matched more than 2,000 veteran-protégés with civilian mentors from 50 institutions. AFA for its part has been developing various initiatives for airmen in transition, aiming to complement DOD programs already in place.

Cordes himself made the jump from the Air Force four years ago. He now works for Boeing. He has been a formal ACP mentor three times and is a bridge between ACP and AFA.

Sixty people attended the first combined-organizations networking reception in January, he said. The last two attracted some 20 guests. A fourth gathering was scheduled for October.

MSgt. Andrew Stephens (left), Jeff Lipsky (back to camera) from Analytic Services, and Col. Dale Sinnott (right) chat at a reception in Arlington, Va. These periodic gatherings introduce military members who are leaving the service to the business community. Steele Chapter’s President Kevin Lewis, Jim Lauducci, Chris Cordes, and Nation’s Capital Chapter President Bruce VanSkiver attended this no-host event in July.



Photo by Christof P. Cordes

Cordes’ success as a mentor has come from brainstorming with his protégés, helping them come up with options.

“Do you still have the GI Bill?” he asked his first protégé, a former Army E-5. Today, that one-time soldier is a junior majoring in physics at Virginia Tech. Cordes now mentors a former marine who hadn’t been receiving responses to job applications, despite Ivy League credentials. Cordes taught him to use keywords in his résumé and how to tailor it for each job announcement. This suggestion resulted in a batch of job interviews.

As for success stories from the AFA-ACP networking receptions, Cordes cited a thank you email he received from

a guest who made a solid connection at the first gathering and landed a job interview at a TV station.

Vroom! Vroom!

Chicagoland-O’Hare Chapter President Gerald L. Ashley began riding motorcycles in 1974. The Illinois resident has owned four of them: a Honda, a Harley, a Kawasaki, and most recently a Yamaha Star 650.

“I did not own a car for six years. Just my bike,” wrote the former RED HORSE heavy equipment operator, describing a period when he lived in Arizona.

So when he was casting about for ways to interest people in joining AFA, he thought of forming an Air Force



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Association Riders motorcycle group. He launched his program this summer.

First, he registered riders, requiring AFA membership to participate.

Heather Kilheaney, who joined in July, served as ride captain for the first group ride. She planned the route and led the formation of five motorcyclists in that inaugural outing.

"The ride she put together was beautiful," commented Ashley. It started in Orland Park and went along the Des Plaines River, with a lunch stop in Wilmington. In all, it took some four hours, Kilheaney estimated.

Ashley is unable to ride two wheeled motorcycles anymore—he's looking for a three wheeler trike—and instead drove the safety car for this group ride.

The motorcycle season ended shortly after this initial ride, but in late September Ashley was already thinking about the next one, to begin in April.

This is not the first time AFA has rolled out with loud pipes. In Utah in 2006, L. Boyd Anderson, then the vice chairman of the board, fired up his red and silver three-wheeler and joined **Ute-Rocky Mountain Chapter** riders Gerald K. Wilcox—on a Harley low rider—and Ed Brisley—on a Honda Valkyrie—for a 9/11 Memorial Ride. A collection of some 70 vehicles, including dirt bikes, rode from Layton to Brigham City, where they took part in a Harley-Davidson motorcycle show.

Ladybirds in New Jersey

The **Shooting Star Chapter** in New Jersey hosted a luncheon for author Henry Holden, then reconvened at a

Lt. Col. Elizabeth Ortiz offers a piece of birthday cake to visitors at New York City's celebration for the 67th anniversary of the Air Force. The festivities took place at Bryant Park, with two large cakes—like this one—provided through funds from the Iron Gate Chapter. Airmen from the city and JB McGuire-Dix-Lakehurst, N.J., also got air time on "Good Morning America" and "Fox & Friends" to spotlight the service.



Photo by Patrick Cashin

At right: On a Honda Shadow, ride captain Heather Kilheaney (at right) led the Chicagoland-O'Hare Chapter's first motorcycle group ride. Jo Powers, at left, checks out a Harley trike.



Photo by Gerald L. Ashley

library afterward for his presentation on American women in aviation.

Holden based his remarks on his books *Ladybirds: The Untold Story of Women Pilots in America*, published in 1991, and *Ladybirds II: The Continuing Story of American Woman in Aviation*, published in 1993.

