September 2014/$10

Journal of the Air Force Association

AIR FORCE MAGAZINE

NATO Looks East

The US and Japan

Saga of the Spartans

Early WWI Airpower

UNMANNED · SYSTEMS

CYBER ·

C4ISR ·

LOGISTICS ·

THE VALUE OF COMMANDING UNMANNED POWER.™

When you can go where others can't, you gain a powerful advantage. From undersea to outer space, Northrop Grumman is at the forefront of every aspect of unmanned systems. Our advanced platforms and technologies offer customers a wide range of new capabilities. *That's why we're the leader in Unmanned Systems.*

THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

www.northropgrumman.com/**ums**

Journal of the Air Force Association
AIR FORCE MAGAZINE

September 2014, Vol. 97, No. 9

About the cover: F-15s fly over Lithuania on a training mission. See "Looking East," p. 32. USAF photo by A1C Dana J. Butler.

FEATURES

Journal of the Air Force Association
AIR FORCE MAGAZINE

DEPARTMENTS

www.airforcemag.com

Publisher: Craig R. McKinley
Editor in Chief: Adam J. Hebert

Managing Editor: Juliette Kelsey Chagnon
Special Content Director: Michael C. Sirak
Editorial Director: John A. Tirpak
News Editor: Amy McCullough
Senior Editor: Marc V. Schanz
Senior Designer: Heather Lewis
Special Projects Manager: Gideon Grudo
Designer: Kristina Parrill
Assistant Managing Editor: Frances McKenney
Associate Editors: Autumn A. Arnett, Aaron M. U. Church, June L. Kim
Production Manager: Eric Chang Lee
Photo Editor: Zaur Eylanbekov
Media Research Editor: Chequita Wood

Senior Correspondent: Otto Kreisher

Contributors: Walter J. Boyne, John T. Correll, Robert S. Dudney, Rebecca Grant, Peter Grier, Richard P. Hallion, Jim Haseltine, Frederick A. Johnsen, Erik Simonsen, Gabe Starosta, Joseph Trevithick

Advertising: Andrea Guarnero, Mohanna Sales Representative
(214) 291-3660
airforcemagsales@afa.org
1501 Lee Highway
Arlington, VA 22209-1198
Tel: (703) 247-5800
Telefax: (703) 247-5855

afmag@afa.org

AIR FORCE Magazine (ISSN 0730-6784) September 2014 (Vol. 97, No. 9) is published monthly by the Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Phone (703) 247-5800. Perodical postage paid at Arlington, Va., and additional mailing offices. **Membership Rate:** $45 per year; $30 e-Membership; $110 for three-year membership. **Life Membership (nonrefundable):** $600 single payment, $630 extended payments. **Subscription Rate:** $45 per year; $29 per year additional for postage to foreign addresses (except Canada and Mexico, which are $10 per year additional). Regular issues $10 each. USAF Almanac issue $20 each. **Change of address** requires four weeks' notice. Please include mailing label. **POSTMASTER:** Send changes of address to Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association.


GREAT FIGHTER PILOTS AREN'T JUST BORN,
THEY'RE MADE.
AT LOCKHEED MARTIN,
WE'RE ENGINEERING A BETTER TOMORROW.
Fifth-generation fighters can do things nothing else can. So pilots need a trainer built by the people who understand next-generation aircraft better than anyone else. The supersonic T-50 is proven and ready to go, having already helped train hundreds of pilots in less time and at lower costs. After all, the world's most advanced fighters can do a lot of things. But they don't fly themselves.
Learn more at lockheedmartin.com/t50
© 2014 LOCKHEED MARTIN CORPORATION
LOCKHEED MARTIN

Editorial

By Adam J. Hebert, Editor in Chief

The Airpower Advantage in Iraq

In June, the ongoing sectarian conflict in Iraq began to look less like a civil war and more like a traditional land war—a land war the Iraqi government was quickly losing to the terrorist organization known as ISIS or ISIL.

By August, enough was enough and President Obama authorized limited US air strikes, requested by the Iraqi government. Iraqi and Kurdish ground forces halted the ISIS advances and registered their first meaningful victories against the terrorists who had seized much of the country.

America's willingness to employ airpower to support Iraqi forces had an immediate and profound effect and may have turned the tide. The air strikes are "to support Iraqi security forces and Kurdish defense forces as they work together to combat ISIL," according to US Central Command, and "to protect critical infrastructure, US personnel and facilities, and support humanitarian efforts."

Although the employment was very limited, it happened. US fighter aircraft, Air Force bombers, and remotely piloted aircraft struck ISIS positions and allowed indigenous ground forces to take the initiative. This was a stark contrast to the events of June, when ISIS—outnumbered and at the time outgunned—rapidly swept Iraq's security forces aside and seized huge swathes of territory.

US intervention was triggered by the Mount Sinjar crisis, a potential humanitarian disaster alleviated thanks to USAF airpower. Some unknown thousands of refugees had fled marauding ISIS forces, seeking sanctuary on Mount Sinjar. For a short time the refugees were trapped.

In response, the President ordered the Air Force into action. "C-17 and C-130 aircrews began a coordinated series of humanitarian assistance airdrop missions to provide aid to the refugees," Army Lt. Gen. William C. Mayville Jr., Joint Staff operations director, explained Aug. 11.

All told, according to a USAF news release, the Air Force delivered the refugees near the Syrian border more than 114,000 meals and 35,000 gallons of water, with more than 100 pallets delivered a day.

Then air strikes helped break the siege. According to CENTCOM data, the US launched 68 air strikes from Aug. 8 through 18. Six strikes per day seems inconsequential, but a little airpower can go a long way—as was seen around Mount Sinjar and the Mosul Dam.

Air Force F-15Es, F-16s, and MQ-1s, and Navy F/A-18s "have helped check the advance of ISIL forces," Mayville reported.

More than 60 intelligence, surveillance, and reconnaissance aircraft were overhead, and air strikes were "providing the Kurdish security forces with time to fortify their defensive positions with the supplies they're receiving from the central government of Baghdad," he said.

ISIS was on a roll until the US moved to support Iraq with airpower.

Next came Mosul Dam. The dam is a decrepit but vital structure north of Mosul that was also under ISIS control. If destroyed, Mosul Dam's waters could have caused devastating flooding in Mosul (still ISIS-held) and as far as Baghdad. The ISIS defenders were in protected positions.

ISIS has a large inventory of useful military equipment, much of it abandoned by the Iraqi security forces who fled the terrorists. According to CENTCOM, on Aug. 17 alone 14 air strikes "damaged or destroyed 10 ISIL armed vehicles, seven ISIL Humvees, two ISIL armored personnel carriers, and one ISIL checkpoint."

By "the end of the second day of their ground offensive, backed by Iraqi troops and US air strikes, the Kurdish forces had wrested back control of the fragile dam and driven out militants," *The Wall Street Journal* reported.

In the short-term, ISIS forces are now faced with a choice. The fighters can continue to operate like a field army and face near-certain destruction from the air if or when the US chooses to engage them, or they can disperse and try to melt into a population that despises them. There are already signs ISIS is choosing the latter, although this makes it much more difficult for it to seize or hold territory—let alone create a new Islamic state.

A week's worth of battlefield successes enabled by US airpower do not end Iraq's problems. ISIS is "very well-organized. They are very well-equipped," Mayville noted. "They coordinate their operations. And they have thus far shown the ability to attack on multiple axes. This is not insignificant."

Within Iraq, several institutional problems must still be addressed. First, Iraqi security forces were routed by ISIS, showing they lack the quality and discipline expected of them. A renewed US training and advisory mission may be necessary.

Second, as Obama has made clear, the US will not be Iraq's air force. The US can assist, as it did in August, but self-defense is ultimately up to the Iraqis.

Third, and most importantly, the political climate in Iraq must change. A critical step took place here, too, when Prime Minister Nouri al-Maliki finally agreed to step aside after two terms and eight years in power. Maliki nurtured a harsh, majority rule government in Iraq—alienating ethnic and religious minorities and sowing the seeds of discontent that ultimately led to ISIS' incursion.

Peaceful, democratic transitions are a rarity in the Middle East, so Maliki stepping down is a huge step. For Iraq's good—and America's—the US should do everything it can to help ensure Iraq's next government is representative and inclusive.

"Americans have learned that it's harder to end wars than it is to begin them," Obama said in May. "Yet this is how wars end in the 21st century—not through signing ceremonies, but through decisive blows against our adversaries, transitions to elected governments, [and] security forces who take the lead and ultimately full responsibility."

Four months ago, Obama's words seemed a wishful-thinking declaration of victory for Afghanistan and Iraq. Now that the US has again militarily stood up for Iraq, the words have new relevance.

Lasting peace is much more likely if the US maintains influence and a presence in-country, and is willing to step up and provide military top cover. The Administration may have finally learned this in Iraq, and there is still time to secure a limited, useful, and lasting presence in Afghanistan. ■

UNIQUELY READY, MINUTE BY MINUTE.

From the inception of America's Minuteman program, Boeing has worked side by side with the United States Air Force to ensure the system's readiness. Today, Boeing brings its unique institutional expertise, innovation and an enduring commitment to modernize the Minuteman force, so it remains a safe, secure and effective deterrent.

BOEING

Letters

letters@afa.org

Seeing Red (Air)

As a longtime Active Duty Aggressor pilot and commander, I think it's important to provide some perspective and balance to the June article, "Enemies for Hire" *[p. 42].* There is no denying that "contract Red Air," as currently provided by several companies, has its place in training our Blue forces to fight against modern and diverse threats. But the claim as stated in the subtitle, "Sometimes, the best 'Red Air' comes from the private sector," should be seen as just that—"Sometimes."

Cost is but only one of the assessment variables, and while fiscal constraints make that more of a dominant factor in today's Air Force, it is only fair to consider what the Air Force aggressor (comprising Active Duty, Guard, Reserve, and GS) force brings to the table and has for the last four decades.

First, Air Force Aggressors are threat *experts* with the mission to know, teach, and replicate the threat. The "replicate" portion of that mission statement is but one part of this important mission set. These pilots and controllers have clearances and attend venues and conferences that give them information not available to the general public or contractors. These Aggressors also travel the world to teach our warfighters about threats and make them smarter and more capable as a result of that knowledge and instruction.

Second, Air Force Aggressors bring currency of experience in operational Air Force units, including large-force employment. This recency of experience is paramount to ensuring the Aggressors not only know the threat, but know the Blue forces they are fighting against in order to provide the highest fidelity training possible.

Lastly, Air Force Aggressors take their threat knowledge and experience back to the operational Air Force after their Aggressor tour and are seen as the acknowledged experts in their Blue squadrons for threat knowledge, education, and replication. This is an invaluable asset for honing the edge of combat units.

While none of these are necessarily as quantifiable as "cost," they are important factors to consider in deciding the amount of "enemy for hire" versus Aggressors. They each have their place, but they are not entirely interchangeable. Unfortunately during tight budget times, the Aggressors have understandably been bill payers but regardless of size, they have always been the keepers of knowing, teaching, and replicating the threat, something we can't afford to lose as a nation.

Col. Paul Huffman,
USAF (Ret.)
Monument, Colo.

Mr. Boyne gives the air-to-air kill ratio in Vietnam as one-to-one. Difficult to believe when the heavily wing-loaded Thud, often in an unwieldy 16-ship box

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

Air Force Association
1501 Lee Highway • Arlington, VA 22209-1198
Telephone: (703) 247-5800
Toll-free: (800) 727-3337
If you know your party's extension enter it or:
Press 1 to enter their last name.
Press 2 for Membership.
Press 3 for the Air Force Memorial Foundation
Or, stay on the line for the operator
Fax: (703) 247-5853
Internet: http://www.afa.org/

Email Addresses

Events..... **events@afa.org**
Field Services..... **field@afa.org**
Government Relations..... **grl@afa.org**
Industry Relations..... **irl@afa.org**
Insurance.....**afa.service@mercer.com**
Member Benefits.....**membership@afa.org**
Membership..... **membership@afa.org**
Communications (news media)..... **communications@afa.org**
CyberPatriot..... **info@uscyberpatriot.org**
Air Force Memorial Foundation.....**afmf@afa.org**

Magazine

Advertising..... **airforcemagsales@afa.org**
AFA National Report.....**natrep@afa.org**
Editorial Offices ..... **afmag@afa.org**
Letters to Editor Column.....**letters@afa.org**

Change of Address

Requires four weeks' notice. Please mail your magazine label and first and last name to the Membership Department at 1501 Lee Highway, Arlington, VA 22209-1198. You may also update this information under the Members Only area of our website at **www.afa.org**, by calling our Membership Department at 1-800-727-3337, or emailing **membership@afa.org**.

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.

Visit Sikorsky Booth #1123 at AFA Air & Space 2014

THAT OTHERS MAY LIVE

The next generation rescue helicopter — ensuring no one is left behind

sikorsky.com |

6451 8/14

Sikorsky
A United Technologies Company

formation and heavily bomb laden, got 27.5 MiGs (one shared with a Double-Ugly) against 22 losses for a ratio of 1.25-to-one. And most believe Dave Waldrop got two, not one. Our Weasels got credit for two on one mission, but we believe they got three. Bob Bennett got one, but was Blue Sixteen with no film in his camera, so not confirmed. One unclaimed MiG was called out by Robin Olds, "Hey, anyone over here [near Bac Ninh], a MiG-17 just went down. Who got it?" A certain MiG-hungry colonel from the 355th, some 70 miles east, shouted out, "I got it! I got it!" Could the F-4s and others have done so poorly that the overall rate dropped to one-to-one?

Lt. Col. John F. Piowaty,
USAF (Ret.)
Titusville, Fla.

Not Made in Our Image

"This War Isn't Over" *["Editorial," July, p. 4].* Maybe a better statement should be, "When Will This War Ever Be Over?" The wars in both Iraq and Afghanistan seem to defy any logical conclusion. First, we supported Iraq in their war against Iran, and likewise we supported the Taliban in their efforts to expel the Russians from their homeland. Seemingly those efforts didn't work, as we invaded Iraq twice, first to expel them from Kuwait, followed by the second invasion to destroy the weapons of mass destruction as well as their support of al Qaeda both of which proved to be incorrect.

Then it was on to Afghanistan to now destroy the Taliban whom we knew had given support and sanctuary to al Qaeda and bin Laden in their preparation for 9/11. The United States has been in the Middle East in one form or another for over 30 years and as far as I can see we have had little or no success in the establishment of stable democratic nations.

While no one, especially the military members who have fought and sacrificed in both Iraq and Afghanistan, wants to see those efforts be for naught, just how long do we stay and how much do we spend in blood and treasure before we realize we cannot by force of arms make a nation in the image of ourselves?

A couple of events brought home very vividly to me why we must find some other solutions: A few years ago I was having breakfast at the new Hong Kong airport and at the next table was a crew from Air Vietnam. As I sat there and thought of all the lives lost, and the money spent in our efforts to win a civil war, it just broke my heart. And secondly, on May 13, Army Command Sgt. Maj. Martin Barreras died as a result of wounds from enemy fire in Afghanistan. This is the same man who aided in the rescue of POW Jessica Lynch in Iraq on April 1, 2003. How can we continue to ask the military to support a conflict with no discernible conclusion?

In our country there will continue to be disagreement of when to disengage in situations like Iraq and Afghanistan. The neo-cons would have us stay forever and would keep redefining what the criteria for leaving should be. And as to the concept that our presence "will help ensure peace for both nations," I would respectfully disagree. The internal problems in both Iraq and Afghanistan bear little or no resemblance to Germany, South Korea, or Kuwait. If our objective is to defeat terrorism I submit that "boots on the ground" in what are essentially civil wars is not the answer.

Lt. Col. Hugh D. Sims,
USAF (Ret.)
Fort Myers, Fla.

Response Vs. Prevention

It's time to look at methods designed to actively sift out and/or deter sexual predators from committing crimes against the men and women in our Air Force. The laser beam targeting on sexual assault prevention ("Breaking the Sexual Assault Stalemate," July, p. 34) has not slowed the rate of assaults. Why is this not surprising? After all the pressure put on leadership and funds invested to "fix it" the reports continue to mount. The focus is not significantly deterring predatory behavior and inspiring little confidence in others via the wingman concept. Instead, USAF's program seems to be more aligned with response than prevention. So what's the problem?

It goes beyond the uniform; American culture has become such a morass of moral relativism. The cultural battle for objective moral truth has taken on a very public dimension in each scandal. However, USAF leaders are not directly saying this. I think they should. Leadership is indirectly saying it with core values, bystander intervention, ethics, and sexual assault prevention training. I still recall a phrase from the recruitment pamphlets of my era that plainly stated what America sought from her pool of citizen volunteers: "You must be of high moral character." Why have we given up on searching out that quality in our recruits?

Until we can answer that I think it will be more money, manpower, and time spent on talking the issue to death and responding to victims, with no substantial progress in reducing the crime rate. This is not helping. Leadership shouldn't just be waiting for victims to maybe come forward. They need to also be confronting the would-be predators. Predators are clearly not worried about committing their crimes, given the number. Pleading ignorance of the modus operandi of deviant sexual behavior, I can only suggest psychological profiling, which was mentioned and looks promising, as well as far greater penalties and punishments to send a message.

MSgt. Thomas Ruffing,
USAF (Ret.)
Bountiful, Utah

No A-10, *Really?*

Just how many persons are going to be killed or wounded because a less efficient aircraft is trying to do the job of the A-10 *["The A-10 and the Rescue Helicopter," July, p. 28]?*

Will the replacement be able to absorb the damage that the A-10 has proven it can absorb and still bring the pilot back?

Will the replacement have a re-engagement time equal to or less than the A-10?

C. J. Lingo
Henderson, Nev.

The A-10 was and is a great airplane. But what really makes it great are the people who maintain and operate it. I was involved with the program from the beginning. Close air support was our mission and we knew it. That's what we trained for. We didn't worry about any nuclear mission. We didn't worry about interdiction. We did just enough air-to-air to defend ourselves so we could get back to our real mission—close air support. Flexibility and responsiveness were ingrained in us. We loved it!

Multirole airplanes involve at least some compromise, but that can sometimes be overcome. Multirole crews, however, are a much greater compromise. For engaged ground forces, compromise is an uncomfortable thing.

We just don't know what the F-35 and its crews will be like. There are no F-35s ready for combat, and there won't be for several years. But our ground forces are engaged now. And even though we would like to disengage, the world seems even more dangerous and unpredictable than it did when this debate began.

Look at what the A-10 and its people have done since the Cold War ended. Do we want to be without that in the foreseeable future?

Col. John D. Smith,
USAF (Ret.)
Rose Hill, Kan.

MQ-9 Reaper

COST-EFFECTIVE MULTI-MISSION CAPABLE

- The most cost-effective and best-valued Remotely Piloted Aircraft (RPA)
- Protects friendly forces and saves lives
- Remotely piloted aircraft avoid putting aircrew in harm's way
- Over 750,000 flight hours with operational ready-rates greater than 96%
- Modular design supports multiple mission payload requirements
- Proven multi-role platform for long endurance Intelligence, Surveillance and Reconnaissance (ISR) missions

GENERAL ATOMICS AERONAUTICAL

www.ga-asi.com

Leading The Situational Awareness Revolution

Brilliance and Respect

I may have been the first officer to meet General Jones upon his arrival at 2nd Air Force headquarters *["David C. Jones," August, p. 46].* It was a Saturday in late 1968, I was completing some routine paperwork. The general appeared in civilian clothes and introduced himself as "General Dave Jones," the new commander. I immediately snapped to. He asked me a few questions about what I was doing. I told him my usual routine was to come in early Saturdays to ensure I had a clean slate for Mondays. He thanked me as he left and continued his walk around the headquarters. A golf tournament that day between the operations and maintenance directorates all but emptied the entire headquarters except for the command post.

The following Monday, General Jones held his first staff meeting. It did not go well. First the initial briefer posted golf scores from the DCO and DCM golf tournament. The general politely asked that there be no more items that did not relate to the 2nd Air Force mission. That directive came through loud and clear and [he] never again wasted his valuable time on frivolous items. The next briefer probably set the tone and established for everyone's edification the unique and powerful memory and brilliance of the general. When the briefer paraded a matrix of performance statistics across the screen, the general stopped the briefing and asked why his numbers differed from those on display in his work area. What General Jones had done is retain every number and all the statistics of all directorates just by a casual walk around the headquarters. He had placed a premium on accuracy but also proved he would never be misled by faulty statistics. I was more than impressed by how quickly he was able to enter every domain and element of his new assignment.

Not long afterward, we had a SAC IG inspection. My little corner of the world involved the accurate management and control of all highly classified documents that arrived at the headquarters. For years it had been a career buster for several officers. My team of experts were knowledgeable and performed at a high level. Unfortunately, they lacked one crucial element—a good quality control process. We worked as a team to smooth out all the glitches and, to their credit, we had a perfect inspection—as reported by the inspector, even better than the program at SAC headquarters and, perhaps, even Air Force headquarters.

Not long after the inspection, I was summoned to General Jones' office. Of course I was nervous, but reported to the general that afternoon. He was quick to point out the results of my IG inspection, but then wanted to know how people treated me as I was the only black officer assigned to his headquarters. I laid it all out, from lack of black products in the BXs and how during my numerous staff visits, black airmen and NCOs would approach me with many issues they had. I also had my own but conveyed them very briefly.

General Jones formed a Special Projects Team (SPO) composed of nine permanent members. I was so fortunate to be selected as one of the nine. We made no-notice visits to each of the 23 bases assigned to his headquarters. His direction was to immediately report to him any serious issues, even if we had to write it on an old envelope—which I did on several occasions. With his new SPO team, he sent a clear message that lax performance would not work well in his command.

Beyond these visits, I also had numerous special tasks the General assigned to me, which included sifting through huge volumes of message traffic. I often would send him stacks of messages—sometimes 200 pages or more. It only took him minutes to quickly read, retain, and return them to me.

He introduced two important concepts that I will never forget. One involved general inspection methodology, which dwelt mainly on compliance that mandated following policies. Most Air Force personnel would follow the mandates even though they intrinsically did not solve the basic issue. By introducing the management inspection policy, we began to require more thorough treatment of issues by following problems down to their root cause. This led to many changes, some even to SAC and Air Force policies. The next concept he required was cross fertilization of ideas between personnel, bases, and wings to capture and implement their best ideas across a wide spectrum.

General Jones planted the seeds of many Air Force programs now taken for granted, such as social actions and race relations training, not to mention his attention to mission. As I departed 2nd Air Force for a highly prized and special assignment, I will never forget when he told me if I encountered problems feel free to call him. I answered if I should by chance encounter issues, the problems would not be mine but the Air Force's issues. During the rest of my Air Force career, I only called him once. I commanded some 10 or so Air Force training programs. One was the first sergeants training class. Commands at the time were sending the worst of the worst to attend the course. My staff of instructors came to me to show a visible demonstration of their problems. It happened to be the drill and ceremonies module. It was awful. Some could not see, others could not hear, a few limped to the right, and others limped to the left. These anomalies caused collisions, a few falling down or marching the wrong way. Making it worse, crowds formed to witness the event.

At the time General Jones was Air Force Chief of Staff. I called his office, identified myself, and spoke to his secretary about a major issue unfolding in the first sergeants training program, not forgetting these men and women would be the mentors for thousands of young airmen throughout the Air Force. She said either she or the general would get back to me. Later that day, his secretary called and mentioned General Jones had rearranged his schedule to visit the course two weeks hence. He came, receiving one of the best, most succinct briefings I have ever heard. It was in my opinion the seed that eventually led to promoting the first sergeants class to what is now a prestigious academy, now at Air University. It also demonstrated the high level of integrity General Jones always had and his concern for both the Air Force mission and the troops.

I was very saddened to hear of his loss. He was perhaps my greatest inspiration and set the bar for what leadership is all about. His world-class brilliance and steel-trap mind were only matched by his sense of mission and respect for people under his command.

Col. Ramon C. Noches,
USAF (Ret.)
Austin, Texas

Lessons Not Learned

In your article "Air Base Defense," from July *[p. 48],* you discuss in vague terms the Air Force's efforts to deal with the evolving air base defense problem. While there are many highly capable defenders who contribute to this mission, the specific issues you highlight with regard to contingency deployments to multiple austere locations bring to mind one specific organization, the 820th Base Defense Group.

The Air Force "learned" these lessons during the early years of the

EXELIS

THE POWER OF INGENUITY

We're enabling communications in denied environments,

Making more robust jamming and defense solutions for new battlespaces,

And advancing electronic surveillance, countermeasures and decoys,

To protect U.S. and allied warfighters.

ELECTRONIC WARFARE

ENABLED BY INGENUITY.

Future battles will be fought and won in the electromagnetic spectrum – a realm where Exelis has excelled for decades. As threats and adversaries become increasingly sophisticated, we are innovating to deliver the next generation of electronic warfare. Our approach? Layered, smart solutions that adapt to changing environments and budgets. Exelis brings you multifunction and multiplatform capabilities that evolve with the mission. Our agility will enable victory.

Learn more about our full EW capabilities at **exelisinc.com/ElectronicWarfare**.

Vietnam conflict when their focus on internal security and a focus on covert threats of sabotage were found to be ineffective against the insurgents' use of well-planned and organized assaults utilizing small raiding parties supported by mortar and sometimes artillery support. By 1966, USAF realized it needed a better-trained and refocused defender force, leading to the development of the combat security police.

Trained at the US Army's Ranger School at Fort Benning [Ga.] and home stationed at Schofield Barracks, Hawaii, Operation Safeside deployed to Phu Cat Air Base in the central highlands of Vietnam as the 1041st USAF SPS (Test). Their success spawned an urgent request from headquarters, 7th Air Force, for more combat security units in theater and the unit was designated the 82nd Combat Security Police Wing on March 8, 1968.

Unfortunately, while the lessons learned by the CSP continued to influence the training and evolution of security forces throughout the Air Force, the CSP program itself (along with its unique training focus) was disbanded after the Vietnam War. Recognizing the need for a dedicated unit for air base ground defense more specifically suited for the expeditionary mission of USAF in the 1990s, Brig. Gen. Richard Coleman sought to re-establish the CSP program. His efforts would receive an unfortunate boost when a vehicle-borne improvised explosive device destroyed the Air Force barracks at Khobar Towers in Saudi Arabia.

On March 17, 1997, the 820th Security Forces Group stood up. With a focus on expeditionary base defense, the SFG inherited the unique combat training and capabilities of the original CSP. Since renamed the 820th Base Defense Group and composed of the 822nd, 823rd, and 824th base defense squadrons and enabled by the 820th Combat Operations Squadron, the 820th BDG continues to maintain a short-notice, airborne, airmobile, and air-land deployment capability in order to bring aggressive integrated base defense specialists to austere locations around the world.

Although the 820th BDG was recently recognized in an episode on the National Geographic Channel for its "outside the wire" missions, this is in fact a capability shared by all security forces units. Likewise, the contingency response groups, which provide a host of air base functions for immediate response to crisis situations, includes a rapidly deployable security element as well. The 820th BDG simply has the unique designation of being fully integrated (including 22nd Air Force specialty codes) and prepared to provide the command and control of group-sized security forces operations on a short-notice tether. By focusing solely on this mission, with no in-garrison requirements, the 820th BDG is able to maintain a razor-honed capability in response to USAF-deployed security needs.

Lt. Col. Stephen Price
Valdosta, Ga.

Flight Suits

I realize it's been a while since I was on Active Duty, but when exactly did a flight suit become daily wear? I know pilots are proud of their duty assignment, but everybody wearing flight suits as a duty uniform away from the flight line just seems tacky to me. The impetus for my letter was the photograph on p. 58 *["China Flies"]* of the July 2014 magazine, where it shows the Chief of Staff of USAF sitting next to the head of China's Air Force, sitting there in his green bag while the Chinese officer is in a uniform. Quite frankly, General Welsh looks like a bum in comparison to his counterpart. I would feel considerably underdressed if it were me in the bag, and if I were General Li, I'd feel insulted that General Welsh thought it was appropriate to wear such a "uniform" on a formal visit. I doubt that General Welsh just stepped out of his cockpit prior to the meeting. While I have no doubt that the flight suit might be more comfortable, General Welsh is the representative of the United States and should look the part, not like the lowliest loadmaster of a C-17 (not that I'm slamming the loadmaster).

James Cheney
Flagstaff, Ariz.

Use It or Lose It

Kudos to John Correll for his excellent summary of the causes and consequences of World War I *["Short Fuze to the Great War," July, p. 22].*

The Schlieffen Plan, and specifically its causal effect on The Great War, remains controversial a century later. As Correll notes, this elaborate stratagem addressed Germany's perceived two-front threat from Russia and France and the reality that it could not defeat both simultaneously. Designed around a closely choreographed movement schedule to quickly deploy forces by rail either east or west, this plan and ones of similar philosophy from the other European powers is credited by historian A. J. P. Taylor in his 1969 book, *War By Timetable,* as having forced the European powers into a mobilization race. Once initiated, the rush to mobilize caused the situation to get ahead of diplomatic efforts to defuse the crisis. The result was the catastrophe of The Great War.

For Germany, the Schlieffen Plan was a "use it or lose it" situation. If it delayed mobilizing during a crisis and its two-front rivals beat it to wartime footing, there would be no hope of prevailing. If, on the other hand, Germany chose to initiate mobilization ahead of its rivals, it had few options other than going to war if it ever hoped to achieve its grand geopolitical objectives. It chose the latter course.

Few historians of the 20th century note this "use it or lose it" link between the Schlieffen Plan and Cold War nuclear war plans—America's Single Integrated Operational Plan (SIOP) and its Soviet counterpart. Despite our best survivability and redundancy initiatives at the height of the Cold War, nuclear weapons became a "use it or lose it" proposition. Discussions of the efficacy of launch on warning and pre-emptive policy mark the apogee (or nadir, depending on your perspective) of MAD—Mutually Assured Destruction. It was an "all or nothing" game. We were lucky in October 1962. With a different roll of the dice it could have been a repeat of August 1914, only orders of magnitude more deadly.

There still are important lessons in crisis management to be gleaned from a century ago, as well as 1962, that may be useful in our future. Sadly, while we may record the lessons of war, they are not always lessons remembered.

Brig. Gen.Thomas D. Pilsch,
USAF (Ret.)
Atlanta

Hail to the Chiefs

Before receiving my commission, a relative, who retired as an O-6, told me to listen and learn from my Chief *["The New NCO Way," June, p.6].* He was right; and I followed that advice from O-1 to O-6.

In my civilian career I hired CMSgt. Bob Gaylor, spelled out the mission, and left him alone. He never failed.

I found this high standard to be held by all chiefs, especially during my military career.

When I retired they made me an honorary chief. I still have the placard and hat (both prized possessions).

Col. Gerald Moore,
USAF (Ret.)
Fort Walton Beach, Fla.

Stronger together.

Finmeccanica's North American team of nearly 8,000 employees delivers the best of American and Allied technology to enhance our defense and security. As a leader in C4ISR, sensor and data fusion, electronic warfare, aircraft integration, maritime power and propulsion, air traffic management and fixed- and rotary-wing aircraft, we provide global solutions with a local footprint.
FinmeccanicaNA.com

Stronger together.

FINMECCANICA

AgustaWestland Alenia Aermacchi DRS Technologies OTO Melara Selex Telespazio

Aperture

By John A. Tirpak, Executive Editor

Clawing back from the precipice; USAF's credibility gap; Total Force future; Flex and stretch ....

EIGHT AIN'T ENOUGH

Air Combat Command chief Gen. Gilmary Michael Hostage III said at an Air Force Association-sponsored event in July that during the height of last year's sequester-driven groundings of combat units, he had just "eight combat-ready" airplanes available if a contingency popped up in Syria, Iran, or North Korea. "That's how bad it got."

All the other combat airplanes under his command were getting spun up to go to a forward operating theater or were already in combat, Hostage said.

"We have clawed our way back out of that hole," he said, but while combat crews are once again up to combat proficiency, depot backlogs persist and Hostage is sure sequester will come again.

As for the decision to divest the A-10, USAF Chief of Staff Gen. Mark A. Welsh III said it was not solely an Air Force in-house management choice.

Speaking at a "State of the Force" press briefing July 30, Welsh said, "I asked the combatant commanders … if you had $4 billion to spend," which is what USAF will save in the near term by retiring the A-10 fleet, "would you prefer to keep the A-10 and have more [close air support] capability? Or would you prefer to buy more ISR or other things? I now have a list of 15 things they'd prefer us to spend the money on."

Air Force Secretary Deborah Lee James, at the same briefing, bristled at the notion that the service is somehow giving CAS short shrift by divesting the A-10.

"It's possible we could get into" a contingency that would require "higher levels of close air support in the next year or two or three. And if that is the case, we've got it. We've got the F-16. We've got the F-15E." Moreover, with regard to the A-10, "this was designed to be a five-year, gradual retirement plan. So it's not as though we ever suggested that the A-10 go away overnight."

USAF still hasn't crawled out of the readiness hole created by last year's budget sequester. If sequestration returns in Fiscal 2016—as existing law says it must—the Air Force will be in deep trouble again, particularly if Congress won't let USAF shape itself to be affordable, top USAF leaders warned.

In the briefing for Pentagon reporters, James said USAF will once again build a two-tiered budget for the coming year: one that spells out what "we really need" and one which, under sequester, USAF will have to "live with."

She said readiness is getting seriously shortchanged—both immediate, fight-tonight readiness and the long-term readiness of having future systems capable of defeating projected threats.

To keep funding the flying hours, operations, and maintenance necessary to stay combat-ready, USAF is reducing the ranks at an accelerated rate, bringing itself down from 330,000 airmen this year to "just 307,000," Welsh said. For just the next year, he said USAF has "already approved about 13,400 airmen for voluntary separation and over 6,000 for involuntary separation." The reductions will be made in about one year instead of the five allowed by the Pentagon, to reap the savings as fast as possible, so it is hoped, they can be plowed back into readiness.

USAF needs to get down to "a size that we can afford to train and operate," he said.

Both James and Welsh pleaded with Congress to avert sequester, saying that readiness cannot help but fall further. They also said that the personnel reductions they've programmed depend heavily on Congress permitting USAF to divest itself of the A-10 and U-2. If those actions aren't allowed, it will derail all the personnel cuts that go with them and hurt readiness that much more.

"Please don't carve money out of readiness," James said, addressing herself to Congress. That's exactly the effect, she said, if Congress requires USAF to keep the A-10 and U-2 in inventory but doesn't appropriate the money to operate them. Even if all the divestitures and force reductions requested in the Fiscal 2015 budget are approved, she said, it will take more than a year for the Air Force to undo the damage done by last year's sequester.

CREDIBILITY PLAN

The Air Force in July rolled out "America's Air Force: A Call to the Future"—dubbed Strategic Agility—its latest service vision document. While meant to take a 30-year look ahead and anticipate, conceptually, what USAF will need to be in 30 years—in terms of personnel, organization, and equipment—Strategic Agility is really a template to keep USAF focused on what's important, what's affordable, and what's believable.

James, at the July 30 "State of the Air Force" Pentagon press conference releasing the 20-page document, called it a "strategic framework" that will "help guide our long-range planning efforts."

Almost immediately, however, she described it as a way to help restore some of USAF's credibility on Capitol Hill, which she said has dwindled in recent years.

In courtesy calls on Congress, James said she hears that "the Air Force seemed to lack consistency in our policy

USAF photo by Scott M. Ash

Please, Congress: Don't hamstring readiness any further.

Gulfstream
SPECIAL**MISSIONS**

THE PLATFORM MATTERS

Special missions call for special aircraft. Gulfstream's military service record stretches nearly a half-century and is marked by versatility, reliability and performance. Gulfstream aircraft perform as trainers and transports, intelligence gatherers and medevac platforms. Today's fleet is in service to 37 countries, and Gulfstream provides more large-cabin business jets for special missions than any other aircraft manufacturer. Whatever your mission, we're ready when you are.

BUDDY SAMS | +1 703 276 9500 | GULFSTREAM.com/specialmissions

Gulfstream™
A GENERAL DYNAMICS COMPANY

choices, our resource choices. One year we would say this, another year we would say that." The new vision should "certainly help us attain better results in the consistency department." All future plans and budgeting decisions will have to keep with the overall concepts of Strategic Agility, she said.

James didn't elaborate on the issues where USAF has been perceived as inconsistent, but members of Congress have cited the service for ambiguity on remotely piloted aircraft, upgrade of legacy fighters, tactical transport, and manning levels, among others.

Welsh, sitting beside James, said the service simply can no longer afford to start projects it can't finish or waste funds creating duplicative or incompatible systems.

While the new vision looks 30 years ahead, it sets the stage for a far more detailed 20-year plan—expected to be complete at the end of the year—which will harmonize "all 12" of USAF's other roadmaps, such as for intelligence, surveillance, and reconnaissance, mobility, and air dominance, to name a few.

That, in turn, will guide development of a "10-year balanced budget," Welsh said, which will avoid new starts on which the Air Force can't follow through. No longer will USAF present unfunded priorities that appear in the sixth year—after a five-year plan—because the "need" was deferred.

"That's stupid," Welsh said.

The document is short on specifics and isn't meant either as a technology forecast or a roadmap as such. Instead, Strategic Agility declares USAF's intention to stay ahead of technology and geopolitics, which are evolving at an ever-accelerating pace.

In practical terms, it calls on USAF to embrace far greater flexibility in how it approaches its man, train, and equip functions. The mix of missions performed by the Active Duty and the reserve components, for example, will shift, so that they're done by the component that can most efficiently do them.

Shortly before the rollout, Air Force Reserve chief Lt. Gen. James "J. J." Jackson told an AFA audience that Strategic Agility would aim to achieve "the most capable Total Force at the lowest possible cost," and that one application of the philosophy would be to use Reservists for seasonal missions, such as hurricane hunting, aerial firefighting or space launch operations. The Air Force would therefore only have to pay for capability "when you use it," instead of having Active Duty members idle between operations.

WILL "TOTAL FORCE" MEAN ANYTHING?

Indeed, the idea of "Total Force" may even wither away as almost all blue-suiters are likely to spend some time in the Active Duty, Guard, and Reserve—and perhaps take some time away from the service entirely, gaining commercial-world expertise on sabbatical before returning with new skills and perspective.

Some new technologies that will profoundly affect the future force were mentioned. The Strategic Agility document cites hypersonics, nanotechnology, directed energy, unmanned systems, and autonomous systems as "game-changing technologies" that will "amplify" the unique characteristics of airpower—namely, speed, range, flexibility, and precision. These are no surprise. USAF has gone into detail about each of these technology pushes in recent years through its technology horizons roadmaps.

Welsh and James referred to Strategic Agility as the last part of a "trilogy"—the previous installments being the "who we are" document—called "America's Greatest Air Force: Powered by Airmen, Fueled by Innovation"—and the "what we do" document—called "Global Vigilance, Global Reach, Global Power for America."

This last element is the "where we need to go" piece, Welsh said.

The automation element of the plan will find practical application in answering a mandate to cut 20 percent of USAF headquarters jobs, James said.

Besides efficiency, organizational changes will be needed to "lower the cost of failure," according to the director of the effort to write the vision, Maj. Gen. David W. Allvin, USAF's director of strategic planning. In order to be more cutting edge, Allvin said, USAF will have to do more frequent experimentation and thus must make it part and parcel of innovation that some experiments will fail.

That's how "organizations learn," he said in an interview. Among many failures will be a few standout successes that will drive leaps in capability and advantage, he said, and "we can't be afraid of that." The document says the Air Force will devise ways to incentivize smart risk-taking and reward constructive failure in airmen to make it easier for good new ideas to bubble up from the lowest ranks.

Welsh has frequently said the Air Force is not good at telling its own story—a point that is called out in the new vision document. It says that the service must "clearly demonstrate its purpose and culture to a broader audience in American society," to derive necessary public support and to attract people to serve as airmen.

FLEXIBILITY, THE KEY TO AIRPOWER

James said embracing agility will help USAF avoid being locked in to certain approaches that may be ill-suited to reality.

"We never ever seem to accurately predict the future. We never get it right," she said. Institutionalizing frequent change and adaptation is the only way to be prepared for anything.

While the vision document calls for nimble plans adjustments, one of the biggest lessons learned from recent acquisition problems is that frequently shifting requirements leads to delay and cost increases. Welsh has said that any changes in requirements for the Long-Range Strike Bomber, for example, must be approved by him—and no changes have been made to those requirements in four years. The KC-46 Pegasus tanker is a fixed-price contract program, and any changes would void the fixed-price nature of the deal.

Existing programs "are what they are," James said, and their philosophies can't really be undone at this stage.

The trick will be to shape new programs so they can take advantage of evolving technology through open architectures, allowing USAF to "plug in different types of capability" and use modular formats to be able to swap out new capabilities for old. She said the upcoming T-X trainer program and a replacement for the E-8 JSTARS aircraft will embody the new approach.

Asked if it will be better to build long-lived platforms with the ability to change out their mission gear or simply speed up the rapidity with which new systems are fielded and replaced, Welsh said the future will be some of both.

Systems "we're going to keep for long periods of time because they cost a lot of money" such as fighters, tankers, bombers, and other items with a potential 50-year lifespan, "we should design for longer life," Welsh said.

However, there are "more rapid acquisition programs" such as weapons and other items with "a shorter shelf life that we know we're going to change, and ... we'll be looking for different solutions" for them. This, Welsh said, "is where agility comes in. We don't need the same process for everything." ■

FORCE MULTIPLIER

Dual Mode Brimstone® Missile

When missing is not an option™

- Combat-proven off fighter aircraft in Afghanistan & Libya
- Dual Mode mmW and SAL seeker for first pass lethality
- Anti-FIAC, Salvo capable, Reaper-proven

Visit us at AFA National '14, Booth #715

BRIMSTONEMISSILE.COM
MBDAINC.COM
@MBDAINCUSA

MBDA
MISSILE SYSTEMS

Air Force World

By Otto Kreisher, Senior Correspondent

Boeing Eating KC-46 Overrun

The Air Force won't bear any costs stemming from a previously undisclosed redesign and necessary rework of KC-46 tanker test models being built by Boeing, the service said July 24. Company CEO W. James McNerney Jr. told financial reporters the company is taking a $272 million charge against earnings in the second quarter to cover the cost of fixing a problem with wiring harnesses on test and production aircraft.

Air Force spokesman Ed Gulick said, "All costs above the $4.9 billion ceiling" on the fixed-price program "will continue to be Boeing's responsibility," and government costs "will not go up as a result" of Boeing's announcement.

McNerney said the problem is "well-understood," and the fix is being installed to keep the program "on track to the next major milestone," the first flight of the "fully provisioned tanker" near the end of the third quarter. Investors should keep in mind that Boeing sees the KC-46 as a highly profitable "$80 billion … franchise" with potential orders of 400 aircraft and "decades" of probable production and "in-service support" work, he said.

The "KC-X" program calls for 179 airplanes to be delivered by about 2027. His forecast likely includes winning both a follow-on KC-Y contest as well as export orders.

Boeing Chief Financial Officer Greg Smith had earlier told financial reporters in a July 23 teleconference that fixes to the wiring problem were "in hand," and the project was doing well overall. Aside from a need to redesign and reroute wiring harnesses, Smith said the sections of the four prototype KC-46s "came together extremely well," and the harness problem is the type of issue normally discovered during initial integration.

Bomber Request Sent to Industry

The Air Force in mid-July released its Long-Range Strike Bomber (LRS-B) request for proposals to industry, officially putting the program in the competitive phase. USAF did not disclose when proposals are due, but Air Force Secretary Deborah Lee James said in a brief statement released July 10 that the RFP will lead to a competitive selection of the prime contractor in the spring 2015 timeframe.

"The LRS-B is a top modernization priority for the Air Force," said James. "It will be an adaptable and highly capable system based upon mature technology. We look forward to industry's best efforts in supporting this critical national security capability."

Airman Awarded Silver Star

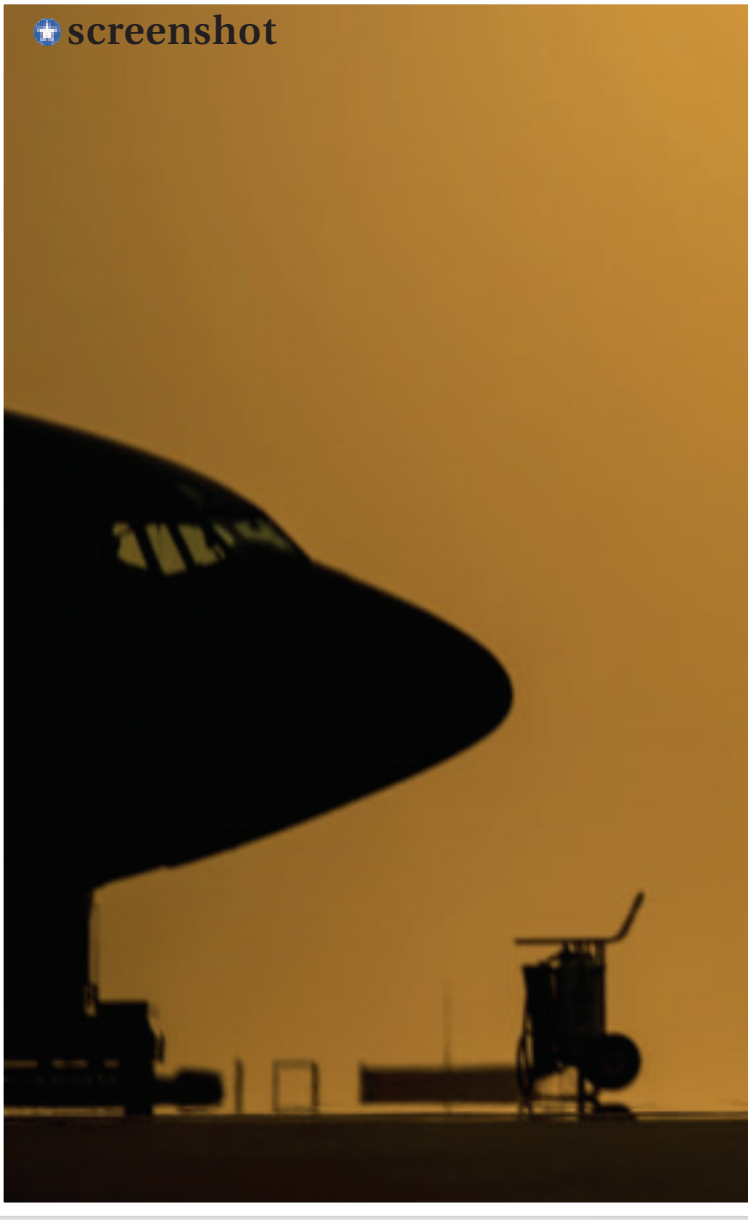
MSgt. Michael F. Sears received the Silver Star, the nation's third highest decoration for gallantry in combat, for his valor during an enemy ambush in Afghanistan in 2012. Sears is an explosive ordnance disposal technician with the New Jersey Air National Guard's 177th Fighter Wing located near Atlantic City. Brig. Gen. Michael L. Cunniff, New Jersey's adjutant general, presented Sears with the Silver Star on June 28 at the wing's headquarters.

