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AIR FORCE

JOURNAL OF AVIATION MAGAZINE



Mobility Ups and Downs

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how



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JOURNAL OF THE AIR FORCE ASSOCIATION **MAGAZINE**

July 2010, Vol. 93, No. 7



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About the cover: A USAF C-17A Globemaster III blasts off from a dirt runway. See "The Double Life of Air Mobility," p. 28. Photo by Kevin Whitehead/Jetwash Images.

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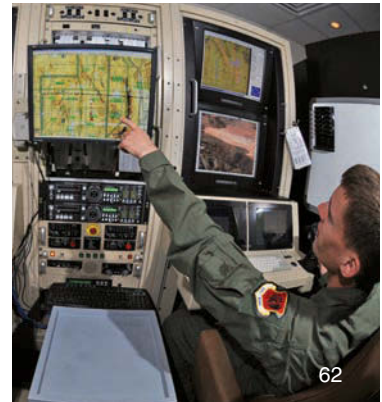
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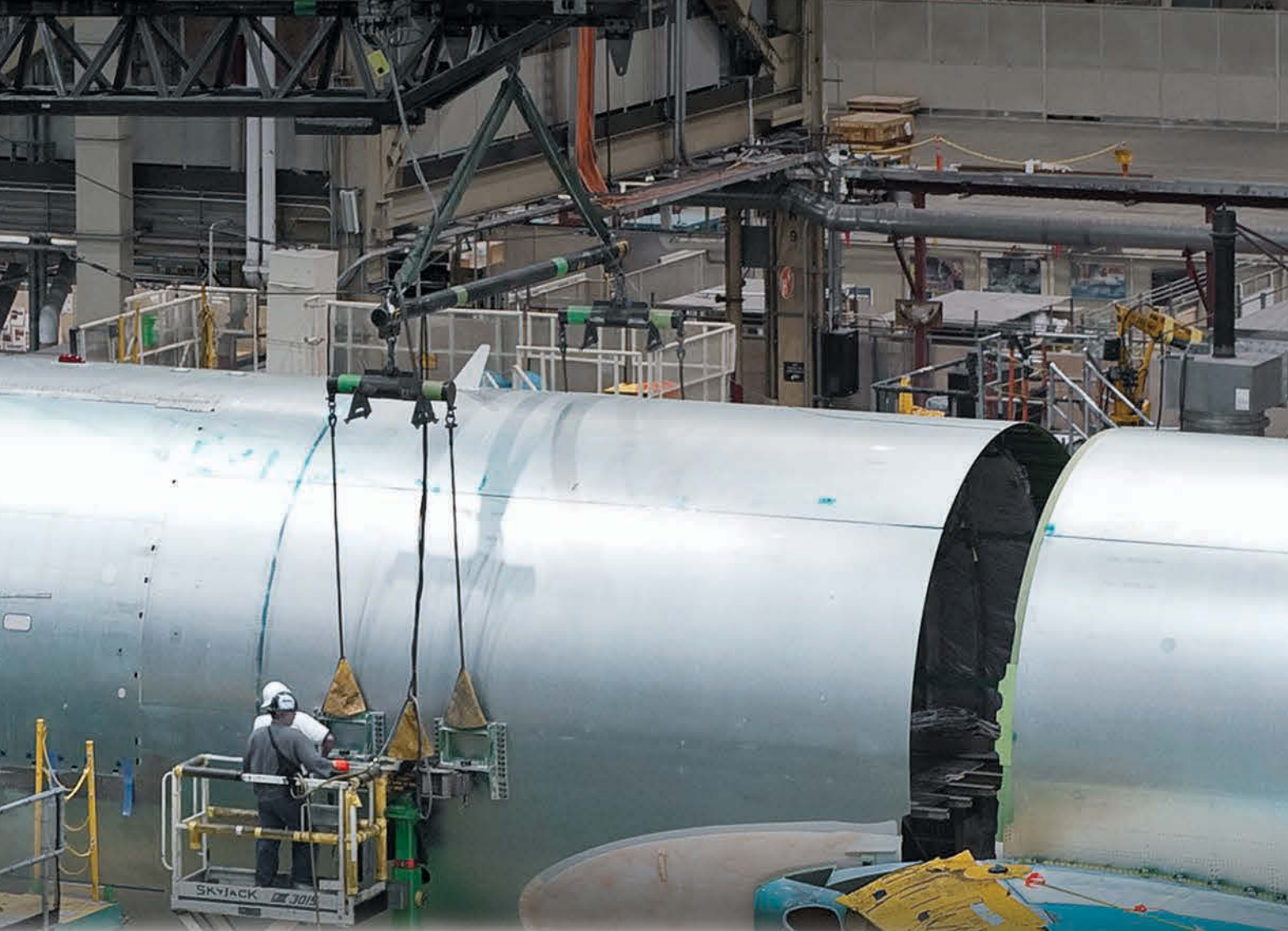
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Superpower No More?

MOST Americans don't know it, but the US has a new national security strategy. It is set down in a 52-page White House paper, dated May 27, which lists US interests and ways to protect them. Unfortunately, the thing instantly calls to mind Dr. Samuel Johnson's words about the epic *Paradise Lost*: "None ever wished it longer than it is."

The paper has a leaden style, composed, according to one critic, of "platitudes, wishful thinking, and self-delusion." What Mark Twain once said of a certain religious book—"It is chloroform in print"—applies here, too.

The bromides and clichés, however, do not totally obscure the paper's worrisome substance, which sums up the basic worldview of President Obama and his Administration. The principal theme—possibly unintended—appears clear enough: America is no longer a superpower, exactly.

The strategy paper is at pains to note—over and over—that American power is circumscribed, that any international US action requires lots of helpers, that we are stretched thin, that we must focus on internal problems. In short, we will just have to learn to live within our limits.

"The burdens of a young century cannot fall on American shoulders alone," Obama writes in the paper's introduction.

In place of reliance on military might, the Administration's strategy emphasizes stronger global cooperation, more and deeper security "partnerships," and helping other nations provide for their own defense as best they can.

The new watchword seems to be soft power—the use of economic levers, diplomacy, international law, cultural relationships, and so on—to help protect and preserve vital US interests.

The concept of national security itself has been broadened to include "threats" such as climate change, pandemic disease, world hunger, and even lack of health care or quality education. The transformation has brought with it a set of fundamental beliefs about the nation's security.

One such fundamental is the primacy of US economic conditions. The strategy views economic renewal as

paramount. Obama made this point in a recent West Point speech. "At no time in human history," he said, "has a nation of diminished economic vitality maintained its military and political primacy."

Another basic belief concerns the value of talk and treaties in containing the world nuclear threat. By seeking nuclear arms cuts with Russia, Obama has gotten back on a well-worn liberal

The new watchword seems to be use of soft power to help protect and preserve vital US interests.

track, as he has also done by pushing nonproliferation schemes.

The strategy puts great store in talking to rogue regimes such as North Korea and Iran. It says Washington "will pursue engagement with hostile nations to test their intentions, give their governments the opportunity to change course, reach out to their people, and mobilize international coalitions."

Another emphasis is on multilateralism. America must construct "a new international architecture," it claims, so as to "modernize the infrastructure for international cooperation."

None of these principles is really objectionable; some are even laudable. The problem is what is missing from Obama's manifesto.

The biggest departure concerns the utility of military force. In his national security papers, President George W. Bush argued the case for "preventive war" to pre-empt threats. The new strategy emphasizes that use of force is, at best, a last resort and even then should have lots of international support.

The White House disavows any intent to lessen the stress on military power. It says it reserves the right to act unilaterally, if necessary. Even so, the de-emphasis of some traditional security matters is striking.

For instance, one searches in vain for any expression of real concern about aggression from nation-states or the steady rise of Chinese or Russian mili-

tary power. More space is given to what is called the "real, urgent, and severe" danger of climate change.

Only on p. 41, buried under the sub-head "Ensure Strong Alliances," does one find a pledge "to ensure that we can prevail against a wide range of potential adversaries—to include hostile states" and to retain "capabilities" needed to "decisively defeat the forces of hostile regional powers."

When it comes to terrorism, the strategy builds on the past but departs from it in important ways. There is a pledge to "disrupt, dismantle, and defeat al Qaeda and its affiliates." However, the terrorist role played by Iran is barely mentioned. Terms such as "jihadism" or "radical Islam" do not appear.

At this stage in the Obama Administration, there really shouldn't be any major surprises. The paper, in fact, mostly rehashes policies that the President has advocated since before his election campaign.

It isn't wholly an academic exercise. Presidents use their strategy papers to set broad goals and priorities. This one could affect future defense spending and deployments. It will be the foundation for a new national military strategy, too.

Perhaps we should not make too much of it. The normal puts and takes of government are sure to wear down certain features and generate new ones. It is possible the Administration will redeem its repeated promises to preserve our military might, and not forfeit it in favor of softer tools of influence. What matters is not what the Administration says, but what it actually does.

Yet it is also true that the Administration's strategic choices and preferences have formed a distinct pattern, indicating beliefs shared by many of those responsible for national security policy.

The strategy paper tells us how the President and his senior leaders view the world. It reflects what they really believe. It appears that they have concluded that America's days as a superpower are numbered, and that its ability to lead in the world just isn't what it used to be.

Other nations are certain to have noticed. It is that, more than any specific claim or policy, that is the real cause for concern. ■



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National Sovereignty

I read the editorial of Robert Dudney in the June issue of *Air Force Magazine* and I agree with its premise [*“Warfare v. Lawfare,” p. 2*]. However, I think the article needs some additional information.

For quite some time now, the United Nations has been labeled as a “peace organization.” In fact, it is anything but. For 64 years of its existence, there have been more wars than in all of history before. One of the things said about the UN is that it is the framework for a “one world government.” If this is so, then Boutros Boutros-Ghali, the former UN Secretary General summed it up in 1995 this way: “The age of national sovereignty is over.”

Your article speaks of possible “war crimes charges” against the United States for the war in Iraq and Afghanistan as proposed by the International Criminal Court. Sounds to me like these are violations of the sovereignty of our nation.

In closing, witness the following from the International Declaration of Human Rights as adopted by the UN in 1948. In Article 15-1 it states: “Everyone has the right to a nationality.” However, in Article 29-3, it says this: “These rights and freedoms may in no case be exercised contrary to the purposes and principles of the United Nations.” The question is simple: Do we allow this travesty of justice to befall our nation or stand up for our sovereignty?

William Reid
Essexville, Mich.

Global Strike Command

I knew it would happen. SAC is back, at least 90 percent. “Strike Command Steps Up”—What an excellent article [*June, p. 26*]. It has taken longer than I thought for the powers that be to get the old SAC policies and procedures in practice again. The statement by Lt. Gen. Frank G. Klotz that the nuclear arsenal demands constant and undivided attention is definitely more true today than it was in Gen. Curtis LeMay’s time. And Gen. Curtis LeMay’s direction of constant and undivided attention was the key towards many if not all of SAC’s operations.

The implementing and standing up of the Strike Command (SAC) is long

overdue. We have already seen a vast improvement in operations and personnel with the new command, and it will only get better. CMSgt. Martin K. Smith mentions morale and confidence. All the wing personnel, both operations and maintenance, will perform their duties with skill, perfection, and pride when their accomplishments result in daily missions completed, and higher headquarters-directed inspections will receive a greater than passing grade. The highest recognition any airman gets is, his wing passed their ORI, and he contributed.

It strongly appears that the powers that be (which in Strike Command goes from the numbered Air Force commander down) have the right attitude, frame of mind, and are going in the right direction.

SAC is back, even though it really never was gone. It was just resting for a time.

CMSgt. Donald W. Grannan,
USAF (Ret.)
Benbrook, Tex.

The Air Force did not “disestablish” Strategic Air Command (SAC) and later “create” Air Force Global Strike Command as an all-new major command. The Air Force inactivated SAC in 1992 and activated it again in 2009, at the same time redesignating it as Air Force Global Strike Command. It is the same command with a new name. From an official organizational perspective, SAC is Air Force Global Strike Command, and Air Force Global Strike Command is SAC. The official lineage and honors history of the organization indicates conclusively that the organization is one and the same, regardless of the inactive period and the

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Publisher

Michael M. Dunn

Editor in Chief

Robert S. Dudney

Editorial

afmag@afa.org

Editor

Suzann Chapman

Executive Editors

Adam J. Hebert
Michael C. Sirak
John A. Tirpak

Senior Editor

Marc V. Schanz

Contributing Editors

Walter J. Boyne, Bruce D. Callander,
John T. Correll, Rebecca Grant, Peter
Grier, Tom Philpott

Production

afmag@afa.org

Managing Editor

Juliette Kelsey Chagnon

Assistant Managing Editor

Frances McKenney

Editorial Associate

June Lee

Senior Designer

Heather Lewis

Designer

Darcy N. Harris

Photo Editor

Zaur Eylanbekov

Production Manager

Eric Chang Lee

Media Research Editor

Chequita Wood

Advertising

bturner@afa.org

Director of Advertising

William Turner
1501 Lee Highway
Arlington, Va. 22209-1198
Tel: 703/247-5820
Telefax: 703/247-5855



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E-Mail Addresses

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Events..... events@afa.org

Membership..... membership@afa.org

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Policy & Communications (news media).....
..... polcom@afa.org

Magazine

Advertising..... adv@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)

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redesignation. In fact, the organization began in 1944 as Continental Air Forces. Among its former commanders is Gen. Curtis E. LeMay. Instead of a new command filling the function of an old one, the old command was activated again, albeit with a new name. Except for its redesignation, SAC is back.

Daniel L. Haulman
Chief, Organization History Division
Air Force Historical Research Agency
Maxwell AFB, Ala.

Penny Packets

The author of the article disastrously tries to equate kinetic airpower—close air support and interdiction—with intelligence, surveillance, and reconnaissance (ISR) and assumes that both should be the province of the air component commander alone [*"Penny Packets, Then and Now," June, p. 56*]. The Army has long had a kinetic airpower capability—attack helicopters—and these have been used to great effect since Vietnam in direct support of ground forces. The Army has also long had an airborne ISR capability, including the RC-12 Guardrail. Our joint warfighting doctrine has long had organizations and procedures to deconflict airspace, ensure safety of flight, and manage close air support assets. During the early days of Operation Enduring Freedom and Operation Iraqi Freedom, there were sometimes disputes between the air component and the ground component over collection priorities for theater UAVs such as the Predator (and even for the JSTARS), but these were resolved precisely where they were supposed to be resolved—by the CENTCOM commander and CENTCOM collection managers—and not by the CFACC alone.

As time has moved on, the Army has added its own airborne ISR platforms, and these have actually freed the Predator/Reaper to focus on theater collection. Even if the Army adds armed UAVs, these will be no different in operation or C2 from attack helicopters. The author is correct that Army division and corps ISR asset managers need to pay attention to joint operating doctrine to ensure proper airspace deconfliction for airborne platforms that now fly at higher altitudes than attack helicopters, but the procedures are in place for this already.

The author is also correct that fixed-wing close air support—from A-10s, F-16s, or F-35s—will always be finite resources and require specific expertise that can only be had in the air component. I know of no one in the Army who suggests otherwise. But the notion that "if it flies, it must be owned and managed by the air component" is anti-historical and out of step with the technological and battlefield command advances since 9/11. We need to continue our efforts to

operate jointly, not restrict who can do what. The author needs to spend some time with the ground component before she writes anything else on this topic.

Greg Barnett
Great Falls, Va.

Verbatim

I was truly astounded by the Tom Hanks quote found in [the June issue's] "Verbatim," [p. 43]. Rarely, if ever, have so many errors in fact and logic coexisted in such a short statement.

First of all, during World War II, "we" as a nation didn't view the Japanese as "yellow slant-eyed dogs." Then, as now, racism certainly existed, but Mr. Hanks erroneously slanders the entire US with his clumsy and embarrassingly uninformed stereotype. Secondly, everything of any historical accuracy that I've ever read regarding Japan's decision to initiate war with us through their dastardly sneak attack at Pearl Harbor suggests that their reasoning was based on Japan's cold, calculated analysis of war strategy and war materiel concerns—not based, as Mr. Hanks again cluelessly claims, on the fact that "our way of living was different." Mr. Hanks is horribly wrong again when he claims the US "wanted to annihilate them because they were different." The US did not want to annihilate the Japanese people or even the Japanese nation. Had we wished to annihilate them, we would've continued creating and dropping atomic weapons on them until they were annihilated. The truth is, we correctly understood that only complete and total victory would solve the dire global threat posed by a merciless and hell-bent Japanese military machine.

Maj. Tom Childress,
USAF (Ret.)
Clemson, S.C.

May Almanac

I am a civilian with Friends of McConnell, a volunteer organization, which support activities and programs at McConnell Air Force Base here in Wichita, Kan. A couple of months ago, a friend of mine recommended that I join the Air Force Association.

Thanks for both an informative magazine and the Daily Report updates, which give me the latest on what's going on in the Air Force. All of this is great, but your May "USAF Almanac" is incredible [p. 34]. As a civilian, I sometimes had a difficult time understanding the structure of all the various commands, components, and agencies within the Air Force and how McConnell fits into the big picture. The Almanac put everything into perspective.

Thanks for a great magazine!
H. Wayne Roberts
Wichita, Kan.

Choosing wrong on China; Gates Quixote; Tanker battle rolls on

Path to AirSea Battle

A possible future armed conflict with China would chiefly be an air and naval campaign, but the Pentagon isn't buying the right things to make victory likely, according to a new study.

"AirSea Battle: A Point-of-Departure Operational Concept" was rolled out by the Center for Strategic and Budgetary Assessments at a Capitol Hill seminar in late May. It forecasts that a military confrontation with China would demand the full effort of the Air Force and Navy, working more closely together than they ever have before, but fielding assets that are now either in decline or deferred from the current defense spending plan.

Andrew F. Krepinevich Jr., CSBA president and one of the study's four authors, said the issues identified in AirSea Battle "are sufficiently numerous and ... different from the program of record" that the buying plan needs to be adjusted as soon as possible.

The US, for example, is investing in the wrong mix of stealthy and long-range aircraft to cope with a cross-Pacific campaign, according to study author Mark A. Gunzinger, noting that the F-22 and F-35 need to be based close to the action and that most of the Air Force's legacy long-range bombers aren't stealthy.

Gunzinger said the platforms "able to penetrate won't have the range to do so, and the capabilities that have the range to do so won't be able to penetrate."

The Air Force and Navy are already at work on an internal "AirSea Battle" concept of operations, and the CSBA paper suggested issues that the classified CONOPS should address, Krepinevich said.

According to the paper, China is endeavoring to catch up to the US with an aggressive armaments building program, but aims to bypass US strengths. It would try to decapitate engaged US forces by striking American bases in the region with heavy volleys of ballistic missiles. The increasing accuracy of those multiplying missiles will require the US to play "a shell game" and move its forces around to as many locations in the region as possible, to avoid losing too many in the opening attacks.

The authors assumed that China would strike first in any scenario, that neither country would go nuclear, but that neither country would enjoy strategic "sanctuary" from conventional attack on its home soil.

The first round of battle would see the US and China pursue a "blinding" campaign, the authors said, wherein satellites, networks, and airborne intelligence-surveillance-reconnaissance assets would be hit hard on both sides, both kinetically and through cyberspace.

There would follow an "ISR competition" with both sides groping to find the others' forces.

The US would be obliged to target China's theater ballistic missiles—likely to number "in the thousands" by the next decade—with stealth and standoff attacks. Stealth and electronic warfare aircraft—a mix of Navy and Air Force types—would open up paths to the targets.

At the same time, the US should invest in tactical missile defenses, probably using lasers, to reduce the cost advantage China would enjoy by employing the missiles against high-value targets such as aircraft carriers and bases such as Kadena in



USAF photo by SrA. Michael J. Veloz

B-52s have range, but no stealth.

Japan and Andersen in Guam. Hardening bases and developing means to quickly repair facilities and reconstitute networks would be key to blunting China's missile advantage.

Air Force and Navy sensors should have a "seamless" integration such that targets would be hit by whatever platform is best positioned to carry out an attack. Navy carrier-based fighters could escort USAF bombers, to relieve the aerial tanking demands on USAF, which will still be operating mostly half-century-old KC-135s for the rest of this decade.

A greater investment in unmanned systems will greatly enhance the overall ISR capabilities of the US, the better to loiter over mobile targets and to reconstitute a picture of the battlespace after the initial blinding phase.

US allies in the region will "have to do more," Krepinevich said, and are probably willing to do so. Japan and Australia, particularly, will have to provide more and longer-range capabilities, such as remotely piloted systems, to maintain an ISR picture of China's posture.

Call for Cannibalism

Secretary of Defense Robert M. Gates warns that a slight uptick in Pentagon spending power over the next few years will be gobbled up by pay, health care, and operating expenses. It won't do a thing to replace obsolete gear or war losses.

If the services wish to achieve either of the latter goals, he said, they will have to slash overhead, to the tune of \$85 billion over five years.

"It's a simple matter of math," Gates said in a speech at the Eisenhower Library in Abilene, Kan.

In this year's defense budget, the Pentagon "asked for and, I hope, will receive just under two percent" real growth, meaning spending above expected inflation, Gates said.

He went on to say that, "realistically, it is highly unlikely that we will achieve the real growth rates necessary to sustain the current force structure." Health care costs alone, he said, "are eating the Defense Department alive, rising from \$19 billion a decade ago to roughly \$50 billion" today.

Gates told reporters he believes 40 percent of defense spending is in overhead. He said that he is "looking for ...



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2.5 [percent] to three percent” reductions, annually, from that figure, which he said translates to about \$10 billion in Fiscal Year 2012 and \$15 billion annually after that.

“That’s the only way we can sustain our current force structure and have investments for the future,” Gates said. “Basically, we’ve got to take money out of tail and put it toward the tooth.” If it works, “then I think we can sustain the current force structure without hollowing it out through 2015.”

Although he offered few specific targets for cutting, Gates said he sees top-heaviness in the military command structure, and wants to flatten out the reporting chain to eliminate unnecessary levels of bureaucracy.

While he’s made the case that defense spending as a function of gross domestic product—roughly 4.5 percent—is “relatively small in historical terms at a time of war,” Gates said the “fiscal duress” on the taxpayer is unprecedented and requires greater austerity. Now is not the time to simply press for higher defense budgets, he claimed.

