October 2013/65

Journal of the Air Force Association

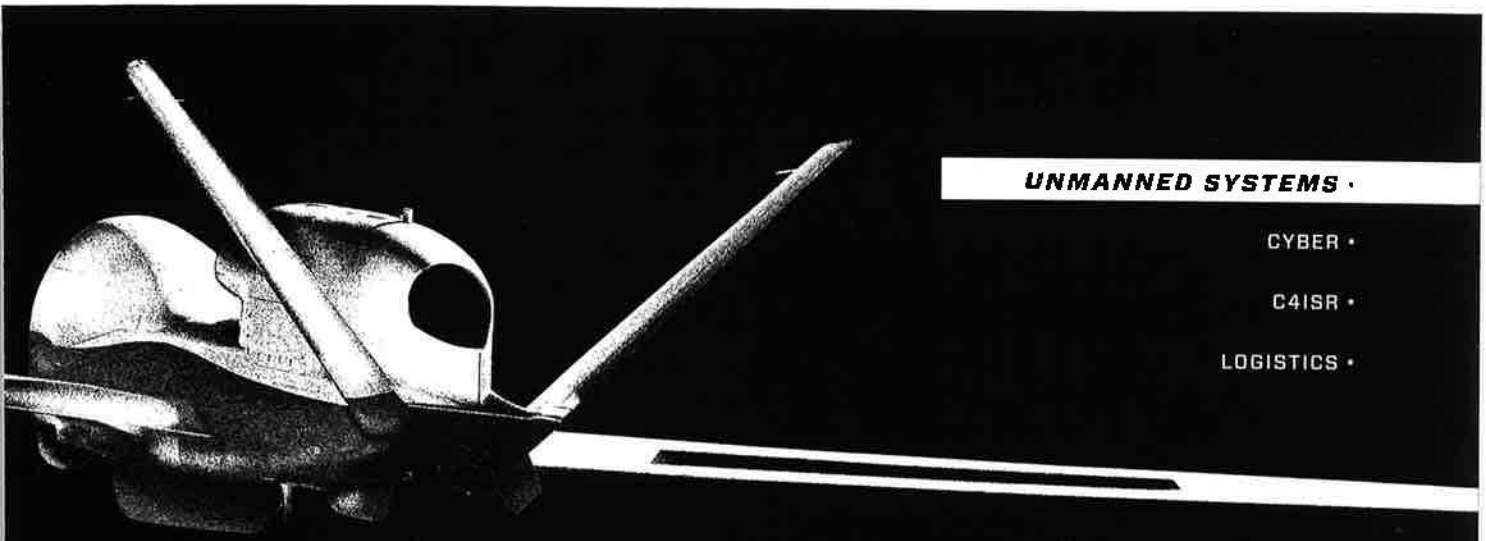
AIR FORCE MAGAZINE

ndustrial Base
n the Edge

NATO, v. 4.0

Tim Wilkinson

Ranch Hand

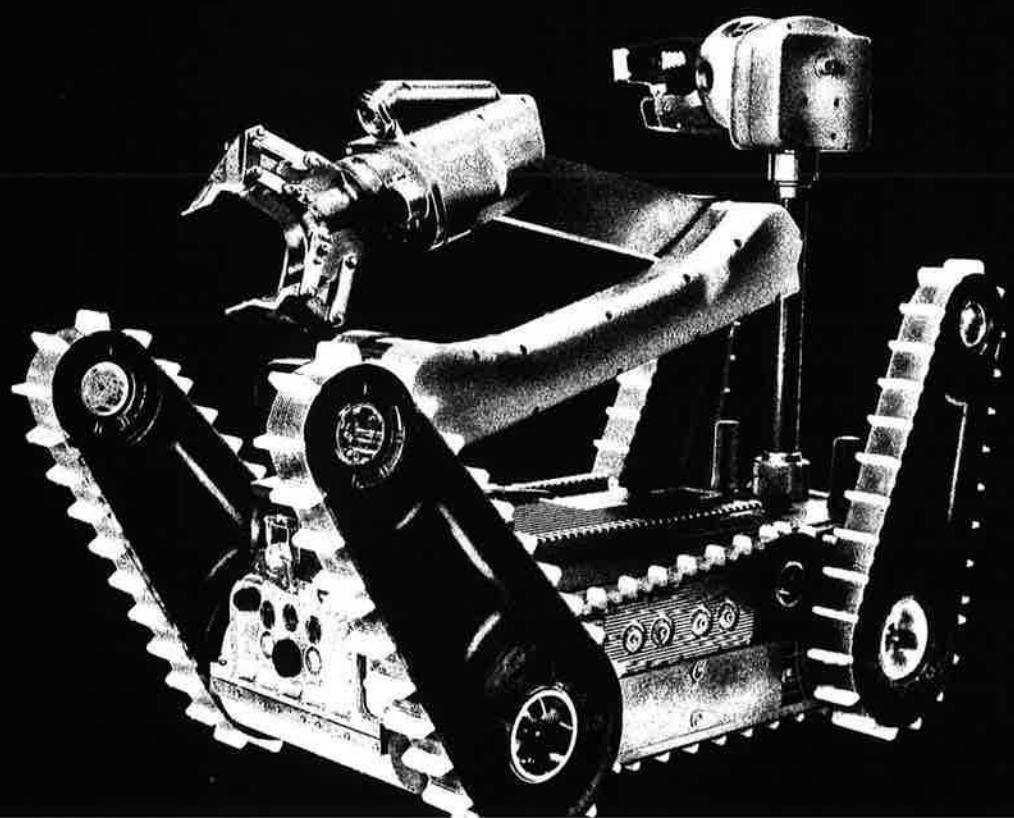


UNMANNED SYSTEMS ·

CYBER ·

C4ISR ·

LOGISTICS ·

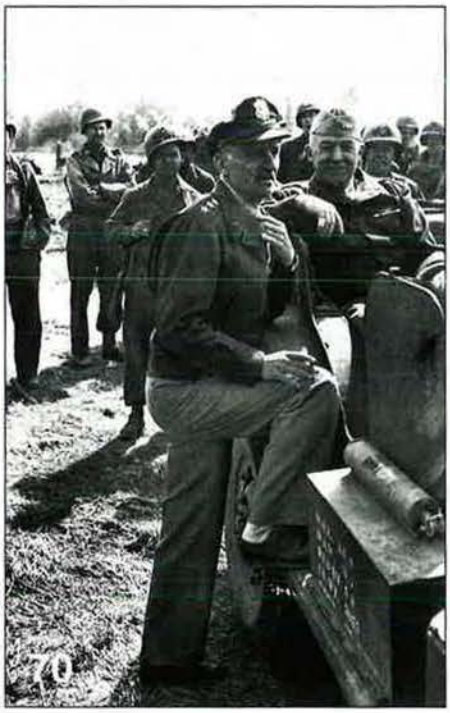


Journal of the Air Force Association

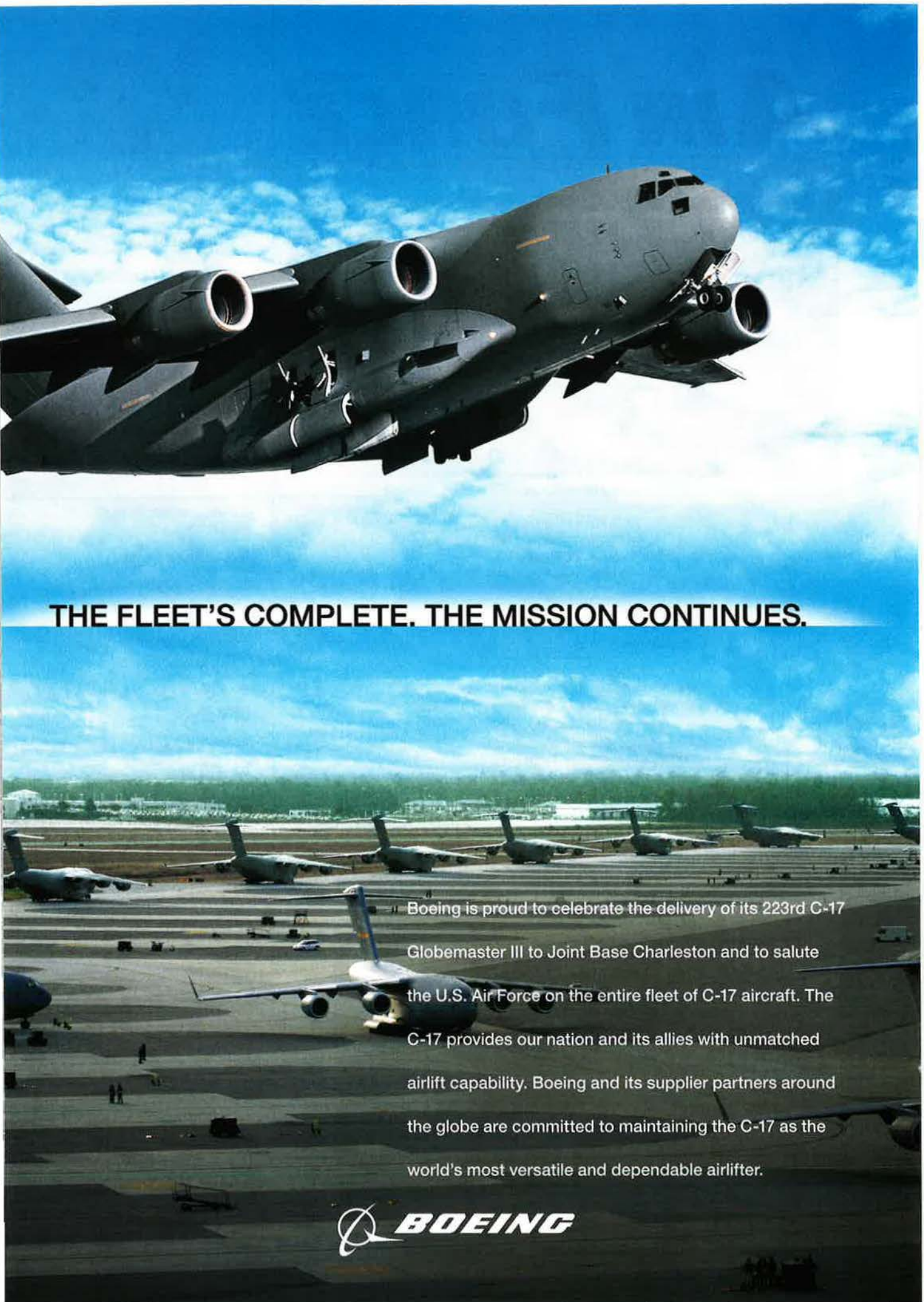
AIR FORCE MAGAZINE

October 2013, Vol. 96, No. 10

About the cover: An F-35 refuels from a KC-135 over the Pacific Ocean. See "Industrial Base on the Edge," p. 34. Lockheed Martin photo by Matthew Short.



FEATURES


THE FLEET'S COMPLETE. THE MISSION CONTINUES.
Boeing is proud to celebrate the delivery of its 223rd C-17 Globemaster III to Joint Base Charleston and to salute the U.S. Air Force on the entire fleet of C-17 aircraft. The C-17 provides our nation and its allies with unmatched airlift capability. Boeing and its supplier partners around the globe are committed to maintaining the C-17 as the world's most versatile and dependable airlifter.
BOEING

Journal of the Air Force Association

AIR FORCE MAGAZINE

www.airforcemag.com

1501 Lee Highway
Arlington, Va. 22209-1198
Tel: 703/247-5800
Telefax: 703/247-5855

afmag@afa.org

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

Editor: Suzann Chapman
Managing Editor: Juliette Kelsey Chagnon
Executive Editors: Michael C. Sirak, John A. Tirpak
News Editor: Amy McCullough
Senior Editor: Marc V. Schanz
Senior Designer: Heather Lewis
Designer: Darcy Lewis
Assistant Managing Editor: Frances McKenney
Associate Editors: Aaron M. U. Church, June L. Kim, Merri M. Shaffer
Production Manager: Eric Chang Lee
Photo Editor: Zaur Eylanbekov
Media Research Editor: Chequita Wood

Contributors: Walter J. Boyne, John T. Correll, Robert S. Dudney, Rebecca Grant, Peter Grier, Jeffrey T. Richelson, Megan Scully, Maggie Ybarra

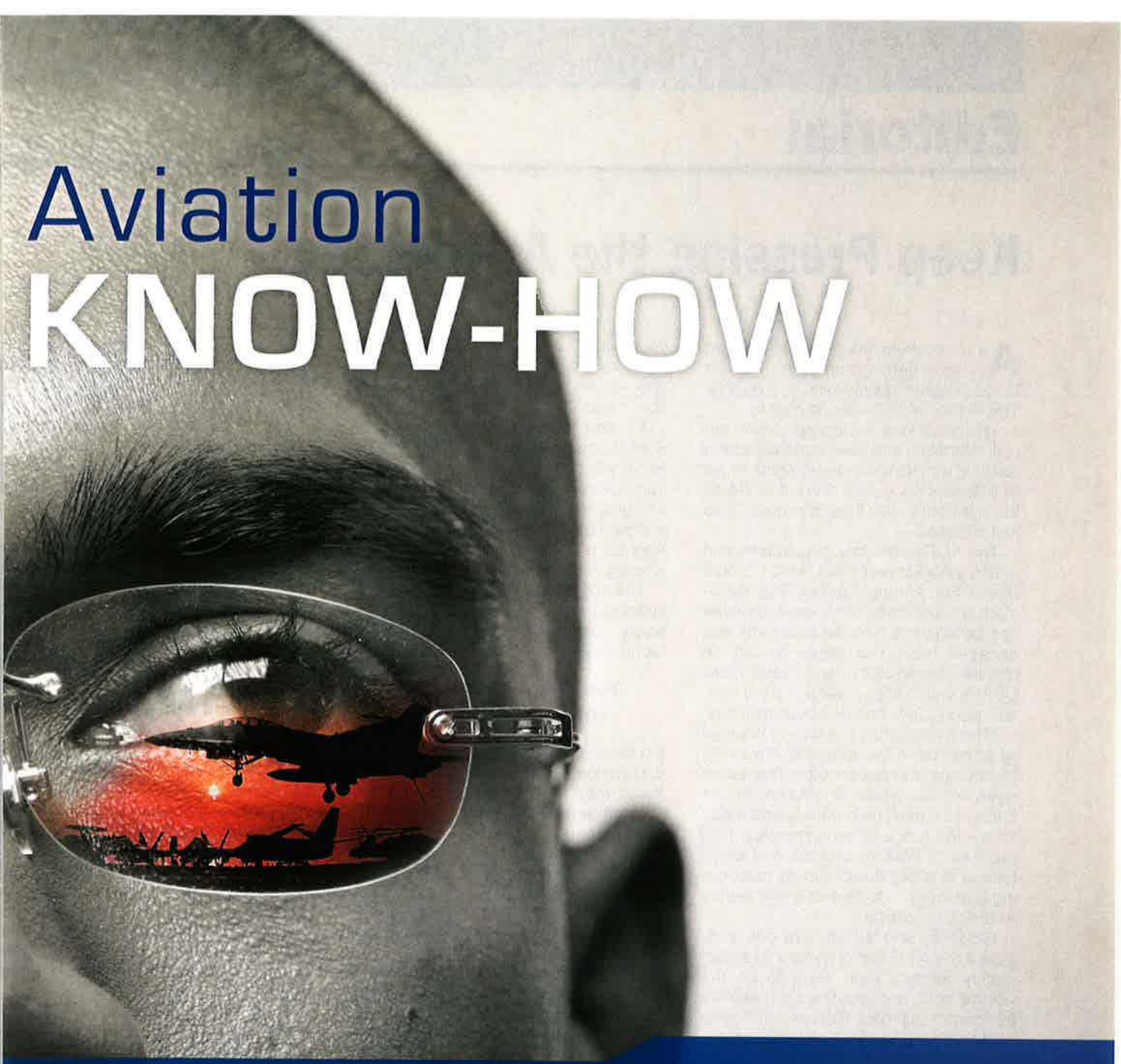
Intern: Brandon Conradis

Advertising: Andraea Davis, Mohanna Sales Representative
214/291-3660
afmagsales@afa.org

AIR FORCE Magazine (ISSN 0730-6784) October 2013 (Vol. 96, No. 10) 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; $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 $5 each. USAF Almanac issue $8 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.

FEATURES

DEPARTMENTS



Aviation KNOW-HOW

When it comes to aviation, we know how to deliver integrated solutions that ensure safety, improve reliability and increase mission readiness.

With unparalleled experience on more than 200 different types of aircraft—including utility and attack helicopters, frontline fighters, and commercial transport aircraft—DynCorp International supports the toughest missions in the most challenging locations on Earth. Whether it's providing total lifecycle management, air operations or aviation maintenance, we help our government, military and commercial customers reduce costs and achieve new levels of performance and productivity.

DynCorp International provides our customers with unique, tailored aviation solutions for an ever-changing world.

DynCorp INTERNATIONAL

We Serve Today for a Better Tomorrow.™

www.dyn-intl.com

Editorial

By Adam J. Hebert, Editor in Chief

Keep Pressing the Advantage

As it recovers from budget-induced summertime groundings, the Air Force remains extraordinarily capable. This is the force the nation paid for.

This force was not cheap, it was not built overnight, and its advantages do not last long without continued investment. As Will Rogers once said, "Even if you're on the right track, you'll get run over if you just sit there."

The Air Force in late August released a "Global Vigilance, Global Reach, Global Power For America" paper. This document lays out many of the ways airpower has benefitted the nation in months and decades past. The paper should be required reading for all who would allow USAF's capabilities to wither on the vine, for it also sounds an alert about the future.

"The 21st century is a time of unusual volatility due to the spread of advanced technology," the paper notes. The nation rarely knows where it will fight in the future, so it must be prepared and ready for a wide range of contingencies. This requires "a flexible, precise, and lethal force that is capable of rapidly responding anywhere ... to protect and advance America's interests."

Flexibility and lethality are only possible if the Air Force continues to attract quality airmen, train them to be the world's best, and acquire and maintain top-notch equipment. Airpower advocates hold these truths to be self-evident, but others need to be reminded.

"This force must be deliberately planned for and appropriately and consistently funded," USAF's paper reads. Today's Air Force is the smallest in history, but will likely have to shrink even more to meet future budget targets. "A smaller, highly capable Air Force is clearly preferable to a larger one of lesser quality," the paper says.

The Air Force's missions have not fundamentally changed from when the service became independent in 1947. The core missions 66 years ago were: Air Superiority, Air Reconnaissance, Airlift, Strategic Air Force, and Coordination of Air Defense. While most of these missions have broadened, the originals are all recognizable.

"What has radically changed is how the Air Force performs these missions," wrote Gen. Mark A. Welsh III, Chief of Staff, in a message accompanying the document. The modern versions of these missions are integrated, in constant use, and—as the paper makes plain—perishable capabilities.

Air and Space Superiority: The Air Force ensures US forces are free from aerial attack and have the freedom to maneuver and operate at will. No American ground troop has been killed by an enemy air attack since two soldiers died April 15, 1953, on a remote island in what is today North Korea.

The ability to maintain air, space, and cyber superiority "will become progressively more difficult as sophisticated technologies continue to proliferate,"

You'll get run over if you just sit there.

the paper notes. Beyond equipment, air dominance requires trained and ready forces with "a well-honed combat edge."

Intelligence, Surveillance, and Reconnaissance: In 2012, ISR airmen "provided critical adversary awareness and targeting intelligence to US and coalition forces" in more than 250 battles. They helped identify more than 100 enemy weapons caches and explosive devices and had many other successes.

In the future, "gaining and maintaining an ISR advantage will become increasingly difficult" as future battlefields will be well-defended. Iraq and Afghanistan offered permissive environments for slow, unprotected ISR aircraft like Predators and Reapers. USAF therefore must "focus primarily on enhancing its ISR capabilities for operations in contested environments."

Rapid Global Mobility: USAF's tanker and airlift forces are in constant action. In 2012 alone, mobility airmen performed 1,300 airdrops to supply dispersed forces, primarily on the ground in Afghanistan. An Air Force transport takes off for a mission every 90 seconds, around the clock, on average.

With the final C-17 delivered to the Air Force just last month, USAF must look ahead. "We anticipate a future that requires ... rapid global mobility to remote, austere, and distributed locations in contested environments," the paper reads. The need for greater range, better fuel efficiency, and larger load capacities will guide future investment.

Global Strike: The Air Force validates its ability to threaten and destroy targets constantly, through continual training, regular exercises, and frequent combat operations. Nuclear forces provide a credible deterrent, while airmen operating aircraft as diverse as MQ-1 remotely piloted aircraft, A-10 attack aircraft, and B-1 bombers take on enemy forces in Afghanistan.

The paper notes enemies "are hardening and burying key weapons and command and control facilities." In response, USAF will "maintain its ability to neutralize such targets so that America's military credibility will remain uncontested [and] potential adversaries will not be emboldened."

Command and Control: Reliable, resilient, and interoperable C2 networks are the backbone of modern US military power. Today, worldwide communication can be secure and instantaneous, enabling everything from theaterwide operations to direct links between ground forces and their air support.

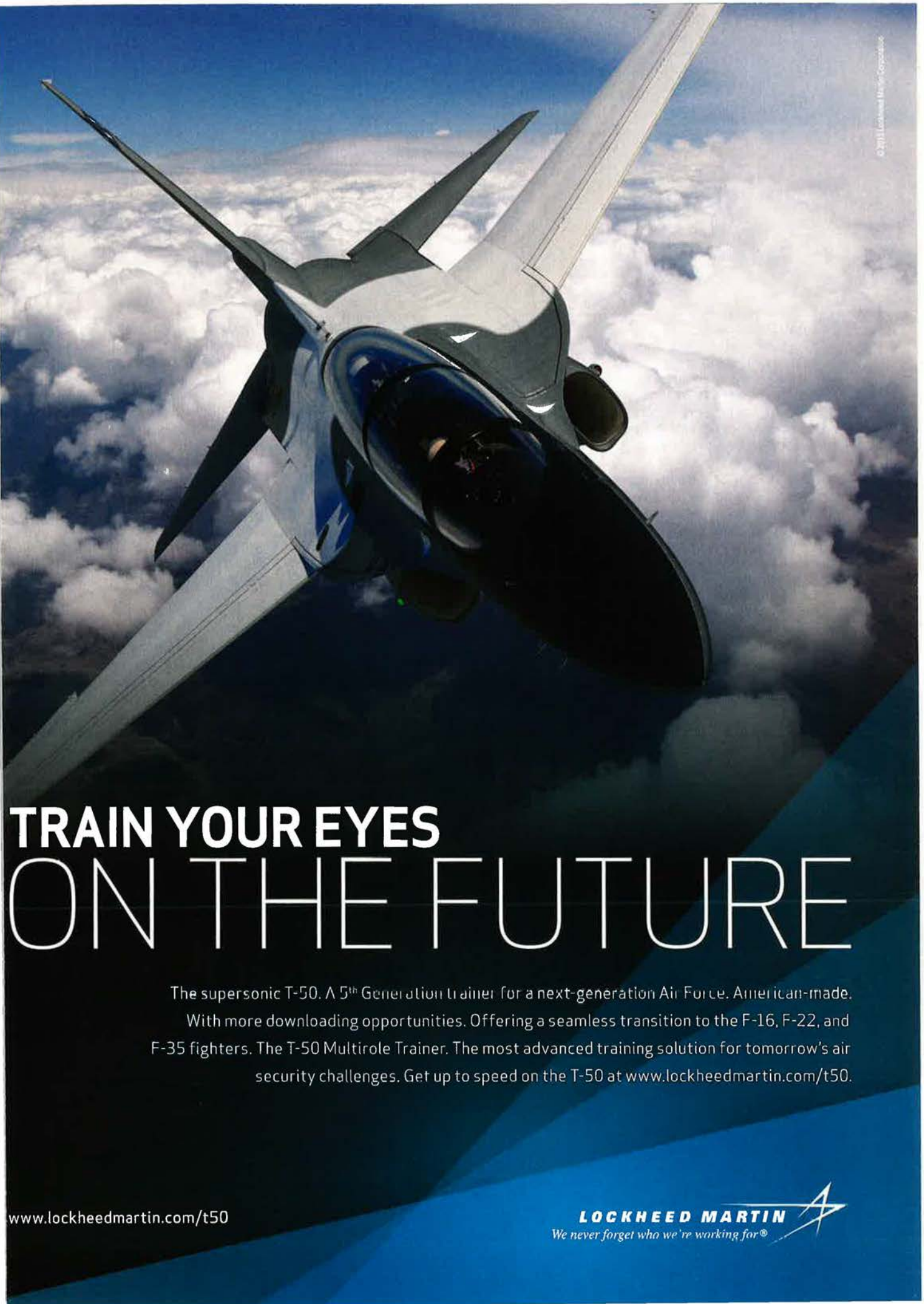
These systems are huge and tempting targets. US networks are under constant threat from cyber weapons, anti-satellite systems, electromagnetic jamming, and even kinetic attack and sabotage. The threats get more sophisticated all the time.

As the paper makes clear, USAF's advantages are not birthrights. They require constant work and investment. USAF is so capable that many in the general public, government, and the other services take airpower for granted.

Airpower investment is sometimes derided as "overmatch"—needlessly building upon an already safe advantage. When it comes to wartime capability, there is no such thing. Airpower is America's asymmetric advantage.

With reliable funding and long-term guidance, the Air Force will provide unparalleled top cover for the nation and its troops. But the US could inadvertently find itself with parity in the air if it does not keep pressing its advantages. One can look back to Vietnam, Korea, or World War II to see the true cost of parity: death and destruction.

Or, as Welsh summarized in a video introducing the paper, "Airpower: Without it, you lose."


TRAIN YOUR EYES
ON THE FUTURE
The supersonic T-50. A 5th Generation trainer for a next-generation Air Force. American-made. With more downloading opportunities. Offering a seamless transition to the F-16, F-22, and F-35 fighters. The T-50 Multirole Trainer. The most advanced training solution for tomorrow's air security challenges. Get up to speed on the T-50 at www.lockheedmartin.com/t50.
www.lockheedmartin.com/t50
LOCKHEED MARTIN
We never forget who we're working for®

Letters

letters@afa.org

Training Spike

I just read with special interest your August article titled "Momyer" *[p. 64]* and learned many things that I wish I had known back in 1970 about General Spike. As a major and a combat crew training instructor pilot for the new A-7D course at Luke, I had been given a very unique mission.

General Momyer had personally called our wing commander to say that he wanted to fly TAC's newest fighter. He wanted to experience for himself its lauded head-up display (HUD) and other ahead-of-their-time avionics. In response to the colonel's query as to when the general would arrive at Luke for his quickie course, the general told him to have two birds at Langley the day after tomorrow. General Momyer also said he would be reading the A-7D flight manual in the meantime and to tell no one else about this. (There were neither two-seat A-7s nor a simulator until several years later.)

Lt. Col. Bobby Bond, the A-7D training squadron commander—who had yet to complete his full formal checkout—accompanied me in order to provide the second airplane and to "pull mobile" in the general's UHF radio-equipped staff car. We were met by General Momyer's old confidantes, the base commander and the two-star TAC LG and were billeted in the VIP quarters.

The next morning I briefed the general for two hours at the coffee table in the base operations VIP lounge. After helping him start the engine I chased him down the runway, around the Hampton Roads area, and through three low approaches and a full stop landing. Bond said Momyer made the better landing, and I believe him. I was far more nervous about all this than the general, having never before so much as even met a one-star. My real concern was the Air Force policy that general officers of all grades were not supposed to fly without an instructor pilot onboard, and that others of operational authority at TAC knew nothing about what was happening. For everyone else, the standard first-flight preparation was a week of academics and several hours of briefings. I knew nothing of General Spike's skills. Of course, he did just fine.

A few weeks later I received a nice personal thank you note from the general, along with photos of the event. They hang prominently on my den wall.

Lt. Col. Greg Butler,
USAF (Ret.)
Encinitas, Calif.

I really enjoyed the Momyer story. As a captain, I was assigned to the ATC Stan/Eval board in early 1965 (to evaluate the conventional MAP training program (T-28/C-47) with the "additional duty" to implement the T-41 (Cessna 172) UPT lead-in program. I moved on to DCS/Ops where I was to continue to oversee the T-41 program in addition to conventional training. Being on the opposite end of the third floor of the headquarters building from the general, we were uncomfortably close to this legend.

When the regular ops briefer transferred, I was given the unpleasant duty of briefing the daily flying status reports to the staff for the eight UPT bases. General Momyer's reputation for attention to detail was well stated. One of the things that stuck with me was that he wanted to know the reason for each aborted sortie at each base as well as a myriad of other information. Another incident I will never forget was when I proudly sent a memo for record to the general stating we achieved 350,000 flying hours in the T-41 without an accident. He summoned me into his office, which had a large painting of a World War II air battle behind him. He said something like, "Korzy, that is a fine achievement, but I was against this T-41 program from the start. We are a jet Air Force and it should stay that way." Shortly after that he moved on to 7th Air Force in Vietnam.

Lt. Col. Darold J. Korzan,
USAF (Ret.)
Concordia, Mo.

I have a minor gnat bite with regard to the statement: "B-52 attacks were controlled by Strategic Air Command" (SAC). My concern is in the interpretation of the word "controlled." No question, those were SAC airplanes and SAC crews, but one might get the impression that SAC controlled which targets were attacked. That was not the case, at least not during my time at MACVHQ. Target selection-approval came from the command section at MACVHQ, based on requests from field units, Army, Marines, and/or intelligence gleaned from other sources.

That is significant in regard to Colonel Boyne's article because of the widely held view at the time that General Momyer was particularly vexed by the idea that an Army general (Westmoreland/Abrams) controlled USAF resources.

Lt. Col. Neil V. Mesler,
USAF (Ret.)
Canton, Ga.

Records Fire

Thank you for the informative report about the St. Louis fire which destroyed 17 million armed services personnel records *["The Records Fire," August p. 48]*. What a disaster—to lose the identities of so many of those who have given their lives [for] our country.

Replacement names and serial numbers should be immediately sought and replaced from:

1. The records of The National Service (government) Life Insurance Company from which all veterans acquired life insurance.

2. The records of those veterans past and present who have registered for health care or have resided in US veterans homes or hospitals.

3. Membership lists of present and

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

past veterans who joined the American Legion and similar organizations.

4. Registration records from veterans' cemeteries around the world.

5. Veterans' family records that will identify serial numbers from soldier dog tags, etc. (My family has proudly kept records of those who served as long ago as the Civil War.)

6. Records from county draft boards.

Hasn't the time arrived to make a major effort and place in the public record the names and serial numbers of all who were killed and have served for the protection of us Americans?

Conrad Leslie
Oxford, Ohio

My father's World War II records were destroyed in the fire. He was wounded in France, returned to Utica Army Hospital by air, and died on Jan. 9, 1945. I never knew what happened to him when I was growing up.

The son of one of the soldiers in his unit went through the trouble of getting all of the division's morning reports (mentioned in the article). From these reports, the few documents my mother had, an excellent book on the division's service in the war, and conversations with my father's brothers and sisters, I was able to piece together what happened to him. I also traveled to France with his division's association and met his battalion commander. I actually was able to stand on the French farm field where he was wounded.

I continue to be concerned by the loss of documents that were mailed to the records center in St. Louis between 1971 and 1994. I went on Active Duty in 1965 and was a member of the Army Reserve between 1971 and 1994, when I retired. I was warned repeatedly by Army Reserve members from different units to stay on "active" status and to avoid "standby" status. A soldier who went on standby status risked having his personnel file lost because the unit had to send it to the St Louis records center. I visited the records center when I was there on business for my civilian job and commanded a reserve unit. I researched my father's documents (some reconstituted through the Veterans Administration) and then looked for a personnel file that my unit sent. They could not find it. Individual documents that were sent for promotion boards were not in the appropriate files. We made sure, after that visit, that we copied complete files and mailed them to the appropriate promotion board. Hopefully the losing of mailed documents has been corrected since I retired.

Lt. Col. Peter Coppolino,
USAR (Ret.)
Leesburg, Va.

Photo ID

Loved the "Dinner for the Heroes" article *[August, p. 43]*. Brings back so many memories. I'm the guy getting off the bird at Clark with Robbie Risner. My name is Leroy Thornal, Colonel, USAF (Ret). I was the Air Force escort officer on the second -141 to come out of Hanoi on Feb. 12, 1973.

Thanks for your time and thanks for keeping the memory of our heroes alive.

Col. Leroy Thornal,
USAF (Ret.)
Niceville, Fla.

Get Joint Fixed Fast

John Tirpak's "Out of Joint," *Air Force Magazine,* August *[p. 24]*, strikes a blow for common sense. Joint is a subject I taught in an academic setting for many years as a USAF contractor. In its best application, joint forces bring tailored mission capability to a joint forces commander. Yet, our services still fight in a regional command setting where each service gets a chunk of the air and ground space.

There are competing themes affecting our ability to go joint: Specific service missions, service Title 10 functions enabling service missions, service acquisition, service specific requirements for test and evaluation, service specific deployments into theater, service doctrine, and more. For example, the Marines are famously expeditionary. The Marine constellation of acquisitions reflects expeditionary. By contrast, the Air Force acquisition reflects persistent application of airpower. In the

case of the F-35, there is a cost to be shouldered for Marine expeditionary that may not apply to USAF deployed force structures. Services also acquire, commensurate with their acquisition reach, the capacity to operate jointly. For this, "joint" competes within service budgets and between services.

The problem we face today is the savaging of service budgets by political and fiscal issues. There is much media effluvia generated by overmarketed so-called experts who never drew a weapon or stood a post, but warm to a "peace" dividend. There is no liberty dividend. Liberty is existential. It exists or it does not. Shedding joint is a nonstarter because joint capability is precisely what is needed as our forces draw down. Every ounce of mission capability must be extracted from our joint forces, particularly when forces are deployed forward. In the joint arena, a Marine lance corporal on foot patrol down range is essential to engaging a threat, but so is the B-2 bomber called in by that marine using the Joint Tactical Radio System. Sadly, service chiefs may witness the dilution of both.

So where does this leave us? There is a convergence of threat where criminal cartels are snuggling with failed and failing regimes having access to weapons of mass destruction. The threat to the US national security is profound and there is no single service capacity for defending America. For this, perhaps the current acquisition system with all its faults and potential for reform is as good as it gets. So, now the question: What is the price of liberty, America?

Lt. Col. Tom Brannon,
USMC (Ret.)
Navarre, Fla.

Women Titans

Your article "Women in Combat" was very good, but you neglected to include the women in Titan II *[August, p. 30]*. I was an instructor crew commander circa 1978 to 1979 and remember my crew training the first female deputy missile crew commander. It was during this time frame we had many mixed male-female crews—well before Minuteman and Peacekeeper crews.

Lt. Col. Len Zigment
USAF (Ret.)
Colorado Springs, Colo.

I understand that our military leaders must support the policies and directives from the current Administration. The President is our Commander in Chief. That is what the Constitution says and is how it should be. But the Air Force Association does not need to do so, and if the association is to mean more than just honoring airmen and our heritage and having a good time, we should push back on policies that are counterproductive to good military formation.

As a lifetime AFA member, I found the celebration of the feminization of the military that appeared in your August issue disappointing. It suggests you view a military that is 15 percent female—and much higher if considering just the Air Force—and going up as a good thing. Only the most blinded progressives would suggest that a military, made up with a significant percentage of female troops, would be a more efficient and effective fighting force than an all-male force.