New Jersey State President Howard Leach explained that the library lecture was one in a series of author talks by Holden, an aviation historian and pilot who joined AFA in May. Holden has

written 37 books, many of them on aviation in the Garden State.

Leach said that the pioneering female fliers Holden spoke about in his presentation succeeded because of their dreams and dedication, positive outlooks, and sometimes a refusal to take no for an answer. ✪

Have AFA Chapter News?

Email "AFA National Report" at: natrep@afa.org. Email digital images at highest resolution, as separate jpg attachments, not embedded in other documents.

reunions@afa.org Reunions

Arc Light-Young Tiger Assn. June 15-19, 2015, at Wright-Patterson AFB, OH. **Contact:** Russ Stephenson (410-740-8024) (rgsteph@msn.com).

1st Air Transport Sq, MATS, including memorial service and cairn dedication. Nov. 7, 2014, at 5th Wg Goose Bay Hq, Newfoundland-Labrador, Canada. **Contact:** Chris Charland (705-476-5325) (pukkagen@cogeco.ca).

Having a Reunion?

Email reunion notices four months ahead of time to reunions@afa.org, or mail notices to "Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. We reserve the right to condense notices.



Author Henry Holden (second from right) holds a tote bag he received as guest speaker for the Shooting Star Chapter in New Jersey in September. With him are (l-r): Chapter Secretary Toby Terranova, VP Cole Kleitsch, State and Chapter Government Relations VP Susan Loricchio, and New Jersey State President Howard Leach. He's holding a copy of one of the author's aviation books.



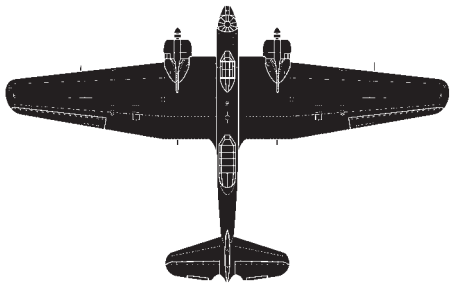
Vermont's Green Mountain Chapter members toured the 158th Fighter Wing's engine maintenance and test facility of the Air National Guard in Burlington. Here, TSgt. Scott Stone talks to the visitors about an F-16 engine.

Photo by Richard F. Lorenz

Airpower Classics

Artwork by Zaur Eylanbekov

B-10



The Air Corps B-10 sparked a revolution in bomber design. Conceived by the Glenn L. Martin Co. in 1932, it boasted an all-metal monoplane frame, the first gun turrets, retractable landing gear, internal bomb carriage, streamlined shape, multiple engines, and high speed. It brought instant obsolescence to the Air Corps' slow, wood-and-fabric, open-cockpit, external ordnance bombers and set a standard that led directly to the highly capable B-17 and other famous World War II bombers.

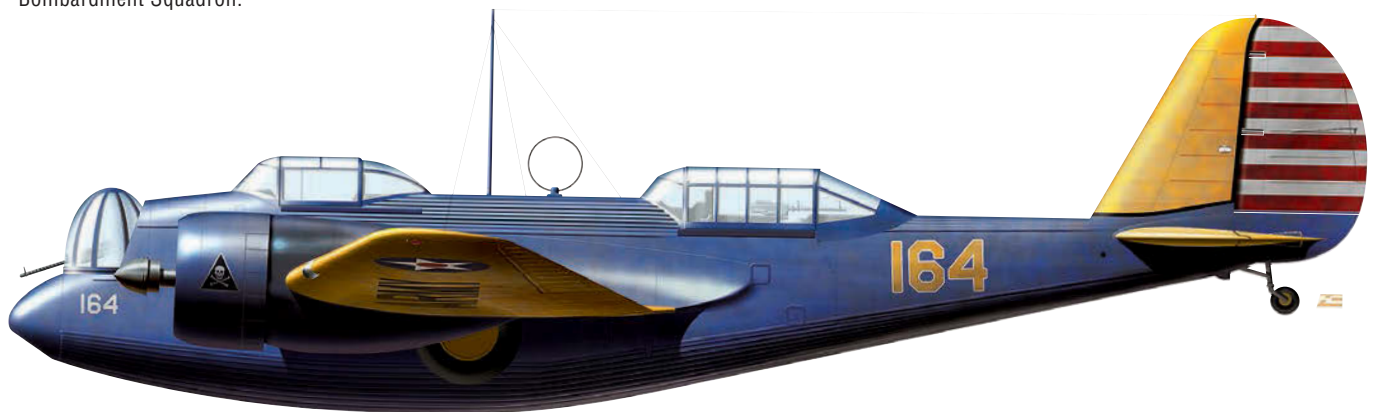
The airplane was privately funded by Martin. Accepted by the Army in 1932, the prototype was heavily modified with more-powerful engines, greater wingspan, and enclosure of the cockpits. In trials, the B-10 achieved 207 mph—a speed 50 percent faster than biplane bombers and even exceeding that of any US fighter. The Air Corps