Gates said he’ll look everywhere for efficiencies, and that everything is on the table. For example, while he’s not planning to cut carriers, he wants the Navy to reassess their value at “a time when you have highly accurate cruise and ballistic missiles that can take out a carrier that costs between \$10 [billion] and \$15 billion and has 6,000 lives on it. How do you do that differently than what you did 30 years ago or 20 years ago?”

In his Abilene speech, Gates chided Congress for continuing to add programs the Defense Department hasn’t requested.

He cited specifically the addition of C-17 airlifters, an alternate engine for the F-35 fighter, and military pay raises of at least one-half percent higher than those requested.

While he applauded the “admirable sentiment” on Congress’ part to continually increase the pay and benefits for troops and their families, Gates argued that this has meant cuts in the amount of equipment that DOD can afford to field.

Congress, in the abstract, cheered Gates’ calls for deep cuts in Pentagon bureaucracy and scrutiny of sacred cows—Senate Armed Services Committee Chairman Carl Levin (D-Mich.) called it “gutsy.” However, lawmakers paid little attention to Gates’ request to stop adding unwanted items to his budget.

The House voted to preserve the F-35 second engine and boost military pay by 1.9 percent, a half-point higher than the Employment Cost Index.

Gates indirectly paid homage to Congressional prerogatives on another front. He shrugged off the notion of finding savings from another round of base closures. While the services “would love” to close more bases, he said, politically, “it may be in the ‘too-hard’ column.”

A week after his speech, Gates directed the Defense Business Board to create a task force to recommend cost-cutting moves in overhead and business operations. He wants an interim report by the beginning of this month and a final report by Sept. 1, on cuts that can be included in the Fiscal 2012 defense budget.



USAF photo by TSgt. Raheem Moore

Gates wants to end C-17 production.

Tanker Hits the Floor

Congress is officially diving into the battle to field a new Air Force aerial tanker, as proposed legislation would affect how bids are evaluated and tip the scales of the contest in Boeing’s favor. The move came as Boeing made veiled threats not to bid if its concerns aren’t addressed.

Three of Boeing’s most ardent supporters—Sen. Sam Brownback (R-Kan.), Sen. Patty Murray (D-Wash.), and Rep. Todd Tiahrt (R-Kan.)—introduced co-sponsored or matching Senate and House bills in May dubbed the Fair Defense Competition Act.

The proposed law would require the Air Force to take recent World Trade Organization rulings into account when weighing the tanker program bids from Boeing and European Aeronautic Defense and Space North America. The WTO found that EADS—parent of EADS North America and Airbus—received billions in illegal subsidies from European governments.

“Our legislation would ... prevent the Air Force from giving an advantage to European workers,” who are bolstered by some \$5 billion in illegal subsidies, said Tiahrt. “We believe this must be taken into account.”

The bill could compel the Air Force to assess as much as a \$5 million penalty per airplane in the 179-airplane competition. In the previous tanker contest, the price difference between the EADS KC-45—then being offered with Northrop Grumman as the prime—and Boeing’s KC-767 was extremely close. With EADS now bidding as prime—and the cost of Northrop Grumman’s participation eliminated—the KC-45 price could be significantly lower in this round.

The Pentagon has maintained that it can’t make the WTO ruling a part of the evaluation, since there is a pending WTO counterclaim against Boeing which won’t be decided until this summer. Instead, the Air Force wrote a “hold harmless” clause into the request for proposal to prevent the winner from charging WTO penalties as program expenses.

In early May, Boeing spread the word that it might not bid, ostensibly because the Air Force was writing the contest rules to favor the KC-45, and because it couldn’t overcome the subsidy advantage. This despite the fact that Northrop Grumman withdrew from the competition, saying the Air Force had expressed a clear preference for a smaller airplane—namely, Boeing’s.

It was a page from Northrop Grumman’s own playbook. In the previous contest, Northrop Grumman won concessions in the structure of the competition by threatening not to bid. The Air Force then adjusted the rules to allow more credit for the KC-45’s special features.

Officially, Boeing said through a spokesman that it would indeed bid the \$40 billion to \$50 billion program, offering its NewGen Tanker, based on the KC-767 but with more advanced features that would meet all of the Air Force’s requirements.

EADS has kept up a drumbeat of ads claiming that the airplane it will offer is flying now in test, and already passing fuel through its newly designed boom. Boeing has countered that the airplane EADS is hyping isn’t the one to be offered and won’t meet all USAF requirements.

Nevertheless, EADS’ flying tanker is closer to the final version than Boeing’s unbuilt NewGen. Since the program was expected to be a contest between off-the-shelf designs—to result in a fixed development, firm-fixed-price production program—Boeing’s threat not to bid might not have been pure theater: The NewGen is not an off-the-shelf design, and the company could find it tough to ready the airplane for production within the Air Force’s desired timetable.

Sizing up its chances, Boeing may not see the contract as the fait accompli many believed it would be when Northrop Grumman backed out. ■



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Donley Cites Budget Vise

The Air Force budget is under attack from within, Air Force Secretary Michael B. Donley said during a speech on Capitol Hill at the inaugural meeting of the Senate Aerospace Caucus May 6. Stated succinctly, the service's topline isn't keeping pace with the new missions USAF is required to take on, he said.

"Nearly every aspect of the Air Force budget is growing larger and faster than the Air Force budget," said Donley, carefully choosing his words for irony. While 63 percent of the service's spending over the future years defense program is consumed by day-to-day operations, the remaining 37 percent is for investment.

He said one-quarter of the investment dollar goes to the combat air forces. (The F-35 alone consumes 60 percent of CAF investment funding.) Space projects get 19 percent, and big portions of investment spending go toward "joint enablers" such as airlift, tankers, and intelligence-surveillance-reconnaissance, and for research and development.

Lorenz Retiring, Rice To AETC

The Air Force announced May 10 that Gen. Stephen R. Lorenz will be retiring after 37 years of uniformed service. He had led Air Education and Training Command since July 2008.

Lorenz is a US Air Force Academy graduate and a command pilot, with more than 3,500 hours in the cockpits of various transport and tanker aircraft. Replacing him at AETC is Lt. Gen. Edward A. Rice Jr., whom the Senate on May 7 confirmed to receive a fourth star. Rice has led US Forces Japan and 5th Air Force since February 2008.

The AETC enlisted force plans to induct Lorenz into the Order of the Sword, its highest honor, during a July 16 ceremony at Lackland AFB, Tex.

Rescue Crew Takes Mackay Trophy

The four crew members of an HH-60G Pave Hawk rescue helicopter from the 33rd Rescue Squadron at Kadena AB, Japan, have won the 2009 Mackay Trophy, Kadena officials announced May 19. The National Aeronautic Association award recognizes the year's most meritorious flight.

The airmen—Capt. Robert Rosebrough, 1st Lt. Lucas Will, MSgt. Dustin Thomas, and SSgt. Tim Philpott—comprised Pedro

16 during a July 29, 2009 mission while operating with the 129th Expeditionary Rescue Squadron at Kandahar Airfield, Afghanistan.

Pedro 16 directed rescue operations by Pedro 15, another HH-60 Pave Hawk crew, to retrieve wounded soldiers from an active firefight, kept in radio contact with the ground commander, and provided emergency close air support, returning fire themselves and acting as forward air controller for two Army OH-58 helicopters.

Cyber Command Starts Work

US Cyber Command on May 21 officially began initial operations at Ft. Meade, Md. It now leads the efforts to protect the US military's cyber network and attack an adversary through that network, if necessary. It is a subunified command subordinate to US Strategic Command.

The nascent organization, led by Army Gen. Keith B. Alexander, draws together existing cyber capabilities from across the Department of Defense, including 24th Air Force. The Senate on May 7 confirmed Alexander's promotion to a four-star general for the position. He also remains at the helm of the National Security Agency at Ft. Meade.

"Given our increasing dependency on cyberspace, this new command will bring together the resources of the department to address vulnerabilities and meet the ever-growing array of cyber threats to our military systems," said Secretary of Defense Robert M. Gates May 21 upon appointing Alexander to the top cyber post.

Newest GPS Satellite Launches

The Air Force and its industry partners on May 27 successfully launched the first Global Positioning System Block IIF satellite into space aboard a United Launch Alliance Delta IV expendable launch vehicle from Cape Canaveral AFS, Fla. This mission marked the first time that a Delta IV carried a GPS satellite into space.

The Boeing-built Block IIF satellite joined 30 other GPS spacecraft of earlier configurations already on orbit. The company said on May 28 the first signals had been acquired from the new satellite, paving the way for orbital maneuvers and operational testing. The satellite was expected to start operational service within 90 days of launch.

The Block IIF model features a more robust and higher power military signal—first

Photo by Ted Carlson



included on GPS Block IIR-M satellites—and a new L5 civil signal for aviation safety of flight. Boeing is under contract to supply the Air Force with 12 Block IIFs.

X-51A Sets Scramjet Marks

The Air Force's experimental X-51A WaveRider unmanned hypersonic air vehicle flew successfully on its maiden flight attempt on May 26, traveling under its own power for longer than any other supersonic combustion ramjet-powered vehicle in history,

according to USAF and industry officials.

Released from a B-52 bomber over the Southern California coast, the X-51's scramjet propelled the vehicle for more than three-and-a-half minutes over the Pacific Ocean after its host booster expired, they said. During this time, the X-51 accelerated to speeds of about Mach 5 and an altitude of about 70,000 feet.

After about 200 seconds of engine burn, a vehicle anomaly occurred and the flight was terminated. Nonetheless, Charlie

Brink, X-51A program manager in the Air Force Research Laboratory, said his team of Air Force, DARPA, NASA, Boeing, and Pratt & Whitney engineers was "ecstatic" with the success of this maiden mission. Three more flights of expendable X-51As are planned.

ANG Units Get Newer F-16s

The Minnesota Air National Guard's 148th Fighter Wing in Duluth on April 27 received the first of 20 F-16 Block 50 aircraft



06.06.2010

You don't encounter this every day—a close-up view of the underside of a KC-135R Stratotanker in flight. The tanker and its crew are assigned to the 151st Air Refueling Squadron, part of the Tennessee Air National Guard's 134th ARW, McGhee Tyson ANGB, Tenn. They were flying on an aerial refueling track over the Atlantic Ocean, funneling gas to a US Navy EA-6B Prowler from the VAQ-209 "StarWarriors." The flight was part of currency training for the Navy crew, which will deploy soon to Southwest Asia.

from Spangdahlem AB, Germany. That same day, the South Dakota ANG's 114th FW in Sioux Falls took delivery of the first of 22 Block 40 F-16s from Hill AFB, Utah, which will replace its Block 30 models.

The Block 50s are replacing Duluth's current F-16 Block 25s, which are being retired. The 148th FW becomes the second Air Guard wing to fly Block 50s. Sioux Falls' 175th Fighter Squadron will operate the

Block 40s in place of the Block 30s it has flown since 1991.

Duluth received its 20th and final Block 50 on May 29, while Sioux Falls is expected to receive all of its the newer F-16s by September. Spangdahlem is shedding about half of its F-16s as part of USAF's 2010 drawdown of some 250 legacy fighters; Hill is losing about one-third of its F-16s under this reduction.

Air Force Unveils Fiscal 2011 Force Structure Changes

The Air Force leadership on May 11 issued the service's proposed force structure, realignment, and management actions in support of President Obama's Fiscal 2011 budget submission.

On the personnel side, these changes involve more than 13,000 active duty, reserve, and civilian positions—some 2,450 active duty, 1,300 Air Force Reserve, 220 Air National Guard, and 9,200 civilian slots.

They include: contractor-to-civilian conversions (about 34 percent of the total positions) to bolster the acquisition workforce, executing joint basing actions (16 percent), increasing Air Force Reserve end strength (12 percent) by adding security forces and civil engineers, and boosting intelligence-surveillance-reconnaissance manpower (11 percent) for purposes such as building 50 remotely piloted aircraft combat air patrols by the end of next fiscal year.

"The Air Force continues to support new and emerging missions, while making every effort to remedy the stress experienced by critically manned career fields," said Air Force Chief of Staff Gen. Norton A. Schwartz, in explaining these moves.

In terms of equipment, the Air Force intends to retire 59 aircraft next fiscal year and add 137 new airframes to its inventory.

The list of aircraft to be phased out includes: 28 C-130Es, seven C-21As, three C-9Cs, 17 C-5As, two MC-130Es, and two T-43s.

The aircraft slated to join the force are: eight C-130Js, 10 C-17s, six C-27Js, one C-37B, three CV-22s, 19 F-22As, 11 F-35As, four MC-130Js, 16 MQ-1s, 29 MQ-9s, five RQ-4Bs, and 25 T-41Ds (for the US Air Force Academy).

Some of the planned retirements, such as the 17 C-5As, are contingent on Congressional approval stemming from language in Fiscal 2010 defense legislation.

Among the proposed activities, the Air Force would also continue to strengthen the nuclear enterprise, grow cyberspace capabilities, and establish an Air Reserve Command association at Little Rock AFB, Ark., to train C-130H operators.

These force structure changes do not reflect pending actions such as the beddown of MC-12s. Nor do they factor in future actions on programs such as the KC-X tanker.

Schwartz: Airmen Are the Key

The case for maximizing the potential and performance of every airman has never been more compelling, Air Force Chief of Staff Gen. Norton A. Schwartz told attendees May 4 at the 2010 senior enlisted leaders summit at Maxwell AFB, Ala.

"Today, more than ever, tactical effects can have strategic consequences," he said. "In many instances, mission success hinges on airmen outside the wire, making split-second decisions in a highly dynamic environment in which black and white choices are rare, and the many shades of gray can challenge even the most brilliant and competent among us."

Schwartz said it is imperative that airmen have "the right experience, training, and education at the right time" so the service can perform its assigned missions, given the challenges of constrained resources and a historically low total end strength.

Stockpile Details Revealed

The Obama Administration on May 3 took the unprecedented step of disclosing the number of nuclear weapons in the nation's stockpile—5,113 warheads, as of Sept. 30, 2009.

Officials said the move was intended to encourage similar disclosure by the world's nuclear powers and strengthen nuclear nonproliferation efforts.

For details, see "Chart Page" on p. 24.

Guard OK With C-27J Fleet

A fleet of 38 C-27J twin-engine transport aircraft will be enough to meet the Army's needs for direct support at austere forward locations, when augmented by some C-130 airlifters, Air Force Gen. Craig R. McKinley, National Guard Bureau chief, told reporters May 4 in Washington, D.C.

The Pentagon decided to procure 38 C-27s, even though the standing requirement is for 78. But McKinley said, "With 38 C-27s and however-many [C-130s] we need, we can do the direct-support mission." He added, "We've done tests recently in Iraq that show the -130 can deliver the last tactical mile."

The C-130, the comparatively larger airframe, has "significant capacity" for direct support when the proper techniques, processes, and procedures are used, said McKinley. Air Force officials told House



USAF photo by SSgt. Raymond Hoy

Red Dawn: "Victims" of a simulated chemical attack await rescue at Incirlik AB, Turkey. The base went on a 24-hour operations schedule for the duration of the anti-terrorism exercise.



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lawmakers in April that the service is making available 40 C-130s for this role.

Schwartz Clarifies LAAR Use

The Air Force wants a Light Attack Armed Reconnaissance aircraft primarily to help build the air capacity of allied air forces and other partners, said Gen. Norton A. Schwartz, USAF Chief of Staff.

The Air Force would not need this LAAR to carry out its close air support mission, Schwartz added. It has identified “a limited need” for a light platform to serve in that role, he said.

Schwartz made his somewhat surprising remarks on May 6 at a Center for National Policy-sponsored event in Washington, D.C.

The Chief of Staff said the presence of LAAR in USAF’s combat units will give the service the ability to transfer the skills for operating light attack airplanes to the airmen of maturing air forces in partner nations.

The Air Force plans to buy 15 LAAR airframes in Fiscal 2012. For the basic CAS mission, Air Combat Command is pursuing a concept called OA-X.

NORAD Boss Cites Concerns

Gen. Victor E. Renuart Jr. on May 13 said NORAD’s “aging systems”—namely radars and air defense fighters—have become “a concern” to planners.

Renuart spoke at his final press conference as commander of both North American Aerospace Defense Command and US Northern Command.

He acknowledged that there is “a modernization plan in place” for air defense-related fighters, but the Pentagon has in place only “temporary” fixes for current ground-based radars.

Renuart asserted that DOD must have “investment in place” in the 2017-19 period, when those radars “begin to age out.”

On May 19, Vice Adm. James A. Winnefeld Jr. replaced Renuart, who officially retired on July 1.

Administration Announces New Nuclear Force Structure

The United States will reduce its deployed force of 450 Minuteman III ICBMs by at least 30 missiles and convert at least 34 of its 94 nuclear-capable B-2A and B-52H bombers to conventional-only roles under a new baseline nuclear force structure announced May 13.

The Obama Administration disclosed this plan when it submitted the New START Treaty to the Senate for ratification. The agreement, signed April 8 by the US and Russia, would limit each nation to no more than 1,550 deployed strategic nuclear warheads and 800 launchers, 700 of which are in deployed status. Obama is hoping for the Senate’s approval by year’s end.

Along with retaining “up to 420 deployed ICBMs, all with a single warhead” and “up to 60 nuclear-capable bombers,” the US will maintain 14 strategic nuclear submarines, the White House said in a fact sheet outlining these changes.

However, the Navy will reduce the number of launch tubes on each sub from 24 to 20, deploying only 240 nuclear ballistic missiles at any one time.

The Administration said the new baseline “fully supports US security requirements and conforms to the New START limits.” Further, this mix could be modified at a later point, while staying within the treaty’s limits, it noted.

Secretary of Defense Robert M. Gates, while making the case for New START ratification before the Senate Foreign Relations Committee on May 18, said the US will retain “all 18” operational B-2As—there are a total of 20 B-2s in the inventory—but convert some B-52Hs to a conventional-only role.

He said the new force structure does not require changes to current or planned basing arrangements. For example, Minuteman IIIs will remain at the Air Force’s three current missile bases in Montana, North Dakota, and Wyoming.

Gates said New START allows the US “complete flexibility” to deploy, maintain, and modernize its strategic nuclear forces. This includes the Air Force incorporating a long-range strike replacement at some point, he added.

ANG Wing Gets New Missions

The Air Force announced May 11 that the Ohio Air National Guard’s 178th Fighter Wing at Springfield-Beckley Airport will gain three missions over the next several years as it loses its F-16 training role per BRAC 2005.

Springfield, located northeast of Dayton, not far from Wright-Patterson Air Force Base, will host a ground control station for operating MQ-1 Predator remotely piloted aircraft in combat zones and will serve as an interim site for F-16 bulkhead repair.

The wing’s Air Guardsmen will also support the operations of the National Air

and Space Intelligence Center at Wright-Patterson. According to local press reports, the new missions will retain more than 860 jobs at the Air Guard base.

Wyatt Cites New ASA Study

Lt. Gen. Harry M. Wyatt III, Air National Guard director, told members of the House Armed Services Committee readiness subcommittee on April 27 that US Northern Command officials are studying the requirements for the air sovereignty alert mission, currently met by 18 alert sites, 16 of them covered by the Air Guard.

Wyatt said this study is to be the first one conducted since the 9/11 terrorist attacks and would “determine if 18 is the required number” or perhaps “more or a little bit less.” If the answer is less, that might solve a big problem for the Air Guard, which expects to have a significant portion of its fighter fleet reach retirement age by 2017, if not sooner.

However, whichever way the NORTHCOM study comes down, Wyatt said the Air Force Chief of Staff has “pledged adequate resources to make sure that [ASA] mission is covered.”

Reservists Aid Gulf Clean-up

Air Force Reservists from the 910th Airlift Wing at Youngstown ARS, Ohio, on May 1 began operating two specially modified C-130H aircraft from Stennis Airport at Bay St. Louis, Miss., to spray a dispersing agent on the oil spill in the Gulf of Mexico.

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Air Force Materiel Command Reorganizes

Air Force Materiel Command announced May 12 that it would adopt a new organizational construct built on directorates, divisions, and branches to acquire and sustain the service's weapon systems.

Under the plan, most AFMC units were expected to shed by June 30 their current command structures based on wings, groups, and squadrons that have been in place since 2004.

These moves are intended to establish more clear lines of authority and accountability within the command, which is headquartered at Wright-Patterson AFB, Ohio.

This goal is one of the pillars of the Air Force-wide acquisition improvement plan that was launched in May 2009 to address shortcomings in the service's acquisition community.

Air Force headquarters approved the AFMC conversion plan on May 11. AFMC officials said all of the command's centers would see some changes, but the realignment would be manpower-neutral, meaning no jobs lost or gained.

AFMC officials said these changes are not a simple reversion to the directorate-based structure that was in place prior to 2004, but rather, represent a more significant overhaul.

Along with changing to directorates, several new program executive officer positions have been created to lead many of the directorates at the product centers.

AFMC organizations switching to the directorate-based model are: Aeronautical Systems Center (ASC) at Wright-Patterson; Air Armament Center (excluding the 46th Test Wing) at Eglin AFB, Fla.; Air Force Security Assistance Center at Wright-Patterson; Arnold Engineering and Development Center at Arnold AFB, Tenn.; and Electronic Systems Center at Hanscom AFB, Mass.

For example, ASC is building five directorates: agile combat support, fighters/bombers, intelligence-surveillance-reconnaissance/special operations forces, mobility, and tanker.

ASC Commander Lt. Gen. Thomas J. Owen, who will also serve as PEO for aircraft, overseeing those five directorates, said May 12 these adjustments would "significantly improve communication and oversight of programs."

These changes also apply to AFMC's three air logistics centers at Hill AFB, Utah, Robins AFB, Ga., and Tinker AFB, Okla.

They were part of the US government's response following the April 20 explosion and sinking of the Transocean Deepwater Horizon oil drilling rig about 130 miles southeast of New Orleans. By their return home on June 4, these airmen had flown 92 sorties, spraying 30,000 acres of Gulf waters with 149,000 gallons of dispersant.

The Youngstown unit has the US military's only full-time large-area fixed-wing aerial spray capability. While its C-130s normally provide larvicide and insect eradication and vegetation control at training ranges, they are also used to help disperse oil slicks by spraying a chemical that helps break it down for natural assimilation by the ocean.