On Sept. 29, 2012, Sears led a three-man EOD team that came under attack in Ghazni province, Afghanistan. During the two-hour firefight, Sears provided life-saving aid to a wounded Polish soldier, directed his team to return fire while exposing himself to enemy fire, and continued to fight after a rocket-propelled grenade blast temporarily knocked him unconscious, according to a wing news release. "It is just phenomenal how he just stepped out away from safety to save others," said Army Gen. Frank J. Grass, National Guard Bureau chief.

Sears credited his two colleagues that day, TSgt. Jay Hurley and SSgt. Josh Jerden, for their courage under fire. "Their actions showed what kind of team I had," he said.

Carlisle To ACC, Robinson To PACAF

The Senate on July 23 confirmed Gen. Herbert J. "Hawk" Carlisle to take over Air Combat Command and Gen. (sel.) Lori J. Robinson to replace Carlisle as Pacific Air Forces commander. Carlisle, a veteran pilot with more than 3,000 flight hours, mostly in fighters, will replace Gen. Gilmary Michael



Hostage III, who's led ACC since September 2011. Hostage plans to retire from the Air Force after 37 years of service. Carlisle has commanded PACAF since August 2012.

Robinson will be the first woman and the first non-pilot to command one of the Air Force's combat component commands. A senior battle manager with more than 900 flight hours in E-3 AWACS and E-8 JSTARS aircraft, Robinson currently is ACC's vice commander.

She will rise to the rank of general for her new assignment, making her the Air Force's second serving female four-star, along with Gen. Janet C. Wolfenbarger, head of Air Force Materiel Command.

Second Air Force Gets New Boss

Brig. Gen. Mark A. Brown assumed command of 2nd Air Force during a July 3 change of command ceremony at Keesler AFB, Miss.

Brown, who previously served as Air Force Materiel Command comptroller at Wright-Patterson AFB, Ohio, replaced Maj. Gen. Leonard A. Patrick, who has led 2nd Air Force since July 2011. Leonard now serves as vice commander of Air Education and Training Command at JBSA-Randolph, Texas.

The numbered air force "is responsible for conducting basic military and nonflying technical training for the Air Force, joint, and coalition enlisted members, and support officers," according to a June 30 news release.

New Leader Coming to 10th Air Force

Brig. Gen. Richard W. Scobee will become commander of 10th Air Force, one of Air Force Reserve Command's three numbered air forces, announced the command on July 7. He will succeed Maj. Gen. William B. Binger, who has led 10th Air Force since November 2011.

Scobee has served as the director of Air Force Reserve plans, programs, and requirements at the Pentagon since October 2013.

Headquartered at NAS JRB Fort Worth, Texas, 10th Air Force oversees AFRC's cyber, space, special operations, strike, and intelligence, surveillance, and reconnaissance assets.

Heithold Becomes Air Force's Top Commando

Lt. Gen. Bradley A. Heithold assumed command of Air Force Special Operations Command in a July 3 ceremony at Hurlburt Field, Fla. He replaced Lt. Gen. Eric E. Fiel, who led the organization since June 2011.

08.11.2014

The crew of a KC-135 tanker belonging to the 340th Expeditionary Air Refueling Squadron—Capt. Andrea Delosreyes at right, with Capt. Trent Parker and A1C Kevin Haggith—step to their aircraft before a refueling mission over Iraq.

USAF photo by SSgt. Vernon Young Jr.

USAF photo by A1C Rebecca Imwalle

A Panama Chat: ***A 96th Bomb Squadron B-52 is readied for takeoff at Ellsworth AFB, S.D., Aug. 11. The Air Force Global Strike Command airmen were participating in PANAMAX 2014, an annual exercise hosted by US Southern Command that focuses on the protection of the Panama Canal zone. The US and 17 partner nations participate in the exercise, which provides interoperability training for USAF airmen and allied nations' aircrews.***

"I'm fortunate to take a command that's in the shape that it is," said Heithold. He noted that AFSOC has the best readiness posture it's ever had.

Air Force Chief of Staff Gen. Mark A. Welsh III presided over the ceremony. Navy Adm. William H. McRaven, head of US Special Operations Command, also participated.

Heithold took the helm of AFSOC, which comprises some 19,000 airmen, after three years as SOCOM's vice commander.

"Brad, your new command is now globally postured, and the air commandos of AFSOC will never, ever let you down," said Fiel, who is retiring from the Air Force, effective Sept. 1, following 33 years of service. McRaven credited Fiel with transforming "AFSOC and its magnificent air commandos to meet the demands of the 21st century."

Leaders Boost F-35 Despite Engine Fire

Although the triservice F-35 fleet continued to fly under restricted flight rules more than a month after the damaging engine fire on an Air Force F-35A at Eglin AFB, Fla., Chief of Staff Gen. Mark A. Welsh III strongly defended the fighter and insisted the fire would not be a showstopper for the crucial program. In a July 30 Pentagon briefing, Welsh said a thorough inspection of all the F-35s indicated the problem causing the fire in the Pratt & Whitney engine was unique to that aircraft.

Although the Air Force F-35s will continue the restricted flights until the root cause of the fire is identified, Welsh said he did not believe the incident would affect the F-35A's reaching its planned initial operational capability in late 2016. And he said the Lightning II was "the only answer" for the Air Force's future fighter force.

The F-35 also received support from Defense Secretary Chuck Hagel who praised the fighter during a visit to Eglin in late July. Although he acknowledged there "are issues" with the F-35, Hagel said, "I don't know of a platform that we've ever had" that made it into operational service without going through "issues."

Nuclear Career Fields Plus-Up

The Air Force will inject 1,100 additional airmen into eight key nuclear career specialties this fall to bring them up to full manning and alleviate strain on the force. These crucially undermanned roles are "principally in the field," Air Force Secretary Deborah Lee James said when she first announced the initiative in June.

The career fields impacted include security forces, nuclear weapons, aircraft armaments, bomber maintenance, ICBM electronic and systems maintenance, missile alert facility maintenance, and command post controllers, Air Force spokesman Maj. Eric Badger told *Air Force Magazine* on July 10.

"When you're undermanned that means the existing people have to work harder and that impacts morale and it could impact other things as well," said James during a June 18 breakfast meeting with reporters in Washington, D.C. The Air Force exempted nuclear career fields from current force reduction measures and initiatives to increase manning across the nuclear mission, James said.

Together, we can upgrade the parts that fly the plane that fights the fight that wins the war that saves the world.

That's right, upgrade — not repair. Only Parker can design Parker products to keep aircraft flying and fighting affordably.

Our reliability-centered maintenance programs provide cost-effective improvements and retrofits, upgrading products to higher standards and delivering heroic performance. It's a focus that's enhanced by partnerships with repair depots to help optimize reliability and availability while minimizing total life-cycle costs.

The bottom line? Our innovative service programs meet today's military directive to do more for less. Call us at **(949) 809-8100** or visit **www.parker.com** to learn more.

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Visit us at the **AFA Air & Space Conference and Technology Expo, Booth 509.**

Parker Aerospace

ENGINEERING YOUR SUCCESS.
www.parker.com

Sub for Russian RD-180 Sought

Although the Russians have not acted on their threat to stop deliveries of the RD-180 engines that are used in many US military and commercial space launches, the threat has triggered action by the Air Force and Congress to reduce the dependency on the rocket motor.

Air Force Secretary Deborah Lee James said July 30 she expects the service to announce changes to its space launch procurement program later this year. "We are heavily reliant" on the RD-180 engine, James said, "and our desire is to get off of that reliance."

A senior Russian official had warned that Moscow would withhold the powerful RD-180 in response to the economic sanctions imposed by the United States and the European Union over Russia's aggression in Ukraine.

The Air Force is working through both near-term and long-term options, said James, to include possibly speeding up purchases of the US-produced Delta V program, even though that could mean incurring greater costs.

Earlier in July, Gen. William L. Shelton, then commander of Air Force Space Command, said he did not expect any changes to the current launch schedule despite uncertainty surrounding the supply of the RD-180 engine, which powers United Launch Alliance rockets. The US has a stockpile of 15 of the Russian heavy-lift engines, and ULA is expecting delivery of two more this month, followed by another three in October, Shelton told Pentagon reporters.

If there were an interruption of the supply or they were told they could not use those engines for national security space missions, the financial impact would be between $1.5 billion and $5 billion, depending on the scenario, he said. The range really comes down to satellite storage cost and whether a more expensive booster would be required.

Headquarters Realignment and Cuts

Making good on promises the service would realign its headquarters, major command, and numbered air force organizations, USAF announced changes July 14 that it projects will save $1.6 billion over the next five years.

"We are aggressively pursuing reductions within the first year, rather than spread them out over five years as allowed by DOD," said Air Force Secretary Deborah Lee James. "It's better for airmen because it provides them predictability and allows us to restabilize our workforce sooner. It also allows us to harvest the savings earlier so that we can plow it back into readiness and some of our key modernization programs."

As part of that effort, James said the Air Force would eliminate 3,459 positions in headquarters in response to the Defense Department's directive to reduce costs and staff levels by at least 20 percent. Acting Deputy Chief Management Officer William H. Booth Sr. said the reductions would allow the Air Force to bolster personnel at the wing levels and maintain optimal readiness.

To help with the headquarters cuts, the Air Force is offering voluntary early retirement authority and voluntary separation incentive pay to civilian personnel.

Another of the initiatives will split the operations, plans, and requirements office on the Air Staff (A3/5), and merge planning functions with strategic plans and programs (A8). The A3 operations office will stand alone, and planners will be consolidated in a new A5/8 office. Programming duties performed by A8 will be sent to the service's financial management organization. The new A5/8 will be responsible for developing, managing, and constantly assessing USAF's strategy, while the finances will be in another organization. This will allow USAF to move forward on long-range goals, despite short-term budgeting challenges.

Bird Strikes Caused Fatal HH-60 Crash

Multiple bird strikes caused the fatal HH-60 Pave Hawk crash on the Norfolk coast of England back in January, US Air Forces in Europe-Air Forces Africa investigators determined.

The flight of two HH-60s diverted over a marsh area to avoid populated areas during a night search training mission from RAF Lakenheath, England, Jan. 7. The helicopters startled a flock of geese, several of which took flight and crashed through the Pave Hawk's windscreen and cabin, knocking the pilot, copilot, and gunner unconscious, according to the aircraft accident investigation, released July 8.

"The types of geese that hit the [Pave Hawk] weigh between six and 12 pounds," states the report. "A bird weighing 7.5 pounds would impact with 53 times the kinetic energy of a baseball moving at 100 miles per hour. The impact from the geese exceeded the design tolerance of the [mishap aircraft's] windscreen."

The impact also disabled the helo's flight-path stabilization system, allowing the HH-60 to roll left, stall the rotors, and impact the ground, killing all four crew members. The crash caused minimal damage to civilian property, but accident investigators pegged the loss of government property at an estimated $40.3 million.

Pave Hawk serial No. 88-26109 was assigned to the 56th Rescue Squadron at Lakenheath.

Last *Enola Gay* Crew Member Dies

The last surviving crew member of the *Enola Gay,* the B-29 Superfortress that dropped the atomic bomb on Hiroshima, Japan, to hasten the end of World War II, has died. Retired Maj. Theodore Van Kirk died July 28 at a nursing home in Stone Mountain, Ga. He was 93.

Van Kirk, known as "Dutch," was the navigator in the *Enola Gay* crew, led by Col. Paul W. Tibbets Jr., who commanded the 509th Composite Bomb Group, formed to conduct the atomic bomb missions. Flying from an airfield on the captured Japanese island of Tinian, the crew dropped the 9,000-pound weapon, called "Little Boy," over Hiroshima early on Aug. 6, 1945. Three days later, another B-29 from the 509th dropped a second atomic bomb on Nagasaki. Japan surrendered Aug. 15.

Crafted in Switzerland

PC-12 NG

PILATUS

75 YEARS 1939 - 2014

THE SPECIAL MISSIONS PLATFORM THAT REALLY *IS* SPECIAL.

It's the most capable and cost effective multi-mission platform in the sky. Switch quickly from nine-passenger transport, to cargo, medevac, and even ISR roles. Combine long loiter and high-speed dash capabilities with low acquisition and operating costs, and you get a compelling multi-role aircraft that is the definition of "mission fit." Call today to learn more about what makes the PC-12 NG so special for just about any mission.

Pilatus Business Aircraft Ltd · +1.303.465.9099 · www.pilatus-aircraft.com

USAF photo by SSgt. Vernon Young Jr.

To the Mountaintop: *SSgt. Daniel Leavindofske and SrA. David Babcock help load 28,224 halal meals onto a C-17 for a humanitarian mission over the Mount Sinjar region of Iraq on Aug. 9. The humanitarian aid includes bottled water and was delivered to members of an Iraqi religious minority who had fled to the mountaintop to avoid attacks from ISIS militants.*

Van Kirk always supported the atomic bombings for avoiding an invasion of Japan that could have killed hundreds of thousands of allied troops and Japanese.

Confused Predator

Investigators determined that a coolant leak, which led to a digital control system error, caused the loss of the MQ-1B Predator that ditched in the Mediterranean Sea on Jan 17, Air Combat Command officials announced on July 10.

The remotely piloted aircraft was airborne for 10 hours before spiking a high engine temperature, causing a loss of thrust and uncommanded descent from 14,000 feet, according to the accident investigation's executive summary.

The RPA operator diverted the Predator to the nearest available airfield, consulted with an instructor pilot, and conducted proper troubleshooting procedures. A loss of engine coolant then exposed a temperature sensor to the ambient air, causing the aircraft's computer to misinterpret the condition as a cold-start and override pilot commands.

The digital control increased and enriched the fuel flow, forcing the crew to guide the RPA to a forced landing at sea. Loss of the RPA and mission equipment is estimated at $4.6 million, according to the accident investigation report.

Sabbatical From Service Offered

Air Force officials announced plans to allow up to 40 Active Duty, Air National Guard, and Reserve personnel to take from one-to-three years of partially paid time out of uniform to focus on other personal or professional purposes, under the congressionally authorized Career Intermission Pilot Program. The program allows officers and enlisted airmen who meet the specified eligibility requirements to take a sabbatical from service and then return seamlessly to duty, according to a July 30 news release.

"This program offers a few high performing airmen the opportunity to focus on priorities outside of their military careers without having to choose between competing priorities," said Chief of Staff Gen. Mark A. Welsh III. Applications will be accepted through Oct. 15, and a Total Force selection board will meet Nov. 12 to pick 20 officers and 20 enlisted airmen for the intermission.

"This is a first for the Total Force," said Air Force Secretary Deborah Lee James. "We've been working together for a couple of years to develop common personnel practices and implement tools used by each component, but this panel represents our first opportunity to truly assess our airmen, whatever their component, as equal members of the Total Force."

By the Numbers

100

The number of Minuteman III missile silos destroyed under the New Strategic Arms Reduction Treaty, with three to go to meet the treaty limit of 1,550 deployed US nuclear warheads.

CMC's Cockpit 4000 NexGen

Your Complete Avionics Solution

Unlimited Mission Flexibility for Military Aircraft

- CMC's adaptable avionics solutions offer flexibility and long-term cost savings
- Open mission system architecture
- Smart 20" x 8" large area display with touchscreen
- Low-profile Digital HUD

Please visit us at the Air and Space Conference
Booth 616

Over 100 Years of Innovation

Esterline CMC Electronics

MONTREAL • OTTAWA • CHICAGO www.cmcelectronics.us

The War on Terrorism

Operation Enduring Freedom

Casualties

As of Aug. 20, a total of 2,340 Americans have died in Operation Enduring Freedom. The total includes 2,337 troops and three Department of Defense civilians. Of those deaths, 1,833 were killed in action with the enemy and 507 died in noncombat incidents.

There have been 19,952 troops wounded in action.

New ISAF Commander Confirmed

The Senate confirmed in July the nomination of Army Gen. John F. Campbell to become the next commander of the International Security Assistance Force and US Forces in Afghanistan. Campbell, the Army vice chief of staff, replaces Marine Corps Gen. Joseph F. Dunford Jr., who was confirmed to become the next Marine Corps Commandant. He replaces Gen. James F. Amos, whose four-year tour will end in October. The timing of the transition in Kabul has not been set.

During their confirmation hearings before the Senate Armed Services Committee, both Dunford and Campbell supported President Obama's plan to reduce US forces to 9,800 next year and expressed confidence in the ability of the Afghan security forces to defeat the Taliban insurgency while US and coalition troops pull back to advising, assisting, and training roles.

Dunford also countered the opposition of Republicans on the committee to the US purchase of Russian-made Mi-17 helicopters for the Afghan Air Force. Dunford said the helicopters, which the Afghans are familiar with, will be crucial to the capabilities of the Afghan special mission wing. And, he added, that unit will play a key part in the force protection of the residual US troops.

US Continues Drawdown, Dismantles Bases

As US forces continue their drawdown to a train-and-assist force of 9,800 next year, they are aggressively dismantling bases and shredding for scrap or selling at enormous discounts billions of dollars worth of vehicles and equipment that are worn out or considered excess and too expensive to ship back to the United States. American commanders reported by the end of July they had reduced their infrastructure from about 800 bases and outposts in 2011 to less than 60 and plan to take it down even further by the end of the year.

Among the equipment being reduced to scrap are dozens of the mine-resistant, ambush-protected (MRAP) vehicles purchased to save US troops from deadly improvised explosive devices. A few of the MRAPs were transferred to allies that would pay to ship them out of Afghanistan and some to the Afghan security forces.

Getting equipment out of land-locked Afghanistan with its primitive transportation network is much more difficult and expensive than it was removing gear from Iraq, which had a good highway system and easy access to ports and supply bases in Kuwait.

Read more in the September 2013 article "Afghanistan in Retrograde" at www.airforcemag.com.

More Fighters to PACOM

A theater security package of F-15E Strike Eagles deployed to South Korea in early August, while other USAF fighters shifted to a new deployment in Australia.

Twelve F-15Es from the 366th Fighter Wing at Mountain Home AFB, Idaho, and support personnel left for Osan AB, South Korea, on Aug. 1 to participate with their Republic of Korea counterparts and allies in exercises and other training.

Sneak Peek: ***The first KC-46 Pegasus on the assembly line at Boeing's Everett factory outside of Seattle. The aircraft—767-2C—is a provisioned freighter that will eventually be finished as a KC-46. It has a baseline nonmilitary aircraft body but an enhanced flight deck, body tanks, tanker systems provisions, and a refueling boom. Next up for the assembly line is a fully provisioned KC-46 tanker, with refueling systems and military avionics. It will be given military certification.***

Photo by Sagar Pathak

COMBAT · HUMANITARIAN · LOGISTICS · RESCUE · **SPECIAL OPS** · REFUELING

Around the globe, V-22 Ospreys are making a critical difference for Special Operations Forces—executing long-range infiltration, exfiltration and resupply missions unachievable with conventional rotorcraft. The tiltrotor's unique blend of high speed, long range, survivability and helicopter flexibility has made it the platform of choice, providing a special edge for SOF operators.

Bell Helicopter®
A Textron Company

BOEING

Senior Staff Changes

RETIREMENTS: Gen. William L. **Shelton,** Lt. Gen. Eric E. **Fiel.**

PROMOTIONS: To Lieutenant General: James K. **McLaughlin. To Brigadier General:** Walter J. **Lindsley.**

CONFIRMATIONS: To be General: Herbert J. **Carlisle,** Lori J. **Robinson. To be Major General:** Mark A. **Brown,** Roger W. **Teague. To be Brigadier General:** Lee E. **Payne,** Ricky N. **Rupp. To be ANG Brigadier General:** Clarence **Ervin.**

NOMINATIONS: To be Lieutenant General: Steven L. **Kwast,** Terrence J. **O'Shaughnessy.**

CHANGES: Gen. Herbert J. **Carlisle,** from Cmdr., PACAF, JB Pearl Harbor-Hickam, Hawaii, to Cmdr., ACC, JB Langley-Eustis, Va. ... Gen. John E. **Hyten,** from Vice Cmdr., AFSPC, Peterson AFB, Colo., to Cmdr., AFSPC, Peterson AFB, Colo. ... Lt. Gen. (sel.) Terrence J. **O'Shaughnessy,** from Dir., Ops, PACOM, Camp H. M. Smith, Hawaii, to Cmdr., 7th AF, Osan AB, South Korea ... Lt. Gen. (sel.) Steven L. **Kwast,** from Vice Cmdr., Air University, AETC, Maxwell AFB, Ala., to Cmdr., Air University, AETC, Maxwell AFB, Ala. ... Gen. (sel.) Lori J. **Robinson,** from Vice Cmdr., ACC, JB Langley-Eustis, Va., to Cmdr., PACAF, JB Pearl Harbor-Hickam, Hawaii ... Brig. Gen. Richard W. **Scobee,** from Dir., Plans, P&R, USAF, Pentagon, to Cmdr., 10th AF, NAS JRB Fort Worth, Texas.

COMMAND CHIEF RETIREMENT: CMSgt. Richard A. **Parsons.**

SENIOR EXECUTIVE SERVICE CHANGE: Lisa **Disbrow,** to Asst. SECAF, Financial Mgmt., Pentagon. ▪

Index to Advertisers

In addition, an earlier TSP package of Air Guard F-16s deployed to Kunsan AB, South Korea, redeployed to Royal Australian Air Force Base Tindal, Australia, to participate in multilateral training events.

Agreement Reached on VA Reform Bill

Sen. Bernie Sanders (I-Vt.) and Rep. Jeff Miller (R-Fla.), the heads of the Senate and House Veterans' Affairs committees, respectively, announced on July 28 that House and Senate conferees have agreed on VA reform legislation.

"This bill makes certain that we address the immediate crisis of veterans being forced onto long waiting lists for health care," said Sanders in a statement. "It strengthens the VA so that it will be able to hire the doctors, nurses, and medical personnel it needs so we can permanently put an end to the long waiting lists."

Veterans' health care needs should be considered a cost of war and funded as emergency spending, said Sanders. To that end, the bill contains $15 billion in emergency spending, including $10 billion for enabling veterans who live more than 40 miles away from a VA facility to seek outside care and $5 billion for hiring more doctors and staff and for upgrades at existing VA facilities. Among its other provisions, the bill promises to improve delivery of care for those who experienced sexual trauma while in uniform and extends housing for veterans struggling with traumatic brain injury. ■

Force Cuts Blocked, Pay Raise Limited

The Senate Appropriations Committee July 17 approved a $489.6 billion Fiscal 2015 defense funding bill that supports most of the Air Force's top procurement requests, but rejects the service's request to retire the A-10 fleet.

The Senate joined the House in approving procurement of the requested 26 F-35As, seven KC-46A tankers, 13 C-130Js, and 12 MQ-9 Reaper remotely piloted aircraft. But the Senate panel refused to allow the Air Force to retire the A-10s, shifting $338 million from "lower priority" accounts to A-10 operations. It also barred retirement of any of the 31 E-3 AWACS.

The Senate committee accepted the Air Force's proposal to cut 12,000 Active Duty airmen and 4,000 Reservists, but does not cut any personnel from the Air National Guard.

The Senate bill holds the military pay raise at one percent, slows the growth of the basic allowance for housing (BAH), and continues the Air Force's personnel reductions. However, it balked at reducing support for military commissaries and requiring higher contributions for Tricare health coverage.

The appropriations panel accepted the Pentagon's request to provide a smaller pay raise than the 1.8 percent the standard formula calls for and a lower BAH increase as part of the effort to slow the rapidly rising cost of military compensation. The House, however, provided the higher pay raise, meaning the issue will have to be compromised. Both chambers agreed to freeze pay for generals and admirals.

Despite the panel's unanimous vote late July 17, committee leaders expressed doubt the bill would get a hearing on the Senate floor before the new fiscal year begins Oct. 1. Congress recessed for six weeks on July 31 and will be in session only a couple weeks in September before going home again to campaign for re-election.

You served for us, now let us serve YOU.

Serious illness and accidents can happen, anywhere.

Are you prepared?

MASA ASSIST

will take care of you.

MASA Assist is dedicated to providing its members with lifesaving emergency transportation and assistance while they are at home, on the job, or traveling the world.

A MASA Assist Membership Includes:

- Emergency Air Transportation
- Helicopter Transportation
- Return Transportation
- Ground Ambulance Transportation
- Organ Recipient Transportation
- Recuperation/Repatriation
- Non-Injury Transportation
- Minor Children Return
- Vehicle Return
- And much, much more!

Apply today!

www.MASAassist.com/AFA • 1-800-423-3226

★ ★ ★ ★ ★

For every MASA enrollment by an AFA member, MASA Assist will donate $50 to AFA's Wounded Airman program.

Verbatim

verbatim@afa.org

By Robert S. Dudney

How's That Reset Going?

"I think it's [the danger of a Russian invasion of Ukraine] a reality. Of course it is. When you see the buildup of Russian troops and the sophistication of those troops, the training of those troops, the heavy military equipment that's being put along that border, of course it's a reality and it's a threat and it's a possibility. Absolutely. ... And the longer that Russia perpetuates and instigates this tension and the possibility of escalating their activity, it's going to get worse. And we have to be prepared for that."***—Secretary of Defense Chuck Hagel, on Moscow's massing of 20,000 troops east of Ukraine, remarks to reporters in Germany, Aug. 6.***

The Fire Next Time

"You've got a Russian government that has made the conscious decision to use its military force inside of another sovereign nation to achieve its objectives. ... They [Russians] clearly are on a path to assert themselves differently, not just in Eastern Europe, but in Europe in the main and toward the United States. ... I think this is very clearly Putin, the man himself, with a vision for Europe, as he sees it, for ... what he considers to be an effort to redress grievances that were burdened upon Russia after the fall of the Soviet Union, and also to appeal to ethnic Russian enclaves across Eastern Europe. ... He's very aggressive about it. And he's got a ... playbook that has worked for him now two or three times. And he will continue to use it. ... If I have a fear about this, it's that Putin may actually light a fire that he loses control of. ... These ethnic enclaves, there's a rising tide of nationalism. And nationalism can be a very dangerous instinct and impulse. There's a rising tide of nationalism in Europe right now that has been created in many ways by these Russian activities—that I find to be quite dangerous. ... We're looking inside of our own readiness models to look at things we haven't had to look at for 20 years, frankly, about basing and lines of communication and sealanes."***—Army Gen. Martin E. Dempsey, Chairman of Joint Chiefs of Staff, remarks of Aspen Security Forum in Aspen, Colo., July 24.***

Kievian Understatement

"They [two Ukraine air force Su-25 ground-attack fighters] were shot down very professionally. The terrorists do not have such professionals."***—Ukraine spokesman Andriy Lysenko, heavily implying that Russian troops, rather than Ukrainian rebels ("the terrorists"), were responsible for the shootdowns, Reuters dispatch, July 23.***

If Russia Balks ...

"If you consider space a national security priority, then you absolutely have to consider assured access to space a national security priority. Given that we have a vulnerability here, it's time to close that hole. ... It is dire [if Russia refuses to sell the US its RD-180 rocket engines for US Atlas rockets]."***—Gen. William L. Shelton, commander of Air Force Space Command, remarks to Senate panel, July 16.***

Shave and a Haircut

"We will not be able to afford all of the programs that we're even doing right now if we go into sequestration the next year and that continues. That's a fact. ... We're not looking to kill programs, but we really need to shave, I think, about as much as you can off the edge. ... It's hard to argue that you might be able to get more money the next year. ... It's going to be just as hard the following year."***—Darlene J. Costello, senior DOD acquisition official, remarks to National Defense Industrial Association audience, July 23.***

Grok, Rattle, and Roll

"Smart refrigerators [run by tiny computers] have been used in distributed denial of service attacks. ... Smart fluorescent LEDs [light-emitting diodes] that are communicating that they need to be replaced ... are also being hijacked for other things. ... The merger of physical and virtual is really where it's at. If we don't grok that, then we've got huge problems."***—Dawn C. Meyerriecks, deputy CIA director for science and technology, Aspen Security Forum, July 24. "Grok" is a sci-fi term for comprehensive understanding on many levels.***

Lost Generation

"Afghanistan and Iraq involved a huge budget surge, but all of it went to personnel, logistics, and systems that have no application in a conflict with a peer adversary. Ships, aircraft, surveillance systems, and other tools that a superpower needs were given a very low priority. In short, we skipped a defense budget cycle in order to pay for a giant nation-building and counterinsurgency exercise."***—Richard L. Aboulafia, Teal Group aircraft analyst, quoted in*** **USA Today,** ***July 23.***

Vickers on Terror ...

"Syria is probably the No. 1 threat—with threats out of Yemen—to the American homeland right now and elsewhere in the west. ... Foreign fighters who are Western passport holders—including Americans, a subset of that—number in the four digits."***—Michael G. Vickers, undersecretary of defense, remarks to Aspen Security Forum in Aspen, Colo., July 24.***

... and Clapper on Terror

"The terrorist threat to the United States is still very, very real. ... The terrorist threat is not diminishing. It is spreading. ... As a nation, in ... my opinion, [we] are accepting more risk than we were three years ago or even one year ago."***—Retired USAF Lt. Gen. James R. Clapper, director of national intelligence, remarks to the National Press Club, July 22.***

The Chief Stands Up

"[I am] very happy with the ethical fabric of the United States Air Force. ... Do we have incidents? Absolutely. Any organization with almost 700,000 people is going to have incidents. But we do not have an epidemic of bad ethical behavior by people across the Air Force. If you look at the numbers, that's simply not the case. ... I don't think it existed. There's a big difference between an endemic or systemic problem and bad behavior by individuals. There's a big difference."***—Gen. Mark A. Welsh III, USAF Chief of Staff, interview,*** **USA Today,** ***July 25.***

RECONFIGURE YOUR THINKING ABOUT AIRBORNE ISR.

The Reconfigurable Airborne Multi-Intelligence System (RAMIS) is the newest member of Boeing's family of long-endurance, multi-intelligence aircraft. Utilizing a proven, FAA-certified, highly efficient platform, RAMIS features a fully integrated suite of sensors that are easily reconfigurable for a wide range of intelligence, surveillance and reconnaissance missions. The result is a highly capable airborne multi-intelligence solution delivering superior flexibility and asset optimization.

BOEING

A Polish F-16 pulls up to a KC-135 from the 100th Air Refueling Wing at RAF Mildenhall, England, to refuel on June 17, 2014. The tanker, which was deployed to Powidz AB, Poland, was supporting the US and Polish bilateral exercise Eagle Talon, as well as the US Navy-led Baltops 2014 exercise.

Staff photo by Amy McCullough

LOOKING EAST

By Amy McCullough, News Editor

US Air Forces in Europe is much smaller than it was in the Cold War, but it is once again compelled to look toward Russia.

IN the 23 years since the Cold War ended, the Air Force mission and force structure in Europe has undergone profound changes. This fact is lost on many Stateside, according to many US airmen in Europe.

The European mission has shifted, to increase focus on new NATO members and to support the war in Afghanistan, but this summer's upheaval in Ukraine is causing the Air Force to once again size up its old adversary, Russia.

Lt. Gen. Noel T. "Tom" Jones, vice commander of US Air Forces in Europe-Air Forces Africa (USAFE-AFAFRICA), said he's been shocked by the changes between what he experienced as an F-16 pilot at Torrejon AB, Spain, from 1985 to 1988 and the command he helps lead today.

"I was a little embarrassed of my own misunderstanding of life here in Europe," Jones told *Air Force Magazine* at Ramstein AB, Germany, in June. "I hadn't been assigned here between '88 and 2012," he said, and he assumed things were much as they always had been. Jones doesn't think he's alone in that misperception.

"My sincere belief is many of our leaders, military and elected," also don't realize that USAFE is no longer like it was in the 1990s, when there was "all kinds of infrastructure, … airplanes, … [and] people over here."

In fact, the number of USAF main operating bases in Europe—as well as the number of aircraft and aircraft squadrons in theater—has fallen by about 75 percent since the 1990s, while the

USAF photo by SSgt. R.J. Biermann

Staff photo by Amy McCullough

USAF photo

USAF photo

Above: USAF C-130J aircraft take off from Aviano AB, Italy, carrying 150 US soldiers to joint NATO training in Poland. Left: SSgt. Ross Blumer, a maintainer from the 52nd Maintenance Group at Spangdahlem AB, Germany, cannibalizes an F-16 at Lask AB, Poland, on June 16, 2014. Maintainers pulled spare parts from the aircraft to keep the rest of the F-16 fleet in flying shape during exercises Eagle Talon and Baltops. Below left: Lt. Gen. Noel Jones, vice commander of USAFE-AFAFRICA, speaks at a D-Day celebration in France in April. Jones says he's been surprised by the changes in the European area of responsibility since his tour at Torrejon AB, Spain, in the mid-1980s, when it was a much larger enterprise.

number of Air Force personnel assigned to the command has dropped about 55 percent during the same period.

During the Cold War, US Air Forces in Europe supported a single combatant command. It comprised four separate staffs, including a headquarters and three numbered air forces. There were 25 main operating bases, at which some 72,000 Air Force personnel were assigned. There also were 805 aircraft assigned to 34 aircraft squadrons. There was no Africa Command then.

Today, there are some 34,000 Air Force personnel assigned to USAFE-AFAFRICA, with just 204 aircraft and 10 aircraft squadrons. They support two combatant commands with a single integrated staff, including a headquarters and just one numbered air force. The 16th Air Force and 17th Air Force are now inactive.

The evolution of the 52nd Fighter Wing at Spangdahlem AB, Germany, is a textbook example of the changing European mission and force structure. In the mid-1990s, the 52nd reconfigured its fighter squadrons, assigning F-16s to

Got LPV?

Meet the 2020 Mandate

with CMC's Certified ADS-B Out/LPV Solution

CMA-5024 GPS Landing System Sensor

CMA-5025 Control Panel

- Fully compliant with the 2020 ADS-B Mandate
- Certified CAT-1 LPV solution
- Easy to integrate on helicopters, transport, trainer and fighter aircraft
- Affordable, best value solution that meets your operational requirements

Please visit us at the Air and Space Conference
Booth 616

Over 100 Years of Innovation

Esterline CMC Electronics

MONTREAL • OTTAWA • CHICAGO www.cmcelectronics.us

the 22nd and the 23rd fighter squadrons and A-10s to the 81st Fighter Squadron.

Then, the Air Force announced plans to divest 254 legacy fighters, including 21 Block 50 F-16s at Spangdahlem. By August 2010, the 22nd and 23rd were inactivated, and the F-16 mission was consolidated under the reconstituted 480th Fighter Squadron. It became the sole Air Force F-16 squadron in Europe with a dedicated mission of suppression of enemy air defenses (SEAD).

The wing underwent another major change in June 2013, when it furled the 81st Fighter Squadron's flag, marking an end to the unit's 71-year history. A total of 21 A-10s were relocated to Moody AFB, Ga., as a result of Fiscal 2013 force structure changes approved by Congress. While the A-10 was conceived to destroy vast numbers of Soviet tanks in Europe should the Cold War turn hot, there are no more Warthogs permanently assigned to Europe. The last A-10s left Spangdahlem on May 17, 2013, and the squadron was inactivated a month later.

"We are trying to be as ready as we … can be. It doesn't matter that we have a large force here in Europe, but the fact that we can continue to train with our allies and continue to build partnerships and partner capacity is really key," said Col. Lars R. Hubert, then acting commander of the 52nd Fighter Wing, in June. "You're opening up the doors. You're building the capacity, not necessarily with a large force, but with a small force, and large forces could roll in behind that."

That's the philosophy behind the aviation detachment at Lask AB, Poland, located about 100 miles southwest of Warsaw. The geographically separated unit, which reports to the 52nd Fighter Wing, represents the first regular presence of US forces in Poland. It is a "proof of concept" of the benefits a small force can bring to partner nations, detachment commander Maj. Matthew Spears said in June. The detachment stood up in November 2012 to strengthen the US-Polish relationship through regular joint training exercises and rotational deployments.

At Lask, there are 10 Active Duty airmen from a variety of specialties assigned, including a three-man officer corps. It comprises Spears, who is an F-16 instructor pilot; the director of operations, who is a C-130 pilot; and the maintenance officer in charge, whose expertise is in F-16s.

There also are seven enlisted members, including an F-16 crew chief, an aerospace ground equipment specialist, a cyber transport specialist, a client systems specialist, a contracting officer, a logistics planner, and a material management specialist.

Together they work around the clock, mostly behind the scenes, to ensure that USAF units rotating into Poland can start operating on Day 1, said Spears. They also work with the Poles every day, building trust between the two countries, so when a crisis arises, "we will have ready knowledge of each other's capabilities, we are speaking off the same tactics, same operations, same strategies, and we can literally communicate with each other," said Hubert.

"Some of those things are pretty darn key," he added, noting that in previous operations, communications were impossible.

COMMITMENT TO POLAND

Spears said the detachment's role "has evolved" since Russia invaded Ukraine earlier this year. Initially, the airmen were tasked with hosting four theater security cooperation events per year. Typically, that meant two F-16 deployments and two C-130 deployments.

Defense Secretary Chuck Hagel announced in April, however, that the US would maintain a continuous presence in Poland as part of an effort to reassure allies—especially those in the Baltics and neighboring countries that were wary of further Russian aggression.

Twelve F-16s from the 555th Fighter Squadron at Aviano AB, Italy, and some 200 personnel arrived at Lask in mid-March. It was the first deployment under the newly defined continuous presence. They were followed in late May by the largest rotation of F-16s to Lask to date—including some 300 airmen from Spangdahlem. An extra two F-16s also were temporarily based there during President Barack Obama's visit in early June, though those fighters weren't participating in training exercises, officials said.

"We are supporting [an] 18-ship package with, essentially, the people and equipment we would bring for a 12-ship package," said 1st Lt. John McKinney, assistant aircraft maintenance unit officer-in-charge for the 480th Aircraft Maintenance Unit from Spangdahlem.

Poland offers great training for US forces. Not only do they get to work closely with a NATO ally, there also are less restrictions to Polish airspace than there are at Ramstein or other western European bases. This gives pilots an opportunity to fly more night training missions and update their certifications.

However, bringing such a large package was not an easy task. For example, ramp space was limited.

"We didn't have the space to park those 18 aircraft here," said McKinney, so they had to measure the ramp pavement and re-mark it to create minimum-distance parking spaces. "If they didn't do that, we would be split between a couple different aprons and ramps and that would really hinder our progress."

The Spangdahlem F-16 rotation was the third this year to Poland. C-130s followed soon after, making a fourth.

"Our commitment to Poland's security, as well as the security of our allies in Central and Eastern Europe, is a cornerstone of our own security and it is sacrosanct," said Obama during a joint press conference with Polish President Bronislaw Komorowski in Warsaw on June 3.

During that same visit, Obama announced the $1 billion European Reassurance Initiative, a series of measures meant to bolster a persistent US air, land, and sea presence in the region, especially in Central and Eastern Europe. The initiative is meant to assure NATO allies of American commitment to Europe following Russia's recent annexation of Crimea and the buildup of Russian forces near the Baltic borders. The details were still being worked out by midsummer, but partner nations welcomed the idea with enthusiasm.

The money will "help us keep US troops on Baltic soil, because [it] will go for sustainment, for more exercises, for permanent presence, as … needed with [the] Ukrainian crisis," Latvian Defense Chief Lt. Gen. Raimonds Graube said during a June interview in his Latvian defense headquarters in Riga.

"We are very pleased about this money, but we don't [expect] to use money for Latvian defenses. It should help to do more exercises [and provide] more soldiers" in Latvia, he added.

Speaking to reporters at the Pentagon on June 30, Gen. Philip M. Breedlove, commander of US European Command and NATO's Supreme Allied Commander, Europe, said, "It's too early to lay out what the details" of the initiative will be, "but it will cover increased and enhanced training, readiness, exercises, and necessary facility improvements that we will need in order to conduct quality training and readiness activities with all of our allies and partners."


COMBAT READY FOR
A NEW GENERATION.
KC-46
www.boeing.com/militaryaircraft
BOEING

Staff photos by Amy McCullough

Top: A four ship of F-16s assigned to the 52nd Fighter Wing at Spangdahlem AB, Germany, fly alongside a KC-135 tanker from RAF Mildenhall during Baltops 2014 over Poland. Above: 1st Lt. Paul Anguita and Capt. Aaron Richardson, KC-135 pilots assigned to the 100th Air Refueling Wing at Mildenhall, prepare to take off from Lask Air Base in support of Baltops.

Those training exercises now fall under what has been dubbed Operation Atlantic Resolve. "In this operation, we will … demonstrate our continued commitment to the collective security of NATO and dedication to the enduring peace and stability in the region, in light of the Russian intervention in Ukraine specifically," said Breedlove.

Hubert said that while it would be easy to see the largest F-16 rotation to Poland as a response to the ongoing crisis in Ukraine—especially in light of Obama's Warsaw announcement, which coincided with the arrival of the aircraft—USAFE-AFAFRICA had been planning it long before the Crimea crisis erupted. The size of the rotation was bolstered, he said, because of the number of exercises the aircraft would participate in during their stay.

While in Poland, the F-16s supported the US Navy-led Baltops exercise—the largest maritime exercise held in the region—where they worked with the US Navy, German, French, and Swedish forces conducting maritime interdiction, SEAD, and defensive counterair munitions, according to Lt. Col. Steven Horton, 52nd Operations Group deputy commander, in Lodz, Poland.

The F-16s also flew with the Polish air force in Operation Eagle Talon, which was limited to just US and Polish forces.

"They had Exercise Eagle Talon in the morning and then they would fly for Baltops in the afternoon, or [conduct] local currency training," said McKinney. "Some days they flew the same stuff, just [with] a different NATO ally. … Being able to be more flexible with our fly times allowed our pilots to become more efficient. That's the cool thing of training with our allies. …We all benefit from that."

One day after the F-16s departed Poland on June 30, three C-130Js from the 86th Airlift Wing at Ramstein touched down at Powidz Air Base in Poland. USAF officials said another F-16 deployment was in the works, though it wasn't clear if that would follow the C-130 rotation or happen simultaneously.

"We can go heel-to-toe if necessary. That's [part of] our plan for the immediate future and that's kind of the way we are looking at it for now," said Gen. Frank Gorenc, USAFE-AFAFRICA commander. "We're still continuing to work on that plan and we'll adjust

that plan as necessary to address the conditions set out by EUCOM and NATO."

Also in mid-June, there were 475 US airmen participating in the Baltic exercise Saber Strike, which included some 4,700 participants from 10 countries. This year's exercise included eight F-16s from the Minnesota Air National Guard's 148th Fighter Wing in Duluth.

The fighters came directly from exercise Thracian Star in Bulgaria, where they flew 10 to 12 sorties a day. They were simultaneously supporting joint terminal attack controllers on the ground for Saber Strike and joining the F-16s from Lask, providing maritime support to US Navy ships operating in the Baltic Sea for Baltops.

THE TANKER ISSUE

This was the first time F-16s took part in Saber Strike; typically, A-10s have provided the ground-troop support. It's also the first time Duluth's F-16 Block 50 airplanes have operated in the European Theater since the wing acquired them from Spangdahlem in 2010.

"It is very busy supporting two different operations on two locations, but our maintenance people are doing a wonderful job … and the operational support people are doing a wonderful job planning," 148th Fighter Wing detachment commander Lt. Col. Nate Aysta said during a visit to Amari AB, Estonia, where F-16s staged southwest of the capital of Tallinn.

Such operations wouldn't be possible without tanker support. All the exercises have kept the 100th Air Refueling Wing at RAF Mildenhall, UK—USAF's only permanently assigned aerial refueling unit in Europe—busy.

The 100th—with refueling responsibility for most of the vast European and African airspace—is on pace to reach 144 percent of its scheduled annual flying hours during just the first six months of the year, said wing commander Col. Kenneth T. Bibb Jr.

"We're at an exceptionally high operational tempo this year," said Bibb. "To only have one flying squadron and one maintenance unit [for all of Europe and Africa], it's an incredible pace to keep up with current operations, but it's also an exciting time to be part of the operation."

Of the wing's 15 KC-135s, two were deployed to Italy, two were in Spain, and one was operating in Poland in early June, said Bibb. The wing was planning to send two KC-135s and three aircrews to Powidz to support Baltops, Eagle Talon, and Saber Strike, but real-world requirements only allowed for one aircraft and one aircrew.

At the time, the unit's airmen also had just returned from Iceland, where they were supporting the Icelandic air policing mission.

"Right now, there are a lot of airmen doing more with less and making things happen," said Bibb, but "there is some stress that comes with that."

Doing more with less is a mantra in today's military, given the tight fiscal environment. European units and bases have had a bull's-eye on their backs for years, however, because a Base Closure and Realignment Commission (BRAC) action isn't required to close excess infrastructure on the continent. Every time DOD leaders ask for another round of BRAC, the default response from Congress has been to cut infrastructure in Europe first. There's no constituency in Europe to plead differently with Congress.