I feel sorry for our generals. They must be cautious about what they say, smile, and support the political policies while desperately trying to maintain a combat force shackled with an entirely new and extremely challenging set of discipline problems that detract from training and combat readiness. Air dominance is impacted by more than just aging systems, and one would hope that at least AFA would tackle the truth about the manning develop-

ments, focus on what makes military sense, and not become a cheerleader for insane policies.

Col. Michael Sexton,
USAF (Ret.)
Albuquerque, N.M.

During my 40-plus-year Air Force career I developed a healthy respect and admiration for the women I worked for, with, and led.

I was disappointed at your choice of a six-year-old photo of a female airman who is no longer in the Air Force, standing watch at an air base that no longer exists, for your cover. In an article highlighting the successes and bright future of women in the Air Force, I think a more current photo would have been more appropos. Surely there is no shortage of Air Force women currently deployed in Afghanistan and other locations, though your photo pick might indirectly imply otherwise.

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

GUMP Grumps

I always enjoy *Air Force Magazine* and read it cover to cover. I especially look forward to Walter J. Boyne's historical articles. I don't want to detract from his excellent article, but I did notice an error in his August article "The Checklist" which noted the 1935 crash of the Boeing B-17 prototype *[p. 52]*. On p. 55 he wrote that the familiar prelanding GUMP check stood for the gear, undercarriage, mixture, and propeller. "Gear" and "undercarriage" are redundant terms. The "G" actually stands for "gas." This can include several things such as checking fuel quantity, balance, pumps on, etc. Sometimes the check was GUMPS where the "S" stands for "switches" (landing light, nav radios, etc.).

Col. Ken Morris,
USAF (Ret.)
Merritt Island, Fla.

I must be among the thousands of readers who caught the "Checklist" article's incorrect definition of GUMPS. It should have read Gas, Undercarriage, Mixture, and Propeller! I guess that's why checklists are created and read. Let he who hasn't made an error cast the first stone. If they're alive.

Herminio Velez
Poinciana, Fla.

Incoming!

The screenshot on p. 15 of the August, issue showing a Fourth of July fireworks celebration at Osan AB, South Korea, brought back a vivid memory for me.

I was a young one-striper (A/3c) just out of tech school who had just arrived at Osan on June 13, 1960.

It was a long time ago and my memory is a little faded, but I don't remember reading or hearing anything about a scheduled Fourth of July fireworks show on base. I do remember that it was hot and humid and I was out for an evening stroll, when all of a sudden fireworks started going off.

Like myself, it was obvious that some of the Koreans who were on base at the time didn't get the word about any sort of planned fireworks show. I'm sure that the the Korean conflict was still fresh in every Korean's mind and I will never forget the panicked look on their faces, and some even started to run, probably thinking that the North was again invading the South.

MSgt. David D. Trotter,
USAF (Ret.)
Aurora, Colo.

Cheater McCheater Pants

John T. Correll is to be congratulated for analyzing so thoroughly the "détente" period in American foreign policy *["The Decade of Détente," August, p. 58]*. He touched most of the weaknesses of this policy in terms of US security. Correll could have mentioned that glaring piece of deception perpetrated from the Soviet side: Moscow's cheating on the ABM Treaty of 1972, an ingredient of the flawed concept of Mutual Assured Destruction (MAD). Former Soviet Foreign Minister

Eduard Shevardnadze freely admitted, as the Soviet Union collapsed, that the USSR had cheated on MAD by secretly establishing an ABM site at Krasnoyarsk. This was in outright violation of the "détente" treaty. At the same time, Moscow kept upgrading its own ABM site defending Moscow. For its part, the US declined to build ABM.

Finally, by the end of the1970s, the Soviets were building naval and air bases worldwide in geostrategic, blue-water areas in order to interdict our Sea Lines of Communication (SLOC) and to throttle sources of our imports of defense-related minerals in the Third World.

With most of our mainstream media in a pacifist, anti-Pentagon mood, Reagan woke everyone up to the Soviet threat. The new President showed how it had materialized globally along with Moscow's SS-20 deployments in Eastern Europe. The new President zeroed in on the "Evil Empire," thus ushering in a more realistic, post-détente policy toward the collapsing Soviet Union.

Albert L. Weeks
Sarasota Fla.

Camel Through the Eye of a Needle

I enjoyed the article about the Globemaster's history in [Japan]. The first "big bird" of transport had its struggles for sure *["C-124 and the Tragedy at Tachikawa," July, p. 70].*

Another element to the history of this aircraft was the effort to certify its use in the Korean theater, notably its ability to land on the poor runways with heavy loads. My particular interest is simple: My father was the test pilot who accomplished this mission, opening up the Korean airlift fourfold.

Maj. Gen. William H. Tunner, deputy commander of the Military Air Transport Service, requested the C-124 be tested in Korea; he needed heavy airlift between Tokyo and Seoul.

In September 1951, the Air Proving Ground Command (Eglin Air Force Base) sent a C-124 to Tachikawa, Japan, for extended operational testing. The Globemaster was piloted by Maj. Roland L. Urquhart, aircraft commander, and Col. Kenneth Johnson, copilot and TAC observer. The C-124s represented an important cargo and personnel delivery advantage to 5th Air Force. With maximum loads of 200 passengers, 23 tons of cargo or 136 litter patients, each Globemaster could carry the equivalent of four to five loads of C-54s, C-46s, or C-119s.

The final Globemaster test mission in 1951 was on Oct. 21. Among those on the aircraft were Maj. Gen. John Henebry, commander, 315th Air Division, and Harold Stuart, former assistant secretary of the Air Force (and then President of the Air Force Association). They flew with the C-124 as it took off from Ashiya with 50,000 pounds of hand grenades and landed at the then not very well developed airstrip at Chunchon. It was reported that at one point along the runway there were two buildings, one on each side, only 270 feet apart. Since the C-124 had a 173-foot wingspan this didn't leave much margin for error; the pilot guided the plane through without difficulty.

According to General Henebry, the C-124 performed brilliantly. His recommendation carried weight, and the "big bird" that roosted in Japan for a short while in 1951 was the first of many others that arrived the next year.

In gratitude for his performance, Douglas Aircraft Co. gave my father a cast aluminum model of the C-124A Globemaster. With a wingspan of 29 inches, it sits proudly among my other keepsakes.

As the years have passed, I've enjoyed "discovering" my father's military experience. There was and are a lot of real unsung heroes; we should be proud of their legacy.

Lt. Col. Robert Urquhart,
ANG (Ret.)
North Kingstown, R.I.

Proselytizing in the Air Force

When you see letters like [Steven E.] Zalesch's *["Letters: Verbatim," August, p. 6],* you can be assured of several things: The writer has an axe to grind.

He is really talking about the elimination of religion and its influence. And he is really unfamiliar with the intimacies of the issue. The use of the term "religionists" is further proof of his ignorance. Freedom of religion does not mean isolation from religion. The mere exposure to religious belief does not incur forced belief. A religion you do not want to share with others is of little or no value. Everyone, atheists included, has a religion, even if it is a man-centered one. Just because you do not see someone attend a house of worship in a suit does not mean they are without religious beliefs. If he wants to complain, let us go back to the Middle Ages when you would almost be certain to be required to join a church or suffer social stigma.

The Bible makes no distinction of how people make a living or even their social status before witnessing and is quite clear not to hide the "light" under a basket. You witness to civil and military alike.

MSgt. John Wolf
USAF (Ret.)
Bethel, Pa.

Air Force Association
1501 Lee Highway • Arlington, VA 22209-1198
Telephone: (703) 247-5800
Toll-free: (800) 727-3337

Press 1 *if you know your party's extension.*
Press 2 *for Membership.*
Press 3 *for Insurance and other Member Bene programs.*
Or *stay on the line for an operator to direct you call.*

Fax: (703) 247-5853

Internet: http://www.afa.org/

E-Mail Addresses

Field Services ..... **fldsvcs@afa.org**
Government Relations ..... **grl@afa.org**
Industry Relations ..... **irl@afa.org**
Events ..... **events@afa.org**
Membership ..... **membership@afa.org**
Insurance/Member Benefits ..... **services@afavba.org**
Policy & Communications (news media) ..... **polcom@afa.org**
CyberPatriot ..... **info@uscyberpatriot.org**

Magazine

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

Air Force Memorial Foundation .. **afmf@afa.org**

For individual staff members
first initial, last name, @afa.org
(example: jdoe@afa.org)

AFA's Mission

Our mission is to promote a dominant United States Air Force and a strong national defens 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 nationa security.

Advocate for aerospace power and STEM education.

Support the Total Air Force family and promote aerospace education.

FULL FAB-T CAPABILITY. NEEDED AND READY.

The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) is essential to our nation's defense, providing critical communications for our nuclear-equipped bomber fleet and command and control infrastructure. This fall, Boeing will have demonstrated a fully integrated FAB-T solution of both Advanced Wideband (AWT) and Command Post Terminals (CPT). A total solution that's needed now and Boeing is ready to deliver.

BOEING

Aperture

By John A. Tirpak, Executive Editor

The full buy of F-35s; Updated budget numbers; Overhaul DOD; What the services should do; What's next for ISR ....

THE F-35 PRICE IS GOING DOWN

Set aside stealth, weapons, and electronic warfare for now: The chief thing the F-35 must do to survive the extremely hostile environment it's fighting in—the budget arena—is get cheaper. Recent events indicate that's happening, and just how much lower the F-35 price will get should become clear this month.

In July, the F-35 Joint Program Office announced it had a handshake deal with prime contractor Lockheed Martin on the sixth and seventh low-rate production lots of the F-35, totaling 71 aircraft. Not only had the negotiations been concluded in a fraction of the time required for previous lots, but Lot 6 was roughly four percent cheaper than Lot 5, and Lot 7 was another four percent cheaper than Lot 6. The two lots included airplanes for the US, Australia, Italy, and Norway.

The practical effect of the cost reduction was huge: The Pentagon had expected it would have to cut as many as five aircraft out of each lot to live within sequester constraints. The full buy wouldn't have been possible without the lower unit costs for the airplanes and "lower prices on a number of smaller contracts," JPO spokesman Joseph DellaVedova said.

The deal, estimated to be worth about $7 billion, didn't include the engines, which are supplied by Pratt & Whitney. However, in late August, the JPO announced a deal with the enginemaker to supply Lot 6 motors at lower prices, as well. The common-configuration F135 engines in the F-35A and C models—the Air Force and Navy versions—went down by 2.5 percent versus the previous lot; the more complex version that powers the Marine Corps short takeoff and vertical landing F-35B variant went down in price "roughly 9.6 percent" versus the previous lot, the JPO reported. The 36 engines in Lot 6 are expected to cost about $1 billion.

In a statement accompanying the news on the airframes, F-35 program chief Lt. Gen. Christopher C. Bogdan said while there's still more work to be done at getting F-35 costs down, the deals are "proof the cost arrow is moving in the right direction."

With regard to the engine contract, Bogdan said it represents a "fair deal" for both Pratt & Whitney and DOD and shows the Defense Department and the contractors are "working together—in each successive contract—to lower costs for the propulsion system."

The Lot 6 and 7 news was just the warm-up, however. In August, Bogdan privately informed the Senate Armed Services Committee about the cost to buy and operate the F-35 fleet over 55 years. Previous estimates had made national headlines because they pegged the number at over the trillion-dollar mark, but Bogdan's August estimate reduced that prediction to $857 billion—a 22 percent drop.

In an explanation included with those answers for the record—leaked to the press—Bogdan said the new lower estimate was informed by several years of real-world experience flying F-35s both in flight test and initial training at Eglin AFB, Fla., coupled with the declining purchase prices and other considerations. The report was not made public because the Pentagon's official Selected Acquisition Reports, which are the official numbers, don't come out until this month. Pentagon officials said the old number—the trillion-dollar figure—hadn't been updated for two years.

Press reports quoting Bogdan's estimate said the unit cost of F-35s could decline by as much as $35 million each just over the next five years, at which point full production is to start. The Air Force F-35A variant could go down from $120 million to $85 million per aircraft—less expensive than the unit prices quoted for fourth generation fighters like the F-15, F-16, F/A-18, and Eurofighter Typhoon in recent international contests.

Pentagon acquisition chief Frank Kendall weighed in on the Bogdan estimates at an early September symposium, trying to temper the excitement about deep F-35 cost reductions.

"I don't want to be overly optimistic and I don't want to be overly conservative," he told reporters after addressing the IDEA Common Defense symposium in Washington, D.C.

He said his office is "looking at" Bogdan's numbers and will issue its own estimates later this month after a meeting of the Defense Acquisition Board, the Pentagon's top weapon-buying panel, which Kendall chairs. The DAB holds authority over how fast a program progresses, given its performance. The new SAR numbers will include the program office numbers and a fresh evaluation from DOD's Cost Assessment & Program Evaluation office.

"I do expect it to come down," Kendall said of the F-35 cost estimate. "I don't know if it will come down as much" as Bogdan's estimate, but "he has a basis for it." Kendall cautioned that any number is conditional on the assumptions made and the "too many different ways to calculate it." He expects to find some middle-ground estimate between Bogdan and the CAPE's new figures "and see what we want to use as an official estimate."

Lockheed Martin photo by Paul Weatherman

A handshake deal for the full buy.

THE UNMANNED FUTURE

The future military is going to see an explosion of applications for unmanned systems, ranging from today's remotely

THE MOST PROVEN.
AND STILL PROVING IT.

With more than one million flight hours, the C-130J still hasn't met its match. From aerial refueling to search and rescue, fighting wildfires and special operations, the C-130J stands ready for its next mission. And for whatever the future holds. C-130J. The world's most proven airlifter.

Load up on all the details at: **lockheedmartin.com/C130**

www.lockheedmartin.com/C130

LOCKHEED MARTIN
We never forget who we're working for®

piloted aircraft for intelligence, surveillance, and reconnaissance to sailorless submarines, robotic armored vehicles, supersonic fighters, unmanned cargo aircraft—possibly of the lighter-than-air variety—unmanned tankers, and dozens of other missions not yet conceived, a top Northrop Grumman official said in August.

Coming soon will be ISR platforms at "extreme altitudes," as well as "swarming" vehicles and groups of combat aircraft under the direction of a single operator. The future RPA fighters will have the ability to turn at 25Gs, he predicted.

The look ahead was provided by Thomas E. Vice, Northrop Grumman's aerospace systems sector president. The company makes the Global Hawk and Triton ISR aircraft. Recently its crewless X-47B experimental aircraft flew off and onto an aircraft carrier using the standard catapult and arresting wires. Northrop Grumman has long been associated with RPAs, due to its Teledyne Ryan heritage and ongoing affiliation with the ISR mission.

All the services are looking at RPAs as ways to conduct missions more effectively and less expensively than are now performed by manned platforms, Vice said, "and this is going to continue."

The remarks are optimistic, however, in the face of forecasts from senior defense leaders that new starts are going to be hard to come by in the coming years. At a conference in August, Dyke D. Weatherington, director of unmanned warfare and ISR at the Pentagon, predicted that fully $1 billion will come out of near-term RPA projects, out of a gross Pentagon budget of more than $45 billion for aircraft in the Fiscal 2015 budget now being developed.

"We will see reductions" in unmanned programs continue, Weatherington said.

Vice, however, was undeterred, saying that just as answering commercial markets has helped prop up defense in recent years, commercial demand for unmanned systems is about to take off. He recommended that the Federal Aviation Administration, for example, establish civilian RPA test facilities for such aircraft, which will come to be embraced by law enforcement, agriculture, and other sectors of the economy as a lower-cost alternative to manned systems. He also urged the FAA to step up its efforts in figuring out how to certify RPAs for operation over civilian areas. So far, he said, only Global Hawk has been given waivers to make such overflights, but more are needed to let the industry bloom.

The foreign market demand for both military and commercial unmanned systems is also "catching up" to the requirements of the US government and industry, he said.

TIME FOR A NEW KEY WEST

The stars have aligned for a meaningful, wholesale overhaul of the nation's military, and the upcoming Quadrennial Defense Review could be the vehicle to achieve it. But unless the service chiefs take personal hold of the process, the US military is likely to come out of the QDR as just a shaved-down—and much more irrelevant—force.

So suggested Mark Gunzinger, a senior fellow at the Center for Strategic and Budgetary Assessments. In a talk for the Air Force Association's Mitchell Institute for Airpower Studies, Gunzinger said the convergence of deep budget cuts, coupled with the end of the long war in Afghanistan and the emergence of new kinds of global threats, make this QDR a golden opportunity to make real change.

Even absent sequestration, the services will see such reduced funds in coming years that they may have "no choice" but to set priorities that may not align with the traditional division of the Pentagon budget into rough thirds for the Army, Navy/Marine Corps, and Air Force, Gunzinger said.

Emphasize reach—such as the future Long-Range Bomber.

Left to the traditional institutional competition between the services, however, the one-third breakdown is exactly what will come out of the QDR, Gunzinger said.

He posited a "new Key West" agreement, harking back to the 1947 deal that created the Department of Defense, the Air Force, and the CIA, as a model for what must happen now if US military forces are to remain credible and relevant against emerging threats. The top leaders, the Secretary of Defense, and their deputies should sit down, away from their constituencies, and hash out just what America must be able to do, militarily, and accept new priorities, Gunzinger asserted.

This need not mean that some services are winners and others losers, Gunzinger argued. The Air Force and Navy have begun anticipating the need for future deeper cooperation and avoidance of duplication by pursuing the AirSea Battle concept. The Army has seen ASB as a threat, but Gunzinger suggested there are many ways the Army could be an equal partner in defeating the rising anti-access, area-denial situation.

The Army, Gunzinger said, could put more emphasis on missile defense, crucial to protecting bases worldwide, and more on its own tactical ballistic missiles. It should also and exploit new technologies, such as directed energy and "rail guns," to ensure the US can preserve its ability to go wherever it needs to.

The Air Force should probably "rebalance" its forces to put greater emphasis on long-range attack—with a new bomber and cruise missiles—and de-emphasize shorter-range fighters, he argued. More remotely piloted aircraft and stepped-up efforts to "dominate the electromagnetic spectrum" will be crucial for USAF, since "that's where they'll be fighting."

The Navy will need to adjust its carrier air wings to include more RPAs, exploit cyber and directed-energy weapons, develop better and new kinds of precision guided munitions, and make its submarine "modular"—reconfigurable for a variety of new missions.

The Marine Corps facility with vertical takeoff and landing—in the form of the F-35 and V-22—will help "complicate any enemy's calculus of where it needs to attack US bases," Gunzinger observed.

The bottom line, though, is that new threats, the end of the war, and severely limited resources mean the services must exact every drop of fighting capability out of the forces they retain, and choices about what goes, what stays, and what is added are not optional.

"If everything's a priority, nothing is," he said.

Air Force Association Veteran Benefits Association (AFAVBA)

Is Proud to Announce a New Insurance Administrator, Marsh U.S. Consumer, a service of Seabury & Smith, Inc.

As an association committed to supporting the total Air Force family, the Air Force Association (AFA), in conjunction with the Air Force Association Veteran Benefits Association (AFAVBA), has offered important insurance products to AFA and AFAVBA members for 59 years. To continue to provide our members with the insurance products and professional service they deserve, Marsh U.S. Consumer (Marsh), a service of Seabury & Smith, Inc., has been selected as the new Insurance Broker for the AFAVBA-endorsed Insurance Program **effective September 1, 2013**.

Personalized assistance is available Monday through Friday from 7:00 a.m. to 5:00 p.m. Central Standard Time at 1-800-291-8480.

AFA INSURANCE PLANS:

- CancerCare Insurance
- Decreasing Term Life Insurance
- Dental Insurance
- Hospital Indemnity Insurance
- Level Term Life Insurance
- Long-Term Care
- Medicare Supplements
- Multi-Benefit Accident Insurance
- Senior Age Whole Life Insurance
- Short Term Recovery Insurance
- TRICARE Supplements

Professional and Personal Service

Marsh U.S. Consumer, a wholly owned subsidiary of Marsh & McLennan, is the world's largest insurance broker, which affords them access to a full range of services to meet your unique insurance needs.

Hearing-impaired or voice-impaired members may call the Relay Line at 1-800-855-2881. Request number 68572-1-1-1.

AIR FORCE ASSOCIATION VBA AFA VETERAN BENEFITS ASSOCIATION

AR Ins. Lic. #245544 | CA Ins. Lic. #0633005
d/b/a in CA Seabury & Smith Insurance Program Management

Senior Staff Changes

RETIREMENTS:

Lt. Gen. Michael C. **Gould,** Lt. Gen. Douglas H. **Owens,** Maj. Gen. Mark W. **Graper,** Maj. Gen. Charles W. **Lyon,** Maj. Gen. William N. **McCasland,** Maj. Gen. Kimberly A. **Siniscalchi,** Maj. Gen. Alfred J. **Stewart,** Maj. Gen. Everett H. **Thomas,** Maj. Gen. Suzanne M. **Vautrinot,** Brig. Gen. Dana H. **Born,** Brig. Gen. James S. **Browne,** Brig. Gen. Richard A. **Klumpp Jr.**

CHANGES:

Brig. Gen. John L. **Dolan,** from Cmdr., 451st AEW, ACC, Kandahar, Afghanistan, to Asst. Dep. Cmdr., US Air Forces Central, Shaw AFB, S.C. ... Brig. Gen. Thomas W. **Geary,** from Dep. to the DCS, Intel., Intl. Security Assistance Force, CENTCOM, Kabul, Afghanistan, to Dir., Intel., SOUTHCOM, Miami ... Brig. Gen. Veralinn **Jamieson,** from Spec. Asst. to DCS, Intel., Surveillance, & Recon, USAF, Pentagon, to Dir., Intel., ACC, JB Langley-Eustis, Va. ... Lt. Gen. James M. **Kowalski,** from Cmdr., AFGSC, Barksdale AFB, La., to Dep. Cmdr., STRATCOM, Offutt AFB, Neb. ... Brig. Gen. Bradford J. **Shwedo,** from Dir., Intel., ACC, JB Langley-Eustis, Va., to Dir., Cap. & Resource Integration, CYBERCOM, Fort Meade, Md. ... Brig. Gen. John S. **Shapland,** Spec. Asst. to the Cmdr., 3rd AF, USAFE-AFAFRICA, Ramstein AB, Germany, to Sr. Defense Official and Defense Attaché, Tel Aviv, Israel ... Brig. Gen. Jacqueline D. **Van Ovost,** from Vice Cmdr., USAF Expeditionary Center, AMC, Travis AFB, Calif., to Dep. Dir., Politico-Mil. Affairs, Europe, Jt. Staff, Pentagon ... Maj. Gen. (sel.) Scott A. **Vander Hamm,** from Dir., Plans, Prgms., Rqmts., & Assessments, AETC, JBSA-Randolph, Tex., to Cmdr., 8th AF, AFGSC, Barksdale AFB, La. ... Maj. Gen. Stephen W. **Wilson,** from Cmdr., 8th AF, Barksdale AFB, La., to Cmdr., AFGSC, Barksdale AFB, La.▪

Index to Advertisers

During the exercises, aircraft surrogates were hijacked and traveled into either Russian airspace or US airspace. Canadian CF-18s and Russian Sukhois then scrambled to identify and follow the hijacked aircraft. In addition, participants practiced handings off control of an aircraft when it left each country's airspace.

"This is a small, relatively inexpensive exercise with a huge payoff," said Joseph C. Bonnet III, NORAD's director of joint training and exercises.

This was the fifth iteration of the Vigilant Eagle series since 2008 and the third to incorporate a live-fly air defense component.

Balancing the Rebalance

Chinese Defense Minister Gen. Chang Wanquan said China doesn't have a problem with the US military's rebalance to the Asia-Pacific region, per se, as long as the strategy is not overly focused on China.

"It is our hope that this rebalancing strategy is a constructive one that could help the peace and stability in the region," he said on Aug. 19 during a joint press briefing at the Pentagon with Defense Secretary Chuck Hagel. "On the other hand, we would like to have this rebalancing strategy balanced on different countries, as well, because the essence of rebalancing—is balance."

***Splish Splash:** A laser guided GBU-10 dropped from a B-1B hones in on a boat at a training range in the Gulf of Mexico. The 337th Test and Evaluation Squadron is testing the bomber's ability to detect, target, track, and destroy small vessels to protect shipping lanes and important sea assets.*

USAF photos

The War on Terrorism

Operation Enduring Freedom

Casualties

As of Sept. 18, 2013, a total of 2,269 Americans had died in Operation Enduring Freedom. The total includes 2,266 troops and three Department of Defense civilians. Of these deaths, 1,783 were killed in action, while 486 died in noncombat incidents.

There have been 19,310 troops wounded in OEF.

Pressing On

Afghan military forces have proved themselves capable in combat, but US and NATO forces are still necessary to suppress the threat of al Qaeda and other terrorist groups in the region, said Marine Corps Gen. Joseph F. Dunford Jr., the top US and NATO general in Afghanistan.

"Over the past few years, Afghan forces have become increasingly competent, capable, and credible," said Dunford on Aug. 8 in a speech he gave via video teleconference from Kabul to the Reserve Officers Association's National Security Symposium in Washington, D.C. Dunford said the Afghans should be able to maintain security once the NATO combat mission ends in Afghanistan on Dec. 31, 2014.

However, Dunford said he was concerned with the results of a recent poll that found the majority of Americans surveyed think the war in Afghanistan was not worth fighting, while nearly half believe all US forces should come home in the next year.

"We still have 60,000 men and women in uniform in harm's way, and the American people need to understand why they are here, what they are doing, and what they are trying to accomplish," he said.

Afghans Show Muscle

The Afghan Air Force participated with Afghan army units in the largest Afghan-led combat operation in three decades, according to an Air Forces Central Command news release.

Operation Seemorgh, launched last July, was meant to clear the Azrah and Hezarak districts of Taliban insurgents, according to the Aug. 8 news release. Two AAF Mi-35s and six Mi-17s participated in the operation's first wave supporting ground forces.

"This was the first completely autonomous Afghan Air Force troop insertion in support of a major operation," said Army Capt. Tom Jones, team lead for the 438th Air Expeditionary Advisory Squadron's Kabul Air Wing partnership. "While the AAF has conducted other troop insertions and air assaults before, they would use coalition support; this time it was done all on their own," he said.

Both Afghan airmen and coalition advisors considered the operation a success, although it was "not complete," stated the release.

"The AAF has demonstrated they have the fortitude to fight for their country and their homeland, and that's something to be proud of," said Jones.

New Mi-17s for AAF

The Afghan Air Force took delivery of three new Mi-17 helicopters at the Kabul Airport, according to a news release from NATO air advisors. The three helicopters arrived disassembled on Sept. 1 in the belly of a Russian Antonov An-124 transport that brought them directly from the manufacturer. They are the first of 12 new Mi-17s that the Afghans are expected to receive in the span of a few months, according to the September release.

"The significance of having these aircraft is each unit will have helicopters with only one variation," said Maj. Greg Douglas, deputy commander of NATO Air Training Command-Afghanistan's J4-M organization. "This streamlines the process for maintenance, operations, and training."

He cautioned against a strategy that "target[s] a specific country."

Chang said China already is noticing a greater US presence in the region, with "the frequency and intensity" of joint military exercises "increasing" of late. These "intensified military activities" do complicate, to a certain degree, the situation in the region, he said through an interpreter. Still, Chang reiterated the Chinese view the Pacific is big enough for "two great countries."

Philippine Basing Access

US and Philippine officials began negotiations in Manila this summer to allow US forces temporary increased access to bases and facilities in the Southeast Asian nation, reported Voice of America.

More US military visitation would allow for "high-impact and high-value exercises that will benefit both sides," said Philippine deputy presidential spokeswoman Abigail Valte, reported the *Philippine Star.*

The main objectives of an agreement are to build a credible defense for the Philippines and improve disaster-response capabilities, she said. Philippine officials have made no secret of their desire for increased military ties with the United States as a bulwark against an increasingly aggressive China, which continues to press disputes with the Philippines over maritime territorial claims.

Combating Sexual Assaults

Defense Secretary Chuck Hagel unveiled seven initiatives to enhance the Defense Department's efforts to combat sexual assault in the ranks. These measures, building on others Hagel announced in May, aim to "improve victim support, strengthen pretrial investigations, enhance oversight, and make prevention and response efforts more consistent across the military services," said Hagel in an August statement.

The initiatives include:

Creating a legal advocacy program in each service to provide legal representation to victims;

By the Numbers

121

The percentage by which the Air Force Reserve met its accession goals. AFR exceeded its goal in the first 10 months of Fiscal 2013 by 1,106—accepting 6,307 recruits, or 121 percent of the target.

Gen. John W. Pauly, 1923-2013

Retired Gen. John W. Pauly, former commander in chief of US Air Forces in Europe, died on Aug. 7 in Colorado Springs, Colo., at the age of 90. Pauly led USAFE from August 1978 to August 1980, retiring from the service after that assignment.

Born in Albany, N.Y., in 1923, Pauly entered West Point in 1942, receiving his commission and pilot wings three years later, according to his official Air Force biography. During the Korean War, Pauly was assigned to the 8th Bombardment Squadron and flew 55 combat missions in the B-26 bomber, amassing 230 combat flying hours.

Pauly served in a NATO assignment in 1956 with 4th Allied Tactical Air Force in Germany as an operations officer within the Bombardment Division and executive officer for the deputy chief of staff of operations. He later returned to the US, assigned to Headquarters USAF in July 1959 as a planning and programming officer in the directorate of plans until 1962, when he became the assistant executive officer to Gen. Curtis E. LeMay, then Chief of Staff.

Several years after leaving the Air Force, Pauly became chief executive officer of Systems Control Technology in Palo Alto, Calif., according to his obituary in the *Colorado Springs Gazette*.

John McCain @SenJohnMcCain
Scandal! Caught playing iPhone game at 3+ hour Senate hearing - worst of all I lost!

AndersFogh Rasmussen @AndersFoghR
I fully support decisions of individual allies. #NATO is alliance of democracies. Democracy doesn't weaken us but is source of our strength

Ensuring judge advocate general officers conduct pretrial investigative hearings;

Providing commanders options to reassign those accused of committing an offense;

Requiring timely follow-up reports on incidents and responses;

Directing DOD's inspector general to regularly evaluate closed investigations;

Standardizing prohibitions on inappropriate behavior; and

Giving victims an opportunity to provide input during the sentencing phase of courts-martial.

Distinguished Flying Crosses

Chief of Staff Gen. Mark A. Welsh III presented the Distinguished Flying Cross to five members of the 33rd Rescue Squadron at Kadena AB, Japan, for their heroism in the air during a grueling and dangerous rescue mission in Afghanistan in 2012.

Recognized by Welsh on Aug. 21 for their intrepid actions in Afghanistan were: Capt. Michael H. Kingry, Capt. Gavin H. Johnson, 1st Lt. Matthew M. Pfarr, TSgt. Scott D. Lagerveld, and SrA. Robert G. Wells. These airmen were crew members of Pedro 83 and Pedro 84, two HH-60G rescue helicopters operating out

Never Forget: *Two beams of light bounce off the cloud cover above New York City's lower Manhattan skyline and the nearly completed One World Trade Center building. This Sept. 11 commemoration recognized the lives lost in the 9/11 terrorist attacks on New York City and the Pentagon and on the hijacked airliner that crashed in rural Pennsylvania.*

USAF photo by David Tacker

In the Velvet Darkness of the Blackest Night: *Capt. Christopher Charron prepares for a night flight during Operation Iron Spear, a two-week exercise at Misawa AB, Japan, that tested the F-16's abilities and the Japan Ground Self-Defense Force's surface-to-air missiles.*

of Bagram Airfield on Aug. 4, 2012. During a 7.5-hour, 320-mile mission on that day, they rescued six wounded New Zealand soldiers along with an Afghan soldier and an Afghan national, in mountainous terrain while under direct enemy fire. They also returned two coalition members killed in action.

World War II Remains Identified

Defense Department forensic scientists identified the remains of Sgt. Dominick J. Licari, 31, of Frankfort, N.Y., an airman who had been missing in action since World War II, announced the Pentagon. His burial took place with full military honors on Aug. 6 in Frankfort, reported the *Utica Observer-Dispatch.*

Licari was a crew member on an A-20G Havoc bomber that crashed in the mountains of what is today Papua New Guinea on March 13, 1944, after attacking Japanese targets, according to the Pentagon's Aug. 2 news release. Investigators excavated the crash site in 2012, recovering Licari's remains, along with those of his crewmate, 2nd Lt. Valorie L. Pollard, stated the release.

DOD scientists used circumstantial evidence and forensic means such as dental comparisons and mitochondrial DNA to help identify Licari. ■

Iraq's Evolving Role

While Iraq continues to struggle with internal threats, its security relationship with the United States has evolved since the end of Operation New Dawn in December 2011. Today, the only presence of US troops in the country is via the Office of Security Cooperation-Iraq, which coordinates military ties and exchanges as well as foreign military sales.

In addition to building up Iraq's security forces, the United States has also worked with the Iraqi government to bolster its military investment in assets geared more for external defense. The Iraqis are acquiring F-16s, and on Aug. 5 the Pentagon announced a proposed package of short- and medium-range missiles, radars, and infrastructure associated with a revamped integrated air defense system, worth some $2.4 billion.

"As the security environment evolves, we are adapting to it, and we want to ensure that [OSC-I] matures," said USAF Brig. Gen. Jeffrey L. Harrigian, US Central Command's deputy director of operations, during an Aug. 6 interview. He said CENTCOM wants to give the Iraqis opportunities and training that can "broaden the aperture" so they not only support internal security but also integrate into activities with the Gulf Cooperation Council and other countries.

[For more coverage of Harrigian's interview check out www.airforcemag.com's archives: "Access and Denial in the Arabian Gulf" and "Rebalancing Engagement in CENTCOM's Area."]

—Marc V. Schanz

China's Stealthy Intentions

While China's J-20 and J-31 stealth fighter programs represent a significant leap forward for the Chinese, observers differ as to whether these programs pose a serious threat to the United States.

According to the Pentagon's recently released China report, China's stealth aircraft are not expected to be operational before 2018. However, Richard Fisher Jr., senior fellow at the International Assessment and Strategy Center in Washington, D.C., said the technology gap that once separated the US and China has narrowed considerably since pictures of the J-20 first surfaced in 2011.

"Both programs and their successors ... represent an attempt by China to match and exceed the United States," Fisher said. "China is not going to settle for parity. Like any great power, China wants its military to be superior."

His comments come in the wake of the release of the Pentagon's 2013 annual report on China's military and security developments. It stated that China was developing its stealth fighters to "improve its regional airpower projection capabilities and strengthen its ability to strike regional air bases and facilities."

Fisher believes China's military capability could eclipse that of the United States by the end of the next decade. The fifth generation fighter programs, he said, are "one part of a much larger program to build a globally powerful military capability and eventually to build a globally dominant military capability."

Other observers seem more ambivalent about them.

Mark Stokes, executive director of the Project 2049 Institute in Washington, D.C., said, "It's not clear exactly what the PLA [People's Liberation Army] is doing and what effect a new fighter would have on air defense systems in the region." He also noted that China's aviation industry has tended to be problematic, though he too acknowledged the advances in China's military technology.

—Brandon Conradis

Gen. David C. Jones, 1921-2013

Retired Gen. David C. Jones, who served as Air Force Chief of Staff and Chairman of the Joint Chiefs of Staff under the Carter and Reagan Administrations, died Aug. 10 at the age of 92.

Though he served in three wars, Jones was best known and most effective as an organizer and administrator, supervising major efficiency and modernization efforts within USAF. As commander of US Air Forces in Europe, he streamlined that organization and created the integrated air headquarters for NATO's central region.