USAF C-130Js Branching Out

Two of the new C-130J transports assigned to the 37th Airlift Squadron at Ramstein AB, Germany, participated in Flintlock 10, a US Africa Command-sponsored multinational capacity-building exercise that ran May 1 to May 23 throughout western Africa. They operated out of Ouagadougou, Burkina Faso.

While Ramstein's C-130Js began flying in-and-out missions to Africa last December, Flintlock 10 marked the first time that they deployed to "an austere environment for significant durations," as well as their first involvement in an exercise on the African continent, said Maj. Mark Oberson, 37th AS assistant director of operations.

"The -130s are making this exercise happen," said Maj. Randle Tankersley who works plans and operations for 17th Air Force (Air Forces Africa). With them, exercise planners were able to bring the participants together at multiple exercise locations. Ramstein is building a force of 14 C-130Js.

SBIRS Sensor Gets Intel Nod

HEO-2, the second Space Based Infrared System sensor payload already on orbit, has been approved to provide technical intelligence (TI) in support of the US military and the intelligence community, the Air Force announced May 7.

This operational acceptance came after the National Geospatial-Intelligence Agency validated that HEO-2's sophisticated IR sensor provides accurate, timely, reliable, and unambiguous TI data for use in intelligence production.

HEO-2 has resided on a classified intelligence satellite in highly elliptical orbit since 2008. US Strategic Command certified it for operations in mid-2009. Its predecessor, HEO-1, was cleared for operations in late 2008. The main mission of both payloads is to provide warning of ballistic missile launches worldwide.

Shaw Drops A-10 Engine Work

Airmen at Shaw AFB, S.C., on May 11 loaded their last TF34 turbofan engine

USAF photo



Courage Under Fire: Photographed here with other members of the 33rd Rescue Squadron are the recipients of the 2009 Mackay Trophy, which recognizes the year's most meritorious flight. Four airmen of Pedro 16—MSgt. Dustin Thomas (left, standing), Capt. Robert Rosebrough (middle, standing), 1st Lt. Lucas Will (right, standing), and SSgt. Tim Philpott (right, kneeling)—are being recognized for their actions under fire near Forward Operating Base Frontenac in Afghanistan (see p. 12).

The War on Terrorism

Operation Enduring Freedom—Afghanistan

Casualties

By June 18, a total of 1,108 Americans had died in Operation Enduring Freedom. The total includes 1,106 troops and two Department of Defense civilians. Of these deaths, 817 were killed in action with the enemy while 291 died in noncombat incidents.

There have been 6,355 troops wounded in action during OEF. This number includes 2,856 who were wounded and returned to duty within 72 hours and 3,499 who were unable to return to duty quickly.

Bagram Comes Under Attack

Just before dawn on May 19, a Taliban force of an estimated 30 to 40 militants, employing suicide bombers, rocket-propelled grenades, and small arms, attacked the outer perimeter of Bagram Airfield, killing one contractor and wounding several service members, US military officials announced.

A building on the base also received minor damages during the attack.

The coalition and Afghan National Police killed 16 insurgents, including four intended suicide bombers before they could detonate themselves.

Following the attack, coalition and police forces detained five suspected militants in a nearby village.

During the attack, the coalition forces and Afghan National Police blocked the insurgents before they could completely breach the perimeter of the base.

Army helicopters, responsible for providing aerial security during the attack, engaged multiple insurgents outside the airfield. Additionally, an enemy mortar pit set up outside the perimeter was destroyed.

Army Lt. Col. Clarence Count Jr., spokesman for Combined Joint Task Force-82 at Bagram, said the Taliban clearly “intended a spectacular event.”

He added, “The quick defensive reaction by the Bagram security forces likely saved a lot of lives.”

HC-130P Rescue Force Activated

The Air Force officially activated the 79th Expeditionary Rescue Squadron at Camp Bastion on April 22, returning an HC-130P King rescue aircraft unit to the Afghanistan theater for the first time in five years.

“Helmand province is the busiest spot right now in Afghanistan; being here puts us right where they need us,” said Lt. Col. Michael Hinsch, 79th ERQS commander.

At Bastion, the squadron is on 30-minute alert status.

The unit comprises some 86 airmen—aircrews, maintainers, and pararescue jumpers—deployed from Davis-Monthan AFB, Ariz. They actually set up alert operations April 8 and flew their first alert sortie April 9.

The PJs can care for wounded troops in transit or airdrop from the fixed-wing HC-130Ps into a combat zone to help injured personnel.

Operation Iraqi Freedom—Iraq

Casualties

By June 18, a total of 4,410 Americans had died in Operation Iraqi Freedom. The total includes 4,397 troops and 13 Department of Defense civilians. Of these deaths, 3,488 were killed in action with the enemy while 922 died in noncombat incidents.

There have been 31,860 troops wounded in action during Operation Iraqi Freedom. This number includes 17,896 who were wounded and returned to duty within 72 hours and 13,964 who were unable to return to duty quickly.

Security Forces Unit Gears for Drawdown

The 732nd Expeditionary Security Forces Squadron at JB Balad on May 13 held its final expected change-of-command ceremony before the unit's withdrawal from Iraq in September.

At the time of the ceremony, the squadron had completed 3,000 mounted and 140 dismounted outside-the-wire missions over some 79,000 miles of what is considered some of the most contested operating environments in Baghdad.

The unit had also managed to train 7,000 Iraqi policemen and build up 148 police stations.

During action since 2006, the 500-person unit has seen five airmen killed and several injured. It's been called the “largest and bloodiest” Air Force squadron in Iraq.

“The 732nd has a rich history here,” said Lt. Col. Dustin G. Sutton, the unit's new commander. He added, “We provide law and order and are essential in police mentoring missions that are dynamic and dangerous.”

for an A-10 Thunderbolt II ground-attack aircraft on a truck for shipment to Moody AFB, Ga., marking the end of Shaw's 18 years of major repair work on A-10 engines.

Over that span, Shaw airmen produced more than 654 serviceable TF34 engines in support of A-10 units at Pope AFB, N.C. (later Moody), Spangdahlem AB, Germany, and Eglin AFB, Fla.

Originally, the Shaw mechanics operated under the 20th Component Maintenance Squadron's Propulsion Flight. It later became the TF34 Engine Regional Repair Center. As part of BRAC 2005, the Air Force is relocating A-10 engine work at two Centralized Intermediate Repair Facilities, one at Moody and one at Bradley Arpt., Conn.

USAF Rejects RPA Leasing

The Air Force is not looking to lease remotely piloted aircraft, not even temporarily, the service leadership said May 12 on Capitol Hill. These comments came in response to the question by Sen. Thad Cochran (R-Miss.) on whether leasing RPAs would make them available more quickly to warfighters outside of Southwest Asia.

“We intend to keep this capability over a longer term,” so it makes more sense—and is probably ultimately less expensive—to buy and own RPAs, answered Air Force Secretary Michael B. Donley.

Chief of Staff Gen. Norton A. Schwartz added that the Air Force is already doing all it can from a resource and manpower standpoint to increase its RPA ranks, including “maximizing” MQ-9 Reaper production. Accordingly, he said, USAF is already on “the max performance glide path” to satisfy combatant commander needs around the globe.

Sheppard Hosts NCO Academy

Sheppard AFB, Tex., will host a noncommissioned officer academy that is expected to open its doors to technical sergeants in early 2011 and initially graduate about 1,300 airmen annually, Air Force officials announced May 7.

The new academy will train active duty, Air National Guard, and Air Force Reserve airmen. It will give the Air Force a total of 11 NCO academies—including one each in Alaska, Hawaii, Germany, and Japan—that will graduate a combined estimated 11,800 students each year.

The Sheppard academy will be housed in a facility on the base grounds previously used for enlisted medical training. That training mission is moving to Ft. Sam Houston in San Antonio, courtesy of BRAC 2005.

New Intel Center Starts Up

After more than seven years of planning and preparations, the new consolidated operating facilities for the 497th Intelligence, Surveillance, and Reconnaissance Group at JB Langley, Va., in late April became fully operational.

Senior Staff Changes

RETIREMENTS: Gen. Victor E. **Renuart Jr.**, Brig. Gen. David B. **Warner**.

NOMINATIONS: To be General: Edward A. **Rice Jr.** **To be Lieutenant General:** Burton M. **Field**, Frank J. **Kisner.** **To be Brigadier General:** David W. **Allvin**, Balan R. **Ayyar**, Thomas W. **Bergeson**, Jack L. **Briggs II**, James S. **Browne**, Arnold W. **Bunch Jr.**, Theresa C. **Carter**, Scott L. **Dennis**, John W. **Doucette**, Sandra E. **Finan**, Donald S. **George**, Jeffrey L. **Harrigian**, Jerry D. **Harris Jr.**, Kevin J. **Jacobsen**, Scott W. **Jansson**, Richard A. **Klumpp Jr.**, Leslie A. **Kodlick**, Gregory J. **Lengyel**, James F. **Martin Jr.**, Robert D. **McMurry Jr.**, Edward M. **Minahan**, Kenneth J. **Moran**, John F. **Newell III**, Jon A. **Norman**, Mark C. **Nowland**, James N. **Post III**, Steven M. **Shepro**, Jay B. **Silveria**, Robert D. **Thomas**, David D. **Thompson**, William J. **Thornton**, Kenneth E. **Todorov**, Linda R. **Urrutia-Varhall**, Burke E. **Wilson**.

CHANGES: Brig. Gen. Bryan J. **Benson**, from Cmdr., 380th Air Expeditionary Wg., ACC, Al Dhafra AB, UAE, to Vice Cmdr., 18th AF, AMC, Scott AFB, Ill. ... Maj. Gen. William A. **Chambers**, from Vice Cmdr., USAFE, Ramstein AB, Germany, to Asst. C/S, Strat. Deterrence & Nuclear Integration, USAF, Pentagon ... Brig. Gen. Richard M. **Clark**, from Vice Cmdr., 8th AF, AFGSC, Barksdale AFB, La., to Commandant of Cadets, USAF Academy, Colorado Springs, Colo. ... Brig. Gen. Samuel D. **Cox**, from Commandant of Cadets, USAF Academy, Colorado Springs, Colo., to Cmdr., 618th Tanker Airlift Control Ctr., AMC, Scott AFB, Ill. ... Brig. Gen. Steven J. **DePalmer**, from Vice Cmdr., 14th AF, AFSPC, Vandenberg AFB, Calif., to C/S, Jt. Warfare Ctr., Supreme Allied Command for Transformation, NATO, Stavanger, Norway ... Maj. Gen. Gregory A. **Feest**, from Cmdr., 19th AF, AETC, Randolph AFB, Tex., to AF Chief of Safety, USAF, Pentagon ... Lt. Gen. (sel.) Burton M. **Field**, from Sr. Mil. Advisor to the US Spec. Rep. for Afghanistan/Pakistan, Pentagon, to Cmdr., 5th AF, Yokota AB, Japan ... Maj. Gen. (sel.) Craig A. **Franklin**, from Cmdr., 332nd Air Expeditionary Wg., ACC, JB Balad, Iraq, to Dir., Ops., DCS, Ops., P&R, USAF, Pentagon ... Brig. Gen. (sel.) Donald S. **George**, from Cmdr., Natl. Air & Space Intel. Ctr., AF ISR Agency, Wright-Patterson AFB, Ohio, to Dir., Intel., STRATCOM, Offutt AFB, Neb. ... Brig. Gen. (sel.) Jerry D. **Harris Jr.**, from Asst. Dir., Ops., Plans, Rqmts., & Prgms., PACAF, Hickam AFB, Hawaii, to Cmdr., 56th FW, AETC, Luke AFB, Ariz. ... Brig. Gen. Bart O. **Iddins**, from Command Surgeon, AFSOC, Hurlburt Field, Fla., to Command Surgeon, AMC, Scott AFB, Ill. ... Lt. Gen. (sel.) Frank J. **Kisner**, from Cmdr., SOCOM Europe, EUCOM, Stuttgart-Vaihingen, Germany, to Cmdr., NATO Spec. Ops., SHAPE, Belgium ... Brig. Gen. (sel.) Gregory J. **Lengyel**, from Cmdr., 1st SOW, AFSOC, Hurlburt Field, Fla., to Exec. Asst. to Supreme Allied Cmdr. Europe, SHAPE, NATO, Mons, Belgium ... Brig. Gen. (sel.) James F. **Martin Jr.**, from Dir., AF Budget Prgms., Office of the Asst. SECAF, Financial Mgmt. & Comptroller, Pentagon, to Dir., Financial Mgmt., AFMC, Wright-Patterson AFB, Ohio ... Brig. Gen. (sel.) Edward M. **Minahan**, from Exec. Officer to the Dep. Cmdr., EUCOM, Stuttgart-Vaihingen, Germany, to Cmdr., 380th Air Expeditionary Wg., ACC, Al Dhafra AB, UAE ... Brig. Gen. Kurt F. **Neubauer**, from Cmdr., 56th FW, AETC, Luke AFB, Ariz., to Cmdr., 332nd Air Expeditionary Wg., ACC, JB Balad, Iraq ... Brig. Gen. (sel.) Jon A. **Norman**, from Spec. Asst. to the Cmdr., 12th AF, ACC, Davis-Monthan AFB, Ariz., to Vice Cmdr., 12th AF, ACC, Davis-Monthan AFB, Ariz. ... Gen. (sel.) Edward A. **Rice Jr.**, from Cmdr., US Forces Japan, Yokota AB, Japan, to Cmdr., AETC, Randolph AFB, Tex. ... Maj. Gen. Douglas J. **Robb**, from Command Surgeon, AMC, Scott AFB, Ill., to Jt. Staff Surgeon, Pentagon ... Maj. Gen. Mark S. **Solo**, from Cmdr., 618th Tanker Airlift Control Ctr., AMC, Scott AFB, Ill., to Cmdr., 19th AF, AETC, Randolph AFB, Tex. ... Brig. Gen. (sel.) Linda R. **Urrutia-Varhall**, from Sr. Mil. Asst. to the Undersecretary of Defense for Intel., Pentagon, to Dep., DCS, Intel., ISAF, Kabul, Afghanistan ... Brig. Gen. Joseph S. **Ward Jr.**, from Dir., Financial Mgmt., AFMC, Wright-Patterson AFB, Ohio, to Dir., Budget Ops., & Personnel, Office of the Asst. SECAF, Financial Mgmt. & Comptroller, Pentagon ... Brig. Gen. Scott D. **West**, from C/S, Jt. Warfare Ctr., Supreme Allied Command for Transformation, NATO, Stavanger, Norway, to Vice Cmdr., 13th AF, PACAF, Hickam AFB, Hawaii.

SENIOR EXECUTIVE SERVICE CHANGES: Brian P. **Burns**, to Dep. Dir., Warfighter Sys. Integration, Office of Info. Dominance & Chief Info. Officer, OSAF, Pentagon ... Lloyd W. **Brasure**, to Exec. Dir., AF Nuclear Weapons Ctr., AFMC, Kirtland AFB, N.M. ... Carolyn M. **Gleason**, to Dir., Financial Mgmt. & Comptroller, ASC, AFMC, Wright-Patterson AFB, Ohio ... Paul A. **Parker**, to Dir., Comm., Instl., & Mission Spt., AFMC, Wright-Patterson AFB, Ohio. ■

This \$75 million construction project brought together more than 700 personnel and their equipment into two new buildings at the north end of the base. Previously, they operated out of six different facilities around Langley.

The group runs DGS-1, a main hub in the Distributed Common Ground System, the Air Force's global enterprise for processing overhead imagery and signals intelligence from airborne ISR assets. With the new setup, the group's daily capacity to analyze still imagery has increased by 50 percent, its full-motion video capacity by 300 percent.

Stenner Wants Speedier Training

Lt. Gen. Charles E. Stenner Jr., Air Force Reserve commander, said May 4 if he had more funds, he would put them toward "seasoning" new recruits to make them deployable faster.

Stenner, speaking at an Air Force Association-sponsored presentation in Arlington, Va., said Reservists graduate basic schools "at a three-level" of competence, but need to be at a five-level to deploy. Recruits who do not get to deploy soon after they complete training are frustrated.

In fact, many, after spending months working up to a deployable skill level, wind up not staying in the Air Force. "It's a morale killer," he said. By contrast, "retention goes up tremendously" for nonpriors who get to deploy soon after completing their training. He would keep the new Reservists in training until they get their five-level certification.

Puerto Rico Unit Gets Reprieve

Senior Air Force officials told House lawmakers April 28 during an oversight hearing that USAF would hold off temporarily on a plan to retire the C-130s of the Puerto Rico Air National Guard's 156th Airlift Wing next year that was proposed as part of the service's Fiscal 2011 budget.

Under the original plan, the wing would have lost its six C-130s. But this idea met with Congressional resistance. Sen. Kit Bond (R-Mo.), co-chair of the Senate National Guard Caucus, said March 25 the plan would "eliminate the only flying unit in the Puerto Rican Air Guard" despite this unit excelling during the recent Haiti earthquake relief.

Accordingly, Lt. Gen. Philip M. Breedlove, deputy chief of staff for operations, plans, and requirements, said the service is discussing with the Air Guard, the Puerto Rico ANG's 156th AW, and Office of the Secretary of Defense delaying the retirements "to allow time to determine a suitable follow-on mission for the unit."



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Two Combat Controllers Receive Silver Stars

Air Force Chief of Staff Gen. Norton A. Schwartz on April 29 presented SSgt. Sean Harvell, a combat controller with the 22nd Special Tactics Squadron at JB Lewis-McChord, Wash., two Silver Stars for his actions during multiple firefights in Afghanistan in 2007.

During the same ceremony at Lewis-McChord, Schwartz presented SSgt. Evan Jones, a combat controller in the same unit, with the Silver Star and the Bronze Star Medal with Valor Device for his actions during two separate events while deployed to Afghanistan in 2008.

According to Lewis-McChord officials, Harvell deliberately exposed his position during one engagement so that he could coordinate close air support during an intense 23-hour firefight.

In another, when Taliban forces attacked his team as they responded to a US helicopter crash, Harvell was wounded and knocked unconscious, but he recovered, returning fire and directing danger-close CAS.

In a third incident, following a rolling, three-day engagement, Harvell repeatedly exposed his position during an eight-hour firefight, provided covering fire as his team withdrew, and then coordinated CAS for their replacements.

Jones received his Silver Star for his actions during an engagement in which the coalition special forces team that he was supporting came under fire from two directions.

Jones coordinated CAS, returning fire and exposing his position repeatedly, and even after being wounded, continued to direct the air support as his team fought through an area covered by 20 enemy combat positions.

The News Tribune of Tacoma, Wash., reported April 30 that Jones received his Bronze Star Medal for saving five soldiers and aiding in the deaths of 14 Taliban forces as he called in F-16 strafing runs, F/A-18 strikes, and helicopter evacuation of wounded team members.

received a Bronze Star Medal with Valor Device from Air Force Chief of Staff Gen. Norton A. Schwartz during a ceremony at JB Lewis-McChord, Wash. All are combat controllers with the 22nd Special Tactics Squadron there.

Guilmain was honored for his actions in Afghanistan in mid-2006, during which he conducted 20 mounted and dismounted patrols and controlled more than 50 strike aircraft.

Malson was recognized for his efforts in Afghanistan from mid- to late 2008, including controlling more than 100 aircraft flights that led to more than 125 enemies killed in action.

Martin received his award for directing 22 air attacks, five strafing runs, and the release of 8,000 pounds of ordnance during two days of fighting in mid-2008 in Afghanistan.

Reiss got his medal for conducting more than 50 combat missions and delivering firepower in five direct-fire engagements, which led to 60 enemies killed during his tour in Afghanistan in mid- to late 2008.

WWII Remains Identified

The Department of Defense on April 28 announced that its forensic specialists had identified the remains of eight airmen missing in action since their B-24J Libera-

Chinese Near Fifth Gen Fighter

If a senior US foreign intelligence analyst is correct, China will have a fifth generation fighter, rivaling the Air Force's F-22 Raptor, operational by 2018, Reuters news service reported May 20.

"It's yet to be seen exactly how [the next generation Chinese fighter] will compare one-on-one with, say, an F-22, but it'll certainly be in that ballpark," Wayne Ulman, China issues manager at the National Air and Space Intelligence Center at Wright-Patterson AFB, Ohio, told the Congressionally chartered US-China Economic and Security Review Commission that day.

Ulman's estimated timeline is at least two years and possibly seven years earlier than what Secretary of Defense Robert M. Gates told Congress in 2009 during the heated debate over Pentagon plans to cap F-22 production at just 187 aircraft.

Bronze Stars for Valor Awarded

MSgt. Jeffrey Guilmain, SSgt. Simon Malson, SSgt. Christopher Martin, and SSgt. Jeffrey Reiss on April 29 each

Look Out Below: Col. Timothy Brown, 435th Contingency Response Group commander, parachutes from a C-17 into a drop zone near Alzey, Germany, during Jump Week, a four-day international training exercise. During the three-day jump phase, more than 100 paratroopers from the US, Belgium, Germany, Britain, and Norway made about 300 jumps from C-17 and C-130 aircraft.



USAF photo by ATC Glover Fuentes-Contreras



The Wild Blue: Lt. Col. Gabriel Green and Capt. Zachary Bartoe, flying in an F-15E, patrol the airspace as the space shuttle Atlantis launches from Kennedy Space Center in Florida. The May 14 mission to the space station was expected to be Atlantis' final flight.

tor bomber was shot down Sept. 1, 1944, during a mission over the Republic of Palau.

The recovered airmen are: 2nd Lt. Frank J. Arhar of Lloydell, Pa.; 2nd Lt. Jack S. M. Arnett, Charleston, W.Va.; Flight Officer William B. Simpson, Winston-Salem, N.C.; TSgt. Charles T. Goulding, Marlboro, N.Y.; TSgt. Robert J. Stinson, San Bernardino, Calif.; SSgt. Jimmie Doyle, Lamesa, Tex.; SSgt. Leland D. Price, Oakwood, Ohio; and SSgt. Earl E. Yoh, Scott, Ohio.

They were part of the 11-member B-24 aircrew. Excavations in 2005, 2007, and 2008 of an underwater site uncovered the remains.

Walker M. Mahurin, 1918-2010

Retired Col. Walker M. Mahurin, who achieved a combined 24.25 aerial kills during World War II and the Korean War, died May 11 at age 91 in Newport Beach, Calif. He died from complications from an earlier stroke, according to his *Washington Post* obituary.