The Defense Department launched the European Infrastructure Consolidation review about a year ago in response to such comments. Breedlove said on June 30 that he expected that review to be completed "relatively soon."

Infrastructure in Europe already has been reduced by some 30 percent since 2000. Thus far, many of the affected facilities have been the Army's. However, the closures still send a ripple effect through the other branches, said Col. Joseph D. McFall, commander of the 435th Air Ground Operations Wing at Ramstein.

The AGOW is a "hugely diverse wing" that primarily serves as a combat enabler. Its members are spread out all over Europe, and many serve on Army installations.

McFall said many airmen feel the effect of the Army closures. For example, the 4th Air Support Operations Group used to be made up of three air support operations squadrons and the 7th Weather Squadron. When the Army downsized from four brigades in Europe to two, the ASOG headquarters moved from Heidelberg to Wiesbaden, Germany. The weather detachment based at Mannheim, in southwestern Germany, shut down because the base closed down, said McFall. The Air Force also made the decision to close two ASOSs, effective Oct. 1—one at Aviano and one in Wiesbaden—and "consolidate everything into one squadron out where the major Army training ranges are, which is Vilseck," the northern part of Bavaria.

Breedlove has said repeatedly there is room for further infrastructure reductions in Europe. However, he's also made it clear that the same doesn't apply to force structure—which needs to be preserved. Although he declined to discuss specifics of the EIC during the late-June news conference, Breedlove said USAF should expect to see "at least reductions of our F-15 force in Europe."

The Fiscal 2015 budget request sought a reduction of 51 F-15Cs across the force, of which 21 will come from Europe, Air Force spokeswoman Ann Stefanik said in early July. Gorenc said his command made its inputs to the EIC, and "up to this point, I've been satisfied that our concerns have been addressed."

USAFE-AFAFRICA and EUCOM leaders also are taking a look at force structure needs in Europe, especially in light of Russia's actions in Ukraine.

"As a result of budget and sequester, there are already some reductions … on the books, so I think the first step in this process is that we develop a mechanism by which we stop [and] relook [at] those planned actions in Europe," said Breedlove. "Then, once that question is answered, we would have a better understanding of what we would need as far as rotational forces. As you know, we have forces all over Europe now, European Command forces that are a part of our immediate response measures, ground forces in the three Baltic nations, in Poland, air forces in Lithuania and in the south, ships in the Baltic Sea, marines in Romania, et cetera, et cetera."

Breedlove said the continuous presence in Eastern Europe would stay in effect at least through Dec. 31. Beyond that, officials will take a look at the situation and determine whether they'll need to rotate in additional forces to accomplish the mission.

"We are an expeditionary Air Force. If something happened here, depending on the priority, we would certainly have to go back to the expeditionary Air Force to fill the requirement," said Gorenc. "With respect to permanently based combat aircraft, for now, given the strategy that we have and the resource decisions we have to make, we think it's reasonable." ■

The Air Force acquired a handful of C-27Js—and then they were gone.

The Saga of the Spartans

By John A. Tirpak, Editorial Director

USAF photo by SSgt. Joseph Harwood

The Coast Guard and Army Special Operations Command now have 21 new or low-time C-27J Spartan light cargo airplanes in their fleets, provided at no charge by the Air Force, which spent more than $567 million to buy the aircraft. The Spartans were transferred from USAF to its fellow services as "excess" materiel only a few years after USAF made impassioned arguments to Congress that it needed the turboprops to fill critical missions supporting the Army and homeland defense missions.

How USAF came to give away new airplanes, at a time when the service is cutting force structure and personnel to live within its means, can be chalked up to simple math. The Air Force argued that it made no sense to keep the C-27Js when budget forecasts showed it wouldn't have the people or funds to operate them.

The case serves, however, as an object lesson in the wasteful effects of sequestration and, broadly, America's inability to create a long-term defense spending plan.

The C-27J experience also taught USAF some important lessons that may apply in the coming months, as it tries to convince Congress to permit retirement of the A-10 Warthog, the U-2 spyplane, or perhaps other platforms, too, if sequestration goes forward.

The C-27J program started out with good intentions. In the early 2000s, the Army needed a replacement for its aging fixed wing C-23 Sherpas, which it used for light transport, and also to relieve pressure on its CH-47 Chinook helicopters, which were pulling heavy duty hauling freight in Iraq and Afghanistan. The C-23s were becoming unsupportable due to their age, and the Chinooks were being pulled from other urgent duties, wearing out before their time, and were becoming costly aerial trucks. The idea was to have an airplane that could carry urgently needed cargo the "last tactical mile" to a fast-moving front, and at an affordable operating cost.

The Air Force was eyeing a similar requirement, believing its C-130 Hercules tactical transports to be overkill for the mission. Anecdotes about C-130s flying with a single pallet to forward airstrips were common among cargo pilots at the time. Air Force Chief of Staff Gen. John P. Jumper said in 2004 that operations in Iraq and Afghanistan supporting far-flung ground units suggested the need for a "light transport" like the C-7 Caribou he flew in Vietnam.

His successor, Gen. T. Michael Moseley, agreed, saying in 2005 he was thinking about an aircraft capable of carrying one or two pallets of cargo or 30 people for such an application.

In 2005, Pentagon acquisition chief Kenneth J. Krieg directed the Air Force and Army to explore merging their separate light transport programs into the Joint Cargo Aircraft program. Within a year, the two services agreed their needs were similar enough that they could jointly buy the same airplane, with some individual tweaks. They signed a memorandum of agreement that laid out how the airplanes would be bought, supported, and used.

SIX MISSIONS

The chosen platform would perform six missions. In order, they were: last

tactical mile resupply, medical evacuation, airdrop, aerial resupply, troop transport, and the domestic "homeland security" role.

This last one was partly a response to the experience with 2005's Hurricane Katrina, after which a consensus emerged that such an airplane would be useful in bringing urgent relief supplies to a devastated area if only austere landing strips were available.

The Army had the lead on the project, but both services staffed the source-selection team.

Following a competition, the C-27J—built by a team of L-3 Communications and Italy's Alenia Aeronautica—was chosen in June 2007. If all options were exercised for a planned 78 airplanes, the contract would have been worth $2 billion.

Some regarded the C-27J as the "Baby Herc," or a junior version of the C-130, because it used the same engines and similar avionics as the C-130J but on a smaller platform. Lockheed Martin, which makes the C-130J, had been heavily involved in developing the C-27J and in fact had viewed the airplane as a smaller, more easily managed alternative to the C-130 for nations that couldn't afford or didn't need the bigger airplane.

The C-27Js started delivering first to the Army and later to the Air Force. A permanent joint pilot and crew training facility was established at Robins AFB, Ga., after L-3 Communications trained the first pilots at its facility in Waco, Texas.

For the Air Force, the C-27J was unique in that it was the only aircraft ever bought to be used exclusively by the Air National Guard. All previous Guard airplanes either had Active Duty force counterparts or were hand-me-downs.

The operating concept was also new: Instead of consolidating C-27Js at a few bases, they would be parsed out in groups of four to seven Guard operating locations.

This allowed more Guard units that had lost a flying mission under the base realignment and closure process to retain or regain a flying mission and gave state governors an agile transport asset to call on in the event of a domestic disaster.

It soon became clear, however, that it would cost less if the C-27Js were consolidated under a single service, with a single logistics and support tail.

The Army wasn't enthusiastic about potentially ceding the last tactical mile mission to the Air Force and taking C-27Js away from division commanders who liked having them at their call. A turf war between the two services ensued. Defense Secretary Robert M. Gates initially sided with the Army, but

USAF photo by TSgt. Matt Hecht

Left: Four Spartans from the 179th Airlift Wing, Ohio Air National Guard, on the ramp at Mansfield Arpt., Ohio, in 2013. Here: A C-27J from the same unit takes off from Bagram Airfield, Afghanistan, in 2012. Two Spartans spent 11 months performing favorably in Afghanistan, but were recalled prematurely for financial reasons.

he cut the planned buy of 78 Spartans to just 38 airplanes.

With dollars drying up, though, even the Army decided it had to trust USAF to do the cargo job.

In May 2009, Army Chief of Staff Gen. George W. Casey Jr. told reporters the frontline support air mission was needed but Army aviators "do not have to fly the planes." He also allowed that flying fixed wing aircraft was not an Army "core competency."

A deal was struck between Casey and Air Force Chief of Staff Gen. Norton A. Schwartz, acting under pressure from Bradley M. Berkson, the Pentagon's program analysis and evaluation chief.

"I certainly didn't have a doctrinal claim" on the mission, Schwartz said in a June interview. "I was trying to be pragmatic. And we both—George and I—ultimately came to the conclusion that this was an Air Force mission, ... provided we would do it the way the Army desired."

Schwartz said Casey agreed "there was a reasonable argument for consolidated management" of the Spartan fleet and mission, "and I gave George my commitment that ... we wouldn't walk away from the promise."

The promise was that the Air Force would respond to any urgent Army request for transport—be it helicopter parts, food, ammo, medical supplies, or medical evacuation—swiftly and without reservation. This mission was called direct support, or DS.

The Air Force conducted a two-month experiment from October to December of 2009, in which it tested and validated the DS concept. The Ohio Air National Guard took two C-130s to Iraq to perform direct support for frontline Army units, embedded with the Army's 25th Combat Aviation Brigade. One of the aircraft was tasked for a daily flight and the other was kept on standby alert to respond to an urgent request for cargo. Though this was intended as rehearsal for the C-27J concept, only two Spartans were in USAF hands at the time, and both were in test, so the C-130s were used as stand-ins.

Thirteen C-27Js were stored at the "Boneyard" at Davis-Monthan AFB, Ariz.—waiting for the Coast Guard to receive them—at a cost to USAF of $700,000.

Screenshot from Google Earth

Schwartz told the House Armed Services Committee the following February that the experiment was a great success, demonstrating "the command and control, the orientation, and the capacity to provide direct support, should that be what the joint force commander requires." Army leaders expressed satisfaction as well.

"We have demonstrated to our Army brothers and sisters, as well as others, that we will be there," Schwartz told the HASC. "We can do this."

In August 2011, USAF followed up the Iraq experiment with an actual deployment of two C-27Js, flown and maintained by Air Guard crews, to Kandahar AB, Afghanistan.

For 11 months, the two airplanes—flown first by the 179th Airlift Wing and then by the 175th AW—racked up 3,200 missions, moving over 1,400 tons of cargo, and more than 25,000 passengers. Guard crews reported being favorably impressed with the airplane.

USAF Photo by SrA. Lausanne Morgan

Then-USAF Chief of Staff Gen. Norton Schwartz, together with then-Army Chief of Staff Gen. George Casey, developed the direct support concept for the C-27J—a concept soon to be overtaken by budget realities.

Where Are They Now?

The 21 retired USAF C-27J Spartan transports have been divided up between the US Coast Guard and Army Special Operations Command, which will receive 14 and seven aircraft, respectively. Both entities pitched to receive all 21 of the airplanes.

The Coast Guard will use its 14 Spartans for light transport and at-sea search and rescue missions, according to Adm. Robert J. Papp Jr., then the Commandant, who told defense reporters in April that getting the airplanes allows him to curtail a buy of HC-144s. This allows the Coast Guard to avoid "about half a billion dollars in acquisition costs." It's a good fit for the USCG, he said, because the C-27J "uses the same engines, the same avionics" as the C-130J the service is buying.

"Initially, we really don't have to do much more than paint them," he said, adding that the aircraft has "a good surface search radar" and military communications equipment, but the Coast Guard will likely add some specialized avionics. "We can put that aircraft to work almost immediately after we get the people trained up on it," he said.

As of early July, the Army had received six of seven C-27Js. These first aircraft will be based at Pope Field, N.C., supporting parachute training. When all aircraft have been received, they will support free-fall parachute training out of Yuma, Ariz. The Army's aircraft are now maintained under a contractor logistics support contract but the Army and Coast Guard are "actively engaged in direct coordination in order to maximize opportunities to work together in regards to maintaining the two low-density C-27J fleets," a US Army Special Operations Aviation Command spokeswoman said.

There was $130 million left in the C-27J program when the Air Force shut it down. The Fiscal 2014 National Defense Authorization Act directed USAF to use the money to convert seven retired Coast Guard C-130Hs for use as firefighting airplanes by the Forestry Service.

It cost the Air Force about $700,000 to store 13 of the C-27Js at its Davis-Monthan AFB, Ariz., "Boneyard" until the USCG was ready to receive them.

An Air Force spokeswoman said that, contrary to press reports, no C-27Js went directly from the production line to the Boneyard.

IMMEDIATE QUESTIONS

Even before they deployed, though, airmen were concerned the C-27J was not sustainable. The Fiscal 2010 defense budget—in which the C-27J was cut from 78 to 38 airplanes—sent the service reeling. The Pentagon was slated to lose $487 billion of anticipated funding over the following decade, before sequester virtually doubled that figure.

"The terrain changed," Schwartz said. "At the time, we were expecting at least no growth," or a flat budget, but got "a sizable decline" which forced heavy debate internally "about how to make the best use of the remaining dollars."

USA photo by Spc. Bryan Rankin

Casey—shown here on a visit to FOB Falcon, Iraq, in 2010—acknowledged that flying fixed wing aircraft was not an Army core competency when, in 2009, he struck a deal with Schwartz.

Schwartz said the deal Casey and he struck in 2009 was based on a sense of reality that changed radically just a year-and-a-half later.

Congressional delegations were already hot about Gates' cut of 40 airplanes from the C-27J program, which meant some Guard units might not get a post-BRAC replacement, or "backfill" mission after all. The entire Connecticut delegation wrote to Deputy Secretary of Defense Ashton B. Carter demanding he restore the airplanes, and the state hadn't even gotten any yet.

Schwartz said the need to equip the Guard, the homeland defense mission, and the wish not to alienate Congress were heavy on his mind.

"I made that argument, personally," that maybe the Air Force should accept some cuts elsewhere in order to keep the Spartans, Schwartz explained. However, "it was hard to sustain that argument against other imperatives." The Air Force had a mandate from Gates to build to 65 combat air patrols of remotely piloted aircraft and was still far from that goal; it needed to fund the new Long-Range Strike Bomber; and it had to keep the KC-46 tanker on track, Schwartz said.

USAF photo by MSgt. Jeffrey Allen

ANG MSgt. Dennis Folk (l) and Army National Guard Sgt. 1st Class Thomas Trigg, loadmasters, prepare a C-27J for takeoff in Afghanstan. Two C-27Js racked up 3,200 mission during an 11-month tour in Afghanistan.

Plus, it wasn't entirely up to the Air Force. Schwartz noted that OSD also worked on the plan.

With the Fiscal 2013 budget, USAF announced it would not only terminate the JCA program but retire the aircraft already in hand. In budget testimony, Air Force Secretary Michael B. Donley chalked up the move to scarce dollars and said the C-130 experiment in Iraq had proved that the Hercules, though perhaps more aircraft than needed, could still perform the on-call direct support mission for the Army. Hercs could fulfill 90 percent or better of Army needs—and do so without introducing another new logistical supply chain and personnel training pipeline.

The two C-27Js deployed to Afghanistan were recalled prematurely because to keep them flying in the combat zone would have required renewing or extending a support contract for them.

Schwartz said the C-27J reversal was "painful for me, personally, because I had given [Casey] a promise that the institution could not keep. ... We went to the 11th hour with the C-27—it wasn't an early casualty, it was a very, very late casualty, but it was a casualty."

Other funding avenues were considered. One was to ask Congress to put enough money back in the budget to operate the C-27Js, but that request went nowhere.

"It was relatively small dollars," Schwartz said, but "it was pretty clear" that if Congress offered money to keep the C-27J going, "it was going to come from something else that we had a higher preference for."

Another possibility was to request it in the OCO, or overseas contingency operations, account—the war appropriation—but USAF leaders felt "the era of getting money out of OCO, … that window was rapidly closing, and it would not be a long-term, sustainable position," Schwartz said. "I think we were a little bit naïve, maybe a little too principled, in trying to do what we thought was both the economic and the prudent thing."

The issue was not closed yet. There were differences of opinion about just how much the C-27Js actually cost to operate per hour, versus the C-130s. Much of the higher cost burden of the C-27Js was due to the basing concept of stationing them in fours all around the country. Had they been consolidated at fewer bases, it would have been a closer call, Schwartz said at the time, but a lower operating cost would not have offset the price of a whole new logistics tail.

Congress was "generally hostile" about the whole thing, Schwartz said. Not only were various Guard units worried they would permanently lose a flying mission, but state governors feared they might not have their own resources to call on.

"Naturally, states wanted to have their own Hercs and not depend on other governors," Schwartz explained, "just like [ground] maneuver units wanted their own C-27s. Or at least the assurance of their own C-27s."

Ultimately, though, Congress accepted USAF's numbers and agreed to the C-27J's early retirement.

Some Guard units that were meant to get Spartans—or lost them—got C-130s, while some got an RPA mission. It was never the Air Force's intention to bait and switch the Army out of the fixed wing transport mission, Schwartz insisted, laying the blame for the C-27 fiasco at the feet of the nation's inability to set and stick to a long-term defense spending plan.

The services need "a predictable topline and something that allows us to [take] the longer view—apparent to Capitol Hill and the staff—rather than triage, which is sort of what we've been doing," Schwartz asserted.

The Air Force is now seeking permission from Congress to retire its A-10 close air support aircraft fleet, substituting other aircraft already performing much of the CAS role in Afghanistan while also having capabilities for missions the A-10 can't perform. The service also wants to rapidly phase out the U-2 spyplane, migrating its functions onto the RQ-4 Global Hawk.

The service has warned that if sequester resumes in Fiscal 2016, the KC-10 tanker fleet could also be a victim. Even though the KC-10s are younger than the KC-135s, USAF has argued, it is more cost-effective to delete the logistics tail for a 60-airplane fleet of KC-10s and to simply consolidate with the far more numerous KC-135s.

Schwartz offered high marks for the way that the current Chief of Staff, Gen. Mark A. Welsh III, and Air Force Secretary Deborah Lee James have presented their case.

"They successfully navigated treacherous internal waters," Schwartz observed, partnering with the Guard and Reserve "in a way that we did not successfully achieve."

Schwartz said what has worked in the past is appealing to the "elders" in Congress, "who ideally have a larger sense of how things should be" and can often exert great influence over the inevitable "constituent interests involved" with the more junior members.

He also suggested that it might be a bridge too far to do the vertical cuts the Air Force wants to do as rapidly as it proposes. The A-10 fleet has been reduced before, he noted, and perhaps a more "incremental" approach would be easier for Capitol Hill to bear.

"The lesson for me is, even in budget-constrained environments, that the Congress is unlikely to … kill something in one cycle. It's a process." ■

INNOVATIVE SOLUTIONS.
UNMATCHED PERFORMANCE.

Agility is the new differentiator. In a world where customers need immediate solutions, L-3 continuously delivers on its reputation for superior mission availability and contract performance. We are changing the game by leading the charge in small aircraft ISR integration. Our solutions include state-of-the-art data links, full-motion video encryption and the industry's most powerful high-definition EO/IR sensors. We consistently find cost-effective answers to critical needs and challenges — agility realized on every front.

Aerospace Systems

L-3com.com

Rising Partners

By Marc V. Schanz, Senior Editor

Japan's more assertive security posture may accelerate a growing partnership with the US Air Force.

USAF photo by SSgt. Alex Montes

SHINZO Abe, Japan's Prime Minister, wants Japan to play a larger role in Asian security affairs. His recent modifications of the Japanese Constitution Article 9—paving the way for a more muscular status in "collective self-defense"—produced heavy controversy in Japan and the region, but received support from the US. It also signals a change in the part the US Air Force plays in the defense of Japan.

The Article 9 change was only one in a series of security-oriented shifts by Abe. He's pushed to reform and modernize Japan's self-defense forces, established a National Security Council, and in December 2013, he published the country's first national security strategy.

On July 1, in a prime-time speech, Abe announced an end to the ban on collective self-defense, calling his new policy a defensive measure that would help protect the Japanese people at home and abroad. The expanded guidelines allow Japan to more easily participate in military exercises with countries other than its US treaty ally, come to the aid of ships of allies under attack on the high seas, and deploy forces to support United Nations peacekeeping operations.

The announcement was welcomed by the US. Defense Secretary Chuck Hagel said the policy would help Japan engage in a "wider range of operations and make the US-Japan alliance even more effective." The week after the announcement, Hagel hosted his Japanese counterpart, Itsunori Onodera, for talks at the Pentagon.

The rapid growth of China's military power hasn't dimmed regional memories of Japan's 20th century occupations and barbarism, however, and China's response to Abe was swift and sharp.

"We are opposed to Japan's pursuit of its domestic political goal by deliberately making up the so-called 'China threat,'" a spokesman for the Chinese Foreign Ministry told reporters following the announcement, adding that Japan should

USAF photo by Jake Melampy

Far left: A Japan Air Self-Defense Force F-15J takes off from Andersen AFB, Guam, during Cope North 2013. Left: A USAF F-16 trains in the skies over Misawa AB, Japan. The Air Force is heavily invested in Japan's facilities. A large portion of Pacific Air Forces' combat power is based there.

respect the "security concerns" of its Asian neighbors.

South Korea, another vital US treaty ally in the region, expressed wariness about the change. Following the announcement, its Foreign Ministry issued a statement saying it won't tolerate any unilateral action from Japan "without the ROK's [South Korea's] request or consent on matters that can affect the security of the Korean Peninsula." It called on Japan to provide transparency on the details of its new posture.

Abe's Article 9 move follows a great deal of military-to-military and diplomatic activity between Japanese and US officials over the last three years, focused on improving interoperability, modernizing forces, and training for a wide range of military contingencies with the US and other Japanese allies. Just days before Abe's high-profile speech, Japan Air Self-Defense Force personnel and aircraft returned from Alaska, where they participated in Red Flag-Alaska 14-2, alongside counterparts from Australia and observers from the Royal New Zealand Air Force. For the two-week June exercise, the JASDF deployed F-15J Eagles, an E-767 airborne warning and control jet aircraft, KC-767 tankers, and C-130Hs. Maj. Taro Murao, a JASDF F-15J pilot, said USAF's Red Flag events are prime opportunities for developing Japanese air combat skills. "When we participate and cooperate with other nations, we learn not only a lot about them, but a lot about ourselves as well," he said.

There has been great progress between the US and JASDF on information sharing, intelligence collaboration, and more integrated command and control activities.

In October 2013, the US-Japan Security Consultative Committee, known as the "2+2" was hosted for the first time in Tokyo. The US secretaries of State and Defense met with their Japanese counterparts. The joint statement released after the meeting announced a raft of new

USAF photo by SSgt. Alex Montes

US, Japanese, and Australian airmen work together on the flight line at Andersen during Cope North 2013, a Pacific region multilateral training exercise.

policy and military initiatives. These included the establishment of a joint intelligence, surveillance, and reconnaissance working group, agreement to expand joint use of Japanese military facilities, and agreement to deploy to Japan more modern aircraft. This includes the RQ-4 Global Hawk, which arrived for its first regular rotation at Misawa AB, Japan, in May.

The US Air Force has been substantially involved in these developments. USAF is heavily invested in facilities in Japan—and a large portion of Pacific Air Forces' combat power is based there. Japan hosts three USAF installations, totaling about 13,000 airmen. An airman commands US Forces Japan—Lt. Gen. Salvatore A. "Sam" Angelella, who is on his fifth tour in the country.

Okinawa, Japan, was the first stop on USAF Chief of Staff Gen. Mark A. Welsh III's initial trip through the US Pacific Command area of responsibility as the top airman, in August 2013. After Kadena Air Base, he visited USAF officials at US Forces Japan headquarters at Yokota Air Base and the Japanese Ministry of Defense, where he met Onodera and other officials.

Welsh met the Chief of Staff of the Japan Self-Defense Forces Joint Staff, JASDF Gen. Shigeru Iwasaki—a career F-15J pilot—and the newly appointed JASDF commander, Gen. Harukazu Saitoh.

The JSDF Chairman and the JASDF Chief of Staff "repeated that they believe the relationship has grown stronger over the last two to three years," Welsh told *Air Force Magazine* during his visit to Tokyo last year, after several days of high-level meetings.

The Japanese are pleased with the string of solid leaders at 5th Air Force and their operational collaboration, he added. Welsh said Iwasaki told him joint training was crucial to building on the alliance. "He talked about his belief that we have to get better together, more capable together, ... [to] work on integrated command and control and things like integrated air and missile defense. And this is very consistent with what [US Forces Japan officials] have told me as well," Welsh said.

Much of this progress bloomed in the aftermath of Operation Tomodachi, the Japanese and US response to the devastating March 2011 earthquake, tsunami, and nuclear meltdown at the Fukushima Daiichi nuclear power station. The operation was unprecedented in the history of the US-Japan alliance and revealed shortcomings in the military relationship.

Tomodachi highlighted the need to institutionalize and improve command and control processes, logistics arrangements in humanitarian and disaster relief operations, and sort out authorities and relationships between PACOM, USFJ, and the JSDF.

In the wake of that experience, there's been an expansion in multilateral cooperation and exercising, not just in traditional combat exercises but also in humanitarian assistance and disaster relief scenarios. These have taken place both in Japan and in other venues, such as Guam and Alaska.

Traditionally a bilateral exercise between Japan and US forces, Exercise Cope North on Guam recently included South Korea, which dispatched a C-130 to the humanitarian response portion of the most recent iteration in February. South Korea's forces rarely train alongside JSDF troops, making the participation a significant event.

In January, USFJ and the JSDF conducted Keen Edge 14, a bilateral command post exercise that put various Japanese and US headquarters in Japan to the test, practicing responses to crises and contingency operations.

MIL-TO-MIL TIES

"When I first took command of USFJ, I was challenged by [PACOM's Adm. Samuel J. Locklear III] to make us more operational, with the idea of this exercise being kind of a test," Angelella told Japanese reporters in February. "I can tell you that we passed that test," he added, with US forces in Japan demonstrating that they are capable of supporting a wide range of missions alongside the Japanese.

The importance of command and control is stressed repeatedly by USAF, PACOM, and Japanese officials for the simple reason that US-Japan mil-to-mil ties are at the core of the so-called "rebalance" to the Asia-Pacific.

It's "why we continue to conduct exercises like Keen Edge. … It's why our service components conduct a variety of exercise not only with Japan, but with other allies and partners as well," Angelella said. The US also seeks to have the "newest

USAF photo by SSgt. Alex Montes

JASDF airman SSgt. Tsuyoshi Miyata (l), and USAF A1C Jacob Rash high-five after completing drag chute training during Cope North 2013 at Andersen.

rolls-royce.com

Rolls-Royce

The T56 Series 3.5 Engine Enhancement Package

Our new T56 Series 3.5 engine enhancement package will save an estimated $2 billion over the lifetime of the Air Force's fleet of C-130s, according to an Air Force study. The package is easy to install, improves engine performance, reduces maintenance and, of course, saves operators money. The T56 is already one of the most trusted and reliable engines in military service and our engine enhancement package just made it even better. If you operate C-130 aircraft, you can't afford to fly without it.

Trusted to deliver excellence

and best equipment here in Japan," he said in February, stressing the importance of modernizing both US forces in Japan and Japan's own equipment. F-22s have long rotated to and from Kadena, he noted, and the F-35—in the form of the Marine Corps F-35B—will deploy to the Pacific first.

Welsh, after his visit with Japanese officials in August 2013, said he talked with them about Japan buying the F-35 and the RQ-4 Global Hawk.

"They are strongly committed to the F-35 and they are excited about the program," Welsh said. However, he noted that new fighters have to be bought in balance with other needs, such as an affordable replacement for Japan's aging E-2 airborne early warning aircraft.

Japan is figuring out how to accomplish its air modernization, deciding what "they can afford to upgrade, what they can't, and what do they trade off in terms of modernization versus recapitalization," Welsh said during his visit. "I was struck by how similar [their] problems are to our own."

The JASDF is closely monitoring USAF's deployment of the RQ-4 to Japan, having indicated Japan might buy up to three Global Hawks over the next five years.

Flying out of Misawa Air Base is proving to be a good move for sortie generation and coverage, said USAF Col. Dan Wolf, head of PACAF's warfighter integration office at JB Pearl Harbor-Hickam, Hawaii. The Global Hawk can get airborne more frequently and has fewer weather-related delays flying from Misawa than from Andersen AFB, Guam. The JASDF is excited to have the capability operating from Misawa, Wolf added. "We view [the deployment] as an opportunity for future discussions with our JASDF partners."

Air and missile defense is an area of growing cooperation and collaboration between USAF and the JASDF. These activities, particularly joint and bilateral training to coordinate antimissile batteries, radars, and data links between US and Japanese forces, are critical to preparing for regional stability and crisis operations, Wolf said. Representatives from all US military services and the JSDF met in Hawaii in February for a high-level integrated air and missile defense war game, which tested participants' ability to collaborate in quickly evolving scenarios.

These drills aim to migrate from simply deconflicting IAMD assets and command and control, to integrating them. Much of Japan's military gear is the same as that employed by the US. Leveraging that commonality is key to building alliance capabilities.

The US and Japan have worked to expand opportunities to train together, to build familiarity and interoperability. Last summer, USAF and Japan Ground Self-Defense Force units started collaborative training for suppression of enemy air defenses, or SEAD. The F-16 "Wild Weasels" of the 35th Fighter Wing at Misawa now train regularly in a simulated combat environment, to include live ordnance drops at a Pacific Ocean range. Previously, SEAD training was limited to just a few exercises a year, at Red Flag-level events, according to Misawa officials. Now, real missile sites simulate shooting at F-16s, paying dividends for both USAF pilots and Japanese missile defenders.

This close collaboration follows Japan's 2013 national security strategy, which declares the country to be in a "severe security environment." Threats include North Korea, tensions with Russia over the disputed Kuril Islands to the north, and tensions with China over the disputed Senkaku/Diaoyu Islands in the East China Sea. It was around this area

Chinese propaganda pamphlets claiming Chinese ownership of the disputed Senkaku/Diaoyu Islands in the East China Sea. In November 2013, China unilaterally declared an Air Defense Identification Zone around the area.

that China unilaterally declared an Air Defense Identification Zone in November 2013.

The Abe government has called attention to regional discomfort with China's military modernization and the ADIZ in particular. It charged in its new security strategy that China is attempting to "change the status quo by coercion" and infringe on the "freedom of overflight above the high seas" in and around Japan's territorial waters.

Earlier this year, in a public announcement, China declared it would raise its defense budget by 12.2 percent—approximately $132 billion—in 2014. This marks another double-digit spending increase for its military, continuing a trend of nearly two decades. DOD, in its annual report on Chinese military capabilities, estimated China's total military spending exceeded $145 billion last year, but "China's poor accounting transparency" makes a solid number hard to determine. A significant category—excluded from official estimates, DOD noted—is purchases of foreign weapons and equipment.

Chinese leaders usually downplay these increases, suggesting their spending is dwarfed by larger world powers. China's government also increasingly tries to draw Japan into a war of words. In an article announcing defense spending, Xinhua, the official Chinese news service, claimed that per capita defense spending is just 20 percent of Japan's—though China boasts a population nine times larger.

"If one is to look seriously for a cause for alarm in Asia, one should fix a gaze on Tokyo," according to Xinhua. It charged that the Abe government has "turned his administration into a regional troublemaker."

USFJ senior leaders avoid discussing what US forces would or would not do if there were a skirmish or incident between Japanese and Chinese forces. As recently as last year, US officials claimed not to have developed detailed plans for such a scenario. (President Obama said in April, however, that the Senkaku Islands fall under the mutual defense treaty, as Japan administers the territory.)

However, PACAF and USFJ officials said they share air defense data to minimize the risk of miscalculation by any side. PACAF's Wolf said the US and Japan share a common operational picture, and US forces stress they adhere to International Civil Aviation Organization standards when navigating disputed airspace.

USAF photo by SSgt. Alex Montes

"We encourage all countries involved to do so, so that we don't take a situation where we are operating in that space and introduce unnecessary miscalculation," Wolf said.

Over the last two years especially, intercepts by JASDF aircraft in and around the Senkaku and Ryuku islands have sharply increased. According to Japan Ministry of Defense figures released in March of this year, China has "rapidly intensified its activities surrounding Japan's airspace, expanded its operational areas, and diversified its flight patterns," even prior to the November 2013 ADIZ declaration.

INCREASING INTERCEPTS

Based on Japan MOD figures, the JASDF scrambled against Chinese aircraft fewer than 100 times in 2010, but in 2011, the number rose to 150—and in 2012 it doubled to more than 300.

During Welsh's visit with USFJ officials at Yokota in August 2013, Angelella pointed out that that year was JASDF's busiest ever for intercepts, and the trend showed no signs of abating. According to Japanese MOD reports, the People's Liberation Army Air Force has flown a wide variety of aircraft around the Ryukus and the Senkakus, including Y-12 surveillance airplanes, H-6 bombers, and Y-8 airborne early warning aircraft.

The day China declared the East China Sea ADIZ, a Tu-154 signals intelligence aircraft and a Y-8 both flew around the Senkakus.

Russia-Japan tensions over the Kuril Islands—disputed since the end of World War II—remain unresolved. In April, the head of Russia's Eastern Military District, Col. Gen. Sergei Surovikin, told Russian reporters more than 150 facilities in the Kurils will be built by 2016 to revamp military capability there. Russia also plans to deliver more than 120 more vehicles and special purpose equipment to garrisons on the islands in the next three years, Surovikin said.

Meanwhile, Russia's military forces in the Far East have become "increasingly active," PACAF's Gen. Herbert J. "Hawk" Carlisle said in a May speech in Washington, D.C. Long-range bombers, such as Tu-95s and Tu-160s, have expanded flights in four regions—two of them the airspaces around Japan and off the Korean Peninsula. Flights near Japan and Korea are for varied purposes, he said, to include military demonstration but also intelligence gathering on joint exercises such as the US-South Korea Foal Eagle drills and US-Japanese training.

Press reports detailed one close encounter in April when a Russian Su-27 flew dangerously close to a RC-135U Combat Sent flying off Russia's east coast, north of Japan. The Flanker turned its wing to brandish its missiles within 100 feet of the Combat Sent's cockpit. DOD officials described the incident as "isolated," but transmitted their objections to Russia.

While Japan's collective security declaration dominated headlines in July, analysts haven't found consensus on what it means for joint operations.

Ian E. Rinehart, a Congressional Research Service Asia analyst, discussing a potential Article 9 change in October of 2013, said it will have complex effects on US-Japan security cooperation. Changes in international security operations, for example, will depend on changes in laws and be constrained by Japanese public opinion.

Japan will seek to limit the exercise of collective security to scenarios that relate directly to its own national interests, Rinehart said at the time in a presentation at the East-West Center in Washington, D.C.

"We are encouraged from the transparency, and from the military perspective we see continued cooperation, especially in the bilateral structures that we have been working on," Wolf said this past July.

Regarding information sharing between USAF and the Japan Air Self-Defense Force, Welsh said the difference between 20 years ago and today is like "night and day." The air forces of Japan and the US are not going to make decisions on their own about how to implement collective self-defense, but can suggest to their governments "what is possible … and figure out "where we can move forward, and where we can't." As the last several years have shown, other opportunities may emerge as time goes by.

"As we continue to grow this partnership, other things will become possible," Welsh said. ■


USAF photo by SSgt. Nathan Lipscomb

Top: JASDF airmen familiarize Australian and US airmen with an F-15J from Naha AB, Japan. Above: An RQ-4 from Andersen is towed down the taxiway at Misawa in May. The Global Hawk arrived at Misawa for a temporary rotation from May to October.

LifeLock®
Relentlessly Protecting Your Identity

You serve to protect our freedom.

We're here to help protect your identity.

Identity theft is bad news for anyone, but military enlistees may face extra consequences—and risks. In addition to damaged credit and stolen funds, members of the armed forces may also be subject to revoked security clearance, disciplinary action, or even delayed or cancelled deployment for debt, bad credit, or crimes committed in their names.

Your identity is one of your most valuable possessions. Help protect it by arming yourself with LifeLock, the leading identity theft protection service in America.

SPECIAL TRIAL OFFER

Activate your LifeLock® membership to try LifeLock Standard™ FREE* for 30 days.

The proactive system monitors your identity and alerts you of potential dangers to your identity.

$24.99 retail value.

ADDED BONUS

FREE PAIR

of Mechanix work gloves with LifeLock Enrollment.**

Use the following promo codes for your specific size:

Medium: AIRFORCEMD
Large: AIRFORCELG
X-tra Large: AIRFORCEXL

Visit **LifeLock.com** or call **1-800-LifeLock (543-3562)**

LifeLock®
Relentlessly Protecting Your Identity

*Offer is for active and retired military enlistees and their family members. At the end of the 30-day trial period, your card will be billed automatically ($8.99mo/$98.90yr for LifeLock Standard™ service or $17.99mo/$197.70yr for LifeLock Advantage™ service or $26.99mo/$296.90yr for LifeLock Ultimate Plus™ service. All pricing includes applicable sales tax.) You can cancel anytime without penalty by calling 1-800-LifeLock. **Must be an active LifeLock member for 31 days after enrollment to be eligible for the glove offer. Please allow up to 6-8 weeks for delivery of your Mechanix "Original" gloves. Estimated retail value is $24.99. No returns. Offer is good for new LifeLock members only.

For one of the busiest wings in the Air Force, meeting growing requirements with fewer airplanes and less money has become a fact of life. A chronic demand to "do more with less" has consequences, however, and as the possible reinstatement of sequester looms over the Air Force budget, readiness is suffering.

The 4th Fighter Wing at Seymour Johnson AFB, N.C., is the biggest F-15E Strike Eagle wing in the world and is in many ways representative of any large unit flying legacy fighters today.

When sequestration's effects hit their initial peak in the summer of 2013, one of the 4th Fighter Wing's squadrons was grounded, a situation piled on top of budget cuts that had already hurt flying hours, exercises, and maintenance. The wing's F-15Es date back to the late 1980s and need a rising amount of attention and sustainment work.

A backlog of depot-level maintenance has hit the F-15s (Cs and Es) harder than other platforms, and senior USAF officials have acknowledged the situation probably won't be fixed for some time. Overall, the Strike Eagle fleet at Seymour Johnson looks like a case study of all the problems sequestration can cause.

The 4th FW has two distinct but related missions and splits its 94 aircraft almost evenly between them. One is USAF's only Strike Eagle formal training unit, comprising two squadrons with 20 and 24 jet aircraft, respectively. The other 50 aircraft make up two operational squadrons that deploy for combat. They're the newest F-15E models—an average of 24 years old—delivered between 1986 and 1990.

The Air Force's other two F-15E operating locations—at Mountain Home AFB, Idaho, and RAF Lakenheath in Britain—each have two Strike Eagle operational squadrons and draw pilots and weapon systems officers from the training program in North Carolina.

The most pressing issue facing the 4th FW today is a shortage of aircraft. The demands of four squadrons that need to fly regularly to meet requirements for student progress and operational qualification puts pressure on maintenance personnel to generate a steady stream of ready aircraft.

By all accounts, maintainers are doing an exceptional job with the

Strike Eagle

aircraft on-site, but too many of their airplanes are stuck at USAF's F-15 depot—Warner Robins Air Logistics Complex in Georgia—for the wing to schedule airplanes they way it would like to. Because of their age, hard use in combat, and other factors, the rate that F-15Es get through depot—where they will undergo tear-down inspections and major rework—has slowed.

DRAW DOWN, RAMP UP

Lt. Gen. Bruce A. Litchfield, commander of the Air Force Sustainment Center, at Tinker AFB, Okla., overseeing all three depots, acknowledged those challenges in an interview and identified the F-15 as the maintenance line most in need of attention.

"There are perturbations" to the depot's long-term plans, he said. "That's where we have to flex and that's where we have to adjust—and that's what drives inefficiencies."

He offered an example. "Let's say we are planning on drawing down a fleet of aircraft because we're going to retire them, and so we don't plan for them, and then all of a sudden we are asked to maintain them in the budget." If the drawdown had already started, Litchfield said, "then we have to ramp back up, and that drives inefficiency ... and it takes a while to respond. You can't turn this big … [and] this complex an operation overnight."

Those inefficiencies materialize on the Seymour Johnson flight line.

"Jet availability is an issue, and that's because of the periodic depot maintenance," said Col. Michael G. Koscheski, then the wing's operations group commander. For now, the wing is simply flying the aircraft on hand more frequently. Koscheski said the wing is well aware that doing so is only a short-term solution to its availability problem.

The depot backlog also has a deep connection to sequestration, the harsh budget-cutting mechanism Congress enacted in 2012. The Air Force recognized immediately that slashing the budget would slow down the "throughput" rate at its three depots, creating a backlog that can only be fixed with time, because the depots have finite space and personnel. Moreover, in-depth maintenance takes so long and

Airmen prepare a line of F-15Es for flight at Seymour Johnson AFB, N.C. The base hosts the largest Strike Eagle wing in the world.

USAF photo by A1C Aaron J. Jenne

The F-15Es at Seymour Johnson typify many of USAF's problems in keeping an old fleet ready for frontline service.

Pressure

By Gabe Starosta

USAF photo by A1C Brittain Crolley

USAF photo by A1C Shawna L. Keyes

An F-15E flies off the wing of a KC-135 tanker during a Razor Talon exercise in 2013. F-15E pilots gain exposure to newer aircraft through the exercises, which draw F-22s and F-16s. Right: SrA. Cally Hatrick performs a final inspection of an F-15E at Seymour Johnson.

the depots have so many responsibilities involving various aircraft and other systems that changes can take months or years to implement.

Lt. Col. Dylan Wells, Koscheski's deputy, described the challenging conditions facing the wing's F-15E maintainers. He said the training units want to have 12 Strike Eagles available to perform a full day's worth of flying operations. As of May, five of the smaller squadron's 20 jet aircraft were at the depot. That meant maintainers could only work on three of the remaining 15 aircraft for the squadron to stay on track with its training curriculum.

"What they do at [programmed depot maintenance] is amazing. It's obviously a must-pay bill," Wells said. "We're very thankful that process is in place, but it does make it hard, especially for our maintenance brethren, to keep a stream of those jets available."

The backlog will stay in place for about a year, though, as Warner Robins deals with sequestration and overhauls its maintenance and management procedures to perform better. Doug Keene, a longtime Warner Robins employee and now the special assistant to the complex's commander, said last year's budget cuts, civilian furloughs, and a government shutdown all hurt the depot's ability to deliver aircraft on time. But he insisted the depots take some responsibility for not being as efficient as they should have been.

Keene said his complex has made a number of changes since January that are already improving maintenance flow times and quality. However, the process of implementing those changes, coupled with the aircraft backlog, will take nine to12 months to work through.

"If you go look right now, we are producing F-15s at a 60 percent increase in throughput than where we were just five months ago," Keene said in June. "We are producing airplanes at much higher quality than we were producing. When F-15s go out to functional test, they usually have to fly two, three, four times" to ensure the repairs all work.

"We're now seeing more and more airplanes start to release [back to their squadrons] the first flight. We're seeing airplanes move through there in a much quicker time because they are arriving at functional test with much higher quality."

He said it will take "months to recover" from the buildup of jet aircraft, "but I'll tell you, our F-15 line is already producing at a rate" such that if there were no backlog, "we would already be producing airplanes really about on time. Our problem is we have to produce somewhat faster" to work off the "additional airplanes that are here."

USAA is proud to be the
Preferred Provider
of Financial Services for
the Air Force Association

Once earned, access to USAA Auto Insurance is often passed down from generation to generation.

At USAA, our commitment to serve the financial needs of military members, veterans who have received a discharge type of honorable and their eligible family members is without equal. In fact, families regard USAA Auto Insurance so highly, 98% of our members have stayed with us year over year.[1]

Begin your legacy. Get a quote.

usaa.com/afa | 877-618-2473

Insurance Banking Investments Retirement Advice

USAA®
We know what it means to serve.®

USAA means United Services Automobile Association and its affiliates. USAA products are available only in those jurisdictions where USAA is authorized to sell them.

[1]Based on member data from 2008–2012. Use of the term "member" or "membership" does not convey any eligibility rights for auto and property insurance products or legal or ownership rights in USAA. Ownership rights are limited to eligible policyholders of United Services Automobile Association. "Honorably served" means a discharge type of "honorable." Membership and product eligibility and underwriting restrictions apply and are subject to change. Eligible former dependents of USAA members may purchase auto or property insurance if the member obtained USAA auto or property insurance. Automobile insurance provided by United Services Automobile Association, USAA Casualty Insurance Company, USAA General Indemnity Company, Garrison Property and Casualty Insurance Company, and USAA County Mutual Insurance Company, San Antonio, TX, and is available only to persons eligible for P&C group membership. Each company has sole financial responsibility for its own products. AFA receives financial support from USAA for this sponsorship. 203351-0814

Col. Darrell C. Steele, the maintenance group commander at the 4th FW, is feeling the strain. Instead of having three or four aircraft at Warner Robins at a time, the wing had 10 of its aircraft at the depot as of July 9 and was about to send another, he said. That's created more work for the 2,200 or so maintainers under his command, all to keep a smaller number of F-15Es flying. One of the wing's training squadrons has been particularly hard-hit by the availability crunch.

That's not by design. Steele said it's more difficult to make up disruptions in a training pipeline than at an operational unit. The problem was, the training squadron was already slated to send many of its aircraft to depot when sequestration hit, leaving it without options.

"That's just a function of who was at depot when sequestration happened," he said.

Steele also explained the trade-offs maintainers are forced to make as a result of having fewer airplanes on-site.

BURNING HOURS

"We're going to meet all the maintenance requirements, OK, but it's going to burn hours off those tails a little bit quicker than we'd wanted to," he said. "We're not able to stand them down and do as much preventive maintenance as we might want to. I think it'll be a challenge meeting our requirements going forward." The situation is "hindering our flexibility" in meeting the requirements of the flying hour program.