Near the end of his chairmanship of the JCS, Jones told Congress the US military needed an organizational overhaul, because it was suffering from an incoherent chain of command and wasting resources on duplicative service efforts. His comments marked the beginning of a four-year campaign, taken up by members of Congress, that ultimately resulted in the Goldwater-Nichols reforms of 1986.

Born in Aberdeen, S.D., Jones grew up in Minot, N.D. He attended what is now Minot State University but dropped out in 1942 to join the Army Air Corps, and during World War II was a Stateside instructor pilot; he never finished his college degree. Transitioning to bombers, he flew 300 missions during the Korean War, then shifted to the brand-new mission of strategic air refueling. From 1955 to 1957, he served as aide to Gen. Curtis E. LeMay during the buildup of Strategic Air Command. Jones subsequently held a variety of command assignments in USAFE and Vietnam, along the way earning a fighter pilot rating.

As Chief of Staff from 1974 to 1978, Jones led USAF through the transition to the all-volunteer force. During the post-Vietnam defense funding cuts and the days of the "hollow force," he managed to keep the F-15, F-16, and A-10 programs on track.

He was less successful with preserving the B-1, a project that he, as a LeMay-mentored bomber general, had championed. When Jimmy Carter was elected President in 1976, having campaigned that he would cancel the B-1, Jones managed to win a temporary reprieve for the bomber. After six months, however, Carter killed the B-1, and Jones was vilified by pro-defense members of Congress for acceding to the order. Some—such as Sen. Jesse Helms of North Carolina—openly charged that Jones had traded compliance with the B-1 decision for a promotion to be Chairman of the JCS in 1978.

In a later oral history, Jones said when the President makes a decision, "we salute smartly, and we ... try not to undermine that decision." He believed it would be "totally inappropriate" to resign over the issue, as hardliners urged, and said such a move would threaten the principles of civilian control over the military. Jones had witnessed the failed campaign to stop Robert S. McNamara's cancellation of the XB-70 and felt it would hurt the Air Force to wage a similar futile effort over the B-1.

He did succeed in getting Carter to approve beefing up strategic forces—particularly with the mobile M-X missile—in exchange for the Joint Chiefs' support for the second Strategic Arms Limitation Talks treaty. In secret, he also facilitated development of stealth technology and launched what would become the B-2 stealth bomber program, in lieu of the B-1. Jones helped keep the SALT II treaty process alive when Ronald Reagan was elected and considered dropping it.

Jones in the cockpit of a C-5.

Then-Capt. David Jones in Korea, following his receipt of a Distinguished Flying Cross.

Jones was Chairman during the failed April 24, 1980, combined-force raid to free the American hostages in Iran, which he felt was hampered by poor communication and cooperation between the services. He accepted the uncertainties of the operation, saying "we better be willing to take risks" or the country would fail to act militarily when it should.

His frustration with service infighting over the Iran operation hardened his resolve that the military—particularly the roles of the Joint Chiefs and regional commanders—had to be restructured.

Testifying on the defense budget in early 1982, Jones broke from prepared testimony and urged a reorganization "which will allow us to develop the proper strategy, necessary planning, and full warfighting capability." He added that "we do not have an adequate organizational structure today."

The JCS, Jones said, was "basically a committee" requiring unanimous agreement to act. Any one service had a "de facto veto" over any recommendation to the President. He further noted there were "few rewards" for officers who served in joint billets—he suggested such duty be essential for promotion—and pushed for greater authority for the JCS Chairman and regional commanders. He promised to work with the civilian leadership on improving the situation and introduce "legislative proposals" to codify them.

Not much happened with Jones' proposals during his remaining time as JCS Chairman, but he laid out a blueprint for the needed changes in the *New York Times Magazine* in November of that year, after his retirement. In the article, he fleshed out his restructuring ideas, including creation of a JCS vice chairman position. While other top Pentagon leaders initially rejected these proposals, Jones' recommendations gathered momentum and were ultimately codified in the Goldwater-Nichols Act.

In retirement, Jones served on the boards of the Air Force Association, American Red Cross, General Electric, USAir, and US Steel, as well as on the Council on Foreign Relations.

—John A. Tirpak

LOGISTICS SUPPORT THAT'S ALL SYSTEMS GO.

Performance-Based Logistics (PBL) are an effective solution in improving military readiness while saving billions. Under Boeing PBL programs, C-17 flying hour costs have been reduced by 26% since 2004, while the F/A-18 Super Hornet has exceeded readiness targets by 17.5% and the Apache Longbow by 19.3%. An AIA study estimates PBL savings to be $25-$30 billion per year. That's performance we can't afford to lose.

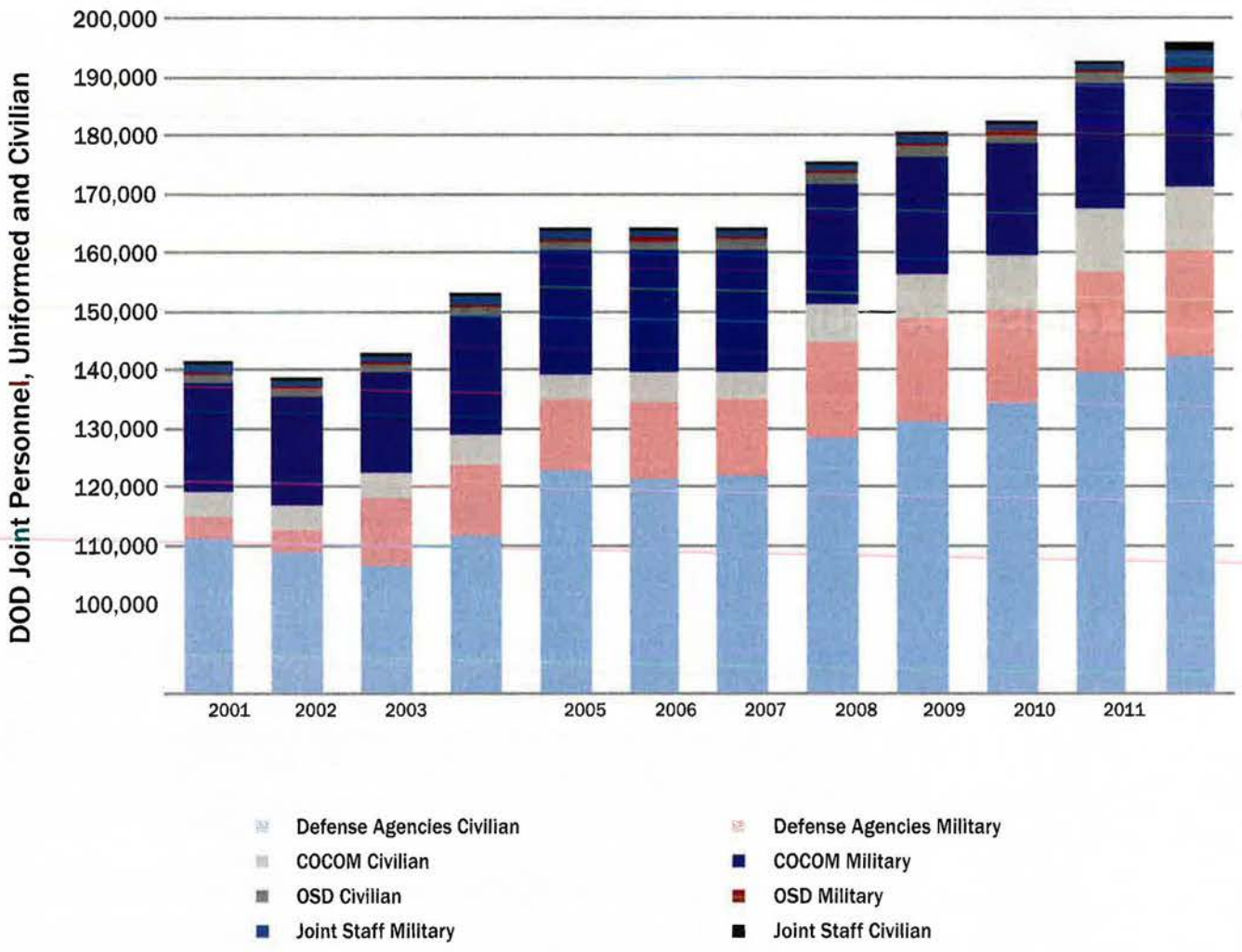
BOEING

chartpage@afa.org

Purple Haze

When it comes to personnel, the Joint world has been a growth industry—for military members and civilians alike. As seen in this chart, the so-called "purple" force had a shade more than 140,000 members in 2001. In 2012, it neared 200,000. The force has ballooned in joint commands, defense agencies, Joint staff, and the like, and this does not include contractor civilians. The Office of the Secretary of Defense alone numbers around 2,700. The Office of the Joint Chiefs of Staff weighs in at 4,244 people (some of whom came from the now-defunct Joint Forces Command). Budget pressure has made the joint world a fat target, says a new report from the Center for a New American Security, a Washington, D.C., think tank. "Before the military considers painful cuts to end strength and combat capabilities," says CNAS, "the excess overhead of staff and headquarters should be reduced."

Soaring Growth of Joint Manpower



Source: Reprinted with permission from "The Seven Deadly Sins of Defense Spending," by David Barno, Nora Bensahel, Jacob Stokes, Joel Smith, and Katherine Kidder, Center for a New American Security, Washington, D.C., June 2013.

Verbatim

verbatim@afa.org

By Robert S. Dudney

Report From Utopia

"The only way to be assured that Syrian chemical weapons will not be used in the future is ... through a successful international effort. ... [This includes] an urgent effort to convene without conditions the long-delayed peace conference the United States and Russia announced in May. A resolution in the UN General Assembly to condemn any further use of chemical weapons, regardless of perpetrator, would be approved overwhelmingly, and the United States should support Russia's proposal that Syria's chemical weapons be placed under UN control. ... This could lead to convening the Geneva peace conference, perhaps including Iran, that could end the conflict."*—Former President Jimmy Carter, op-ed in the* **Washington Post,** *Sept. 11.*

Report From the Grassy Knoll

"No one doubts that poison gas was used in Syria. But there is every reason to believe it was used not by the Syrian Army, but by opposition forces, to provoke intervention by their powerful foreign patrons, who would be siding with the fundamentalists."*—Russian President Vladimir V. Putin, op-ed in the* **New York Times,** *Sept. 11.*

Bred in the Bone

"In my last days as Defense Secretary earlier this year, I made one final effort on Capitol Hill to persuade the leadership of Congress not to let sequestration happen. I described the serious impact on defense readiness and the real danger that it would hollow out the force. Every member of the leadership, Democrat and Republican, agreed with my analysis but to a person admitted there was little that could be done. I persisted. ... Finally, one member ... said: 'Leon, you don't understand. The Congress is resigned to failure.'"*—Former Secretary of Defense Leon E. Panetta, op-ed in the* **Washington Post,** *Sept. 2.*

Days of Goons and Gulags

"He's about lost power, lost empire, lost glory. It will be very difficult to make headway as long as he's there."*—Former Secretary of Defense Robert M. Gates, referring to Russian President Vladimir Putin,* **New York Times,** *Sept. 2.*

The Buck Skips Here

"First of all, I didn't set a red line [on Syrian use of chemical weapons]. The world set a red line. The world set a red line when governments representing 98 percent of the world's population said the use of chemical weapons are abhorrent and passed a treaty forbidding their use even when countries are engaged in war. Congress set a red line when it ratified that treaty. Congress set a red line when it indicated—in a piece of legislation titled the Syria Accountability Act—that some of the horrendous things that are happening on the ground there need to be answered for. ... Point No. 2, my credibility is not on the line. The international community's credibility is on the line. And America and Congress' credibility is on the line because we give lip service to the notion that these international norms are important."*—President Barack Obama, remarks at a Stockholm press conference, Sept. 4.*

Hallucinations

"They are opening the champagne in Iran and probably switching to higher gear on their way to nuclear weapons. If anyone really thinks this President will strike Iran based on evidence that Iranians have crossed the red line towards nuclear weapons, they must be hallucinating."*—Uri Ariel, member of the Knesset in Israel, referring to President Obama's waffling on what to do about Syria,* **Los Angeles Times,** *Sept. 1.*

No, Really, It's Been Fun

"What was she going to be doing anyway? Something more strenuous than sitting in a chair? We don't concede there's been any stress involved."*—Ronald Herrington, lawyer for Naval Academy midshipman accused of rape. He referred to the accuser, who said she was exhausted from spending several days on the witness stand,* **Washington Post,** *Aug. 30.*

Two-War Memory

"Will we be able to look in more than one direction at a time? The cornerstone of US foreign and security policy since the end of World War II was that America would be able to prevent a World War III by retaining sufficient military force to keep regional conflicts from spreading into global conflicts. The linchpin of the ability to limit conflict is the ability to fight two wars at once. Shuttering combat commands, trimming war plan requirements, and shuttling forces from one crisis to the next are all indicators that the global safety net against future global conflicts is atrophying to dangerously low levels."*—James Jay Carafano, Heritage Foundation, from "Omens of a Hollow Military,"* **The National Interest,** *Sept. 4.*

Quack, Quack

"So far, armed drones have been used either over countries that do not control their own airspace (Somalia, Mali, Afghanistan) or where the government has given the United States some degree of permission (Yemen, Pakistan). Those circumstances are rare. When the foe can actually defend itself, the use of armed drones is extraordinarily difficult. ... Drones are slow and noisy; they fly at a low altitude; and they require time to hover over a potential target before being used. They are basically sitting ducks."*—Audrey Kurth Cronin, George Mason University, from "Drones Over Damascus,"* **Foreign Affairs,** *Sept. 2.*

Nice While It Lasted

"Nuclear weapons have not been central to America's national security for the past two decades because its primary foes—Serbia, Iraq, Afghanistan, and al Qaeda—did not have them. ... But times are changing. ... China has become more assertive in pursuing revisionist claims in East Asia, confronting America's allies, and building military capabilities—including anti-ship ballistic missiles and submarines—tailored for a fight with the United States. ... Even relations with Russia, America's partner in arms control, are becoming more competitive: The civil war in Syria bears every hallmark of a Cold War-style proxy battle. In short, great-power political competition is heating up once again, and as it does, nuclear weapons will once again take center stage."*—Matthew Kroenig, Georgetown University, from "Think Again: American Nuclear Disarmament,"* **Foreign Policy,** *September/October issue.*

NATO, v. 4

The Atlantic Alliance aims to keep relevant by embracing change.

NATO is redefining itself for the third time in its history.

Forged in 1949 to protect Western Europe from Soviet attack, the Alliance began taking on security issues outside of its immediate area and accepted new members to the east following the fall of the Berlin Wall in 1989 and end of the Soviet Union some two years later.

After the 9/11 terrorist attacks, member nations recognized that non-state violent extremists and the failure of nation states threatened global, and thus their own, security. The Alliance decided to use its organization to promote the stability of democratic nations.

Now, with NATO's combat mission ending in Afghanistan in 14 months, the 64-year-old Alliance again faces "a major inflection point," said Deputy Secretary General Alexander Vershbow in a speech in Paris in late June.

"This time, however, the challenge is very different, because the next adjustment will require that the Alliance achieve a new balance in the contributions made on the two sides of the Atlantic," he said. "To put it bluntly, it will require the Europeans to do more—both individually and collectively—at a time when financial conditions are bleak on both sides of the Atlantic."

NATO is preparing for Resolute Support, its post-2014 training, advising, and assisting mission in Afghanistan. Plus, it will still have a rump force providing stability in Kosovo and air and naval forces countering piracy off Africa's east coast.

However, barring an unforeseen conflagration, the Alliance's operational tempo will sharply decrease after some 20 years of major peacekeeping and stability activities that started in the Balkans in 1995 and continued in Afghanistan in 2001 and Libya in 2011. At the same time, the United States is refocusing attention on the Pacific, and some see US and European interests diverging, perhaps to an unprecedented degree.

"The big question is: What is NATO for, now that it is drawing down from operations?" said an Alliance official during an interview at NATO headquarters in Brussels, Belgium, in late June. "There is an imperative for NATO to remain visible, to remain credible post-2014."

Ballistic missile defense—in the form of protecting European member states' territory and population centers—is taking on greater importance within the Alliance, as is the protection of the Alliance's cyber networks. NATO is also considering taking on the role of training Libyan security forces as part of its work fostering democratic states.

To preserve the 28-member organization's relevance, NATO officials intend to focus on operational readiness via expanded training and exercising.

"To have people out there demonstrably training, practicing, and doing things together is the thing which we believe will maintain the credibility of NATO," said the official. "So there is that imperative to get out there and train."

Connected Forces, Ready Forces

Achieving greater interoperability among member states is crucial to keeping the Alliance capable and poised to engage on a large scale. To support this, NATO announced the Smart Defense initiative in Munich in 2011. It seeks to foster greater harmonization of defense priorities among the allies so they individually procure modern capabilities—or pool resources to jointly field new systems—that best serve the Alliance.

The goal is to address capability shortfalls in areas such as strategic airlift, electronic attack, and intelligence, surveillance, and reconnaissance while focusing on operational readiness. NATO adopted the Connected Forces Initiative

in February 2012 to support the concept of "NATO Forces 2020." These will be modern, tightly connected forces properly equipped, trained, exercised, led, and ready to go if called upon.

In a blog posting in early August, USAF Gen. Philip M. Breedlove, NATO Supreme Allied Commander, Europe, said Alliance members had "achieved an unprecedented level of cohesiveness" after fighting together in Afghanistan for more than 10 years. "We are operating as a seamless integrated team right now, and we aim to maintain this level of cohesion ... by intensifying our education, training, and exercises across the air, land, and sea domains," he said.

The Alliance has said the NATO Response Force—the high-readiness, technologically advanced, multinational force that can rapidly deploy, if needed—will become even more important post-2014 to help demonstrate the Alliance's operational readiness and to serve as a test bed for NATO transformation.

Training costs money, however, and there isn't much around. As a result, CFI and Smart Defense, originally seen as progressing on dual tracks, are looking more like they will evolve more sequentially in nature, with the concentration on CFI in the short term.

"That doesn't mean there will be no procurement, but I think we have to acknowledge that it is going to be less than perhaps we would like," said the NATO official.

Same Old B.S.

Tight fiscal times also agitate the Alliance's old itch: NATO's burden-sharing debate, as old as the Alliance itself, with peaks and valleys over the years. There is now a peak. The United States bears nearly three-quarters of the Alliance's costs today, up from about 63 percent in 2000. This is despite having nine more Alliance members now than back in 2000—and 12 more compared to 1998.

"It is grossly unfair [to] America," said the NATO official.

A great burden-sharing divide, however, also exists among European members, with Britain, France, and Germany providing 88 percent of non-US Alliance defense spending.

With the euro crisis showing no signs of abating in the near term, more and more European nations are slipping below NATO's hoped-for level of defense outlays. This calls for each member state to spend at least two percent of gross domestic product on defense. Only four NATO members are now at, or above, that level: the United States, Britain, Estonia, and Greece. That's down from nine in 2003.

Further, the US is the only NATO member with wide-ranging capabilities. "America could go to war tomorrow and have all the capabilities required in her arsenal to win," said the NATO official. Meanwhile, "there are a number of broad-spectrum nations in Europe left, but there are no full-spectrum nations."

For example, France, one of those broad-spectrum allies, required help from the United States, Canada, and the United Kingdom in the form of airlift, aerial refueling, and overhead intelligence, surveillance, and reconnaissance for its military intervention into Mali earlier this year.

European Alliance members have mulled over the creation of a European full-spectrum capability. There is no consensus, however, on whether that would help the Alliance or be politically divisive. In fact, recognizing the potential corrosive effect of delineating a European NATO and a US NATO, talk is now shifting to creating "coherent forces" within the Alliance, without specifying the centering on Europe. Some refer to this idea as "burden pooling."

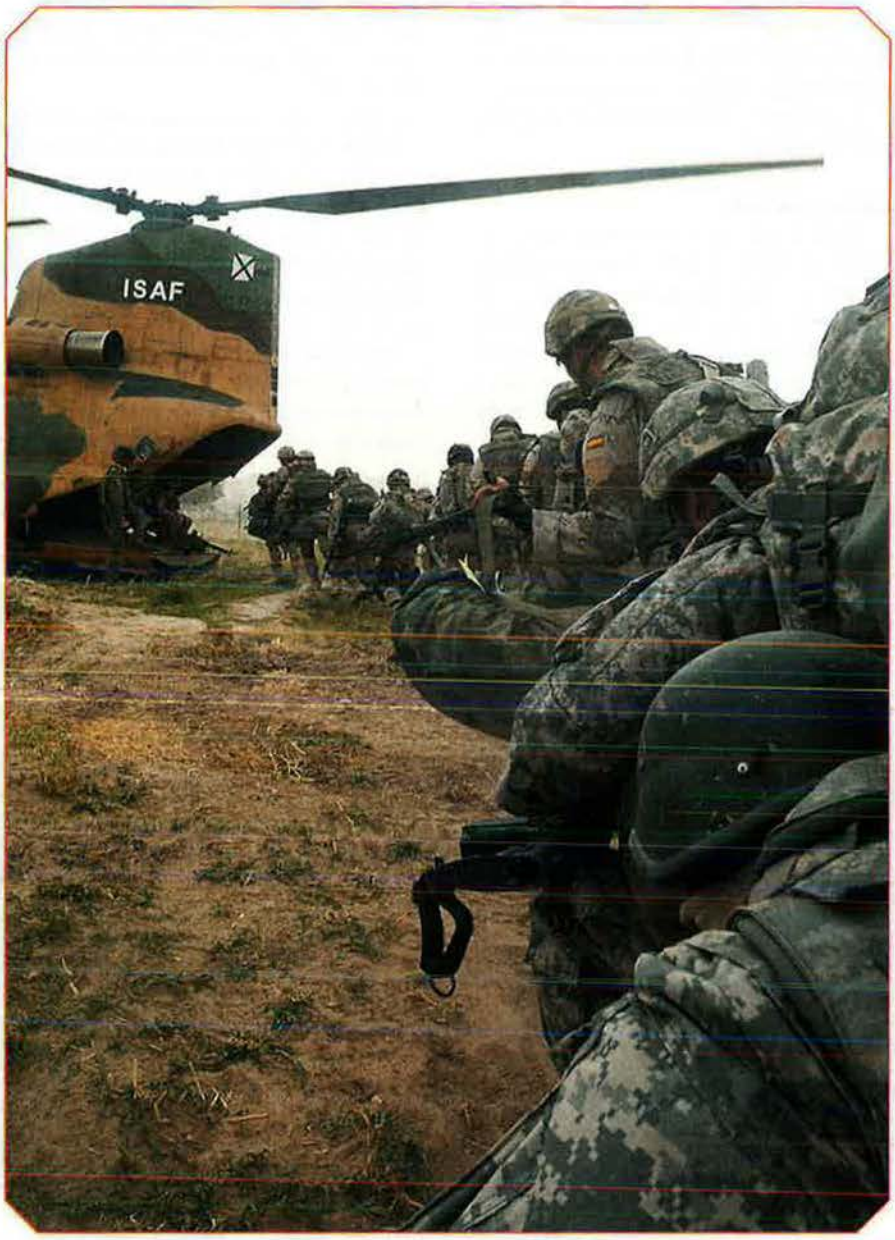
The Alliance would develop these coherent forces "in a coordinated way,

Maryland Air National Guard A-10s are readied on the ramp at Amari AB, Estonia, before a sortie for Saber Strike, a multilateral command post and field exercise. Saber Strike aims to improve interoperability between the US and partner nations.

DOD photo by SSgt. Benjamin Hughes

By Michael C. Sirak, Executive Editor

NATO photo



US and Spanish soldiers in 2008 prepare to board a CH-47 in Afghanistan for an International Security Assistance Force mission.

among them, the Alliance Ground Surveillance system will revolutionize NATO's ability to monitor developments on the ground from overhead, vastly improving the Alliance's situational awareness during operations.

For more on NATO's AGS, see airforcemag.com, search "NATO's New Eyes in the Sky."

In addition, 10 NATO members and two Alliance partners came together in a Strategic Airlift Capability consortium to procure three C-17s. This group now operates them to meet partner, international relief, and national needs.

"This is a perfect example of smart cooperation: nations working together to provide a capability which they could not afford on their own," said NATO Secretary

based on framework nations that have a broad spectrum of capability," said the NATO official. For example, Estonia and Denmark could build on the experience they have in operating closely with Britain in Afghanistan to provide certain capabilities.

Alliance officials presented this idea to NATO Defense Ministers at their June meeting in Brussels. "There was enough enthusiasm for it to be taken forward and developed as another track to look at this problem" of burden sharing, the NATO official said. Germany has agreed to take the lead in determining what a framework nation might do in this regard.

Looking forward, NATO members are already pursuing joint acquisitions. Chief

NATO's new headquarters complex, shown here in March 2013 under construction, is right across the street from its current HQ.

General Anders Fogh Rasmussen, in July during a trip to Papa AB, Hungary, to visit the Heavy Airlift Wing that operates the SAC C-17s.

Further, the Alliance has already identified some 30 other Smart Defense joint projects, such as pooling maritime patrol aircraft, establishing a multinational rotorcraft aviation training center, and jointly procuring remotely controlled robots to clear roadside bombs.

Smart Defense also seeks to get Alliance members to avoid overinvesting in capabilities that the Alliance doesn't need. For example, NATO has been providing fighter aircraft to protect the airspace of Alliance members Estonia, Latvia, and Lithuania under the Baltic Air Policing mission. "We still don't want those states to spend their limited funds on fighter aircraft, of which we have a surplus already in the Alliance," said the NATO official. Thus far, the payoff to the Alliance is that those nations have been able to provide funds for NATO operations.

USAF photo by SSgt. Austin M. May

A British Typhoon flies off the tail of an RAF TriStar tanker during a formation flight.

Cyber on the Radar Screen

NATO members have the potential to build on existing constructs, such as the European Air Transport Command—in Eindhoven, Netherlands—which brings together Belgian, Dutch, French, German, and Luxembourgian airmen to fly airlifters and tankers under a common operational umbrella. "A logical step forward would be others coming in to this, possibly including the SAC," said the NATO official. "There are plenty of options for things that ought to be acceptable because [they involve] support rather than combat functions."

During their June meetings in Brussels, NATO Defense Ministers devoted, for the first time in the Alliance's history, a formal session to discussing cyber defense. "Cyber has been on the radar screen, but not ... where they would actually discuss [it] as a separate item," one NATO official said.

That event reflected the growing significance cyber defense is assuming within the Alliance. The aim is now to protect NATO's networks, today spanning the globe. NATO has been defending its networks for years, but as the Alliance has branched out into places like Afghanistan, they have become more exposed and therefore potentially more vulnerable. Thus, the current push is "to centralize the protection," said the official.

The Alliance intends to complete by the end of October an upgrade to its NATO Computer Incident Response Capability Technical Center, located at Supreme Headquarters Allied Powers, Europe, in Casteau, Belgium. The new software and equipment will enable the center's staff to be "better aware of what is going on with our networks, meaning able to detect anomalous activity" and "respond to it," said the official. The center has a staff of some 70 personnel and is expected to grow, including the addition of two newly forming rapid-reaction teams to respond to cyber incidents.

NATO's 2011 cyber policy recognized that member states have a responsibility to take care of their own networks but that the Alliance has a role in helping them increase their national cyber resiliency. The Alliance plans to do this by advocating certain cyber practices through its defense planning process to ensure a minimum level of cyber defense where national and NATO networks interconnect.

"We need allies to do their share" by properly monitoring their networks and having a strategy in place, including a cyber "fire brigade" to respond to attempted intrusions and vulnerabilities, said the NATO official. However, "everybody has to figure out their solutions themselves."

NATO is contemplating what role it should have in coming to the defense of a member state that requests assistance when under cyber attack. At the June session, the Alliance's Defense Ministers agreed that cyber defense is a matter of collective defense. They intend to take up the issue again at their next meeting in October.

"The question might sound simplistic, but it is actually quite difficult. What is NATO's role in assisting allies?" asked the official. Already, there is the recognition that it is infeasible to attempt to build the cyber expertise within NATO headquarters to help protect members. "Allies have said, 'Forget about building a NATO cyber army.' This is not going to happen," said the official. Instead, "you have to do it differently. You have to find a way to connect the dots where allies help allies."

European Missile Umbrella

That model would be similar to how the United States, Germany, and the Netherlands stepped up with Patriot missile defense batteries when NATO partner Turkey requested help in bolstering its defenses to protect against Syrian missiles. "We didn't need to have a core NATO army or NATO Patriots," said one Alliance official.

Along with cyber defense, protecting NATO territory against ballistic missile attack is a mission of growing importance. Already, NATO has invested to shield its deployed forces from ballistic missile threats during out-of-area operations. Now, it is working to defend its civilian populations at home in Europe from mis-

USAF photo by SSgt. Ryan Whitney

Spanish military members monitor and maintain network access during Combined Endeavor 2011, a multilateral communications exercise. It involved nearly 40 NATO, Partnership for Peace, and strategic security partner nations.

siles emanating, as Vershow said in June, "from outside the Euro-Atlantic area, not from Russia."

At its Chicago summit in May 2012, NATO declared an interim capability for ballistic missile defense. This meant the Alliance had installed and tested the command and control element at Allied Air Command headquarters at Ramstein AB, Germany, and this system is able to provide commanders with a comprehensive, real-time operational air picture so they could employ missile defense assets effectively.

Member states will voluntarily supply those assets: sensors and anti-missile interceptors. Today, they are in the form of the European Phased Adaptive Approach (EPAA) Phase 1 system, the US contribution to protecting NATO's European territory. Phase 1 comprises a Navy Aegis ship available in the Mediterranean, equipped with Standard Missile-3 interceptors, as well as an AN/TPY-2 surveillance radar based in Turkey.

With the C2 and EPAA elements in place, the Alliance declared it has the ability to protect "southern NATO Europe against a ballistic missile attack." Since the ultimate goal is to protect the entire NATO territory from increasingly complex threats, the Alliance intends over the next several years to mature the interim capability into an initial operational capability that features an enhanced C2 element, along with more sensors and anti-missile missiles. Further down the road, early next decade, NATO expects to declare a full operational capability when an even more robust shield is in place.

At this point, however, it is not clear what specifically has to happen to reach IOC. "We are still in a discussion on these issues," said another NATO official during an interview in Brussels. "We have not yet defined what should be part of the package that would allow us to move to that next step."

EPAA is not synonymous with NATO missile defense, even though it is the primary component right now—and may be for some time. Some European members have announced plans to contribute. The Netherlands, for example, is modifying four air-defense frigates with missile defense radars. France plans to develop an early warning capability and long-range radar. Spain has agreed to host four US Navy BMD-capable Aegis ships at Rota by 2015.

As those contributions take shape, the United States is beefing up EPAA, working toward Phase 2. It will add a land-based SM-3 interceptor site in Romania in 2015 and incorporate a new iteration of the interceptor, the SM-3 Block 1B. Plans then call for another land-based SM-3 site in 2018, this time in Poland, and introduction of the more sophisticated SM-3 Block 2A interceptor for EPAA Phase 3. Unclear is whether NATO will tie any phase of EPAA to the IOC milestone. "You could argue that this is what we should do, but this point has not been made yet," said the official.

The BMD realm is one area where NATO officials have sought to engage Russia in substantive cooperation as a means

Photo by Andrea Hohenfirst

NATO photo

US Marine Corps Gen. Joseph Dunford, ISAF commander, greets NATO Secretary-General Anders Fogh Rasmussen in Afghanistan. Rasmussen is a fan of "smart cooperation"—nations pooling resources to gain capabilities they couldn't afford on their own.

of transforming the NATO-Russia security relationship. However, so far, Russian rhetoric hasn't advanced much beyond regarding NATO's defensive shield as a threat to Russia's strategic nuclear missile force, thereby stymieing real progress beyond activities such as computer-based missile defense simulations.

"We still have a lot to do to build up trust and confidence and to get over our shadows of the Cold War," said the NATO official. "This is much more difficult than everyone thought and it is also frustrating as far as I am concerned because I would like to see much more progress, and it is not happening right now."

At NATO's May 2012 Chicago summit, Alliance members called for establishment of a NATO-Russia data fusion center, where the two parties would share early warning data and other information on missile threats, and a NATO-Russia planning and operations center, where they would plan and coordinate missile defense operations together. So far, Russia has not embraced these proposals.

The NATO AWACS program is an example of successful pooling of resources.

"If Russia doesn't want to cooperate, then it will be a huge missed opportunity," said NATO's Vershbow in a June missile defense speech in London. "But life will go on. We will move ahead with NATO missile defense as planned, because it is critical to the collective defense of our people and our territories in this 21st century."

Resolute Support

When NATO's International Security Assistance Force completes its combat mission in Afghanistan at the end of 2014, the Alliance will lead a follow-on mission called Resolute Support to help Afghan National Security Forces sustain their capability to handle internal threats and also become stronger.

"The new mission will not be ISAF by another name," NATO Secretary General Anders Fogh Rasmussen told reporters in early June, following meetings of the Alliance's Defense Ministers in Brussels. It was there that the Alliance adopted the detailed concept for Resolute Support.

This endeavor "will be different and be significantly smaller," said Rasmussen. "Its aim will be to train, advise, and assist the Afghan forces—not substitute for them."

Resolute Support calls for a force of between 8,000 and 12,000 personnel; a regional approach; and the training, advisory, and assistance activities generally taking place at the corps level, not at tactical echelons.

Planning for Resolute Support, now some 15 months away from start, is underway.

NATO members, perhaps not all, will contribute manpower to the Resolute Support force, as will some non-Alliance partner nations. Already some 10 non-NATO countries are involved with NATO in the planning process for generating the troops, said the official. The Resolute Support coalition will be smaller in number than the 51-member ISAF coalition since the need for ground forces is much less.

The Resolute Support force will include teams of trainers, advisors, and mentors; elements to protect and logistically sustain them; and administrative support and "other bits and pieces," said the NATO official in an interview at Alliance headquarters in late June. The actual training, advising, and assisting presence will comprise "less than 25 percent" of the total force.

"Close air support may still be necessary," as part of force protection, but "in a much more limited way than now" and "absolutely and solely in support of our own forces," said the official.

Similar to ISAF, Resolute Support's regional approach will include a hub in Kabul and one in the country's north, south, east, and west. In each region, one NATO member will serve as the "framework nation," playing the lead role for coordinating activities in that area. Germany will lead in the north, Italy in the west, and the United States in the south and east.

Resolute Support training will occur at the Afghans' national-level security academies and institutions, with NATO instructors teaching at them. Britain is taking the lead in helping the Afghans establish a new officer academy.