During World War II, Mahurin served first in Europe, but after being shot down and working with the French underground for several months, he was sent to the Pacific, where he scored his last victory of the war in January 1945. In F-86s in Korea, he shot down 3.5 MiG-15s. On May 13, 1952, his aircraft was taken down by enemy ground fire.

He was captured by the North Koreans and held as a prisoner for 16 months. After his release, he left active duty in 1956, working in the aerospace industry, and later retiring from the Air Force Reserve. ■

News Notes

■ Members of the Senate on May 6 formally launched the new Senate Aerospace Caucus to promote the health of the aerospace industrial base. Sen. Patty Murray (D-Wash.) and Sen. Christopher Bond (R-Mo.) lead the caucus.

■ Chief of Staff Gen. Norton A. Schwartz on April 21 approved the Air Force's new cyberspace badge and set eligibility requirements for officers working in this domain. Guidelines for enlisted airmen would follow "in a future message," AFSPC officials said.

■ CMSgt. Antonio D. Travis, chief enlisted manager of the Air Force Special Operations Training Center at Hurlburt Field, Fla., made *Time* magazine's list of the 100 most influential people for 2010 for leading post-earthquake airfield relief operations in Haiti.

■ AF-1 and AF-2, two F-35A test aircraft, flew nonstop on May 17 from

Lockheed Martin's aircraft plant in Fort Worth, Tex., to Edwards AFB, Calif., completing the historic first multiship, long-range flight in the F-35's history, according to the company.

■ Lt. Col. Joseph Santucci, 99th Reconnaissance Squadron commander at Beale AFB, Calif., is the 2009 recipient of USAF's Koren Kolligian Jr. Trophy for safely landing his U-2 aircraft following an in-flight emergency during a February 2009 flight.

■ The Air Force in early May began its first class of combat systems officers to undergo training at new facilities at NAS Pensacola, Fla., under the supervision of the 479th Flying Training Group, instead of training at Randolph AFB, Tex.

■ B-1 bomber aircrews with the 7th Bomb Wing at Dyess AFB, Tex., set three unofficial time-to-climb world records during separate flights April 29-May 1

at the Texas base, eclipsing previous records set by C-17 transports, said Dyess officials.

■ The Department of Defense's 2010 Commander in Chief's installation excellence awards, announced April 9, recognized Elmendorf AFB, Alaska, as the top Air Force installation.

■ A group comprising 15 Medal of Honor recipients and 120 former POWs have partnered to return an F-105 to airworthy status, making it part of the Collings Foundation's Vietnam Memorial Flight, according to an April 27 foundation release.

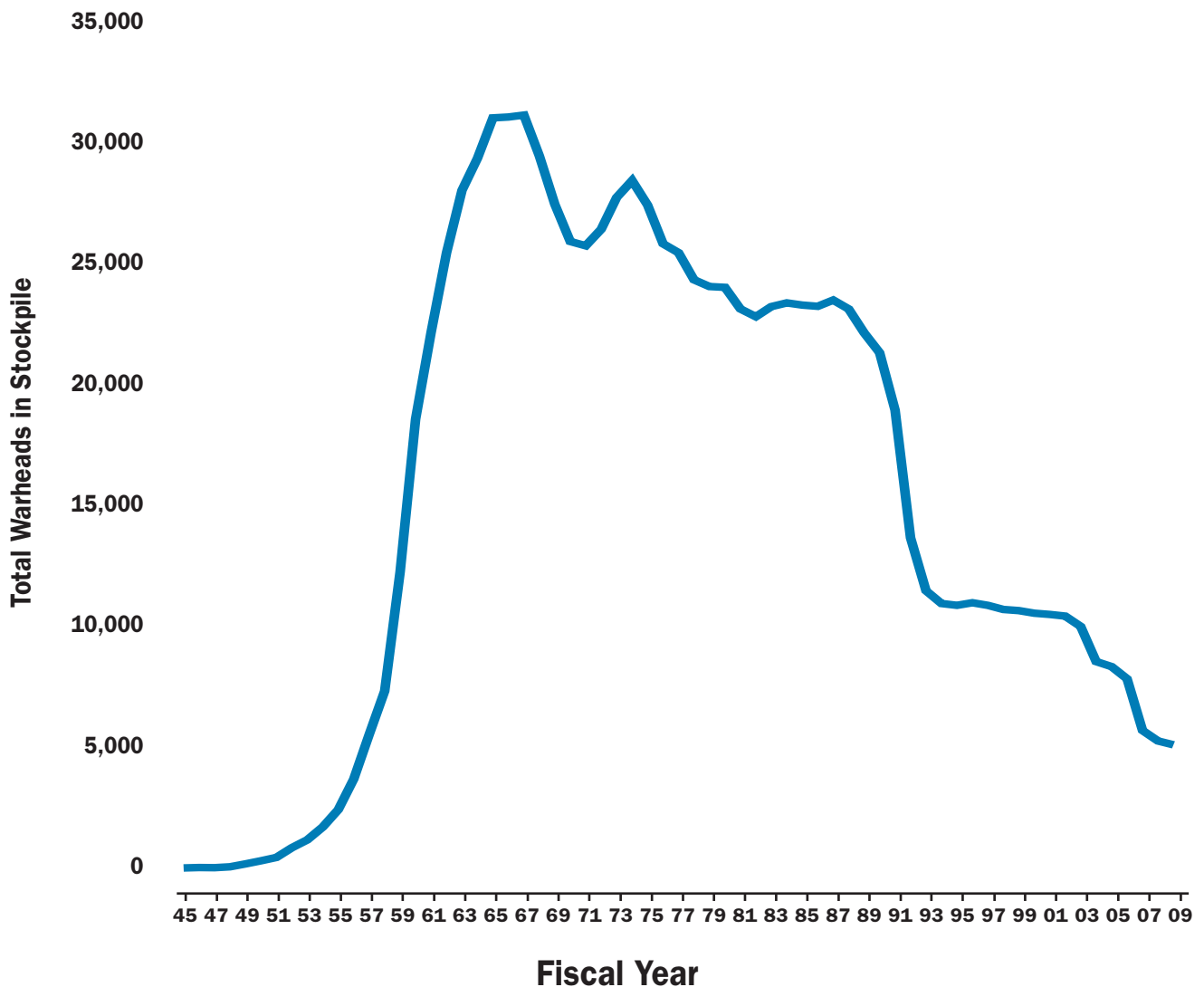
■ A team from the Air Force Institute of Technology's Center for Cyberspace Research at Wright-Patterson AFB, Ohio, received the best score in this year's National Security Agency-sponsored cyber defense exercise, Air Force officials said May 12. ■

Atomic Boom and Bust

President Obama in May declassified some deep nuclear secrets. As a result, we now know that, on the last day of Fiscal 2009, the US nuclear stockpile had 5,113 warheads—deployed and nondeployed, strategic and nonstrategic. We also know the stockpile has seen a huge, decades-long decline. The warhead count peaked in 1967 at 31,255, meaning that the arsenal has undergone an 84 percent reduction, most of it in the past 25 years.

The last time the US released stockpile data was in late 1993; 1961 was the most recent year for which information was given. Never before has the government disclosed current figures. Obama officials said they did so in the hope that the US example would encourage other nations—in particular China and Russia—to be more forthcoming about their own arsenals. So far, the only taker has been Britain, which revealed on May 26 that its arsenal contains 225 nuclear warheads.

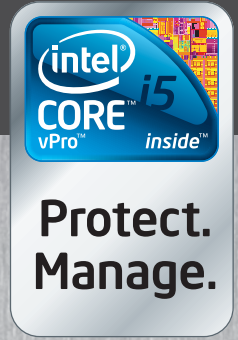
US Nuclear Weapons Stockpile, 1945-2009



Source: Data for years 1945-61 from "Summary of Declassified Nuclear Stockpile Information," Department of Energy, December 1993. Data for years 1962-2009 from "Fact Sheet: Increasing Transparency in the US Nuclear Weapons Stockpile," Department of Defense, May 2010.

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The Pay Debate Lives On

The Pentagon recently asked Congress to raise military pay in 2011 by 1.4 percent. This increase would be equal to wage growth in the nation's private sector, according to the Employment Cost Index. ECI is a measurement prepared by the US Bureau of Labor Statistics.

However, leading members of Congress balked and immediately proposed a 1.9 percent raise—a half-percentage point higher than the ECI figure. All signs are Congress will impose its will. Lawmakers say that the larger raise is needed to close a worrisome civil-military “pay gap.”

The extra half-percent raise, if it stands, will cost taxpayers some \$500 million a year. What is the pay gap, and what is its significance?

The story begins in 1973 with the creation of the All-Volunteer Force. When conscription ended, DOD dramatically raised pay so as to attract high-quality personnel. Initial results were good, but soon pay began to lag again.

The results were predictable—the military couldn't attract troops it wanted and couldn't retain those it wished to keep. The “gap” between military and civilian pay became a major issue.

There are many different opinions about this; some even claim that it is impossible to compare the pay of two vastly different “worker” groups. Indeed, the differences are many.

For all that, though, it is possible to measure and compare some aspects of military employment. These include recruitment and retention and the relative size of annual raises.

In the late 1970s, with the nation worried about a “hollow” military force, Congress began appropriating hefty pay raises. It was a move emphasized and expanded by President Ronald Reagan. By 1982, the military was said to have achieved parity with civilian pay, and recruiting and retention soared.

Even so, military compensation, relative to civilian pay, once again began to slip, in large part because of huge growth in private sector wages. By 1993, the pay gap stood at 11.5 percent. It peaked at 13.5 percent in 1999.

In the late 1990s, recruiting and retention problems returned. The Air Force in 1999 missed its recruiting goal for the first time in 20 years. In the Army and Navy, the problem was even worse. Critics turned once again to the pay gap as the explanation.

Congress finally stepped in. From 2000 through 2004, annual military raises averaged 1.5 percent better than the ECI figure. These multiple increases, cumulatively, cut the pay gap by more than half.

Today, the pay gap as typically understood stands at 2.4 percent. A better way to view this is as a “raise gap”—measuring the cumulative differences in military and private sector raises since 1982.

It is important to note that the military's own goal is not strict parity; it is for troops to earn in the 70th percentile (that is, to be better paid than 70 percent of comparable civilians), not to have “average” pay—or the best pay.

The Congressional Budget Office determined that military members in 2006 were actually in the 75th pay percentile. “Since then, military pay raises have continued to exceed the increases of civilian wages and salaries,” CBO officials told Congress this year.

Further, the pay gap only counts basic pay. Not included in the calculation are the value of military housing and sustenance allowances, a major portion of total military pay. By the CBO's calculations, military pay—when housing and food allowances are factored in—has actually outpaced private-sector pay by 11 percent since 1982. RAND has also found essentially no pay gap since 1982.

What does this mean in practical terms? Including cash allowances, a 26-year-old unmarried staff sergeant with eight years of military service earns \$50,708. A 42-year-old lieutenant colonel with a family of four and 20 years of service earns \$125,916.

Servicemen and -women certainly need to be well paid. High quality is a nonnegotiable requirement. Troop training is long and expensive. Service members are responsible for deadly and expensive weapons. Typically, they must uproot their families and move every few years. Of course, they also deploy to war zones and can stand in daily risk of injury or death. Civilian jobs are simply different.

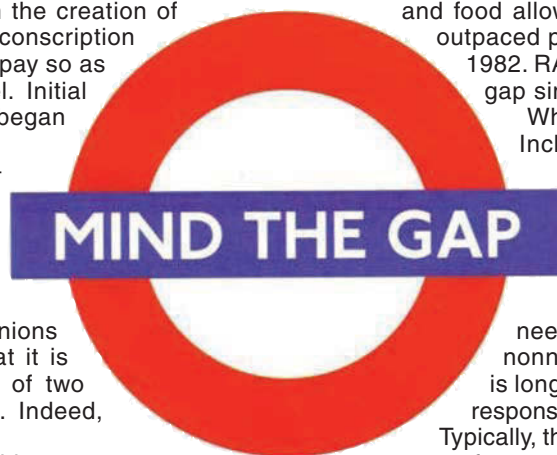
“Just mentioning rising [pay] costs ... seems in bad taste,” notes military columnist David Wood. “Members of the armed forces risk their lives for a high ideal. Their service cannot be measured in dollars alone.”

Indeed, for recruiting and retention, as long as compensation is generally regarded as “fair,” money is not really the issue. The state of the job market is often more critical.

When the military has trouble recruiting and retaining the best personnel, it needs to pay more—even if military compensation is considered high. When personnel are not a problem, larger raises may not be necessary.

Today, so few airmen are leaving the Air Force that the service is offering voluntary separation pay, convening an early retirement board, and may begin forcing airmen out because retention is at a 15-year high.

DOD needs to pay the “market rate” to attract and retain a top-notch force. However, solving the pay gap won't fix retention problems that don't exist: The money could be better applied to targeted bonuses in highly stressed career fields. It is unlikely, though, that Congress will agree. ■



More information: <http://militarypay.defense.gov/mp-calcs/calculators/RMC.aspx>



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The Double Life of Air Mobility

Airlift generates confidence. Refuelers generate anxiety. USAF must try to reconcile the two.

By John A. Tirpak, Executive Editor



USAF photo by A1C Stephanie Rubi

Despite years of heavy wartime operating tempo, the Air Force's mobility fleet is well-postured for the coming decade—at least, part of it is.

Most of USAF's strategic airlifters are either relatively new or, if not, are receiv-

ing major upgrades and life-extending modifications. USAF's tactical airlift fleet is large, and the service is acquiring lots of new aircraft. In fact, USAF has more cargo-moving capacity than it needs and will shed some excess in order to meet new strategic guidelines.

Above: A C-17 prepares to land at Nellis AFB, Nev. Two "stretch" C-130s wait nearby. Right: A C-5 lifts off from the runway. Above right: A C-27J readies for an air drop.

That's the situation regarding transports. Aerial tankers are something else altogether.

Even if the much-bedeveled KC-X program proceeds without further delay—a big if—the Air Force will be struggling with a scarcity of refuelers for many years to come. The problem will persist long after new tankers start arriving.

The Right Mix

The airlift fleet's ability to handle multiple contingencies at once was illustrated earlier this year, when Air Mobility Command was called upon to move a massive amount of relief aid to Haiti after a huge earthquake.

Although supporting “surge” deployments to Afghanistan as well as supporting forces in Iraq and commitments worldwide, AMC was able to accommodate relief operations with minimal impact on wartime operations. It did so by deferring some secondary-priority missions and temporarily withdrawing some aircraft from depot maintenance.

Within four days of the earthquake, AMC had run 100 sorties to Haiti, moved 1,200 persons, and delivered more than 600 short tons of relief supplies. Over several weeks, USAF evacuated more than 19,000 US citizens from the devastated island.

However, the watershed event for Air Mobility Command's planning this year was the release of Mobility Capabilities and Requirements Study 2016. Two years in the making, this study pitted overall US mobility op-



Alenia North America photo by Katsuhiko Tokunaga



Lockheed Martin photo

tions—to include ships, rail, and other surface methods as well as air—against a series of stressing scenarios.

The goal: Determine the right mix of capabilities for years to come.

Typically, 90 percent of US military freight travels by surface, and only 10 percent by air. The aerial percentages are somewhat higher in Afghanistan, where rugged terrain and a poor roads network compel greater reliance on airlift.

The study concluded that a plausible, worst-case contingency would only require 304 strategic airlifters—those very large aircraft of the C-5 and C-17 class able to carry outside military gear—but the Air Force already has



KC-10 tankers fill part of the flight line at a base in Southwest Asia.

334 such airplanes either in hand or on order.

Likewise, in the most stressing notional contingencies, no more than 335 tactical airlifters of C-130 size were needed, and the Air Force and its reserve components have 401 such aircraft either in hand or under contract.

The Air Force had previously set the operational minimum requirement at 316 strategic lifters, and Congress in turn cast this requirement as law. Now, the Air Force must get Congress' permission to retire the aircraft the mobility study found to be excess to need.

However, the study also determined that the US needs 567 aerial tankers of the size of the venerable KC-135 or larger, but the nation has only 474 such aircraft in its inventory. In the MCRS scenarios, the tanker fleet came up short in the two most-stressing cases.

The Pentagon expects to receive contractor bids this month on the KC-X program. That program envisions the production of 179 KC-135 replacements, but the winning contractor probably won't be able to deliver more than about 15 new tankers per year, beginning in 2015, and the oldest KC-135s will be retired during the same period. The KC-X will not be a near-term fix.

In fact, the tanker problem is actually worse than the MCRS stated.

"Up to 19 percent of the KC-135s are in depot at any one time," Brig. Gen. Michelle D. Johnson, US Transportation Command director of strategy, policy, programs, and logistics, told the House Armed Services air and land forces subcommittee in late April. Although the in-depot KC-135s might be tapped

for a major contingency, they wouldn't be immediately available for action.

Boeing is planning to offer its New-Gen 767-based tanker in the competition. The aircraft will be all-digital, having a flight deck derived from the 787 airliner, as well as a new refueling boom and other improvements. It will be an advancement over the KC-767 offered in previous rounds, Boeing officials said.

Northrop Grumman, which won the last round of the KC-X contest, elected not to bid this time, saying the evaluation rules were skewed toward a smaller airplane than the KC-45 the company was offering along with European Aeronautic Defense and Space Co. Northrop Grumman said it could

not win. The company said it would not protest the evaluation rules and plunge the tanker contest into another round of acrimonious litigation.

However, once free of the partnership with Northrop Grumman, EADS announced in late April that it would re-enter the contest, this time as the prime contractor, and again offering the KC-45. EADS North America leaders said their airplane is well into flight test, is passing fuel through a new-design boom, has won five tanker competitions against Boeing, and that the reduced risk of their aircraft will overcome size issues. They insisted that their aircraft meets all USAF requirements.

Three Scenarios

The MCRS followed two controversial and flawed mobility studies. The first, in 2001, was quickly rendered moot in that it was released just before the war on terrorism began. It didn't consider the needs of special operations forces or tactical airlift, either. A 2005 study failed to consider scenario-driven requirements; it was a simple review of capabilities on hand. Neither review considered the effect on airlift of irregular warfare needs, a larger Army and Marine Corps, or the application of the strategic C-17 to intratheater, or tactical, lift operations.

This time, the mobility review cast existing and anticipated mobility forces as they will exist in 2016 against three scenarios, each designed to stress the fleet in different ways.

- In the first scenario, the US faced two major land wars in close succes-



Lockheed Martin photo

HC/MC-130s on the Lockheed Martin production line. The Air Force is receiving new Hercules models.



C-17s marshal for takeoff at a Nellis training exercise in May.

sion, even as it responded to three domestic crises stemming from a natural disaster or terrorist attack. This was considered the toughest case, and demanded airlift capacity of 32.7 million ton-miles a day.

- The second scenario saw the US conducting a major air and naval war overseas while answering a single domestic crisis. It required a maximum of 30.7 MTM/D.

- The third scenario put the US in a major land war at the same time it was conducting a separate long-term irregular warfare campaign, while facing three domestic crises. Its requirement came in at 29.1 MTM/D.

All three scenarios assumed the US would still conduct air sovereignty missions at home while maintaining a worldwide naval presence.

The common denominator of all three scenarios was that the demand for strategic airlift peaked early in the conflict, during the deployment of forces phase. It also rose during redeployment to a second contingency but, again, tapered off shortly thereafter, entering a long-term sustainment phase.

The maximum need for 32.7 MTM/D was moderately below the existing capacity of 35.9 MTM/D.

In the scenarios, after initial deployments, intratheater lift rose in importance. The C-17s, which can operate from short and austere strips, could

augment the smaller turboprop types such as C-130s in the intratheater role. It has actually done so many times in both Iraq and Afghanistan.

The study also found that delivery timelines would not speed up with the acquisition of more aircraft. The chief “limiting factor” in airlift is the ability of foreign airports to handle the offloaded materiel, according to the MCERS authors. A larger airlift fleet “will not overcome” this limitation, they said.

Air Force officials, in budget testimony this spring, asked Congress not to add further buys of C-17 aircraft, since USAF is already oversubscribed with strategic lift capability. Air Force Secretary Michael B. Donley told reporters in February that such adds—Congress has increased the C-17 buy from 180 to 223 aircraft in the last few years—represent a “double hit” on the service. First, he explained, the additions compel USAF to take procurement money away from higher-priority items, and second, Congress neglects to add operation and maintenance funds to run the additional aircraft.