Flying aircraft more often while also having more in depot limits the number available for maintenance and weapons load training, Steele said, to keep the aircraft available for flights.

Two other issues are on the minds of F-15E operators and maintainers: possible Strike Eagle upgrades and the advent of the F-35 strike fighter.

Though the F-35 is a single-seat aircraft—unlike the two-seat F-15—the Strike Eagle is one of the specialties USAF will have to mine for F-35 pilots. So far, the Strike Eagle community has not been heavily raided to find F-35 pilots.

Wells said his group has only lost four to six pilots per year to the F-35, which the Air Force is expected to declare operational in 2016. A wing the size of Seymour Johnson's Strike Eagle enterprise—between 120 and 150 pilots—can absorb that attrition.

"We have not sent anyone that's not top tier," Wells said, "but the numbers are so small, … we haven't felt a huge impact."

Moving high-quality operators to the new platform while leaving the legacy fleet well-manned seems to be a priority for the Air Force—and not just in the F-15 community. The largest F-16 organization in the continental US, the 20th Fighter Wing at Shaw AFB, S.C., has gone through a similar experience in recent years.

Col. Paul Murray, the 20th's director of operations, said in an interview that he's seen some six officers leave the wing per year to transition to the F-35. Like his counterparts at Seymour Johnson, Murray said the rate is sustainable because of the wing's large size.

Legacy fighter wings such as the 4th and 20th need to stay sharp. Their aircraft are still frontline combat assets, and the Air Force expects to keep flying the F-15 and F-16 for many years.

That will mean keeping F-15s and F-16s relevant with upgrades, although Air Combat Command has said it will have to be highly selective about the improvements installed and the number of jets to get them.

Asked to name their upgrade of choice for the F-15E—regardless of affordability—Koscheski and Wells separately mentioned the desire to improve its engines. The Strike Eagle is capable of running on two different power plants: the F100-220 and the F100-229, both built by Pratt & Whitney. The -229 motor is more powerful and is installed on some of the aircraft operated out of Mountain Home and RAF Lakenheath, but all of the 4th Fighter Wing's aircraft use the less-powerful -220 engine.

An aircraft equipped with the F100-229 can produce 58,000 pounds of

USAF photo by Micah Garbarino

USAF photo by SrA. Gino Reyes

Lt. Gen. Bruce Litchfield, head of USAF's sustainment center, said the F-15 maintenance line is the one most in need of attention. Col. Jeannie Leavitt, then 4th FW's commander, is congratulated by Col. Michael Koscheski, then 4th Operations Group commander, after completing the final sortie of Fiscal 2012 at Seymour Johnson.


WHEN THE FUTURE STRIKES, THE ENEMY
WILL NEVER SEE IT COMING.
AT LOCKHEED MARTIN,
WE'RE ENGINEERING A BETTER TOMORROW.
Its stealth makes it all but invisible. Yet, the F-35A Lightning II remains one of the most unmistakable aircraft in history. Its unrivaled sensor fusion, net-enabled connectivity and support systems make it a formidable force multiplier. And by the time the enemy sees it—if they see it—it's too late.
See how the future is arriving at F35.com
F-35 LIGHTNING II
NORTHROP GRUMMAN | BAE SYSTEMS | PRATT & WHITNEY
LOCKHEED MARTIN
© 2014 LOCKHEED MARTIN CORPORATION

USAF photo by Sue Sapp

Civilian maintainers work on a replacement aft fuselage after the original one was damaged by a bird strike. Sequestration has caused a depot maintenance backlog that only time will clear.

thrust, compared to 50,000 with the F100-220, according to an Air Force fact sheet. The Strike Eagle can fly with a maximum gross weight of 81,000 pounds—comparable to the F-22 and far more than any other legacy fighter in the Air Force inventory.

Capt. Reid Thompson, an F-15E pilot, and weapon systems officer Maj. Anthony Breck said the -229's additional thrust would give their fighter 30 to 60 minutes more flight time or allow it to carry more munitions, compared to a jet aircraft flying on the F100-220.

The performance difference is evident in operations from high-altitude fields, they said. The Strike Eagle may need to be lightened by removing some fuel or weapons in order to take off with the older engine.

Koscheski suggested the possibility of leaving his two training squadrons in their current configuration and upgrading the motors on the operational aircraft based at Seymour Johnson to keep costs down. An engine replacement isn't in the Fiscal 2014 budget, however.

B-52 OF THE FIGHTER FORCE

The Strike Eagle is in the process of receiving a variety of avionics improvements, most notably a new radar, digital video recorder, and electronic warfare system known as EPAWSS. Those are all geared toward keeping the F-15 up-to-date with the threat.

Communications and data links are a key requirement. The F-22 and F-35 stealth fighters have a unique and stealthy voice transmission system that legacy fighters don't have. The Strike Eagles will have to communicate and share data with the F-22 Raptor, and eventually the F-35, because the Air Force plans to fly all into combat together.

The technology mismatches should be taken care of in several years through the Air Force's fifth to fourth generation gateway program to allow F-22s and F-35s to communicate with each other and legacy fighters without compromising stealthy operations.

In the meantime, Seymour Johnson's Strike Eagle pilots are getting plenty of exposure to those newer aircraft and many others through an East Coast exercise called Razor Talon. That exercise, managed by the 4th FW and held roughly each month, regularly draws F-22s from JB Langley-Eustis, Va., and F-16s from Shaw, as well as Marine Corps F/A-18 Hornets and AV-8B Harriers from bases across North Carolina.

F-35 strike fighters may also make an appearance at Razor Talon in the not-too-distant future. The Marine Corps is in the process of moving all pilot training for its short takeoff and vertical landing F-35B fighters from Eglin AFB, Fla., to the Marine Corps Air Station in Beaufort, S.C.

Koscheski, the 4th FW ops group commander, said he expects the F-15E to remain a central Air Force asset for years. He said manyStrike Eagles with initial life expectancies of 8,000 hours could be reinforced to withstand up to 30,000 hours of flight time, and he predicted the aircraft "is going to end up being the 'B-52 of the fighter force' because there's really no Plan B." ■

Gabe Starosta is a freelance journalist and the former managing editor of the defense newsletter "Inside the Air Force." His most recent article for Air Force Magazine, *"Mission to Mali," appeared in the November 2013 issue.*

YOUR MISSION IS CRITICAL. OURS WAS TOO.

BOSE® A20® AVIATION HEADSET

Military studies show that reducing noise allows for improved communications and mission effectiveness. That's why we introduced active noise reducing headsets to military aircrews across the world more than 20 years ago, forever changing the way crews fly critical missions.

This time, our mission was to improve on the standard set by our Aviation Headset X® – a mission-critical part of military operations worldwide, with a proven record of performance in military applications. The Bose A20 Aviation Headset is specifically designed for the high noise levels military aircrews experience. It features acclaimed noise reduction, a comfortable fit and clear audio. It's made in the U.S.A., and we back it with exceptional customer support. Call today to try it and see how well we've accomplished our mission.

Ask about our no-obligation military evaluation program.
Call 1-800-736-5018 or visit Bose.com/MilitaryAir1

BOSE
Better sound through research

GSA Schedule
Contract GS07F0232N

ON

AP photo by Stuart Price

AT the end of March, four Air Force Special Operations Command CV-22B Ospreys departed the US-operated base at Camp Lemonnier, Djibouti, accompanied by two MC-130P Combat Shadows and a lone KC-135. The aircraft were headed south.

The small task force's destination was Uganda's Entebbe Airport. The aircraft were detailed to US Africa Command for an operation against one of the most notorious rebel groups in Africa: the Lord's Resistance Army (LRA).

In May 2010, President Barack Obama signed the Lord's Resistance Army Disarmament and Northern Uganda Recovery Act into law. At the time, Obama said the legislation "crystallizes the commitment of the United States to help bring an end to the [LRA's] brutality and destruction," a group that "has no agenda and no purpose other than its own survival."

The law defined counter-LRA operations (or C-LRA as it's been known inside the Pentagon) by four lines of effort. The priorities are to increase civilian protection, apprehend or eliminate LRA head Joseph Kony and his senior commanders, promote defection and disarmament of remaining LRA fighters, and provide humanitarian relief to affected areas of Africa.

US military help to capture or otherwise neutralize the group's leadership was a key component of this strategy. The aircraft at Entebbe were part of this mission, and the Ospreys were to help African troops hunt down the remaining guerrillas and search for Kony in particular. (He is wanted by the International Criminal Court for crimes against humanity.)

The Department of State describes the LRA as "one of Africa's oldest, most violent, and persistent armed groups." Since the 1980s, LRA fighters have waged a brutal campaign of violence across the Central African Republic, the Democratic Republic of the Congo, Sudan, Uganda, and most recently, South Sudan.

Kony created the LRA in the late '80s after the rebel faction he had previously aligned with signed a peace agreement with the Ugandan government. Fighters were largely recruited from the Holy Spirit Movement, a rebel group run by Kony's relative Alice Auma that also fell apart in the late 1980s. Kony and Auma both claimed to have mystic powers and blended Christian dogma with local religious traditions, steadily building a cult of personality. The LRA's stated goal was to fight for the Acholi people who lived in Uganda's north, as well as in Sudan. Rebels led by now current Ugandan President Yoweri Museveni, a member of the Banyankole ethnic group, deposed Ugandan President Tito Okello, an Acholi, in 1986.

Over the past three decades, as the rebellion against the Ugandan government has waned, the shrinking LRA has built an infamous legacy for horrendous and arbitrary atrocities. These have included mutilations and executions, often with rudimentary weapons, such as machetes. The guerrillas have wiped out entire villages, looting anything of value. The rebels have also kidnapped more than 60,000 children and youths between 1986 and 2005, according to a 2006 study funded by the United Nations Children's Fund

Air Force Special Operations Command has a key role in the small and secretive war against Joseph Kony's Lord's Resistance Army.

USAF photo by SSgt. Ryan Crane

THE HUNT FOR KONY

By Joseph Trevithick

Top left: Joseph Kony answers journalists' questions in 2006. Defectors from the Lord's Resistance Army say they haven't seen Kony himself in quite some time. Here: A photo illustration of a C-17 on the flight line at Entebbe Arpt., Uganda. The US and Uganda share information on various security threats in the region.

USAF photo by MSgt. Scott Wagers

USAF Rivet Joint aircraft such as this one support AFRICOM by tracking signals intelligence. Intercepting Sigint data is critical to the fight against the LRA.

USAF photo by SSgt. Erik Cardenas

Burundi soldiers prepare to board a USAF C-17 at the Bangui Arpt., Central African Republic. The US, in cooperation with France and the African Union, has provided military airlift support to the CAR, to help quell sectarian violence in the region.

USAF photo by TSgt. Samuel King Jr.

Non-US built aircraft, such as this PZL Mielec M-28 (C-145 Skytruck), belong to AFSOC's Nonstandard Aviation Fleet. Many NSAv aircraft are specifically designed or modified for short takeoff and landing on unimproved airstrips and rough terrain.

(UNICEF). Hundreds of thousands in the region have been displaced by LRA violence.

The Air Force and AFSOC have been combating the LRA for years: The Ospreys and their tanker aircraft were just the latest contribution to a broad interagency program that began in earnest in the mid-2000s. "Airlift and intelligence support are consistently identified as the most-needed enablers to help regional forces," said Sgt.1st Class Jessica Espinosa at US Special Operations Command, Africa.

The Pentagon's mission to support the hunt for the LRA is nicknamed Operation Observant Compass and formally began in October 2011. Special operations forces established their main base of operations in Uganda to help the African Union's Regional Task Force. From the beginning, USAF personnel played a critical role providing intelligence, surveillance, and reconnaissance aid for the mission.

SIGINT

The exact details are a delicate matter, but the sorties are known to include manned and unmanned aircraft from operating sites both on and surrounding the African continent.

Since standing up in 2008, AFRICOM has received regular RC-135 Rivet Joint support, tracking signals intelligence. USAF's Air Combat Command has also since tasked U-2s and C-130H Senior Scout aircraft for AFRICOM operations, according to SOCAFRICA officials.

By 2011, two Beechcraft King Air 200 series aircraft had deployed to Entebbe Airport and were quickly set to work on the C-LRA effort among other missions in the region. The aircraft fed information into Uganda's Kampala Combined Intelligence Fusion Center, which was established two years earlier. The US and Uganda had agreed to set up the node to help share information on various security threats in the region.

In 2012, DOD also helped establish a C-LRA Operations Fusion Center in Obo, located in the Central African Republic. This facility was run in cooperation with personnel from the Uganda People's Defense Force and the Forces Armées Centrafricaines.

Many details remain classified, but the aircraft on the hunt for Kony are outfitted with a variety of sensors such as a signals intelligence package and the Jungle Advanced Under Dense-Vegetation Imaging Technology system, a light detection and ranging (LIDAR) instrument. LIDAR involves using pulsed laser light to measure the distance to objects rapidly and produces highly accurate three-dimensional maps. The use of a laser also allows such systems to penetrate water or foliage to determine objects beneath them. LIDAR has great utility in central Africa, as much of the LRA's operating area is under multiple layers of rain-forest canopy. LRA fighters, like guerrillas around the world, used this natural cover to escape and evade regional forces and establish secure base areas.

The utility of Sigint data is critical to the effort. The LRA probably does not have advanced encryption technology for their communications. Scanning for radio chatter gives clues as to the guerrillas' whereabouts and may even provide advance warning of raids. Most Sigint systems also have an aerial radio direction finding capability. Properly equipped ISR aircraft could generate actionable intelligence for African Union troops simply by homing in on LRA transmissions.

Because of these factors, Air Force ISR support (both organic and contractor associated) has been invaluable to counter-LRA operations. Most African partners have few, if any, airborne ISR assets themselves that could help readily locate enemy fighters.

The intelligence that American forces provide to their African partners is essential to the mission, but so is airlift support. Finding the LRA is one thing, but if AU troops cannot respond before LRA fighters flee, the effort in finding them is effectively wasted. Streamlining these operations remains a significant issue because regional governments do not always exercise complete control over their territory and have limited military resources—a fact the LRA has repeatedly exploited in the past.

The African partners have few aircraft to call upon themselves. Uganda, by far the largest contributor to the regional effort, had only three functional Mi-17 Hip helicopters as of 2013, according to the International Institute for Strategic Studies, and has no fixed wing transport aircraft of any kind. At the same time, the Central African Republic, Congo, and South Sudan, combined, have another dozen or so Mi-8/Mi-17s and two C-130 Hercules transports.

In response, the Pentagon and the State Department have worked to provide "robust logistics support" via several funding streams such as foreign military assistance and the State Department's Global Peace Operations Initiative, said Army Lt. Col. Jason Nicholson, chief of the East Africa Regional Division at AFRICOM's Strategy, Plans, and Policy Directorate. Before his tour at AFRICOM, Nicholson also served for two years as the chief of the Office of Security Cooperation at the US Embassy in Kampala.

The US military uses fixed wing aircraft from AFSOC and additional aircraft flown by civilian contractors to facilitate this movement of men and materiel. Aircraft from AFSOC's Nonstandard Aviation fleet (NSAv) are integral to this effort.

The NSAv fleet includes various types of fixed wing light transport and utility aircraft and is ideally suited to the austere conditions in central Africa. Many of these aircraft are specifically designed to take off and land from short, unimproved airstrips and require far less infrastructure than a larger C-130 transport.

NSAv aircraft have participated in Operation Observant Compass by flying personnel and equipment between Entebbe and operating sites in Obo; Dungu, in the Congo; and Nzara, South Sudan. American SOF and members of the AU RTF manage these sites to facilitate operations in all four countries. Personnel and equipment might then be transported to additional forward operating locations. Many of these sites can only be resupplied from the air, Nicholson explained. AFSOC's PZL Mielec M-28s and Bombardier Q-200s are turboprop transports, capable of air dropping supplies.

NSAv aircraft provide AFSOC with a variety of options for SOF missions and to advise and assist friendly air arms. Because of worldwide demand, AFSOC has made it a priority to improve the NSAv fleet and its capabilities. This includes fully militarizing the remaining aircraft to meet official Air Force regulations. This unique fleet continues to support operations against the Lord's Resistance Army.

Despite the recent emphasis, there are still only a limited number of AFSOC and contractor aircraft available to move African personnel around and fly critical logistics missions. These aircraft are not always available to respond to actionable intelligence as a result. Helicopters with the ability to reach remote areas may not be fast enough to reach the sites in time even if they are ready to go. The Pentagon hopes the recent CV-22 deployment would fill some of these gaps, at least temporarily.

These tilt-rotors have been a boon to American SOF. The Ospreys came into service just before the retirement

Photo via Melting Tarmac Images

Uganda in 2013 had only three Mi-17 Hip helicopters and no fixed wing transports. The CAR, Congo, and South Sudan combined have a dozen helicopters and two C-17 aircraft. Robust US logistics support is vital to the effort.

of the MH-53 Pave Low helicopter fleet and are "often mistaken as a replacement," according to AFSOC's 2010 official history. The CV-22Bs fly almost as fast as C-130s, but can still make use of small landing zones in remote locations. Ospreys are well-suited to rush African forces to engage groups of LRA fighters, and tanker support gives them added flexibility.

A VICTIM OF SUCCESS?

Unfortunately, the aircraft's specialized capabilities also mean they are in high demand. Ospreys from AFSOC's 8th Special Operations Squadron and 20th SOS are regularly deployed to support SOF missions around the globe. The 7th SOS, based in England, began receiving CV-22s last year.

This spring's deployment actually marked the second time in six months that the airplanes had been sent to help in Africa. CV-22Bs from Djibouti flew a mission last December to evacuate American civilians caught up in the fighting in South Sudan.

US and African officials laud the regional effort against the Lord's Resistance Army. Observant Compass and Air Force support for African forces have been invaluable in degrading the ability of the organization to continue its campaign of violence. The LRA numbered in the thousands as recently as 2007, but has shrunk to less than 500 members, by UN and US estimates, with between 100 and 300 actual armed fighters.

News reports and UN figures cited in the LRA Crisis Tracker online website show there were 61 attacks attributed to the LRA in the first quarter of this year, compared to 215 in the first quarter of 2010. Recent defectors say they have not seen Kony himself in some time, highlighting the belief that the LRA has morphed into loosely associated groups participating in banditry to fund their activity.

However, there are concerns that American assistance—especially ISR assets and other advanced technology—might become a "victim of its own successes" in Africa and elsewhere, said Nicholson.

Partner nations feel the US military can "do anything" and "think the US military is more capable than we are or we are not sharing enough, and this is just simply not the case," Nicholson said. The Pentagon—and the Air Force elements—must work to manage their partner's expectations.

Overall, the combined Counter-Lord's Resistance Army mission appears to be working. "In the last six months alone, US forces provided enabling support to 33 partner operations that disrupted LRA activities and significantly increased pressure on the LRA," Army Gen. David M. Rodriguez, AFRICOM commander, told Congress this past March. "With the enhanced support provided by [AFSOC] aircraft, we believe our partners are well-positioned to further degrade the LRA's remaining command structure," said Lt. Cmdr. Matthew Allen of SOCAFRICA.

"The American people can take pride in knowing that US forces helped set the conditions to bring the endgame to this long running conflict," Nicholson said of the progress thus far. AFSOC's piece of this campaign is prime reason Joseph Kony's reign of terror appears to be drawing to a close. ■

Joseph Trevithick is a longtime writer on defense and security affairs. He is also a fellow at globalsecurity.org and operates America's Codebook: Africa, a blog dedicated to tracking US military engagement on the continent. This is his first article for

CORPORATE MEMBER SPOTLIGHT

The AFA Corporate Membership Program recognizes companies that support the Air Force Association's mission, people, and events. These businesses play a vital role in making AFA the most powerful advocate for every member of the Air Force family. This month we are highlighting AFA's Premium Corporate tier members. For more information on the Corporate Membership Program, please visit www.afa.org/CM.

Boeing is the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space, and security systems. A top US exporter, the company supports airlines and US and allied government customers in 150 countries. Boeing products and tailored services include commercial and military aircraft, satellites, weapons, electronic and defense systems, launch systems, advanced information and communication systems, and performance-based logistics and training. With corporate offices in Chicago, Boeing employs more than 168,000 people across the United States and in more than 65 countries.

www.boeing.com | Chicago, Ill.

Lockheed Martin is a global security and aerospace company principally engaged in the research, design, development, manufacturing, integration, and sustainment of advanced technology systems, products, and services. Headquartered in Bethesda, Md., Lockheed Martin employs approximately 113,000 people worldwide. The company is led by Marillyn Hewson, chairman, president, and chief executive officer. Lockheed Martin also provides a broad range of management, engineering, technical, scientific, logistic, and information services. Its main areas of focus are in defense, space, intelligence, homeland security, and information technology, including cybersecurity.

w www.lockheedmartin.com | Bethesda, Md.

Top Aces USA is changing the face of contracted air services worldwide. With over 45,000 accident-free flying hours delivered to date, it provides live combat airborne training with the largest operational fleet of privately owned, advanced, modernized fighter aircraft and veteran pilots. It ensures that the same standards, training, and professionalism that have garnered its worldwide reputation as the premier contracted combat support service provider of choice to NATO and allied forces are in place to support your national training objectives. Experience matters!

www.topaces-usa.com | Mesa, Ariz.

Since 1922, USAA has proudly served the financial needs of the military and their families by providing a full range of highly competitive financial products and services. The same core values that guide our military inspire USAA employees to go above and beyond for our members every day. When people join USAA, they join generations of military families who have depended on the company to provide superior products and services in an atmosphere of financial strength. Turn to USAA for insurance, banking, investments, and advice.

www.usaa.com | San Antonio, Texas

The Flash Boys

Photo from National Air and Space Museum

Photo from National Air and Space Museum

In the 1950s, the above-ground testing of US nuclear and thermonuclear weapons became, for some hardy souls, a spectator sport. The government filmed and photographed these explosions, bringing in their own technicians to do the job. In the large photo here, up-close cameramen and photographers record a 1953 explosion of a nuclear weapon at the Nevada Test Site, 65 miles northwest of Las Vegas. Other test observers were invited guests. In the inset, a select group of VIPs, sporting special eyewear to protect the user from the nuclear flash, observe one of the four Operation Greenhouse thermonuclear tests on Enewetak Atoll in 1951.

QUICK GUIDE TO YOUR AFA MEMBERSHIP BENEFITS

AFA Membership entitles you to all these money-saving benefits. Remove and retain this Quick Guide and become reacquainted with your benefits. Use them often to get the most out of your membership.

FINANCIAL SERVICES YOU CAN TRUST

AFA's preferred provider for the following financial services is USAA.

AFA USAA Rewards™ Credit Cards

The card that makes it easy for anyone to support AFA. Select from several unique AFA card designs, which provide:

- Choice of American Express® or MasterCard®
- Low variable APRs
- Reward points
- No annual fee
- Special deployment and PCS benefits

Call 1-877-618-2473 or visit usaa.com/afa for more information and to apply.

USAA Bank is built on military values

That's why we make it easy to bank anytime, anywhere. From cutting-edge mobile apps and online banking to award-winning customer service, see why we're different.

Call 1-877-618-2473 or visit usaa.com/afa for more information and to open an account.

USAA Financial Advice, Planning and Investments

At USAA, our disciplined approach to managing money stems from our military values of service, loyalty, honesty and integrity. It's a commitment we share with those we serve. Our advisers are salaried, not paid commissions. Look to them for advice and options to help meet your goals.

- Mutual Funds
- Certificates of Deposit (CDs)
- Annuities
- Retirement Solutions
- Individual Retirement Accounts (IRAs)
- Brokerage Accounts
- Managed Portfolios
- 529 College Savings
- Trust Services

Call 1-877-618-2473 for a personal, no-obligation consultation.

Investments/Insurance: Not FDIC Insured • Not Bank Issued, Guaranteed or Underwritten • May Lose Value

Investing in securities products involves risk, including possible loss of principal.

Financial planning services and financial advice provided by USAA Financial Planning Services Insurance Agency, Inc. (known as USAA Financial Insurance Agency in California, License # 0E36312), a registered investment adviser and insurance agency and its wholly owned subsidiary, USAA Financial Advisors, Inc., a registered broker dealer.

USAA means United Services Automobile Association and its insurance, banking, investment and other companies. Banks Member FDIC. Investments provided by USAA Investment Management Company and USAA Financial Advisors Inc., both registered broker dealers.

LifeLock
Relentlessly Protecting Your Identity™

Identity theft is one of the fastest growing crimes today. Small leaks of personal information–over which you have no control–can make it possible for unscrupulous identity thieves to spend your money, ruin your credit, get medical attention under your health insurance, and even commit crimes in your name.

Then you are faced with the insurmountable task of undoing the damage which can leave you further in debt and emotionally drained. OR you can protect yourself with LifeLock Ultimate, the most comprehensive identity theft protection available.

Call 1-800-LifeLock or visit www.LifeLock.com for an AFA Members special offer plus 10% off with promo code AFA1.

LEGAL SERVICES…JUST IN CASE

Hyatt Group Legal Services

Choose from 13,000 attorneys nationwide to assist you with your personal legal matters. You can save hundreds of dollars on typical attorney fees with no deductibles, no co-pays, and no claim forms. You, your spouse, and your dependents will receive full attorney representation for expected and unexpected legal matters such as wills, trusts, traffic ticket defense, adoption, debt collection defense, identity theft defense, elder law matters, buying or selling your home, domestic violence protection, unlimited phone and office consultations and much more.

Your plan costs just $216 per year...that's only $18 a month. The Open Enrollment Period for AFA Members is every November and December for the following calendar year. For more information:

Call 1-800-821-6400 or visit https://info.legalplans.com and use access code 8539007.

This QUICK GUIDE TO YOUR AFA MEMBERSHIP BENEFITS is a summary that we hope you will remove from the magazine and keep handy. AFA Insurance Benefits are not included here as they will be covered in an upcoming issue of AIR FORCE Magazine. Use all your benefits often to get the most value out of AFA membership and to support Air Force Association programs. Questions? call 1-800-727-3337.

HEALTH SERVICES TO ASSURE YOUR WELL BEING

Medical Air Services Program

If you are on vacation and become ill or injured, what would you do? You may be surprised to learn that your health insurance may not cover your return home for treatment. And did you know that air ambulances start at $15,000 and must be prepaid?

Medical Air Services Association (MASA) enables AFA Members to enroll in the premier worldwide emergency assistance program. You can have the peace of mind of knowing that your transportation home is covered wherever you travel in the world at no cost to you, with no deductibles, no co-pays, no dollar limits on air transport costs, and no claim forms. Instead you just pay MASA annual dues–discounted for AFA Members–which will never be raised–guaranteed!

Benefits include transportation for sick/injured and escort (air or ground), organ retrieval, organ recipient transport, repatriation/recuperation, escort transportation, minor children/grandchildren return, vehicle return, mortal remains return, WORLDWIDE COVERAGE and more!

Individual Plan	$290
Family Plan	$390
$60 Enrollment Fee	Waived

Call 1-800-423-3226 or visit www.masaassist.com/afa.

Dental Benefits Max

Now you can try Dental Benefits Max free for 30 days. It provides access to Aetna Dental Access®, one of the country's most recognized and comprehensive dental networks. For just $9.95 per month for individual coverage or $12.95 per month for your entire household, you will receive substantial discounts at more than 125,000 dentists nationwide. In addition you qualify for discounts on Vision Care (through Coast-to-Coast Vision Plan), Prescriptions, Chiropractic Care and Medical Supplies.

Call 1-866-481-6289 or visit www.benefitservices.com/afa to try this plan free for 30 days!

Prescription Discounts

AFA provides members with a FREE prescription discount card that will entitle you to savings of 10-60%. The participating pharmacies include Target, Rite Aid, K-Mart, Costco, CVS, Publix, Walgreens, Kroger, Safeway, United Drugs, A&P and more. Over 48,000 pharmacies nationwide participate!

Call 1-877-321-6755 or to receive your FREE Rx discount card immediately, simply visit www.dprxcard.com/AFA. Enter your name and email address, print the card and begin saving.

Hearing Benefits

American Hearing Benefits is a convenient hearing benefits program which provides you access to free hearing consultations and significant discounts on hearing aids through our nationwide network of hearing professionals. As a member of AFA, you and your family are entitled to hearing savings through American Hearing Benefits.

AFA members receive:

- FREE annual hearing consultations
- Advanced Hearing Solutions with the latest in hearing aid technology, tinnitus solutions and protective hearing products
- Special AFA discount pricing
- FREE box of batteries (40 cells per hearing aid purchased)
- 60-day trial period • And MORE!

To activate your benefit, find a provider near you and schedule your free consultation, Call 1-888-809-7786 or visit www.americanhearingbenefits.com

Coast-to-Coast Vision Plan

Save 10-60% on most eye care services and products–eye glasses, contacts (excluding disposables), eye exams, and surgical procedures such as LASIK. With more than 12,000 participants, the Coast-to-Coast provider network is one of the most comprehensive and includes ophthalmologists, optometrists, independent optical centers and national chains such as Pearle Vision, JC Penney Optical, Sears Optical, LensCrafters, and EyeMasters.

Now AFA Members can save 20% off the cost of Coast-to-Coast Vision plans (normally $29.95 per year for an individual or $49.95 a year for the whole family). Plus, for a limited time, get 3 months free!

Call 1-888-632-5353 (will answer "Dental Plans.com") or visit www.afavisionplan.com and use code EYECARE for 20% Off and 3 months free.

AFADentalPlans.Com

Get 20% off regular rates and 3 extra months of dental plan membership free–a $20 to $50 value–when you sign up for your choice of one of many fine discount dental plans.

Visitors to AFADentalPlans.Com access a nationwide search engine to compare discount dental plans by zip code, view sample savings and find a nearby dentist. You could save 10-60% on procedures such as cleanings, root canals, x-rays and even cosmetic dentistry with select plans.

With the AFA discount, plans range from $63.96 to $111.96 per year for individuals, and $103.96 to $159.96 per year for families. Most plans activate within three business days.

Call 1-888-606-8401 or visit www.afaDentalPlans.com. Mention code AFA20 to get your 20% discount and 3 extra months free.

Did you know that you may be at risk for life-threatening diseases and yet have no symptoms? Life Line Screening evaluates your risk for several of today's most critical and often undiagnosed health conditions. The screenings are less than an hour, painless, and noninvasive and are performed conveniently in your own community by a skilled technologist then reviewed by a board-certified physician.

AFA Members receive discounts on Life Line Screenings such as:

Stroke, Vascular Disease and Heart Rhythm Package	$135
AFA Members Savings	**$105**
Complete Wellness Package	$145
AFA Members Savings	**$130**

Call 1-800-908-9121 or visit www.LifeLineScreening.com/AFA, mention code BBPA-001 and the discount will be applied to your appointment.

SHOPPING THAT'S MEANINGFUL AND ECONOMICAL

AFA Christmas and Holiday Cards and Gifts

Show your Air Force pride. Send AFA Holiday Cards. Choose from over 20 designs available nowhere else. Cards can be personalized in a number of ways so you send a unique and meaningful message.

If you want your holiday gifts to be just as unique, consider the wide assortment AFA offers for all ages such as puzzles, ornaments, and note cards. Make Christmas shopping easy while showing your support for AFA's mission to promote a dominant United States Air Force and a strong national defense. And we'll send you a FREE GIFT, too.

Call 1-800-556-5489 or visit www.holidaycardcenter.org/afacards. After-Christmas clearance sale in January!

Sam's Club® Gift Card

If you like to save money every time you shop, here's your chance. Sam's Club® is known for its remarkably low prices and discounts at its one-stop shopping stores which contain Pharmacy and Optical Departments. And now, AFA Members receive up to a $25 Sam's Club® Gift Card when you sign up for, upgrade to, or renew a Sam's Club® Plus Membership by August 31, 2014. Or choose an Advantage or Business Membership and receive a $10 Sam's Club® Gift Card.

Call AFA on 1-800-727-3337 for certificate or print it at www.afa.org/benefits by August 31, 2014 to start saving more.

GOVX

life after work

A benefit you've earned! AFA Members get free VIP access to GovX, where you get 20% to 50% off men's and women's apparel along with 20,000+ popular tech, tactical, golf, outdoor and active-lifestyle products, PLUS receive exclusive pricing on major league sports tickets directly from the teams!

Easy to access, just visit GovX.com/AFA and for every purchase you make as an AFA Member on GovX, a portion of the proceeds is donated back to support AFA programs.

Call 1-888-468-5511 or visit www.GovX.COM/AFA.

AFA Hangar

The Hangar is the official store of the Air Force Association and the Air Force Memorial. Browse The Hangar for ladies and men's apparel, pens, hats, mugs, golf supplies, and more–all proudly sporting the AFA logo, the Air Force Memorial spires, or the CyberPatriot logo. New lower pricing on most items so order today. These items make unique gifts, too.

Call 1-800-727-3337 for a catalog or visit www.afa.org/store.

Apple Member Purchase Program

AFA Members qualify for preferred pricing on the latest select Apple products and accessories. Take advantage of:

- Exclusive promotions
- Free shipping on orders over $50
- Free engraving on all iPods and iPads
- Mac customization
- Ratings on accessories and software

Call 1-877-377-6362 and identify yourself as an AFA Member or visit www.store.apple.com/us/go/eppstore/airforce.

Dell's Member Purchase Program

Dell welcomes AFA Members with special savings and services just for you including:

- Buy with ease. Go to www.dell.com/afa and order from the featured systems, which are pre-loaded with great features. Systems are built exclusively for AFA Members!
- Customize your system. Meet your unique needs and get an additional 7% discount on top of generally advertised Dell promotions.
- Add the extras: For the first time ever, get an additional 7% off electronics and accessories.
- 24-hour support: Convenient Dell hardware telephone technical support whenever you need it.

Call 1-800-293-3492 or visit www.dell.com/afa. Provide Member ID DS 126348550.

CAREER SERVICES HELP YOU MAXIMIZE YOUR MILITARY EXPERIENCE

Résumé Assistance

Don't take a chance on your résumé being overlooked in this tough job market. AFA career consultants know how to present the value of your military experience. Let them prepare an impressive, motivating professional résumé for you or critique your existing one to help you get the interviews.

Call 1-800-727-3337 or visit www.afa.org/benefits.

EDUCATION BENEFITS BECAUSE LEARNING IS NEVER ENDING

eKnowledge™ SAT/ACT Discounts

Designed for Military families, eKnowledge is offering AFA Members and their families $250 SAT and ACT Test Prep Programs for less than $20.00. The PowerPrep programs are available online or DVD and contain 11 hours of video instruction, 3000 files of supplemental test prep material, thousands of interactive diagnostic tools, sample questions and practice tests. Students select the training they need and study at their own pace.

The eKnowledge Sponsorship covers the complete $250 purchase price for the standard SAT or ACT PowerPrep Program. AFA members pay only a nominal charge of $17.55 to $19.99 (per Standard program) for the cost of materials, support, shipping or streaming.

To order online: www.eKnowledge.com/AFA or telephone 951-256-4076 (reference AFA).

Grantham University

Grantham offers our Members discounted tuition at Grantham University. Its 100% online degrees allow you to fit education into your busy life.

The University offers associate, bachelor and master's degrees in Business Administration, Computer Science, Criminal Justice, Engineering, Health Sciences, Human Resource Management, Information Systems Security, Medical Coding and Billing, and more.

Grantham offers convenient weekly enrollments and frequent course starts. Tuition through AFA is $250 per credit hour regardless of the program you select.

Call 1-888-947-2684 or visit www.afa.org/benefits and inquire about scholarships as well.

TRAVEL SERVICES TO BROADEN YOUR HORIZONS AT A SAVINGS

Exclusive Worldwide Hotel Discount Program

One call or visit to our website will check multiple hotel reservaton networks at once to provide AFA Members with the best rates. Our analysis shows savings averaging 10-20% BETTER than online travel agents. Some members saved as much as 50%. In fact, the AFA rate beat the leading online discount sites 98.6% of the time. Next time you need to book a hotel anywhere in the world, book with confidence through AFA.

Call 1-800-892-2136 or visit www.afa.org/hotels and use code AFA.

Veterans Holidays®

You and your family can stay at over 3,500 popular resorts, apartments, and condominiums in more than 100 countries for only $349 USD per unit, per week. Yes, that is the weekly rate as long as space is available.

Book by phone, mention that you're an AFA Member and use the Veterans Organization Code #601. Or to search the database of eligible resorts and make your reservations online, just remember to choose "Air Force Association" under "Installation". It's that easy.

Call 1-877-772-2322 or visit www.veteransholidays.com.

Government Vacation Rewards

Travel with a Best Price Guarantee and earn rewards points toward future travel. Government Vacation Rewards makes it possible with over 40 cruise lines and more than 4,000 different resort properties worldwide from which to choose. The discounts vary depending on itinerary, length of trip, and time of travel. Expect to save up to $150 or more. The Military Cruise Store offers cruise line-sponsored military rates. And there are no blackout dates or booking fees ever!

You earn 1 point for every dollar spent and AFA Members receive 2,500 FREE POINTS (worth $150) immediately upon registration.

Call 1-866-691-5109 and mention you are an AFA Member or visit www.govvacationrewards.com/afa.

Medical Air Services Program

See description under Health Benefits.

Car and Truck Rental Discounts

AVIS and Budget discounts up to 25% off to AFA Members. They also offer periodic discounts on their websites which you can take IN ADDITION to your regular AFA discount. We suggest you cut out and use the coupons below every time you rent from AVIS or Budget and also check their websites for additional discounts.

AFA MEMBER DISCOUNT UP TO 25%

Call 1-800-698-5685 and reference AVIS Worldwide Discount **D453800**. Visit www.avis.com/afa for additional timely discounts.

AFA MEMBER DISCOUNT UP TO 25%

Call 1-800-455-2848 and reference AFA discount **BCD X201400.** Visit www.budget.com/afa for additional timely discounts.

Make moving easier than ever with a Budget Truck. You'll save money with these AFA Member Discounts:

Sunday-Thursday...**up to 20% OFF**
Friday-Saturday.....**up to 15% OFF**

Call 1-800-566-8422 and use promo code **56000083928.** Visit www.budgettruck.com/airforce for additional timely discounts.

The United States Air Force Charity Ball

Since 2004, the Air Force Charity Ball has raised nearly $6 million for the Air Force Aid Society in support of our airmen and their families. We could not do this without the generosity of our sponsors. Thank you to our top tier sponsors who each donated $5000 or more to this year's event.

To view the entire list of our sponsors or to learn more about sponsoring the 2015 event, go to:

www.airforcecharityball.org

DIAMOND PLUS PATRON
Lockheed Martin Corporation
The Raytheon Company

DIAMOND PATRON
The Boeing Company

PLATINUM PLUS PATRON
UTC United Technologies Corporation
UTC Aerospace Systems
Pratt & Whitney
Sikorsky Aircraft Corp
Northrop Grumman Corporation
Textron Systems Corporation

PLATINUM PATRON
General Dynamics
Leidos
Airbus Group, Inc.
General Electric Aviation
Rolls-Royce North America
Science Applications International Corporation (SAIC)
SES Government Solutions

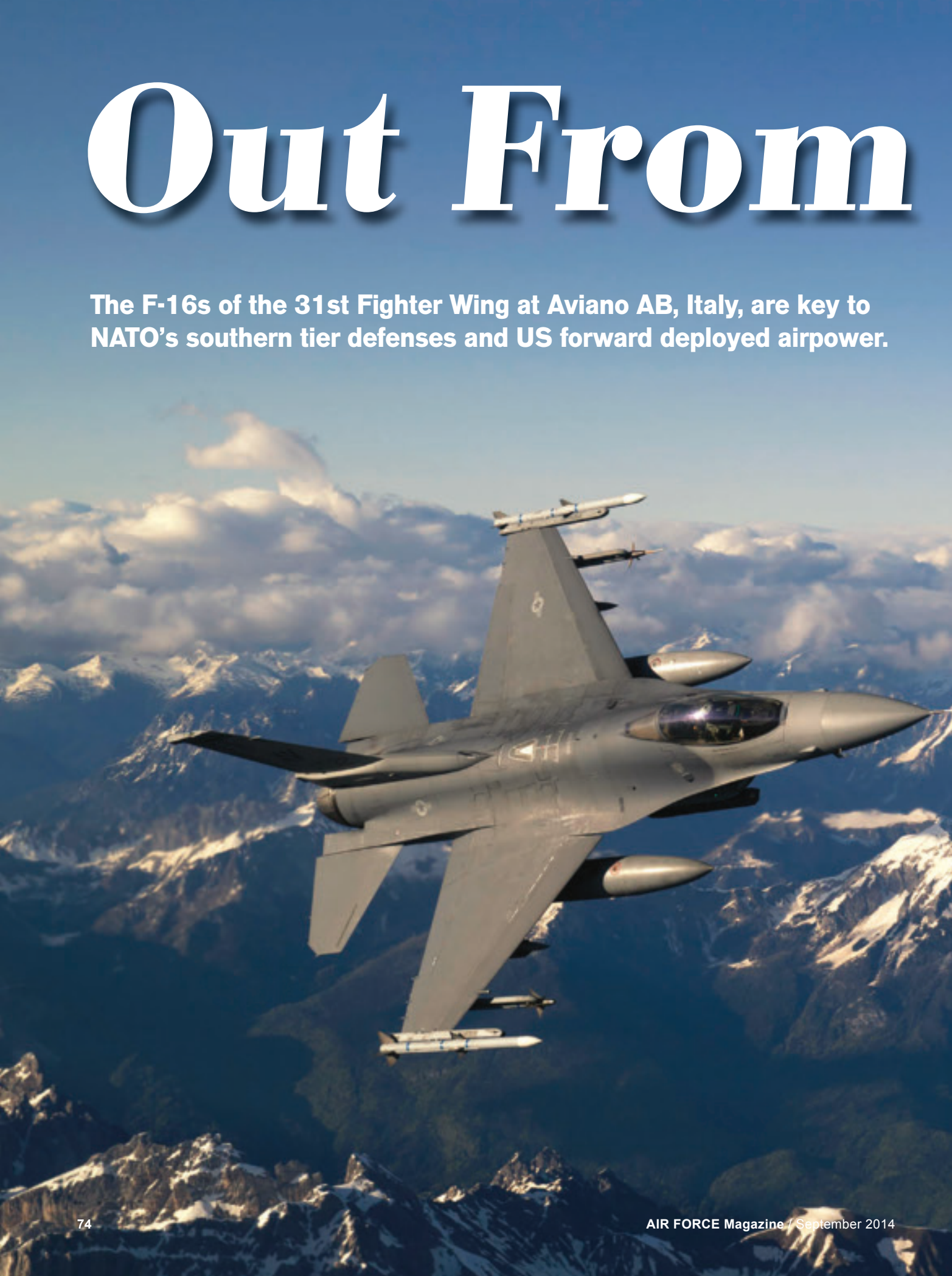
GOLD PATRONS
Aircraft Propeller Service, LLC
Air Force Association
Alliant Techsystems, Inc. (ATK)
Booz Allen Hamilton (BAH)
Exelis, Inc.
Rent A Center
The USAA Foundation

SILVER PATRONS
General and Mrs. John Jumper
Kramer Portraits, New York
Doctor and Mrs. Mick J. McKeown
The Honorable and Mrs. William A. Moorman
Saab Group
Sierra Nevada Corporation
Triumph Group, Inc.
USAA

Save the Date of March 21, 2015 for Next Year's Charity Ball

Out From

The F-16s of the 31st Fighter Wing at Aviano AB, Italy, are key to NATO's southern tier defenses and US forward deployed airpower.



Italy

Photography by Jim Haseltine
Text by Otto Kreisher, Senior Correspondent

Aviano Air Base sits at the foot of the Dolomite mountains on the southern edge of the snow-capped Alps in northern Italy. But the F-16s of the Aviano-based 31st Fighter Wing frequently have been in much less scenic and serene locations, such as Iraq, Afghanistan, South Korea, and recently, Libya. As the only Air Force fighter wing south of the Alps, the 31st FW is a critical part of NATO's combat capabilities in the alliance's southern region. The location also gives the wing's two F-16 units, the 510th Fighter Squadron and the 555th Fighter Squadron, a head start on deployments to US operational and combat missions far removed from Aviano. Here, three F-16C Block 40s from the 555th FS, the "Triple Nickel," maneuver over the Dolomites on a training mission.