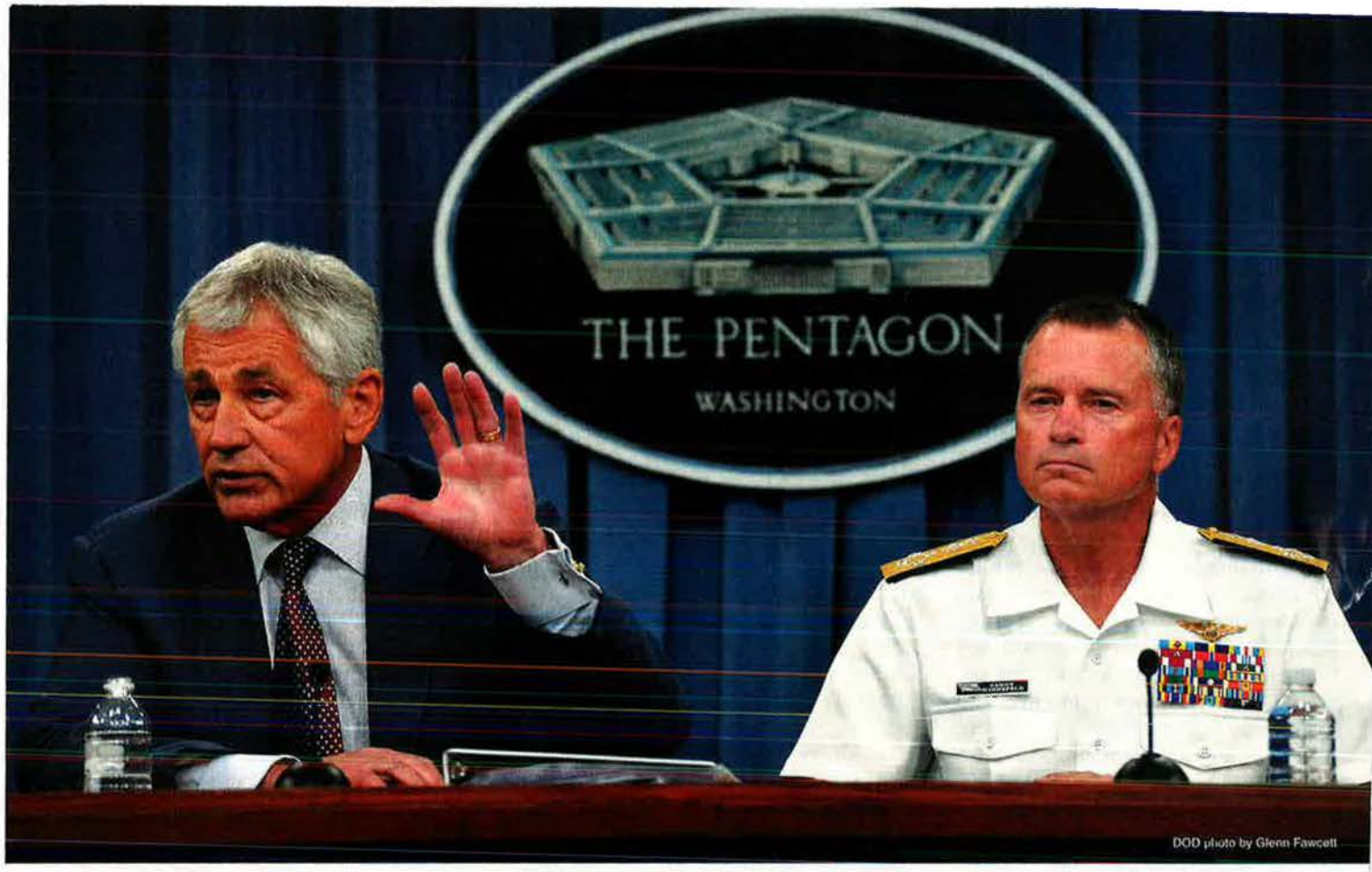
The advising work will entail placing mentors in Afghan security ministries to work alongside senior local officials to provide advice on topics such as force planning. There will also be mentors working at the operational level with Afghan senior staffs.

The assisting activities will involve providing technical help to Afghan special forces. In some cases, this "may drop down to the tactical level," said the official. It could include airlift and intelligence, surveillance, and reconnaissance support "in certain, very controlled and limited circumstances."

Since the development of the Afghan Air Force will not be complete by the end of 2014, the United States will continue to lead efforts to train Afghan airmen in parallel to the Resolute Support activities. NATO expects the AAF to be fully operational around 2017.

NATO's coalition has been working to bring Afghan security forces up to a point of self-sufficiency. "While they are capable of dealing with all security threats within the country, their sustainability is not quite so certain," said the official. With Resolute Support, "what we need to do is to build a little bit more robustness ... such that they become very quickly completely self-sustaining."

"We are still at quite an early stage," but "a lot of the detailed work is going on," said the NATO official. The Alliance is proceeding in a measured way and does not intend to make decisions too far in advance. "We need to retain the flexibility to adjust the mission right to the point of execution," said the official. With so much still to change in Afghanistan over the next 15 months, the measured approach seems the logical way to go. ■



DOD photo by Glenn Fawcett

Industrial Base on the Edge

By John A. Tirpak, Executive Editor

Sequestration is imperiling what's left of the Arsenal of Democracy.

Budget sequestration is pummeling the defense industrial base, accelerating its contraction. Continuing uncertainty about defense spending and the evaporation of new programs mean more layoffs and hiring freezes are coming. The US could lose its combat edge in some critical areas of designing and manufacturing unless action is taken, but with little money to spend, the Pentagon must be extremely selective in how and when it will intervene to save crucial suppliers.

Defense Secretary Chuck Hagel, laying out sequestration's consequences in a late July press conference, said if the spending limits roll on into Fiscal 2014—which starts this month—they would trigger "a decade-long modernization holiday."

The US military would not be able to replace obsolete or worn-out systems, "many of which are already near the end of their service lives," Hagel said, and the nation could soon find itself overmatched by better-equipped adversaries.

"We ... have to consider how massive cuts to procurement and research and development funding would impact the viability of America's private-sector industrial base," he warned.

Adm. James A. Winnefeld Jr., vice chairman of the Joint Chiefs of Staff, echoed Hagel's remarks in the press conference, saying, "We have to keep our industrial base alive."

Before adjourning for its August recess, Congress showed little interest in undoing sequestration, and senior Pentagon officials could guess why. Army Chief of Staff Gen. Raymond T. Odierno told reporters earlier in the summer that in his dealings with members of Congress, none reported being deluged with letters from constituents complaining about idled military units, plant closings, or layoffs, so the members didn't feel any urgency to act.

Rep. Adam Smith (D-Wash.), ranking member of the House Armed Services Committee, offered his perspective at an August hearing.

The appetite to reverse sequester, he said, is "lessening instead of growing around here" because "the sky didn't fall. The economy didn't completely collapse when sequestration happened."

He likened the circumstance to the classic tale of the frog that boils to death in a slowly warming pot.

Sequestration cuts would "have a devastating impact on the industrial base," Smith asserted, adding, "by 'industrial base,' I mean jobs. I mean manufactur-

Defense Secretary Chuck Hagel and Adm. James Winnefeld Jr., vice chairman of the Joint Chiefs, lay out the cost of continued sequestration. Industry would be hit hard.

ing jobs, good jobs that really help our economy." While those imperiled jobs are defense-related, he said, they "build skills and expertise that then helps us in the commercial sector as well. We would lose that also."

Elana Broitman, the Pentagon's chief of manufacturing and industrial base policy, said she thinks she understands why there isn't more alarm about the situation. For one thing, big aerospace companies have been doing well for some time, and even in the last few weeks, their financial reports have been "rosy," she said in an interview with *Air Force Magazine*. That's because the bad news in defense has been offset by the good news in higher demand for their commercial products. The predicted calamity of waves of unemployed aerospace and defense workers hasn't come true—yet.

However, "it's coming," Broitman said. "And it's really next year that we're going to see some big fallout." The delayed reaction has to do with the inherent slowness of the defense procurement process, she explained: Canceled orders and deferrals of contracts from last spring and earlier won't start affecting companies for a few months, as they work off existing backlogs. Then—especially if sequester rolls on—the pink slips will come.

Sector by Sector, Tier by Tier

"The reality may be a little slow to catch up," she said.

Moreover, big contractors have seen this situation coming and have taken steps to prepare, she said: They're reducing overhead, "doing some layoffs," closing facilities, and tightening up wherever possible. The "unfortunate" side effect of their being good managers, she said, is that there's not as "stark of an impact" to point to, illustrating the danger to the industrial base, even though the alarm needs to be sounded.

Broitman worries that because big companies have healthy bottom lines right now, other decision-makers in Washington will think "we're all, communally, off the hook." It's blunting the "broader public pressure or congressional review" that "the problem may not be as sharp right now, when it needs to be sharp." Broitman reported that the pace of congressional contacts to her office hasn't increased much in recent months.

Members of the Aerospace Industries Association are already feeling the bite of sequester and the broader defense downturn, AIA President Marion C. Blakey said in an interview.

"We are seeing our supply chain very negatively impacted," she said. Citing an unpublished June AIA survey of member executives, she said 88 percent reported having been affected by defense budget cuts; 84 percent have seen reduced sales or profits; and "100 percent are expecting negative impacts as this goes forward."

Moreover, 50 percent of those surveyed said they'd already resorted to hiring freezes or layoffs, and 60 percent said they've reduced production. "Even we were a little bit taken aback" by the numbers, Blakey admitted.

While the major aerospace companies have the cushion of their commercial lines to help soften the defense downturn, smaller companies in the lower tiers of supply may not be so lucky. If they rely on just a few defense contracts—or just one—they may not be able to ride out the deeper austerity measures that are coming and may leave defense work or go out of business. If they provide a highly specialized and key capability, that's a serious problem.

This was not unexpected, and Broitman said the Defense Department has been trying to prepare for the situation for a few years now. DOD undertook what it called its sector-by-sector, tier-by-tier, or S2T2, review of the industrial base over the last two years, looking for single-point-of-failure specialties whose exit from the supply base would knock out a number of critical defense projects.

Lockheed Martin photo by Matthew Short

An F-35 takes on fuel from a KC-135 tanker during a test flight over the Pacific Ocean. A long hiatus is expected between the F-35 and whatever comes next.

Lockheed photo by Alan Radecki

Lockheed Martin's "Skunkworks" in Palmdale, Calif. Pentagon acquisition chief Frank Kendall sees it as a possible model to preserve cutting-edge talent and capabilities in lean times.

About 12 industrial sectors are on the endangered species list, Broitman said. They include "the missile sector, the space sector, ground vehicles, radios [and] ... rotary wing" design or component supply, among others she declined to name. For example, according to DOD's 2012 mandatory report on the health of the industrial base, numerous military helicopters depend on bearings produced by just one company.

The 2012 "Annual Industrial Capabilities Report to Congress" cited fragility in other sectors, such as:

- small turbine engines that power cruise missiles
- solid rocket motors for weapons and launch vehicles
- heavy castings and forgings
- fuzes
- radar components and the ability to package them into advanced AESA (active electronically scanned array) radars.

The report also assessed potential restricted supply of certain strategic materials, such as titanium, beryllium, and rare earth elements.

Broitman said DOD won't provide specifics on its most imperiled suppliers because the data are proprietary and were shared with the Pentagon in confidence.

There are some ways DOD can intervene to save an industrial capability if one is imperiled. Title III of the Defense Production Act allows DOD to use a wide variety of techniques to help out a company that offers a unique and critical product. These can include spreading out a buy over a certain amount of time to loans to mandating a "buy American" clause in defense contracts, "so the US production line doesn't disappear and we don't have to go overseas, where that really could be the noose around our neck on that system," Broitman said.

"You can get relatively creative" with these interventions, she continued. In a recent case, DOD allowed a contractor in financial distress, to "use our assets—which we were eventually going to do anyway—to collateralize some debt to tide them over."

The ManTech (Manufacturing Technology) program broadly allows DOD to invest in production capabilities to create or maintain a US capability, to make production more efficient and possibly create competition, all with the idea of realizing an ultimate return on the investment.

In some cases, there's no point in trying to "beat the globe," she said, and retain a US production base for a product widely and cheaply available worldwide.

There are "different tools we can use," she said, "but our overarching goal is definitely to save those critical capabilities" while avoiding the unnecessary use of taxpayer dollars "especially in this [financial] climate."

Broitman noted that one of the signs that DOD takes the industrial base seriously is the fact that a number of efforts like ManTech and DPA III have recently

been consolidated under her office, and the job has been elevated to the assistant secretary level.

The Defense Department "must increasingly tailor its relationships and policies to specific circumstances" in industry, according to Frank Kendall, the Pentagon's acquisition, technology, and logistics chief. In 2011, he said "a long hiatus between new program starts in a given area can call into question the continued existence of experienced design teams and the body of knowledge they bring to development of certain types of products."

Back to Skunk Works

One of these, for example, would be in the ability to design a new stealth fighter aircraft.

Blakey pointed out that right now there is no new US fighter even on the drawing board for the first time "since ... the Wright brothers." Knowledge of stealth technology, critical to a new combat aircraft, is perishable.

"Once lost, rebuilding this type of capability can take a generation or more," Kendall said, adding that DOD must be "vigilant" about situations where this could happen.

The 2012 industrial capabilities report urged the Pentagon to get new programs going in the areas where industry is shaky, such as cruise and other kinds of missiles, small aircraft motors, certain kinds of seeker devices, and launch vehicles. While the companies making such products may not always be small and dependent on the one contract, they may, without something to work on, fold up their design shops in the starved areas, the report warned.

EADS photo

The Army's choice of the European UH-72 Lakota over American designs was a sign to some that the US helicopter industry had lost its competitive edge in some niches.

Kendall has in recent months urged companies not to give up their defense-oriented independent research and development efforts, asking for time to let government work out its disagreements and come up with an agreed upon spending plan.

"We're very concerned," Broitman said. "I'm worried" that among big companies the defense downturn "will mean less R&D into new technologies."

She said what she hears most from companies is "as much as people are worried about the cuts, the hugely frustrating, immediate effect is they don't know how to plan." Executives "are incapacitated by the lack of clear data coming at them."

Blakey agreed.

"We ... are urging, and I think to good effect at this point, that DOD have a good ongoing open dialogue with us about the decisions that they're making, about the needs they're going to have, about the capabilities that they anticipate maintaining," Blakey said. Armed with the priorities list, companies can make informed decisions about what design teams and manufacturing capabilities they may want to try to preserve if they know another project is coming along.

In the absence of clear guidance, she said, it's tough to convince stockholders to spend the money to preserve a capability if there's no guarantee it will be needed.

Kendall, in a May talk at the Center for Strategic and International Studies in Washington, D.C., suggested that DOD may want to go back to a "Skunk Works model" approach to developing new capabilities, in some cases.

Skunk Works was the moniker adopted by the small design and engineering shop formed by the late Clarence L. "Kelly" Johnson of Lockheed. He created it to tackle specific, high-challenge problems, and credited its successes—including the U-2, SR-71 reconnaissance aircraft, and the F-117 stealth attack fighter—to secrecy, minimal government oversight or interference, and a spirit of cooperation and trust between the government and the company.

This approach will only work, Kendall said, when both the contractor and government teams are small and "both sides know what has to be done." In emulation of Johnson's shop, Boeing created its own "Phantom Works," but Kendall was not suggesting limiting the idea to one of those companies. He's invited all the services to nominate a candidate program that might benefit from the approach, in order to help keep innovation, critical capabilities and know-how alive. If it works, com-

Boeing photo by Ed Turner

Big primes like Boeing (left, with a 777 airliner being readied for delivery) have some cushion from their commercial business. But lower-tier vendors with only a few crucial military contracts could be wiped out by defense cuts.

via chinesemilitaryreview.blogspot.com

Stealth fighter prototypes—this is China's Shenyang J-31—are appearing in competitor air forces. Without a next generation jet to work on, industry leaders fear America will lose air superiority.

panies could get more such contracts, he said. "It could be a very efficient way to do work."

The Skunk Works comment is the closest anyone from Kendall's shop has come to explaining how the US will preserve its ability to design new fighter aircraft given the long hiatus expected between the F-35 and whatever comes next. Pentagon and Air Force officials have suggested that concept work on USAF's Long-Range Strike Bomber will help keep stealth and other critical know-how alive, and then-Air Force Secretary Michael B. Donley suggested that a new fighter will get underway during the Pentagon's five-year plan.

Design teams, however, are expensive to keep together, and in the absence of an opportunity to work on cutting-edge technology that actually gets built, "I am having a tough time asking my guys to wait," said one major company's technology chief. He noted that in Kelly Johnson's day, new aircraft designs came along every year or two. An engineer could reasonably expect to work on a dozen or more combat aircraft over a career. Now, the cycle times are so long, "they may only work on one program if they stick with me for 20 years," he said. "That is not a recruiting incentive."

Brett B. Lambert, who in August left the job as assistant secretary of defense for manufacturing and industrial base, told the Association of Defense Communities in June that one could argue "there's not a single defense industrial base" anymore, given the fact that the Pentagon's vendors get their products from "around the globe."

"The demand for exclusively defense products has never been less," he said, and DOD no longer gets to "dictate" what will be produced.

Broitman noted that, back in the 1980s, "75 percent of what we bought was produced [just] for us," meaning that defense drove the market. Today, however, "70 percent of what we buy ... is not produced strictly for us," and defense is just one of many customers for a given product. That's good, because broader supply and competition means, generally, lower prices. But it's bad in that the US often becomes dependent on another country for supply of a critical material or device, and that country may not be an ally.

The Crown Jewels

The US government—in the combined efforts of DOD, Congress, and the Departments of Commerce and State—has been slow to reform its list of aerospace goods that can be sold abroad, a fact that gives the aerospace industry fits. What was a cutting-edge technology just five years ago may now be freely available on the open market as competitors have caught up to US technology. While those competitors can easily sell such equipment, laws are still on the books banning US companies from exporting it because government has not caught up to revising its export control regime.

An accelerated pace of allowing such sales would greatly help preserve US aerospace competitiveness, Blakey said.

"We need to step up our game" on foreign military sales and direct commercial sales, she said. Those sales help companies' bottom lines and also preserve "some" design talent.

"I would certainly give great credit to the Administration for their work on export licensing and reforming the export control process," Blakey said. "It's never fast enough, but that is an area where they are making substantial progress." Recent relaxation of satellite technology controls, for example, means the US "can really get back in the game there."

It would be wrong, however, to assume that greater exports alone will keep the US military edge. Certain technologies such as stealth are "the crown jewels" that keep the US ahead of its competitors, Blakey observed.

"There are ... certain technologies and capabilities that we still hold very close which make an enormous difference in the United States' ability to dominate when it comes to any theater of war," she said. Air superiority, for example, "matters tremendously, and we still hold a number of key cards in that."

However, China is developing a stealth capability, so this is "not an area that the United States' role can be taken for granted or even will remain healthy if others are able to develop competitive technologies and ... control the marketplace."

The 2012 industrial capabilities report noted that in most aerospace technology, competitors such as China are lagging the US by only five years.

Broitman said the government wants to intervene in the industrial base as little as possible and, to the extent it can, allow the market to decide. Plus, "so much innovation comes from different tiers" of suppliers, she said. "We're trying to get our analytical arms around ... that," looking for ways DOD can actually help without interfering with natural market forces.

The sector-by-sector, tier-by-tier analysis, she said, will be constantly updated and is now a tool DOD can use to find critical companies and products without which the US would be in military trouble.

The US defense sector "is in for a tough ride, obviously, for a couple of years," she said. "I think we are working on it" by doing everything possible to keep communications open with industry and listening to its concerns.

Blakey agreed that DOD is trying harder to be a partner and act on industry's concerns, but the real solution is the one no one has in great supply.

"The most obvious and important thing is to not make such massive defense cuts that we can't recover from them and we do lose vital capabilities," she said. "There is no substitute in this for money." ■

***AIR FORCE MAGAZINE* PRESENTS**

A WHOLE WORLD OF MILITARY AVIATION IN A NEW SPECTACULAR BOOK!

AIRPOWER CLASSICS

***Air Force Magazine*'s collection of classic military aircraft from around the world**

Giant 14.5" x 11.5" Size!

A new, coffee-table size, hardbound book captures the vintage aircraft in the Airpower Classics series that readers of *Air Force Magazine* have enjoyed for the past seven years. The first 60 aircraft from the imaginative series have been collected in this magnificent book—visually stunning and loaded with history and data.

The giant 14.5" x 11.5" horizontal format showcases the vivid aircraft illustrations created by *Air Force Magazine*'s Zaur Eylanbekov, with supporting text by world-renowned aviation writer Walter J. Boyne. Each listing contains additional historical facts and photos that did not appear in the magazine version.

Airpower Classics provides a captivating look into the history of military aircraft around the world. It will be an irreplaceable source of visual enjoyment, memories, and reference.

YOUR PRICE only $39.95 plus shipping & handling

Hardcover • 136 pages • Giant 14.5" x 11.5" size
60 superb artworks • Printed on art paper in full color
Classic fighters, bombers, transports and recce aircraft
Detailed specifications • Histories and interesting facts • Full index
Sewnbound • Laminated dustjacket

Available at the end of November 2013

TO ORDER:

Call:
1-800-727-3337

or Order Online at:
www.afa.org/book

Actual size of the artwork in the book

Lightning Rod

Is the F-35 Joint Strike Fighter program simply too big to fail?

That's the question Sen. Richard J. Durbin (D-Ill.) asked top Pentagon officials just months after he took over the gavel of the Senate Defense Appropriations subcommittee.

Durbin is known more for his political skills and his close ties to President Barack Obama than for his acumen on defense issues. As such, his chairmanship of the panel, which distributes roughly half of all federal discretionary spending, marks a new era for a committee that has traditionally been led by far more hawkish lawmakers.

It is telling, then, that one of Durbin's first moves as chair was to focus intently on the international F-35 program, by far the most expensive single acquisition program in Pentagon history. The Department of Defense plans to buy 2,443 of the stealthy strike fighters through 2037 to replace old Air Force, Navy, and Marine Corps fighters. But much of the planned procurement of the F-35s dovetails with a sudden downturn in defense spending, making it a potential target for cutters either within DOD or on Capitol Hill.

The Pentagon has spent $33.8 billion to procure the F-35 since 2007, with the total bill to both develop and buy the airplanes expected to come to nearly $400 billion. Procurement costs will average $12.7 billion annually over the next 23 years, a hefty sum for a military in the midst of a postwar budget crunch that has only been exacerbated by a political divide over the country's burgeoning deficit.

With other big-ticket procurement priorities on the horizon, the timing for a downturn in defense spending simply couldn't be worse for the F-35.

Still, despite a high level of scrutiny and long-term funding questions, it is clear that Congress is poised to support the Pentagon's purchase of 29 F-35s next year. After that, things get increasingly murky.

"Maintaining this level of sustained funding will be difficult in a period of declining or flat defense budgets and competition with other big-ticket items such as the KC-46 tanker and a new bomber program," read a June 19 Government Accountability Office report.

Procurement costs get the lion's share of the attention, but they represent just one piece of the overall F-35 price tag—and not even the majority of it. The Pentagon's Cost Assessment and Program Evaluation office in 2011 estimated that keeping the jets flying will cost an additional $1.1 trillion during their anticipated 30-year life cycles. That staggering sum is in inflated then-year dollars and includes everything from related construction projects to 30 years' worth of fuel. But on top of the procurement costs, it has drawn a lot of heat on Capitol Hill.

The program office believes the operations and support costs for the F-35 will be far lower—about $857 billion. In written answers this summer to questions posed by Durbin's committee, Lt. Gen. Christopher C. Bogdan, the F-35 program executive officer, said the CAPE estimate is nearly two years old and does not factor in lessons the program office has learned during more than 7,000 flying hours.

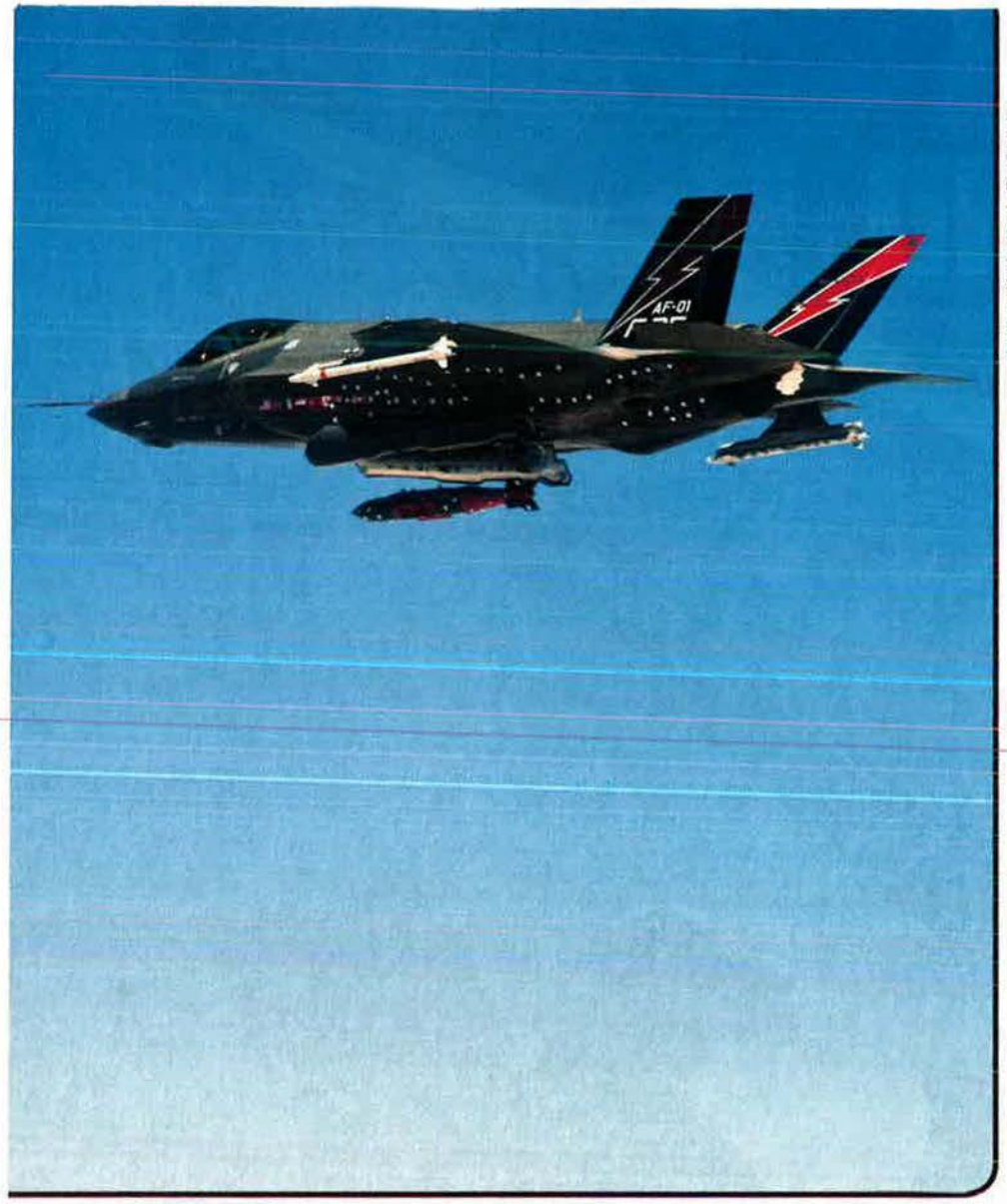
The sheer size of the F-35 program makes it an irresistible target for congressional cost-cutters.

Capt. Brad Matherne runs preflight checks inside an F-35 before a training mission. The budget downturn has come at a bad time for the Joint Strike Fighter.

on the Hill

By Megan Scully

USAF photo by SrA. Brett Clashman



Maj. Eric Schultz, flying a conventional takeoff and landing F-35A (the Air Force variant), conducts a weapons separation test with a 2,000-pound Joint Direct Attack Munition at Edwards AFB, Calif.

Lockheed Martin photo by Tom Reynolds

"That said, significant effort remains to continue to find cost efficiencies and reduce this number even further," Bogdan wrote. The Defense Department will update its figure for the annual Defense Acquisition Board review of the F-35 this fall, Bogdan said.

Even if the life cycle costs drop 22 percent, as the program office expects, the total price tag for the F-35 program continues to dwarf any other in the military budget—a fact that will not escape the attention of skeptical lawmakers in this era of belt-tightening at the Pentagon.

"In the financial industry, we have this phrase, too big to fail, and I'm wondering if this project is so large in scope that it was too big to cancel?" Durbin asked at the June 19 hearing. "That it had to continue apace because of international partners, fifth generation demands? Have we reached a point when it comes to acquisitions in the future that we have to take this into consideration?"

Durbin's questions were fielded deftly by Pentagon acquisition chief Frank Kendall, who acknowledged that no program in the department is too big to fail. But, Kendall stressed, Pentagon officials are not considering stopping the program now that the fighter has made its way through a significant portion of its development phase, the department attempts to reduce long-term sustainment costs, and the strategic need for a fifth generation fighter grows.

"To start over, to go back 10 years, 20 years and invest $20 billion or $30 billion in the development of another aircraft in replacement of the F-35 just doesn't make any sense," Kendall said.

Congressional Support

Kendall's arguments seem to be resonating on Capitol Hill, where even Durbin and others who have raised questions about the F-35 are reluctant to do little more than trim around the edges of the expansive program. A steep drop in Pentagon spending, which could bring the department's budget next year to $52 billion below the Administration's request, has done little to change minds in Congress about the F-35.

Months after the hearing, Durbin's panel approved a $594.4 billion defense appropriations bill that buys the requested 29 F-35s next year. But the committee did take issue with the Pentagon's plans to buy 42 of the strike fighters in Fiscal 2015—a 45 percent year-over-year increase in production.

"Given the scope of issues that must be addressed in this phase of the program, a large increase in the production of aircraft is not yet warranted," appropriators wrote in the report accompanying their bill. While flight testing has progressed smoothly in recent years, the program's critics cite continued struggles with the program's software development, system reliability, and development of the maintenance system.

Durbin's committee trimmed $48 million from the Air Force's request for F-35 advance procurement, a move that would affect four aircraft slated for procurement in 2015. For the Navy, Senate appropriators cut $31.5 million in advance procurement, a reduction of two aircraft. These types of moves can become self-fulfilling prophesies, as F-35 unit costs increase every time the buy is cut below efficient production levels and every time the program is stretched out.

During the Senate Appropriations Committee's consideration of the sprawling bill

Lockheed Martin photo by Sydney Carroll

An F-35 on the assembly line at Lockheed Martin's facility in Texas. The Senate has provided funds to buy 36 of the aircraft in 2015, a modest increase in production.

Aug. 1, Durbin said creating a common fighter was the right goal that turned out to be a challenge for the military, one that it sometimes failed, he said.

Despite Durbin's reservations, the Senate panel is hardly moving to gut the program, providing enough advanced procurement funding to buy 36 of the aircraft in 2015—a more modest but still significant 24 percent increase in production.

Indeed, all four of the congressional defense committees approved the Pentagon's request for 29 F-35s next year. The panels only tweaked aspects of the $8.4 billion F-35 request (House appropriators, for instance, trimmed $67.1 million from the $1.8 billion request for F-35 development) or demanded new reports from the Pentagon on the program's milestones and long-term costs.

With 125,000 direct and indirect jobs sprinkled in 46 states, it comes as little surprise that the Lockheed Martin-run F-35 program enjoys strong support on Capitol Hill. This was clear during the House Armed Services Committee's consideration of the Fiscal 2014 defense authorization bill in June, when the panel soundly defeated an amendment from Rep. Tammy Duckworth (D-Ill.) that would have withheld program funds until the F-35 meets several technical requirements, including certification that all flight testing is successfully complete.

One of the 10 committee members who supported the Duckworth amendment later made an unusual public reversal, citing the economic effects of withholding F-35 dollars.

"Upon further review of the impacts that additional funding delays would have on the program, I believe that this amendment would actually increase costs, damage the supplier base, and risk over 100,000 direct and indirect jobs," Rep. Robert A. Brady (D-Pa.) wrote in an addendum to the report on the House-passed authorization bill.

In the Senate, Republican John McCain of Arizona has been sharply critical of programs that exceed original cost projections. McCain said in a statement that he is "cautiously optimistic" about the health of the F-35 program. The statement followed an Air Force decision to put three additional F-35 squadrons at Arizona's Luke Air Force Base, for a total of six squadrons and 144 aircraft at the Phoenix-area installation.

McCain, who grilled program officials on the affordability of the F-35's procurement and sustainment costs during an April hearing, urged the Defense Department in his statement to "demand excellence from the Air Force and the contractor to ensure that this critical program builds on recent contracting, technical, and manufacturing progress." But he is reserving his harshest rhetoric for other programs struggling to meet cost and schedule goals, such as the Navy's Littoral Combat Ship.

Legislative Action

Even as support remains high for the F-35, there are some fractures in Capitol Hill support for the program hinting at increased congressional scrutiny.

Among the notable critics are Rep. Adam Smith of Washington, the top Democrat on the House Armed Services Committee, and Rep. Loretta Sanchez of California, the top Democrat on the Tactical Air and Land Forces subcommittee, who voted for the Duckworth amendment withholding the F-35 funding.

During the House committee's consideration of the bill, Sanchez acknowledged progress on the development and production of the F-35s, but added that the program is seven years behind schedule and 70 percent over cost. She also cited technical concerns about the program, including the helmet-mounted display system.

"This puts pressure on Lockheed Martin and everybody that's involved in building this program. And I don't mean that in a negative way. We certainly have sat down with them. I mean it in a positive way," Sanchez said. "We need to continue to ensure that things are being met and things are coming along and the taxpayers are protected in this."

In the end, the House Armed Services Committee, whose bill passed the House in June, boosted its oversight of the program, rather than slashing or withholding funds. The bill requires the Pentagon's acquisition chief to establish an independent team of subject matter experts to review the development of F-35 software and send a report to Congress by March 2014.

The committee's report also orders a Government Accountability Office report on the costs of keeping the aircraft flying, citing "fiscal uncertainties facing the department and growing concerns related to the affordability of the F-35's long-term sustainment costs."

DOD photo by Erin A. Kirk-Cuomo

Frank Kendall, undersecretary of defense for acquisition, technology, and logistics, speaks at a Center for Strategic & International Studies event. Kendall says scrapping the F-35 only to sink more money into a replacement would be foolish.

AF photo by Carolyn Kaster

Sen. Richard Durbin, chair of the Senate Appropriations defense subcommittee, listens to Air Force Chief of Staff Gen. Mark Welsh during a hearing on the Fiscal 2014 budget. One of Durbin's first moves as chair was to focus on the F-35 program.

The Senate Armed Services Committee's version of the authorization bill, approved by the panel in June, is bullish on the F-35 and appears to support a spike in production in Fiscal 2015—marking a divide with their appropriator colleagues. The committee's report on the bill states the program has been executing close to the planned testing and development schedule and stresses that meeting the services' initial operational capability dates hinges, at least in part, on sticking to the production plan.

"With the program now achieving most testing milestones, the committee believes that the Department of Defense should seriously consider continuing with the current plan to increase production in Fiscal Year 2015 and beyond," according to the report.

The Armed Services panel, whose bill is expected to head to the Senate floor sometime this fall, does require some new oversight of the program, including a briefing on the fighter's Block 3F software following a critical design review and another briefing on the status and risk reduction efforts for four systems that have proved challenging for program officials. Those are the helmet-mounted display system, the tailhook, the fuel dumping system, and the autonomic logistics information system.

It is unclear which of these provisions and allocations the final versions of either the defense authorization or appropriations bills will include. The Senate needs to pass both measures and then differences must be negotiated with the House's versions of the bill before going to the President's desk for signature.

Going Down

Funding levels in the final versions of the defense bills, however, may not ultimately be up to the leaders of the congressional defense committees. If the Pentagon's budget for Fiscal 2014 exceeds the mandated budget cap—and there is no other deficit-reduction deal in place to override those caps—the Defense Department would be vulnerable to another round of across-the-board sequester cuts that hit the budget in Fiscal 2013.