Historic Highs

To get the fleet down to the MCERS levels, the Air Force wants to retire 17 C-5As in 2011, and another five in 2012. The service has long said that if Congress insisted on buying additional C-17s beyond the Air Force’s require-

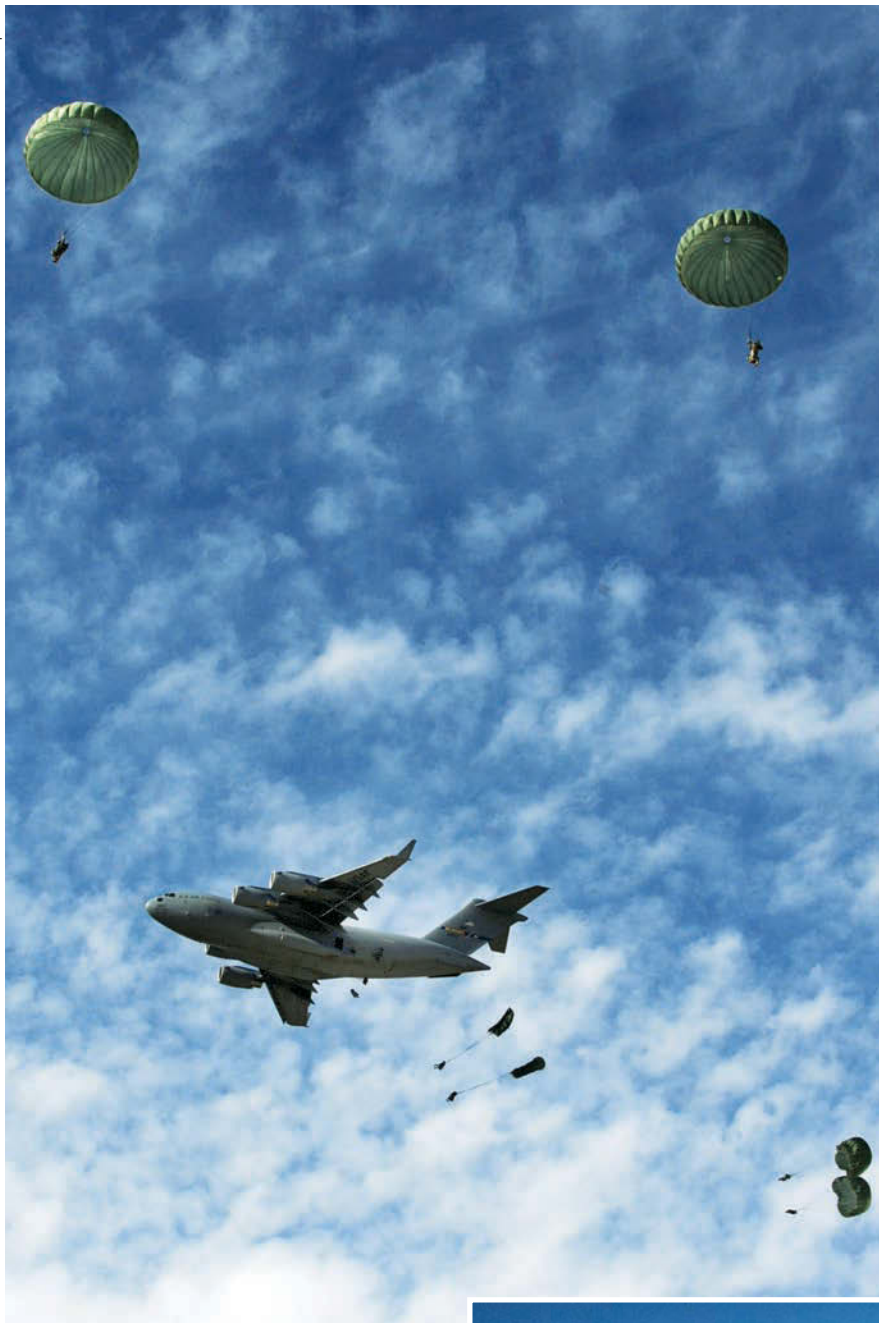
ment of 205 airplanes, it would have to retire older C-5As to keep the airlift fleet in balance.

“Too much aluminum is almost as bad as not enough,” Chief of Staff Gen. Norton A. Schwartz told the Senate Armed Services Committee in budget testimony in March.

Schwartz, a former head of US TRANSCOM, has long held that an excessively large airlift fleet would take contract work away from participants in the Civil Reserve Air Fleet. CRAF comprises air freight companies that make their airplanes available to the US in time of war. When CRAF is not activated but US forces are heavily engaged overseas, as they are now, CRAF participants get preference for air freight contracts. CRAF participants carry the bulk of airlifted cargo and passengers; the organic airlift fleet is used mainly to transport outsize or oversize military gear, or to fly into locations not safe enough for the commercial operators.

In the MCERS scenarios, CRAF was determined to offer plenty of additional capacity such that greater organic capacity was not needed.

A TRANSCOM spokeswoman said that participation in CRAF today is “near historic highs, with 1,149 aircraft committed overall by 32 US-flagged



Above: Parachuters drop from a C-17 during a mobility air forces exercise over the Nevada desert. **Right:** A KC-135 refuels a Japanese F-15 during air refueling training near Kadena AB, Japan.



as the 5,600 trips CRAF made during the whole of the 1991 Gulf War. CRAF also made 50 trips in support of Haiti relief this year.

By late April, the Air Force had accepted 197 C-17s, of the 223 on order. The service is on track to receive its 205th C-17 by the end of 2010, with 10 more coming in 2011 and eight to round out the 223 by February of 2012, according to Brig. Gen. Richard C. Johnston, USAF director of strategic planning. He told the House Armed Services subcommittee on air and land forces in April that if Congress will permit C-5s to be retired, USAF will go down to “94 [C-5s] in [Fiscal 2011] and probably 89” in Fiscal 2012. The combined actions would get AMC below 316 strategic airlifters in 2012, by which point it would need relief from Congress mandating that number of aircraft.

Establishing a “Floor”

The C-5 Galaxy is undergoing a major modification program, converting the flying behemoths from analog airplanes with old engines to digital aircraft with new engines. Only the newer batch—the C-5B/C fleet, which dates to the 1980s—is scheduled to get the full modification, which is expected to extend the Galaxy’s service life another 20 years. However, one C-5A, dating to the 1960s, was also converted as a test aircraft, and neither pilots nor maintenance personnel involved in operational testing reported any difference in performance between it and the converted B models.

The re-engined C-5s have set time-to-climb and endurance with payload records, and it seems likely they will at least match or exceed the targeted 75

carriers.” Participation, she said, has been driven up by depressed demand for airline services since 2001, as well as “DOD commercial business exceeding \$2 billion annually.” Most, though not all of that business, supports operations in Iraq and Afghanistan.

Although CRAF was conceived as a purely wartime surge program, it has been functioning at a rate approaching all-up activation. In 2009, CRAF carriers made 5,453 trips for TRANSCOM—nearly the same level

percent takeoff reliability called for in the upgrade. With greater availability, the improved C-5s will have the effect of adding capacity to AMC's fleet.

The C-17 has also vastly increased AMC's capability. Since its introduction in the 1990s, the C-17 has been fitted with additional fuel tanks for extra range, and offers a large volume increase over the aircraft it replaced, the C-141 Starlifter.

Although a "stretched" version of the C-17 has been proposed (much as the C-141A was stretched with a fuselage plug adding 20 feet of length and considerable internal volume), the Air Force is not interested in such an aircraft, service officials reported.

The tactical airlift inventory is a more complicated issue. There are three types of aircraft to consider in the tactical fleet: the C-130 Hercules, which exists in three versions; the C-27 Spartan, a smaller aircraft just now in test; and a not-yet-chosen small airlifter the Air Force will use in conjunction with nascent partner air forces such as those in Afghanistan and Iraq.

The Air Force is building new C-130Js, having digital controls and more powerful engines, to replace its older C-130Es and C-130Hs, most of which are more than 30 years old and have been worked hard in nonstop action since the 1991 Gulf War. The service's acquisition plan for the C-130 is highly uneven, however, amounting to small handfuls through the next five years.

USAF officials told Congress in late April that they intend to establish a "floor" of 375 C-130s: 335 as called for in the most stressing MCRS scenario, and a further 40 to be available to the Army for short-notice direct-support missions. In testimony before the House Armed Services air and land forces subcommittee, USAF leaders said they wish to retire 34 C-130s in Fiscal 2011: 28 from Little Rock AFB, Ark.—the C-130 schoolhouse—and potentially six from the Puerto Rico Air National Guard.

Because the Air Force fields most of the new-build C-130Js in the active duty inventory, the retirement of the older Hercules will require the service to "borrow" a number of older C-130s from the Air National Guard and Reserve to maintain representative aircraft at Little Rock Air Force Base, according to ANG chief Lt. Gen. Harry M. Wyatt III.

The C-130Es and Hs to be retired at Little Rock are primarily active duty airframes, Wyatt told the House Armed Services subcommittee on readiness in



USAF photo by S/A. Kasey Zickmund

A KC-135 lands at a base in Southwest Asia. Currently, up to 19 percent of KC-135 aircraft are in depot at any given time.

late April, and they are among the oldest flying. The active duty force trains C-130 pilots, and needed somewhat younger Es and Hs to continue the training, which it also does for allied nations that fly these types.

The "loan of those tails" will be "temporary"—ending in 2015 at the latest—and will diminish as retirements reduce the need for training aircraft of the older types, Wyatt said, noting that once the active duty force no longer needs them, the Air National Guard will get them back.

In Fiscal 2012, USAF wants to retire nine more C-130s, followed by eight in 2013, and another eight in 2014.

The C-27J was initially an Army program to replace its C-23 Sherpas, which had reached the end of their useful service lives, and some CH-47 helicopters, for the direct-delivery mission, supporting troops at the front lines. The Army had long insisted it needed its own cargo aircraft capability because it felt it couldn't rely on the Air Force in a pinch.

Meeting the Requirement

The Army requirement—approved by the Joint Requirements Oversight Council—was for 78 airplanes. Then the Air Force became a partner in the program, and last year, Defense Secretary Robert M. Gates decided the Air Force would be the sole operator of the C-27.

The Air Force now plans to buy 38 C-27Js. To prove its commitment to meet the Army's needs, the Air Force last fall conducted an in-theater test in which C-130s—standing in for the not-

yet-acquired C-27s—were on standby to meet any urgent Army needs.

Lt. Gen. Philip M. Breedlove, USAF deputy chief of staff for operations, plans, and requirements, told the House Armed Services subcommittee on air and land forces in late April that the Army has been "very, very happy" with the results of the test, which is ongoing today, as USAF maintains 40 C-130s at the "beck and call" of Army forces in Afghanistan.

The Air Force plans to meet the requirement for 78 direct-delivery aircraft by buying 38 C-27Js and supplementing them with 40 C-130s "earmarked" to support Army direct-delivery needs, Breedlove said. The plan has been "personally approved" by theater commanders Gen. Stanley A. McChrystal and Gen. Raymond T. Odierno, he added.

Under questioning from Rep. Roscoe G. Bartlett (R-Md.), Breedlove admitted that no studies indicate the requirement for the C-27J is "any number other than 78," but the Air Force feels the requirement can be more economically met from within its existing C-130 pool instead of buying new airframes.

The Air Force is also planning to buy 15 light mobility aircraft in Fiscal 2011. The need for these aircraft was identified in the Quadrennial Defense Review, and is part of USAF's effort to better shape itself to conduct irregular warfare operations. The airplane hasn't been picked yet, but it will be smaller than the C-27J, and will be able to operate from the most austere landing strips. A contract award is expected in May of 2011, with initial operational capability in late Fiscal 2012. ■

Too Fat

"Are we becoming a nation too fat to defend ourselves?"—**Retired Army generals John M. Shalikashvili and Hugh H. Shelton, former Chairmen of the Joint Chiefs of Staff, noting that 27 percent of military-age Americans are too overweight to serve, Washington Post, April 30.**

Nuclear Innocence

"China has consistently stood for the complete prohibition and thorough destruction of nuclear weapons [and] is firmly committed to a nuclear strategy of self-defense, and its nuclear weapons pose no threat to other countries. ... China has never deployed any nuclear weapons on foreign territory. China has not participated and will not participate in any form of nuclear arms race."—**"Senior Chinese diplomat" quoted by Chinese government's Xinhua News Agency, May 4.**

Is the Navy Affordable?

"Do we really need 11 carrier strike groups for another 30 years when no other country has more than one? ... At the end of the day, we have to ask whether the nation can really afford a Navy that relies on \$3 [billion] to \$6 billion destroyers, \$7 billion submarines, and \$11 billion carriers."—**Secretary of Defense Robert M. Gates, address to Navy League, May 3.**

Setup for Decline

"The Defense Secretary is setting the stage for a decline in America's global military power that matches its waning economic clout."—**Loren B. Thompson, Lexington Institute, May 5.**

And Then There's Tricare

"Health care costs are eating the Defense Department alive. ... The premiums for Tricare, the military health insurance program, have not risen since the program was founded more than a decade ago. Many working age military retirees—who are earning full-time salaries on top of their full military pensions—are opting for Tricare, even though they could get health coverage through their employer, with the taxpayer picking up most of the tab."—**Gates, speech in Abilene, Kans., May 8.**

1.4 Percent Is Enough

"The deal is that we're going to have to again look at ourselves and the proportion of dollars that we invest in personnel and personnel programs and family programs—where we might be able to sort of reduce the growth in our personnel costs. Any strategic leader has to look at that. As have American companies—and they have found ways to adjust. The President asked for a 1.4 percent pay raise for military members. Typically, the Congress adds to that, and we certainly are grateful for their generosity. However, it comes from someplace. It requires a trade. And that is why each of us [service chiefs] has said in our own way that for now, 1.4 percent is enough."—**Gen. Norton A. Schwartz, USAF Chief of Staff, Defense News, May 10.**

Stark Choice in Iran

"Past approaches haven't worked. President Bush tried his we-don't-speak-to-evil hard line, which failed to persuade Iran to stop its nuclear program. President Obama tried his open-hand approach, but Iran refused to engage in negotiations. Given the political turmoil within Iran, it is possible that Iranians cannot get their act together to engage with the United States. But the nuclear program has broad support, even among the political opposition. There are really only two options if sanctions fail: attack Iran or prepare to live with an Iranian bomb."—**Military analyst H. D. S. Greenway, Boston Globe, April 21.**

Best Value Force

"We provide a third of total Air Force capabilities for less than seven percent of the total Air Force budget. In all three areas—personnel, operations, and facilities—the Air Guard provides the 'Best Value for America.'"—**Lt. Gen. Harry M. Wyatt III, director of the Air National Guard, House Armed Services personnel panel, April 15.**

Changing Times

"Once we freed Europe. Now we pay to leave an Afghan valley without getting shot at."—**Columnist Henry Allen, Washington Post, April 20.**

Bloated CIA Bureaucracy

"The CIA has become a bloated bureaucracy where senior bureaucrats are more interested in protecting their jobs than in gathering intelligence. A sign of how bad things are is that more than 90 percent of all CIA employees work within the United States. This is curious for an organization whose purpose is to collect foreign intelligence."—**Columnist Jack Kelly, deputy assistant secretary of the Air Force in the Reagan Administration, Pittsburgh Post-Gazette, April 18.**

Eight Years Later

"Eight years after they were overthrown by US airpower, a drumbeat is starting to sound across Afghanistan in favor of talking to the Taliban, the country's once-hated former rulers. An idea that used to seem absurd, if not defeatist, is coming to be seen as the only credible way to end an ever-widening war."—**Columnist Jonathan Steele, Guardian (Britain), May 4.**

NATO Industrial Specialization

"Do we really need so many different types of infantry combat vehicles, or radios, or helicopters? If European nations buy 600 NH-90 helicopters, does each of them really have to certify its allotment on a national basis when it is estimated that, if this certification were harmonized, it could save up to 5 billion euros?"—**NATO Secretary General Anders Fogh Rasmussen, Defense News, April 28.**

Handy Lancer

"The B-1's very flexible. What makes us very useful in the current fight is that we have a large payload, we can carry a varied amount of weapons. If you need to go kinetic, you have a lot of choices on what you can do. ... We're fast for what you might think a bomber can do. The loiter time is exceptional so we don't require as much tanker time to stay and hang around over the fight. Afghanistan is a good-size country and we can dash back and forth across it as we need to, if somebody needs help in a hurry."—**Col. Charlie Catoe, 7th Operations Group commander, AFNS, April 26.**

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USAF photo by MSgt. Jeremiah Erickson

Around, and Over, the Horn

Air Forces Africa has picked up the pace of air operations in the continent's most restive region.

By Marc V. Schanz, Senior Editor

Air Forces Africa, the air component for the new US Africa Command, has begun solidifying its nascent command and control capabilities and boosting its “soft power” efforts, especially in the restive Horn of Africa and its immediate environs.

The Horn of Africa—Djibouti, Somalia, Ethiopia, and Eritrea—is wracked by security dangers. The diverse problems include rampant piracy in the Gulf of Aden and a sputtering civil war in Somalia, which has not enjoyed a functioning government since 1991.

Somalia, in particular, is a concern for AFRICOM's leadership. It is a nonfunctioning state rife with militias and terrorist elements.

“I don't think that it is a secret” that Somalia is “generally an ungoverned state,” said Maj. Tony Carr, a division chief in AFAFRICA's operational plans shop.

Somalia is not the only concern. To the west lies southern Sudan where AFAFRICA (also known as 17th Air Force) carried out its first major air operation in January 2009. That was when two C-17s transported vehicles and special equipment from Rwanda

USAF pararescuemen practice combat search and rescue from a Marine Corps CH-53 helicopter in Djibouti, on the Horn of Africa.

to the Darfur region. This took place over the course of a few weeks, to supply troops assigned to a joint African Union-United Nations peacekeeping mission.

The US government is taking an active approach to regional concerns, and USAF has a hand in much of this. There are no permanently assigned forces on the continent, or even a headquarters, but that does not mean the Air Force isn't active.

Partnerships with neighboring countries and the various security organizations in the region are vital to the success of AFRICOM's mission—particularly in humanitarian assistance and contingency operations. “It's an area where we are thinking about a wide range of scenarios where we might help people respond,” Carr said.

From its headquarters at Ramstein AB, Germany, AFAFRICA has pushed to improve command and control activities in Africa, the better to keep track of threatening developments. The 617th Air and Space Operations Center (AOC) at Ramstein is crucial to continuous air command and control capability for all theater security cooperation exercises, engagement activities, and crisis response operations.

With the AOC now at full operational capability, it can provide a common operating picture of all air and space missions over Africa from its Ramstein location.

Wrapping up a \$6.3 million effort that began in October 2008, upgrades to the AOC went through while 17th Air Force staff conducted operations, officials said. This was done

with around a third of the building undergoing modification at any given time. The center experienced major reconfiguration, carving out classified work areas, installing new fiber optics, and upgrading the electrical capacity of the facility.

"We're housed, processes are built, and we're up and running 100 percent," said Maj. Gen. Ronald R. Ladnier, commander of Air Forces Africa.

AFAFRICA has spent a good chunk of time since 2008 playing catch-up as its taskings have grown steadily. Its 404th Air Expeditionary Group routinely flies three- to four-day airlift missions from Ramstein, across Africa, transporting medical groups, security training teams, and supplies.

Now with a full-up AOC, 17th Air Force's engagement activities will decidedly increase, Ladnier said. He noted that back in early 2009, AFAFRICA routinely had six to eight security cooperation events going on at any given time on the continent. These taskings have blossomed by 300 percent from last fiscal year.

Staff and planners at 17th Air Force are already assembling plans for the 2011-12 fiscal years, as several officials anticipate even more expansion.

"Our objective is sustained engagement. We don't just want to roll into town. We want to engage with forces but continue to help develop relationships," Ladnier said.

The work is challenging and often complicated, working with foreign governments, the US State Department, and nongovernmental entities such as the United Nations and African Union.

One of the sayings at the command is, "He who plans early in Africa plans often." So quipped Col. John Yocum, chief of the regional engagement division at 17th Air Force, where the command's security cooperation events are assembled. "We have about a six-month lead time," he said. "With no assigned forces, we have to leverage the Total Force to get the people we need, the subject matter experts. We have to work the same process as other [combatant commanders] to get forces," he said.

"We've seen entire governments come and go. ... Now, all the stuff

that you've planned out might have to change," he said.

East Africa is a focal point for US concerns on the continent. There is instability in the Horn, unrest in southern Sudan, and the presence of yet another al Qaeda franchise.

Al Qaeda in Somalia

Daniel Benjamin, the State Department's coordinator for counterterrorism activities, said he is working with "local players" along with allies to ensure governance returns to areas such as Somalia. "Obviously, the [Transitional Federal Government] in Somalia is not in a position yet to be a really aggressive counterterrorism force, and so to a certain extent, we need to continue building up the TFG's capabilities," he said in January.

Col. Todd Brooks, the division chief of the 617th AOC's strategy and combat plans division, said 17th Air Force's nerve center has stepped up to play a larger role in Horn operations. This is primarily by assisting the Combined Joint Task Force-Horn of Africa, based at Camp Lemonnier, Djibouti, in its security partnership work.

"We've been getting personnel, trying to put a plan together to train folks and get our feet wet with operations on the continent," Brooks said. When he arrived at Ramstein in June 2009, the AOC had about 50 personnel. Today, the number is around 130.

As of Jan. 5, 17th Air Force assumed responsibility as the joint force air component commander for CJTF-HOA. In this role, it helps deconflict the busy airspace around the Horn, as

the region is home not only to a range of peacekeeping operations but also the multinational anti-piracy effort in the waters off Somalia.

Air Forces Africa took over airspace authority from Air Forces Central, and has responsibility to build a daily air tasking order for the region. This authority helps tremendously to legitimize cooperative efforts with other nations in the region, Brooks said.

The work of the 617th is somewhat dissimilar to other AOCs, Brooks notes—especially on the Horn. It does not compile a targeting list daily, like US Central Command does, he said. "What we do is a lot of airlift missions, so we work over vast distances," he said. They build engagement lists. "We have to take things [in the AOC] and tweak them so they fit our mission and what we're asked to do."

Military strikes in Africa on terrorist elements are rare, and AFRI-COM downplays them, but US forces, particularly special operators, have featured in several limited strikes in the region.

For example, US and Ethiopian forces have sought out key al Qaeda militants, who reportedly took shelter in Somalia. In January 2007, the Pentagon confirmed an AC-130 strike in the southern part of the country, targeting al Qaeda leadership involved in the 1998 attacks on US embassies in Kenya and Tanzania.

Last September, a senior al Qaeda operative was killed in a special operations raid in southern Somalia. Saleh Ali Saleh Nabhan, a Kenyan tied to the bombing of the embassies in 1998

DOD photo by Petty Officer 2nd Class Joshua Bruns



Ethiopian Air Force Capt. Hailu Teklu observes as TSgt. Darryl Woodruff and SrA. Jacob Dattage perform a pre-flight inspection at Camp Lemonnier, Djibouti.



A C-130 lands on a dirt landing strip in Ethiopia. The aircraft and crew come from Elmendorf AFB, Alaska.

and other attacks, was traveling in a car near Barawe, Somalia, when special operations forces helicopters descended on the convoy, killing him in the assault. The military had long sought Nabhan, believing him closely involved in al Qaeda's East African operations. He also had links to al Shabaab, a militant wing of Islamic Courts Union which took over most of southern Somalia in 2006 and uses terror attacks and guerilla warfare against the US-backed transitional government.

Al Shabaab also announced its support to al Qaeda's Yemen branch, while its activities increased on the Arabian Peninsula. Yemen lies only 20 miles from Somalia on the Bab al Mandab Strait.

For its part, AFAFRICA is taking measured public steps. It pieces together units, including Guardsmen and Reservists, to carry out theater activities. AFAFRICA has a "significant relationship" with the 110th Air Operations Group of the Michigan Air National Guard, a former A-10 unit realigned to perform the air and space operations center mission, Brooks noted. With experienced Guardsmen working in both coordinating assigned forces and AOC duties, their alignment under the 617th AOC in April of 2009 is paying dividends.