1

*/**1**/ The 31st FW's flagship (foreground) leads a four-ship formation of F-16s from the 510th FS and the 555th FS in flight over the Dolomites, north of their home at Aviano Air Base. /**2**/ A1C Nathaniel Lott (left) and SSgt. Kristoffer Jambaro conduct postflight maintenance on an F-16 at Aviano. /**3**/ A1C Nicholas Crouse (left) and A1C David Hamilton check a tool box and laptop in preparation for weapons maintenance on an F-16. /**4**/ In Nevada, two F-16s from the 510th FS climb steeply over the test and training range complex near Nellis Air Force Base in preparation for the July 2014 Red Flag exercise there.*

2

3

4

*/**1**/ Lt. Col. Scott Poteet from the 31st Operations Group flies a training mission over Italy wearing the Joint Helmet-Mounted Cueing System. It helps pilots maintain situational awareness even without looking at the cockpit instruments. The system displays aircraft performance, navigation, and tracking symbology on the helmet's visor. /**2**/ TSgt. Fritzgerald Ruiz (foreground) and Crouse load a GBU-54 laser and GPS guided 500-pound bomb on the 31st FW flagship during weapons loading training. /**3**/ An F-16 loaded with AIM-9 Sidewinder and AIM-120 AMRAAM munitions, external fuel tanks, a Sniper targeting pod, and an ALQ-131 jamming pod pulls Gs in an overhead break for landing at Aviano. /**4**/ An F-16 flies over the snow-covered Italian Alps in May. /**5**/ Capt. Joe Gagnon (left) and Capt. Brian Beears, F-16 pilots from the 555th FS, walk back to the squadron for debriefing after a training mission.*

*/**1**/ Armed with M16s, SSgt. Maurice James (left) and A1C James Oshel, security forces airmen, stand next to a Humvee with a roof-mounted weapons station while providing security for an F-16 at Aviano. /**2**/ Capt. Matt Robbins, a 510th FS pilot, checks an AIM-9 Sidewinder missile as part of his preflight check. /**3**/ A four ship from the 31st FW flies over Venice, Italy, on a training flight southwest of their base. /**4**/ SrA. Enrique Melgarejo performs an end-of-runway preflight check on an AIM-120 AMRAAM as an F-16 prepares for a flight.*

*/**1**/ Capt. Cory Jerch, a pilot with the 510th FS, checks the AIM-120 missile as part of his preflight inspection of an F-16. /**2**/ Maintenance personnel from the 555th tow an F-16 to a hardened aircraft shelter on Aviano. /**3**/ The 31st FW flagship flies through a mountain valley in northern Italy during a training flight. /**4**/ Aviano transit alert personnel refuel a Greek air force airborne early warning aircraft on the air base flight line.*

1

2

3


4

*/**1**/ Three F-16s from the 31st FW fly over the Italian city of Sacile during a mission. The wing flagship has the lead, with an F-16 from the 510th off its left and one from the Triple Nickel on its right. /**2**/ A 510th FS F-16, with afterburner flaring, takes off from Aviano for a training mission. /**3**/ In front of the 510th FS facilities at Aviano, an F-16 model stands as a proud historical symbol of the "Viper." The squadron nickname, displayed on the pedestal, has evolved over the years. The unit and its airmen have been called the "Bien Hoa Buzzards," "Bosnia Buzzards," and the "Fightin' Buzzards."*

3


1

2

*/**1**/ Pilots in four Vipers complete their preflight checks before taxiing out for a training sortie from Aviano. /**2**/ A 510th FS pilot climbs into his F-16 in preparation for another mission. /**3**/ An F-16 is framed by the front of a hardened aircraft shelter at Aviano. /**4**/ SSgt. Johnathan Sills and SrA. Mathew Monk from the 555th Maintenance Squadron install an AIM-9 Sidewinder on an F-16 showing a Triple Nickel fin flash. Thanks to the base's proximity to Eastern Europe, Africa, and the Middle East, for the airmen and F-16s at Aviano, optempo doesn't look to slow down any time soon.* ■

The high-tech systems ordered during the 1980s revitalized the Air Force and helped win the Cold War.

If you check the tail number of an F-16, F-15, KC-10, or B-1, most likely it will show a year marked from the 1980s. Defense spending under President Ronald Reagan restocked the US Air Force with war-winning platforms that carried out a transformation from the late years of the Cold War to a new world order and the age of precision and information.

One of the lasting legacies of the Reagan buildup was better airpower. The Air Force retired hundreds of old fighters and bought new fighters, bombers, tankers, and airlifters. "None of the four wars in my lifetime came about because we were too strong," Reagan said.

CONVINCING THE SOVIET UNION

President Reagan came into office after America had suffered through one of its bleakest moments in modern history: the Iran hostage crisis. Détente was defunct. The Soviet Union invaded Afghanistan in 1979. President Jimmy Carter boycotted the 1980 Olympics held in Moscow. Soviet troops menaced Poland.

"By 1980 we had fighter planes that couldn't fly, Navy ships that couldn't leave port, a Rapid Deployment Force that was neither rapid nor deployable and not much of a force," Reagan said in a 1982 speech.

"The 1980s promise to be a new era for the USSR," wrote William G. Hyland. "The strategic superiority of the United States has clearly ended."

Not if Reagan could help it.

Americans knew that rebuilding the military was a top priority for the new President. To Reagan, the defense investment was part one of a larger plan. Reagan favored a military increase to counter Soviet forces in the Third

The Reagan Buildup

By Rebecca Grant

DOD photo

Above: Two F-15s armed with AIM-9 and AIM-120 air-to-air missiles. During the buildup years, the total USAF inventory of F-15s rose to 732 in 1987. Right: President Ronald Reagan delivers to the nation on March 23, 1983, a speech outlining and initiating the Strategic Defense Initiative—"Star Wars."

World without dangerously draining forces from Europe.

He wanted to bring US forces up to parity, but most of all he wanted to reduce tensions and nuclear arms stockpiles. Recently declassified National Security Council records from April 1982 note Reagan's comments on the Strategic Arms Limitation Treaty, SALT II (he thought it was "lousy"), and his desire to do "what Ike proposed on all nuclear weapons," namely, to eliminate them. After 1985 he found a willing partner in Soviet Premier Mikhail S. Gorbachev and made startling progress on arms control.

But first, there was the military buildup. In his 1981 confirmation hearing for Defense Secretary, Caspar W. Weinberger said he was worried US forces were "incapable of stopping an assault on Western oil supplies."

Reagan gave perhaps his clearest explanation of defense spending in a speech on Feb. 19, 1983. "Over the past 20 years, the Soviet Union has accumulated enormous military might, while we restrained our own efforts to the point where defense spending actually declined, in real terms, over 20 percent in the decade of the '70s," he said. "If we continue our past pattern of only rebuilding our defenses in fits and starts, we will never convince the Soviets that it's in their interests to behave with restraint and negotiate genuine arms reductions."

NATO and the US needed credible conventional forces to restore meaning to flexible response and open options for moving away from nuclear weapons.

Matching the Soviet arsenal was worrisome. By 1983, the Soviet Union could muster about 6,500 aircraft. On the horizon was the new Su-27, thought to rival the F-15. Scholars pointed out that the US and NATO had a qualitative edge. The geography of Europe—such as the famous Fulda Gap on the border between West and East Germany—favored defenders. Still, even those who questioned Reagan's buildup most acutely admitted the shortfall in numbers. John J. Mearsheimer and Barry R. Posen tallied a 150 percent advantage in tanks for the Warsaw Pact countries, with a 180 percent advantage in artillery and 15 percent in tactical aircraft.

But there was a gap in airpower, among other things. "The Soviet Air Force could outnumber the US Air Force in central Europe by as much as three to one if it brought forward assets based within the USSR and included earlier generation aircraft like the MiG-21 and Su-7," wrote RAND analyst Benjamin S. Lambeth in a 1985 article for *International Security*. "If NATO European fighters were

US government photo

An F-117 takes on fuel from a KC-10. The F-117 was built in great secrecy, and the stealthy aircraft was indicative of Reagan's commitment to quality, state-of-the-art weapon systems. The KC-10 Extender, meanwhile, greatly enhanced USAF's global reach.

introduced into the equation, the balance would look more like two to one or possibly less."

The US Navy of 1981 couldn't provide much help.

"The reason I say we have lost our margin of superiority is I believe we can no longer tell our Commander in Chief that we have the capability to prevent the Soviets from carrying out their naval task, which is to cut our lines for significant periods of time in certain areas of the world," said the new Secretary of the Navy, 38-year-old financier John F. Lehman Jr., in 1981.

QUALITY AIRPOWER

Rejuvenating the Air Force was thus one of the quickest ways to boost the conventional balance in Europe, address areas such as the Persian Gulf, and open up maneuvering space in strategic arms limitation talks.

Reagan was a longtime believer in airpower. As a 31-year-old actor, in June 1942 he transferred from the cavalry to the Army Air Forces. He served in Culver City, Calif., with director Frank Capra and others in the First Motion Picture Unit making stirring documentaries such as "Why We Fight" and "The Memphis Belle," which featured a B-17 crew surviving 25 missions over Europe. Reagan had another special inside connection to the Air Force via his close friend Jimmy Stewart, who would serve a long career in the USAF Reserve and was a decorated World War II B-24 pilot.

Stewart, Reagan, and their wives had been pals and weekly dinner partners for 40 years and continued to be during Reagan's White House years. The two movie stars were on occasion joined for dinner at the White House by their Bel Air, Calif., neighbor Thomas V. Jones, chairman of the Northrop Aircraft Co.

In the Reagan buildup, quality counted—as seen in acquisition of systems such as the F-117, F-15E, and advanced blocks of the F-16 fighter.

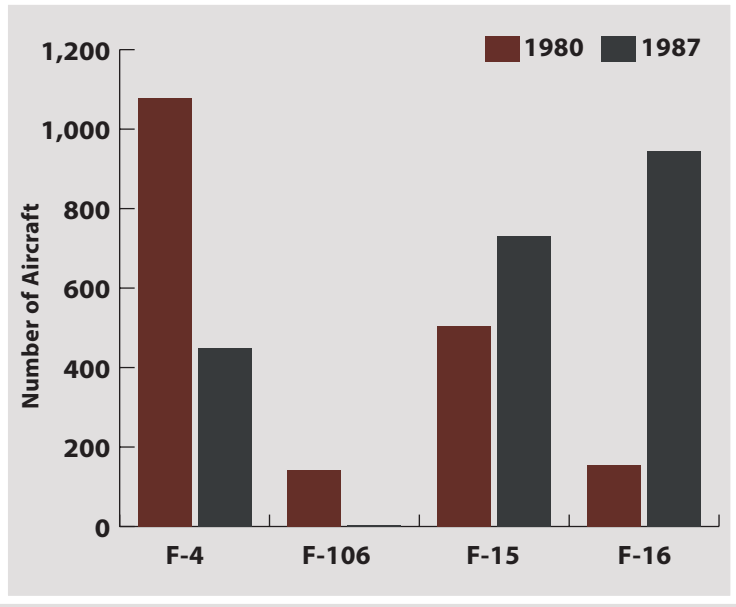
In the early 1980s, technology excellence was the byword. However, most of the significant work on stealth, battlefield sensors, and other systems had started under previous Administrations. The Carter Administration nurtured a number of secret projects, including stealth aircraft, the predecessors to JSTARS, and early work on the concept of the Global Positioning System. Defense budgets rose in the late Carter years, too.

By 1981, the debate was about how much to increase defense spending: to five percent of GDP, as Carter planned, or about seven percent, per Reagan's plans.

Reagan was a big proponent of advanced technology and didn't want the US military to settle for make-do solutions or second best. "Innovation is our advantage," he said in a 1986 address to the nation. "One example: Advances in making airplanes and cruise missiles almost invisible to Soviet radar could neutralize the vast air defense systems upon which the Soviets and some of their most dangerous client states depend. But innovation is not enough. We have to follow through. Blueprints alone don't deter aggression. We have to translate our lead in the lab to a lead in the field. But when our budget is cut, we can't do either."

Reagan's first moves accelerated production of weapons developed during the late 1970s. At the top of the list was the B-1. Canceled under the Carter Administration in June 1977, the B-1 was a prime campaign issue for Reagan and he wasted no time restarting the bomber program. "The advanced B-1 is favored by the Air Force's high command, by a fairly vocal constituency in Congress and by Administration officials who contend that it would be a better signal to the Soviet Union that the Reagan Administration is serious about rearming America," reported *The New York Times*.

"The Reagan buildup enabled modernization but little growth in force levels," noted James C. Ruehrmund Jr. and Christopher J. Bowie in *Air Force Magazine* in February 2011. The Air Force took advantage of the buildup to swap out older fighters for the most modern airframes, thus keeping force levels relatively stable. As tallied by the Air Force in 1988, total numbers of "Fighter/Intercept" aircraft in the



USAF photo

Active Duty inventory increased only slightly, from 2,360 in 1980 to 2,538 in 1987—not including 59 F-117s whose existence was still secret. Thus the total of 1,078 F-4s in 1980 fell to just 448 in 1987. Of the 142 F-106s in the active force in 1980, just five remained by 1987.

In their place, the number of F-16s rose sharply from 156 in 1980, primarily F-16As with some F-16Bs, to 944 F-16s by 1987. The Air Force continued purchases of the F-15 as well. The total active inventory rose from 505 in 1980 to the peak of 732 by 1987.

The concern for advanced tactical airpower in Europe also led the Air Force to purchase two different and distinctive fighter-bombers during the Reagan buildup.

One was the F-117. The production F-117A made its first flight in great secrecy on June 18, 1981. In October 1983, the F-117 reached initial operational capability. The airplane was expensive from the beginning but proved its value due to its ability to penetrate air defenses and knock out vital command and control targets early in a NATO-Warsaw Pact combat scenario. Under Reagan, the clear demand for superior conventional airpower made purchase of the revolutionary fighter a no-brainer.

Next was the Dual Role Fighter, better known as the F-15E. The Reagan Administration hurried along the competition and funded the first purchases of the workhorse that would become indispensable in air-ground warfare.

Reagan also brought the C-5 back into production with modifications and improvements. The first C-5B was approved in 1982 and delivered in January 1986. The Reagan Administration bought a total of 50 new C-5Bs.

Another 1970s design that blossomed in the buildup was the KC-10 Extender. The long-range tanker with cargo capacity flew in the summer of 1980 and Strategic Air Command accepted the first aircraft at Barksdale AFB, La., in March 1981. The KC-10 buy proceeded without a hiccup, yielding 59 aircraft by the end of 1988. KC-10s swung into action for the signature airpower mission of the Reagan years: the 1986 attack on Tripoli, Libya—Operation El Dorado Canyon. KC-10s greatly facilitated the long flight of F-111s from bases in England.

Manpower wasn't the way to face down the Soviet Union, but Air Force Active Duty personnel number grew nonetheless. The total number on Active Duty increased from 557,969 in 1980 to 607,035 by September 1987. Just five years later, the number declined to 470,315 in 1992.

Beyond this was Reagan's effect on morale. The new equipment, pay raises, restored readiness, and funding for better training and multinational exercises boosted spirits. So did Reagan's obvious affection and respect for the military, which came through in speech after speech. For those in uniform in the 1980s "it meant that we could start to feel proud of ourselves, our uniform, our military, and yes, our President again," wrote former Army NCO David DeBatto.

MILITARY REFORM

Of course, there were critics of Reagan's plan. No Reagan initiative attracted more attention than "Star Wars." Reagan proposed a Strategic Defense Initiative based on a futuristic missile defense system in a speech televised to the nation in March 1983. Sen. Edward M. Kennedy (D-Mass.) famously labeled the proposals "reckless Star Wars schemes," and the name stuck. Opposition coalesced around the technological difficulties of elements such as X-ray lasers and on the consequences of moving away from mutually assured destruction.

SDI and other Reagan intiatives stoked debate in Washington about the role and structure of the military. The rising budget was a target and so was the emphasis on advanced technology. "The pursuit of the latest 'bells and whistles,' as high-tech frills are called in the military, is a major factor in producing massive cost overruns," wrote Walter Isaacson in a *Time* magazine cover story on March 7, 1983.

That issue featured Pentagon bureaucrat Franklin C. Spinney on the cover after Spinney had briefed the Senate Armed Services Committee on his analysis of cost factors. For hunting tanks, he argued, "five times as many A-10 planes could be bought for the same money as F-15Es."

On Capitol Hill, the Congressional Military Reform Caucus rallied debate. The military reform movement in its purest form shunned defense budget debates and focused only on conventional warfare and sought to empower maneuver warfare with close air-ground coordination as a way to restore America's edge. Through the 1980s, it broadened opposition to the Reagan buildup and a suspicion of high-technology projects.

Lambasting the Pentagon made for easy pickings. "Every new voice calling for reform has helped encourage the brontosaurian Pentagon slowly to raise its head and peer out beyond the money patch where it has contentedly been feeding," opined Colorado Democrat Sen. Gary W. Hart in a 1986 opinion piece for *The New York Times.* Hart was a founder of the CMRC.

For the most part, the reformers were deeply interested in military doctrine and force structure. Most agreed with rearmament even if they differed on details. But an itchy side of the military reform movement emerged with a backlash against high technology. "We need to rebuild the Navy around the submarine, not the aircraft carrier," suggested Hart. "The Air Force's primary purpose should be shifted: It should not be 'winning through air power' but rather, supporting our ground forces."

By 1986, the Congressional Military Reform Caucus had 130 members. Many were thoughtful strategists, while others enjoyed the oratory.

DOD photo

A three-ship of F-16s carry AIM-9 Sidewinder missiles. USAF's inventory of F-16s grew six times in size during the Reagan years.

A tendency to exempt programs in their own districts limited the legislative impact of the members. "If you got the reform group together and started going through specific programs, you couldn't get them to agree on any of them," said Texas Republican Sen. John G. Tower.

Reagan himself was unfazed. He used a 1984 visit to the Rockwell International B-1 plant in Palmdale, Calif., where he was campaigning against former Carter vice president Walter F. Mondale, to praise advanced technology and air his disbelief that the Carter Administration had let defense slip so far. "This hostility to a strong, secure America—an America at the leading edge of technology—was also demonstrated in his opposition to the space shuttle," Reagan reminded his friendly audience of aerospace workers. "If it were up to my opponent, I'm afraid Rockwell might still be building the B-25—that is, if you were building anything at all," he joked.

Reagan emphasized superpower relations in his second term. He'd proposed what became the Strategic Arms Reduction Treaty (START) back in 1982. "American power is the indispensable element of a peaceful world; it is America's last, best hope of negotiating real reductions in nuclear arms," he said in his 1986 address to the nation.

Reagan and Soviet Premier Mikhail Gorbachev speak during a summit in Washington, D.C., in 1987. The two leaders made significant progress working together on arms control.

Photo via Ronald Reagan Presidential Library

Reagan met Soviet leader Gorbachev for the first time in Geneva in 1985. The two men talked for two days in Reykjavik, Iceland, in October 1986, and Reagan visited Moscow in the spring of 1988. The START agreement was not signed until 1991, but British Prime Minister Margaret H. Thatcher credited Reagan's superpower thaw as a factor in ending the Cold War.

The rise in defense spending didn't last. Congress passed the Gramm-Rudman-Hollings Act in 1985 and reaffirmed it in 1987. The law called for either balancing the budget or forcing automatic cuts. The spending cuts usually attributed to President Bill Clinton and, on occasion, George H. W. Bush, actually began during the Reagan Administration's second term, when the United States was still engaged in the Cold War. Defense spending topped out at six percent of GDP in 1986, then declined every year from 1987 to 1999.

Still, the Reagan buildup left USAF with a modernized and much-improved force. The buildup created the high-technology Air Force that dominated Operation Desert Storm in 1991 and won over Kosovo in 1999. Much of the hardware continues to operate effectively—but with increasing cost and obsolescence—even today.

Ronald W. Reagan died June 5, 2004. An impressive reminder of the Reagan-era buildup paid tribute. Twenty-one F-15Es flew past the US Capitol for his state funeral, the largest F-15E flyover at that time.

These were not show fighters; the 21 F-15Es from Seymour Johnson AFB, N.C., were operational aircraft, with thousands of hours of combat time in Iraq, Afghanistan, Kosovo, and other operations. ■

Rebecca Grant is president of IRIS Independent Research. Her most recent article for Air Force Magazine *was "China Flies" in the July issue.*

SAVE the DATE

AIR FORCE ASSOCIATION'S

AIR & SPACE CONFERENCE AND TECHNOLOGY EXPOSITION 2·0·1·5

SEPTEMBER 14-16, 2015 | NATIONAL HARBOR, MD
GAYLORD NATIONAL HOTEL & CONVENTION CENTER

Eyes in the Sky

Airpower shaped the early battles of World War I, with profound consequences.

Over the fateful summer of 1914, Europe plunged into the abyss of war. Before it did, government officials, military experts, and popular journalists spent weeks tallying the strength of nations and their war-making potential. They calculated power based on the density and strength of fortifications; the number, caliber, and range of cannon; divisions of fielded troops; and the tonnage, armor, and throw-weight of ever more imposing dreadnoughts.

Only a few thought of airplanes. Compared to forts, cannon, ships, and infantry, the frail wood, wire, and fabric "aeroplanes" seen buzzing through Europe's summer skies seemed hardly more consequential than darting dragonflies.

Yet prewar maneuvers had already convincingly affirmed their potential as flying scouts, and all of Europe's leading armies and navies already possessed some. An average two-seat airplane of 1914 vintage weighed about 1,600 pounds, had an 80 horsepower engine, could reach an altitude of 9,000 feet, attain 70 mph, and remain aloft up to 3.5 hours. It would be outperformed by all but a handful of today's general aviation airplanes and remotely piloted aircraft.

Armies and navies typically assigned six to 12 airplanes to divisions, headquarters, ships, and ports. Observers—generally staff intelligence or cavalry officers—directed their pilots, took notes, and snapped photographs. Though a few airplanes had crude wireless sets, crews more typically scribbled terse messages and dropped them to friendly ground forces, or landed in clearings or on roads near their parent units to report firsthand.

Austria-Hungary declared war on Serbia on July 28, and by the end of August the war had spread from Europe to the Middle East, Africa, Asia, and even the islands of the far Pacific. Besides the Hapsburg monarchy, the major combatants at the war's beginning were France, Germany, Great Britain, and Russia. Among them, they could field more than 400 divisions. As well, they possessed over 900 aircraft: 176 French, 208 British, 256 German, and 268 Russian.

TARGETING THE FRENCH

In 1905, Field Marshal Alfred von Schlieffen, the chief of the Oberste Heeresleitung (OHL), or the German high command, had declared that in any future war, "the French army must be annihilated." He envisioned the German army smashing through Belgium into France, thus evading its frontier defenses, sweeping southwest of Paris, then looping back to roll up the French army in disarray. After he retired in 1906, Schlieffen's basic plan lived on. Consequently, by mid-August, five German armies were poised to invade France.

By Richard P. Hallion

Photo from author's collection

Library of Congress photo

Far left: The Aviatik B.1 was an important early reconnaissance aircraft widely used by the Germans on every front and through the Balkans and Palestine. Left: Generals Paul von Hindenburg (l) and Erich Ludendorff understood the potential value of airpower and used it to Germany's advantage. Below: A Rumpler Taube airplane such as this one bombed Paris on Aug. 30, 1914, on the eve of the Marne campaign.

Museum of Flight photo

France, however, had a powerful ally: Russia. For two decades, uneasy with Kaiser Wilhelm II's bellicosity, the two countries had formed a mutual assistance pact. Now, France's ambassador in St. Petersburg begged Czar Nicholas II to order an immediate offensive, warning, "There is a risk of the French army being overwhelmed." Nicholas agreed. Russian headquarters subsequently ordered General Yakov G. Zhilinsky to prepare for an offensive "at the earliest possible moment."

Zhilinsky commanded the Northern Army Group, consisting of two armies of 200,000 troops each, with supporting artillery and cavalry, and approximately two dozen scout aircraft, most of French origin.

Defending East Prussia was the German 8th Army. It numbered about 150,000 regulars and aging reservists and could call on some 40 reconnaissance aircraft distributed in eight flying detachments. Prudently, the 8th Army commander on Aug. 2 ordered his airmen to reconnoiter the Russian border territories.

For two weeks they flew as far as Kovno (now Kaunas, Lithuania) in the east and Mlawa, Lodz, and Warsaw to the south. Though weather aborted some missions and some missed Russian troops already employing camouflage to evade detection, overall, the airmen discovered a surprisingly rapid Russian buildup. Concerned, on Aug. 14 Field Marshal Helmuth von Moltke, chief of the army supreme command and Schlieffen's successor, warned the 8th Army commander he must conduct "an offensive defensive" when the Russians eventually attacked.

They would have three advantages: a document found on a dead officer at Gumbinnen disclosed the basic Russian strategy; sporadic radio intercepts offered some significant operational tidbits (though not perfect awareness); and vigorous aerial reconnaissance provided tactical updates on enemy locations, threats, and possible opportunities several times each day.

German planners expected Russia to vigorously employ its airplanes, but it did not. One corps commander lamely rationalized afterward that he'd been "keeping them for a more important moment," as if one existed.

While Russian aircraft sightings were rare, German aircraft droning overhead were commonplace. They flew multiple times each day, tracking the Russian advance even before it reached the Prussian frontier. "Every morning the German aviators would appear over our bivouacs or columns on the march," recalled a Russian corps commander. He added, "The enemy aviators observed us with impunity."

The payoff came on Aug. 18, when German airmen detected a gap between the 1st and 2nd Russian armies. It continued to widen, as one slowed and

Library of Congress photos

the other pressed onward. Subsequent signals intercepts offered corroboration that the gap was still expanding, raising the prospects of isolating and destroying each army as time went on.

On Aug. 27, after having carefully assembled his forces, Gen. Paul von Hindenburg struck, attacking Usdau (now Uzdowo, Poland), Hohenstein (Olsztynek, Poland), and other positions. Within hours, his soldiers had cut through Russian Gen. Alexander V. Samsonov's army, halting his 1st Corps and sending his 6th Corps reeling in retreat. By the next day, Samsonov's 2nd Army had lost all cohesion, its officers and men fighting a series of disconnected actions and having only vague ideas of the locations of friend and foe. Meanwhile, Hindenburg's airmen kept the 8th Army routinely informed of enemy forces and dispositions.

As Aug. 28 opened, Samsonov's separated corps were fighting against encirclement. Throughout the day, German generals received "good reports": Troops captured Neidenburg (Nidzica), severed most escape routes, and by night, were threatening Samsonov's encircled forces at Hohenstein with annihilation.

The next day, the ring around the Russians tightened despite, as Hindenburg recalled, a heroic resistance, "which saved the honor of arms but could no longer save the battle." All the while, his airmen observed and updated his commanders. That night, Samsonov held a final counsel with his officers, then slipped quietly away to shoot himself in woods bordering Willenberg (Wielbark).

On Aug. 30, reconnaissance flights detected that a desperate final thrust by a corps-size force assembled from remnants of various Russian formations threatened a German corps. Continuous aerial monitoring gave its commander confidence and time to continue fighting, while his fellow leaders, hastily briefed by the airmen, dispatched reinforcements. Thus, though the column did briefly occupy Neidenburg, it lacked sufficient strength to withstand the certain German assault to follow. Pulled back, its soldiers retreated through Mlawa, bringing the battle to a close.

The next day, Aug. 31, Hindenburg sent a victory message to the Kaiser, announcing the destruction of the 2nd Army, the capture of "more than 60,000 prisoners" (actually, more than 90,000 were taken), adding that "the booty is immense." Indeed, it filled 60 trains.

Later, the Germans christened the battle "Tannenberg," pointedly recalling a battle fought over the same ground slightly over 500 years earlier. In that battle, a combined Polish-Lithuanian army had broken the power of the Teutonic Knights, a humiliation now seemingly redressed. A month later, at the Masurian Lakes, the Russian 1st Army likewise met defeat, setting Czarist Russia down a road that would eventually lead to its collapse.

A postwar US Army study found that the Russian 2nd Army never had a clear

Library of Congress photo

Right: German Generals von Hindenburg (l) and Ludendorff (r) brief Kaiser Wilhelm II (c) late in the war. Both generals appreciated the value of aerial reconnaissance. Hindenburg credited the German victory of Tannenberg, where some 90,000 Russians were taken prisoners, to airmen. Center right: Field Marshal Helmuth von Moltke, chief of the army supreme command, doomed Germany's chances at a quick victory by fatally altering the Schlieffen plan. Far right: An RAF B.E.2b and other aircraft on the ground at St. Omer, France.

Library of Congress photos

Far left: The German crew of an Albatros B aircraft prepares for a reconnaissance mission. Center left: In contrast to the 1st and 2nd Russian armies, the staff officers of the German 8th Army worked closely with airmen. Here, a reconnaissance crew is debriefed after a mission. Left: An aerial view of Hohenstein after a battle there on Aug. 27.

picture of German dispositions and locations, thereby suffering "a succession of disastrous occurrences, largely avoidable, had the army commander been promptly informed of events." That's what air reconnaissance could have furnished, had Russian commanders only appreciated it.

The victors certainly had: Hindenburg exclaimed appreciatively to air staff Maj. Wilhelm Siegert, "Without airmen, no Tannenberg!"

MARNE: VICTORY FOR AIRMEN

But in the west, Germany's invasion of Belgium and France was in trouble.

Various factors played a role. Moltke had modified Schlieffen's plan, reducing the troop ratio between the offensive right wing and defensive left wing to ensure defeating any French attack on Germany. Then, defying expectations, Britain honored an 1839 treaty to defend Belgium, sending troops to fight in France. Finally, the Russian offensive had forced shifting some troops from west to east.

In early August, the first elements of Britain's expeditionary force arrived in France. On Aug. 13, 60 Royal Flying Corps (RFC) airplanes hopped the English Channel to join them. Six days later, they flew their first combat sorties. "They kept close touch with the enemy," Field Marshal John D. P. French wrote later, "and their reports proved of the greatest value."

On Aug. 22 they detected troops of Gen. Alexander von Kluck's 1st Army advancing on the Brussels-Ninove road toward a British corps commanded by Lt. Gen. Horace L. Smith-Dorrien. Unlike many of his contemporaries, Smith-Dorrien appreciated aerial reconnaissance. The sighting gave him an advantage Kluck should have enjoyed, but did not. Though, over the previous two days, German airmen had spotted the British moving toward Mons, Kluck never received the information in time to turn it into actionable intelligence. Unlike Hindenburg's army on the Russian front, Kluck's lacked an efficient intelligence field distribution process.

Thus, at Mons on Aug. 23, Smith-Dorrien's corps shocked Kluck's troops with a veritable sheet of brisk, accurate, and sustained rifle fire. Their withering marksmanship cost Kluck a day's advance, and his army only crossed into northern France on the 25th. At Le Cateau on the 26th, it clashed with Smith-Dorrien's corps again. French's advisor, Gen. Henry H. Wilson, noted that the German artillery was "extremely well-served by aeroplane reconnaissance." Afterward, the Allies continued to fall back.

Advancing alongside Kluck's 1st Army was Gen. Karl von Bülow's 2nd Army. On Aug. 28, British airmen detected a growing gap exposing its flank to attack. A subsequent assault by the French 5th Army so discomforted the twitchy Bülow that he immediately asked the more forceful Kluck for help, even though German air reports indicated (quite accurately) that the Allies were not only still retreating, but

Library of Congress photo

RAF Museum photo via Peter Elliott

Library of Congress photos

Far left: Gen. Alexander von Kluck (c) commanded the German 1st Army into France. He ordered a turn to the southeast that would prove fateful, leading to the battle of the Marne. Left: Gen. Joseph Galliéni, the governor of Paris, called for the aerial reconnaissance missions of Sept. 4 that exposed Kluck's vulnerable flank and persuaded the French to launch a counterattack.

that they were "in disorder." So confident of victory were German airmen that, on Aug. 30, one overflew Paris in his graceful Taube ("Dove"), hand-dropping four small bombs and a message cheekily urging surrender. "The word 'Taube,'" a Parisian wrote, "took on a sinister meaning."

Desperate to win, Moltke now abandoned the Schlieffen plan, ordering all five German armies to advance in parallel southwestward in an assault on Paris. But Kluck and Bülow had decided to turn their armies east, passing north of Paris in the region of the Marne valley. This they did, on Aug. 31 and afterward, to avoid further chaos, Moltke gave his after-the-fact approval.

Early on the morning of Aug. 31, a British aircraft spotted elements of Kluck's army moving southeast, not southwest. Subsequent flights confirmed the unexpected shift. Then, on Sept. 2, a French spotter aircraft found Kluck's army had turned even farther eastward, with its leading elements passing well north of Paris. Incredibly, the French 6th Army's chief intelligence officer refused to pass this information along, apparently more willing to trust reports from horse cavalry than from airplanes. Corroborating reports by French and British airman, supported by intercepted communications, eventually pushed the report forward.

For days the air-minded military commander of Paris, Gen. Joseph S. Galliéni, had awaited an assault on the city. The sightings brought both relief and opportunity: Kluck's flank was wide open. Galliéni ordered intensive air reconnaissance for the next morning, Sept. 4, stressing its "vital importance" and the need to get the information to him "with all speed."

Nine aircraft set out that morning, the first reporting back at 10:15 a.m. One after another, all confirmed that the Germans had indeed fatally exposed their flank. Listening to the reports, a French staff major exclaimed, "We've got them!" Brig. Gen. David Henderson, chief of the Royal Flying Corps, predicted the shift would be taught to future staff college classes "as one of the great mistakes of the war," as it proved to be.

ASSUMING THE WORST

For five days, French, British, and German troops grappled in the Marne valley, fighting the kind of frontal battle Schlieffen had explicitly hoped to avoid. The battle was not even joined when, on Sept. 5, French Gen. Joseph J. C. Joffre visited the British high command to express his gratitude to the RFC's airmen for the "vital part" they were playing in keeping him "accurately and constantly informed of von Kluck's movements," furnishing him "the certainty" needed to make solid plans.

Ironically, a corrosive lack of resolve triggered Germany's departure from the Marne. An ill-considered visit to the front by Moltke's chief of intelligence, Lt. Col. Richard von Hentsch, sealed the deal.

Sent by Moltke to assess conditions at the front and, if necessary, make on-the-spot decisions in Moltke's name, Hentsch was inexperienced and preconditioned by Moltke's increasingly bleak outlook to assume the worst. He arrived at Bülow's headquarters on the evening of Sept. 8. Their discussions that night and early the next morning reinforced their uncertainties, and Bülow, supported by Hentsch, determined to withdraw to the northeast.

En route to Kluck's headquarters on Sept 9, Hentsch then encountered what he later related was "a complete panic." "

En route to Kluck's headquarters, Hentsch then encountered what he later related was "a complete panic." A single Allied airplane had bombed the road, disrupting and delaying traffic. The five hours it took for him to travel the 60 kilometers between the two headquarters solidified his perception of disaster. Consequently, after his late arrival that afternoon, he announced Bülow was withdrawing, invoking authority granted him by Moltke to insist Kluck do as well. And so Kluck did, beginning his own retreat. Afterward, German Gen. Walter F. A. von Bergmann, the 1st Army's chief quartermaster, castigated Bülow's "unjustifiable decision to retreat" and Hentsch's "disastrous interference," writing bitterly, "All that had been gained was surrendered." Ahead lay four years of misery and stalemate, lasting until Nov. 11, 1918.

"Our aeroplane officers are real heroes," Smith-Dorrien recorded in his diary, as reports came that Kluck and Bülow were withdrawing. He added, "In spite of being shot at every time they go up, they continue their reconnaissances and bring back quite invaluable, and what always proves to be true, information." Retreating no longer, RFC headquarters now moved forward to Coulommiers.

Airmen made the difference in the battles of Tannenberg and the Marne. Aerial reconnaissance furnished the crucial information to winning commanders; lack of it cost the losers their victories. The mere presence of persistent aerial overwatch influenced commander decisions that ultimately led to their defeat. Despite the passage of a hundred years, the airpower lessons learned of the Great War are as pertinent today as they were then. ■

Richard P. Hallion is an aerospace historian who served 11 years as the Air Force historian and has written widely on aerospace technology and airpower topics. His previous article for Air Force Magazine, *"Air Dominance From Normandy to the Bulge," appeared in the February 2013 issue.*

Photochart of USAF Leadership

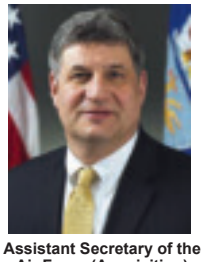
An *Air Force Magazine* Directory
By Chequita Wood, Media Research Editor

As of Aug. 25, 2014

Office of the Secretary of the Air Force

Secretary of the Air Force
Deborah Lee James

Undersecretary of the Air Force
Eric Fanning

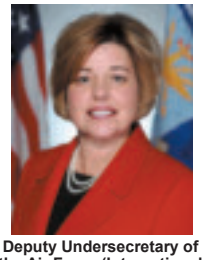


Assistant Secretary of the Air Force (Acquisition)
William A. LaPlante

Assistant Secretary of the Air Force (Financial Management & Comptroller)
Lisa S. Disbrow

Assistant Secretary of the Air Force (Installations, Environment, & Logistics)
Kathleen L. Ferguson (acting)

Assistant Secretary of the Air Force (Manpower & Reserve Affairs)
(Vacant)



Deputy Undersecretary of the Air Force (International Affairs)
Heidi H. Grant

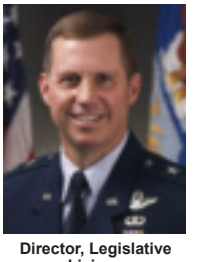
Deputy Undersecretary of the Air Force (Space)
(Vacant)

Auditor General
Daniel F. McMillin

General Counsel
(Vacant)

Inspector General
Lt. Gen. Gregory A. Biscone

Chief, Information Dominance & Chief Information Officer
Lt. Gen. Michael J. Basla



Director, Legislative Liaison
Maj. Gen. Thomas W. Bergeson

Director, Public Affairs
Brig. Gen. Kathleen A. Cook

Director, Small Business Programs
Mark S. Teskey

Administrative Assistant to the Secretary of the Air Force
Patricia J. Zarodkiewicz

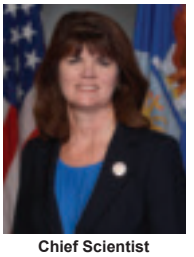
The United States Air Force Air Staff

Chief of Staff
Gen. Mark A. Welsh III

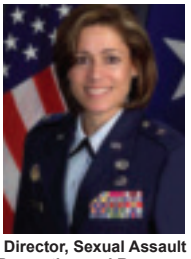
Vice Chief of Staff
Gen. Larry O. Spencer

Assistant Vice Chief of Staff
Lt. Gen. Stephen L. Hoog

Surgeon General
Lt. Gen. Thomas W. Travis



Chief Scientist
Mica R. Endsley



Director, Sexual Assault Prevention and Response
Maj. Gen. (sel.) Gina M. Grosso

Chief Master Sergeant of the Air Force
CMSAF James A. Cody

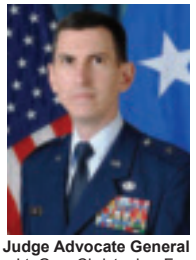
Chairman, Scientific Advisory Board
Eliahu H. Niewood

Chief of Air Force Reserve
Lt. Gen. James Jackson

Air Force Historian
Walt Grudzinskas

Chief of Chaplains
Maj. Gen. Howard D. Stendahl

Director, Air National Guard
Lt. Gen. Stanely E. Clarke III



Judge Advocate General
Lt. Gen. Christopher F. Burne

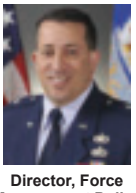
Chief of Safety
Maj. Gen. Kurt F. Neubauer

Director, Test & Evaluation
Devin L. Cate

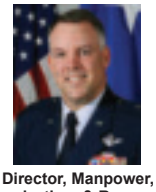
A1 Manpower, Personnel, & Services

Deputy Chief of Staff
Lt. Gen. Samuel D. Cox

Director, Force Development
Russell J. Frasz

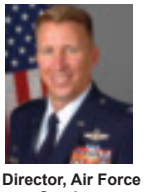


Director, Force Management Policy
Brig. Gen. Brian T. Kelly



Director, Manpower, Organization, & Resources
Brig. Gen. Richard M. Murphy

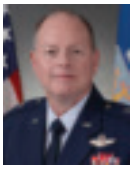
Director, Plans & Integration
Michelle S. LoweSolis



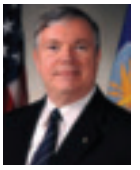
Director, Air Force Services
Brig. Gen. Patrick Doherty

A2 Intelligence, Surveillance, & Reconnaissance

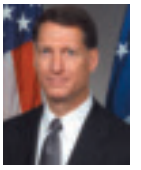
Deputy Chief of Staff
Lt. Gen. Robert P. Otto



Director, ISR Capabilities
Maj. Gen. Eugene Haase

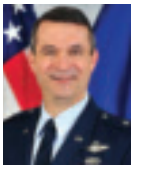


Director, ISR Interoperability
James G. Clark



Director, ISR Resources
Kenneth Dumm

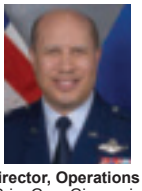
Director, Special Programs
Joseph D. Yount



Director, ISR Strategy, Plans, Doctrine, & Force Development
Brig. Gen. Donald J. Bacon

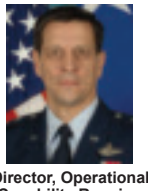
A3/5 Operations, Plans, & Requirements

Deputy Chief of Staff
Lt. Gen. Burton M. Field

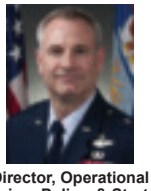


Director, Operations
Brig. Gen. Giovanni K. Tuck

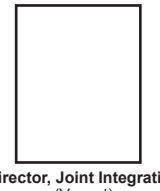
Director, Space Operations
Maj. Gen. Martin Whelan



Director, Operational Capability Requirements
Maj. Gen. Paul T. Johnson

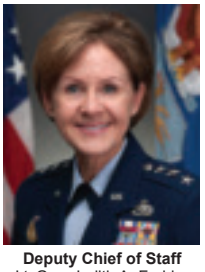


Director, Operational Planning, Policy, & Strategy
Brig. Gen. Timothy G. Fay

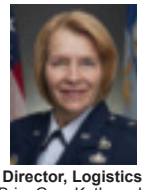


Director, Joint Integration
(Vacant)

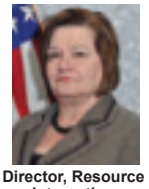
A4/7 Logistics, Installations, & Mission Support



Deputy Chief of Staff
Lt. Gen. Judith A. Fedder

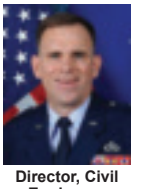


Director, Logistics
Brig. Gen. Kathryn J. Johnson



Director, Resource Integration
Lorna B. Estep

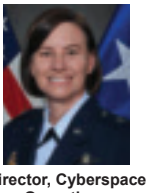
Director, Security Forces
Brig. Gen. Allen J. Jamerson



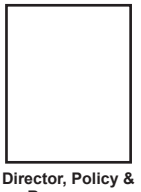
Director, Civil Engineers
Brig. Gen. Timothy S. Green

A6 Office of Information Dominance & Chief Information Officer

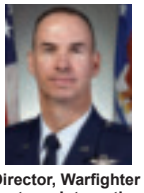
Chief, Information Dominance & Chief Information Officer
Lt. Gen. Michael J. Basla



Director, Cyberspace Operations
Brig. Gen. Sarah E. Zabel



Director, Policy & Resources
Col. Michael Hill (acting)



Director, Warfighter Systems Integration
Brig. Gen. Brian M. Killough

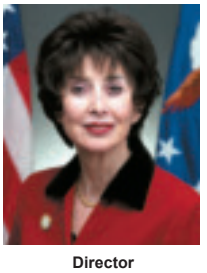
A8 Strategic Plans & Programs

Deputy Chief of Staff
Lt. Gen. Michael R. Moeller

Director, Programs
Maj. Gen. Jerry D. Harris Jr.

Director, Strategic Planning
Maj. Gen. David W. Allvin

A9 Studies & Analyses, Assessments, & Lessons Learned



Director
Jacqueline R. Henningsen

Deputy Director
Kevin E. Williams

A10 Strategic Deterrence & Nuclear Integration

Assistant Chief of Staff
Maj. Gen. Garrett Harencak

Deputy Assistant Chief of Staff
Michale R. Shoults

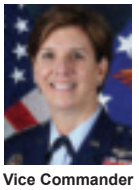
Associate Assistant Chief of Staff
Billy W. Mullins

Major Commands

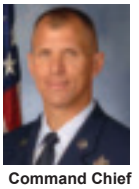
Air Combat Command

Hq. JB Langley-Eustis, Va.

Commander
Gen. Gilmary M. Hostage III



Vice Commander
Gen. (sel.) Lori J. Robinson



Command Chief Master Sergeant
CMSgt. Steve K. McDonald

1st Air Force/Air Forces Northern
Lt. Gen. William H. Etter
Tyndall AFB, Fla.

9th Air Force
Maj. Gen. Harry D. Polumbo Jr.
Shaw AFB, S.C.

12th Air Force/Air Forces Southern
Lt. Gen. Tod D. Wolters
Davis-Monthan AFB, Ariz.

25th Air Force
Maj. Gen John N. T. Shanahan
JBSA-Lackland, Texas

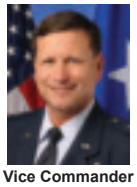
US Air Forces Central Command
Lt. Gen. John W. Hesterman III
Southwest Asia

US Air Force Warfare Center
Maj. Gen. Jay B. Silveria
Nellis AFB, Nev.

Air Education and Training Command

Hq. JBSA-Randolph, Texas

Commander
Gen. Robin Rand



Vice Commander
Maj. Gen. Leonard A. Patrick

Command Chief Master Sergeant
CMSgt. Gerardo Tapia Jr.

2nd Air Force
Maj. Gen. (sel.) Mark Brown
Keesler AFB, Miss.

59th Medical Wing
Maj. Gen. Bart O. Iddins
JBSA-Lackland, Texas

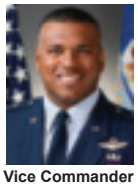
Air Force Recruiting Service
Brig. Gen. James C. Johnson
JBSA-Randolph, Texas

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

Air Force Global Strike Command

Hq. Barksdale AFB, La.

Commander
Lt. Gen. Stephen W. Wilson



Vice Commander
Maj. Gen. Richard M. Clark

Command Chief Master Sergeant
CMSgt. Terry B. West

8th Air Force/Air Forces Strategic
Maj. Gen. Scott A. Vander Hamm
Barksdale AFB, La.

20th Air Force
Maj. Gen. Jack Weinstein
F. E. Warren AFB, Wyo.

Air Force Materiel Command

Hq. Wright-Patterson AFB, Ohio

Commander
Gen. Janet C. Wolfenbarger

Vice Commander
Lt. Gen. Andrew E. Busch

Command Chief Master Sergeant
CMSgt. Michael J. Warner

Air Force Life Cycle Management Center
Lt. Gen. C. D. Moore II
Wright-Patterson AFB, Ohio

Air Force Nuclear Weapons Center
Maj. Gen. Sandra E. Finan
Kirtland AFB, N.M.

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

Air Force Sustainment Center
Lt. Gen. Bruce A. Litchfield
Tinker AFB, Okla.

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

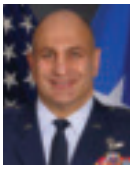
National Museum of the US Air Force
John L. Hudson
Wright-Patterson AFB, Ohio

Major Commands (cont.)