That means the F-35 would fall victim to the same types of reductions that would hit nearly every other military account. DOD has limited flexibility to move money to high-priority accounts through reprogramming requests, which require the approval of all four congressional defense committees. There would undoubtedly be fierce competition from every corner of the department for those limited dollars.

In late July, Rep. Jim Cooper (D-Tenn.) and Rep. Paul Ryan (R-Wis.) introduced a bill that would give the Pentagon discretion when applying cuts from sequestration. But the White House and several key Democrats don't want to give the Defense Department special treatment when domestic discretionary spending will take a similar hit.

In the absence of a deficit-reduction deal, the other option is to actually get the Pentagon's approved budget for Fiscal 2014—as well as its requests for Fiscal 2015 and beyond—to the levels mandated by the decade-long caps.

That would avoid the painful indiscriminate cuts, but neither the Pentagon nor Congress has offered a proposal with detailed cuts to get the budget to the necessary levels.

Like the Pentagon request, both the House and Senate versions of the defense appropriations bill ignore the mandated caps.

It is indiscriminate, inefficient, and arbitrary, but in some ways it is actually easier to just let sequester happen. Automatic cuts help officials in the Pentagon and lawmakers on Capitol Hill avoid difficult decisions on specific programs such as the F-35. But it also means they can't protect top priorities.

For its part, the Pentagon has explored its options for getting below the budget caps, including one approach that would cut the size of the military to preserve high-end technical capabilities. Under that scenario, the F-35 would stand its best chance of keeping its production and testing schedule largely intact.

"We would protect investments to counter anti-access and area-denial threats, such as the long-range strike family of systems, submarine cruise missile upgrades, and the Joint Strike Fighter, and we would continue to make cyber capabilities and special operations forces a high priority," Defense Secretary Chuck Hagel told reporters July 31 at the Pentagon.

Any final decision on defense spending priorities would likely include trade-offs among the various Pentagon accounts, from personnel to procurement dollars. The F-35 could very well see its budget cut, its annual production numbers reduced, its program stretched out, and its unit costs rise—but nearly all experts expect the program to survive.

In this environment, program officials know they have to keep their eye on the bottom line and make every dollar count.

"Affordability remains my No. 1 priority, and I expect these cost estimates to continue to go down over the next several years as the program matures," Bogdan wrote in his response to Senate appropriators. ■

Megan Scully is the defense reporter for National Journal's *"CongressDaily" in Washington, D.C., and a contributor to* National Journal *and* Government Executive. *Her most recent article for* Air Force Magazine, *"The Austerity Budget Hits the Hill," appeared in the June 2012 issue.*

AIR FORCE ASSOCIATION
Professional Development

AIR FORCE ASSOCIATION'S
PACIFIC AIR & SPACE SYMPOSIUM



November 21-22, 2013 | Hyatt Regency Century Plaza | Los Angeles, CA

AIR FORCE ASSOCIATION'S ANNUAL
AIR WARFARE SYMPOSIUM AND TECHNOLOGY EXPOSITION

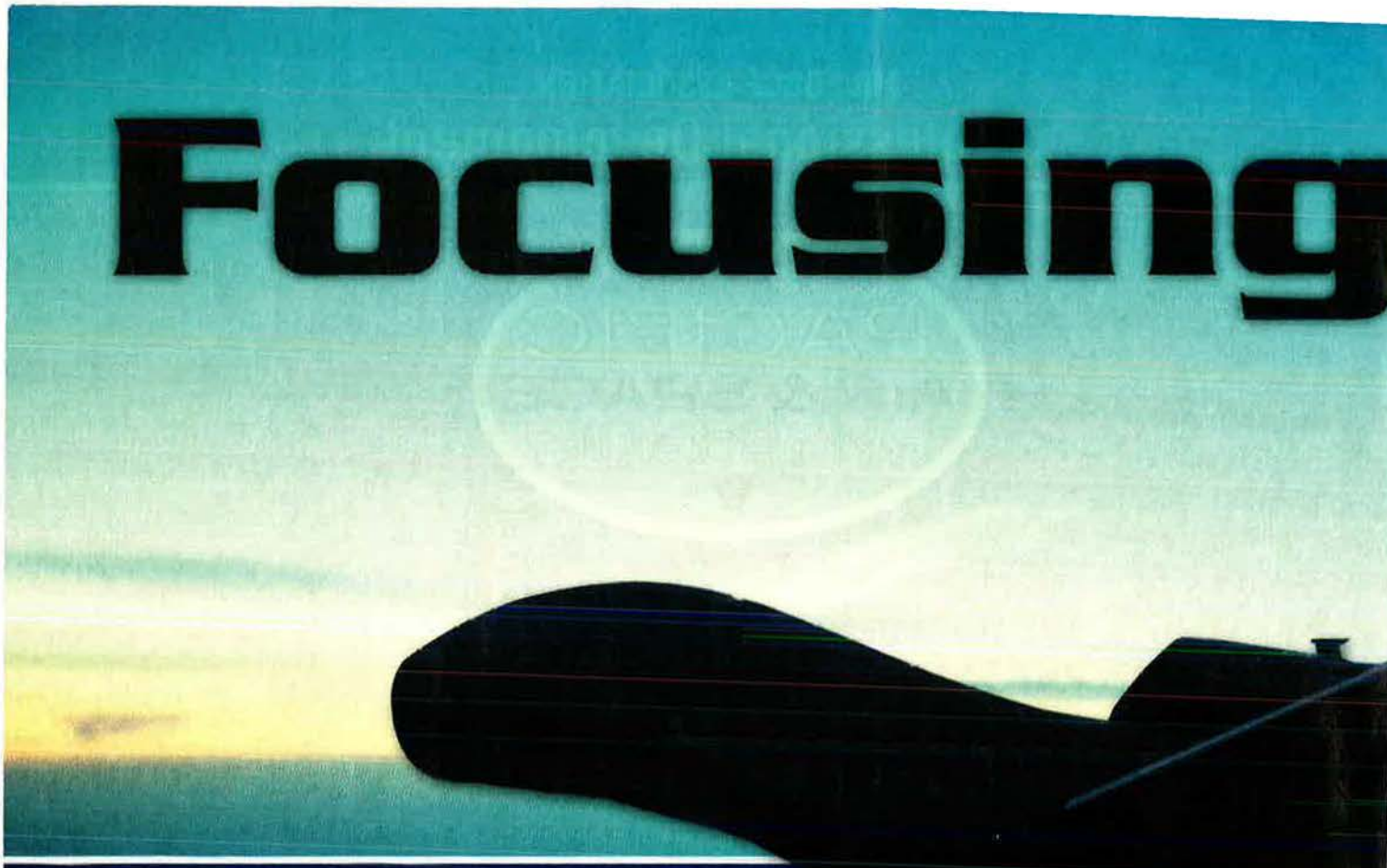
FEBRUARY 20-21, 2014
SEN SHINGLE CREEK HOTEL
ORLANDO, FL

AIR FORCE ASSOCIATION'S
AIR & SPACE CONFERENCE AND TECHNOLOGY EXPOSITION 2·0·1·4

SEPTEMBER 15-17, 2014
GAYLORD NATIONAL HOTEL & CONFERENCE CENTER
NATIONAL HARBOR, MD

For additional information visit us at www.afa.org

Focusing



A pair of Air Force roadmap studies will help guide the service toward its future intelligence, surveillance, and reconnaissance capabilities.

By the end of the year, the Air Force should have a pair of roadmaps in hand, guiding how the service plans to structure and grow its exploitation of intelligence, surveillance, and reconnaissance gathered by remotely piloted and manned aircraft.

One of the roadmaps, built over most of 2013, will look 10 years ahead at the toolbox that analysts will need for exploitation of mission data collected by RPAs.

The other will forecast what the Distributed Common Ground System—the globally networked, ISR ground-processing system—should look like 10 years hence.

ISR aircraft have been plying the skies of Southwest Asia and the Middle East for more than a decade, and both roadmaps are expected to play a significant role in defining the Air Force's future ISR procurement plans.

Lt. Gen. Larry D. James, who was the Air Force's deputy chief of staff for ISR until he retired in August, said earlier this year that the DCGS has come a long way from when the Air Force first established it.

"It was a system that kind of grew up ad hoc," James said.

The DCGS is the backbone of global processing, exploitation, and dissemination, or PED. The service wants the system to become "sensor agnostic," capable of collecting and digesting data no matter where the "take" comes from. Right now, DCGS works with real-time intelligence collected from aerial sensor aircraft such as the high-altitude, long-endurance RQ-4 Global Hawk RPA, the MQ-1 Predator and MQ-9 Reaper RPAs, and the manned U-2 Dragon Lady and MC-12W Liberty.

The Air Force must decide, however, whether it wants the system to be all-source—meaning inclusive of space, cyber, and airborne technology—and if so, how to best achieve that goal in an organized and streamlined way.

DCGS started off as a U-2 node, tasked with taking the data collected by the venerable spyplanes while they

ISR

By Maggie Ybarra

were on missions and digesting that information, James said. Over the years, the system's role has expanded.

That "ad hoc" system was not necessarily built on a comprehensive architectural plan, which has made it difficult for the Air Force to plan out the future of the system, James said during an *Aviation Week* conference in Arlington, Va., in March.

What the DCGS roadmap will do is provide guidance on whether to evolve DCGS into a cloud-based system, according to an Air Force official familiar with the service's progress on the two roadmaps. That would allow future system operators at any DCGS node worldwide to instantly access or store information on the same database, the official said.

The ISR roadmap is equally important to the Air Force, James said. Over the past few years, the service has been overwhelmed by the amount of data streaming in from its RPAs, he said.

"We have roughly, let's say, 6,000 analysts across the DCGS enterprise—by about 2015, [we'll] need over 100,000 analysts," James said. "And obviously, we're not going to do that because we don't have those people." So the Air Force will need to look at other options, he added.

Copy, That's a Problem

The Air Force has also been expanding its RPAs' ability to capture wide-area motion imagery while surveying a large swath of land, a system called Gorgon Stare. That ability, though so far limited to just a few medium-altitude, long-endurance MQ-9 RPAs, has changed what was once a narrow, "soda straw" view to a large, neighborhood-size view. The roadmaps should help USAF decide on continuing to invest in Gorgon Stare or something like it, and if so, how much, according to the Air Force official.

The ISR tools roadmap will look at what USAF analysts do now and what they've done in the past, focusing on the automated tools analysts use to catalogue information.

As the Air Force has grown increasingly concerned that its ISR take far exceeds its capacity to analyze and disseminate finished ISR products, it must now identify a feasible way to keep up with the quantity of material being collected.

"They're really trying to standardize how the information is displayed for the airmen, ... doing the cognitive brain work for: 'That's a picture. What is that picture telling me?'" the official said.

The analysts are "the ones adding value to those pictures" so the data become useful to decision-makers and those in combat, the official said. "Anybody who employs a weapon is going to want to be able to use the information that you have available and that's ... the goal."

The need for the roadmaps became obvious after a RAND Corp. study—requested by Lt. Gen. David A. Deptula, then USAF's deputy chief of staff for ISR—revealed the vast disparity between the amount of information collected by the Air Force's RPAs and the number of analysts available to interpret and catalogue it.

An oft-quoted remark from that study noted that if USAF doesn't improve its automated ISR processing tools and change the way it does business, especially given the increasing volume of data coming in, it would need 110,000 new people just to keep up. "So, copy, that's a real problem," the official said.

Retired Air Force Gen. Charles F. Wald, former deputy commander of US European Command, said USAF needs to better define its RPA acquisition strategy, including the capabilities on each platform, before buying any more of them. Wald's firm, Deloitte Services, compiled a white paper on defense acquisition in 2010, which suggested USAF decide how much it intends to spend on RPAs in the coming years and identify common sensors and analytical tools that are its top priorities.

Wald asserted in a June interview that military RPAs have been inefficiently used. The Air Force, Army, and Navy, he said, should be sharing their remotely piloted aircraft and ISR tools with each other in order to avoid wasting the assets. He also questioned the need for the military services to put funding into duplicate efforts, calling this a "peacetime luxury" the Defense Department can't afford.

Illustration by Erik Simonsen

Above: A U-2 comes in for a landing at Beale AFB, Calif., accompanied by a chase car carrying a second U-2 pilot relaying instructions. The Distributed Common Ground System—now considered the backbone of global ISR processing and dissemination—started out as a node on the U-2. Right: An RQ-4 Global Hawk Block 30 in a hangar at Edwards AFB, Calif. The prime contractor for Global Hawk, Northrop Grumman, was tapped to contribute to the ISR roadmap. Below: Lt. Gen. Larry James, who was then deputy chief of staff for intelligence, surveillance, and reconnaissance, briefs on the ISR mission at an Air Force Association breakfast in Virginia. James believes the ISR roadmap will be important to USAF planning.

In addition, Wald said USAF should concentrate on growing its wide-area motion imagery sensor capabilities, like the Gorgon Stare pods on Reapers.

The Air Force's enthusiasm for Gorgon Stare seems to have waned after several years of investment. Some project funding has been put on hold, and depending on the outcome of the roadmap efforts, USAF may decide to spend its research, development, test, and evaluation funds on other ISR tools, according to the Air Force official.

"Now, [if] I want to track a vehicle—that one vehicle—I can still be able to do that, but now I can see where all the vehicles are," the official said, describing Gorgon Stare. "I have broadened that aperture and I can see more ... [which] gives you more ... 'pattern of life'" information.

"Pattern of life" is terminology the military uses to describe scenarios where its analysts are able to identify the history and accomplices associated with a particular target, thereby providing context and content to a particular incident.

"That one vehicle that I was watching: Now I know where he was before," the official continued. "I see where other vehicles ... that I'm tracking—where they've been in the neighborhood." The wide-area view allows better understanding, he said, permitting greater depth to analysis. "It's not just me reporting what that truck is doing right now; I'm gaining understanding."

Full-motion video assets, however, are only one part of the ISR tools roadmap. The Air Force is also looking at collaboration, automation, and visualization. The service wants to have an inventory of those tools to understand what new ones are needed—and where.

USAF photo

USAF photo by TSgt. Charles Larkin Sr.

Platforms are not the prime focus of either roadmap. George Guerra, Northrop Grumman's vice president of high-altitude, long-endurance systems, said USAF tapped his company to contribute to the RPA roadmap. Northrop is the prime contractor for USAF's Global Hawk Block 30 and 40 and their sister aircraft in the Navy, the MQ-4 Triton.

Capability roadmap meetings are valuable, Guerra said. "The contractor team is there with the Air Force team going, 'Hey, what if we wanted to do this with Global Hawk and we wanted to add this? Is it feasible? Do you guys think it would be affordable?' I think, from that aspect, ... they've done a nice job of including us up front."

The two roadmaps were launched by then-Air Force Secretary Michael B. Donley in 2011. He instructed James to conduct a comprehensive review of where Air Force ISR was and where it needed to go in the future. The DCGS roadmap and ISR tools roadmap are just two of several tasks directed by Donley.

The milestones have no suspense dates, the official said. They are meant to be descriptive of how USAF should move toward an all-source, all-domain common system.

Hard To Find, Easy To Destroy

The roadmap may face some huge potholes from budget sequestration, which is slashing billions from USAF programs. Besides the uncertainty of the sequester's effect on the budget, Wald said the Air Force, along with the other armed services, is pursuing a cost strategy that doesn't fit its needs.

Wartime and peacetime spending requirements have shifted over the past few decades, Wald asserted. While it's natural to assume spending can taper down if the country's not at war, that's not necessarily true, he said. There's high risk associated with lower spending, he claimed.

The old mantra of targets—"easy to find, difficult to destroy"—has been stood on its head, Wald said. Now, it's "hard to find and easy to destroy," which significantly changes the capability requirements equation—not just for USAF and its RPA fleet, but for the Defense Department as a whole, he said.

Another problem the Pentagon faces, Wald said, is that each of the service chiefs must make the best possible investment to ensure his own branch can accomplish the mission. But those leaders are not, by definition, responsible for deciding when to start scaling back on force structure and assets. That means the acquisition process for ISR assets is askew, according to Wald.

There is nothing in a service chief's job description that says they are responsible to "divest," Wald said, suggesting there might be a need for an independent group with the charter and authority to make such recommendations to the Defense Secretary.

"Somebody that's objective has to make the cut, and it can't be based on who has the cutest PowerPoint slides, ... and I don't think we're there yet," he said. ■

Maggie Ybarra is an associate editor with the defense newsletter "Inside the Air Force." This is her first article for Air Force Magazine.

USAF photo by SrA. Julius Delos Reyes

eight US personnel on Super 61, not four. RPGs were flying through the airspace below, more than Wilkinson had ever seen on previous missions.

Fast-rope was clearly the best way in. Their pilot came in hard, banked, and then flared up the nose of the Black Hawk to about 30 degrees to slow the helicopter. Downwash from the rotors kicked up Somali dust and created a brownout. Thick ropes dangled from both open doors.

Heat, Dust, and AK-47 Rounds

Wilkinson was the last man on the right side. He kicked out some medical supply bags forgotten in the rush, then grasped the rope with his heavy leather fast-rope gloves and slid off into the dust. It was like descending a flexible fireman's pole as fast as possible.

The second he cleared the door, the Black Hawk took an RPG in its main rotor. The pilots didn't flee. They waited until Wilkinson and his fellow rescue team members were on the ground. Then they struggled away, trailing smoke, with no oil pressure. They would make it back to the airport—barely.

The ground was a chaos of heat, dust, and snapping AK-47 rounds. Wilkinson was standing on Marehan Road, a narrow thoroughfare in a warren of stone walls and buildings near the Bakaara Market, epicenter of the area of influence for warlord Mohammed Farah Aidid and his Habr Gedir clan.

Wilkinson moved to a wall on the west side of the street. He was sweating and could not see anything. He had no idea how to find the crash site of Super 61. Then he saw some members of his team on the other side of the street, moving south to a corner about 130 feet away.

Wilkinson grabbed his medical bags and hustled after them as automatic weapons fire kicked up dirt in the street. He rounded the corner and blinked: Crammed in a narrow alley, the wrecked Black Hawk seemed huge. It was sitting on its left side, tail boom cracked, rotors missing.

Rangers and Special Forces at the site had established a command post and casualty collection point about 15 feet down the alley. Wilkinson extracted some litters from his bags and got them ready to load wounded.

He figured that a ground convoy of Army personnel would arrive shortly and he had to be ready. He also figured that they had a half-hour or so until Aidid's fighters could organize themselves for a concerted attack.

That surmise was incorrect. The PJ had just landed in a battle that would stretch into the next day and be immortalized in the book and movie "Black Hawk Down." Wilkinson would earn an Air Force Cross for his actions.

"I was wrong about how much time we had, as I was about everything else that day. We were decisively engaged right from the start," said Wilkinson in an oral history published in *The Battle of Mogadishu: Firsthand Accounts From the Men of Task Force Ranger.*

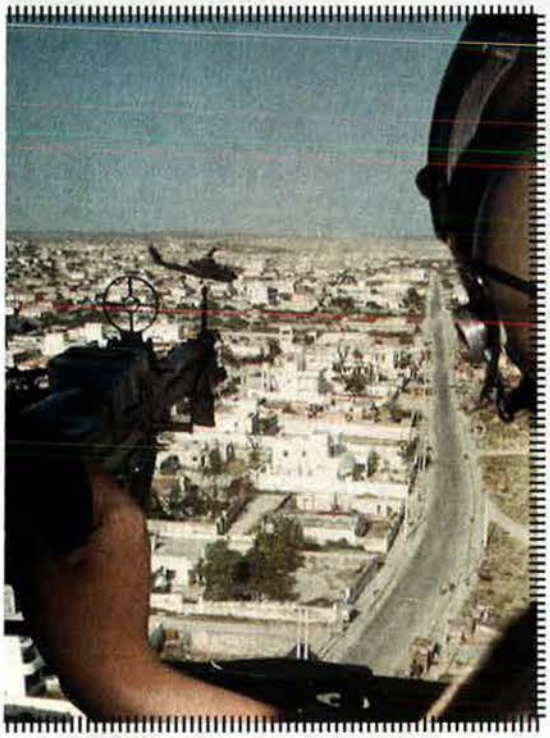
Somalia in 1993 was the definition of a failed nation. It had been split by sectarian and ethnic warfare since the collapse of the government of Mohammed Siad Barre in 1991. Drought and fighting over food stocks and relief supplies had caused widespread famine in the country in 1992, leading the US to begin a food airlift. Violence continued to hamper aid distribution, so in December 1992, President George H. W. Bush ordered in US military forces.

"Their mission was to ensure that relief supplies reached the people who needed them and thus to 'break the cycle' of starvation and save lives," according to the publication "The United States Army in Somalia: 1992-1994" by the US Army Center of Military History.

Officially, the US military was operating under the umbrella of the United Nations Operations in Somalia, or UNOSOM. During the course of the Somali operation, 23 nations, including Australia, Belgium, Canada, France, Italy, Malaysia, Morocco, and Pakistan provided troops.

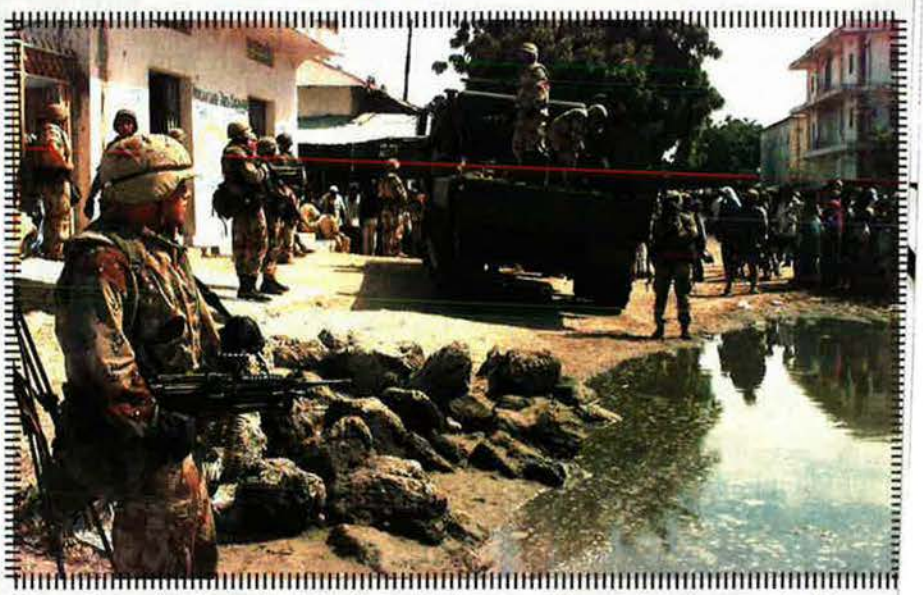
But US firepower, intelligence, and logistics capabilities were the backbone of the effort. Within a few months, aid was flowing relatively freely to the desperate Somali people.

Little violence occurred between February and May of 1993. Markets reopened, travel within the country became possible, and some officials



AP photo by Dominique Mollard

A gunner on a US Army Black Hawk covers the flight of a Cobra gunship during a patrol over Mogadishu, Somalia, in October 1993.



US marines stand guard while others load ammunition and weapons seized in a raid at the Bakaara Market in Mogadishu. US forces were originally in Somalia to ensure that relief supplies reached the needy.

began talking of reinstituting a Somali national police force to enforce the shaky calm.

"However, clan rivalry and US reluctance to engage in long-term 'nation-building' operations soon doomed the effort," concludes the US Army Center of Military History.

May was the turning point. The US, eager to bring troops home, turned control of the mission completely over to the UN. The military situation then began to unravel. Warlord Aidid seemed to have little respect for the UN or the new UNOSOM II forces.

On June 5, his fighters ambushed and killed 24 Pakistani UNOSOM II soldiers. In response, US AC-130 gunships began hammering Aidid's weapons depots, radio station, and related facilities.

The UN issued a warrant for Aidid's arrest. In August, Aidid's men detonated a mine under a UNOSOM II vehicle, killing four US military policemen. As the security situation worsened, UN Secretary-General Boutros Boutros-Ghali asked new US President Bill Clinton to help catch Aidid.

The answer to this request was Task Force Ranger. An assault force composed of Delta Force special operators, Army Rangers, Air Force pararescuemen and combat controllers, Navy SEALs, and a special operations aviation element, TF Ranger was in Somalia by Aug. 28. Over the next few weeks it staged six raids into Mogadishu from its base at the airport on the outskirts of the city.

TF Ranger snatched one of Aidid's key lieutenants. It limited Aidid's mobility to areas of the city under his more-or-less direct control. But resistance was stiffening. Aidid's men seemed more and more willing to engage US forces with every weapon at their disposal, from small arms and RPGs to 106 mm recoilless rifles.

Then on Oct. 3 TF Ranger launched its seventh mission. Intelligence had revealed that Aidid aides were meeting near the Olympic Hotel, in an area known as the Black Sea. If the US could capture his top men it would be an audacious strike against the warlord in an area central to his power.

But things quickly began to go wrong.

Helicopters carrying the assault and blocking forces arrived at the target in good order. The assault team captured 24 Somalis and prepared to load them into ground convoy trucks. Then a circling Black Hawk—Super 61—was downed by an RPG three blocks away.

Corbis photo by Chris Rainier

A soldier for one of the warring factions struggling for control of Somalia hefts a rocket launcher through Mogadishu in 1993.

Aidid's forces slammed TF Ranger with heavier fire than in previous raids. Another Black Hawk went down a mile south of the first destroyed helicopter.

Inside the Snow Globe

The Battle of Mogadishu was on. The two-day firefight would develop into the fiercest engagement for the US military since the Vietnam War.

At the Super 61 crash site Wilkinson found more US personnel than had roped in with his team. Some of the Rangers and Special Forces personnel involved in the nearby snatch-and-grab had moved in to lend support.

One of the helicopter crew chiefs was walking about dazed, still stunned from the crash. A Special Forces sniper was trying to lift the copilot out of the top right side of the wreckage. The copilot was dead. The sniper said the pilot was dead, too.

Wilkinson crawled into the wreckage from the right side door, which was now at the top since the Black Hawk was lying on its side. The sniper was right: The pilot, like the copilot, had been killed by the impact of the crash. The body was trapped underneath the crushed instrument panel and would not be easy to remove.

Wilkinson wiggled back out to see if there was any way to dig underneath the helicopter to get at the pilot. No go. He dropped back into the fuselage. Then he saw a small patch of desert camouflage cloth under the debris piled at the cabin's bottom. Was someone still inside?

He called out and saw a flight glove move. A hand waved. The left-side gunner and crew chief was still strapped in his seat—and alive. The PJ dug at the junk that covered the gunner and began to cut his seat straps. A Special Forces medic dropped in to help. The gunner, freed, began to stand up. At that moment the interior of the Black Hawk lit up with enemy fire.

"It looked like the inside of one of those little snow globes that you shake and watch the flakes swirl about," said Wilkinson in his *Battle of Mogadishu* firsthand account.

All three men were hit by shrapnel. Wilkinson was wounded in the face and arm while the gunner lost two fingertips. They began ripping up the Kevlar floor panels of the helicopter and leaning them against the sides to provide some protection against bullets. After they slid the gunner outside, Wilkinson and the Special Forces medic handed out the Kevlar panels to place around the casualty collection point at the aircraft's tail.

Wilkinson tended to the wounded while Rangers kept up a steady stream of suppressing fire. Somali RPGs seemed to come in waves, with a large volley every 20 minutes or so. The PJ surmised that was the length of time it took for Aidid's fighters to return to their warehouse, stock up, and get back to the battle. Not every grenade exploded, perhaps due to the poor quality of the Russian-made munitions.

At 5:30 p.m. another call came: US forces wanted a medic across the intersection of the alley and Marehan Road to the south. About a dozen Rangers and Special Forces personnel were hunkered down in a courtyard. Some were wounded and needed help.

Photo by Theodore Lias /Bambino Images

The picked-over remains of a US Black Hawk helicopter photographed in Mogadishu in 1994. Eighteen US servicemembers were killed in the Battle of Mogadishu.

The location was about 150 feet away, but it might as well have been a mile. The wide intersection was a shooting gallery, and the shooters were Somalis with automatic weapons.

Wilkinson did not hesitate. He picked up his medical sack, moved to the corner of the intersection, and said, "Cover me!" His colleagues later said they just laughed at what they all knew was a cinematic absurdity.

As he broke into the open, Wilkinson thought to himself that he just needed to put his head down and plow ahead, as if he were stealing second base. But his boots felt heavy and he seemed to be stealing that base in slow motion. AK-47 rounds zipped around him. Somehow, he made it to the courtyard unscathed.

Three casualties awaited him. The most seriously wounded was a Ranger who had taken a bullet in the hip and groin. He was in great pain and bleeding heavily. Wilkinson tried to wrap the wound as tightly as he could with a pressure dressing. Then he slipped rubber pneumatic pants over the Ranger's legs and pelvis and pumped in air to apply more pressure still.

The bleeding slowed and stopped. He gave the Ranger a dose of morphine and kept up IV fluids. At the rate he was using up bags his fluid supply would soon be exhausted.

Wilkinson radioed back to the casualty collection point for more. At first he told them to try and throw the fluids across the street. Then he thought better of this approach; if the toss did not make it, the bags would be lying in the street, an aim point for Somalis waiting for a US soldier to stoop and try and retrieve them. Plus, the bags might well burst on impact, making the whole attempt a waste.

Wilkinson decided he would rather run across the street twice than stop in the middle once. So he put his head down and bowled back across to his original position amidst the familiar crack of automatic weapons.

What I'm Paid To Do

He stuffed IV bags in his pockets, plus some bandages and other assorted supplies, then yelled, "Cover me!" again. For the third time he raced across an open killing zone under fire, though "raced" might be something of an exaggeration.

He made it to the courtyard safely.

"My teammates have come up with a couple of theories to explain my success in transiting the hostile no-man's-land between the two isolated groups of the task force," Wilkinson said in his account. "One theory suggests that while I was running across the road I was clumsily dropping pieces of my gear and had to stop to pick them up, thereby creating a stop-start, up-down target the enemy couldn't get a good bead on. The other theory is that an exaggerated rate of arm swing combined with a pathetically slow rate of movement created the optical illusion of moving faster than I actually was, so the enemy was constantly leading me too much. I don't think either theory holds much merit. I think God just watches over fools."

Their position took fire throughout the night and the defenders suffered further casualties. At one point a Ranger was wounded by an RPG, which peppered him with shrapnel and covered him in black residue from the explosion. He looked like a cartoon character who had survived an exploding cigar, according to Wilkinson, but fortunately his injuries were relatively minor.

In the early morning hours of Oct. 4, the armored vehicles of a pick-up quick-reaction ground force finally arrived. Wilkinson loaded his wounded into a Malaysian armored personnel carrier and jumped in after them. The APC moved a bit down the street, and then stopped to take on another casualty. It stayed still for an hour-and-a-half while RPGs rattled the walls.

Finally the convoy rolled out, reaching the relative safety of a soccer stadium at about 8 a.m. When Wilkinson reached the US base at the airfield some hours later he was shocked at what he saw: piles of weapons, bullet-riddled and bloodstained Humvees, and the empty cots of the 18 US personnel killed in action.

"It was then that I became aware of just what a huge impact this battle had had on Task Force Ranger," Wilkinson said.

Wilkinson earned the Air Force Cross, the service's highest honor for gallantry in combat, for his actions in the Battle of Mogadishu. He was the first enlisted airman to receive the award since 1975.

His citation mentions that he repeatedly exposed himself to enemy fire to pull dead and wounded crew members from the wreckage of Super 61, and that he ignored all concern for personal safety to cross the deadly open intersection.

"Sergeant Wilkinson's medical skills and uncommon valor saved the lives of multiple gravely wounded American soldiers in the longest sustained firefight involving United States combat forces in over 20 years," reads the Air Force Cross citation.

"I didn't do anything spectacular," Wilkinson said of his actions that day. "People were counting on me to do what I'm paid to do," he told Air Force officials. "I was just holding up my end of the deal on a bad day; everyone there was doing what was expected of them." ■

Peter Grier, a Washington, D.C., editor for the Christian Science Monitor, *is a longtime defense correspondent and a contributing editor to Air Force Magazine. His most recent article, "Dinner for Heroes," appeared in the August issue.*

Keeper File

keeper@afa.org

Seeing a Super-Bomb

It was a remarkably prescient document—the first technical description of a workable atomic bomb. The authors were Austrian-British physicist Otto R. Frisch and German-British physicist Rudolf E. Peierls, University of Birmingham. They conceived of this "super-bomb" five-and-a-half years before Hiroshima. They realized that "the most effective reply" to a foe's possession of such a weapon would be "a counter-threat with a similar bomb"—i.e., deterrence. The memo lent great impetus to US and British nuclear efforts and helped lead to the Manhattan Project.

"Frisch-Peierls Memorandum"

Otto R. Frisch and Rudolf E. Peierls
Memo given to the Committee for the Scientific Survey of Air Warfare
Birmingham, England
March 1940

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

The attached detailed report concerns the possibility of constructing a "super-bomb" which utilizes the energy stored in atomic nuclei as a source of energy. The energy liberated in the explosion of such a super-bomb is about the same as that produced by the explosion of 1,000 tons of dynamite. This energy is liberated in a small volume, in which it will, for an instant, produce a temperature comparable to that in the interior of the sun. The blast from such an explosion would destroy life in a wide area. The size of this area is difficult to estimate, but it will probably cover the center of a big city.

In addition, some part of the energy set free by the bomb goes to produce radioactive substances, and these will emit very powerful and dangerous radiations. The effects of these radiations is greatest immediately after the explosion, but it decays only gradually and even for days after the explosion any person entering the affected area will be killed.

Some of this radioactivity will be carried along with the wind and will spread the contamination; several miles downwind this may kill people. ...

It is a property of these super-bombs that there exists a "critical size" of about one pound. A quantity of the separated uranium isotope that exceeds the critical amount is explosive; yet a quantity less than the critical amount is absolutely safe. The bomb would therefore be manufactured in two (or more) parts, each being less than the critical size, and in transport all danger of a premature explosion would be avoided if these parts were kept at a distance of a few inches from each other. The bomb would be provided with a mechanism that brings the two parts together when the bomb is intended to go off. Once the parts are joined to form a block which exceeds the critical amount, the effect of the penetrating radiation always present in the atmosphere will initiate the explosion within a second or so. ...

We do not feel competent to discuss the strategic value of such a bomb, but the following conclusions seem certain:

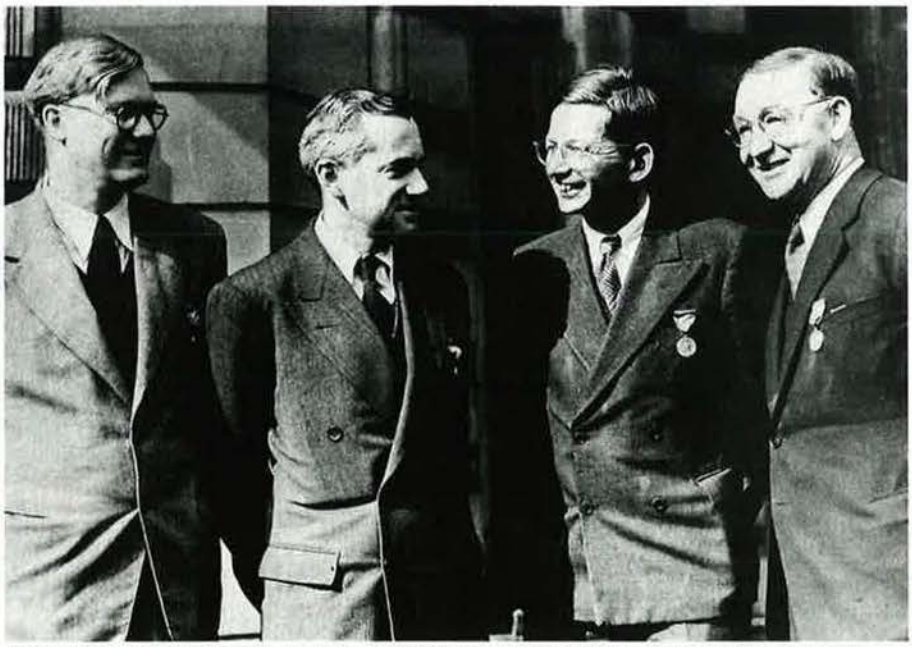
1. As a weapon, the super-bomb would be practically irresistible. There is no material or structure that could be expected to resist the force of the explosion. ...