placed a large order for more than 150 (32 fitted with Pratt & Whitney engines got the designation B-12). In addition, Martin struck export deals for 189 B-10 variants.

Gen. Henry H. "Hap" Arnold, who flew it on a MacKay Trophy flight to and from Alaska, called the B-10 "the airpower wonder of its day." Its great speed and long range convinced air planners that independent bomber attack—without fighter support—could succeed. In the peacetime 1930s, the B-10 was flown on numerous long-range shows of force and in the Army's new coastal defense mission. The Martin bomber, however, was overtaken late in the 1930s by the B-17, before World War II. Export versions sold to the Netherlands and China did see combat in the Pacific.

—Robert S. Dudley with Walter J. Boyne

This aircraft: US Air Corps B-10B—#164—as it looked in 1935 when assigned to US Air Corps 31st Bombardment Squadron.



In Brief

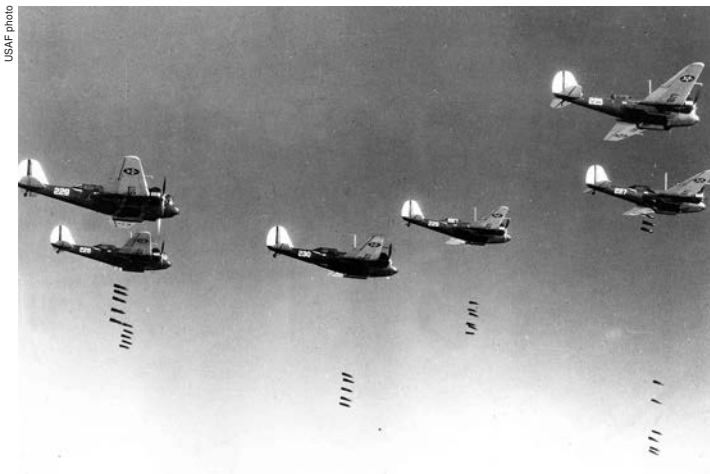
Designed, built by Glenn L. Martin Co. ★ first flight Feb. 16, 1932
★ number built 342 (153 Air Corps, 189 export) ★ crew of four (one pilot, one radio operator, two gunners) ★ armament three .30 cal machine guns (nose, ventral tunnel, rear turret); 2,260 lb of bombs.
Specific to B-10B: two Wright R-1820-33 radial engines ★ max speed 213 mph ★ cruise speed 193 mph ★ max range 1,240 mi ★ weight (loaded) 16,400 lb ★ span 70 ft 6 in ★ length 44 ft 9 in ★ height 15 ft 5 in.

Famous Fliers

Notables: Lt. Col. Henry H. "Hap" Arnold (MacKay Trophy, 1934). **Future generals:** Frank Andrews, Malcolm Grow, Hugh Knerr, Westside Larson, Harold McClelland, Ralph Royce, George Stratemeyer, Clarence Tinker, Nathan Twining. **Chinese:** Hsu Huan-sheng, Teng Yan-po. **Dutch:** E. T. Kengen, L. H. van Oyen. **Test pilot:** William K. Ebel.

Interesting Facts

Won 1932 Collier Trophy, presented by FDR ★ nicknamed "Flying Whale" ★ began life (prototype) with three open cockpits ★ flew faster than any extant US fighter ★ adapted for coastal defense mission ★ sold in greater number to foreign nations than to Air Corps ★ developed into largest Air Corps aircraft order in post-World War I era ★ flown by Chinese and Dutch air forces against Japan ★ served in every Air Corps bomb group in 1930s ★ carried out first test of Norden bombsight ★ served in air arms of Argentina, China, Netherlands, Philippines, Thailand, Turkey ★ used continuously until retired in 1949 by Thailand.