Air Force Reserve Command

Hq. Robins AFB, Ga.

Commander
Lt. Gen. James Jackson



Vice Commander
Maj. Gen. Richard S. Haddad

Command Chief Master Sergeant
CMSgt. Cameron B. Kirksey

4th Air Force
Brig. Gen. John C. Flournoy Jr.
March ARB, Calif.

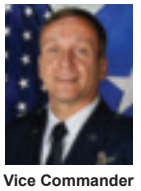
10th Air Force
Maj. Gen. William B. Binger
NAS Fort Worth JRB, Texas

22nd Air Force
Maj. Gen. Stayce D. Harris
Dobbins ARB, Ga.

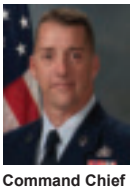
Air Force Space Command

Hq. Peterson AFB, Colo.

Commander
Gen. John E. Hyten



Vice Commander
Maj. Gen. David J. Buck



Command Chief Master Sergeant
CMSgt. Douglas I. McIntyre

14th Air Force/Air Forces Strategic
Lt. Gen. John W. Raymond
Vandenberg AFB, Calif.

24th Air Force
Maj. Gen. Burke E. Wilson
JBSA-Lackland, Texas

Air Force Network Integration Center
Col. Amy Vannortwick Arwood
Scott AFB, Ill.

Air Force Spectrum Management Office
Col. Donald Reese
Alexandria, Va.

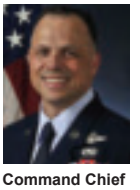
Space & Missile Systems Center
Lt. Gen. Samuel A. Greaves
Los Angeles AFB, Calif.

Air Force Special Operations Command

Hq. Hurlburt Field, Fla.

Commander
Lt. Gen. Bradley A. Heithold

Vice Commander
Maj. Gen. Norman J. Brozenick Jr.



Command Chief Master Sergeant
CMSgt. Mathew M. Caruso

1st Special Operations Wing
Col. William P. West
Hurlburt Field, Fla.

24th Special Operations Wing
Col. Eric D. Ray
Hurlburt Field, Fla.

27th Special Operations Wing
Col. Tony D. Bauernfeind
Cannon AFB, N.M.

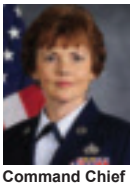
Air Force Special Operations Air Warfare Center
Col. David Tabor
Hurlburt Field, Fla.

Air Mobility Command

Hq. Scott AFB, Ill.

Commander
Gen. Darren W. McDew

Vice Commander
Lt. Gen. Brooks L. Bash



Command Chief Master Sergeant
CMSgt. Victoria Gamble

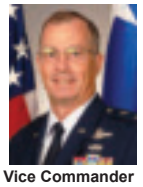
18th Air Force
Lt. Gen. Carlton D. Everhart II
Scott AFB, Ill.

US Air Force Expeditionary Center
Maj. Gen. Frederick H. Martin
JB McGuire-Dix-Lakehurst, N.J.

Pacific Air Forces

Hq. JB Pearl Harbor-Hickam, Hawaii

Commander
Gen. Herbert J. Carlisle



Vice Commander
Maj. Gen. Paul H. McGillicuddy

Command Chief Master Sergeant
CMSgt. Harold L. Hutchison

5th Air Force
Lt. Gen. Salvatore A. Angelella
Yokota AB, Japan

7th Air Force
Lt. Gen. Jan-Marc Jouas
Osan AB, South Korea

11th Air Force
Lt. Gen. Russell J. Handy
JB Elmendorf-Richardson, Alaska

United States Air Forces in Europe-Air Forces Africa

Hq. Ramstein AB, Germany

Commander
Gen. Frank Gorenc

Vice Commander
Lt. Gen. Noel T. Jones

Command Chief Master Sergeant
CMSgt. James E. Davis

3rd Air Force
Lt. Gen. Darryl L. Roberson
Ramstein AB, Germany

Direct Reporting Units

Air Force District of Washington

JB Andrews, Md.

Commander
Maj. Gen. Darryl W. Burke

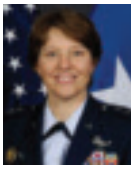
Air Force Operational Test & Evaluation Center

Kirtland AFB, N.M.

Commander
Maj. Gen. Scott D. West

United States Air Force Academy

Colorado Springs, Colo.



Superintendent
Lt. Gen. Michelle D. Johnson

Auxiliary

Civil Air Patrol-USAF

Maxwell AFB, Ala.

Commander
Col. Paul D. Gloyd II

Civil Air Patrol

Maxwell AFB, Ala.

National Commander
CAP Brig. Gen. Joe Vazquez

Air Force Generals Serving in Joint and International Assignments

Joint Chiefs of Staff

Gen. Mark A. Welsh III
Chief of Staff, United States Air Force
Pentagon

US Pacific Command

Gen. Herbert J. "Hawk" Carlisle
Air Component Commander
JB Pearl Harbor-Hickam, Hawaii

US European Command/NATO

Gen. Philip M. Breedlove
Commander, and NATO Supreme Allied Commander, Europe
SHAPE, Belgium

Gen. Frank Gorenc
Commander, Allied Air Command
Ramstein AB, Germany

US Transportation Command

Gen. Paul J. Selva
Commander
Scott AFB, Ill.

DO YOU HAVE ENOUGH TO TAKE CARE OF THEM?

As an AFA member, you understand the meaning of commitment to the needs of your family. But stop and think for a moment — would you feel confident about your family's financial future in the event that something happens to you and you're not around to fulfill that commitment? Would you have enough life insurance to take care of them?

Life insurance can offer peace of mind to help your loved ones with the burden of extra expenses, as well as the taxes and debt you may leave behind. And it's the assurance that your dreams for your family can live on after you're gone.

At AFA, we mirror that commitment to our members. That's why we offer the budget-friendly group rates of our AFA Term Life Insurance Plan to our members, with no military exclusions and protection 24 hours a day, 365 days a year. And that includes if you're flying military aircraft.

The AFA Term Life Insurance Plan leads the way with:

- AFFORDABLE GROUP RATES — no higher premiums for flying personnel
- VALUABLE COVERAGE — with an "accelerated benefit" to help loved ones immediately
- NO MILITARY EXCLUSIONS — even when flying military aircraft
- PREMIUMS WAIVED — if a sickness or injury leads to a Total Disability
- FAMILY COVERAGE AVAILABLE FOR SPOUSE AND DEPENDENT CHILDREN

Learn more about the Term Life Insurance Plan.
Call 1-800-291-8480 or visit www.afainsure.com

Hearing-impaired or voice-impaired members may call the Relay Line at 1-800-855-2881.

MetLife

Like most group insurance policies and plans, group insurance policies and plans offered by MetLife contain certain exclusions, exceptions, waiting periods, reductions, charges, limitations, termination provisions and terms for keeping them in force. Ask your MetLife representative for costs and complete details.

L0414371368[exp0615]

AR Ins. Lic. #303439
CA Ins. Lic. #0G39709
In CA d/b/a Mercer Health & Benefits Insurance Services LLC

A P-51 Mustang comes in for a landing near a P-38 Lightning on the ramp at the Chino Air Show in California.

Warbirders and the Re-enactors

By Frederick A. Johnsen

Photo by Frederick A. Johnsen

Generations mingle at warbird air shows around the country. One weekend every May, at the annual Chino Air Show in California—put on by the Planes of Fame Museum—the tarmac is filled with parents pushing tots in strollers, Baby Boomers eyeing the warplanes made famous by their parents' generation, and an honored and inexorably dwindling number of World War II veterans telling their stories.

World War II is now 70 years in the past, so its memory and legacy must become the charge of those who weren't even born when it unfolded. Chino has a big role to play in that passing of the torch.

In the 1960s, the nascent warbird movement was populated by enthusiastic—but not very deep-pocketed—owners of surplus warplanes. Southern California was ripe for the picking back then, when 20-year-old stashes of bargain-basement aircraft parts were one legacy of the region's booming aviation factories. Chino at the time was a quiet airfield where the occasional P-51 or P-40 could be groomed for flight by a weekend warbirder.

A TEMPTING SIZZLE

The cachet of Chino as a center for the restoration and operation of World War II aircraft was enhanced in the late 1960s when restaurateur David C. Tallichet Jr. located his warbird collection there. By 1973, pioneer air museum developer Edward T. Maloney settled his hitherto migratory collection at Chino. Restoration shops began to spring up there.

That there were restoration shops at all heralded the next shift in the warbird movement. No longer was it up to owner-operators to fix and fly their warplanes. The sizzle of being a P-51 pilot attracted younger wealth, as people bought their way into the club by having warbirds restored to

At the Chino Air Show, World War II enthusiasts help cultivate the next generation of aviation advocates.

Photos by Frederick A. Johnsen

A replica of a Japanese Aichi D3A Val dive bomber that appeared in the movie "Tora! Tora! Tora!" arrives at the Chino Air Show, passing a pair of P-47 Thunderbolts.

perfection. There was competition to have the best one.

Where once a warplane would be expected to fly in civilian paint, next came the application of vintage military colors. Photos from the 1970s show a fairly rudimentary level of acceptability for such markings, but the rebuilding shops honed their skills and the results showed.

At Aero Trader on Chino Airport, owners Carl Scholl and Tony Ritzman know how to execute accurate metalwork capped with precise paint and markings. For these restorers, it's not merely a job but a passion for preservation. The elegance of their results comes from more than being workers on the clock; Scholl, Ritzman, and their employees are infused with enthusiasm and pride of workmanship that bespeaks of a desire to keep the World War II message breathing and vibrant.

Scholl can be blunt in his clipped, fast-paced way of speaking, ascribing significance to the warbird movement as an important way to keep the wartime ethos alive.

"The schools aren't teaching it," he observed. What better way to keep the memory of veterans alive than by displaying their authentic warplanes in flight, restored right down to all the hardware civilian owners once discarded before the aircraft were considered valuable historical icons.

Across the Chino apron, Maloney's Planes of Fame Museum delivers on his prescient postwar notion that these aircraft needed to be preserved. Maloney recalls watching warplanes being scrapped at Chino after the war and aircraft technical manuals mounded high for burning. At the invitation of the scrappers, Maloney carted home as many of the now-precious manuals as he could. He had to lug them to his car "about a mile away," he said. "I just wish I'd had money to buy airplanes, but I was just in high school."

From that wishful beginning came the notion that examples of the aircraft themselves needed to be saved from the furnace, and Maloney was on a mission that keeps him going to this day.

But how will all this be remembered? How will the legacy of the World War II generation and their equipment be cared for and publicly shared when the veterans and the first generation preservationists are all gone? Scholl says his company recruits new blood, rejuvenating the

gene pool of aircraft mechanics who know how—and why—to rebuild World War II aircraft.

Planes of Fame—while honoring founder Maloney at every turn—has evolved to a museum with a business model and a staffing system intended to keep it fail-safe into the future. "We don't like to borrow money to buy anything," Maloney explained. That conservative approach may delay some projects and programs, but it ultimately makes it easy for him to sleep at night, knowing the museum's assets are not endangered as collateral.

DUE DILIGENCE

The stream of visitors to Planes of Fame is growing, he said, and that fact augurs well for the continued ability of the museum to preserve and present World War II history. Maloney is squarely in the camp of those who believe in flying the vintage aircraft so that visitors can load their senses on the spectacle before them, and he believes this operational aspect to Planes of Fame is a crowd attractor to Chino.

Located east of the Los Angeles metropolitan area and served by freeways, Chino continues to offer a good venue for warbird displays within an easy drive from a major population.

Maloney acknowledges an inevitable danger when all of the witnesses to World War II have died: "When you don't have any veterans to interview, where are you going to get your information?"

While sound research and documentation can be found electronically, he is unequivocal in his description of some online World War II postings as "Internet hokum." Maloney insists on due diligence in researching World War II history to keep it truthful and accurate.

Another movement that is keeping the World War II message alive is the re-enactor movement. For decades, American Civil War history has boomed to life with the firing of cannons and volleys from muzzle-loading muskets as lines of troops refight skirmishes on hallowed green fields in the south and east. Now, the World War II re-enactor movement is gaining traction.

At warbird air show displays like Chino, airpower advocates and aviation enthusiasts ranging from teenagers to adults in their 50s and 60s don period uniforms and civilian attire to bring the era to life with a passion ranging from thespian-chic to delightfully, almost obsessively, nerdy.

From clean-cut airmen in wool flight suits and leather A-2 jackets to cigar-chomping maintainers in herringbone coveralls and GI ball caps with flipped-up brims, the re-enactors are the animators of the story.

Sally Lockard (l), dressed as a World War II German nurse, and Gail Marinello, dressed as a Soviet doctor, in the re-enactment area at Chino. Re-enactors represent many countries and types of service.

Re-enactors at Chino brought everything from operable World War II radios and hand-crank generators to a replica Fieseler Storch German liaison aircraft. American, British, German and Russian troops set up camps next to each other and invited air show visitors to meander into their time machine.

Maloney recalls that many of the early re-enactors who wanted to get involved with Planes of Fame decades ago were enamored of German uniforms. He had to coach them to branch out and represent Allies as well. Wary of such quirkiness, Maloney nonetheless acknowledges re-enacting. "It has its place," he said.

Nick Casanova wears a World War II US Army enlisted uniform with the nonchalance needed to make it look natural. At Chino, he is representing a

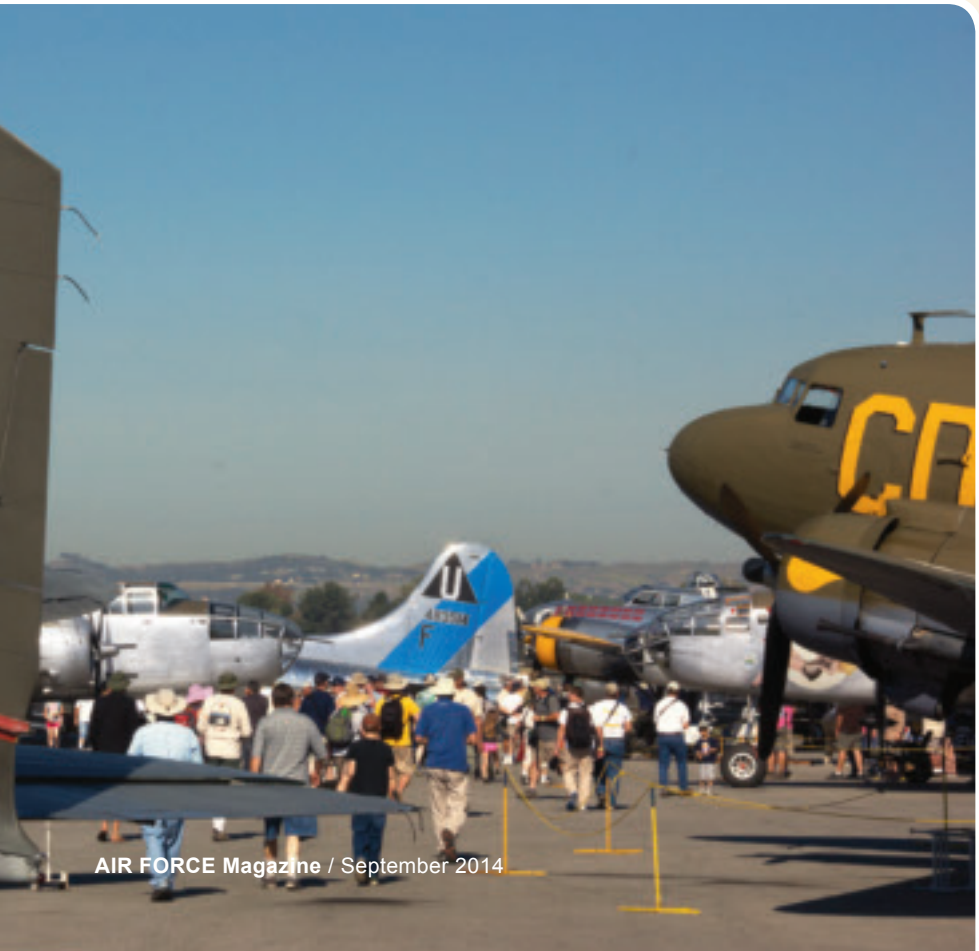


Photo by Frederick A. Johnsen

Far left: A World War II-era Northrop N9M subscale manned flying wing is a big favorite of the crowds at the Chino Air Show. Left: C-47s, B-25s, and B-17s, plus rows of fighters, gathered at the 2014 air show. Chino and the adjacent Planes of Fame museum are drawing ever-larger crowds as aviation fans, history buffs, and re-enactors discover the significance of the era.

member of the 82nd Airborne Division. Now 18, he first discovered re-enacting at an earlier Chino Air Show. Not unlike some teenagers during the war years, Casanova donned a uniform before his re-enactor character was old enough to do so. He is quietly earnest about his motivation: "telling the people about what they [the World War II generation] did so it doesn't die down. That's the one thing I don't want to have happen." For him, life imitates art; his pending graduation from high school leads to an Army enlistment.

HEROIC ENOUGH

Casanova is absorbing the view of World War II from veterans at Chino like B-17 ball turret gunner Wilbur Richardson. A cherished part of the Chino show's format is a session with veterans such as Richardson who recount their wartime experiences while seated under a shady awning as respectful visitors crowd close to them. Casanova is emphatic: "Wilbur's great. He still remembers it like it was yesterday." Not always an 82nd Airborne re-enactor, Casanova sometimes cruises the Chino encampment in a flier's A-2 jacket, bolstered in his role by the World War II history he reads and what he observes from Richardson and others.

Richardson wears a suntan-colored enlisted 50-mission-crush hat as he speaks at Chino. He frequently closes his eyes while describing wartime events as if conjuring the memories comes easier that way. He chats about what it was like in a cold B-17 at altitude, what food was available to the crews. Richardson recalls that airmen were free to fly. Their military service was mandatory, but flying was voluntary, and some declined it. Not him: "I was proud to do the missions I did."

The re-enacting is not only for men. Sally Lockard drove from Oxnard, almost 100 miles from Chino, to bring her recreation of a World War II German Red Cross nurse to life.

"I'm a history nerd," Lockard explained. On a field trip to Colonial Williamsburg when she was in the eighth grade, she was mesmerized by the re-enactors at that historic site. "I thought that was the coolest thing on the planet," she said. But the going pay for those re-enactors who do it for a living pales in comparison to what Lockard makes as a quality control expert, so she settled into the pattern of a weekend re-enactor, migrating from 1850s California some years ago to the 20th century now. "I've always loved [the era of] World War II," she said.

For many, re-enacting is an utterly apolitical adventure. Like a versatile member of a repertory theater troupe, Lockard has been known to cross battle lines to become a Soviet medical specialist when she is not in German garb. At Chino, she caught up with re-enactor Gail Marinello, replete in her reproduction Soviet women's uniform and her mother's vintage eyeglasses.

Marinello came to the re-enactor group after her home-schooled son chose Russian for his educational language requirements. Now both of them breathe life into a Stalingrad camp setup.

If Civil War re-enacting is still the cornerstone for this passion, Lockard said World War II is more accessible to people. "In some ways it's getting very romanticized as time goes on." Some would argue this is a flaw in such activities, if it tends to glorify the war. What deserves glorifying is the people of that time, however, not battle itself.

Photos by Frederick A. Johnsen

Wilbur Richardson, a B-17 ball turret gunner during World War II, is one of several veterans who tell their wartime stories at the Chino show, helping to keep history alive.

Only time will tell if the burgeoning World War II re-enactor movement will eventually lose touch with some of its realism as the years pass. For now, the Chino encampment is doing its best to bring the war years to life.

The fabric of American history constantly gets tugged and restitched, with heroic mythology sometimes supplanting reality until the next round of historians sets the record straight once more. But with World War II, the reality is more than heroic enough. Now, it is up to people who never faced a Focke-Wulf in combat to convey the emotions and grit of those who did. ■

Frederick A. Johnsen retired as director of the Air Force Flight Test Museum at Edwards AFB, Calif., to pursue museum, writing, and video projects. He is completing a major study of the interface between US Air Force and German aerospace technology from the 1930s into the postwar era. His most recent article for Air Force Magazine, *"Museums and Money," appeared in the June issue.*

Nick Casanova, an 18-year-old re-enactor, bolts down a GI breakfast from a World War II mess kit at Chino in the early morning before the Chino Air Show.

IHS AEROSPACE, DEFENSE & SECURITY

Helping you target the largest defence and security audience

IHS Jane's Defence Weekly offers a range of advertising solutions that ensures fast delivery of your message to a huge international audience via an extensive range of dynamic marketing solutions for both international and regional targeting.

Call us now to discuss your 2014 multi-media options

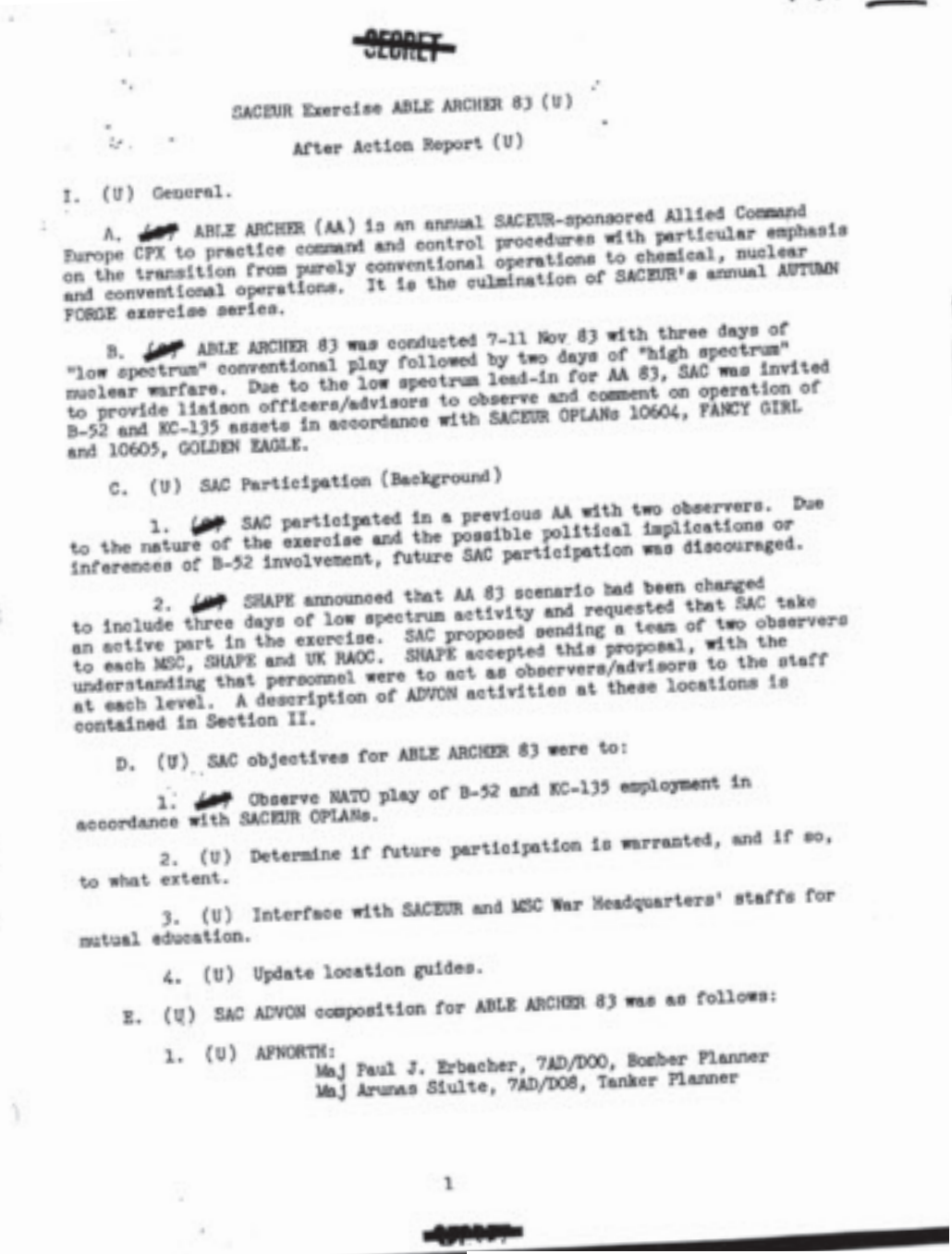
Tel: +44 (0) 20 3253 2289

US: +1 703 236 2438

Email: magazines@ihs.com

6342_0814AA

Able



~~SECRET~~

SACEUR Exercise ABLE ARCHER 83 (U)

After Action Report (U)

I. (U) General.

A. ~~(S)~~ ABLE ARCHER (AA) is an annual SACEUR-sponsored Allied Command Europe CPX to practice command and control procedures with particular emphasis on the transition from purely conventional operations to chemical, nuclear and conventional operations. It is the culmination of SACEUR's annual AUTUMN FORGE exercise series.

B. ~~(S)~~ ABLE ARCHER 83 was conducted 7-11 Nov 83 with three days of "low spectrum" conventional play followed by two days of "high spectrum" nuclear warfare. Due to the low spectrum lead-in for AA 83, SAC was invited to provide liaison officers/advisors to observe and comment on operation of B-52 and KC-135 assets in accordance with SACEUR OPLANs 10604, FANCY GIRL and 10605, GOLDEN EAGLE.

C. (U) SAC Participation (Background)

1. ~~(S)~~ SAC participated in a previous AA with two observers. Due to the nature of the exercise and the possible political implications or inferences of B-52 involvement, future SAC participation was discouraged.

2. ~~(S)~~ SHAPE announced that AA 83 scenario had been changed to include three days of low spectrum activity and requested that SAC take an active part in the exercise. SAC proposed sending a team of two observers to each MSC, SHAPE and UK RAOC. SHAPE accepted this proposal, with the understanding that personnel were to act as observers/advisors to the staff at each level. A description of ADVON activities at these locations is contained in Section II.

D. (U) SAC objectives for ABLE ARCHER 83 were to:

1. ~~(S)~~ Observe NATO play of B-52 and KC-135 employment in accordance with SACEUR OPLANs.

2. (U) Determine if future participation is warranted, and if so, to what extent.

3. (U) Interface with SACEUR and MSC War Headquarters' staffs for mutual education.

4. (U) Update location guides.

E. (U) SAC ADVON composition for ABLE ARCHER 83 was as follows:

1. (U) AFNORTH:
Maj Paul J. Erbacher, 7AD/DOO, Bomber Planner
Maj Arunas Siulte, 7AD/DO8, Tanker Planner

1

~~SECRET~~

NATO UNCLASSIFIED

Exercise Scenario

n leadership in ORANGE in February 1983. Criticism of
llowing West to gain new influence in the Third World, espe
iling to prevent the BLUE decision to modernise Western

83: Continuing Iran-Iraq War, with ORANGE providing po
deliveries to Iran. Also arms deliveries to Syria and South
oncern.

3: Gulf States feel threatened by growing ORANGE invol
itary aid. US sends military advisors and increases naval pres

: growing unrest in Eastern Europe

: ORANGE unable to keep its economic aid promises to E
. Also pro-ORANGE political party and pressure grou
the government's policies and calls for closer alignment with

: ORANGE steps up propaganda campaign against the West.

983: ORANGE condemns US military presence and naval d

983: Internal situation in Yugoslavia worsens; central government faces
from pro-ORANGE elements. Major disturbances take place in Kosovo,

Fall 1983 was one of the most tense periods of the long Cold War standoff between the Soviet Union and the United States. Moscow was angry and worried about Washington's military buildup and NATO's pending deployment of Pershing II nuclear missiles. The US, for its part, was outraged at the USSR's recent destruction of KAL 007, a civilian Korean airliner that had wandered into Soviet airspace.

In this charged atmosphere, the US and its NATO allies conducted a realistic command post exercise that involved the simulated release of nuclear weapons. Watching this war game closely with a variety of technical and spying techniques, the USSR apparently panicked. To Soviet eyes, the exercise had all the earmarks of a genuine countdown to war, masquerading as a war game.

According to some former Soviet officials, the KGB—Russia's spy agency—concluded that NATO forces had indeed been placed on war footing and that NATO was quite possibly in the final stages of preparing to attack the Soviet Union. In response, Moscow put its own nuclear-capable aircraft on alert.

The crisis—for crisis it was—fortunately ended there. The NATO exercise, Able Archer 83, was over in days. It soon became obvious that the drill was not a mask for a real-world NATO operation against the Soviet Union. But to Cold War historians, the episode has become a cautionary tale. It showed how easily one superpower might misread the other's nuclear intentions and how quickly deterrence might crumble as a result.

In fact, some analysts see the Soviet response to Able Archer as having brought the world closer to nuclear war than any event since the Cuban Missile Crisis of 1962.

Able Archer was not an exercise in isolation. In some ways, it was the culmination of Autumn Forge 83, a months-long series of interrelated NATO maneuvers. A final phase of Autumn Forge—Reforger 83—involved the physical deployment of some 19,000 US troops and 1,500 tons of cargo to West Germany and the Netherlands. Able Archer took place when NATO readiness was at a highly elevated state.

Tensions had been escalating right up until the war game. For years, the USSR's leaders had been increasingly worried about what they called the "international correlation of forces" against them. For Moscow, the tides of history seemed to be ebbing out, not running in.

At the time, the Soviet Union's foreign adventures were draining the

Archer

A misread war game, colored by Cold War suspicion, brought the world a hair's breadth from accidental nuclear war.

By Peter Grier

country. In the early 1980s, Afghanistan was the Red Army's Vietnam, a trap it could not seem to escape. Cuba required expensive patronage. The Soviet-backed Angola regime was struggling against an insurgency that received some aid from the United States. Nicaragua's leftist Sandinistas faced US-backed rebels, as well.

Meanwhile, US defense spending had turned upward in the last years of the Jimmy Carter presidency. Ronald Reagan ratcheted it much higher.

Hurricane Alert

In Moscow's eyes, the US armed forces seemed as if they were almost taunting their Soviet counterparts. The Reagan Administration had initiated a classified psychological operations program involving air and naval probes near Soviet borders. US aircraft or ships would seemingly appear from nowhere and approach the USSR's airspace or waters at high speed, peeling off at the last moment. The point was to keep Moscow off-balance while learning more about Soviet early warning capabilities and practices.

Faced with all this, the KGB's foreign intelligence directorate drew up an assessment concluding, in essence, that the USSR was losing the Cold War. Then "the Politburo issued what amounted to a full-scale hurricane alert," wrote Benjamin B. Fischer, a CIA historian.

Soviet leader Leonid I. Brezhnev and KGB Chief Yuri V. Andropov proclaimed this warning before a closed meeting of intelligence officers in May 1981. First Brezhnev outlined his worries about the direction of Washington policy.

Then Andropov took the podium and said flatly that the US was preparing for a surprise nuclear attack on the USSR. All Soviet intelligence agencies would join forces in a new collection effort to thwart America's plans. This effort would be called Operation RYAN, after the Russian-language acronym for Raketno Yadernoye Napadenie, or "Nuclear Missile Attack."

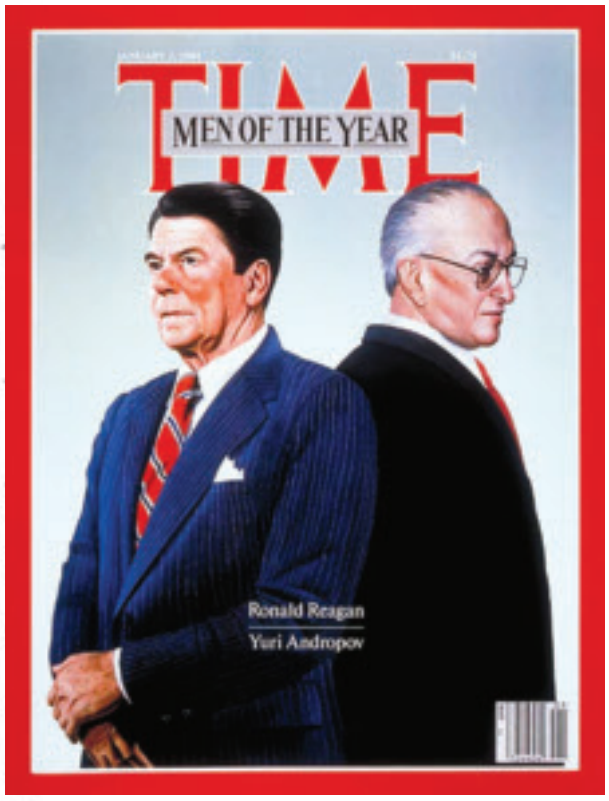
Operation RYAN was a high priority for Soviet spies throughout 1981 and 1982, but it was not their top or main focus. It continued apace even when Brezhnev died in November 1982, after years of failing health, ending a period of drift and stagnation at the top of the Soviet hierarchy. (His successor, Andropov, at first impressed US officials as an energetic and able man, but Andropov's own declining health quickly sapped his vitality. He died in early 1984.)

In February 1983, however, KGB station chiefs suddenly received orders from Moscow that Operation RYAN was now "of particularly grave importance," according to a cable provided and translated by Oleg A. Gordievsky, a KGB colonel who was an agent of British intelligence for a decade before escaping to the West.

USSR spies were to organize a "continual watch" for signs of preparation

Photos by Mary Anne Fackelman, via National Archives and Ronald Reagan Presidential Library

Left and below: President Ronald Reagan meets in 1987 with Oleg Gordievsky, a former colonel in the KGB—and a longtime spy for Britain until he escaped to the West. Gordievsky was able to provide context for and insight into the Soviets' strong reactions to Able Archer.



Top:* Time *magazine chose US President Ronald Reagan and Soviet leader Yuri Andropov as "Men of the Year" for 1983. Above: A Pershing II missile is launched on a test flight in 1983. The impending deployment of the intermediate-range ballistic missiles in Western Europe prompted Andropov to call Reagan's Strategic Defense Initiative "insane," predicting a renewed and dangerous arms race between the US and USSR.

for nuclear war in political, economic, and military sectors.

In essence, the KGB was betting that a decision to launch nuclear war would be so momentous for the US that it would ripple throughout the society in visible ways. US and NATO government, military, intelligence, and civil defense bases were even more closely watched, with service and technical workers in particular targeted for recruitment, according to Fischer.

What caused this sudden surge in RYAN's importance? Most likely, it was the impending deployment of Pershing II intermediate-range ballistic missiles in West Germany. Accurate and fast, Pershing IIs were powerful enough to destroy Soviet command bunkers. By locating them in Western Europe, US officials intended to link the fate of the US and its allies more closely and make the NATO nuclear deterrent more credible. The Soviets, though, called them a destabilizing threat that could reach Moscow in minutes and thus would be a useful nuclear first strike weapon.

Two other developments in early and mid-1983 caused superpower tensions to worsen further.

In late March, Reagan publicly outlined the Strategic Defense Initiative, a multilayer space- and ground-based antimissile structure intended to involve everything from space-based "rail guns" to superfast ground-based interceptor rockets. Moscow worried that the program would create a whole new category of fantastically expensive antimissile weaponry that Washington would dominate and that might negate Russia's offensive missile force.

In response, Andropov lashed out in intemperate terms, saying that upsetting the existing deterrent nuclear balance would launch a runaway race in both offensive and defensive strategic arms.

"Engaging in this is not just irresponsible, it is insane," said Andropov in response to questions from a *Pravda* correspondent.

Then came KAL 007. On Sept.1, a Soviet Su-15 shot down a Korean Airlines 747 carrying 269 passengers and crew. The airliner had transited the Kamchatka Peninsula, a sensitive Soviet military region, then re-entered Soviet airspace near Sakhalin Island. The air defense response was not swift; by the time the interceptor fired at the airplane it was re-entering international airspace.

Moscow didn't publicly admit what had happened for five days. It then blamed the event on the US, saying the 747 had been on some sort of American intelligence mission. Reagan did Andropov one better in the toughness of his response. He called the shootdown "an act of barbarism" from a country that "wantonly disregards individual rights and the value of human life."

A Dire Scenario

On Sept. 26, a Soviet early warning satellite erroneously reported the launch of an American ICBM. Soviet officers correctly recognized it as a computer fault, especially since it was highly unlikely the US would launch only a single missile, but the incident put Soviet leaders on edge.

Able Archer 83 took place only a few weeks later. The war game was conducted from Nov. 7 to 11, 1983. It was designed to practice high-level staff procedures and interactions, with a particular emphasis on "the transition from conventional to nonconventional operations, including the use of nuclear weapons," according to an unclassified NATO summary of its operations.

The notional action of the war game spanned Europe, from Norway (launching pad for attacks on the Kola Peninsula) to the intra-German border (fighting along a broad front) to the United Kingdom (attacks on NATO airfields) to Bulgaria and even Crimea.

Even by the standards of the era, the scenario for the exercise was dire. The setup was this: Orange forces—the thinly veiled Soviet army—had dealt with growing political unrest in Eastern Europe by invading Yugoslavia in late October.

In the game, on Nov. 3, Orange crossed the Finnish border. A day later it rolled into Norway—a NATO member—and crossed the inner German border. Simultaneously, Orange began to occupy Greece while conducting naval attacks in the Adriatic, Mediterranean, and Black seas.

Then things got really serious.

Facing stiff resistance from Blue

Большая работа проведена по обеспечению безопасности в период
подготовки и работы XXVI съезда КПСС. Сегодня многие участники

(NATO) troops, Orange resorted to widespread use of chemical weapons.

While only NATO headquarters staffers were direct participants, there were some moments of scripted drama. At one point, war gamers were directed to evacuate from their permanent war headquarters to an alternate location, where they donned helmets, gas masks, and chemical suits.

Early plans for the exercise even included participation by President Reagan, Vice President George H.W. Bush, and Defense Secretary Caspar W. Weinberger.

On Nov. 8—again, all within the exercise—the Supreme Allied Commander, Europe, requested initial limited use of nuclear weapons against predetermined targets. This didn't stop Orange's advance, though. The next day, SACEUR asked for follow-on, more widespread nuclear use.

Command authorities granted this request on Nov. 10, according to the NATO summary. On Nov. 11, the second wave of Blue nuclear weapons unleashed atomic devastation on Orange. And there the exercise terminated.

The point of the drill was not to fight a simulated war to its conclusion, but to practice the political interactions and communications necessary to do so, should it ever become necessary.

The Soviets knew that NATO had conducted Able Archer exercises in previous years. But they noticed that the 1983 version was somewhat different from its predecessors.

Originally, Weinberger and members of the Joint Chiefs of Staff were scheduled to participate, along with Reagan and Bush. This participation on the part of top officials had been scaled back due to Soviet nervousness, wrote former *Washington Post* diplomatic correspondent Don Oberdorfer in his book *From the Cold War to the New Era: The United States and the Soviet Union, 1983-1991.* But Able Archer was still more realistic than it had been in the past.

It was different in that it covered the full spectrum of conflict: The transition from conventional weapons to the full use of the West's nuclear arsenal within the exercise's scenario was new.

With all these events in the swirl, the KGB saw the rapid succession of Reforger and Able Archer—which included bursts of encrypted communications—as potentially an actual countdown to nuclear war.

The Soviet espionage hierarchy believed they had to treat Able Archer as real. Gordievsky said that on the night of Nov. 8 or 9 (he can't recall the exact date) the KGB sent a flash cable to its Western European station chiefs that US forces in Europe had gone on alert and some troops were being mobilized.

The cable requested Soviet spies to evaluate possible reasons for these supposed US actions. Were they reactions to the bombing attack on a Marine barracks in Beirut in late October? Were they part of some larger exercise? Or were they the prelude to hostilities?

"At two air bases in East Germany and Poland, [nuclear-capable] Soviet fighters were put on alert—for the first and last time during the Cold War," wrote CIA historian Fischer in a secret article for the agency's *Studies in Intelligence* series. The article was declassified in 2011.

Genuine Fears or Fake Ones?

Other analysts have asserted that the Soviets went so far as to put their entire ballistic missile force on an elevated alert status. Under these conditions, another false-alarm ICBM launch detection—like the ones the Soviets experienced in September—could have been catastrophic.

Reagan, writing in his book *An American Life,* said he had a hard time believing the Soviets could have imagined the US striking the first blow in a nuclear war, but developed a profound worry that leaders on either side could apply "reason" in such a crisis, with "six minutes to decide" what to do about a detected incoming strike.

American listening posts noticed that Warsaw Pact communications traffic spiked sharply during the period of Able Archer. Soviet intelligence efforts were at full extension, watching for signs of real movement by NATO forces.

A few weeks after the exercise had ended, the CIA's London station reported that the USSR had been concerned that the activity masked an actual US move toward war. This account probably came from Gordievsky. But a similar report of Soviet fears came from a "well-connected American who had heard it from senior officials in an Eastern European country closely allied to Moscow," wrote Oberdorfer.

US National Security Advisor Robert C. McFarlane discounted these reports, considering them Soviet disinformation, and told Reagan as much. But early in 1984, CIA Director William J. Casey sent over a more extensive report that sobered minds at the White House.

After reading it, Reagan asked McFarlane how Soviet leaders could put any credence in a nonexistent US intention to destroy them with a nuclear first strike. That was something to think about, Reagan said.

"In a meeting with his senior White House advisors the same day, Reagan spoke about the biblical prophecy of Armageddon, a final world-ending battle between good and evil, a topic that fascinated the President. McFarlane thought it was not coincidental that Armageddon was on Reagan's mind," wrote Oberdorfer.

Was Moscow genuinely concerned about the nuclear headquarters exercise? Or were its fears faked? Two US Special National Intelligence Estimates (SNIEs) produced in 1984 concluded that the entire war scare of 1983 was a Soviet scheme intended partly to frighten the US and its allies into toning down their rhetoric and perhaps rein in their defense plans as well.

In 1990, however, an extensive review of the situation by the President's Foreign Intelligence Advisory Board reversed this conclusion. The SNIEs had not looked at things from the USSR's point of view and therefore had not fully grasped the Soviet fears, according to the advisory board report.

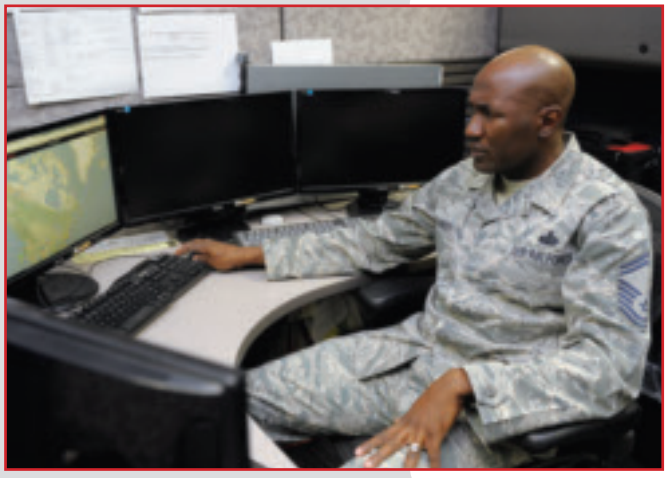
The "war scare was an expression of a genuine belief on the part of Soviet leaders that [the] US was planning a nuclear first strike," said the unclassified summary of the report.

A few years later, Robert M. Gates, who was CIA deputy director for intelligence when Able Archer 83 took place, concurred in this judgment in his 1996 book *From the Shadows: The Ultimate Insider's Story of Five Presidents and How They Won the Cold War.*

"I don't think the Soviets were crying wolf," Gates wrote. "They may not have believed a NATO attack was imminent in November 1983, but they did seem to believe that the situation was very dangerous. And US intelligence had failed to grasp the true extent of their anxiety." ■

Peter Grier, a Washington, D.C., editor for the Christian Science Monitor, *is a longtime contributor to* Air Force Magazine. *His most recent article, "Kittinger," appeared in August.*

Outstanding
AIRMEN OF THE YEAR



SMSGT. BOSTON A. ALEXANDER
Superintendent J6 & Command 3DXXX Field Manager
NORAD and USNORTHCOM (AFDW)
Peterson AFB, Colo.
Home of Record: New Carrollton, Md.

Alexander successfully directed a 170-member information technology service management team and oversaw critical assets valued in excess of $4 billion. As the J6 superintendent, he led 15 projects to provide around-the-clock, full-spectrum support for NORAD and USNORTHCOM missions. He piloted a $2.8 million friendly forces tracker program of 32,000 electronic devices that improved force protection, homeland defense, and defense support to civil authorities operations. Alexander drove the information technology equipment certification methodology and managed 9,000 mission systems worth $2 million, ultimately increasing NORAD, NORTHCOM, and Defense Information Systems Agency interoperability.

SMSGT. MICHAEL J. VENNING
Functional Area Manager
Directorate of Contracting (AFMC)
Wright-Patterson AFB, Ohio
Home of Record: Melbourne, Australia

Venning expertly managed the Air Force's largest contingency contracting corps of 405 members at nine bases. He was the uniformed expert for the contingency acquisition support model, briefing and demonstrating the program for five Army general officers, ensuring the system's approval. Venning planned and executed the career field's electronic training documentation initiative, creating a standardized system for 1,890 enlisted members. His efforts transitioned the entire career field in less than two months. He received Air Force Materiel Command's Senior Noncommissioned Officer of the Year Award in contracting and was a distinguished graduate at the Senior Noncommissioned Officer Academy, where he also won the prestigious Commandant's Leadership Award.

MSGT. DELOREAN M. SHERIDAN
Combat Control Craftsman
21st Special Tactics Squadron (AFSOC)
Pope Field, N.C.
Home of Record: Chesapeake, Va.

Sheridan served as the lone air commando with Army Special Forces through 177 days of combat in Afghanistan, including 43 high-risk missions and 18 firefights. He received the Silver Star for actions in an ambush by an Afghan police officer and insurgents, during which he exposed himself to heavy machine-gun fire to drag wounded service members to safety. Sheridan was handpicked to stand up an airfield recon team with a global focus. He led a search team to recover downed, sensitive technology with zero compromise to national security. Despite being deployed for more than half the year, he earned his second Community College of the Air Force degree and completed 12 semester hours toward a bachelor's degree. He was awarded a second Bronze Star Medal for heroism in combat during his sixth deployment to Afghanistan.