2. Owing to the spread of radioactive substances with the wind, the bomb could probably not be used without killing large numbers of civilians. ...

3. ... Since all the theoretical data bearing on this problem are published, it is quite conceivable that Germany is, in fact, developing this weapon. ...

4. If one works on the assumption that Germany is, or will be, in the possession of this weapon, it must be realized that no shelters are available that would be effective and that could be used on a large scale. The most effective reply would be a counter-threat with a similar bomb. ...

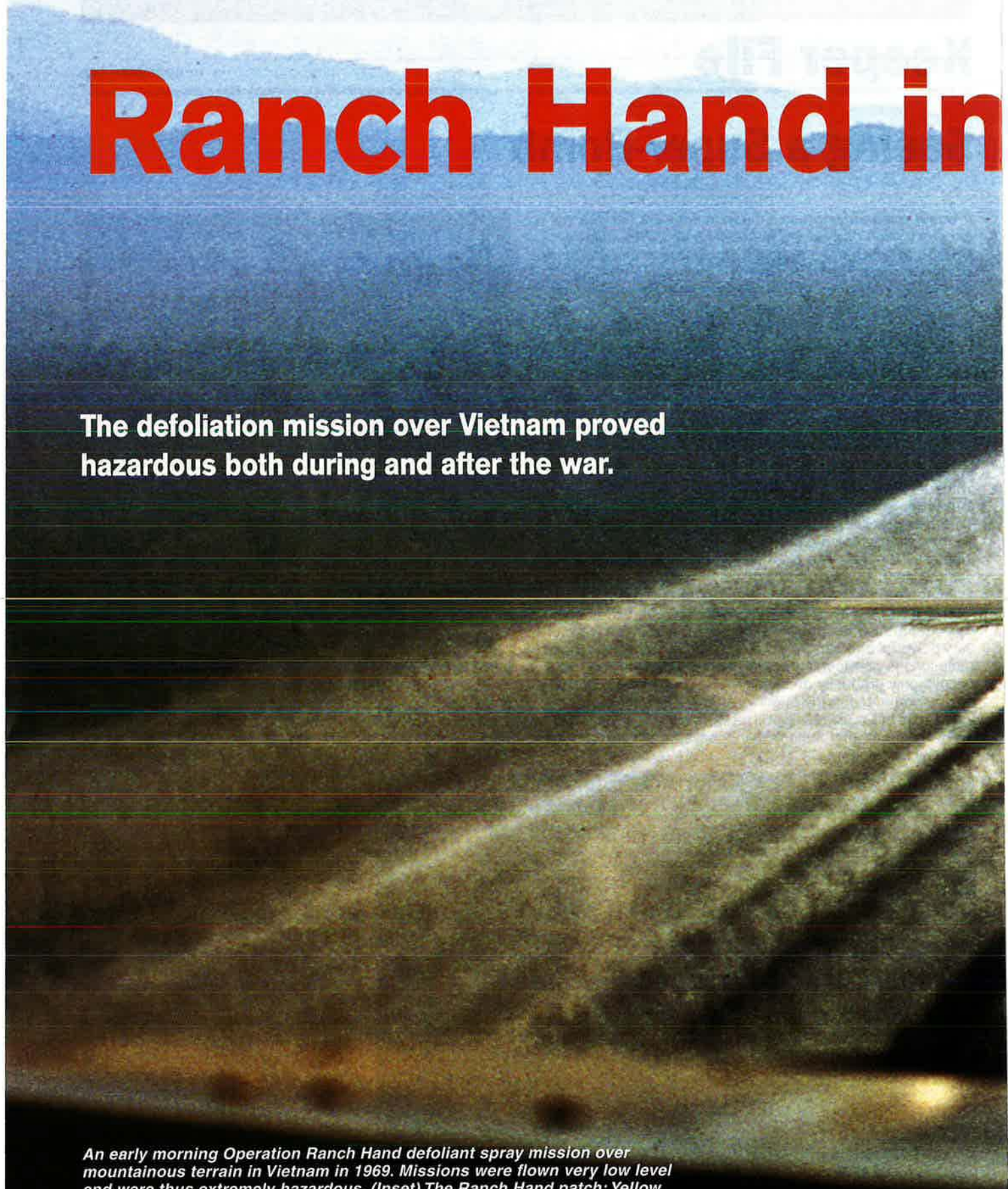
Photo via Wikipedia



Otto Frisch (second from left) and Rudolf Peierls (third from left) flanked by British mathematician William Penney (l) and British physicist John Cockroft. All four worked on the Manhattan Project.

Ranch Hand in

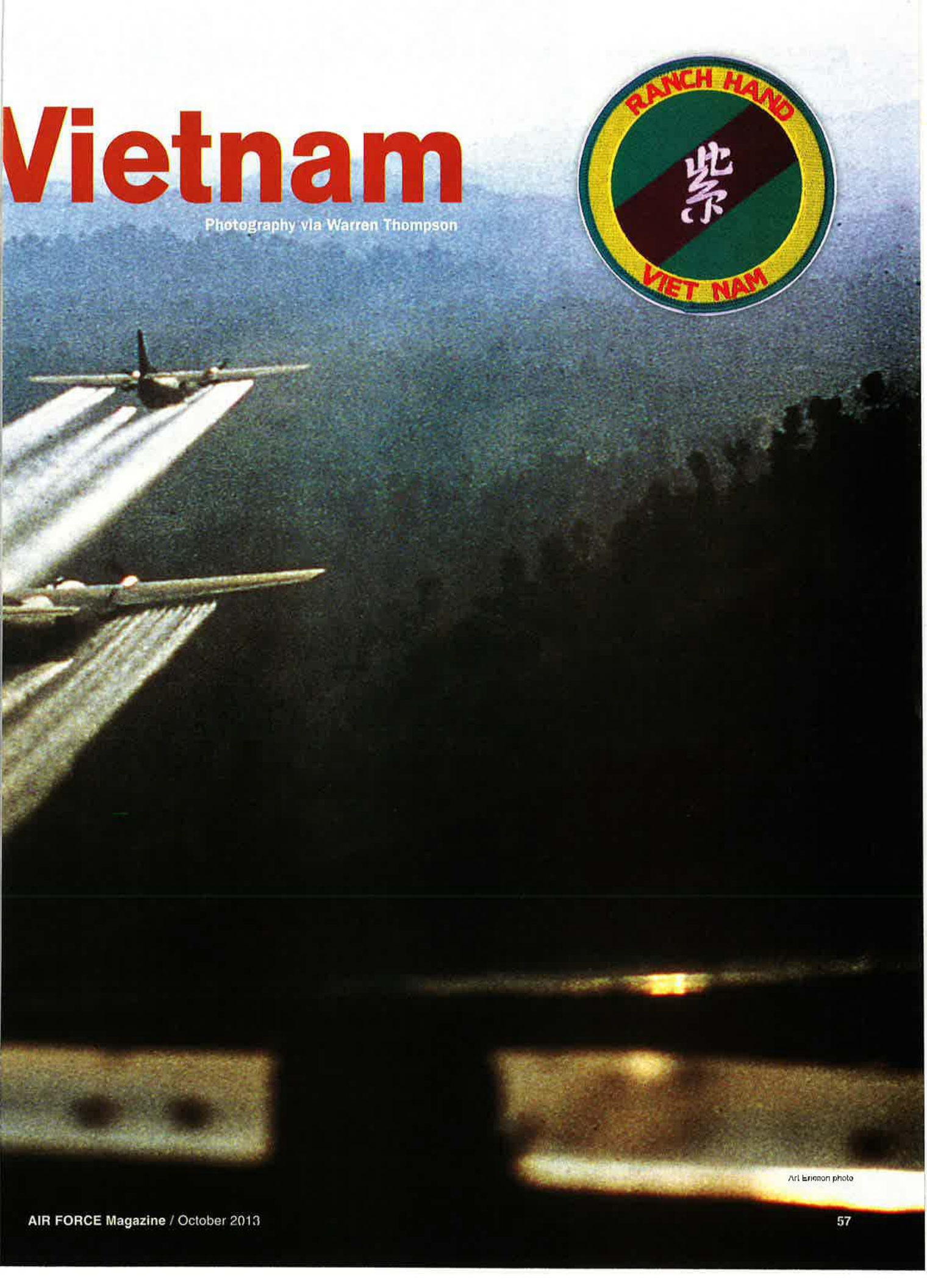
The defoliation mission over Vietnam proved hazardous both during and after the war.



An early morning Operation Ranch Hand defoliant spray mission over mountainous terrain in Vietnam in 1969. Missions were flown very low level and were thus extremely hazardous. (Inset) The Ranch Hand patch: Yellow and red were Vietnam's national colors; the brown swath across the green alluded to the deforestation mission, and the central character says "purple," in Chinese to denote one of the many colors of agents sprayed.

Vietnam

Photography via Warren Thompson



Art Ericson photo

From 1962 to 1971, the Air Force performed aerial spraying missions over South Vietnam, Laos, and Cambodia, under an operation known as Ranch Hand. The idea was to defoliate jungle areas—such as along the Ho Chi Minh Trail—thus depriving communist insurgents of cover and to destroy crops that would sustain the enemy. More than 20,000 sorties delivered 20 million gallons of chemicals over some six million acres in South Vietnam. The various herbicides used each had a color name, such as Agent Purple, Blue, White, Orange, or Pink. They were nicknamed "rainbow" agents and applied in concentrations many times that intended for agricultural use. Spray aircraft would fly in formation to denude an area as much as 10 miles long at a time. ***1*** *The spray apparatus hangs from the wings and tail of this UC-123 Provider.* ***2*** *This UH-1 Huey helicopter based at Bien Hoa, South Vietnam, was also used in the spray mission—for the mosquitoes that plagued US troops.* ***3*** *The aircraft got quite low to ensure effectiveness.* ***4*** *A crew chief checks the oil in a C-123. Aircraft had high in-service rates.*


1


2

USAF photo

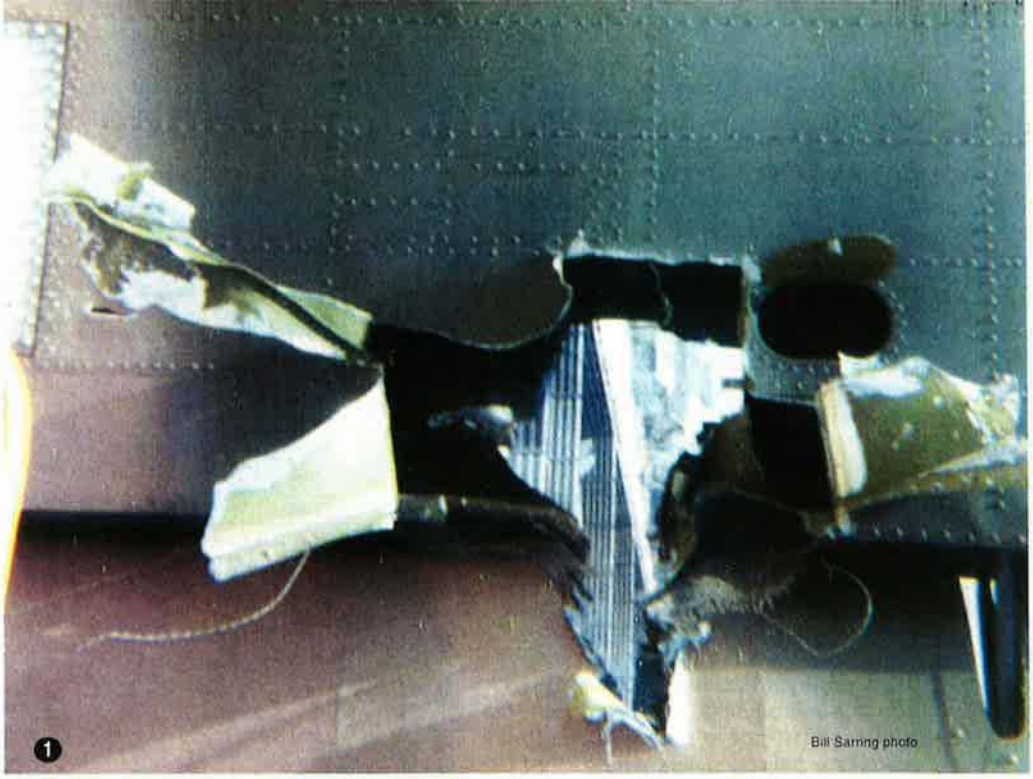

3

Tom Kasych photo


4

Bill Sarring photo

Bryan Aleksich photo



Bill Saming photo

1

USAF photo

Art Ericson photo

3

Spray aircraft flew early in the morning because the rising heat of the day could cause the vaporized chemicals to float up instead of drift down, and winds were lighter. The lower the spray was applied, the more effective it was likely to be, but that put aircraft and crews within range of small-arms fire and anti-aircraft artillery. ***I1I*** *This aircraft operating out of Da Nang, South Vietnam, in 1969 was lucky; damage from the high-caliber round could easily have felled the aircraft if it had been hit in a more vulnerable spot.* ***I2I*** *Early missions meant mission briefs typically at zero-dark-30.* ***I3I*** *The hazards of flying so low are clearly evident in this shot of a maintainer fixing holes in a Provider's tail. The name Ranch Hand was an offshoot of the name of the broader spray and defoliation mission in Southeast Asia, Trail Dust. A variety of vehicles also performed the mission at ground level.*

|1| A C-123 sprays defoliant from under its wings and tail. Typically, several aircraft would fly in a staggered formation to cover a wide swath without wing vortices disrupting the dispersal pattern. Note the stripped foliage at left, resulting from a previous mission here. |2| Agent Orange arrives in 50-gallon drums at an unidentified location. Ranch Hand was flown from five main locations in South Vietnam. |3| Onboard, the chemicals were contained in a 1,000-gallon tank. |4| C-123Ks sent to Vietnam had auxiliary jet engines under the wings to add agility, speed, and carrying capacity. Some 183 Providers were equipped in this way. Spray-configured versions were designated UC-123Ks. |5| This view from a Provider shows red stripes that made the aircraft more visible to others flying above it. |6| Spray-equipped Providers, seen here at Bien Hoa, wore the standard Southeast Asia paint scheme—all except "Patches," a bare-metal aircraft that earned its name from more than 600 bullet holes that had to be repaired on its skin."Patches" was used mainly for mosquito spraying over US bases in South Vietnam. It now represents the Ranch Hand mission

1

2

Art Ericson photo


Art Ericson photo


7
Art Ericson photo


6
Bill Sarring photo


Bill Sarring photo


5
Art Ericson photo

3
Don Huff photo

in the National Museum of the US Air Force in Dayton, Ohio. ***|7|*** *An airman refills the onboard tank with Agent Orange. The messy process resulted in heavy exposure for many servicemen. After years of postwar litigation, the US government admitted the long-term toxic effect of the chemical, and in the 1991 Agent Orange Act, Congress approved benefits to veterans with a range of illnesses presumed to have been caused by the chemical.*

|1| *The C-123s could also be tankers, transporting fuel to forward locations where Ranch Hand aircraft staged. The full fuel bladder in the foreground, likely about to be unloaded for use by helicopters, sits behind a UC-123K.* *|2|* *A large formation of UC 123Ks heads out to a jungle target in 1968.* *|3|* *The Ranch Hand motto—"Only we can prevent forests"—was a play on the Smokey Bear injunction of the time, "Only you can prevent forest fires."* *|4|* *The tail spray booms on a UC-123K.* *|5|* *This head-on photo shows the wing spray booms. The other main user of the C-123 in Southeast Asia was the CIA, whose "Air America" false-flag company moved personnel and cargo with some degree of deniability.* *|6|* *Another view of "Patches." Seven of its crew received the Purple Heart for wounds they received during battle.* *|7|* *Capt. Arthur Ericson poses with his Ranch Hand helmet during his third combat tour in Vietnam. A veteran of many spray missions, he also flew EC-121s in-theater. Note the flak jacket and rifle—standard personal gear when going so low and slow over enemy territory.*

1

2

Art Ericson photo

Art Ericson photo

7

Art Ericson photo

6

Vincent Elequin photo

Bill Sarring photo

5

USAF photo

3

Art Ericson photo

The UC-123Ks were transferred to the Air National Guard and Air Force Reserve after Vietnam, used chiefly for domestic control of mosquitoes and other harmful insects. When retired in the 1980s, some transferred to federal agencies such as the Department of Agriculture, and the last ones did not retire until the late 1990s. USAF's spray mission today resides with C-130s configured with a special modular system. ■

THE FIRST DOMINO

By John T. Correll

The French outpost at Dien Bien Phu fell in 1954, 10 years before the United States was drawn into Vietnam.

AP photo

Soldiers watch as parachutes descend into Dien Bien Phu, South Vietnam, on Nov. 20, 1953, during Operation Castor. The French took the remote outpost from the Viet Minh, repaired the runway, and built fortifications. It wouldn't be enough.

FOR 56 days in 1954, the eyes of the world were fixed on Dien Bien Phu, a remote mountain outpost in Vietnam where 11 French army battalions were pinned down by some 50,000 Vietnamese insurgents.

The rebels were led by Vo Nguyen Giap, a former history teacher and self-taught general. Giap's artillery, firing from the forward slopes of the hills, pounded the exposed encampment in the valley. At the cost of heavy losses in his own ranks, Giap rolled back the French perimeter with a series of human-wave ground attacks.

Airplanes could not land on the besieged airstrip. The only way in was by parachute. There was no way out.

It was the decisive battle in what began as an attempt by the French to re-establish their empire in Indochina after World War II. Before long, though, the conflict escalated to international significance, perceived as a critical step in the global march of communism.

Vietnam was regarded as a test of the "Domino Theory," which predicted that if one nation in Southeast Asia fell to communism, the others would follow like a row of toppling dominoes. For the United States, that conviction trumped its long-held principle of opposition to colonialism. US aid for the French war in Indochina started in 1950 and by 1954 was funding 75 percent of the costs.

It was not enough. Without direct US military intervention, Dien Bien Phu was doomed. In March and April 1954, ideas and proposals of all sorts were flying back and forth.

Among them was Operation Vulture, a plan—cooked up by French and American functionaries in Saigon—for US B-29s to bomb the enemy positions at Dien Bien Phu. According to the French foreign minister, the United States also opened the possibility of using nuclear weapons. US officials denied it.

In any case, the United States did not intervene. When Dien Bien Phu fell on May 7, it was the fatal blow for the French empire in Indochina. However, that did not end the entanglement of the United States which—still pursuing the Domino Theory—was drawn into its own war in Vietnam 10 years later.

Last Grasp for Empire

France's prewar standing among the nations of the world had not been restored by the ouster in 1944 of the collaborationist Vichy regime. The Free French provisional government continued to struggle for influence in international affairs.

If France could reclaim its colonial empire, it might be able to regain some of the prestige it had lost. "A consensus existed around the proposition that France's grandeur depended on the preservation of empire," said historian Fredrik Logevall.

French Indochina—consisting of what is now Vietnam, Laos, and Cambodia—remained loyal to Vichy during World War II, but the real power was the nominally allied Japanese occupation force. The most important part of Indochina was Vietnam, a French possession since 1887. The French army returned in 1945 to resume control but before it got there, Ho Chi Minh, leader of the communist Viet Minh, declared independence for all of Vietnam.

Attempts at negotiating with Ho came to nothing. Under pressure, the French offered "independence within the French Union," which meant that France would retain the sovereignty as well as all the important aspects of government, including military and foreign affairs.

The war began in December 1946, spreading from Tonkin in the north to Annam in central Vietnam and Cochin China in the south. The National Liberation Army, commanded by Giap, was essentially a guerrilla force with only a few pieces of modern military equipment.

The French held the towns and the main roads; the Viet Minh owned the villages and the trails. Outside of the towns, the French concentrated their troops into fortified posts called "hedgehogs." At night, the Viet Minh easily infiltrated the areas around them.

The French Expeditionary Force in Indochina consisted of professional soldiers, volunteers, and the scrapings of the empire: colonial regiments, the Foreign Legion, and local auxiliaries. They were supported by air force squadrons flying a handful of worn-out World War II airplanes. French draftees were expressly withheld from service in Indochina, assigned instead to the Metropolitan Army, which remained in Europe. After several years of no discernible progress, French public opinion began to tire of the war and begrudge the expense of it.

The End of Neutrality

President Franklin D. Roosevelt was doggedly opposed to colonialism. His successor, Harry Truman, took a more flexible position about the colonial empires of US allies and, until the late 1940s, followed a general policy of neutralism.

That changed with the eruption of communist challenges on multiple fronts, including the blockade of Berlin in 1948, the revolution in China, and the invasion of South Korea in 1950. Communist factions led the insurgencies against the colonial regimes in Malaya and Indochina.

The driving theme of US foreign policy was anti-communism. In 1949, the National Security Council recognized Southeast Asia as "the target for a coordi-

nated offensive directed by the Kremlin," and in NSC 124/2 in 1952 said that "the loss of any single country would probably lead to relatively swift submission to or an alignment with communism by the remaining countries of this group."

By 1952, the United States had provided substantial financial assistance to the French as well as 229 aircraft and all sorts of other military equipment for use in Vietnam.

The Fourth Republic in France was notoriously unstable. When Prime Minister Joseph Laniel took office in 1953, it was the 19th French government formed over the previous seven years. Support for the effort in Indochina waxed and waned.

US determination to salvage Vietnam was more constant than that of the French themselves, but the motivation was different. The United States wanted France to agree to full independence as part of the strategy to defeat the communist challenge. This had no appeal for the French, whose reason for fighting was to preserve the empire.

"By the time I entered the Presidency, the French nation had become weary of war," President Dwight D. Eisenhower said. From 1953 on, the Eisenhower Administration continued the basic previous approach but increased the aid to the French.

At a press conference in April 1954, Eisenhower declared the "Falling Domino Principle," often remembered as the seminal US commitment to Indochina. "You have a row of dominoes set up, you knock over the first one, and what will happen to the last one is the certainty that it will go over very quickly." His description was more graphic than Truman's NSC 124/2, but the meaning was exactly the same.

Light in the Tunnel

The French military position in Vietnam had been slipping since 1950, but Gen. Henri E. Navarre, who arrived in May 1953 to command the French Expeditionary Force, sought to change the momentum by going on the offensive.

Navarre's plan had several parts. He would employ his best forces in a more mobile role and seek to draw the Viet Minh into an open battle. He hoped to do this somewhere in Giap's stronghold in northwestern Tonkin, where he also figured to cut off the Viet Minh invasion route into Laos.

An international conference on restoring peace in Indochina had been organized by the major world powers with French concurrence. It was scheduled to begin in Geneva in May 1954, and a victory by Navarre in Vietnam could strengthen the French hand in the negotiating.

Confident of success, one of Navarre's aides told *Time* magazine, "Now we can see it clearly—like light at the end of the tunnel." Years later, that famous phrase would be mistakenly attributed to US

In this painting by Jeffrey Bass, CAT pilot James "Earthquake McGoon" McGovern, his copilot, Wallace Buford, and two French crew members struggle to make it over the border into Laos after being hit by flak over Dien Bien Phu. They made it, but died in the crash. McGovern and Buford were the first Americans killed by the Vietnamese in combat.

Gen. William C. Westmoreland, who never said it.

The place Navarre chose to make his stand was identified on French maps as Dien Bien Phu, close to the Laos border but 185 miles from the French Tonkin theater headquarters in Hanoi. The name meant "big frontier administrative center," referring to a post established by the French in 1889 at the obscure village of Muong Thanh.

Dien Bien Phu lay in a valley, 11 miles long and seven miles wide, surrounded by mountains. Colonial Route 41 cut through the center, alongside a narrow river and numerous small hamlets. There was also an airstrip, built in 1939.

Fundamentally, the French did not believe that colonial insurgents could defeat a modern European army and in their arrogance made several fatal miscalculations. They assumed that Giap would be unable to transport and sustain a large force in a remote location, and in particular that he would not be able to move in artillery. French airpower would interdict the approach routes. If Giap somehow managed to bring his cannons into action, they could be silenced in minutes by counterbattery fire.

In Operation Castor, Nov. 20, 1953, three airborne battalions parachuted into Dien Bien Phu and captured it from the Viet Minh defensive force. The French repaired and reopened the runway, which had been sabotaged. There was not much timber in the valley, so they tore down every house and shed in the villages for construction materials to build fortifications.

It did not amount to much protection, but the French did not believe they needed much. They placed their own artillery in open pits so it would be free to swing around unobstructed and fire in any direction. Col. Charles Piroth, the French artillery commander, assured Navarre that "no Viet cannon will be able to fire three rounds before being destroyed by my artillery."

Airhead Under Attack

The commander at Dien Bien Phu, Col. Christian de Castries, established his headquarters near the airstrip, where the village of Muong Thanh had stood. The encampment consisted of nine strong points named Anne-Marie, Beatrice, Claudine, Dominique, Elaine, Francoise, Gabrielle, Hugette, and Isabelle. Gabrielle on the northern point was more than five miles from Isabelle in the south, where a small secondary airstrip was built.

The outpost was an airhead, totally sustained by airlift. The French air force had four squadrons of C-47s and a few C-119s in country, a resource that had to support operations elsewhere in Vietnam as well.

By January, the French presence at Dien Bien Phu had grown to about 11,000 troops. Most of the air support came from bases around Hanoi and Haiphong, but there were usually a few Bearcat fighters at Dien Bien Phu as well as half a dozen Morane Criquet light spotter airplanes to find and mark enemy artillery positions.

The French would have been astounded had they known the size of Giap's force in the hills around Dien Bien Phu. He had five army divisions—50,000 regular troops—no longer the rag-tag guerillas of days gone by. He also had 144 artillery pieces, 36 antiaircraft guns, and some rocket launchers. Many of the guns were of American manufacture, captured by the Chinese in Korea. All told, Giap had

Artwork courtesy of Jeff Bass, commissioned by Fairchild Corp.

What Ike (May Have) Said

Disagreements linger, almost 60 years later, about what the Americans and the French said to each other about the possibility that US forces might enter the conflict in Indochina. The most contentious question of all is how seriously the use of nuclear weapons was considered.

The definitive word on US policy was long presumed to be a statement by President Eisenhower. When the thought of using atomic bombs in Vietnam was brought forward, he supposedly said, "You boys must be crazy. We can't use those awful things against Asians for the second time in less than 10 years. My God!"

All references to that statement track back to a sole source, *Eisenhower the President,* published in 1984 by popular historian Stephen E. Ambrose, who attributed it to an interview with Eisenhower.

Problems set in when the Eisenhower Library at Abilene, Kan., discovered in 2010 that Ambrose had exaggerated his contact with Eisenhower, and that many of the interviews he reported had not in fact happened.

Before his death in 2002, Ambrose admitted to shoddy methods in other works, but none of that compared in importance to the issue of the Eisenhower interviews. The library's revelations did not specifically invalidate the statement about the atomic bomb. Some of the interviews were real, and some of the attributions were surely valid.

Among those willing to give Ambrose the benefit of the doubt on this one is Jean Edward Smith, a well-established historian whose *Eisenhower in War and Peace* was published in 2012. To him, the atomic bomb quotation "rings true," he says.

an advantage of four-to-one over the French in artillery.

Giap sustained his force in several ways. Modified bicycles—with wooden struts for extra strength and extensions on the handlebars—could haul up to 440 pounds of supplies. Porters carried additional loads on bamboo poles. The Viet Minh had about 600 Russian trucks, which they used to carry the artillery from the Chinese border over roads kept open by manual labor. Historian John Prados estimates that Giap transported as much tonnage into Dien Bien Phu as the French did.

Incredibly, the French did not see that Giap was emplacing his guns on the forward slopes of the hills, looking directly down on the camp. The peaks were steep, and howitzers on the reverse slopes would have had to fire at unfavorable angles of elevation to clear the ridges. The guns would have been vulnerable on the forward slopes except that Giap placed them in deep casemates, narrow embrasures dug into the face of the hill, protected by several yards of overhead cover with only the muzzles protruding. Since each gun was assigned to a single target, there was no need for the barrel to move.

When Giap began sporadic bombardment in January, the French took it to be pointless harassment. In fact, the guns were sighting in on their specific coordinates. The main attack, which began at twilight on March 13, was devastating. The French batteries were unable to target Giap's guns and their artillery spotter airplanes were destroyed on the airstrip.

Strongpoints Beatrice and Gabrielle were overrun the first night and Anne-Marie was taken soon thereafter. By the fifth day, the French had lost the equivalent of three battalions. Giap's casualties were even greater, but he was now able to strike the encampment with mortars and artillery.

French artillery chief Piroth, who had guaranteed that the Viet Minh guns would do no harm, committed suicide.

The Question of Intervention

As the situation deteriorated, the clamor increased for the United States to enter the conflict. Eisenhower effectively ruled out sending ground troops but left the possibility of airpower slightly open. He listed four firm conditions for US intervention: a formal request for intervention; sanction of the response by the United Nations; participation by other nations; and approval from Congress.

Meanwhile, staff officers and bureaucrats were busily conducting studies and putting together contingency plans. At Navarre's headquarters in Saigon, French and American officers conceived of Operation Vautour (Vulture), in which US B-29 bombers and carrier-based aircraft would attack the insurgents around Dien Bien Phu.

In early April, the French government requested that Operation Vulture be carried out, believing that it had already been approved in Washington. They had gotten that impression, apparently, from enthusiastic discussions between Adm. Arthur W. Radford, Chairman of the Joint Chiefs of Staff, and Gen. Paul H. R. Ely, the French chief of staff.

The previous month, Radford had sought concurrence from the other members of the Joint Chiefs on a recommendation to commit US airpower at Dien Bien Phu and had been rebuffed. The State Department told the French they must have misunderstood Radford and said no on Operation Vulture.

A further misunderstanding, this one about nuclear weapons, also arose from a freewheeling idea by staff planners. In early 1954, the Joint Advanced Study Committee in the Pentagon reached the strange conclusion that the Viet Minh at Dien Bien Phu could be defeated with three atomic weapons. It is unknown how the committee figured to do this without also wiping out the nearby French forces.

For reasons yet unclear, US Secretary of State John Foster Dulles—the strongest advocate in Eisenhower's Cabinet of US military aid to the French—discussed the Pentagon study with French Foreign Minister Georges A. Bidault, a leading advocate of victory in Indochina. Bidault later said that Dulles offered him the use of two (not three) atomic bombs, but that he had declined.

AP photo

Dulles said he was "totally mystified" by Bidault's claim.

The United States loaned the French some additional C-119s and other aircraft and assigned almost 300 US Air Force personnel to Vietnam to provide maintenance and support. The French had few aircrews qualified on C-119s, so they contracted with Civil Air Transport—a CIA proprietary airline that would later be renamed Air America—to fly the C-119s on the Dien Bien Phu run.

French bombers did little damage to Giap's fortified artillery positions and the fighters seldom caught his infantry in the open during daylight hours. Napalm, employed by C-47s and C-119s, was somewhat more effective, mostly because of the fear it created. From beginning to end, Giap had the initiative.

The last airplane landed March 8, after which the Viet Minh guns prevented any further use of the airstrip. Dien Bien Phu was totally dependent on airdrop for reinforcements and supplies.

The airlifters, coming straight down the valley, were starkly vulnerable. To escape the flak, the French C-47s flew at 10,000 feet and the C-119s, almost all of them crewed by Americans, flew at 5,000 feet. The airdrops, especially from the higher altitudes, often went wide. More than half of the airdropped food, ammunition, and other supplies fell into enemy hands.

Aircraft, both French and American, took hundreds of hits. In April alone, C-119s flown by CAT pilots were hit more than 60 times.

The first Americans to die in combat were CAT pilot James B. McGovern—a big man with a bushy beard, nicknamed "Earthquake McGoon" for his resemblance to a character in the comic strips—and his copilot Wallace A. Buford. On the afternoon of May 6, they came down the valley at 3,000 feet with six tons of ammunition for strongpoint Isabelle. Hit by ground fire over the target, McGovern, Buford, and their two French crewmen made it across the Laos border before the C-119 crashed and exploded.

The Fall of Dien Bien Phu

The last reinforcements parachuted into Dien Bien Phu on May 4, three days before the end. The final French position was no larger than a baseball field when the Viet Minh overran it on May 7.

The French lost 2,080 killed and 5,613 wounded in the eight-week engagement. Viet Minh casualties were much higher, estimated at 7,900 killed and 15,000 wounded.

Of the 6,500 French troops taken prisoner, more than 4,000 died or disappeared in captivity, the result of mistreatment, disease, poor food, and lack of medical care. Of the 15,000 French Union troops who served at Dien Bien Phu, "no more than four out of every 10 ever went home, wounded or unwounded," said historian Martin C. Windrow.

The French still held numerical military superiority in Vietnam, but Dien Bien Phu had taken the starch out of them. The Geneva Accords on July 21, 1954, partitioned Vietnam at the 17th parallel. The Viet Minh got the north. The south remained briefly in the French Union until President Ngo Dinh Diem declared independence. The last French forces left Indochina in April 1956.

The Viet Minh bided their time until 1959 when they moved to consolidate Vietnam, creating what would become the Ho Chi Minh Trail as an infiltration route to the south. The long effort to overthrow the government in Saigon was relentless.

US President John F. Kennedy, elected in 1960, subscribed fully to the Domino Theory, as did his advisors and the Joint Chiefs of Staff. US entry into Vietnam began with civilian advisors and trainers and evolved to major combat before the departure, called "peace with honor," in 1973. South Vietnam finally fell to the North in 1975.

Laos and Cambodia were taken over by the communists, but the falling dominoes stopped there. Next door Thailand kept its independence as well as an alliance with the United States.

In 2005, the French ambassador to the United States presented the Legion of Honor, France's highest award for service, to the seven surviving CAT pilots who flew missions to Dien Bien Phu.