"They bring a lot of stability and expertise," Yocum said. "In Africa, particularly, ... it's about relationships. ... If I can send the same guy over and

over again, we've found the Guard has provided us a key [for] the long term."

Frequently, events involve multiple services, Guardsmen, and Reservists. Last August, a team of airmen from Ramstein's 37th Airlift Squadron, along with two Army Reservists, traveled to Entebbe, Uganda, to train members of the country's defense force to improve operations on their L-100 aircraft, a civilian version of the C-130.

Getting People Savvy

The event paired airmen with members of the Ugandan military to go over classroom instruction and in an exercise focusing on air-dropping goods and equipment. The cooperation included work on tasks such as palletizing cargo, weighing and inspecting cargo, and preparing to air-drop supplies for humanitarian purposes.

The training is part of the Africa Deployment Assistance Partnership Team (ADAPT) program, an AFRICOM effort funded through the State Department's global peace initiative that aims to enhance projection abilities of African militaries, standby forces, and coalition partner forces and improve interoperability.

Culminating with a few live airdrops, the effort was rated a success by both the US Embassy and the Ugandan government, and is an example of the many benefits of such activities. "Uganda is a regional hub for peacekeeping from an airman's perspective," Yocum said,

since many airlift missions to locations such as Somalia and Sudan transit Ugandan bases. But the Ugandans also have needs of their own, with seasonal major flooding and a need to get relief supplies to isolated villages along the Nile River.

Engagement goes the other way as well. In February, six Ethiopian Air Force officers visited the 449th Air Expeditionary Group at Camp Lemonnier to discuss air-drop procedures for the country's small C-130 force. Airmen from the 81st Expeditionary Rescue Squadron briefed the Ethiopians on air-drop tactics, collision avoidance systems, personnel air-drop procedures, and other topics—in addition to showing them a C-130J.

These experiences and activities in the region are vital to developing a cadre of foreign air officers in USAF, Yocum said, as the nature of AFRICOM's work demands adaptable airmen ready for a challenge. The Air Force is looking to send captains and majors to school to get trained up on the intricacies of international affairs, such as tactics for dealing with political affairs and the cultural issues inherent to working in East Africa. "We want to get people savvy. Develop languages—Arabic, Swahili, Portuguese, etc.," said Yocum. Working with partner air services in Africa is also paying dividends for US airmen, he added, noting the work that 17th Air

A pararescueman assigned to Camp Lemonnier makes a training jump into the sea from the back of a CH-53 helicopter.

Force carries out with the Kenyan Air Force in pilot currency efforts.

“We were able to send in some instructor pilots and compared programs,” he said. Yocum praised the Kenyans’ adeptness at utilizing their small force and their experience in bush-flying in austere areas, with light mobility and light attack capabilities which “we might be able to learn something from as we develop our own programs in those areas.”

The currently stretched 17th Air Force is also getting assets faster than when it was activated in late 2008, Ladnier noted. In December 2009, a C-130J transport flew the first support mission for 17th Air Force, transporting service members back from Mali, where they had been involved in training activities.

The J model, assigned to the 86th Airlift Wing at Ramstein, replaced the wing’s older Hercules models, and their enhanced capabilities should prove useful in dealing with the distances and austere conditions that are often a factor in flying African missions. The 86th is the first wing outside the US to have assigned J-model C-130s, and their range and other capabilities have already been beneficial. The transport needs a minimum of three crew members, compared to five for older H- and E-model Hercs.

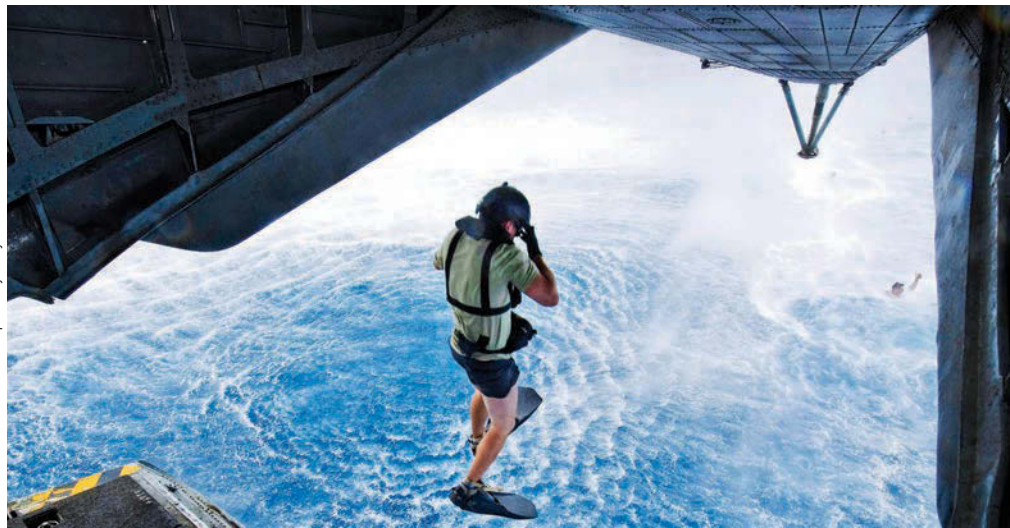
Critical to operations in East Africa are future air safety capabilities and tools, 17th Air Force officials repeated several times.

“If you look at the air picture over Africa, it can be scary,” Yocum pointed out. With a huge land mass and sparse infrastructure, “you’re not under anyone’s guidance,” so pilots often use visual separation in the air and on the ground, due to lack of radar and communications. Another critical concern cited by Yocum: Runways are frequently not secured.

AFAFRICA’s command and control effort includes an Air Domain Safety and Security program. ADSS uses airmen and working with other government agencies and partner institutions to develop regional air safety and security tools for African nations. Improvements will benefit both civil and military air operations, Ladnier said.

The program is projected to grow from \$2.6 million in 2010 to \$3.1 mil-

USN photo by Petty Officer 2nd Class Mark Rockwell-Pate



lion in 2011. Many African nations are eager to develop their air infrastructure, as it is crucial to development, commerce, and connectivity.

The air safety program is huge in East Africa. “It’s a model to help develop ... infrastructure in Africa, ... particularly aviation capacity building,” Yocum said.

One of the success stories is AF-AFRICA’s work with Rwanda, where its government was able to build up air traffic control tools in order to become a regional hub for air control. Teams from 17th Air Force have visited the country and performed assessment activities with the military and civil aviation officials, advising and examining how they can develop infrastructure to get a regional-type capability. This is accomplished by improving radars, communication tools, and networks with other countries, Yocum added. ADSS will help fund activities such as consultation on airfield security and improving screening procedures for civilian air traffic.

A Delicate Process

Maintenance practices are also a focus for future improvement. “I see capable aircraft a lot, but they have maintenance issues,” Ladnier said. The US Air Force, he observed wryly, knows a few things about keeping old airplanes flying.

Yocum said several allied African nations are participating in Air Force Special Operations Command’s partnership aviation course at Hurlburt Field, Fla. Hurlburt is also home of the service’s aviation foreign internal defense unit, the 6th Special Operations Squadron. The 6th SOS is performing low-profile missions around the world. The security assistance work is considered a criti-

cal element of US partnership efforts with allied militaries. The mission is receiving increased attention from the Air Force.

Bringing foreign airpower into play is a delicate process, said Lt. Col. Joseph Michalek, commander of the 6th SOS, but helping allies put airpower to work for their people is a key to the success. The results in African nations are “a good example of that,” Michalek said without mentioning specific details.

In Africa, airpower makes a big difference in small ways. It enables improvements to come in areas ranging from mobility to medical evacuation, so that governments are better able to serve their populations.

“We get in there and give them the ability to go out and see the people,” Michalek noted.

Yocum attributes this to the number of airmen returning from Iraq and Afghanistan with experience performing security assistance work with those countries’ respective air services.

The US is currently developing a 10-year assistance plan for Mali, which wants better aircraft, maintenance, and logistics systems to help the country become more integrated with UN and African Union efforts—not to mention becoming more open to trade. AF-AFRICA officials are hoping to generate similar efforts in East Africa.

“I think there has been a realization that ... if you have friendships and trust, you have friends and partners who are willing to stand by and help you accomplish your mission,” Yocum said. This can reduce the burden on USAF as well: If host nations can move peacekeepers around independently, the Air Force doesn’t have to use its C-17s for that purpose. ■



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Nukes for NATO

“Extended deterrence” will go on, and the F-35 fighter will take up the burden.

By Rebecca Grant



For more than 60 years, nuclear-armed fighters have been a key part of the US deterrence calculus, particularly in Europe. Indeed, providing the umbrella of “extended deterrence” to NATO nations has been a mission performed by generations of USAF air crews, maintainers, and security forces.

It now appears that, before long, the iconic nuclear fighter role, performed in recent years by the F-15E and F-16, will pass to a new heavyweight—the F-35 Lightning II.

As the Obama Administration sees it, nuclear weapons delivered by fighters will continue to play an important role in the nation’s international affairs. The 2010 Nuclear Posture Review, released in April, reaffirmed the requirement for tactical nuclear weapons in US defense strategy.

The United States, it said, will “retain the capability to forward deploy US nuclear weapons on tactical fighter-bombers ... and proceed with full scope life extension for the B61 bomb, including enhancing safety, security, and use control.”

The Air Force, the NPR made clear, will “retain a dual-capable fighter ... as it replaces F-16s with the F-35.” The

NPR also announced final retirement of the nuclear-capable Tomahawk cruise missile (TLAM-N), a theater-range nuke. The Army long ago eliminated its theater nuclear missiles. Thus, USAF will do all of Washington’s heavy lifting for extended tactical deterrence.

Several NATO countries have the technical capability to deliver US nuclear warheads with nuclear-certified fighters. Each munitions storage

Lightning II fighters complete a test flight. The F-35 will inherit the nuclear deterrence mission.

site—some were completed as recently as 1998—can securely house a score or more of warheads in NATO’s central and southern regions.

NATO members Germany, Belgium, Luxembourg, the Netherlands, and Norway formally requested that the alliance discuss potential withdrawal

USAF photo by ATC Perry Aston



An F-15E takes off from RAF Lakenheath, Britain. In recent years, the nuclear fighter burden has fallen on F-16 and F-15E aircraft, but they’re getting old.

of US weapons from the continent as the alliance reviews its strategic concept. Other nations, including several formerly under Soviet domination, disagree. They say such weapons are critical symbols of the US military commitment to Europe.

Secretary of State Hillary Clinton rebuffed the call. "First," she said, "we should recognize that, as long as nuclear weapons exist, NATO will remain a nuclear alliance."

In short, the policy of extended deterrence is alive and well, but meeting the NPR's guidance over the long run will hinge on success with the F-35 and the B61 bomb refurbishment.

The Air Force has a long and successful track record with extended deterrence. In fact, fighters carrying tactical nuclear weapons have been around nearly as long as NATO itself.

In the late 1940s, war plans for a confrontation with the Soviet Union in Europe first depended on B-36 intercontinental bombers attacking Soviet targets. But planners conceded that the strategic bombing would not prevent the battle-hardened Red Army from trampling much of Europe if Stalin chose to invade. With Europe demobilized, atomic weapons were seen as vital to the ground force engagement.

A new forward defense war plan code-named Ironbark incorporated a limited form of tactical atomic weaponry for NATO from 1950 onward. At first, when plans anticipated that much of Europe would be overrun, it was mainly a mission for Navy attack aircraft. Up to 16 aircraft carriers on NATO's flanks would use nuclear weapons against invading Soviet forces.

In February 1951, the US Sixth Fleet, operating on permanent assignment in the Mediterranean, received AJ-1 Savage attack aircraft capable of carrying atomic bombs from the fleet's aircraft carriers. "We certainly need their atomic capabilities," declared five-star Gen. Dwight D. Eisenhower, who was NATO's first Supreme Allied Commander Europe.

Meanwhile, Tactical Air Command was training the first cadre of F-84 pilots for nuclear alert in Europe. When atomic artillery in the form of the 280 mm howitzer arrived in Europe in the fall of 1952, Eisenhower's staff put the guns in their plans.

As a NATO strategy paper recounted: "To deter major war in Europe, nuclear weapons were integrated into the whole

DOD photo



Two F-111 aircraft over RAF Upper Heyford, Britain. Under some 1970s nuclear war plans, F-111 wings were tasked to quickly launch up to 60 aircraft.

of NATO's force structure, and the alliance maintained a variety of targeting plans which could be executed at short notice."

Just Across the Border

The result was a mission known as Victor Alert. Fine-tuned command and control of NATO's extensive arsenal required continuous practice and exercises. Officers at US Air Forces in Europe became experts in the high-stakes task of moving nuclear weapons to aircraft to arm and get them airborne under tight time lines.

A 1987 list compiled by the *Bulletin of the Atomic Scientists* identified nearly a dozen aircraft types certified to drop nuclear bombs, not including strategic bombers. The F-100 pulled the mission for years. The F-104G Starfighter was nuclear-certified for the air forces of Italy, Greece, and Turkey.

For USAF, the main aircraft for nuclear operations were the F-4, F-111, F-16, and much later, the F-15E. The F-111 wings in England in the 1970s were tasked to quickly launch up to 60 aircraft under certain war plans. F-111s could carry multiple B61 warheads.

During the 1980s, F-16s in "triple doc" squadrons—those tasked with air-to-air, air-to-ground, and nuclear missions—sat Victor Alert at bases in Europe. Under NATO's quick-response mandates, two aircraft from each squadron in a wing of three squadrons

might be on alert, with B61s loaded, at all times. The aircrews had to demonstrate they could take off within 15 minutes of an alert order.

NATO discontinued the rapid alerts as the Cold War receded. The alert culture once inculcated in thousands of Air Force officers and enlisted members went with it. Today's dual-capable fighters still train to the mission, but on a scale anticipating a slower buildup of readiness over a period of weeks.

Part of the reason that nuclear fighters remain in NATO is because Russia still has thousands of nonstrategic nuclear warheads. For many of the new NATO members, that's still just across the border.

The Air Force's forward deployed presence "is a response to the volume of nonstrategic nuclear weapons Russia has in its arsenal," said Maj. Gen. C. Donald Alston, assistant chief of staff for nuclear matters at Air Force headquarters.

Thus, the US remains firmly committed to extended deterrence. Maintaining its credibility depends on the stockpile, dual-capable aircraft, and crews trained to deliver nukes.

According to Amy F. Woolf of the Congressional Research Service, the US in 2010 keeps in Europe only "a few hundred" nuclear weapons for fighters. As to platforms, the burden for USAF falls on its F-16s and, in recent years, the F-15Es. They, however, are getting old.



An F-100C releases a dummy nuclear bomb.

It was a foregone conclusion that the F-35 would inherit the extended deterrence mantle. Early in the program, some questioned whether such nuclear capability was truly needed, but Pentagon officials held firm on that requirement.

Actually, most of the aircraft the F-35 is designed to replace had nuclear missions. For the Navy, the dual-capable antecedents lay in certified aircraft such as the A-6 and A-7, plus the F/A-18. The Marine Corps AV-8B was also nuclear certified.

For the British, in addition to the Harrier, there was the nuclear-certified Panavia Tornado GR1 with a low-level interdiction role. Britain armed its Tornados with the WE177, a low-yield tactical nuclear weapon ultimately retired from RAF service in 1998. (Though the WE177s were dismantled,

Britain retains D5 warheads for the Trident missile in its submarine fleet.)

NATO members Germany, Belgium, the Netherlands, and Italy did not develop indigenous nuclear weapons programs. Instead, they maintained dual-certified aircraft capable of uploading US B61s during a crisis.

Given this background, the requirement for nuclear weapons certification for F-35 was planned from the beginning.

A Strong Commitment

Air Force plans dating back to the 1980s called for the F-16's replacement to take over the tactical nuclear role, and due to the effort involved in full nuclear certification, the Air Force wanted only one nuclear fighter type in its future arsenal. A nuclear-capable F-16 replacement also needed to be an interoperable export fighter that NATO allies in particular could buy to maintain their extended deterrence role. Therefore, the F-22 was never intended to be a nuclear fighter, and was instead optimized for air-to-air operations and destruction of enemy air defenses.

"The NPR, ... in essence, reaffirms the alliance position to have nuclear weapons as part of the alliance force structure," said Alston. "Those dual-capable aircraft historically have been the F-16 and the F-15E, and they will continue to be those aircraft until such time as the F-35 is deployed."

Full certification of the F-35 for the nuclear role will ultimately require an



A USAF F-104 lands at Morón AB, Spain, in March 1964. The F-104 was also nuclear-certified for the air forces of Italy, Greece, and Turkey.

additional \$339 million in funding. Key elements include special attention to internal wiring and avionics, with additional costs to cover the test and certification process. It will begin after early testing is complete, taking place as part of a stage called follow-on development.

Although F-35 costs are under scrutiny, the Pentagon's commitment is strong. "I have no lack of confidence in us absolutely following through" on F-35 nuclear certification plans, Alston said. "The Department of Defense has made it clear that we're committed to doing this, to making the F-35 dual-capable," he said.

Just as important is funding a B61 life extension on a schedule synchronized with F-35 development.

"It will matter that the B61 life extension program moves forward and that we can have a life-extended B61 to marry up to a nuclear-capable F-35," acknowledged Alston.

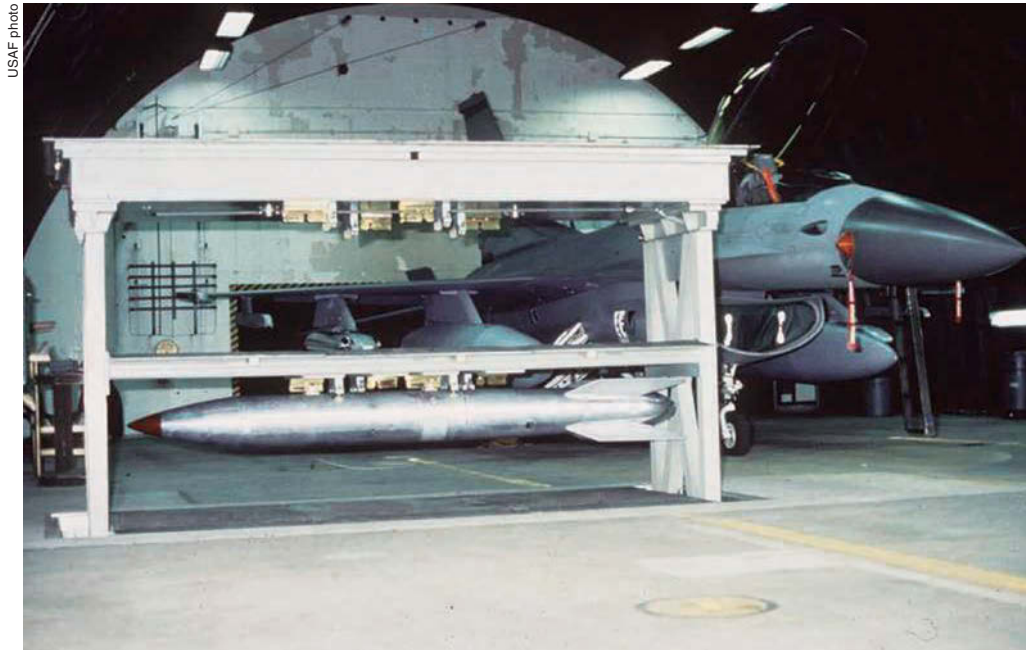
The B61 has seen so many variants that experts refer to it as the B61 family of weapons. Production took place from the 1960s through the 1980s. Some variants were converted to the B61 family after beginning design under other monikers. The most recent variant was the B61 developed for use with the B-2 bomber. Its ballistic shape—without nuclear material, of course—was tested in 1998.

"One of the things the life extension program would do would be to reduce the number of variants of the B61," said Alston. "We don't need that number of variants. There are some aging problems with the B61, and the life extension program will overcome those."

Stable funding is critical because pipeline capacity for warhead refurbishment is very limited. As Alston described it, the "life extension program drives infrastructure demands on the Department of Energy to build the production capacity. Their infrastructure is hurting. The Navy has the W76 system under way right now. We couldn't do [the B61] at the same time, that's how limiting [it] is."

Modernizing the B61 will take steady investment. "There's a considerable amount of infrastructure that has to come through for the Department of Energy to be able to move forward on the B61," Alston said.

At US Strategic Command, Gen. Kevin P. Chilton is adamant about the need for a B61 life extension—



A B61 nuclear bomb rests in a protective hangar next to an F-16. The B61 is receiving a full-scope life extension.

regardless of F-35 scheduling. "A lot of folks are linking 2017 to F-35. We need the B61 in first production in 2017 regardless of the F-35 because the B61 also is a weapon that is used by the B-2, by our strategic deterrent," he told the House Armed Services Committee on April 14.

Despite the Administration's support, shifting policy winds could derail B61 modernization and perhaps even final certification of the F-35. For example, Congressional committees have tossed around cuts to the B61 life extension program, although support for the W76 program for the Navy has been solid.

The Nuclear Umbrella

The longer-term risk comes from those who were not happy about what they saw as a free pass for tactical nukes. One school of thought regards tactical nuclear weapons as a skeleton in the closet forgotten by the Obama Administration's nuclear strategy review—and ready to haunt US foreign policy.

"So before anyone cracks open the champagne for Obama's vision of a nuclear-free world, don't take your eye off the little guys," warned David E. Hoffman in an article for *Foreign Policy* in April.

Yet as Hoffman noted, "Tactical nukes are going to be very, very hard to negotiate."

A large part of the reason for that is that DOD, the State Department, and NATO see continued utility for tactical nuclear weapons. Nuclear fighters provide extended deterrence beyond NATO's border. There is every possibility that, over the life of the F-35, Middle East states or Pacific region allies will confront regional nuclear threats.

According to the NPR, the "nuclear umbrella" of extended deterrence included the strategic triad, nonstrategic forward deployed forces, and US weapons that "could be deployed forward quickly to meet regional contingencies."

What is certain is that a dual-capable F-35 is moving to the center of extended deterrence plans. With its stealth and specialized sensors, the F-35 will soon be the only nuclear-capable fighter able to penetrate the most sophisticated enemy air defenses.