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

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

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

TSGT. TOYRE L. HUDSON
Mental Health Flight Chief
6th Medical Operations Squadron (AMC)
MacDill AFB, Fla.
Home of Record: Columbus, Ga.

Hudson provided exceptional leadership for 47 personnel delivering mental health care to the Department of Defense's largest single-unit area, serving 220,000 beneficiaries. He deployed to Kabul, Afghanistan, where he served as the combat stress noncommissioned officer in charge, providing oversight to 11 forward operating bases and ultimately supporting 15,000 joint service members and 50 coalition nations. Hudson conducted 21 outside-the-wire missions to assist more than 100 airmen in crisis. He served 65 days as a first sergeant, resolving more than 1,200 equipment and personnel issues, ensuring his team of 45 airmen was prepared to support combat operations throughout Afghanistan.

TSGT. DOUGLAS J. MATTHEWS
Combat Control Craftsman
125th Special Tactics Squadron (ANG)
Portland, Ore.
Home of Record: Boulder, Colo.

Matthews completed a mobilization that included a combat deployment in support of Operation Enduring Freedom. During this deployment, Matthews was injured when his team came under heavy enemy fire. An improvised explosive device detonated directly below his vehicle, blowing Matthews out of it. Refusing a medevac, he continued to fight, calling in close air strikes and providing cover for his team. Matthews was awarded the Silver Star for heroism and a Purple Heart. After spending a year in intense physical therapy, Matthews returned to full combat mission ready status.

TSGT. WILLIAM R. POSCH
Pararescue Craftsman
308th Rescue Squadron (AFRC)
Patrick AFB, Fla.
Home of Record: Indialantic Beach, Fla.

Posch led a crisis evacuation of more than 120 Americans from the US Embassy in the South Sudan capital of Juba. He headed a team of 23 battlefield airmen during an expeditionary combat deployment and provided more than 1,560 hours of combat rescue coverage, rescuing 143 persons. His contributions in reorganizing UTC packouts increased his team's alert readiness by 33 percent. Posch aided his squadron's effectiveness by providing training for airmen and joint service personnel. Proven battlefield experience, coupled with an understanding of tactical operations, led to his design of schematics for a personnel recovery tactical operations center, increasing the efficiency and effectiveness of command and control of rescue and recovery operations.

Outstanding AIRMEN OF THE YEAR

TSGT. RYAN E. GANGADEEN
NCOIC of Operations Training
1st Space Operations Squadron (AFSPC)
Schriever AFB, Colo.
Home of Record: Brooklyn, N.Y.

Gangadeen, on a one-year deployment in Afghanistan as the lead professional military education advisor to the Afghan air force (AAF), guided the creation of the AAF training regimen. He quickly responded to a vehicle-born improvised explosive device threat, ensuring the safe return of 33 coalition and 22 civilians to Kabul Airport. As a certified convoy vehicle commander, he led seven outside-the-wire NATO mobility missions, securing 18 members with zero incidents. During the deployment, Gangadeen directed 44 AAF courses for 60 career fields. He evaluated four maintenance training contracts worth $527 million, revealed six duplicate contractual requirements, and saved $40 million.

TSGT. LATORIA R. ELLIS
Contracting Team Lead
502nd Contracting Squadron (AETC)
JBSA-Lackland, Texas
Home of Record: Miami

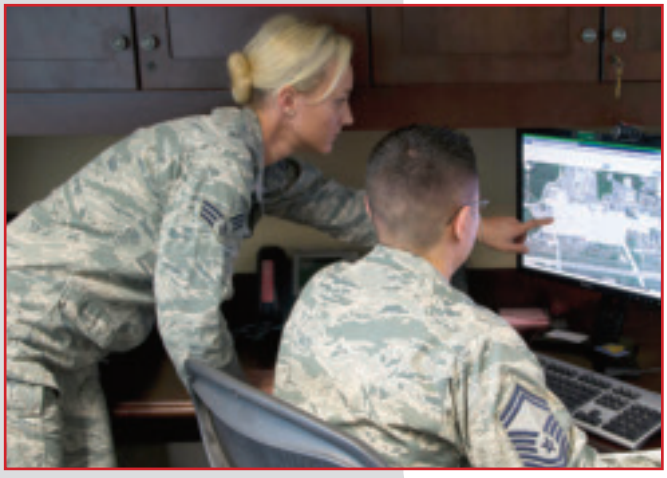
Ellis led a 25-member team that completed 86 contracts for Wilford Hall Ambulatory Surgical Center, the Air Force's largest medical wing. She spearheaded a $2 million energy savings acquisition, retrofitting 19 buildings with solar panels, reducing the utility bill and saving the Air Force $600,000 a year. She steered a $1.9 million generator efficiency project, replacing 33 percent of defective grids in military family housing, reducing output by 14 percent and saving the Air Force $24,000 a year. She completed 223 hours of training at the Noncommissioned Officer Academy, garnering her distinguished graduate and academic achievement awards. Ellis was named Air Education and Training Command's NCO of the Year out of 13,039 noncommissioned officers.

SSGT. DAVID W. WALLACE III
Plans and Programs NCO
91st Security Forces Group (AFGS)
Minot AFB, N.D.
Home of Record: Minot, N.D.

Wallace was selected as the Air Force's 2013 Outstanding Security Forces Support Staff Airman of the Year while serving as the plans and programs noncommissioned officer. During that time, he authored a response-time matrix for 150 off-installation nuclear sites that maximized resources and minimized response times. His product was benchmarked throughout 20th Air Force for all intercontinental ballistic missile units. He reinvigorated outdated site defense plans to enhance the security posture for 150 launch facilities and 15 missile alert facilities. He also completed four college courses; the 12 completed credit hours culminated in a bachelor of science degree in criminal justice. Wallace also organized the Minot Air Force Base Spouse Showcase, which highlighted base products and services to more than 300 dependents.

SRA. AARON T. FELICIANO
MQ-9 Avionics Systems Journeyman
849th Aircraft Maintenance Squadron (ACC)
Holloman AFB, N. M.
Home of Record: St. Cloud, Fla.

Feliciano was instrumental in modernizing the 49th Wing's MQ-9 fleet by successfully upgrading 13 MQ-9s in five days, increasing the combat mission readiness of 340 aircrews. He led a five-person RPA safety modernization team that upgraded 11 aircraft and reduced processing time from 90 days to less than two weeks with a 100 percent maintenance quality assurance rating. As the avionics section trainer, he certified 99 tasks, trained 11 airmen, and raised the section's qualifications by 35 percent. He successfully completed three college classes and seven College Level Examination Program exams with a 4.0 GPA, earning his Community College of the Air Force avionics systems degree. Feliciano also remissioned a MQ-9 training sortie supporting the recovery of an injured German air force airman stranded in the New Mexico desert.



SRA. SHABREE N. HEASELL
Geospatial Intelligence Analyst
603rd Air and Space Operations Center (USAFE)
Ramstein AB, Germany
Home of Record: San Luis Obispo, Calif.

Heasell's work as an imagery intelligence support analyst led to her selection as a tactics and training analyst. In this facet, she identified 43 smuggling routes across a 193-square-mile area, leading to the discovery and elimination of 12 enemy workshops, 20 improvised explosive devices, and 50 weapons caches. She developed nine primary and alternate evacuation routes for the Secret Service, ensuring the safety of the President of the United States and 223 staff personnel during the President's diplomatic visit to Africa. Heasell volunteered 1,270 hours for 15 organizations and led 350 volunteers through 53 events, raising more than $2 million in sales and proceeds that were donated to local schools and charities.

SRA. ARIFUL HAQUE
Water and Fuel Maintenance Technician
374th Civil Engineer Squadron (PACAF)
Yokota AB, Japan
Home of Record: East Elmhurst, N.Y.

Haque led five Japanese-national employees in maintaining and repairing the Yokota Air Base bulk fuel storage area, Type III hydrant fueling systems, and high-level control valves, which enabled air operations for the sole airlift wing in the western Pacific. He led a storm pump renovation project that solved two years of flooding problems, eliminating the risk to multiple networks vital to bilateral operations. Relying on his criminal justice background and language skills, he partnered with the local AFOSI detachment to develop realistic scenarios for a joint training exercise for agents. As a member of the Yokota Air Base Honor Guard, he re-established the only drill team in Pacific Air Forces and has performed as a ceremonial guardsman.

F-108 RAPIER

By Erik Simonsen

Illustrations by Erik Simonsen

The Air Force's Mach 3 interceptor that almost was.

The sleek, triple-sonic F-108 Rapier was to have been the fighter-interceptor half of an Air Force nuclear tag team with the B-70 Valkyrie supersonic bomber. Both were futuristic designs developed to vault ahead of rival Cold War technologies of their day—one defending the homeland against Soviet bombers and missiles, the other carrying the nuclear fight to the Soviet heartland at unprecedented speed.

Despite great optimism surrounding the projects, neither the Rapier nor the Valkyrie would see operational service.

The Valkyrie was done in by politics, changing mission requirements, and cost.

The Rapier was a victim of changing requirements and better information about the threat—eclipsed by more expedient designs with more modest ambition. While some view the Rapier as too far ahead of its time, others see it as a lost opportunity. Among aviation fans, it reigns as one of the best supersonic fighters that never was.

In the late 1950s new aircraft designs were leaping off the drawing board and into mock-up or test-flight stage only months apart. The so-called "Century Series" of USAF fighters had already produced the F-100 Super Sabre, F-102 Delta Dagger, and F-104 Starfighter, each configured with a slightly different aspect of the aerial Cold War in mind.

The Rapier—dubbed the F-108—was conceived to deal with approaching Russian bombers while they were as far away as possible. This was necessary for two reasons: one, to keep the bombers distant so their nuclear weapons couldn't reach the United States, and two, because the Rapiers would have destroyed the attacking bombers with air-to-air missiles also carrying nuclear warheads.

Ideally, those detonations would take place over the Soviet frontier or Arctic Ocean, not over Canada or the United States.

Today, the idea of arming interceptors with nuclear-tipped missiles seems like overkill. In the 1950s, however, there were no direct-hit guided weapons; air-to-air missiles were still in their infancy. A nuclear blast was considered the only practical way to "clear the air" of enemy bombers. Even missing the target by a wide margin would still get the job done. It was a no-fail mission, and only nuclear weapons offered the needed certainty of success.

As radar and fire-control systems matured and missile performance improved, though, air-to-air missiles were modified to carry high-explosive conventional warheads, alongside nuclear versions of the same missiles.

North American Aviation, builder of the F-86 Sabre and F-100 Super Sabre, won the competition for what would become the F-108 program in June 1957. It had competed hard since 1955 against Lockheed and Northrop for the program then known as the Long-Range Interceptor, Experimental (LRI-X).

Left: An illustration of the YF-108A flying at high altitude.The aircraft was designed to intercept air-breathing targets from sea level to 100,000 feet. Above: Rapiers return from a training mission in this artist's conception. Had the F-108 entered operational service, it would have gradually replaced the F-106.

Illustration by Erik Simonsen

North American was also competing for the XB-70 project, the Air Force's planned new Mach 3-plus bomber.

The company operated out of Inglewood, Calif., setting up shop adjacent to Mines Field, the site of present-day Los Angeles Airport. In World War II, North American had produced more than 40,000 aircraft—fully 10,000 more than any other US airplane maker. These included the famed T-6/SNJ Texan trainers, P-51 Mustang fighters, and B-25 Mitchell medium bombers.

With a growing reputation for innovative design, North American proceeded to develop the Sabre. The company's XP-86, the first swept-wing US jet airplane design, took flight at Muroc AAF, Calif., (now Edwards Air Force Base) on Oct. 1, 1947, less than two weeks before Charles E. "Chuck" Yeager pushed the Bell X-1 to supersonic speed. The F-100 followed only a few years later. North American went on to win the contract to build the X-15, the brutish manned rocketplane that set a slew of aviation speed and altitude records and flew to the edge of space at better than Mach 6.

The company had reached the pinnacle of aerospace technological development. If anyone could build the first Mach 3 interceptor, it was North American.

A sleek, advanced configuration took shape at the Los Angeles Division. North American's F-108 concept would be capable of Mach 3, while operating at more than 75,000 feet, able to zoom-climb to 100,000 feet.

The Air Force specified two flying prototypes, to be called YF-108, with a follow-on order expected for 30 further prototypes. The service anticipated buying 480 operational models.

In late December 1957, North American was also chosen to build the new B-70 bomber. The pair of awards represented a welcome infusion of cash and boosted morale. Earlier, North American had lost a fighter competition between its YF-107—a further development of the F-100—and Republic Aviation's YF-105, which went on to become the F-105 Thunderchief, a mainstay of the Vietnam War.

The high Mach fighter-interceptor and bomber programs represented a major step forward, however. The Eisenhower Administration was embarking on a new path to ensure US dominance in the Cold War while stimulating technologies to benefit the industrial base. It was all meant to send a message to the Soviet Union and America's allies that the US intended to maintain technological superiority. The flip side of the coin was that adversaries like the Soviets would have to invest heavily to counter American advances.

In May 1958, the F-108 designation was officially applied to the program. North American held a contest to give the airplane a name. SSgt. Charles

Illustration from Boeing archives

Far left: Two Rapiers initiate a climb in afterburner in this artist's conception. Left: An early rendering of the F-108 design configuration featured canards like those on the forthcoming XB-70. Later in the process, the canards were eliminated.

Wyon came up with "Rapier," a two-edged thrusting blade. It echoed North American's "Sabre" sword theme and won Wyon a $500 bond and a trip to Las Vegas.

A company press release stated, "The US Air Force F-108 Rapier would be designed to launch an atomic missile 1,000 miles away from its base and be back on the ground an hour later. ... [This] will result in a defensive system for the United States that will permit the atomic destruction far offshore of enemy aircraft or missiles approaching from sea level to extremely high altitudes."

DUAL SYSTEMS

North American issued an update regarding its dual interceptor and bomber programs: "No military airplane in the world today even approaches their performance. The F-108 can seek out any enemy and intercept it a thousand miles from our borders. The B-70 is being designed as a successor to the B-52 and is expected to have intercontinental range, while traveling at more than three times the speed of sound."

To save money, North American decided to develop and fabricate some systems commonly for both aircraft. It announced that Hamilton Standard, a division of United Aircraft Technologies, would provide the air-conditioning and pressurization systems for the F-108 and XB-70. More fabrication contract announcements followed. In January 1959, Convair was named builder of the F-108 wing, while Lockheed would provide a fuselage section for the XB-70. Chance Vought would design and manufacture the bomber's vertical stabilizer sections. In March, Sundstrand Corp. was awarded a contract to design and build the secondary power systems for both aircraft.

Other major shared components included the General Electric J93-GE-3AR engine, honeycomb stainless steel materials, and a North American-designed crew escape system. Although final assembly would take place at the company's Los Angeles division, 70 percent of the development and manufacturing would be performed by subcontractors, including small businesses.

While development proceeded, a movement began to stir to substitute missiles for manned bombers and fighters. In early February 1959, USAF Chief of Staff Gen. Thomas D. White tried to deflect this sentiment, telling the Senate Armed Services Committee, "Manned interceptors are required for long-range attack on the enemy and are necessary for identification and air policing. In this function, nothing has yet been developed with the judgment, flexibility, and intelligence of the man in the cockpit."

That same month, North American announced the successful completion of the F-108 mock-up review. Over three weeks, more than 70 Air Force and civilian personnel had scrutinized the Rapier full-scale mock-up, offering comments and suggestions.

"The mock-up gives the Air Force an opportunity to minutely examine what in effect is a three-dimensional blueprint," Heston Cherry, North American's F-108 Weapon System manager, explained in 1959. "Built to the measurements of the actual airplane, the mock-up is an essential step before production of the flying article can begin."

By May, the Air Force was beginning to publicly describe its concept of operations for how future air defenses would work. Lt. Gen. Roscoe C. Wilson, USAF deputy chief of staff for development, said the F-108 and Bomarc surface-to-air missile, "teamed together, will enable our air defenses to reach out over long range to destroy enemy bombers long before they reach their targets. Both the F-108 and Bomarc also offer a very high degree of growth potential to provide us with a highly effective defense against air-breathing missiles." Not only that, but the F-108 "also shows considerable promise as a tactical fighter-bomber for use in limited conflicts abroad," said Wilson.

The F-108 was aesthetically pleasing—a graceful and clean aerodynamic design that seemed futuristic. At one point during the configuration stage, engineers considered enlarging the basic design to accommodate more internal fuel, instead of external tanks. They concluded, though, that a smaller aircraft would be less expensive to produce and easier to

Photo from Boeing archives

Crew escape capsules were designed for crew members wearing anti-G flight suits.

maintain and operate. Supersonic drop tanks would remain an option for some missions, to be jettisoned prior to high-Mach flight.

After several iterations, the wingspan was fixed at 57.5 feet. The wing sweep was 58 degrees, narrowing to 32 degrees just short of the wing tips—giving it a cranked-arrow delta shape. The F-108 fuselage length was 89 feet (25 feet longer than today's F-15), with a single 22.1-foot vertical stabilizer. Maximum takeoff weight was about 102,000 pounds.

The YF-108 test flight articles would have a crew of two—a pilot and a weapon systems officer—seated in tandem, and individual high-speed clamshell ejection capsules. Both the twin-engine F-108 and six-engine XB-70 featured variable inlets with unique configurations. A variable intake arrangement similar to the F-108's would later appear on the Navy's RA-5C Vigilante, capable of Mach 2. The MiG-25 Foxbat—developed by the Soviets to counter the B-70—used a similar intake configuration.

Two engines were considered a safety essential for the F-108, given its expected usual operations over the Arctic region and lengthy overwater patrols. Additionally, the Rapier would use onboard electronics to fill in gaps in the Distant Early Warning, or DEW, Line. It could be forward deployed, needing 6,000 feet to take off. Thrust reversers, then considered more efficient than drag chutes, were a late add in the design process. Although this feature added nearly 700 pounds, operations on icy or snowy runways would be much improved.

After touchdown, the brakes of jet aircraft are usually quite hot, posing a hazard to ground crews. The Rapier, though, was designed with quick-turn refueling and rearming in mind. North American's engineers developed heavy-duty steel cages surrounding the tires on each wheel after landing. In the event of hot brakes causing a tire explosion, the cages would contain the tire and wheel fragments, reducing the risk to ground personnel. This feature was a topic of considerable discussion in the mock-up review, but was retained as a requirement.

A number of historical accounts have suggested the F-108 was intended to be an "escort" for the B-70. Former North American engineers report this was never the case. Keeping a program "sold" is essential, and it would have hurt the case for the B-70 to say it needed an escort fighter. In addition, the intercontinental range of the B-70 would have meant any Rapier escorts would have needed extensive air refueling.

EMERGING INTELLIGENCE

In 1955, when the F-108 project began, it was thought Russia would be able to field large numbers of nuclear-armed bombers to threaten the US and Canada. A high-speed, long-range interceptor was needed to counter this threat.

U-2 reconnaissance flights indicated, however, that the bomber threat could take some time to materialize. The U-2 overflights of Russia ended when Francis Gary Powers was shot down in May 1960.

Corona spy satellites began turning in useful intelligence shortly thereafter. The Corona Project was the first imaging intelligence satellite operated by the CIA, and after a frustrating teething period, Corona produced its first useful imagery in August 1960. It confirmed a lower count of Soviet bombers and ICBMs.

The intelligence obtained began a shift in US defense strategy, and the perceived need for superinterceptors diminished. Though air defense was still considered a top priority, funding was already migrating toward ICBMs as a faster strike system and improved deterrent.

The bomber threat was still there, though, and still might have materialized as originally envisioned. The Soviet Union could certainly have ratcheted up bomber production and was already developing long-range air-to-ground missiles (eventually evolving into air launched cruise missiles) for deployment on bombers. Had the Soviets pursued that direction more aggressively, it could have dramatically increased the number of incoming targets, potentially overwhelming existing US air defense systems and less capable interceptors.

The handwriting was on the wall by late 1958, however. The Air Force cut the F-108 order from 31 to 20 prototypes.

Photo from Boeing archives

The full-scale mock-up under construction at North American Aviation's Los Angeles facility.

By mid-1959, the F-108 program was placed on an austere funding track.

North American Aircraft engineers working on the project at the time said word was getting around that something was up, particularly those working with Hughes Aircraft on the radar/missile interface. Technical coordination meetings with Hughes were tense, as if Hughes may have had early knowledge the F-108 was to be canceled.

The Eisenhower Administration had set a goal of delivering a balanced budget for its last year in office. National budget director Maurice H. Stans was pressuring Defense Secretary Neil H. McElroy to find big-ticket items to cut. It was something of a Cold War gamble; the Administration had been caught off guard by the October 1957 launch of Sputnik.

Directly as a result of the balanced-budget cuts, the F-108 program officially ended Sept. 23, 1959, with a terse USAF statement: "As of today, the Air Force contract with North American Aviation Inc. of Los Angeles for the development of the F-108 long-range interceptor is being terminated. A total of $150 million [1959 dollars] has been expended to date."

THE DOMINO EFFECT

The F-108 cancellation had a direct—and negative—effect on the XB-70. With the F-108 gone, hardware developed for it that was also to be used on the XB-70 now became an expense borne solely by the Valkyrie program. Some $180 million (in 1959 dollars) of F-108 costs shifted to the XB-70 budget—a contributing factor in the bomber's eventual termination.

Some 2,000 North American employees were immediately put out of work by the F-108 cancellation, and the full-scale mock-up was scrapped. The advanced Hughes AN/ASG-18 radar/fire-control system, GAR-9/AIM-47 Falcon nuclear/conventional missile technology, and the infrared search and track system meant for the F-108 migrated to the forthcoming Lockheed YF-12 program. The Air Force's F-108 project officer, Col. Kenneth Chilstrom, took over the YF-12A, the developmental forerunner to the SR-71 Blackbird.

Had the original timetable been borne out, the F-108 would have made its first flight in early 1961 and was to be operational by 1963. The Rapier would have provided US air defenses unmatched dash speed, range, and a lookdown/shootdown radar capability. Its support systems were compatible with forward-based logistics, so F-108s could have been an effective power-projection tool in a crisis.

While the F-108 was being developed in the open, there were competitive, classified programs in the works at the same time. Lockheed was working on the Mach 3-plus single-seat A-12 reconnaissance airplane, as well as the similar YF-12A interceptor prototype. After initial problems, the A-12 was declared mission ready in 1965. The first YF-12A interceptor prototype achieved flight in August 1963.

Though testing of the three prototypes proved the new high-mach jet aircraft a success, Defense Secretary Robert S. McNamara canceled production of the F-12B interceptor at the beginning of 1968. Consequently, no Mach 3 US interceptors would fly.

The Soviet bomber forces never became an overwhelming threat. Variants of the Tu-95 Bear remained a potential menace as standoff weapons platforms, and the Soviets continued development of supersonic bombers with the Tu-22 Blinder, Tu-22M Backfire, and the Tu-160 Blackjack (the latter a scaled-up conceptual cousin to America's B-1 Lancer). But the skies never darkened with Russian bombers, and for those that did probe the edges of NORAD's airspace, the F-106 Delta Dart served admirably, rarely needing to achieve its top speed of Mach 2.2. ■

Erik Simonsen is a freelance photographer and writer. This article is adapted from his book Project Terminated: Famous Military Aircraft Cancellations of the Cold War and What Might Have Been. *A frequent contributor of photos and illustrations, this is Simonsen's first article for* Air Force Magazine.

The flamboyant Pancho Villa was famous on both sides of the border.

Photo by D.W. Hoffman, Library of Congress

Chasing Pancho Villa

By John T. Correll

The pursuit into Mexico included the horse cavalry as well as Benny Foulois and his eight-plane air force.

In the early morning hours of March 9, 1916, Pancho Villa and his "Division of the North" swept down on Columbus, N.M., three miles from the US-Mexico border, shooting at anything that moved. Half of the nearly 500 riders struck at the town itself and the other half attacked the US Army's Camp Furlong, which was adjacent.

Villa and his band had been raiding and killing along the Mexican side of the border for months. In January, they ambushed a train carrying American mining engineers and killed 18 of them. Rumor said he would soon make a foray into the United States.

The 13th Cavalry Regiment at Columbus had conflicting information about Villa's whereabouts and had patrols out looking for him. The Villistas crossed into New Mexico under cover of darkness and threaded their way between the cavalry detachments.

Columbus looked like an easy target. The population, counting children, was about 300. There were two hotels, a bank, a post office, and several stores. Villa's scouts had reported only 30 men in the army garrison on the edge of town. Actually, 348 troops were in the camp that night.

The Villistas came whooping in at 4:30 a.m, shooting indiscriminately, ransacking stores and homes for loot, and setting fires. The soldiers recovered quickly from the surprise attack and mounted an effective defense. Fast-shooting Benét-Mercié machine guns established command of the streets and the raiders never got farther than the middle of town.

Before the fighting ended around 6 a.m., 10 American civilians and eight soldiers had been killed, but so had 100 of the Villistas. By daybreak, the invaders were on the run, pursued 12 miles into Mexico by a troop of cavalry, and forced to abandon most of their loot.

Villa had a week to disperse his forces before the US Army came after him.

The "punitive expedition," led by Brig. Gen. John J. Pershing, consisted of horse cavalry, infantry, artillery, and the 1st Aero Squadron, commanded by Capt. Benjamin D. Foulois. The squadron had eight JN-3 Curtiss Jenny biplanes—every airplane the Army possessed except for those at the aviation school in San Diego. It was the first time a US aerial unit had ever deployed in active field service.

MAKING AN ENEMY

Francisco "Pancho" Villa, 38, was already famous in the United States as well as in Mexico. Uneducated but a natural leader, he joined an outlaw gang at age 17, becoming chief when the old chief was killed in a stagecoach robbery. A few years later, he took up cattle rustling and enjoyed considerable public approval because of resentment toward the big ranchers.

When the Mexican Revolution began in 1910, the flamboyant Villa rose to folk hero status, leading partisan forces in support of reformer Francisco Madero, who ousted longtime dictator Porfirio Diaz. In 1913, Madero was overthrown by Gen. Victoriano Huerta and "shot while trying to escape." Villa aligned with another rebel leader, Venustiano Carranza, in opposing the Huerta regime.

In 1914, Villa signed a motion picture contract with the Mutual Film Co. of New York, which combined documentary

Bettmann/Corbis photo

Pershing (foreground) led the punitive expedition south in two columns. His main striking force in Mexico would be the cavalry.

battle footage with fictional content for movies that starred Villa as the hero. He got 20 percent of the revenues. There is no truth to the claim that the contract called for him to restage the battle scenes when needed for cinematic effect.

Contrary to his image as the Robin Hood of the border, Villa was inclined toward sudden and extreme violence and executions, which sometimes included the families of his victims.

The revolution was already in progress when Woodrow Wilson took office as President of the United States in 1913, but Wilson hoped to steer it in the direction of his idealistic and progressive principles. Wilson regarded Huerta as "a butcher" and thought that Mexico needed to be rid of him.

Wilson never understood that while the various factions welcomed American money and arms, they did not want his guidance or his meddling in Mexican politics. All sides resented a heavy-handed operation in which US forces temporarily occupied Vera Cruz in 1914.

Huerta was driven into exile that year. Villa parted ways with Carranza and, by late 1914, their forces were actively fighting each other. In 1915 Wilson recognized Carranza as the legitimate leader of Mexico and allowed him to use railroads in Texas, New Mexico, and Arizona to outmaneuver the Villistas. Villa, who had previously expressed friendship for Americans, took it as betrayal and vowed vengeance.

"We decided not to fire one more bullet against the Mexicans, our brothers, and to prepare and organize ourselves to attack the Americans in their own dens and make them know that Mexico is a land for the free and tomb for thrones, crowns, and traitors," Villa said in January 1916 in a letter to his fellow revolutionary Emiliano Zapata.

The situation was further complicated by the Germans, who were stirring up trouble in Mexico in hopes of keeping the United States preoccupied in its own hemisphere and out of the war in Europe.

PERSHING TAKES CHASE

Villa's motives for the raid are not entirely clear. He was well aware that Columbus was an insignificant target. Nevertheless, he figured to replenish his supplies there and perhaps obtain weapons from the army camp, which he expected to be lightly defended. An additional factor may have been a grievance by Villa against the owners of the Commercial Hotel. The Villistas set it afire during the raid.

The most likely explanation is that Villa wanted to provoke a US intervention in Mexico. "Villa, spoiling for a fight, with Germany whispering encouragement in his ear, danced up and down the border like an enraged rooster trying to provoke the rush of a large dog," said historian Barbara Tuchman. "He believed his only hope lay in forcing an American invasion that would rally the peons in an anti-American rising behind his banner. Then he, not Carranza, would be the national hero."

After the attack on Columbus, US public opinion, especially in the border states, was strong for retaliation. Congress, expressing doubt that any government authority in Mexico was "capable of punishing these atrocious acts," endorsed intervention. Wilson ordered a "pursuit of Villa with the object of capturing him and putting a stop to his forays."

Pershing, a brigade commander at Fort Bliss, Texas, and a rising star in the Army was appointed to lead the expedition. He headed south March 15 with about 4,800 troops in two columns, one departing from Columbus and the other from a ranch near Hachita, N.M. Two days later, the columns came together at Colonia Dublán, 116 miles inside Mexico, where Pershing set up a forward headquarters. Colonia Dublán was chosen because it was the location of a small colony of American Mormons. Pershing figured his presence would be less likely to create an incident there than at a Mexican village.

At Colonia Dublán, Pershing obtained a Dodge touring car from one of the Mormons. He put an American flag on one bumper and his guidon on the other and turned in the bay horse he had ridden into Mexico. For the remainder of his time there, his travel would be by automobile.

On March 19, Foulois and his eight-plane air force arrived in Mexico to join Pershing. Their mission was observation and communications, not combat—their JN-3s had no fittings to mount weapons. Besides, the airmen struggled along on 90-horsepower engines that could not support the additional weight of Lewis machine guns.

In addition to scouting for Villa and carrying messages back and forth to the cavalry patrols, the airmen took dispatches from the newspaper reporters with them on their regular flights back to Columbus. The *New York Times* proudly labeled its reports "By Army Aeroplane from Field Headquarters."

For more than a week, nothing was seen of Villa, who had melted into the countryside of his Chihuahua stronghold. At first, the Mexican government's attitude toward the US intervention had been ambiguous but soon hardened into wanting the Americans to go home.

Carranza would not allow Pershing to use the Mexican railroads, so the expedition had to be supplied by truck from the logistics base at Columbus. Eventually, Pershing had 162 trucks in operation, and the population of Columbus became

the largest in New Mexico. Even so, it wasn't enough, especially when rains washed out the roads in July. The 4th Field Artillery ate beans three times a day for 62 days.

Villa finally surfaced March 27, capturing the Carranza garrison at Guerrero in the Sierra Madre mountains in a five-hour battle in which Villa was wounded in the leg. On March 29, a squadron of the US 7th Cavalry engaged 500 Villistas at San Jerónimo, killing 56 and losing five of their own, after which, Pershing said, the Villistas "scattered to the four winds."

Villa was not about to give Pershing's well-equipped regulars the set-piece battle they wanted.

AERO SQUADRON TRAVAILS

The 1st Aero Squadron started out with problems that got steadily worse. The best that can be said of the experience is that it taught the Army some valuable lessons about airplanes.

It began well. The JN-3s were shipped by train to Columbus where they were unpacked and assembled. As soon as the first one was ready March 16, Foulois and his deputy, Capt. Townsend F. Dodd, made a reconnaissance flight into Mexico to assure Pershing that there were no enemies within a day's march of his columns.

The first flight after the squadron arrived at Colonia Dublán was a different matter. On March 20, Foulois and Dodd attempted a reconnaissance flight toward Cumbre Pass in the heart of the Sierra Madres to locate Villistas. "About 30 miles out, I noticed the ground getting closer and closer," Foulois said.

The JN-3 was at its altitude limit. Colonia Dublán was already a mile above sea level and the Sierra Madres loomed ahead, much higher than the Army pilots had ever flown. Cumbre Pass lay at about 9,000 feet. The underpowered engine could not make it and Foulois and Dodd had to turn back, the mission a failure.

There were occasional successes in the following days, but the JN-3s—predecessor of the classic JN-4 Jenny that came later—battled harsh conditions that included severe rain, hail, and snowstorms. "The dust in the air was so thick that the snow was actually brown by the time it hit the ground," Foulois said.

Foulis lost the first of his eight airplanes March 20 when it was caught in a whirlwind upon landing and crashed. Over the next month, five more were lost, overmatched by the rugged terrain and unfavorable operating conditions. The two aircraft remaining were in such bad shape that they were flown to Columbus, condemned, and destroyed.

As replacements, Foulois received Curtiss R-2s, with larger 160 hp engines. However, the R-2s were hastily manufactured, had numerous faults, and did not perform well on the border.

Between March and August, the squadron flew 540 missions in Mexico, enabling Pershing to stay in touch with his cavalry detachments ranging deep into the countryside. There were good days, such as April 1, when the airmen flew 19 missions without any problems. In August, Foulois and Pershing decided to relocate the main squadron back to Columbus and keep two airplanes on rotational duty at the advanced station at Colonia Dublán.

In his final report, Foulois recommended that in the future, the Army should test airplanes under conditions resembling those they would encounter in the field rather than subjecting them only to testing at sea level under favorable conditions, which was the practice up till then.

HEARTS AND MINDS

Carranza, challenged by both Villa and Zapata, was not in firm control. Fearing that some of his commanders might defect to Villa, he demanded that US forces withdraw but tempered his remarks, not wishing to cut ties completely with the United States.

In any case, directions from Carranza might not have made that much difference. "Carranza has no more control over local commanders or of states or municipalities than if he lived in London," Pershing said.

"Practically every Mexican so far encountered had questioned our right to be in Mexico," Pershing said. The *New York Times* reported that shots were sometimes fired at small detachments as they rode through villages.

On April 7, Pershing sent Foulois to Chihuahua City with dispatches for the US consul general. Foulois took a second airplane as backup with the duplicates of the dispatches. Upon landing, Foulois set out for town but was arrested by a contingent of *rurales,* the Mexican national police. An angry crowd opened fire on the airplane, flown by Lt. Herbert A. Dargue, as he lifted off to join the backup airplane on the opposite side of town.

After a long wait, the military governor freed Foulois, but both airplanes were damaged by the mob before they were able to depart the next day.

A more serious clash came April 12 in Parral, Villa's hometown, where a squadron of the 13th Cavalary was fired on by armed civilians and engaged in a running battle with Carranza troops. Two days later, a cavalry detachment supported by one airplane reached the village of Ojito, southwest of Parral, marking the deepest penetration of the expedition into Mexico, 450 miles from Columbus.

Photo by Robert Runyan, Library of Congress

Villa (center) was still on friendly terms with the US when he and Obregón (left) visited Pershing (right) in 1914.

The JN-3 biplanes could not handle the altitude or field conditions in Mexico. Six of the eight were lost in the first month and the other two were in such bad shape that they were condemned and destroyed.

In May, Mexican raiders attacked several towns in Texas, including Glenn Springs, where they robbed the general store of everything they could carry except for the canned sauerkraut. Mexican government forces made no effort to catch them. In fact, two of the robbers were Carranza officers. Secretary of State Robert Lansing complained that in no instance had Carranza aided in the pursuit of Villa or taken action to protect the frontier.

Pershing's detachments fought occasional skirmishes with Villistas but the confrontations were more frequently with government forces. At Carrizal June 21, the cavalry commander insisted on going straight through town although warned by the Carranzista commander that he would be fired on. In the ensuing firefight, 12 Americans were killed, 12 wounded, and 24 captured. The prisoners were later released on the international bridge at Juarez.

Gen. Alvaro Obregón, the minister of war and a future president of Mexico, bragged that if a war began, he would march north and seize San Antonio. The Germans were well-satisfied with the progress of events.

THE EXPEDITION STALLS OUT

Pershing, who now had some 10,000 troops in Mexico, proposed more aggressive action to find and deal with Villa. The Mexicans said they would attack Pershing if he moved any way except north.

With the US presidential election coming up in November, Wilson saw no good option. Withdrawing the expedition could cost him the White House, but so could getting into a war in Mexico. He chose to equivocate.

Wilson announced that US troops could not be withdrawn from Mexico until the danger to the border was removed. Pershing would stay at Colonia Dublán but was not allowed to make any patrols south of there. Pershing did not like the decision but he raised no objection in public.

In a series of rapid strikes, the surging Villistas attacked Satevo in September, killing 200 Carranzistas, beat them again at Santa Isabel and Chihuahua City, and captured and looted Parral in November.

Wilson saw a fleeting chance to get out when the Carranzistas inflicted three defeats on Villa in early January. The Villistas were depicted—prematurely, as it turned out—as decisively beaten.

On Feb. 5, 1917, Pershing rode out of Mexico at the head of the punitive force and the agonizing adventure was over.

On Feb. 10, a resurgent Villa wiped out the Carranza garrison at Guzman, but that was Carranza's problem, not Wilson's.

History was not quite finished with the principals from the punitive expedition. Pershing was promoted to major general, then became commander of the American Expeditionary Forces in Europe in World War I and was promoted to general of the armies, a higher grade than any American soldier had ever held before.

Foulois was promoted to brigadier general and was chief of the Air Service in France. (His rival, Billy Mitchell, was air commander for the Zone of the Advance.) In 1931, Foulois was promoted to major general and made chief of the Air Corps.

Two officers from the Mexican expedition gained fame in World War II: Lt. Carl A. "Tooey" Spaatz, fresh from flying school, flew with the 1st Aero Squadron, and George S. Patton, a special aide to Pershing, was promoted to first lieutenant after leading a fight against the Villistas.

The Aviation Section, US Signal Corps, to which the 1st Aero Squadron belonged, became the Army Air Service in 1926.

ACROSS THE BORDER

The *New York Times* continued to report on the unending revolution in Mexico. In March 1917, Villa was said to have lost a battle near Chihuahua City, 350 of his riders killed and 500 captured. In May, he took and held a border town opposite Presidio, Texas. His last major action near the United States was in January 1919, a raid on Juarez, across from El Paso.

Villa retired from revolutionary activity in 1920, but troubles continued along the border for years.

In May 1920, war minister Obregón took over as president, having ousted his former boss Carranza—who was killed while fleeing—in possession of much of the national treasury.

Villa's turn came next. He was gunned down by assassins, hired by his enemies July 20, 1923. His car was raked by a fusillade of more than 40 dum-dum bullets as he drove through Parral.

Obregon was assassinated in July 1928.

Today, Pancho Villa State Park is located where old Camp Furlong stood 98 years ago. A few of the original buildings still stand and are designated as national historic landmarks. In the exhibit hall, visitors can see a replica of a JN-3 biplane, a 1916 Dodge touring car like the one that Pershing used, and a 1909 Benét-Mercié machine gun.

Every March on the anniversary of the raid, 100 horseback riders from Mexico, following Villa's invasion route out of Chihuahua, cross the border and join American riders for a parade through Columbus. The contingent is led by a reenactor portraying Pancho Villa. Marjorie Lilly, writing in the Silver City, N.M., *Desert Exposure,* called it "Hooves Across the Border."

"The whole purpose is to show friendship and goodwill and let bygones be bygones," said park manager John Read. ■

John T. Correll was editor in chief of Air Force Magazine *for 18 years and is now a contributor. His most recent articles, "Short Fuze to the Great War" and "The Cloud Over Lindberg," appeared in the August issue.*

AFA Almanac

By Frances McKenney, Assistant Managing Editor

Donald W. Steele Sr. Memorial Award

Air Force Association unit of the year

Year	Recipient(s)
1953	San Francisco Chapter
1954	Santa Monica Area Chapter (Calif.)
1955	San Fernando Valley Chapter (Calif.)
1956	Utah State AFA
1957	H. H. Arnold Chapter (N.Y.)
1958	San Diego Chapter
1959	Cleveland Chapter
1960	San Diego Chapter
1961	Chico Chapter (Calif.)
1962	Fort Worth Chapter (Texas)
1963	Colin P. Kelly Chapter (N.Y.)
1964	Utah State AFA
1965	Idaho State AFA
1966	New York State AFA
1967	Utah State AFA
1968	Utah State AFA
1969	*(no presentation)*
1970	Georgia State AFA
1971	Middle Georgia Chapter
1972	Utah State AFA
1973	Langley Chapter (Va.)
1974	Texas State AFA
1975	Alamo Chapter (Texas) and San Bernardino Area Chapter (Calif.)
1976	Scott Memorial Chapter (Ill.)
1977	Thomas B. McGuire Jr. Chapter (N.J.)
1978	Thomas B. McGuire Jr. Chapter (N.J.)
1979	Brig. Gen. Robert F. Travis Chapter (Calif.)
1980	Central Oklahoma (Gerrity) Chapter
1981	Alamo Chapter (Texas)
1982	Chicagoland-O'Hare Chapter (Ill.)
1983	Charles A. Lindbergh Chapter (Conn.)
1984	Scott Memorial Chapter (Ill.) and Colorado Springs/Lance Sijan Chapter (Colo.)
1985	Cape Canaveral Chapter (Fla.)
1986	Charles A. Lindbergh Chapter (Conn.)
1987	Carl Vinson Memorial Chapter (Ga.)
1988	Gen. David C. Jones Chapter (N.D.)
1989	Thomas B. McGuire Jr. Chapter (N.J.)
1990	Gen. E. W. Rawlings Chapter (Minn.)
1991	Paul Revere Chapter (Mass.)
1992	Central Florida Chapter and Langley Chapter (Va.)
1993	Green Valley Chapter (Ariz.)
1994	Langley Chapter (Va.)
1995	Baton Rouge Chapter (La.)
1996	Montgomery Chapter (Ala.)
1997	Central Florida Chapter
1998	Ark-La-Tex Chapter (La.)
1999	Hurlburt Chapter (Fla.)
2000	Wright Memorial Chapter (Ohio)
2001	Lance P. Sijan Chapter (Colo.)
2002	Eglin Chapter (Fla.)
2003	Hurlburt Chapter (Fla.)
2004	Carl Vinson Memorial Chapter (Ga.)
2005	Central Florida Chapter
2006	Enid Chapter (Okla.)
2007	Central Oklahoma (Gerrity) Chapter
2008	Lance P. Sijan Chapter (Colo.)
2009	Paul Revere Chapter (Mass.)
2010	C. Farinha Gold Rush Chapter (Calif.)
2011	Lance P. Sijan Chapter (Colo.)
2012	Hurlburt Chapter (Fla.)
2013	Paul Revere Chapter (Mass.)
2014	D. W. Steele Sr. Memorial Chapter (Va.)

AFA Membership

Year	Total	Life Members	Year	Total	Life Members
1946	51,243	32	1980	156,394	2,477
1947	104,750	55	1981	170,240	3,515
1948	56,464	68	1982	179,149	7,381
1949	43,801	70	1983	198,563	13,763
1950	38,948	79	1984	218,512	18,012
1951	34,393	81	1985	228,621	23,234
1952	30,716	356	1986	232,722	27,985
1953	30,392	431	1987	237,279	30,099
1954	34,486	435	1988	219,195	32,234
1955	40,812	442	1989	204,309	34,182
1956	46,250	446	1990	199,851	35,952
1957	51,328	453	1991	194,312	37,561
1958	48,026	456	1992	191,588	37,869
1959	50,538	458	1993	181,624	38,604
1960	54,923	464	1994	175,122	39,593
1961	60,506	466	1995	170,881	39,286
1962	64,336	485	1996	161,384	39,896
1963	78,034	488	1997	157,862	41,179
1964	80,295	504	1998	152,330	41,673
1965	82,464	514	1999	148,534	42,237
1966	85,013	523	2000	147,336	42,434
1967	88,995	548	2001	143,407	42,865
1968	97,959	583	2002	141,117	43,389
1969	104,886	604	2003	137,035	42,730
1970	104,878	636	2004	133,812	42,767
1971	97,639	674	2005	131,481	43,094
1972	109,776	765	2006	127,749	43,266
1973	114,894	804	2007	125,076	43,256
1974	128,995	837	2008	123,304	43,557
1975	139,168	898	2009	120,507	43,782
1976	148,202	975	2010	117,480	43,954
1977	155,850	1,218	2011	111,479	44,182
1978	148,711	1,541	2012	106,780	43,686
1979	147,136	1,869	2013	102,540	43,851
			2014	96,017	43,720

Profiles of AFA Membership

As of June 2014 (Total 96,017)

37%	One-year members
17%	Three-year members
46%	Life members
15%	Active Duty military
53%	Retired military
13%	Former service
5%	Guard and Reserve
8%	No military service
4%	Cadet
2%	Spouse/widow(er)

Of AFA's service members who list their rank:

65% are officers
28% are enlisted

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

64% are officers
28% are enlisted

AFA Chairman's Aerospace Education Award

For long-term commitment to aerospace education, making a significant impact nationwide.