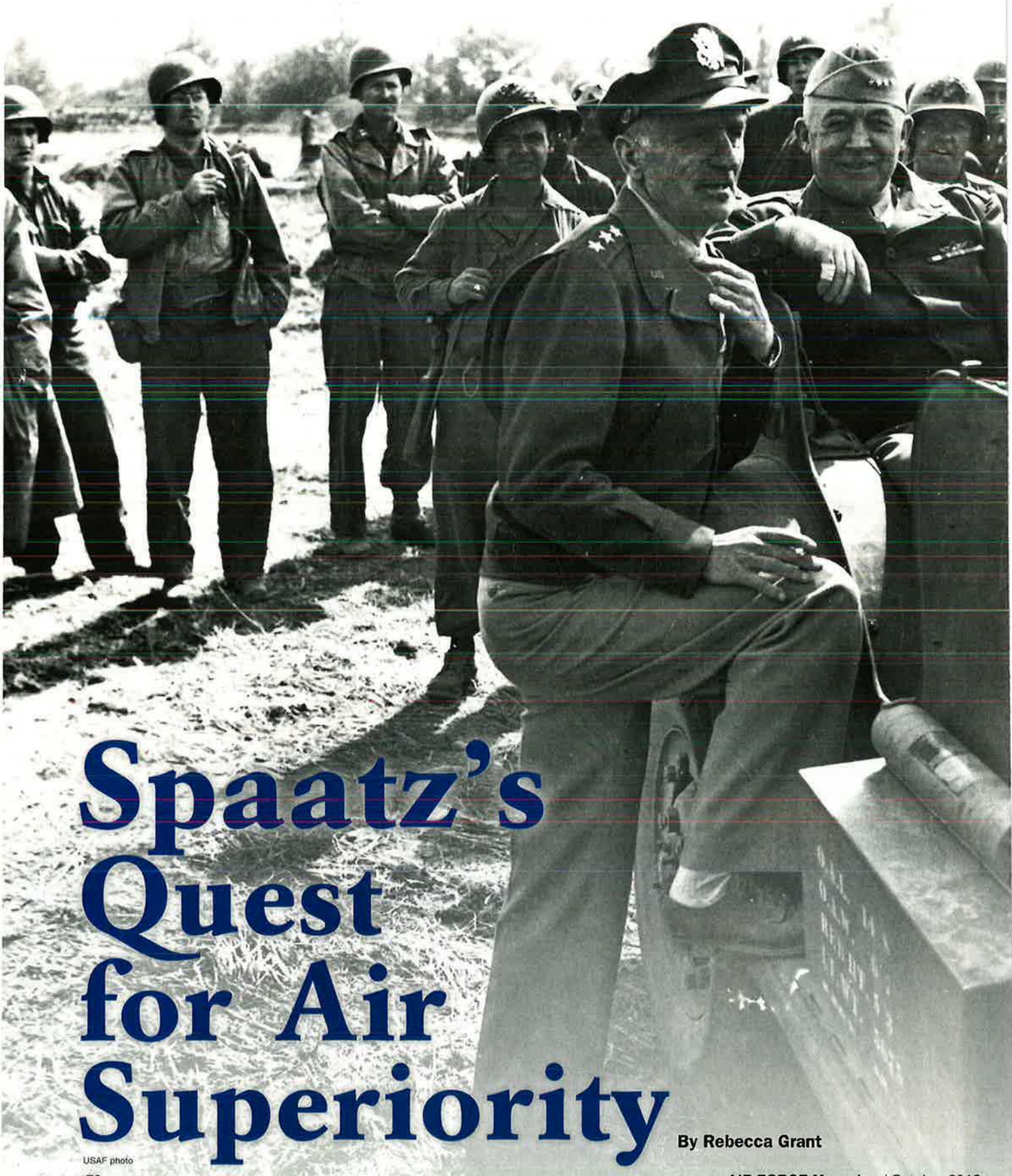
The scars of battle are gone from Dien Bien Phu, which has been the capital of Lai Chau province since 1993. The mountain valley, now with a population of 60,000, is a destination for both Vietnamese and French tourists. Rusting French cannons are still scattered about, and there is a small museum. The displays include relics from both sides, including one of the bicycles modified to carry 440 pounds of cargo to the Vietnamese forces in the hills. ■

AP photo

Far left: Secretary of State John Foster Dulles and President Dwight Eisenhower confer at Lowry AFB, Colo., in 1954. Dulles was a strong advocate of military aid to the French in Vietnam. Left: Viet Minh steer a convoy of modified bicycles, configured to carry hundreds of pounds of supplies. The French believed Vo Nguyen Giap, the Viet Minh leader, wouldn't be able to transport and sustain a large force in a remote location like Dien Bien Phu. They were wrong.

John T. Correll was editor in chief of Air Force Magazine *for 18 years and is now a contributor. His most recent article, "The Second Coming of Counterinsurgency," appeared in the September issue.*

The legendary airman accomplished a signature achievement in the skies over Europe.



Spaatz's Quest for Air Superiority

By Rebecca Grant

USAF photo

On Dec. 28, 1943, Lt. Gen. Carl A. "Tooey" Spaatz took off from North Africa on his command airplane, a B-17 named *Boops* for his daughter Carla, age 11. After a year in the Mediterranean theater, Spaatz was taking over as commander, US Strategic Air Forces in Europe.

He was the personal choice of US Army Gen. Dwight D. Eisenhower. "Wouldn't take anyone else," Gen. Henry H. "Hap" Arnold noted after a private meeting with the newly selected supreme allied commander of the Allied Expeditionary Force. When it was all over, Eisenhower wrote, "On every succeeding day of almost three years of active war I had new reasons for thanking the gods of war and the War Department for giving me 'Tooey' Spaatz."

But that was in the future. As 1943 drew to a close, the long-planned invasion of France was barely six months away, and the Allies were behind in their most immediate task: winning air superiority in Europe by battering down the Luftwaffe. The task fell to Spaatz.

Winning air superiority was the first job of an air force. The task was extremely difficult, yet it could not have fallen on more capable shoulders.

While remembered today as the first USAF Chief of Staff, or as a World War II bomber baron who launched massive offensives such as Big Week in February 1944, Spaatz's critical wartime achievement was coming from behind to win air superiority over the Luftwaffe.

Air superiority then was not like it is in the modern era, where few enemy aircraft disturb the skies. Air superiority in Europe in 1944 was a costlier and more transient phenomenon. It had eluded the Allies and was of supreme importance to the liberation of Europe.

Spaatz was well-acquainted with the expectations for air superiority. In 1939, he joined Major General Arnold's staff in the Office of the Chief of the Air Corps at the Pentagon. He then witnessed the beginning of the Blitz while on assignment in London in 1940. Back in Washington, he headed a planning division and then became chief of the air staff. The ambitious rush production of warplanes in AWPD-1 was laid out under his authority.

Lt. Gen. Carl Spaatz (standing), then commander of US Strategic Air Forces in Europe, and USAAF commander Gen. Henry Arnold (in jeep) visit a landing strip in France during World War II.

In the process, Brigadier General Spaatz got to know another young brigadier doing planning for Army Chief of Staff Gen. George C. Marshall. This was Eisenhower.

At the time, the Americans were sketching out a cross-Channel attack for as early as October 1942. Marshall insisted on air cover to protect invasion beaches and the advance inland. Here, in the dark days of early 1942, Spaatz set the expectations for air superiority, or as he would have termed it, air supremacy.

"The most salient point of Spaatz's plans was the emphasis on destroying the Luftwaffe rather than on conducting a strategic bombing campaign against the German war economy," observed Richard G. Davis in his biography *Spaatz and the Air War in Europe.*

Those plans would soon be postponed in favor of invading North Africa. For a year, Spaatz worked with Eisenhower to master air and ground employment and win battles in the Mediterranean theater. Eisenhower was appointed supreme commander for the Normandy invasion and in December 1943 he ordered Spaatz back to England.

"The most salient point of Spaatz's plans was the emphasis on destroying the Luftwaffe rather than on conducting a strategic bombing campaign against the German war economy."

Grim Toll

All plans for Operation Overlord—the Allied invasion of German-occupied Western Europe—hinged on air superiority. Eisenhower described it as "almost on faith" that combined air forces would be able to provide overpowering force.

However, the failure to attain air superiority was building to a crisis. Aviators recognized this. The classified monthly report, the Army Air Forces "Impact," put it in the most charitable terms. The period from mid-1942 to mid-1943, "with the air forces opposing each other about equal in strength, was generally a stalemate."

Several problems were piling up. The Germans actually had more aircraft in Western Europe's skies in late 1943 than they did in early 1942. First, they moved more fighters to the Western front. Numbers increased from 591 single-engine fighters in theater in mid-1943 to more than 700 by Oct. 5. The Germans had also figured out that fighter production needed to be a top priority. Deliveries rose from 753 for the first half of 1943 to 851 for the final six months of the year.

The other side of German strategy was to inflict loss rates on the Allies to compensate for increasing Allied production.

Albert Speer noted there was "no need to think in terms of destroying all enemy bomber planes." High losses demoralized and depleted crews. "Therefore, enemy superiority in materiel and men could be balanced out by the greatest losses," Speer opined after the war.

Loss rates through 1943 were just as bad as Speer thought. Sixty B-17s went down on the final Schweinfurt raid of the year on Oct. 14, 1943. From July to November, the loss rate averaged 3.8 percent per mission. At that rate, bomber crews flying the allotted 25 missions would suffer a casualty rate of 64 out of every 100 men.

The fighter squadrons were lacking, too. Range limits still leashed them to limited escort duty. The rugged P-47 could not escort to a radius much beyond 300 miles. Men, aircraft, and equipment flowed into theater, but Eighth Air Force had not yet found the tactical formula to accomplish its mission.

Official historians Wesley F. Craven and James L. Cate summed up the desperate situation: "The fact was that the Eighth Air Force had for the time being lost air superiority over Germany."

Spaatz was coming back to England to effect a turnaround. Air superiority to Spaatz and Eisenhower was focused on the goal of allowing other air operations deemed essential for Overlord. Principally, these were to clear opposition so that a highly precise campaign could be conducted, at low altitude, on the transportation system in France. Railways and bridges were the top targets.

This would also allow fighter-bomber reconnaissance to harass and halt German reinforcements after the landing. To do all this, the first aim as codified in the Pointblank directive of 1943 was to render the Luftwaffe incapable of effective resistance. That did not mean emptying the

skies, but it meant the landings would not hang in the balance while a battle raged for air control. Hence, the stalemate in place in December 1943 was unacceptable.

Spaatz knew what it meant to take the offensive. During World War I, he'd spent a year running training at the large US base at Issoudun in France. While there, he'd seen the high losses among trainee pilots both from accidents and combat operations. He also found a way to attach himself on temporary duty to a combat unit and flew in the major air battle at St. Mihiel in September 1918 and again during the Meuse-Argonne action later that month.

His last sortie with the 13th Aero Squadron had been memorable: Major Spaatz chased and shot down two Fokkers. In the process, he became target-fixated, and other Fokkers jumped him. A more experienced aviator came to his rescue and shooed them off Spaatz's tail. However, he was out of fuel and set the ship down in no-man's land. Spaatz later told the story this way: He downed three airplanes—"two German and my own."

Years later, Spaatz had observed in detail how fighters were employed by the RAF in the Battle of Britain. Destroying fighters in the air was essential, he concluded. "Control of the air would have to be won by shooting the German planes out of the skies in air-to-air battles," summed up another biographer, David Mets.

The Spaatz doctrine for air superiority was to work every angle. Factory attacks alone could not halt production permanently, given the dispersal of the German aircraft industry. So Spaatz resolved to restrict fuel, limit their training, blow up their bases, and most of all, send big raids to targets the German fighter pilots had to defend in the air.

He started his shake-up in January 1944. First, he changed the way fighters were employed. Doctrine at the time called for fighters to act as escorts as far as their fuel range allowed. This translated into mighty air battles but only at the margins of German control of the air. Spaatz altered the strategy and sent bombers and fighters against targets chosen to lure out the Luftwaffe. Once up in the air, the fighters went on the attack.

The concept was called loose escort. In practice, fighters were now free to leave the bomber boxes to pursue and destroy German aircraft. The tactic "revolutionized daylight air warfare over Germany," said biographer Davis in a recent essay on Spaatz. "American P-51s, P-38s, and P-47s pursued and destroyed the Luftwaffe's day fighter force from the tops of the clouds

USAF photos

Above: Spaatz in front of a Martin trainer during pilot training in California. Below: A B-17 loses its wing to fire from an Me 262 over Germany during World War II. Spaatz expanded the bombing campaign to include not only aircraft production facilities but fuel depots, bases, and big raids on tempting targets the Germans were forced to defend in the air.

to the tops of the trees and even as they landed and took off."

At the same time, Spaatz decided to increase attacks on Luftwaffe bases. Such attacks—today a cornerstone of offensive counterair doctrine—had worked in the Mediterranean but had been less effective to date in Europe. Still, Spaatz was ready to try it again.

"My tendency will be to place a little bit more emphasis upon swatting the enemy on his airdromes whenever possible," he wrote.

Perhaps as important, he gathered the bulk of the new P-51s arriving in theater under Eighth Air Force. Originally, P-51s were sent both to the ground-attack specialists in Ninth Air Force and to the Eighth. Spaatz fought the position through the complicated air command structure and ended up with seven groups of P-51s for Eighth Air Force and two for the Ninth. Thus the mass formations of bombers and fighters totaling hundreds of aircraft were serving one prime objective: destruction of the German air force.

Through it all, Spaatz was noted for his equanimity and modest nature. He could also be a stern taskmaster—as Maj. Gen. Jimmy Doolittle discovered.

Soon after Spaatz elevated Doolittle to command of Eighth Air Force, Doolittle had to abort not one but two massed bomber raids when weather was suddenly forecast to drop below minimums at the home airfields in England. Naturally, the weather didn't break, and the returning initial formations landed in bright sunshine.

Spaatz summoned Doolittle. "I wonder if you've got the guts to lead a big air force," Spaatz said. "If you haven't, I'll get someone else who has."

Spaatz summoned Doolittle. "I wonder if you've got the guts to lead a big air force," Spaatz said. "If you haven't, I'll get someone else who has."

Doolittle later wrote, "My heart sank." He defended his decision by saying he did not want to allow an uncalculated risk. Spaatz's reaction was "cryptically noncommittal."

Later, Spaatz and Doolittle were flying around England on an inspection tour when the fog moved in. They barely landed on an unprepared field. Spaatz was quick to admit, "You were right, Jim. I see what you mean about uncalculated risks."

Big Week

Dogged by bad weather, Spaatz still had not yet struck the much-awaited hard blows against the German air force. His opportunity came in mid-February 1944. Weather conditions were suitable for Operation Argument, otherwise known as Big Week. From Feb. 20 to 26, 1944, USAAF and the RAF launched mass bomber offensives on German aircraft production. Bombers ranged near the edge of their combat radii from Hamburg to Leipzig, Dresden, and Nuremberg.

The first set of targets selected were 12 major assembly and component plants for German Me 109s, Me 110s, Ju 88s, FW 190s, and other German fighters. Scheduled for the attack on Feb. 20 were 16 bomber wings and 17 fighter groups. This was the big chance, and Spaatz was willing to take the risk of losing up to 200 bombers to carry it out.

On the eve of the attack, Spaatz alone had to make one of the toughest decisions of his career. Commanders around England were calling in to express reservations about weather and icing conditions and how they would affect the strike. Competing priorities in supporting the Anzio beachhead and tussles with the RAF also conspired to put a damper on plans.

"The risks were so great and the conditions so unfavorable that none of the subordinate commanders was willing to take the responsibility for the launch," noted one of the brigadiers present the night before the mission. "General Spaatz quietly and firmly issued the order to go."

Of the 941 bombers that flew sorties, amazingly, only 21 were lost that night. Spaatz was more than vindicated.

Total losses for Big Week tallied 158 bombers for Eighth Air Force and 89 for Fifteenth Air Force, plus 28 fighters. Results were spectacular. Nearly 70 percent of the original buildings used for fighter production were destroyed. Estimates showed a total of 545 German fighters destroyed from January through Feb. 29, 1944.

By late March 1944, the question of when to begin direct air preparation of the battlefield grew urgent. All commanders knew that at some point, the weight of airpower would shift. Perhaps Spaatz's most difficult task was sticking to the air superiority campaign, which was after all the long-agreed precondition for the invasion. How long could he hold on to the priorities?

The most serious disputes occurred over when and how to attack railways leading to the invasion area that might be used by Germans to bring rapid reinforcements. The plan—which turned out to be a success—began with all sorts of opposition and debate. Actual selection of targets for US and RAF bombers was accomplished through a complex, combined process that often involved the joint chiefs of staff, Eisenhower, and even Churchill and Roosevelt. As a result, the railway plan debate took up a good deal of high-level time.

USAF photo

Spaatz (seated second from left) and Gen. Jimmy Doolittle (to his left) during an after-action discussion with crews from the 303rd Bombardment Group after a raid on an oil refinery in Halle, Germany.

USAF Photo

A B-26 flies over an invasion beach in the early morning hours of D-Day. Spaatz's campaign to fuel-starve the Luftwaffe had a profound effect on the land battle, said Gen. Dwight Eisenhower.

Matters came to a head during a meeting on March 25, 1944. It fell to Spaatz to present the alternative view, namely, continuing to target German oil supplies for a time longer. His top priority was to assure air supremacy at the time of the Allied assault.

Oil remained a prime target for its potentially choking effect and for another reason: Spaatz thought the oil targets were far better bait. He felt the Luftwaffe would not bother coming up to defend French rail hubs.

"We believe they will defend oil to their last fighter," Spaatz said in the alternative plan presented to the top US and British commanders.

Spaatz had won his point anyway. Eisenhower had put off for more than a month the decision to switch to rail targeting. This four-star stall had already given Spaatz extensive leeway to finish his quest for air superiority.

March was another month of heavy losses in the Luftwaffe.

In the end, Eisenhower decided to pursue both approaches. He moved forward with the rail and transport plan, but Spaatz also continued his conquest of the Luftwaffe. "Spaatz convinced me that, as Germany became progressively embarrassed by her diminishing oil reserves, the effect upon the land battle would be most profound," Ike explained.

Eisenhower took command of the air force in the run up to D-Day. He continued to approve Spaatz's mass assaults on oil targets and they delivered knockout blows. One such armada attacked synthetic oil targets on May 12, 1944, with 886 bombers and 735 escort fighters pitted against German defenses. The cost was 46 Eighth Air Force bombers, 10 fighters, and their crews.

Other attacks followed, delivering immediate results cramping oil production and taking out yet more German fighters.

Bloody Victory

Life magazine ran Spaatz on the cover of its May 29, 1944, issue, the week before the invasion. The portrait showed what aides called his poker face. Spaatz's tired eyes and gaunt face hinted at the effort of the air battle. It wasn't his first or his last major magazine cover, but it marked a unique moment for him. As the invasion approached, every indication showed that the Luftwaffe could not contest the skies.

The invasion date was set for June 5, 1944. Then, foul weather descended. Navy commanders told Eisenhower they could handle the rough seas. British Field Marshal Bernard L. Montgomery offered to take the invasion force in without air cover. Eisenhower overruled him. His deputy, Air Vice Marshal Arthur W. Tedder, recorded that Eisenhower thought "the operation was only feasible in its present form because of our very great air superiority." According to Tedder, Eisenhower declared that if the air forces could not operate, then the operation must be postponed. The invasion would wait one more day.

On June 6, Spaatz had his victory. "The battle for air supremacy over the beachhead never occurred," noted Davis.

"The Luftwaffe refused the challenge," noted Craven and Cate's official history. "The concentrated attacks on the Luftwaffe, production, and product, paid the dividends that we always envisioned, the dividend being beyond expectation," summed up Spaatz himself. "During the entire first day of the invasion, enemy opposition in the air, either fighter or bomber, was next to nil."

With a force estimated between 50 and 120 fighters, the German air force in the Normandy area managed some 250 sorties.

This kind of air superiority was not smooth or easy. Flak and some air combat took down 71 US aircraft. Yet it was exactly what Eisenhower counted on to give the landings a chance for success and hold off a German counterattack.

From the perspective of six months earlier, the victory in the air was a profound achievement.

It is not one usually attributed to Spaatz, however. Eisenhower had an explanation for that. "He shunned the limelight and was so modest and retiring that the public probably never became fully cognizant of his value," Eisenhower said of Spaatz.

After VE day, Spaatz transferred to the Pacific. He fought postwar battles, too, to ensure the birth of an independent Air Force.

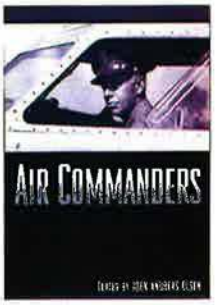
Spaatz's experience stands as a reminder that air superiority is not static but has many different meanings. The most important ingredient in defining it is the expectation of the joint force commander—in this case, Eisenhower. For Spaatz, what he gained was a form of working air superiority that gradually increased to dominance but never without risk and cost. The cost was high, but the dividend, as he put it, was beyond expectation.

Spaatz's achievement is also a reminder of what top commanders have acknowledged for decades: The American way of war is possible only with air superiority. As challenges rise again in the Pacific and elsewhere, the finesse and flexibility of Spaatz's singular achievement stands out all the more. ■

Rebecca Grant is president of IRIS Independent Research. Her most recent article for Air Force Magazine *was "Old Lessons, 'New' Domain" in the September issue.*

Books

Compiled by Chequita Wood, Media Research Editor

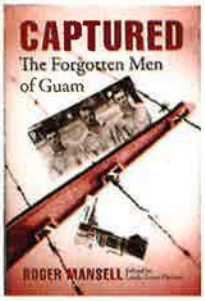


Air Commanders. John Andreas Olsen, ed. Potomac Books, Dulles, VA (800-775-2518). 503 pages. $35.00.

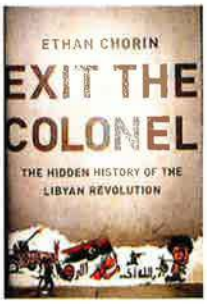
America's Secret MiG Squadron: The Red Eagles of Project Constant Peg. Col. Gaillard R. Peck Jr., USAF (Ret.). Osprey Publishing, Westminster, MD (866-620-6941). 320 pages. $25.95.

Big Week: Six Days That Changed the Course of World War II. Bill Yenne. Berkley Caliber, New York (212-366-2000). 298 pages. $26.95.

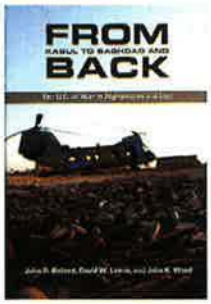
Blueprints for Battle: Planning for War in Central Europe, 1948-1968. Jan Hoffenaar and Dieter Kruger, eds. University Press of Kentucky, Lexington, KY (800-537-5487). 261 pages. $40.00.



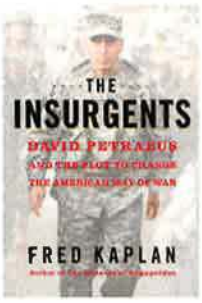
Captured: The Forgotten Men of Guam. Roger Mansell. Naval Institute Press, Annapolis, MD (800-233-8764). 255 pages. $33.95.



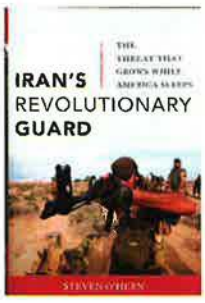
Exit the Colonel: The Hidden History of the Libyan Revolution. Ethan Chorin. PublicAffairs, Jackson, TN (800-343-4499). 374 pages. $29.99.



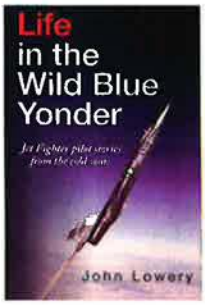
From Kabul to Baghdad and Back: The US at War in Afghanistan and Iraq. John R. Ballard, David W. Lamm, and John K. Wood. Naval Institute Press, Annapolis, MD (800-233-8764). 369 pages. $42.95.



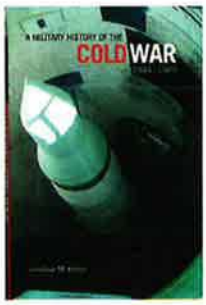
The Insurgents: David Petraeus and the Plot to Change the American Way of War. Fred Kaplan. Simon & Schuster, New York (800-223-2336). 418 pages. $28.00.



Iran's Revolutionary Guard: The Threat That Grows While America Sleeps. Steven O'Hern. Potomac Books, Dulles, VA (800-775-2518). 271 pages. $29.95.

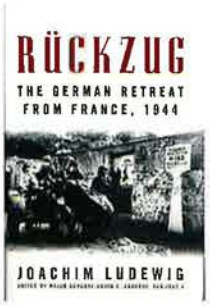


Life in the Wild Blue Yonder: Jet Fighter Pilot Stories From the Cold War. John Lowery. Order from: www.amazon.com. 315 pages. $12.95.

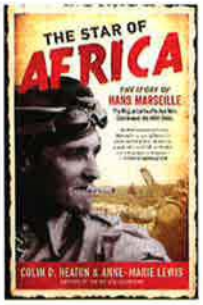


A Military History of the Cold War, 1944-1962. Jonathan M. House. University of Oklahoma Press, Norman, OK (800-627-7377). 546 pages. $45.00.

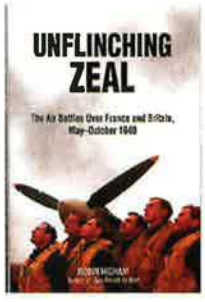
Predators: The CIA's Drone War on al Qaeda. Brian Glyn Williams. Potomac Books, Dulles, VA (800-775-2518). 281 pages. $29.95.



Rückzug: The German Retreat From France, 1944. Joachim Ludewig. University Press of Kentucky, Lexington, KY (800-537-5487). 435 pages. $40.00.



The Star of Africa: The Story of Hans Marseille, the Rogue Luftwaffe Ace Who Dominated the WWII Skies. Colin D. Heaton and Anne-Marie Lewis. Zenith Press, Minneapolis, MN (800-458-0454). 224 pages. $30.00.



Unflinching Zeal: The Air Battles Over France and Britain, May–October 1940. Robin Higham. Naval Institute Press, Annapolis, MD (800-233-8764). 317 pages. $39.95.

By Jeffrey T. Richelson

WEATHER OR NOT

WEATHER has always been a key consideration in war. Sun Tzu, writing more than 2,000 years ago, said, "Know the ground, know the weather; your victory will then be total." He also identified "the heavens"—referring to day and night, cold and heat, and times and seasons—as one of the five constant factors of war. Severe winter weather helped Russia defeat Napoleon and Hitler both.

The lesson hasn't been lost on the US and its adversaries. During the Cold War and beyond, the importance of intelligence about weather conditions has been underscored in conflicts hot and cold with the Soviet Union, North Vietnam, and Iraq.

In 2011, weather played a crucial role in the raid that killed Osama bin Laden. Higher-than-expected temperatures (along with the weight of the stealth equipment onboard) contributed to the crash of a special helicopter that carried Navy SEALs to the compound in Abbottabad, Pakistan. The mission was still a success, however.

For the night of Feb. 14, 1991, Stephen Rose, the staff weather officer for the 3rd Special Forces Group (Airborne) predicted "overcast skies with 1,000-foot ceilings, quarter-mile visibility, winds from the south at 12, gusting to 18 knots" for Iraq. The forecast proved out, and those winds blew smoke onto the Iraqi forces that had just set their oil fields afire. The Iraqis soon discovered the hard way that the Russian optics on their weapon systems couldn't penetrate smoke and haze.

The US has gathered information on foreign weather and forecasting procedures for decades. Part of that effort has been conducted openly, including Air Force interception of weather broadcasts. Other collection activities—whether in space or on the ground—have been conducted in secret by the Central Intelligence Agency, National Reconnaissance Office, and National Security Agency. But collecting weather data hasn't been the only challenge; part of the art is deciding if intercepted weather reports are accurate or intended to deceive.

In March 1945, US airmen began flying B-24L aircraft over Japan to gather weather data in support of B-29 bombing missions. After the war's end, some of those B-29s became WB-29s, employed for weather reconnaissance as well as sniffing the air for evidence that Russia had detonated a nuclear device. They found that evidence during a Sept. 3, 1949 flight directed by various elements of the US government and where beneficiaries included a secret Special Projects Section of the US Weather Bureau. The weather spies also gathered data on the nature of the device and where it was detonated.

Over time, the units and airplanes involved in weather intelligence changed, but the need for the mission remained constant. The information required, however, exceeded what any air fleet could provide. Weather data would be needed from inside the Soviet Union—not only for possible wartime operations but also to assist US reconnaissance satellites photographing the Soviet interior.

In 1951, RAND Corp. scientists explored the feasibility and utility of a weather satellite—including the ability of such a craft to provide information on clouds, temperature, pressure, moisture, and precipitation. They noted that a weather satellite could identify cloud cover which could prevent photographic reconnaissance satellites capturing images of their targets. At the time, though, an operational reconnaissance satellite was almost a decade away.

By late 1960 the US had succeeded in photographing the Soviet Union from space. A November 1960 presentation to the Air Force Ballistic Missile Division on weather support to the SAMOS recce satellite program indicated the requirement hadn't been forgotten. The following April, NASA was assigned responsibility for developing the National Operational Meteorological Satellite System for both civil and military users.

Joseph V. Charyk, undersecretary of the Air Force and head of the National Reconnaissance Office, was skeptical of the effort, however. He was convinced that NASA's weather satellite wouldn't arrive in orbit for at least two or three

NRO photo

Strategists have always known that the ability to predict the weather may mean winning—or losing—the battle.

A Hexagon photo reconnaissance satellite. Accurate weather prediction was critical to the Hexagon program's success.

years, during which time opportunities to photograph Soviet ICBM sites under construction could be lost. In May 1961, he received and approved a proposal for a separate weather satellite. The program, managed by Air Force Lt. Col. Thomas O. Haig, would be known by a variety of designations during its classified existence—including Program II, P-35, Program 417 (shortly after Aug. 23, 1962), the Defense Systems Application Program—and finally as the Defense Meteorological Satellite Program (DMSP).

After one failure, the NRO/Air Force satellite—a 100-pound, spin-stabilized, weather-sensing craft—arrived in a 391-by-539-mile orbit in August 1962. Its sensors captured video images of cloud cover with about one-mile resolution, transmitted to ground stations at Vandenberg AFB, Calif., and New Boston, N.H. By December, 3,820 useable pictures were received and incorporated into the daily forecasts produced by the Air Force's Global Weather Central—"in direct support of satellite reconnaissance activities," according to a late 1962 NRO assessment. An NRO history of the KH-9/Hexagon program (1971 to 1984) noted the importance of cloud-free imagery to the success of each KH-9 mission and the "accuracy of weather forecasts was critical to Hexagon success."

Saving Apollo 11

In addition to providing weather imagery in support of intelligence and military operations, the secret satellites would play a key role in the very public Apollo program of moon exploration. Weather reconnaissance helped prevent what would have been a huge disaster: the loss of the Apollo 11 crew after its July 1969 success in the first moon landing.

Capt. Hank Brandli was working at Hickam AFB, Hawaii, as a specialist in weather tracking and prediction, employing data from Program 417 satellites to support the Corona reconnaissance satellite program. In mid-July, Brandli was examining classified weather satellite photos that showed that Neil Armstrong and fellow astronauts Buzz Aldrin and Michael Collins were scheduled to splash down right in the midst of violent thunderstorms with powerful high-altitude winds. Brandli has recalled that the storm "would have ripped their parachutes to shreds" and that "without parachutes, they'd have crashed into the ocean with a force that would have killed them instantly."

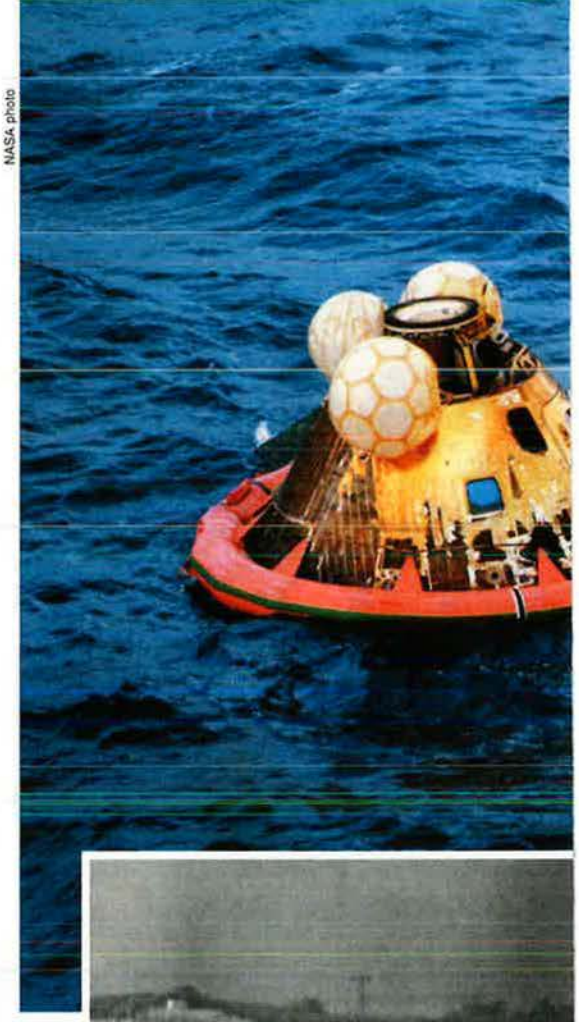
The secrecy attached to the program limited Brandli's ability to tell others of the danger facing the Apollo 11 crew. But ultimately, he was able to convince the right people of the problem, which eventually led NASA and the Navy to alter Apollo 11's re-entry and splashdown profile. Re-routing the entire carrier task force that would recover the re-entry capsule to the new splashdown site saved the astronauts' lives.

The satellites developed under Haig's direction—and their successors—are the most advanced method of weather collection, but the practice of monitoring foreign weather forecasting procedures and intercepting foreign—particularly Soviet Bloc—weather reports did not abate. One early example of intelligence interest in foreign prediction methods is a 1953 CIA information report, classified "Secret/Control—US Officials Only" and titled "Weather Forecasting in China." The report focused on a new forecasting method and its success in predicting the weather for different future time periods.

But more important than understanding how foreign nations produced forecasts was gathering raw data on foreign weather, and satellite data collection was not enough. During the Vietnam War, the chief of US air operations, Gen. William W. Momyer, while declaring the NRO's weather satellites to be "the greatest innovation of the war," still needed to rely on additional methods of weather data collection. Such methods—including the monitoring of weather broadcasts—could provide even more timely data on very small areas necessary to support combat operations.

In June 1956, William M. McMurray, a staff member of the US Weather Bureau, had reported—in an unclassified publication—on the intercept of Soviet weather reports. He noted that the majority of reports from the Soviet Union were received by radio teletypewriter via a multiple relay system. He also explained that the availability of the intercept teletypewriter source was made possible "through the cooperation of ... US Air Force installations in Germany, Japan, and Arabia and a similar intercept station in Alaska operated by the Civil Aeronautics Administration."

The overt nature of some of the weather intercept activity was evident almost three decades later when the Air Weather Service issued a 73-page unclassified regulation, Global Weather Intercepts. It identified 11 different intercept stations



NASA photo

USAF photo

3

|1| The Apollo 11 crew and a Navy diver await pickup after splashdown. Accurate weather prediction likely saved the lives of the astronauts. |2| A screenshot from the Soviet daily news program "Vremya." The Soviets intentionally broadcast inaccurate weather information to confuse adversaries. |3| The first launch of a Defense Meteorological Satellite Program satellite. This launch, in May 1962, failed, but the next one, in August, succeeded.

distributed across the planet. In addition, there was a 46-page section listing the frequencies and types (radio teletype, fax, continuous wave) of weather broadcasts from sites from Addis Ababa in Ethiopia to Yakutsk in the Soviet Union. On that list were 27 separate sites in China and the Soviet Union whose weather broadcasts (often involving multiple frequencies) were of interest to the Air Force. Special interest in the Soviet Union and China was indicated by a requirement for more detailed reporting. While there was a general requirement for acquisition of surface weather data covering 62-mile segments every three hours, the regulation specified that surface weather data from Russia and China be collected every hour for 19-mile segments.