A formation of Martin B-10s dropping bombs.



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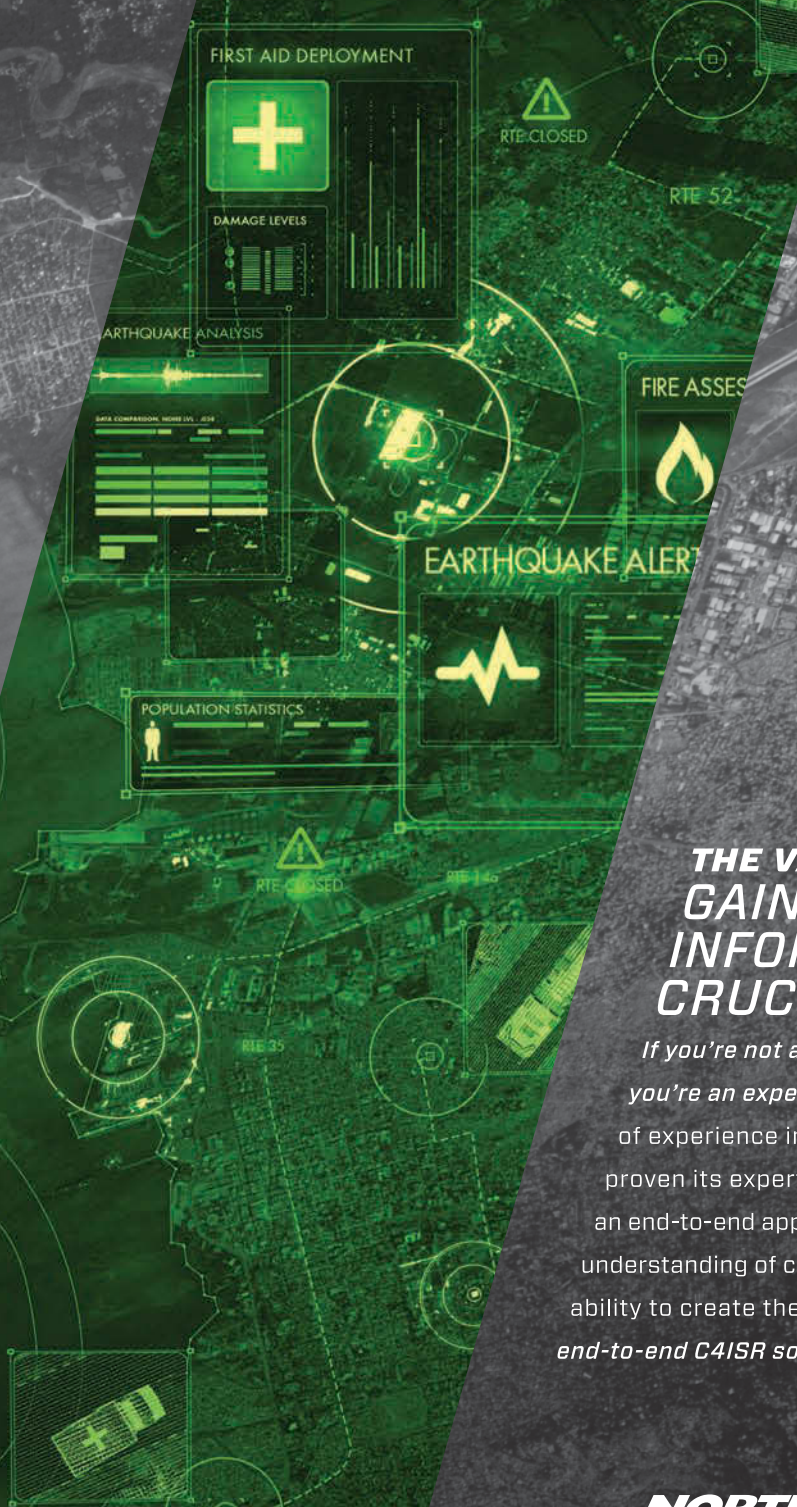
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