2009 ExxonMobil Foundation
2010 *USA Today*
2011 The National Science Foundation
2012 The Military Channel
2013 The Civil Air Patrol Aerospace Education Program
2014 Department of Defense STARBASE Program

H. H. Arnold Award Recipients

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

1948 W. Stuart Symington, Secretary of the Air Force
1949 Maj. Gen. William H. Tunner and the men of the Berlin Airlift
1950 Airmen of the United Nations in the Far East
1951 Gen. Curtis E. LeMay and the personnel of Strategic Air Command
1952 Sens. Lyndon B. Johnson and Joseph C. O'Mahoney
1953 Gen. Hoyt S. Vandenberg, former Chief of Staff, USAF
1954 John Foster Dulles, Secretary of State
1955 Gen. Nathan F. Twining, Chief of Staff, USAF
1956 Sen. W. Stuart Symington
1957 Edward P. Curtis, special assistant to the President
1958 Maj. Gen. Bernard A. Schriever, Cmdr., Ballistic Missile Div., ARDC
1959 Gen. Thomas S. Power, CINC, SAC
1960 Gen. Thomas D. White, Chief of Staff, USAF
1961 Lyle S. Garlock, Assistant Secretary of the Air Force
1962 A. C. Dickieson and John R. Pierce, Bell Telephone Laboratories
1963 The 363rd Tactical Recon. Wing and the 4080th Strategic Wing
1964 Gen. Curtis E. LeMay, Chief of Staff, USAF
1965 The 2nd Air Division, PACAF
1966 The 8th, 12th, 355th, 366th, and 388th Tactical Fighter Wings and the 432nd and 460th TRWs
1967 Gen. William W. Momyer, Cmdr., 7th Air Force, PACAF
1968 Col. Frank Borman, USAF; Capt. James Lovell, USN; and Lt. Col. William Anders, USAF, Apollo 8 crew
1969 *(No presentation)*
1970 Apollo 11 team (J. L. Atwood; Lt. Gen. S. C. Phillips, USAF; and astronauts Neil Armstrong and USAF Cols. Buzz Aldrin and Michael Collins)
1971 John S. Foster Jr., Dir. of Defense Research and Engineering
1972 Air units of the Allied Forces in Southeast Asia (Air Force, Navy, Army, Marine Corps, and the Vietnamese Air Force)
1973 Gen. John D. Ryan (Ret.), former Chief of Staff, USAF
1974 Gen. George S. Brown, USAF, Chm., Joint Chiefs of Staff
1975 James R. Schlesinger, Secretary of Defense
1976 Sen. Barry M. Goldwater
1977 Sen. Howard W. Cannon
1978 Gen. Alexander M. Haig Jr., USA, Supreme Allied Commander, Europe
1979 Sen. John C. Stennis
1980 Gen. Richard H. Ellis, USAF, CINC, SAC
1981 Gen. David C. Jones, USAF, Chm., Joint Chiefs of Staff
1982 Gen. Lew Allen Jr. (Ret.), former Chief of Staff, USAF
1983 Ronald W. Reagan, President of the United States
1984 The President's Commission on Strategic Forces (the Scowcroft Commission)
1985 Gen. Bernard W. Rogers, USA, SACEUR
1986 Gen. Charles A. Gabriel (Ret.), former Chief of Staff, USAF
1987 Adm. William J. Crowe Jr., USN, Chm., Joint Chiefs of Staff
1988 Men and women of the Ground-Launched Cruise Missile team
1989 Gen. Larry D. Welch, Chief of Staff, USAF
1990 Gen. John T. Chain, CINC, SAC
1991 Lt. Gen. Charles A. Horner, Cmdr., CENTCOM Air Forces and 9th Air Force
1992 Gen. Colin L. Powell, USA, Chm., Joint Chiefs of Staff
1993 Gen. Merrill A. McPeak, Chief of Staff, USAF
1994 Gen. John Michael Loh, Cmdr., Air Combat Command
1995 World War II Army Air Forces veterans
1996 Gen. Ronald R. Fogleman, Chief of Staff, USAF
1997 Men and women of the United States Air Force
1998 Gen. Richard E. Hawley, Cmdr., ACC
1999 Lt. Gen. Michael C. Short, Cmdr., Allied Air Forces Southern Europe
2000 Gen. Michael E. Ryan, Chief of Staff, USAF
2001 Gen. Joseph W. Ralston, CINC, EUCOM
2002 Gen. Richard B. Myers, USAF, Chm., Joint Chiefs of Staff
2003 Lt. Gen. T. Michael Moseley, Cmdr., air component, CENTCOM, and 9th Air Force
2004 Gen. John P. Jumper, Chief of Staff, USAF
2005 Gen. Gregory S. Martin, Cmdr., AFMC
2006 Gen. Lance W. Lord, Cmdr., AFSPC
2007 Gen. Ronald E. Keys, Cmdr., ACC
2008 Gen. Bruce Carlson, Cmdr., AFMC
2009 Gen. John D. W. Corley, Cmdr., ACC
2010 Lt. Gen. David A. Deptula, USAF Deputy Chief of Staff, ISR
2011 Gen. Duncan J. McNabb, Cmdr., TRANSCOM
2012 Gen. Norton A. Schwartz, Chief of Staff, USAF
2013 Gen. Douglas M. Fraser (Ret.), former Cmdr., SOUTHCOM
2014 Gen. C. Robert Kehler, USAF (Ret.), former Cmdr., STRATCOM

John R. Alison Award Recipients

AFA's highest honor for industrial leadership.

1992 Norman R. Augustine, Chairman, Martin Marietta
1993 Daniel M. Tellep, Chm. and CEO, Lockheed
1994 Kent Kresa, CEO, Northrop Grumman
1995 C. Michael Armstrong, Chm. and CEO, Hughes Aircraft
1996 Harry Stonecipher, Pres. and CEO, McDonnell Douglas
1997 Dennis J. Picard, Chm. and CEO, Raytheon
1998 Philip M. Condit, Chm. and CEO, Boeing
1999 Sam B. Williams, Chm. and CEO, Williams International
2000 Simon Ramo and Dean E. Wooldridge, missile pioneers
2001 George David, Chm. and CEO, United Technologies
2002 Sydney Gillibrand, Chm., AMEC; and Jerry Morgensen, Pres. and CEO, Hensel Phelps Construction
2003 Joint Direct Attack Munition Industry Team, Boeing
2004 Thomas J. Cassidy Jr., Pres. and CEO, General Atomics Aeronautical Systems
2005 Richard Branson, Chm., Virgin Atlantic Airways and Virgin Galactic
2006 Ronald D. Sugar, Chm. and CEO, Northrop Grumman
2007 Boeing and Lockheed Martin
2008 Bell Boeing CV-22 Team, Bell Helicopter Textron, and Boeing
2009 General Atomics Aeronautical Systems Inc.
2010 Raytheon
2011 United Launch Alliance
2012 Boeing
2013 X-51A WaveRider Program, Boeing, Aerojet Rocketdyne, and Air Force Research Laboratory
2014 C-17 Globemaster, Boeing

W. Stuart Symington Award Recipients

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

1986 Caspar W. Weinberger, Secretary of Defense
1987 Edward C. Aldridge Jr., Secretary of the Air Force
1988 George P. Schultz, Secretary of State
1989 Ronald W. Reagan, former President of the United States
1990 John J. Welch, Asst. SECAF (Acquisition)
1991 George Bush, President of the United States
1992 Donald B. Rice, Secretary of the Air Force
1993 Sen. John McCain (R-Ariz.)
1994 Rep. Ike Skelton (D-Mo.)
1995 Sheila E. Widnall, Secretary of the Air Force
1996 Sen. Ted Stevens (R-Alaska)
1997 William Perry, former Secretary of Defense
1998 Rep. Saxby Chambliss (R-Ga.) and Rep. Norman D. Dicks (D-Wash.)
1999 F. Whitten Peters, Secretary of the Air Force
2000 Rep. Floyd Spence (R-S.C.)
2001 Sen. Michael Enzi (R-Wyo.) and Rep. Cliff Stearns (R-Fla.)
2002 Rep. James V. Hansen (R-Utah)
2003 James G. Roche, Secretary of the Air Force
2004 Peter B. Teets, Undersecretary of the Air Force
2005 Rep. Duncan Hunter (R-Calif.)
2007 Michael W. Wynne, Secretary of the Air Force
2008 Gen. Barry R. McCaffrey, USA (Ret.)
2009 Sen. Orrin G. Hatch (R-Utah)
2010 John J. Hamre, Center for Strategic & International Studies
2011 Rep. C. W. "Bill" Young (R-Fla.)
2012 Gen. James L. Jones, USMC (Ret.)
2013 Michael B. Donley, Secretary of the Air Force
2014 Ashton B. Carter, former deputy Secretary of Defense

AFA Lifetime Achievement Award Recipients

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

2003 Maj. Gen. John R. Alison, USAF (Ret.); Sen. John H. Glenn Jr.; Maj. Gen. Jeanne M. Holm, USAF (Ret.); Col. Charles E. McGee, USAF (Ret.); and Gen. Bernard A. Schriever, USAF (Ret.)
2004 Gen. Russell E. Dougherty, USAF (Ret.), and Florene Miller Watson
2005 Sen. Daniel K. Inouye; William J. Perry; and Patty Wagstaff
2007 CMSAF Paul W. Airey, USAF (Ret.)
2008 Col. George E. Day, USAF (Ret.); Gen. David C. Jones, USAF (Ret.); and Harold Brown
2009 Doolittle Raiders, Tuskegee Airmen, and James R. Schlesinger
2010 Col. Walter J. Boyne, USAF (Ret.); Andrew W. Marshall; Gen. Lawrence A. Skantze, USAF (Ret.); and Women Airforce Service Pilots
2011 Natalie W. Crawford; Lt. Gen. Thomas P. Stafford, USAF (Ret.); Gen. Larry D. Welch, USAF (Ret.); Heavy Bombardment Crews of WWII; and Commando Sabre Operation-Call Sign Misty
2012 Gen. James P. McCarthy, USAF (Ret.); Vietnam War POWs; Berlin Airlift Aircrews; Korean War Airmen; and Fighter Pilots of World War II
2013 Maj. Gen. Joe H. Engle, USAF (Ret.); US Rep. Sam Johnson; and The Arlington Committee of the Air Force Officers' Wives' Club—"The Arlington Ladies"
2014 Brig. Gen. James A. McDivitt, USAF (Ret.); Civil Air Patrol—"Our Congressional Gold Medal Journey"; and American Fighter Aces

Gold Life Member Card Recipients

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

Name	Year	Card No.	Name	Year	Card No.
Gill Robb Wilson	1957	1	Sam E. Keith Jr.	1990	12
Jimmy Doolittle	1959	2	Edward A. Stearn	1992	13
Arthur C. Storz Sr.	1961	3	Dorothy L. Flanagan	1994	14
Julian B. Rosenthal	1962	4	John O. Gray	1996	15
Jack B. Gross	1964	5	Jack C. Price	1997	16
George D. Hardy	1965	6	Nathan H. Mazer	2002	17
Jess Larson	1967	7	John R. Alison	2004	18
Robert W. Smart	1968	8	Donald J. Harlin	2009	19
Martin M. Ostrow	1973	9	James M. McCoy	2013	20
James H. Straubel	1980	10	George M. Douglas	2014	21
Martin H. Harris	1988	11			

The Twelve Founders

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

Dottie Flanagan Staff Award of the Year

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

1992 Doreatha Major
1993 Jancy Bell
1994 Gilbert Burgess
1995 David Huynh
1996 Sherry Coombs
1997 Katherine DuGarm
1998 Suzann Chapman
1999 Frances McKenney
2000 Ed Cook
2001 Katie Doyle
2002 Jeneathia Wright
2003 Jim Brown
2004 Pearlie Draughn
2005 Ursula Smith
2006 Susan Rubel
2007 Ed Cook
2008 Michael Davis
2009 Chris Saik
2010 Bridget Wagner
2011 Merri Shaffer
2012 Caitie Craumer
2013 Pamela Braithwaite

AFA Chairmen of the Board and National Presidents

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

Edward P. Curtis
Chairman, 1946-47

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

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

Robert S. Johnson
President, 1949-51

Carl A. Spaatz
Chairman, 1950-51

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

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

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

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

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

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

Peter J. Schenk
President, 1957-59

James M. Trail
Chairman, 1958-59

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

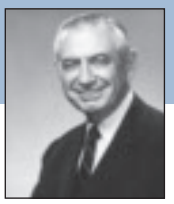
Howard T. Markey
President, 1959-60
Chairman, 1960-61

Julian B. Rosenthal
Chairman, 1959-60

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

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

John B. Montgomery
President, 1962-63



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

Jack B. Gross
Chairman, 1963-64

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

Robert W. Smart
President, 1967-69

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

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

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

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

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

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

Daniel F. Callahan
Chairman, 1979-81

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

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

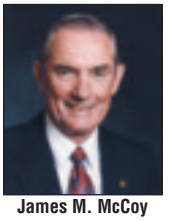
Edward A. Stearn
Chairman, 1985-86

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

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

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

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



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

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

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

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

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

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

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

Joseph E. Sutter
Chairman, 2008-10

S. Sanford Schlitt
Chairman, 2010-12

George K. Muellner
Chairman, 2012-2014

[a] The office of National President, an elected position, was disestablished in 2006.
[b] AFA's Chairman of the Board also serves as Chairman of both AFA affiliates, the AFA Veteran Benefits Association and the Air Force Memorial Foundation.

Vice Chairmen for Field Operations

Joseph E. Sutter	2006-08
James R. Lauducci	2008-10
Justin M. Faiferlick	2010-12
Scott P. Van Cleef	2012-14

Vice Chairmen for Aerospace Education

L. Boyd Anderson	2006-07
S. Sanford Schlitt	2007-10
George K. Muellner	2010-12
Jerry E. White	2012-14

National Treasurers

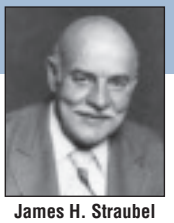
W. Deering Howe	1946-47
G. Warfield Hobbs	1947-49
Benjamin Brinton	1949-52
George H. Haddock	1952-53
Samuel M. Hecht	1953-57
Jack B. Gross	1957-62
Paul S. Zuckerman	1962-66
Jack B. Gross	1966-81
George H. Chabbott	1981-87
William N. Webb	1987-95
Charles H. Church Jr.	1995-2000
Charles A. Nelson	2000-05
Steven R. Lundgren	2005-10
Leonard R. Vernamonti	2010-14

National Secretaries

Sol A. Rosenblatt	1946-47
Julian B. Rosenthal	1947-59
George D. Hardy	1959-66
Joseph L. Hodges	1966-68
Glenn D. Mishler	1968-70
Nathan H. Mazer	1970-72
Martin H. Harris	1972-76
Jack C. Price	1976-79
Earl D. Clark Jr.	1979-82
Sherman W. Wilkins	1982-85
A. A. "Bud" West	1985-87
Thomas J. McKee	1987-90
Thomas W. Henderson	1990-91
Mary Ann Seibel	1991-94
Mary Anne Thompson	1994-97
William D. Croom Jr.	1997-2000
Daniel C. Hendrickson	2000-03
Thomas J. Kemp	2003-06
Judy K. Church	2006-09
Joan Sell	2009-11
Edward W. Garland	2011-14

AFA Executive Directors/ President/CEOs

Willis S. Fitch
Executive Director
1946-47



James H. Straubel
Executive Director
1948-80

Russell E. Dougherty
Executive Director
1980-86

David L. Gray
Executive Director
1986-87

John O. Gray
Executive Director
1987-88
1989-90

Charles L. Donnelly Jr.
Executive Director
1988-89

Monroe W. Hatch Jr.
Executive Director
1990-95

John A. Shaud
Executive Director
1995-2002

Donald L. Peterson
Executive Director
2002-06[c]
President-CEO
2006-07

Michael M. Dunn
President-CEO
2007-12

Craig R. McKinley
President
2012-

[c] The position of Executive Director was replaced in 2006 by President-CEO. In 2012, the position was redesignated President.

AFA's Regions, States, and Chapters

These figures indicate the number of affiliated members as of June 30, 2014. Listed below the name of each region is the region president.

CENTRAL EAST REGION 10,308
F. Gavin MacAloon

Delaware	**419**
Brig. Gen. Bill Spruance	120
Delaware Galaxy	299
District of Columbia	**310**
Nation's Capital	310
Maryland	**1,968**
Baltimore*	686
Central Maryland	411
Thomas W. Anthony	871
Virginia	**7,405**
Danville	39
Donald W. Steele Sr. Memorial	3,516
Gen. Charles A. Gabriel	1,161
Langley	1,143
Leigh Wade	170
Northern Shenandoah Valley	262
Richmond	522
Roanoke	278
Tidewater	314
West Virginia	**206**
Chuck Yeager	206

FAR WEST REGION 8,920
Wayne R. Kauffman

California	**8,271**
Bob Hope	566
Brig. Gen. Robert F. Travis	552
C. Farinha Gold Rush	1,057
Charles Hudson	68
David J. Price/Beale	303
Fresno*	277
Gen. B. A. Schriever Los Angeles	343
General Doolittle Los Angeles Area*	1,180
Golden Gate*	514
High Desert	148
Maj. Gen. Charles I. Bennett Jr.	199
Orange County/Gen. Curtis E. LeMay	591
Palm Springs	346
Robert H. Goddard	454
San Diego	701
Stan Hryn Monterey Bay	148
Tennessee Ernie Ford	494
William J. "Pete" Knight	330
Hawaii	**649**
Hawaii*	649

FLORIDA REGION 8,235
Dann D. Mattiza

Florida	**8,235**
Brig. Gen. James R. McCarthy	268
Cape Canaveral	896
Central Florida	989
Col. H. M. "Bud" West	249
Col. Loren D. Evenson	340
Eglin	1,077
Falcon	467
Florida Highlands	269
Gold Coast	576
Hurlburt	771
Miami-Homestead	357
Red Tail Memorial	533
Sarasota-Manatee	294
Waterman-Twining	1,149

GREAT LAKES REGION 6,712
Kent D. Owsley

Indiana	**1,232**
Central Indiana	357
Columbus-Bakalar	96
Fort Wayne	193
Grissom Memorial	186
Lawrence D. Bell Museum	177
Southern Indiana	223
Kentucky	**653**
Gen. Russell E. Dougherty	379
Lexington	274
Michigan	**1,398**
Battle Creek	78
Lake Superior Northland	116
Lloyd R. Leavitt Jr.	309
Mount Clemens	895
Ohio	**3,429**
Capt. Eddie Rickenbacker Memorial*	519
Frank P. Lahm	419
Gen. Joseph W. Ralston	358
North Coast*	190
Steel Valley	120
Wright Memorial*	1,823

MIDWEST REGION 6,070
John D. Daly

Illinois	**2,311**
Chicagoland-O'Hare	910
Heart of Illinois	180
Land of Lincoln	243
Scott Memorial	978
Iowa	**540**
Fort Dodge	51
Gen. Charles A. Horner	203
Northeast Iowa	216
Richard D. Kisling	70
Kansas	**551**
Lt. Erwin R. Bleckley	369
Maj. Gen. Edward R. Fry	182
Missouri	**1,465**
Whiteman	433
Harry S. Truman	492
Spirit of St. Louis	540
Nebraska	**1,203**
Ak-Sar-Ben	971
Lincoln	232

NEW ENGLAND REGION 3,099
Ronald M. Adams

Connecticut	**594**
Flying Yankees/Gen. George C. Kenney	358
Lindbergh/Sikorsky	236
Massachusetts	**1,451**
Minuteman	248
Otis	224
Paul Revere	688
Pioneer Valley	291
New Hampshire	**686**
Brig. Gen. Harrison R. Thyng	686
Rhode Island	**181**
Metro Rhode Island	145
Newport Blue & Gold	36
Vermont	**187**
Green Mountain	187

NORTH CENTRAL REGION	2,922
James W. Simons	
Minnesota	**960**
Gen. E. W. Rawlings	774
Richard I. Bong	186
Montana	**363**
Big Sky	269
Bozeman	94
North Dakota	**331**
Gen. David C. Jones	144
Happy Hooligan	93
Red River Valley	94
South Dakota	**403**
Dacotah	203
Rushmore	200
Wisconsin	**865**
Billy Mitchell	865

NORTHEAST REGION	5,881
Maxine Rauch	
New Jersey	**1,396**
Brig. Gen. Frederick W. Castle	280
Hangar One	154
Highpoint	73
Mercer County	120
Sal Capriglione	258
Shooting Star	206
Thomas B. McGuire Jr.	305
New York	**2,167**
Albany-Hudson Valley*	367
Chautauqua	41
Finger Lakes	278
Gen. Carl A. "Tooey" Spaatz	160
Genesee Valley	184
Iron Gate	238
L. D. Bell-Niagara Frontier	249
Long Island	523
Pride of the Adirondacks	127
Pennsylvania	**2,318**
Altoona	115
Joe Walker-Mon Valley	238
Lehigh Valley	179
Liberty Bell	545
Lt. Col. B. D. "Buzz" Wagner	113
Mifflin County*	105
Olmsted	272
Pocono Northeast	203
Total Force	286
York-Lancaster	262

NORTHWEST REGION	4,541
Mary J. Mayer	
Alaska	**582**
Edward J. Monaghan	441
Fairbanks Midnight Sun	141
Idaho	**450**
Snake River Valley	450
Oregon	**901**
Bill Harris	232
Columbia Gorge*	669
Washington	**2,608**
Greater Seattle	846
Inland Empire	682
McChord Field	1,080

ROCKY MOUNTAIN REGION	5,244
Gayle C. White	
Colorado	**3,776**
Gen. Robert E. Huyser	118
Lance P. Sijan	2,094
Mel Harmon	152
Mile High	1,412
Utah	**1,135**
Northern Utah	386
Salt Lake	413
Ute-Rocky Mountain	336
Wyoming	**333**
Cheyenne Cowboy	333

SOUTH CENTRAL REGION	6,396
James M. Mungenast	
Alabama	**2,090**
Birmingham	348
Montgomery	1,095
South Alabama	193
Tennessee Valley	454
Arkansas	**866**
David D. Terry Jr.	510
Lewis E. Lyle	356
Louisiana	**939**
Ark-La-Tex	519
Maj. Gen. Oris B. Johnson	420
Mississippi	**896**
Golden Triangle	281
John C. Stennis	407
Meridian	208
Tennessee	**1,605**
Chattanooga	130
Everett R. Cook	347
Gen. Bruce K. Holloway	600
H. H. Arnold Memorial	116
Maj. Gen. Dan F. Callahan	412

SOUTHEAST REGION	6,833
John R. Allen Jr.	
Georgia	**2,910**
Carl Vinson Memorial	976
Dobbins	1,409
Savannah	309
South Georgia	216
North Carolina	**2,263**
Blue Ridge	463
Cape Fear	221
Kitty Hawk	66
Pope	555
Scott Berkeley	320
Tarheel	638
South Carolina	**1,660**
Charleston	494
Columbia Palmetto	364
Strom Thurmond	379
Swamp Fox	423

SOUTHWEST REGION	6,223
Ross B. Lampert	
Arizona	**3,386**
Cochise	105
Frank Luke	1,827
Prescott/Goldwater	343
Tucson	1,111
Nevada	**1,484**
Thunderbird	1,484
New Mexico	**1,353**
Albuquerque	903
Fran Parker	296
Llano Estacado	154

TEXOMA REGION	11,327
Richard D. Baldwin	
Oklahoma	**1,755**
Altus	171
Central Oklahoma (Gerrity)	1,087
Enid	153
Tulsa	344
Texas	**9,572**
Abilene	351
Aggieland	175
Alamo	3,425
Austin	1,108
Concho	205
Del Rio	140
Denton	487
Fort Worth	1,414
Gen. Charles L. Donnelly Jr.	213
Northeast Texas	406
San Jacinto	905
Seidel-AFA Dallas	743

*These chapters were chartered prior to Dec. 31, 1948, and are considered original charter chapters; the North Coast Chapter of Ohio was formerly the Cleveland Chapter; and the Columbia Gorge Chapter of Oregon was formerly the Portland Chapter.

AFA's Overseas Chapters

CHAPTER	LOCATION
United States Air Forces in Europe-Air Forces Africa	
Charlemagne	Geilenkirchen, Germany
Dolomiti	Aviano AB, Italy
Ramstein	Ramstein AB, Germany
Spangdahlem	Spangdahlem AB, Germany
United Kingdom	Lakenheath, UK
Pacific Air Forces	
Keystone	Kadena AB, Japan
MiG Alley	Osan AB, South Korea
Tokyo	Tokyo, Japan

AFA Member of the Year Award Recipients

Year	Recipient(s)
1953	Julian B. Rosenthal (N.Y.)
1954	George A. Anderl (Ill.)
1955	Arthur C. Storz (Neb.)
1956	Thos. F. Stack (Calif.)
1957	George D. Hardy (Md.)
1958	Jack B. Gross (Pa.)
1959	Carl J. Long (Pa.)
1960	O. Donald Olson (Colo.)
1961	Robert P. Stewart (Utah)
1962	*(no presentation)*
1963	N. W. DeBerardinis (La.) and Joe L. Shosid (Texas)
1964	Maxwell A. Kriendler (N.Y.)
1965	Milton Caniff (N.Y.)
1966	William W. Spruance (Del.)
1967	Sam E. Keith Jr. (Texas)
1968	Marjorie O. Hunt (Mich.)
1969	*(no presentation)*
1970	Lester C. Curl (Fla.)
1971	Paul W. Gaillard (Neb.)
1972	J. Raymond Bell (N.Y.) and Martin H. Harris (Fla.)
1973	Joe Higgins (Calif.)
1974	Howard T. Markey (D.C.)
1975	Martin M. Ostrow (Calif.)
1976	Victor R. Kregel (Texas)
1977	Edward A. Stearn (Calif.)
1978	William J. Demas (N.J.)
1979	Alexander C. Field Jr. (Ill.)
1980	David C. Noerr (Calif.)
1981	Daniel F. Callahan (Fla.)
1982	Thomas W. Anthony (Md.)
1983	Richard H. Becker (Ill.)
1984	Earl D. Clark Jr. (Kan.)
1985	George H. Chabbott (Del.) and Hugh L. Enyart (Ill.)
1986	John P. E. Kruse (N.J.)
1987	Jack K. Westbrook (Tenn.)
1988	Charles G. Durazo (Va.)
1989	Oliver R. Crawford (Texas)
1990	Cecil H. Hopper (Ohio)
1991	George M. Douglas (Colo.)
1992	Jack C. Price (Utah)
1993	Lt. Col. James G. Clark (D.C.)
1994	William A. Lafferty (Ariz.)
1995	William N. Webb (Okla.)
1996	Tommy G. Harrison (Fla.)
1997	James M. McCoy (Neb.)
1998	Ivan L. McKinney (La.)
1999	Jack H. Steed (Ga.)
2000	Mary Anne Thompson (Va.)
2001	Charles H. Church Jr. (Kan.)
2002	Thomas J. Kemp (Texas)
2003	W. Ron Goerges (Ohio)
2004	Doyle E. Larson (Minn.)
2005	Charles A. Nelson (S.D.)
2006	Craig E. Allen (Utah)
2007	William D. Croom Jr. (Texas)
2008	John J. Politi (Texas)
2009	David R. Cummock (Fla.)
2010	L. Boyd Anderson (Utah)
2011	Steven R. Lundgren (Alaska)
2012	S. Sanford Schlitt (Fla.)
2013	Tim Brock (Fla.)
2014	James W. Simons (N.D.)

State names refer to recipient's home state at the time of the award.

AFA National Report

natrep@afa.org

By Frances McKenney, Assistant Managing Editor

Driving to Ellensburg

Heading out from his home, east of Spokane, Wash., **Inland Empire Chapter** President William P. Moore thought about putting his 1998 Bonneville sedan in cruise control.

He had a long drive ahead on Interstate 90.

Moore and Chapter Membership Director Ray Ortega set off on a three-hour road trip in May to present an Air Force Association AFROTC Medal to cadet Vyacheslav O. Ulanovskiy at Central Washington University in Ellensburg.

To get there, Moore would put some 180 miles, one way, on the odometer—basically three-quarters of the way across Washington state. He's been making this drive annually for the past six or seven years. "I know every rest stop," he joked.

The scenery "all looks the same," he said, especially because this year, a dry spring had begun to turn the roadside fields of wheat, potatoes, alfalfa, corn, and onions a uniform brown early in the season.

Moore explained that he makes this trip because the school's officials offer tremendous support. University President James L. Gaudino is an Air Force Academy graduate and served with USAF in California, Turkey, and Germany. The AFROTC Det. 895 staff always express their appreciation for the AFA award, even though it's just one of about two dozen presented in a ceremony that Moore said lasts an hour-and-a-half, including a pass in review.

The school's support for AFA, in fact, prompted him to bring Ortega along this time. Moore wanted to introduce him to university representatives, to ensure that the AFA-Central Washington relationship remains strong after he hands over to the younger Ortega the honor of presenting the award.

But for now, Moore drives more than 360 miles to Ellensburg and back. "We just cinch it up and get it done," he said.

Inland Empire Chapter President Bill Moore congratulates cadet Vyacheslav Ulanovskiy on earning an AFA ROTC Medal. Moore presented it at Central Washington University in Ellensburg, Wash. Ulanovskiy is majoring in Russia and will be commissioned next year.

Photo by Linda S. Aldrich

Former astronaut B. Alvin Drew (center) signs autographs at the Colorado State Awards Banquet, where he was guest speaker. Drew spent more than 612 hours in space in 2007 and 2010.

Rocky Mountain High: An Astronaut in Colorado

The Colorado State Awards Banquet took place in July at the US Air Force Academy in Colorado Springs, home of the **Lance P. Sijan Chapter** and alma mater of the featured speaker, retired USAF Col. B. Alvin Drew Jr.

A former astronaut, Drew graduated from the academy in 1984 and flew into space in August 2007 on *Endeavour.* It was the 119th space shuttle flight and the 22nd to the International Space Station. The mission involved four space walks. Drew went into space again in March 2010 on the last mission of the shuttle *Discovery.* It too went to the ISS and included two space walks.

Linda S. Aldrich, the Sijan Chapter's VP, reported that Drew "amazed" the AFA banquet audience with video footage showing docking with the ISS and space walks.

Drew retired from the Air Force in September 2010 and is now the NASA liaison to Air Force Space Command.

Aldrich said Colorado's four chapters**—Mile High, Mel Harmon, Gen. Robert E. Huyser, and Sijan—**honored the top airmen and civilians at this dinner, as well as "exceptional contributors" to AFA in the state.

National award winners recognized that evening were: from the Sijan Chapter, President David K. Shiller, Jeri Andrews, and Sharon White and from the Harmon Chapter, President Richard A. Follmar and Howard Hayden.

Science instructor Katie Hobbs of Talbott Elementary in Colorado Springs was introduced to the audience as the State Teacher of the Year winner. She had earlier been selected as the Sijan Chapter's Teacher of the Year in the kindergarten through 5th grade category.

The Space Foundation, based in Colorado Springs, hosted the next day's AFA state meeting, where Star Wars

storm trooper re-enactors added excitement by "invading" the AFA business session, wrote Aldrich. She said chapter presidents' reports on activities led to an exchange of ideas and suggestions for fund-raisers.

After what she called "a productive meeting" led by State President Stephen K. Gourley, AFA National Director Emeritus Charles P. Zimkas Jr., took guests on a tour of the Space Foundation, highlighting its educational and space awareness activities. Zimkas had been the organization's president until retiring in 2013.

Thank You, Buddy!

Keynote speaker Lt. Gen. David L. Goldfein gave his perspective on national security, in addressing the July gathering of the **Donald W. Steele Sr. Memorial Chapter** in Arlington, Va. The director of the Joint Staff also shared thoughts on leadership, teamwork, perseverance, and other qualities Air Force service has imparted to him.

Along with speaking to the luncheon audience of 70, he helped present a Teacher of the Year award, the Moorman Scholarship, and Open Scholarships earned by 10 applicants. That's a lot of handshaking.

As a result, reported Chapter VP Col. Michelle R. Ryan, one scholarship recipient stood out when he broke the routine.

West Springfield High School graduate Michael Steiner expressed his thanks for a $500 Open Scholarship by putting his arm around Goldfein, all but hugging him as if they were long-lost buddies. The three-star general was caught "totally by surprise," Ryan wrote, "and the entire audience burst out laughing."

Open Scholarships go to 10 recipients from the National Capital Region, with airmen, spouses, and dependent children all eligible. Recipient Steiner begins school at the Colorado School of Mines this fall, majoring in mechanical engineering.

Photo by Lang Anderson

"American Idol" contestant SrA. Paula Hunt sings with USAF's Heartland of America Raptor Band at a concert arranged by Nebraska's Lincoln Chapter to commemorate D-Day. The chapter invited the band and rented the Antelope Park venue. VP Lang Anderson was master of ceremonies. Earlier this year, Hunt had gotten as far as the final round in the TV singing contest's "Hollywood Week," aired in February.

The $2,000 Moorman Scholarship—named after former USAF Vice Chief of Staff Gen. Thomas S. Moorman Jr. and awarded to an enlisted airman—went to MSgt. Jason Logan. He is a senior at Post University of Waterbury, Conn., studying for a business administration-management degree.

Steele Chapter President Kevin R. Lewis introduced Chapter Teacher of the Year Caitlin Fine to the audience,

gathered at a Sheraton, overlooking the Air Force Memorial. Fine is a science teacher at Francis Scott Key Elementary School, a dual English-Spanish immersion school in Arlington. She is the chapter's kindergarten through eighth grade-level Teacher of the Year.

Marguerite Wiseman from H-B Woodlawn, a secondary school in Arlington, is the chapter's grade nine-through-12 Teacher of the Year. Wiseman teaches physics and chemistry.

POW: 2,068 Days

Retired Lt. Col. Melvin Pollack spoke at a recent **Miami-Homestead Chapter** meeting about his experience as a POW in the Vietnam War.

In 1967 he was a first lieutenant with the 480th Tactical Fighter Squadron at Da Nang AB, Vietnam. He had already survived a June 21 nighttime mission to destroy a target in North Vietnam—action that would earn him a Distinguished Flying Cross—when two weeks later, flak downed his F-4C north of Hanoi. He spent more than 2,000 days in captivity, until repatriation through Operation Homecoming on March 4, 1973.

Chapter President Rodrigo J. Huete said that Pollack's speech about his POW years was "motivational." At the same time, "most impressive was his ability to incorporate humor into his presentation," Huete commented.

Photo by Ken Goss

US Rep. Dana Rohrabacher (R-Calif.) and AFA Board Chairman George Muellner (right) exchange a collegial hand clasp at the congressman's office during AFA's "Fly-In" in July. AFA field leaders flew in from across the country to meet with nearly 40 congressional members. They discussed readiness, modernization, sequestration's impact, problems at the VA, and the effect of Washington's decisions on their states.

San Diego Chapter VP Gene Alfaro leads the applause for San Diego State University cadets at an awards program. Left to right: Andrew Cha, Andrew Novak, Athiel Ann Coloma, Anna-Christina Fernandez, and Bri-Jae Scarbrough. Novak and Coloma received $2,500 Northrop Grumman chapter scholarships. The others received $1,000 scholarships. Det. 075's commander, Col. Darryle Grimes, and education flight commander, Capt. Kristin Russell, both belong to the chapter.

Pollack is a member of Florida's **Gold Coast Chapter** and came to the Miami chapter's attention through its past chapter president Stanley J. Bodner, a friend of the former POW.

Team Olympics at Fort Lee

In Petersburg, Va., a brand-new **Leigh Wade Chapter** member came up with an idea to raise funds for the Air Force's Wounded Warrior program and AFA's Wounded Airman Program.

TSgt. Matthew D. Loy, who joined AFA in March, proposed that the chapter host a team-based sporting event: the 345th Training Squadron Student Olympics. The competitors would come from the ranks of blue-suiter students assigned to the Army's nearby Fort Lee for services and transportation schooling.

So on a hot Saturday in July, five teams made up of 40 students gathered to compete in five events: push-ups, sit-ups, broad jump, vertical jump, and 40-yard dash. The athletes—no exaggeration since students in the services schoolhouse in particular include Air Force fitness specialists—raised $754 for the wounded airmen. ■

Have AFA Chapter News?

Email contributions for "AFA National Report" to: natrep@afa.org. Email digital images at highest resolution, as separate jpg attachments, not embedded in other documents.

Photo by Becky Brown

In Florida, Aerospace Education VP John Jogerst presents Susan Cundiff with the Hurlburt Chapter's Teacher of the Year award. Cundiff's students at Gulf Breeze High School gained hands-on experience with wireless communications, robotics, and electronics because of her ability to find resources for equipment purchases. As a chapter member, Cundiff has also helped the chapter conduct teachers' workshops.

Photo by Gary Metzinger

It wasn't all running, jumping, and push-ups. TSgt. Juan Rijos, A1C James Glenn, and Viviana Rijos (left to right) grilled hamburgers and hotdogs for competitors and more than two dozen guests at the Leigh Wade Chapter and the 345th Training Squadron's Student Olympics at Fort Lee, Va. New chapter member TSgt. Matt Loy came up with the idea for this sports event.

Joe Capriglione (third from left), president of New Jersey's Sal Capriglione Chapter, presented cadet Sebastian Kaiser (fourth from left) with an AFA AFROTC Medal at Rutgers University, N.J. With them (l-r) are: Pam Kaiser, AFROTC Northeast Regional Commander Col. Kent Dalton, Jerry Kaiser, and Lt. Col. Matthew McAndrew, commander of the Rutgers AFROTC Det. 485.

At right: For his stint as Miami Homestead Chapter guest speaker, Melvin Pollack received this crystal block depicting a B-17. The chapter has chosen the warbird as its icon to highlight how the bomber helped set the stage for the World War II Normandy Invasion.

At right: Bob Schure and Col. Brian Kamp, of the 157th Air Operations Group, show their AFA Certificates of Appreciation at the Spirit of St. Louis Chapter's 39th annual Airman of the Year Awards Banquet in Missouri. NCOs honored at the event were: A1C LaDarryon Brown and TSgt. Thomas Demont, both from Jefferson Barracks, Mo.; MSgt. Michael Cline from Scott AFB, Ill.; and MSgt. Karen Faris from Jefferson City, Mo.

In Hot Springs, Ark., Lewis E. Lyle Chapter officials presented a state-level award to the CyberPatriot VI team of the Arkansas School for Math, Science, and the Arts in May. With the team are: Arkansas State AFA VP and Chapter Secretary Morris Cash (far left), State and Chapter President Larry Louden (center), and Chapter Aerospace Education VP Ted Carrithers (far right).

reunions@afa.org

Reunions

86th Fighter-Bomber Gp Assn (WWII). Oct. 1-5 at Fort Walton Beach, FL. **Contact:** Dallas Lowe (850-319-3047) (fighterbomberpilot@yahoo.com).

91st Strategic Recon Wg, McGuire (1948-49), Yokota (1950-54), Barksdale (1950-51), Lockbourne (1951-57), including 91PRS, 91SRS, 322SRS, 323SRS, 324SRS, 91ARS, FMS, AEMS, RTS, PMS, Sup Sq, Med Gp, AP Sq, Com Sq, HQ, 16PRS, 31SRS, 6091SRS, 91st Bomb Wg (1963-68), 91st Space/Missile Wg (1968-Active), 91IS (Fort Meade 1993-2005), 91NWS (Lackland 2007-Active), et al. Also invited are members of the 91st BG (WWII) and Lockbourne AFB Reunion Group. May 17-22, 2015, at the Best Western Plus Savannah, GA. **Contact:** Jim Bard, 3424 Nottingham Rd., Westminster, MD 21157 (410-549-1094) (jimbardjr@comcast.net).

522nd Tactical Fighter Sq. Oct. 17-19 in Texas Hill Country. **Contact:** Mike Hall (210-695-8335) (jetsnboats@gmail.com).

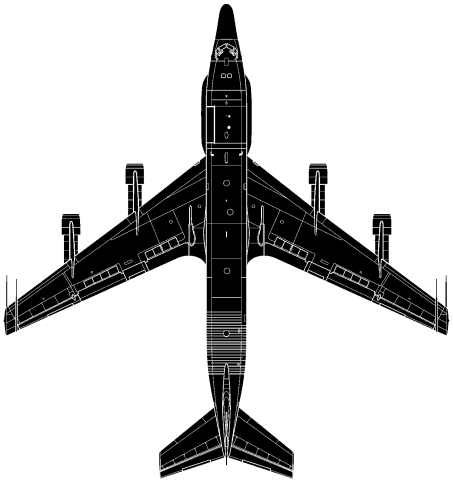
548th Recon Assn/67th Recon Tech Sq. Oct. 2-4, Holiday Inn Rosslyn Key Bridge, Arlington, VA. **Contact:** Bill Forsyth (webmaster@548rtg.org).

2014 Gathering of Loadmasters. Sept. 10-14 at the Crowne Plaza St. Louis-Downtown, MO. **Contact:** Kevin Butler (618-229-0581) (kevinbutler.2@us.af.mil). ▪

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.

Artwork by Zaur Eylanbekov

RC-135



The Air Force RC-135, comprising numerous missionized variants, rates as perhaps the most potent airborne intelligence-gathering platform in history. The secretive Boeing system has been in constant service for some five decades, facilitating combat in Vietnam, Libya, Grenada, Panama, the Balkans, Iraq, and Afghanistan, as well as in numerous smaller operations. The RC-135's continuous on-scene presence, omnivorous data collection, and instant communication with strike aircraft make it a force multiplier of enormous reach and capability.

The RC-135, a four-engine, swept-wing aircraft, features an outer shape that has been continuously modified. The first three RC-135s were converted KC-135 tankers; subsequent aircraft were modified C-135s. Boeing gave the airframe the designation of Model 739. Later models are distinguished by the variety and complexity of electronic suites. These newer aircraft sport additional antennae, radar platforms, bulges, stings, and other less-than-aerodynamic shapes to accommodate the exotic electronics.

Today, the RC-135 flies in three distinct variants—RC-135S Cobra Ball, RC-135U Combat Sent, and RC-135V/W Rivet Joint. The latter are the most numerous, with 17 in inventory. RC-135s are crewed by technical experts who provide real- and near-real-time information from ever-more sophisticated equipment. The crew expertise connects data from and to satellites, headquarters, and systems engaged in combat. In its long operational history, the RC-135 type has suffered a total of four loss-of-aircraft accidents, all in Alaska.

—Walter J. Boyne

This aircraft: USAF's RC-135W Rivet Joint—*#62-4134*—as it looked while assigned to the 55th Wing and deployed to RAF Mildenhall, Britain, in August 2006.

In Brief

Designed, built by Boeing ★ first flight (basic C-135) Aug. 17, 1956 ★ number built/conversions (all models) 32 ★ crew of 27 (typical): three pilots, two navigators, 22 mission specialists ★ no armament ★ **Specific to RC-135V/W Rivet Joint:** four CFM International F-108-CF-201 turbofan engines ★ max speed 500 mph ★ cruise speed 375 mph ★ max range 3,900 mi ★ weight (loaded) 297,000 lb ★ span 131 ft ★ length 135 ft ★ height 42 ft.

Famous Fliers

Notables: Ricky McMahon, George Miller, Larry Mitchell, William Riggs, Merlin Stevens, Harrison Tull, Regis Urschler.

Interesting Facts

Derived from prototype Boeing 367-80, progenitor of the famous 707 ★ deployed first by SAC ★ broadcasts variety of direct voice communications, including imminent threat warnings ★ military system: on-board sensor suite to identify and geolocate signals throughout EM spectrum ★ offers data and voice links to friendly ground forces ★ conducts Elint and Comint intercept operations out to 150 miles ★ operated by RAF (Rivet Joint) ★ nicknamed (individual Rivet Joint aircraft) Greyhound, Junk Yard Dog, Anticipation, The Flying W, Rapture, Jungle Assassin, Sniper, Red Eye, Fair Warning, Don't Bet on It, Problem Child, Luna Landa.

USAF photo

An RC-135 Rivet Joint on final approach.

USAA is proud to be the
Preferred Provider
of Financial Services for
the Air Force Association

Apply for the

Air Force Association
USAA Rewards American Express Card.

0% introductory APR for 12 months on balance transfers.[1]

Earn 2X points on gas and groceries — year after year.[2]

USAA Bank helps make it easier to support the Air Force Association.
Get the AFA USAA Rewards™ American Express® Card and take advantage of:

- **No annual fee**
- **Variable purchase APR as low as 10.9%**
- **0% introductory APR for 12 months** on balance transfers and convenience checks posted in the first three months after account opening **(10.9% to 25.9% variable APR after 12 months on these balances)**
- **Earn 1 point for every dollar spent and 2X points on gas and groceries**

Apply today.

usaa.com/afaamex | 877-618-2473

Insurance Banking Investments Retirement Advice

USAA®
We know what it means to serve®

USAA means United Services Automobile Association and its affiliates. USAA products are available only in those jurisdictions where USAA is authorized to sell them.

[1] **Offer subject to approval.** As of 7/1/14, regular APRs on purchases, cash advances and balance transfers are 10.9% to 25.9%, depending on your credit history and other factors, and will vary with the market based on the Prime Rate. There is a transaction fee of 3% on cash advances ($200 maximum on each balance transfer and each convenience check) and 1% on foreign transactions. Rates and fees subject to change. If you transfer a balance or write a convenience check with this offer you cannot avoid interest on purchases, even if your promotional balance transfer or convenience check has a 0% APR. You can avoid interest on purchases if you pay your account balance, including any balances you transfer with this offer, in full by your due date each month. [2] Earn 1 point for every $1 in purchases plus 1 additional point on every $1 in purchases that the merchant properly codes as gas and grocery purchases. Grocery purchases at warehouses, discount stores, department stores or other non-grocery store locations are not eligible for the additional 1 point reward. Rewards points terminate if account is closed or delinquent or program ends. Other restrictions apply. USAA Rewards Program terms and conditions will be provided with your card. Availability restrictions apply. Purchase of a bank product does not establish eligibility for or membership in USAA property and casualty insurance companies. American Express is a federally registered service mark of American Express and is used by USAA Savings Bank pursuant to a license. AFA receives financial support from USAA for this sponsorship.

UNMANNED SYSTEMS •

CYBER •

C4ISR •

LOGISTICS •

THE VALUE OF *GAINING CRITICAL INFORMATION AND A CRUCIAL ADVANTAGE.*

If you're not an expert in every part of C4ISR, you're an expert in none. Through four decades of experience in C4ISR, Northrop Grumman has proven its expertise in the category. We've developed an end-to-end approach that demonstrates our complete understanding of complex C4ISR solutions, as well as our ability to create them. *That's why we're a leader in end-to-end C4ISR solutions.*

THE VALUE OF *PERFORMANCE.*

NORTHROP GRUMMAN

www.northropgrumman.com/**c4isr**