But overt Air Force weather intercept stations weren't the only source of weather data. Some of the National Security Agency's clandestine collection operations were directed toward providing weather data. In 1958, a secret article in the NSA *Technical Journal* noted that a weather unit had been included in the communications intelligence effort since the early months of World War II and followed with a brief discussion of the "NSA Weather Unit." Some of it is still classified 55 years later.

It reported that, while the civilian weather services of all nations maintain special channels solely for the transmission of meteorological data, military services—particularly major commands—"have special channels set apart for the dissemination of weather data." In addition, they "may, and very often do, employ other nets (operational, administrative, etc.) for the same purpose." While the stations designated for Air Force monitoring employed a universal system of identifying themselves, the article noted that "on internal weather networks of some countries unique methods are employed." Those methods could include encryption of the data and the weather station location—making them a subject for NSA collection.

The NRO history of Hexagon stated that broadcasts from Soviet weather stations "were intercepted by Sigint [signal intelligence] collection means" and relayed to the Air Force's Global Weather Central.

Keeping It to Ourselves

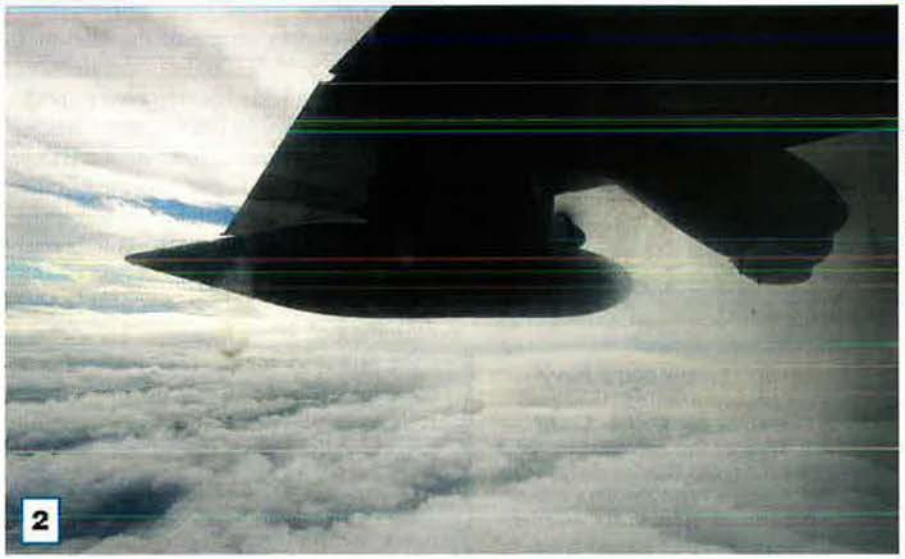
From the mid-1960s into the first years of the next decade, NSA was keenly interested in North Vietnam's weather. During that period, the author of another article in the NSA *Technical Journal* wrote that "precise knowledge of the actual surface weather conditions existing at stations throughout North Vietnam is of utmost importance in the conduct of offensive operations." Not only did NSA's weather intercept operations target reporting of surface weather conditions, they also sought data on the three-dimensional distribution of atmospheric conditions in the troposphere—where clouds, other weather, and combat aircraft could be found. It was challenging to find and validate these data.

The value of keeping accurate weather data out of the wrong hands is understood by both the US and its adversaries. In December 1990, in the midst of Operation Desert Shield, the Naval Technical Intelligence Center (subsequently absorbed into the Office of Naval Intelligence) produced a secret report: Meteorological Satellites and the Iraq Crisis. The report, released with substantial redactions, characterized Iraq's need for meteorological data, particularly that provided by the US National Oceanic and Atmospheric Administration satellites, as "very urgent" and concluded that "if access to the US information is terminated, Iraq's meteorological support [deleted, but probably "to its military"] should be downgraded."

During the Cold War and the war in Vietnam other nations tried to block the US from accumulating accurate weather data. In his 1983 portrait of Russia, journalist David K. Shipler said that "even the weather is considered a security item with military implications," and that it wasn't until the late '70s that Soviet newspapers began publishing

USAF photo by SSgt. Jonathan Snyder

1



USAF photo by SSgt. Jason Robertson

2

|1| SrA. Adam Chmielowski (l) and SSgt. Adam Gagne (r), both battlefield weather forecasters, observe climatc conditions at Forward Operating Base Masum Ghar, Afghanistan. |2| The view from a WC-130J as it flies into Hurricane Sandy Oct. 29, 2012, over the Eastern coastline of the US.

weather maps. He recounted how, when an American reporter writing about a Soviet New Year's celebration called the meteorological service to find out how much snow had fallen that day, he was told that if he wanted the information he would have to "write a letter to the protocol department."

Red Herrings

But even after Soviet newspapers began publishing weather maps, there was suspicion, at least among some analysts, that some internal weather stations were broadcasting data intended to deceive those eavesdropping on the broadcasts about actual meteorological conditions in the Soviet interior. Certainly, NSA's experience during the Vietnam War in pursuit of data on atmospheric conditions led analysts to question if the intercepted reports were accurate.

During most of 1965 NSA had a hard time gathering intercepts on conditions over North Vietnam because upper-air observations were rarely reported in that country's communications, leaving US forecasters with little data on which to base their predictions. Then, in September 1965, data from Hanoi on wind speed, derived from unmanned balloon-carried equipment, began to appear regularly, along with surface weather reports. According to a 1967 NSA paper, those data were passed on "with great delight and much satisfaction."

It didn't last long, however—the upper-air data soon became suspect. When the content of the intercepted messages was plotted on upper-air charts, "the laws and principles governing the nature of the elements measured and the character and behavior of the upper air were violated." Anomalies included unreasonable wind shifts, distorted temperature inversions, and impossible temperature/dew point temperature readings. A number of benign explanations were offered, including poor intercepts, inexperienced North Vietnamese weather observers, faulty equipment or data, or some peculiar alteration of the basic international code. Encryption was temporarily ruled out.

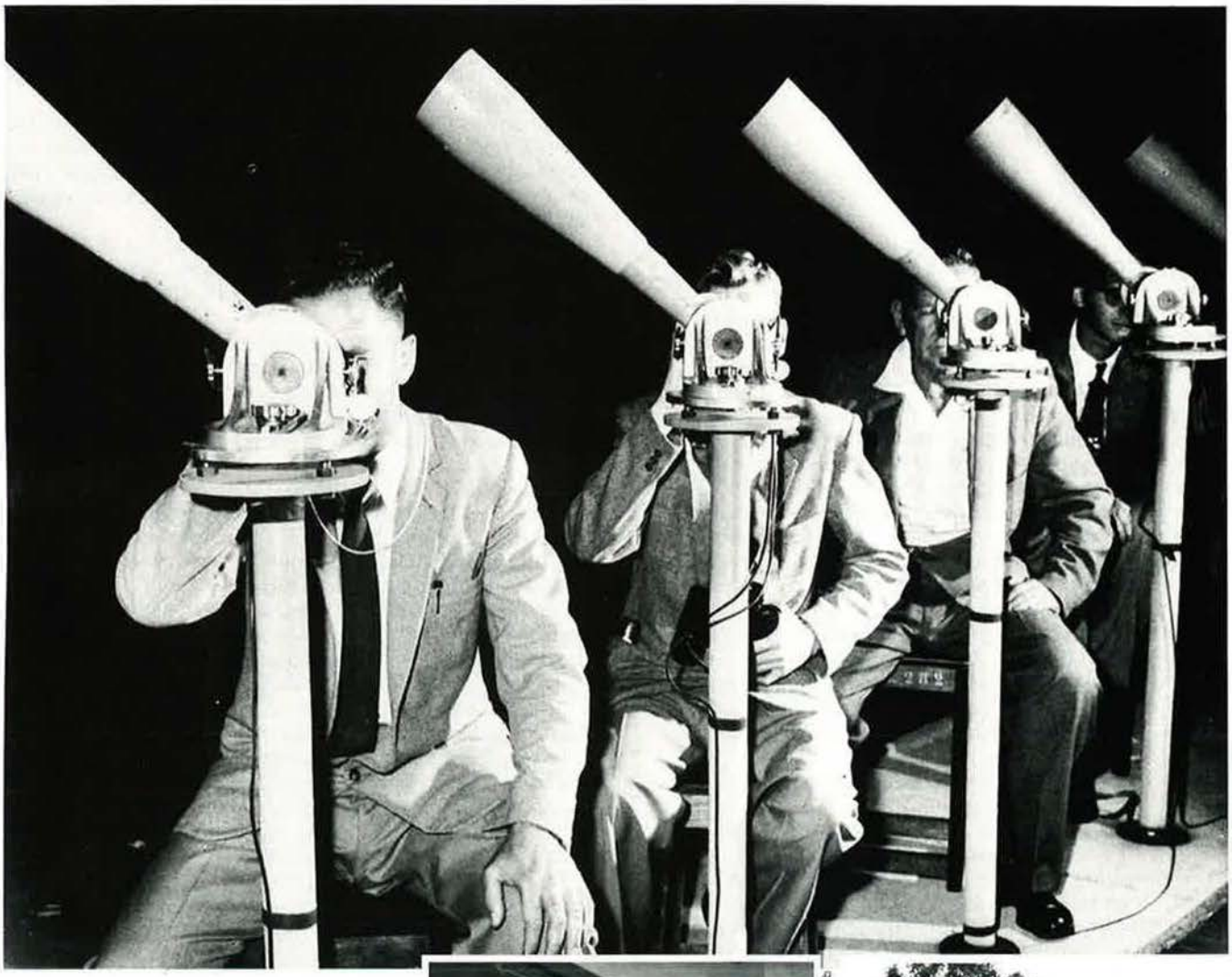
It's unclear how NSA established that the data were deceptive; a key part of the solution remains classified. However, it started with examining all sources of upper-air data, no matter how they were obtained. Upper-atmosphere weather reports originated by Hanoi were, to the surprise of NSA analysts, detected in the exchange of weather data between the Soviet Union and the US. Analysts were apparently able to compare those with the Vietnamese reports being intercepted by NSA and figure out a way to convert the deceptive reports into accurate ones. Thus, the 1967 paper begins, "This paper describes some of the special security measures introduced in North Vietnamese weather communications" and concludes with: "Never before has a system such as that described been observed in weather traffic from any country. It is considered an ingenious method of providing security in weather communications; until the system was detected, the weather analysts and forecasters were effectively and unwittingly misled."

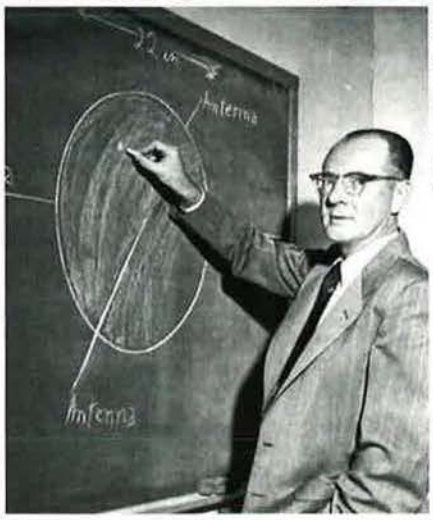
Victims of a bad weather report may wonder about the competency of the weatherman, but few will imagine they were being deliberately misled. The US Intelligence Community, however, has dealt for decades with the challenges of collecting weather information on conditions inside unfriendly nations—that definitely don't want to provide an accurate forecast. ■

Jeffrey T. Richelson is a senior fellow and consultant of the National Security Archive in Washington, D.C., and author of nine books on intelligence and military topics. His most recent article for Air Force Magazine, *"Eavesdroppers in Disguise," appeared in the August 2012 issue.*

Operation Bloodshot Eyes

Smithsonian Institution Archives photo via Wikipedia





Argenta Images via the Web

Via the Web

In the 1950s, Americans worried about satellites even before Russia launched Sputnik on Oct. 4, 1957. Operation Moonwatch was begun in 1956; it was an amateur science program sponsored by the Smithsonian Astrophysical Observatory (SAO). Its primary goal: Spot "artificial moons." This photo shows a band of volunteer trackers in 1965 in South Africa, one of more than 100 such teams worldwide. Each observer stared through a special telescope at a small portion of the nighttime sky, watching for a satellite. The godfather of the program was Fred L. Whipple (right), SAO director. Moonwatch teams backed up an optical network of 12 Baker-Nunn tracking cameras (far right). Moonwatch continued until 1975.

AFA National Report

natrep@afa.org

By Frances McKenney, Assistant Managing Editor

Emerging Leaders: AFA's Up 'n Coming

The Air Force Association needs "committed new leaders to bring a fresh perspective," stated the AFA Field Council, laying out the challenge.

The council also offered a solution: the Emerging Leaders Program.

This summer, Region Presidents nominated prospective candidates, and a Field Council committee selected six. (The future target is seven.) The AFA Board of Directors confirmed the selection, and at the AFA National Convention, the half-dozen Emerging Leaders were introduced:

- **Capt. Leanne M. Babcock** from the Charleston Chapter (S.C.).
- **Juan E. Cruz,** president of the Robert H. Goddard Chapter (Calif.).
- **Capt. E. Miranda Hernandez,** Maryland state president and Central East Region executive VP.
- **C. Tyler Johnson,** executive VP of the Langley Chapter (Va.).
- **Lt. Col. Cristina F. Lussier** from the Montgomery Chapter (Ala.).
- **TSgt. Timothy J. Tichawa,** secretary of the Robert H. Goddard Chapter (Calif.).

Emerging leaders volunteer for a year and during that time participate in a national-level council, attend the Region and State Presidents and Board of Directors orientations, serve as National Convention delegates, and receive help from assigned mentors. AFA's Vice Chairman of the Board for Field Operations administers the program, with a Field Council committee.

Will this approach yield leaders with fresh perspectives?

In the past, AFA had what it called Under-40 Directors and Leadership Development Directors. Those who "grew up" through these programs include AFA President Craig R. McKinley, two former AFA Board Chairmen—Thomas J. McKee and Stephen P. Condon—and three members of today's board: Julie Curlin, Angela Dupont, and Gilbert E. Petrina Jr.

"This is a big deal," commented Scott P. Van Cleef, Vice Chairman of the Board for Field Operations, "and a good deal that folks will want to be a part of."

AFA National Report will profile each Emerging Leader in the upcoming months.

Just in Time

Columbia Palmetto Chapter's president, Lt. Col. E. G. Shuler III, reports that an AFA Spouse Scholarship arrived just in time for his local recipient in South Carolina.

Tuition and fees at the University of South Carolina, Columbia, had just been hiked more than three percent, and scholarship recipient Kristy L. O'Neill was already working as a child care provider at a church in addition to juggling studies for a bachelor of science degree.

O'Neill's spouse is SSgt. Timothy D. O'Neill of Det. 157, 495th Fighter Group, McEntire JNGB, S.C., where he works in the Electrical and Environmental Systems shop in F-16 maintenance.

AFA's Spouse Scholarship program encourages Air Force spouses in the Total Force to pursue associate, bachelor's, graduate, or postgraduate degrees. In June the association awarded $2,500 grants to a dozen recipients, including O'Neill, who plans to specialize in geriatric nursing.

Awards on TV

Hosted by the **Carl Vinson Memorial Chapter,** Georgia State AFA chapters held their annual awards luncheon to recognize outstanding performers in the community and from Robins and Moody Air Force Bases.

Robins honorees from the chapter's hometown area of Warner Robins were: Capt. Sean Bojanowski, Capt. Marvin Brown Jr., and Capt. Matthew Krauss; AFJROTC cadet Auscia Williams; and Civil Air Patrol cadet Clayton Searcy.

From Moody in the Valdosta area, honorees were: Capt. Jacob P. Hess, 1st Lt. Bradley A. Schmidt, MSgt. Joseph Johnson, TSgt. Michael D. Sessions, and SrA. Christopher J. Bechtold; and AFROTC cadet Dustin Prosser.

Jason Heath, originally selected in April as the Carl Vinson Chapter's Teacher of the Year, received the statewide honor at this awards banquet in August.

Heath teaches at Huntington Middle School in Warner Robins and told local television station WMAZ—in its coverage of the awards banquet—that his creativity in teaching science got him the nod.

Kristy O'Neill displays her AFA Spouse Scholarship awards. Columbia Palmetto Chapter's president, Lt. Col. Buck Shuler (right), made the presentation at McEntire JNGB, S.C.

See the coverage of the awards ceremony at: www.13wmaz.com. The video segment includes glimpses of the Active Duty audience members, Southeast Region President John R. Allen Jr., and Georgia State President Jacqueline C. Trotter.

Harry Truman: Beginning of the End

In August, **Harry S. Truman Chapter** members conducted their annual ceremony in Missouri, highlighting President Truman's courage in hastening what Chapter Treasurer Robert E. Seibolt calls the "beginning of the end" of World War II.

On Aug. 6, 1945, the US dropped an atomic bomb on Hiroshima, Japan, and followed up with another dropped on Nagasaki three days later. The Japanese announced their surrender on Aug. 15, 1945.

"I was 10 years old in 1945," Seibolt said, looking back on that historic period. "Some of it I didn't understand." But he had two brothers in the military, so he knew the significance of the President's decision to use the bomb, he said.

Eight chapter members attended the observance this August at the gravesite of Truman and his wife, Bess, at the Truman Library and Museum in Independence.

Harry McLane, John Campo, Anita Seibolt, and Joan Boyd formed an honor guard for the ceremony. Chapter member Jerome E. Hughes spoke to the gathering, recounting events of Aug. 6, 1945, and describing Truman's life in Independence, the town where he went to school and later lived in retirement.

Robert Seibolt said several library visitors watched the chapter's commemoration and wreath-laying. The AFA mem-

Photo by 1st Lt. Rebecca Trotter

Georgia State President Jacqueline Trotter and VP Dennis Leadbetter present Clayton Searcy (far right) with a CAP Cadet of the Year award. At the podium is Trotter's son, Jeremy, a Carl Vinson Memorial Chapter member.

Before being named AFA's National Aerospace Teacher of the Year, Margaret Spigner received the State Teacher of the Year award at the South Carolina State Convention. L-r: State President Art Rooney, AFA Vice Chairman for Field Operations Scott Van Cleef, and Southeast Region President John Allen Jr. Spigner teaches at West Ashley High School in Charleston.

At left: Sarasota-Manatee Chapter CyberPatriot workshop attendees included left to right: Keaton Fraticelli, Nicholas Butler, Tyler Fritzsching, Carl Goodrich, former AFA Board Chairman Sandy Schlitt, Stephen Cline, Kim Huston, and Alexis Jenkins. The Sarasota Military Academy students in this photo participated in the CyberPatriot V competition.

Above: Long Island (N.Y.) Chapter President Fred Di Fabio (left) and VP Al Parise (right) present Francis S. Gabreski Scholastic Grants to AFJROTC cadets Bruno Meira and Nicole Casamassina. Meira now studies at the State University of New York, Fashion Institute of Technology. Casamassina is now at the SUNY, Stony Brook.

bers "took time to explain" Truman's significance to the younger visitors. "That made it worthwhile," he said.

CyberPatriot Workshop

The **Sarasota-Manatee Chapter** in Florida held a CyberPatriot Orientation workshop in late August.

Chapter President Michael Richardson explained that the chapter wanted to make local high schools and other eligible groups aware of the national high school cyber defense competition.

CyberPatriot VI begins Nov. 15 and runs through spring 2014.

Richardson reported that eight teams from Florida's Sarasota and Manatee counties competed in this year's recently completed CyberPatriot V—two more than in the CP-IV.

Chapter Secretary Charly K. Shugg told the workshop audience how the chapter could assist teams in the competition, including the potential for mentoring by his own cybersecurity company's associates.

Stephen Cantees, executive director for high schools in the Sarasota School District, explained how CyberPatriot meshes with efforts to promote the study of science, technology, engineer-

How to Get Nationwide Coverage

"This morning I spoke with the Air Force Association in Midwest City, OK, about sequestration and furloughs," announced the Aug. 6 Facebook page posting from Sen. James M. Inhofe (R-Okla.).

Photo by Paul Hellstern, courtesy of *The Oklahoman*, copyright 2013

Behind that one-sentence entry lay two weeks of hard work by the **Central Oklahoma (Gerrity) Chapter**—backed by years of nurturing contacts with the state's legislators on Capitol Hill.

But it paid off in news coverage coast to coast. How did that happen?

- **A hot topic:** Chapter President Jerry R. McMahan explained that Inhofe flew his own airplane around Oklahoma during this summer's congressional recess and told his schedulers that he had an hour of free time. He wanted to use it to meet Tinker Air Force Base personnel affected by sequestration and furloughs. "That brought out the press," alerted by the senator's office, said McMahan. Along with local coverage, a resulting Associated Press article about Inhofe's appearance in Oklahoma got reprinted from California to Connecticut.
- **Timing:** At the suggestion of Chapter VP Mark Tarpley, the chapter began hosting a luncheon three years ago for its delegation's military legislative assistants. The annual gathering takes place at Tinker during the congressional recess. "It's one of the most-attended events that we have," said McMahan. So even though Inhofe is an Army veteran, an AFA chapter was on the radar when his staffers looked for a way to carry out his Aug. 6 meeting with Tinker personnel.
- **Help from Community Partners:** Chapter leaders considered everywhere from the Tinker base theater to Rose State College as a possible venue for this event. In the end, Community Partner Boeing offered its Midwest City facility. Civilians thus didn't need to pass through a front-gate military screening, and Boeing's conference room was big enough for 300 guests but small enough to be secured for VIP safety.
- **Groundwork before and after:** Turns out Inhofe is an old friend of Tulsa's David L. Blankenship, AFA's former President and Board Chairman (1982-1985). With Blankenship as their host-sponsor, AFAers from the Sooner State touch base with Inhofe every year when they attend the National Convention.

The AP article on Inhofe's AFA event appears on the Web as "Okla. Sen. Inhofe Criticizes Military Budget Cuts."

ing, and math (STEM) topics in the school district.

An Invitation to the Council

Florida's Michael E. Emig, the **Red Tail Memorial Chapter** president, sent in a photo showing him shaking hands with US Rep. Richard Nugent (R-Fla.).

The occasion? The inaugural meeting in August of the congressman's Veterans Advisory Council. Topics covered included health care, educational benefits, and the Department of Veterans Affairs claims processing times.

Nugent had invited Emig to join the council, established for efficient information gathering on vets' issues.

Emig has spent more than a decade building the relationship between local AFA members and their congressional representatives.

He explained that he began by becoming "active in political circles" for US Rep. Ginnie Brown-Waite, a Florida Republican who served from 2003 to 2010. When Nugent won Brown-Waite's office, Emig continued the contact.

He ensured recognition for the new congressman's team: Last year, Emig and Dennis E. Foley of the **Waterman-Twining Chapter** nominated Nugent's district director, Shirley Anderson, as AFA Florida Legislative Staffer of the Year.

Emig broadened the chapter's circle of friends, paying a call on the director of the VFW Veterans Village retirement facility in Fort McCoy, Fla. He and Alcides Lugo "hit it off," in Emig's words, and he signed up the retired Army officer as a chapter member. Then Emig recommended him for a seat in Nugent's veterans council.

Emig volunteers with the local county veterans groups. He said this gives him a background on issues important to veterans, so he was well-prepared for Nugent's Veterans Advisory Council meeting.

Red Tail Memorial Chapter President Michael Emig (left) exchanges greetings with US Rep. Richard Nugent (R-Fla.) at the Veterans Advisory Council in Florida.

More Chapter News

■ The **Langley Chapter,** centered around JB Langley-Eustis, Va., sponsored its 20th annual Salute to Air Combat Command and Team Langley in July. The events did not include a symposium or reception this year, but some 90 golfers participated in the traditional tournament, and nearly 200 guests attended the banquet. ACC Commander Gen. G. Michael Hostage III addressed the audience and, according to Chapter President Vincent P. Wisniewski, spoke about sequestration's effect on unit readiness. Wisniewski pointed out that this salute is a fund-raiser, and he praised "great industry sponsorship for a small event."

■ James F. Albaugh, who retired last year as Boeing Co.'s executive vice president, addressed the **Iron Gate Chapter** in New York City in July. Chapter President Frank T. Hayes reported that Albaugh spoke about the aerospace industry's impact on national security and economic growth. According to Hayes, Albaugh stressed education in science, technology, engineering, and math. He also told the audience that the US needs home-grown engineers to create the next-generation pushing-the-envelope bomber. Albaugh is a senior advisor with Blackstone Group, an investment and advisory company based in New York City.

■ **Gold Coast Chapter (Fla.)** President Virginia Montalvo announced with pride that chapter member Virginia S. Knudsen had been named first runner-up to Margaret Spigner for AFA's National Aerospace Teacher of the Year award. (See Spigner's photo, p. 83.) Knudsen teaches at-risk students at Parkway Middle School in Fort Lauderdale. Montalvo pointed out that her Florida chapter has produced three state-level winners and two first runners-up in the last eight years. ■

Langley Chapter President Vince Wisniewski presents a $1,600 donation to Col. John Allen Jr., 633rd Air Base Wing commander, as part of the chapter's Salute to Air Combat Command. The donation supports programs benefitting ACC and Langley airmen.

Reunions

reunions@afa.org

40th Fighter Sq, 40th Flight Test Sq. Oct. 11-14 at Eglin Air Force Base, Fort Walton Beach, FL. **Contact:** Bill Highfield (770-229-4297) (reddevil40@bellsouth.net).

Air Reserve Personnel Center, all former and present ARPC members. Feb. 28, 2014, at Buckley AFB, CO. **Contact:** Erline Rohan (720-847-3016) (erline.rohan@us.af.mil).

Strategic Air Command Airborne Command Control Assoc. June 25-29, 2014, at the Rushmore Plaza Holiday Inn in Rapid City, SD. **Contact:** Rod Berlin (937-469-5473 or 937-431-6878) (rodney.berlin@ngc.com).

Undergraduate Pilot Tng 66-A, Laughlin AFB, TX. Oct. 9-11 at Nashville Airport Marriott, in Nashville, TN. **Contact:** Bob Woods (615-591-8802) (falcon72@comcast.net).

USAF Military Training Instructor Assn, current and former military training instructors. Oct. 15-18, at JBSA-Lackland, TX. **Contact:** John Pavey Jr. (828-226-2409) (j.pavey@pdlawnc.com).

Willie UPT 86-06, 86-07, 86-08. Oct. 4-5 in Phoenix. **Contact:** Dano Cotton (williesummerofjetsreunion@aol.com). ■

E-mail unit reunion notices four months ahead of the event to reunions@afa.org, or mail notices to "Unit Reunions," *Air Force Magazine,* 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.

the solutions you **NEED**
the source you **TRUST**

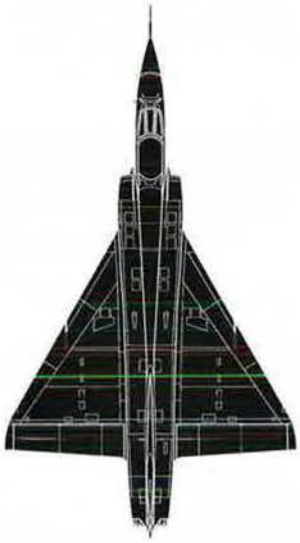
From unmanned aerial vehicles to logistic management systems to electromagnetic launchers, connecting with the best suppliers has never been easier than with the *Airpower Industry Guide*. The *Guide's* comprehensive, industry-specific database makes finding relevant results effortless. Tap into the incredible network of the Air Force Association with the premier online search tool and directory for defense professionals.

It works for your company. It works for you. See how at:
www.AirpowerIndustryGuide.com

Suppliers – interested in reaching defense professionals through the only targeted search engine for your industry? Call 1-800-816-6710 or send an inquiry to AFA@MultiView.com for more information on staying visible to your market 365 days a year.

Artwork by Zaur Eylanbekov

Mirage III



The Mirage series made France a leader in fighter aircraft. The Dassault delta-wing design has served for more than 50 years, in more than 20 air forces, and in at least 60 variants. The first was the small MD 550 Mystere Delta aircraft. A series of rapid improvements swiftly produced a multirole, radar-equipped Mirage III. Even low-time pilots found it easy to fly.

Of all-metal construction, the tailless three-spar stressed skin delta wings have 60 degrees of sweep back and airbrakes on top and bottom of wing. The tailless design eliminated horizontal stabilizers, and thus the pilot could not use flaps on takeoff or landing. This limitation meant the fighter required long runs and careful speed control going up or coming down. Maintenance, however, was simple compared to contemporary fighters such as the USAF F-104.

The versatility of the design made possible the production not only of the interceptor version but also ground-attack, trainer, and reconnaissance models. The Mirage IIIE ground-attack type, the first of which flew in 1961, was especially successful. The Mirage III's reputation for combat prowess was greatly enhanced by Israeli success in the 1967 Arab-Israeli War, when it flew in both the interceptor and attack profiles.

—Walter J. Boyne

This aircraft: Israeli Air Force Mirage III—*#745*—as it looked in summer 1967 when assigned to IAF No. 117 Squadron, Ramat David AB, Israel.

DOD photo

A Royal Australian Air Force Mirage III-D aircraft takes off from RAAF Base Darwin during the joint Australia-New Zealand-United States Exercise Pitch Black in 1984.

In Brief

Designed by Dassault ★ built by Dassault, various foreign licensees ★ first flight Nov. 17, 1956 ★ number built 1,737 (463 by licensees) ★ crew of one or two (trainer) ★ armament two 30 mm cannon. ★ **Specific to Mirage IIIE:** one SNECMA Atar 09C turbojet engine ★ load 8,818 lbs of bombs and/or missiles, including AN52 nuclear bombs ★ max speed 1,460 mph ★ cruise speed 590 mph ★ max range 745 mi ★ weight (loaded) 30,203 lb ★ span 26 ft 11 in ★ length 49 ft 3 in ★ height 13 ft 11 in.

Famous Fliers

Aces (all Israeli Air Force): Amos Amir, Gideon Dror, Giora Epstein, Ya'akov Richter, Giora Romm, Avraham Salmon. **Test pilots:** Ezra Aharon, Jean Coureau, Roland Glavany.

Interesting Facts

Built without license in Israel as Nesher (Eagle) ★ became first European fighter to achieve Mach 2 (1958) ★ flown in the past by 18 nations, including France, Australia, Egypt, Spain, Israel, South Africa ★ still operated by Argentina and Pakistan ★ featured in late 1960s French TV series "Les Chevaliers du Ciel" (Knights of the Sky) ★ sported canard surfaces called "mustaches" ★ called Cheetah in South Africa and Pantera in Chile ★ in Israeli hands, destroyed 58 Arab fighters in 1967 war and 110 Arab aircraft in 1973 war ★ believed used by Argentina in Falklands War ★ appeared in 1991 Italian action-thriller "Blue Tornado."

AIR FORCE ASSOCIATION
AFA VETERAN BENEFITS ASSOCIATION

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

USAA Auto Insurance. Cherished from generation to generation.

At USAA, our commitment to serve the financial needs of military members, veterans who have honorably served and their families is without equal. In fact, families regard USAA Auto Insurance so highly, 95% of USAA members plan to remain with USAA for life.[1]

Begin your legacy. Get a quote.

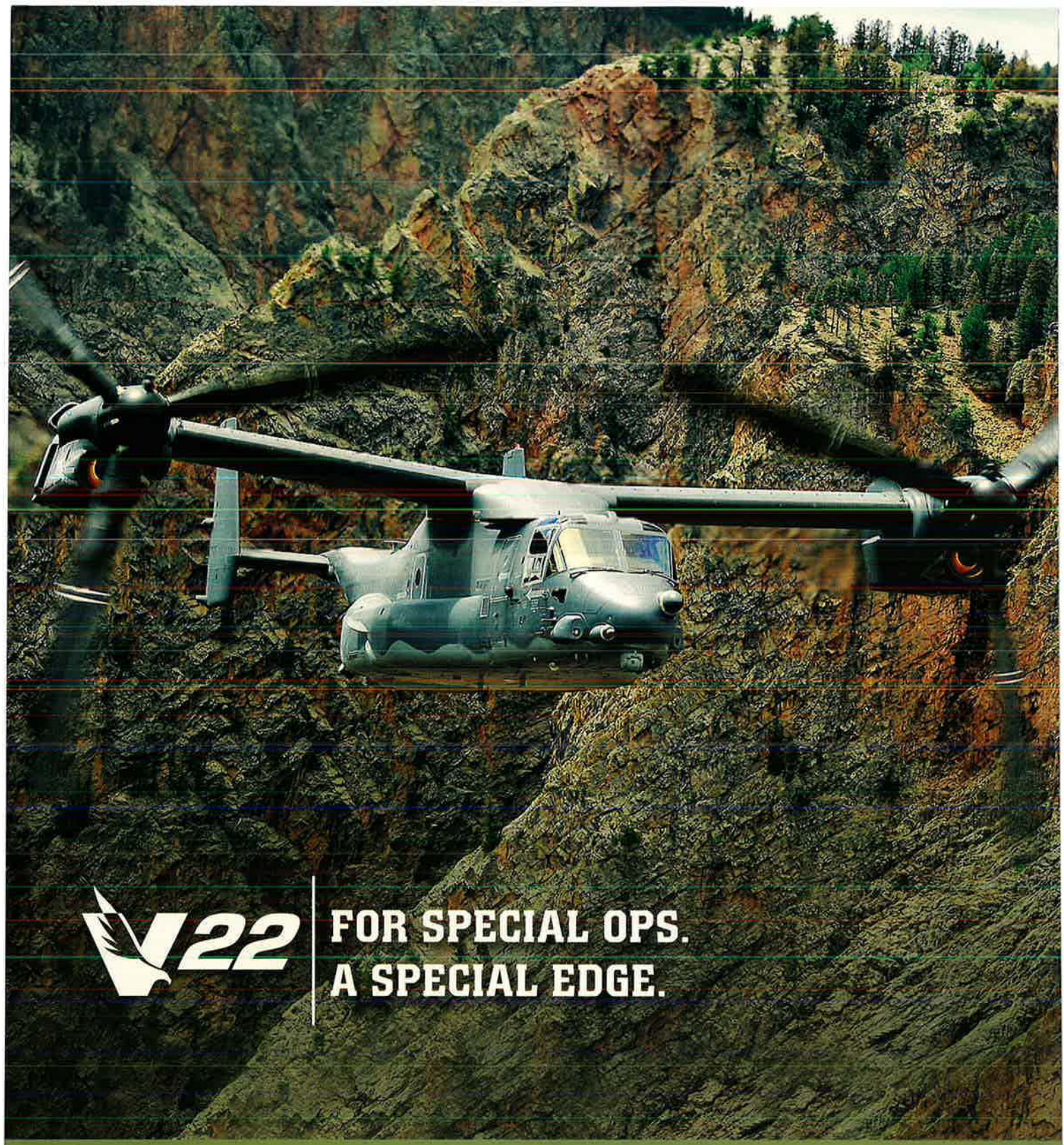
usaa.com/afa | 877-618-2473

Insurance Banking Investments Retirement Advice

We know what it means to serve®

USAA means United Services Automobile Association and its insurance, banking, investment and other companies. USAA products are available only in those jurisdictions where USAA is authorized to sell them.

[1]Based on the 2011 Member Communications Trend Survey. 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. The term "honorably served" applies to officers and enlisted personnel who served on active duty, in the Selected Reserve or National Guard and have a discharge type of "Honorable." Eligibility may change based on factors such as marital status, rank or military status. Contact us to update your records. Adult children of USAA members are eligible to purchase auto or property insurance if their eligible parent purchases 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, 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.



V22 | FOR SPECIAL OPS. A SPECIAL EDGE.

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

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