The F-35 could be thrust into the spotlight if the planners judge that the B-2 reaches a point where it is no longer able to penetrate enemy air defenses—especially in daytime. The B-2 does not carry standoff weapons, noted Alston. Threats that keep a B-2 from performing direct nuclear attacks could, in effect, hand that mission, too, to the F-35. ■

Rebecca Grant is president of IRIS Independent Research. She has written extensively on airpower and serves as director, Mitchell Institute, for AFA. Her most recent article for Air Force Magazine, "Penny Packets, Then and Now," appeared in the June issue.

The Front Lines Down South

By James Kitfield



Air Force Gen. Douglas Fraser, SOUTHCOM commander, sees illicit trafficking networks destabilizing Latin America and threatening US security.

Each day, one of the world's most sophisticated smuggling networks propels contraband toward the United States. Its toxic mixture of illicit drugs, weapons, bulk cash, and criminals spread instability throughout Latin America.

This network feeds the drug cartels that are now challenging the Mexican government and spilling blood and violence along the southern US border. It supplies terrorist insurgencies in Colombia and Peru and well-financed and sophisticated gangs that corrupt fragile governments throughout Central America and the Caribbean. The Defense



USAF photo by SSGT. Austin M. May

Department calls this network a direct threat to US national security.

All of which should make Air Force Gen. Douglas M. Fraser, the commander of US Southern Command, a household name. Yet it is one of the vagaries of international relations that US military operations in distant theaters such as Central Command in the Middle East or Pacific Command in Asia typically attract much more media attention than does SOUTHCOM's daily engagement with America's neighbors in Central and South America and the Caribbean.

Instability and Insecurity

These nations are increasingly threatened by the illicit network that combines aspects of a regional insurgency, terrorist enterprises, and organized crime.

"Overall the biggest concern I have within the region is not a military threat to the United States, not a conventional military threat to nations within the re-

Latin America. As one of 10 unified combatant commands, SOUTHCOM is headquartered in Miami, with two forward operating locations in its area of responsibility at Comalapa, El Salvador, and Aruba/Curacao in the Netherlands Antilles.

In combating the region's illicit trafficking networks, SOUTHCOM is one of a host of multiagency, multinational players, albeit a very important one. Because 90 percent of the cocaine and 47 percent of the heroin that reaches the US originates in or passes through Colombia, the country remains a central focus of counternarcotics operations in the region.

As part of a narcoterrorism initiative, SOUTHCOM has deployed nearly 400 US personnel to Colombia, where they offer training, logistics, and intelligence support to Colombian security forces battling the Revolutionary Armed Forces (FARC) militia and narcoterrorist group.



AP photo by Scott Dalton



USN photo by Mass Comm. Spec. 2nd Class Laura A. Moore

Above: Soldiers and airmen position a UH-60 Black Hawk helicopter for loading onto a C-5 at Soto Cano AB, Honduras. Left: A US Special Forces soldier (second from left) helps train a Colombian anti-narcotics battalion. Above right: Gen. Douglas Fraser, commander of US Southern Command (left), consults with his deputy, US Army Lt. Gen. P. K. Keen, head of Joint Task Force Haiti, at Toussaint Louverture Airport in Port-au-Prince, Haiti.

gion; it's illicit trafficking," said Fraser at a recent meeting in Washington, D.C. "By illicit trafficking I mean drugs, human trafficking, weapons, bulk cash—all the various, different areas of illicit trafficking, and it affects almost every part of the region," he said. "My concern [is] the instability, the insecurity that trafficking organizations have brought into different parts of the region," he said, highlighting Mexico and Colombia as examples.

SOUTHCOM's relatively low profile in part reflects regional sensitivities to an overt US military presence in

"The Colombians have been very successful this year at finding and eliminating some senior FARC leaders, as well as midlevel leaders," said Fraser, who estimated that the number of FARC insurgents in Colombia has declined by roughly half over the past decade, from 16,000 to roughly 8,000.

As the group has come under pressure, he said, it has reverted back to tactics such as kidnapping and extortion, suggesting that its funding from the drug trade may have been disrupted. Asked about the reasons for recent



US sailors pilot a seized submarine captured from drug traffickers on a river near Turbo, Colombia.

Colombian success, Fraser points to the country's determination to build the capacity of their armed forces and law enforcement agencies in order to combat the threat.

"What we have been doing is enabling [Colombia's] capacity," he said. "So as they've learned how to work and conduct joint operations, we've enabled that. We've enabled training from riverine capacities to supporting some of their special ops, to supporting aircraft maintenance and those types of things."

Through the train-the-trainer model, SOUTHCOM has achieved a force multiplier effect from its partnership with Colombian security forces. Today, Colombian forces are sought out by other regional security forces, for instance, to share their expertise.

"We look at our experience within Afghanistan, with Iraq, but if you look at the Colombian experience, they've suffered on average three to four to five hundred soldiers ... killed on an annual basis for 10 years," said Fraser. "So they have a lot of experience. ... They're starting to share that with partners in the region. In fact, the Mexicans are sending helicopter pilots for training in Colombia. There's cooperation between Peru and Colombian armed forces, ... with Ecuador and Colombia. ... We see it as a very big success."

Because DOD is the lead federal agency in efforts to detect and monitor the transit of illicit drugs toward the United States, SOUTHCOM spends much of its time and energy gathering intelligence on the smugglers' favored routes, techniques, and operations. At

its command center at the Joint Interagency Task Force-South, in Key West, Fla., SOUTHCOM gathers and fuses that intelligence and shares it with colocated law enforcement agencies and allied nations responsible for actually interdicting drug runners, often with military support.

Evolving Tactics

Chasing and catching drug smugglers amounts to a game of cat and mouse, with each side constantly changing tactics. After an air interdiction network established by SOUTHCOM in the 1990s proved successful, for instance, the traffickers started moving the bulk of their contraband by sea, where 80 percent of the drugs are now transported. SOUTHCOM then made the maritime approaches on the east and west coasts more risky, so drug traffickers shifted strategy and began moving drugs by ship to Central America, and then across the land routes through Mexico, which falls within US Northern Command's zone of responsibility. When armed Coast Guard helicopters became more adept at running down and disabling "go-fast" smuggling boats that had previously outrun slower Coast Guard and Navy ships, the traffickers more recently switched to slow "semisubmersibles"—boats that are extremely difficult to see or detect.

SOUTHCOM helped interdict 76 of the craft in 2008 and 52 in 2009, Fraser said. Semisubmersibles are usually 60 to 70 feet long, carry four to 10 tons of cocaine with a four-man crew, and feature diesel engines and a range of up to 5,000 miles. "Their normal

tactic is to travel at night, and then to stay still in the daytime. ... If they see a ship or helicopter approaching, they have scuttle cocks on the vessels, where they can pull a lever, and scuttle this vessel within minutes. So before anybody can get there and detail it, it's gone," Fraser said.

Such evolving tactics and SOUTHCOM's need to monitor vast stretches of ocean and airspace, as well as hundreds of thousands of square miles of dense jungle, have put a premium on intelligence-surveillance-reconnaissance assets. As one example, he cited the need to detect assembly operations for semisubmersibles and cocaine labs hidden deep in South American jungles.

"There's a large amount of jungle, triple canopy capability there. Traffickers are able to use that to their benefit," Fraser said. "In some ... mangrove swamps in western Colombia, you can be 10 feet away from where somebody's building a semisubmersible and never see it." He said they need to know the trail networks and traffic patterns the smugglers use, and where the cocaine labs are. They need the technical means to look underneath the jungle canopies.

"A large portion of [the Defense Department's] ISR capacity ... is headed into Iraq and Afghanistan, so it does limit some of the capacities that we get," said Fraser. "But we also benefit from the fact [that countering] illicit trafficking is a combination of law enforcement and military capacity." So for example, the Customs and Border Protection's P-3 Orions surveillance aircraft provide assistance. SOUTHCOM is also working with allied navies in the region, using all the ISR systems that are available, and interconnecting them with one another to build "virtual domain awareness." The biggest need, however, is for persistent surveillance coverage so that SOUTHCOM understands what is happening in this broad expanse of ocean.

In terms of potential threats to regional security, SOUTHCOM also keeps a close eye on Venezuela and its bombastic anti-American president Hugo Chavez. There are growing tensions between Colombia and Venezuela, for instance, over credible reports that Chavez has lent support and sanctuary to FARC insurgents. There have also been reports that Venezuela has signed an arms deal with Russia worth \$5 billion.

"I don't see that there is a military threat to the United States from Venezuela," Fraser said. And while there

is tension between Colombia and Venezuela, and Venezuela is modernizing its military, he did not see a real potential for conflict there. More pressing is Venezuela's purchase of 100,000 Russian-made AK-103 military assault rifles, he said, and plans to build a factory in Venezuela capable of producing an additional 25,000 rifles annually. Venezuela has also purchased 2,400 Russian-made Iгла-S man-portable surface-to-air missile systems (MANPADS).

Fraser's "biggest military concern" is Venezuela's purchase of so many small arms, and the potential for the proliferation of those arms. There are already numerous weapons flowing through regional illicit trafficking networks, some of them from the United States. This represents another potential opportunity for some "pretty substantial weapons to be available to illicit trafficking groups," he said. As an example, Fraser cited the ISR capabilities the Colombian security forces are using to find and prosecute operations against the FARC. If those MANPADS were to fall into the hands of the insurgents, it would give them a defensive capability against those airborne reconnaissance assets, Fraser said.

An additional concern to SOUTHCOM officials is growing ties between Caracas and Tehran, and the appearance of Iranian-backed terrorist groups Hezbollah and Hamas in South America. While intelligence analysts have seen no direct ties between those groups and terrorist activities in the region, Fraser is keeping a close eye on their activities. From a diplomatic and commercial standpoint, Iran has shown a growing interest in Latin America, increasing their number of embassies in the region from seven in 2007 to 12, with the opening of a new embassy planned for 2011, he said.

As any combatant commander can attest, no amount of contingency planning can anticipate all potential crises. Fraser discovered this firsthand in January, when Haiti was struck by a catastrophic, magnitude 7.0 earthquake that killed an estimated 230,000 people, injured another 300,000, and displaced nearly a million more.

"I'll be the first one to tell you we did not have a plan on the shelf for an earthquake response in Haiti, [given that] the last earthquake in Haiti was in 1860," said Fraser. "So our focus was on providing as much capacity and as much flexibility as we could, as quickly as we could."



USAF photo by TSgt. Bryan Gatewood

Airmen from the 621st Contingency Response Wing help load evacuees at Toussaint Louverture Airport after the recent earthquake.

As an example, the hospital ship USNS *Comfort* was fully outfitted, crewed, and under way from Baltimore within 72 hours, arriving in Haiti eight days after the earthquake. With aid initially flown into the country through Haiti's single operational airport and damaged seaport, the emphasis was on moving big-deck ships with helicopters to the scene, including an aircraft carrier and a Marine amphibious ship.

Validated Practices

With the aircraft carrier and Marine ships, SOUTHCOM had the flexibility "to transit over the destroyed parts of the city" and assess the damage, and the Marines brought their capacity to move goods across the shore, said Fraser. "So all of those pieces and parts worked very well. I call it Team DOD. ... We should be very proud of the response and the capacity that we were able to bring to Haiti in the time we did."

SOUTHCOM is already considering lessons learned from the Haiti earthquake response.

"We're in the process of [saying], 'OK, where's a template on how we respond to a serious disaster? ... What can we do better?'" said Fraser. One early lesson is the need to maximize the use of social networking sites and other nontraditional communications technologies, he said, to share information and gain critical situation awareness. Another is the need to leverage and coordinate the US military's huge logistic capacities with the aid offered by the international community and nongovernmental relief agencies.

The disaster also validated SOUTHCOM's practice of keeping a large-deck ship in the region during hurricane season, so response times can be kept to a couple of days.

"Those are ... keys to helping enable us to do that better" in the future, but every situation will be unique, said Fraser. As an example, he noted that another earthquake happened less than two months after Haiti's, this time in Chile.

"It was actually a stronger earthquake. It affected a larger portion of the country," he said, but because Chile had experience in dealing with earthquakes and a much stricter building code, the relief requirements from the international community were "nowhere near the same." So "we will build a template [for future disaster responses], but there will always have to be a lot of responding to the situation as we find it at the moment."

Though he spent the previous decade in a variety of posts in Alaska, Colorado, and Hawaii (most recently as deputy commander of US Pacific Command), Fraser says that taking the reins of SOUTHCOM felt like coming home, in a way. As a teenager, he spent three years living in Colombia.

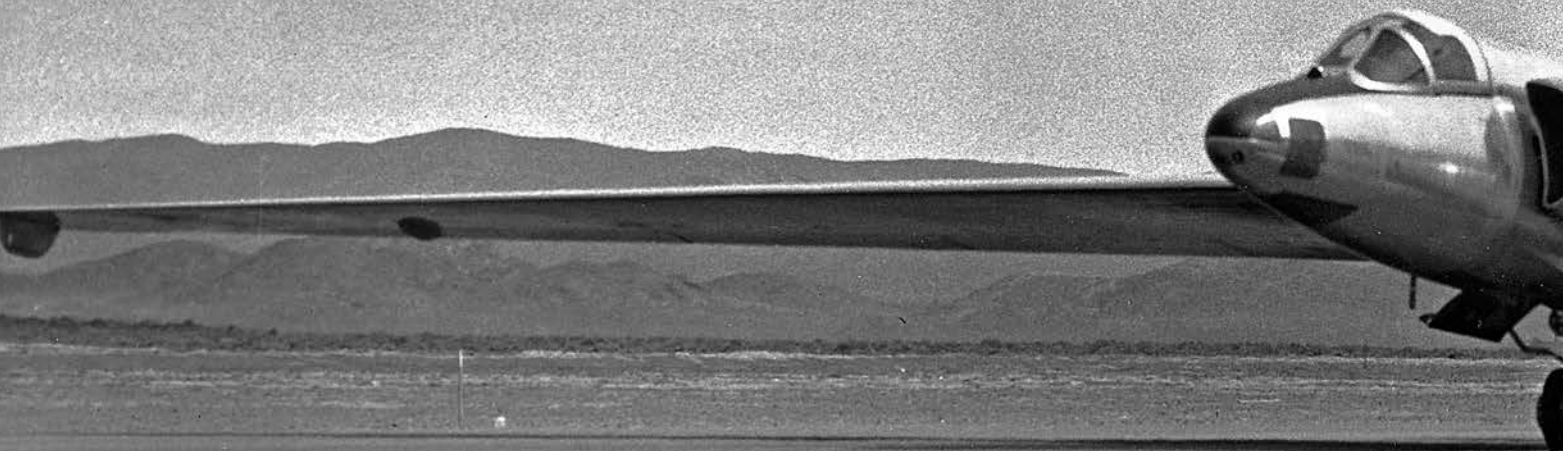
Living in a region that he's now responsible for in terms of US military forces and operations gives Fraser "a connection" to the area that he otherwise wouldn't have had, and he thinks it gives the Latin Americans a sense of connection to him. Fraser has retained "a familiarity with Spanish." All of this gives him a sense of awareness that has been beneficial. He feels that he understands Latin America better than if he had never lived there. ■

James Kitfield is the defense correspondent for National Journal in Washington, D.C. His most recent article for Air Force Magazine, "The Cruise Missile Question," appeared in the February issue.

Project Aqu

In the 1950s, the epoch-making U-2 spyplane was young, promising, and still very, very secret.

Photo research by Zaur Eylanbekov



atone



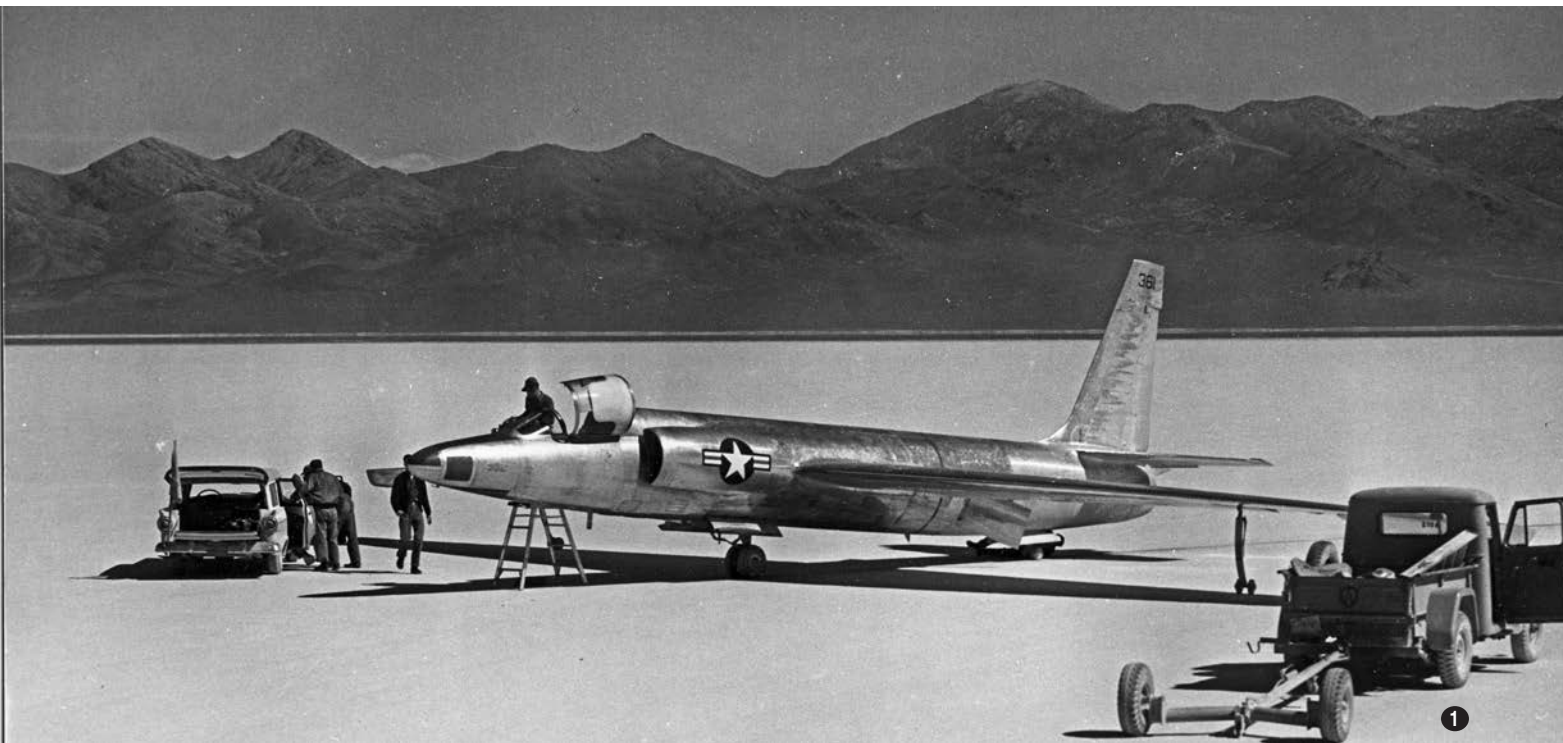
An early U-2 reconnaissance airplane, speed brakes and landing chute deployed, lands at Groom Lake, Nev., in the mid-1950s. This aircraft bears a civilian registry number and markings of the National Advisory Committee for Aeronautics—forerunner of NASA. It was part of an elaborate cover story for what actually was a joint effort of the CIA and the Air Force. This photo and those on the following pages, recording those early days, come from the Lockheed Martin archive.

The U-2 is headed into its operational homestretch; in a few years, the Global Hawk will take its place. Even now, though, the story of its birth is fascinating. In November 1954, President Eisenhower approved Project Aquatone, a top secret effort to build a spyplane able to obtain intelligence about Soviet nuclear deployments. The U-2 made its first flight in August 1955. The U-2 was conceived by the CIA and built by Lockheed's famed Skunk Works. It was the first airplane to fly higher than 60,000 feet, above the reach of Soviet anti-air missiles at that time. **1** A U-2 pilot is readied for a mission. Early U-2 pressure suits required "reverse breathing," in which pilots had to exhale hard to admit new air into the face mask. **2** A technician at Groom Lake—the secret base that got its start as home of the U-2 program—checks flight gear, which was form-fitted to each pilot. **3** A U-2 (background) is main-



tained in the open at Groom Lake. The U-2 has always had bicycle landing gear, but this one has a wheeled dolly under the tail to facilitate towing. The aircraft bears NACA markings. Once the U-2 became known, some genuine weather flights were flown to maintain the cover story, but the type's true altitude capability was not revealed. **4** The A-2 camera system for the U-2, here being installed. Note the wide apertures of the three down- and side-pointing cameras.





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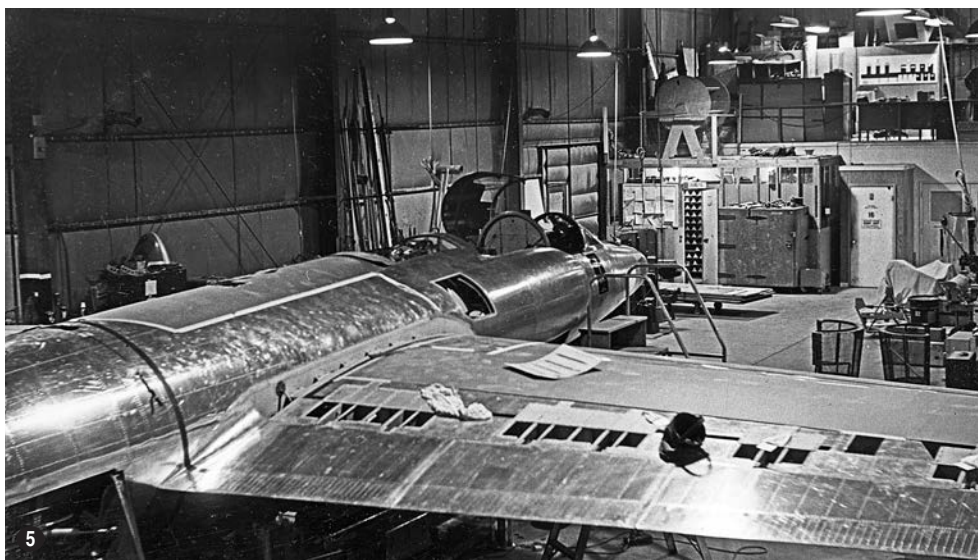
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111 A U-2 receives a postmission check. The aircraft's wings were patterned after those on gliders, to obtain maximum lift. Early test flights were confined to an area within 200 miles of Groom Lake; a pilot whose single engine flamed out could make a dead-stick landing back at the secret base. 121 Behind the fiberglass panels on the nose of this early U-2 were sensors that collected signals intelligence on Soviet radars tracking the airplane. These data were collected and analyzed after each mission, to plot future routes away from defenses. 131 A half-dozen U-2s wore NACA markings early in flight test. 141 U-2s were built by Lockheed at Burbank and Palmdale, Calif., then loaded in C-124 Globemaster IIs and reassembled at Groom Lake for test and operations.

111 The arduous process of suiting up for extremely high-altitude flight could take hours. Pressure suits, like the U-2 itself, evolved quickly and with many field modifications. Early suits had no lavatory accommodations, despite missions that could last up to 10 hours. 121 A pilot poses for a wry photo. Pilots had to prebreathe pure oxygen for more than an hour to eliminate nitrogen bubbles that could give them “the bends” at extreme altitude. Heating elements are visible on the edges of the faceplate. 131 U-2 wings being assembled at Oildale, Calif. 141 Groom Lake had few amenities, but the crash truck proved a necessity on numerous occasions. 151 U-2 in final assembly at Groom Lake. Early hangars were small and sparse.

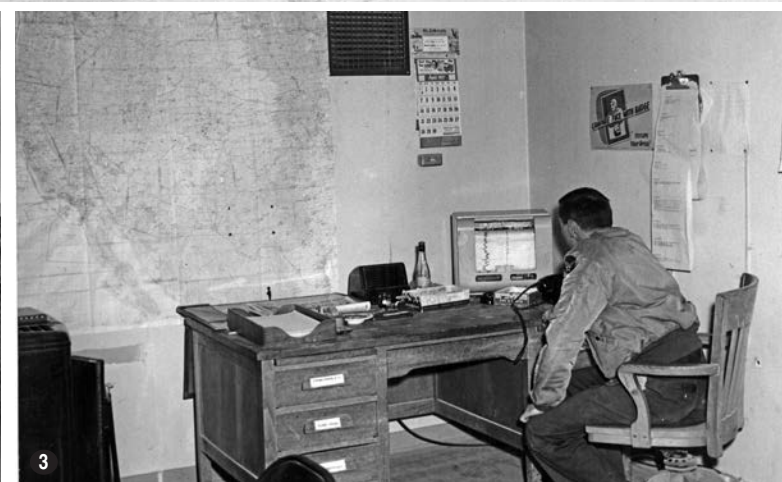




111 The U-2 pilot's pressure suit was so stiff when inflated that another pilot had to perform the preflight inspection, help strap the pilot into the seat, and then serve as a spotter as the U-2 took off, feeding the pilot, by radio, information about the airplane's attitude. *121* A U-2, unpacked from its cargo flight, is assembled at Groom Lake. An early unofficial name for the base was "Watertown Strip," named after the New York hometown of CIA Director Allen Dulles. *131* The Groom Lake cafeteria served meals to Lockheed, Air Force, and CIA employees. A few billiard tables served as the only after-hours entertainment. *141* A U-2 wearing NACA livery has its engine serviced. The entire rear of the aircraft could be removed.

11| Mission planning was also done at Groom Lake, keeping planners close to the pilots and the whole operation as secret as possible. The atmosphere was serious but informal. 12| Lockheed pilot Bob Schumacher dons the improved MC-2 helmet for prebreathing; it would be covered with a thin white shell in flight. The helmet was not a trivial matter: Latching problems contributed to three fatal crashes in the late 1950s. 13| "Housing" accommodations at Groom Lake were spartan. The site was chosen for its remoteness and proximity to nuclear test ranges. Unwelcome visitors could be spotted miles away. 14| Final assembly in a Lockheed hangar at Watertown Strip. 15| The U-2 will "lean" on one wing if it's not moving. Pylons support the wings for maintenance. During taxiing for takeoff, "pogo" landing gear fall away. The scene shows how much infrastructure was built up in a relatively short time, but the aircraft were still being housed and serviced out in the open.





11 A U-2 takes off at Groom Lake. Spotters in these cars watched with binoculars, talking the pilot through the tricky takeoff. *12* Lockheed, CIA, and Air Force workers commuted to Groom Lake via military aircraft. Early U-2 pilots were selected from USAF. They mustered out and were hired back as civilians, to hide their military connections. *13* The weather office. *14* By the 1960s, the Air Force had taken over the U-2 program—note the insignia—and was making frequent upgrades. These two aircraft are in flight test over Edwards AFB, Calif. The U-2 proved remarkably successful. Today, more than 50 years later, variants of the U-2 are still in service, their retirements extended several times because of their continued utility. ■

**C-27 program changes have put the Air Force and Army
“on a far more amicable path.”**



The Little Airlifter That Could

By Megan Scully

Alenia North America photo

More than a year ago, Secretary of Defense Robert M. Gates did two things with the C-27J Joint Cargo Aircraft program. First, he made it the exclusive property of the Air Force, all but eliminating the Army's role in the program. Second, the Pentagon chief cut the planned procurement of the aircraft in half.

The decision turned plans for the program—and the direct-support airlift mission—on their head. Air Force officials are still working to transition the program and its mission to their sole purview while anticipating a smaller fleet.

The stakes are high. The airlifter is scheduled to make its initial deployment next March 2011, and the expected destination is Afghanistan.

The program, which began in 2005 as a joint Army and Air Force venture, has stirred some old service rivalries centered on the issue of the direct-support airlift mission. This has complicated the transfer of the C-27 to the Air Force.

Over the last year, Army and Air Force officials have worked to set up the Air Force program office at Aeronautical Systems Center at Wright-Patterson AFB, Ohio. It is scheduled to open this fall.

Meanwhile, the joint program office at the Army's Redstone Arsenal, Ala., is staying open until the end of this fiscal year to help with the transition.

“From an acquisition perspective, it's really been seamless,” said Maj. Gen. Randal D. Fullhart, director of global reach in the Air Force's acquisition office. “We clearly recognize the investment of time, knowledge, etc., that the joint program office had. So rather than simply stopping that and going on, we've really tried to drive a smooth transition, and to all measures, that's gone very well.”

Proof of Concept

Still, the challenges in shepherding the urgently needed propeller-driven cargo airplanes—all of which will be fielded by the Air National Guard—are not just acquisition-related. The two services had to develop a concept of employment for the C-27J to guide how the Air Force will provide critical direct support airlift to Army ground forces operating in austere locations.

Late last year, officials set out to prove the concept of employment using surrogate C-130 airlifters dedicated to an Army combat aviation brigade deployed to Iraq. Both Army and Air

A C-27J Spartan shows off its agility by flying inverted at an air show.

Force officials have said they were overwhelmingly pleased with the results of the two-month battlefield test of the concept, stating it was a worthwhile exercise as the Air Force prepares to deploy the first C-27Js next year. The exercise “proved tremendously successful,” Lt. Gen. Robert P. Lennox, the Army's deputy chief of staff for programs, told the House Armed Services Air and Land Forces Subcommittee March 10.

In all, the Air Force's relationship with the Army on this issue “is probably a model for anything we do like this in the future because it really has been a partnership,” Fullhart said. “We wanted to make sure that in the transition, we did no harm, and I think we've been thoroughly successful in that.”

The change has been felt on the Army side as well. During a breakfast with reporters March 31, Army Secretary John M. McHugh said he believes the changes to the program have put the Army and the Air Force on a “far more amicable path.”

“I've discussed this matter with [Air Force] Secretary [Michael B.] Donley,

and I think we're probably in a better place than perhaps the Army and Air Force were on this issue a year ago," McHugh said.

Last spring, the C-27J became one of the lesser-known targets hit by the budget ax in the Pentagon's Fiscal 2010 proposal. The \$3 billion L-3 Communications/Alenia North America program did not have the visibility or the long-standing support on Capitol Hill as did other programs cut or terminated, such as the F-22 Raptor or the Army's Future Combat Systems.

Nonetheless, the Pentagon's decision to slash the C-27J buys from 78 aircraft to 38 and transfer all remaining aircraft to the Air Force shocked many in defense circles who had questioned the Air Force's commitment to the program while at the same time for years hearing the Army's urgent pleas for the aircraft. Under the original plan, the Army was to receive 54 C-27Js to replace aged C-23 Sherpas and help decrease the workload of the heavily deployed CH-47 Chinook helicopter fleet, which has logged record hours during operations in Iraq and Afghanistan. Lawmakers, however, had long questioned whether the Air Force, with its fleet of C-130s, actually wanted or needed the 24 airplanes it planned to buy.

In the Fiscal 2009 defense appropriations bill, Congress cut the Air Force's request for advanced procurement funding, but USAF kept its portion of the program on ice by saving \$16 million in research and development

funding. Lawmakers supported the Army's request that year to procure seven C-27Js.

However, shortly after announcing the decision to trim the buy of the aircraft and transfer them to the Air Force, Gates questioned the wisdom of buying 78 C-27Js to meet both Army and Air Force requirements, telling the House Armed Services Committee that the transport carries half the payload of a C-130 but costs two-thirds as much.

Platform-Neutral

Gates added that the C-27J, which had been hailed for its ability to land just about anywhere and go deep into the fight, would give the military access to only one percent more runways than a C-130 could. And with hundreds of C-130s not deployed overseas, the active and reserve components had adequate lift capability to respond to needs at home and overseas, he said. Attempting to assuage lawmakers concerned about the Air Force's commitment to the direct-support mission, Gates also told House lawmakers that Air Force Chief of Staff Gen. Norton A. Schwartz and Army Chief of Staff Gen. George W. Casey Jr. were already discussing how the Air Force would respond to Army needs.

"And I think they are going to make considerable progress in that," Gates said.

To learn how to best and most efficiently deliver deployed Army forces' time-sensitive, mission-critical equip-

ment, supplies, and personnel into an area of operations, the Air Force convened a number of working groups comprising Air Force airlift experts, Army aviation experts, and representatives from US Transportation Command and US Central Command.

The result was the development of the platform-neutral concept of employment, which now serves as the doctrinal framework for deploying any aircraft—whether it is C-27Js, C-130s, or any other aircraft—in the direct-support airlift role. The plan gives the senior Army aviation authority tactical control of the Air Force's deployed C-27Js, which will be embedded with Army combat aviation brigades. Members of the Ohio Air National Guard deployed with two C-130s to Iraq from October to December 2009 to mature the command and control structure and validate the direct-support requirements envisioned for the C-27J. (The two C-27Js in the Air Force inventory at the time were still undergoing testing Stateside.)

During concept testing, the Ohio Guard's 164th Expeditionary Airlift Squadron was tasked by the Army's 25th Combat Aviation Brigade. The squadron flew one aircraft daily, with the second on standby for immediate response, if necessary. "When the call came in, asking if we would support this mission, it took us about three seconds to answer," Col. Gary McCue, commander of the Ohio Air National

The C-27J program will now be wholly owned by the Air Force.



Photo by Piotr Butowski



Guard's 179th Operations Group, said last November. "As an Air Guard unit, we work very closely with the Army [National Guard] in Ohio. And since we rolled in here, it's been seamless. The Army wants this to work. They've been asking for this for 60 years. And we're showing them that we're with them 100 percent."

According to Fullhart, the exercise gave the Air Force a clearer understanding of how the Army's requirements are generated and how the Air Force can be responsive to those needs. "I would say it's really a confidence builder on both sides, both parties, to understand the mission, understand our ability to meet that mission, and for the Army to have the confidence that we, in fact, can deliver—which we did," Fullhart said.

The Air Force Chief of Staff signaled to the House Armed Services Committee Feb. 23 that the concept of employment testing was successful in demonstrating the Air Force has "the command and control, the orientation, and the capacity to provide direct support, should that be what the joint force commander requires."

Schwartz also signaled that the Air Force has reaffirmed to any doubters its commitment to the mission.

"I think the Army was intently interested in this [buying the C-27J] because

they weren't sure their Air Force would be there with them when they needed direct support," Schwartz said. "That is a change. We have demonstrated to our Army brothers and sisters, as well as others, that we will be there. We can do this."

Preparing for the Big Show

The Air Force was to begin multi-service operational test and evaluation on the C-27Js in April, in the hopes of wrapping up the test program by August and setting the airplanes up for initial operational capability, which is expected by October.

Ohio's 179th Airlift Wing and the 175th Wing (a composite wing) at Martin State Arpt., Md., the first two Air Guard units to train and deploy with the new aircraft, will play a role in the multiservice operational test and evaluation, as will two Army National Guard units, Company H, 171st Aviation Regiment from Georgia, and 1st Battalion, 245th Airfield Operations, from Oklahoma. "Completing the test program in August is a big milestone for us because, at that point, we will be able to confirm the operational effectiveness and suitability of the weapon system," said Brian Dougherty, a C-27J program analyst.

All of the testing and evaluation is leading up to the big show—next

The small, prop-driven lifter can carry 68 troops, 46 paratroopers, or 36 litters. Here, paratroopers prepare to jump.

year's anticipated deployment of up to four C-27Js to Afghanistan. For the Army, which has been heavily tasking its Chinooks in the punishing Afghanistan terrain, the C-27J deployment can't come soon enough. "I don't think there's a service Chief who wouldn't like to see anything they desire deployed faster," said McHugh, who served as the ranking member on the House Armed Services Committee before stepping down last year to take the Army post. "Is that a reasonable way forward at this point? It's workable."

First deliveries of aircraft to National Guard units are expected to begin in August or September, with crews getting mission qualified once the aircraft are delivered. At press time, the Air Force anticipated receiving the fourth C-27J into its inventory in April, with the last C-27J expected to be delivered in 2015.

The National Guard Bureau has plans to initially beddown the first 24 C-27Js at four other Air National Guard bases besides the ones in Maryland and Ohio: Hector Airport in Fargo, N.D.; Bradley Airport near Hartford,



Conn.; W. K. Kellogg Airport in Battle Creek, Mich.; and Key Field in Meridian, Miss.

For the remaining 14 aircraft, the NGB has developed criteria for basing options and is conducting site surveys and assessments of other potential operating locations. Once completed, it will provide recommendations to the Air Force's Strategic Basing Executive Steering Group, which will forward recommendations to the SECAF's office. A complete basing plan for all 38 aircraft is expected this fall.

Despite the progress on the program over the last year, some lawmakers are still not convinced the decision to transfer the program to the Air Force and cut the buys of the aircraft in half was the right one.

"I'm not sure the Air Force wants to be at the beck and call of the Army," House Armed Services Air and Land Forces ranking member Roscoe G. Bartlett (R-Md.) said in a recent interview off the House floor.

Bartlett, who had repeatedly asked questions about the C-27 program during a series of hearings on the Fiscal 2011 budget, said he also remains concerned that despite the cuts to the program, the Army's requirement for intratheater airlift has not changed since the JCA's inception. Indeed, the

Army's Lennox told the Air and Land Forces panel March 10 he was not aware of any change in the requirement for C-27s.

Further Army Lift Requirements

Fullhart, however, said the Air Force believes 38 C-27Js is a "very reasonable number" and "will be sufficient in partnership with C-130 aircraft to fulfill the direct mission support needs of the Army." McHugh signaled that the Army still has a requirement for additional lift, but is looking at ways to meet the near-term requirement through C-130s and other assets. Like Bartlett, Rep. Jim Marshall (D-Ga.) similarly questioned the Army's requirement during the March 10 hearing, particularly as it relates to the Army's direct-support needs. "I hope [the] Army is thinking about more than 38 in the future here, even if the Air Force happens to have the platform, you know, temporarily or permanently, because it seems to me the Army's view is more than 38, based on all [the] Army has said thus far," Marshall said.

A C-27J cruises over Monument Valley, Utah, during a USAF evaluation test.

Despite Bartlett's strong support for expanding the C-27J program, the House-passed version of the Fiscal 2011 defense authorization bill, as well as the Senate Armed Services Committee's bill, includes \$351.2 million for eight C-27Js for the Air Force—matching the Obama Administration's request. Other priorities, such as getting a handle on cost hikes and schedule delays on the F-35 strike fighter program, have "pushed everything else off the table," Bartlett said prior to the bill's passage.

Still, Bartlett said he wants to at least bring the issue to light and get straight answers from the Army and Air Force about their operational needs for these aircraft.

"I think these things are budget driven, rather than need driven—and I think that's true about everything over there," Bartlett said. "We'd like to know what the need is. And if we can't get the money, we can't get the money, but we'd like at least to know what the need is." ■

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, "Getting on With the Neighbors," appeared in the March issue.



USAF photo by SrA. Nadine Y. Barclay

Putting the Pilot in the RPAs

By John A. Tirpak, Executive Editor

Remotely piloted aircraft are big business, but USAF must come up with the trained people to fly them.

Air Force leaders are working to build a new pilot culture in the service, creating a career track designed to turn officers without prior flying experience into operators of remotely piloted aircraft such as the MQ-1 Predator.

Officially institutionalized in June as Undergraduate RPA Training, the new course evolved from an experiment nearly two years in the making—called a beta test—which indicated that the syllabus will likely need to continue evolving.

A handful of officers have already passed the beta test to learn how to fly RPAs, and were awarded special wings

USAF photo by TSgt. Efrén Lopez



Left: A1C Caleb Force (r) points out targeting information to 1st Lt. Jordan Smith, a Predator pilot, during simulator training at Creech AFB, Nev. Below, an MQ-9 Reaper takes off for a night mission from Kandahar Airfield, Afghanistan.

recognizing their achievement. Some of those pilots are now operating drones in combat.

However, the experiment showed that candidates needed more actual flying time, more airmanship training, and more “seasoning” than initially expected, according to Air Education and Training Command officials.

The original idea was to create a course that would take less time and cost less than standard pilot training.

Lt. Gen. Philip M. Breedlove, deputy chief of staff for operations, plans, and requirements, said the step of formalizing URT signifies the Air Force’s commitment to RPAs and the importance of the aircraft “to the joint community.” The first official URT class will begin in October.

In February, AETC commander Gen. Stephen R. Lorenz said it could take up to five years to create a formalized URT course. “I can guarantee you we don’t have it 100 percent correct,” Lorenz said then, but added that AETC was working hard to get the kinks out. However, there were no glaring deficiencies reported in the training of beta candidates, Lorenz said.

Standard undergraduate pilot training (UPT) takes about a year. The beta course—not including initial qualification training—was originally expected to take about 15 weeks, but increased in length to about 22 weeks as more flying time was added to the curriculum and other coursework was expanded.

In September 2008, Gen. Norton A. Schwartz, Air Force Chief of Staff, raised the alarm that USAF was short of pilots for the RPA mission, and he announced two steps to address the shortfall.

First, he directed that 100 graduates of UPT each year would move on to learn how to fly drones, instead of

manned airplanes. The second step was establishing the beta test, to see if those without prior pilot training could master the skills necessary to fly the RPAs.

Flying an MQ-1 Predator or MQ-9 Reaper is not as simple as sitting at a computer display with a joystick and a satellite hookup. The pilots must communicate with military and civil air control systems, file flight plans, be able to fly both visually and by instruments, have knowledge of the rules of war, and understand the use of various kinds of weapons. Like other pilots, they must know emergency procedures, have a knowledge of aerodynamics and meteorology, and be able to work with other pilots and enlisted sensor operators, as well as troops on the ground needing surveillance or reconnaissance backup or close air support.

For a decade, pilots of RPAs (also called unmanned aerial vehicles) were drawn from the ranks of rated USAF pilots in all other systems, from fighters and bombers to transports. The first classes of betas, however, were drawn from a variety of career fields, according to Lt. Col. Bryan Runkle, director of operations for the 12th Operations Group at Randolph AFB, Tex., and director of the beta curriculum.

Hand On Stick, Up In the Air

“Some are second lieutenants,” fresh from ROTC, Officer Training School, or the Air Force Academy, Runkle said. “There have been captains from a cross section of career fields: ... [communications] officers, security forces, medical, you name it.” A few are not strangers to the cockpit: The beta program has inducted some navigators and combat systems officers from other types of aircraft.

Breedlove said URT candidates will be chosen from accession boards or from an undergraduate flying training board. The URT course will closely follow the beta test.

The beta classes—several are still under way—begin at Pueblo, Colo., where students receive more than 18 hours of flight instruction in small aircraft from a contractor, over a period of six weeks, Runkle said. This phase of the program mirrors the screening program that candidates for UPT receive. The flight instruction is to ensure that the candidates are not coming in cold. They’ll have had some time with hands on throttle and stick, up in the air.

After Pueblo, the classes move on to Randolph, which is the schoolhouse for RPA pilot and sensor operator training.

Their first course is called RPA Instrument Qualification (RIQ). During this phase, the betas take academic instruction in basic flying, and they receive 36 training missions in a simulator of the Air Force’s T-6 Texan II pilot training aircraft—but not the real aircraft.

During the 10-week RIQ phase, “we also expose them to a flying environment as much as we can,” Runkle said. Just like their UPT counterparts, they have a flight room, daily emergency procedure quizzes—better known as “standups”—as well as weather briefings, and “we try to put them through the normal stressors that a pilot training student goes through,” Runkle said.

In fact, the betas train alongside UPT students. “[They] share a flight room with the T-6 squadron here, they see how an operations desk works, they learn about go/no-go procedures, [and] sign off [on] all their required reading.”

After completing the RIQ, the betas move on to the one-month-long RPA Fundamentals Course, also at Randolph. Here they are joined by UPT graduates headed into Predators and Reapers, but who have never been assigned to a combat system before.

Graduates of UPT previously went directly to Creech AFB, Nev., for instruction in their drone system, but officials “realized after a short while that these guys were showing up without having already had an assignment as a flight lead or a wingman. They were lacking some basic knowledge and terminology and combat planning. So this course was created to fill that void,” Runkle explained.

At the fundamentals course, the students take classes in sensor theory, radar, electro-optical theory, command and control, weapons and mission planning, air defense systems, and how to communicate with ground troops.

There is even a physiology class, for while RPA pilots won’t have to endure G forces or sudden decompression, they still must know how to stay alert for 12-hour missions by managing their sleep cycles, diet, and personal health, Runkle noted.

Unique in the Air Force, the fundamentals course also puts the officer pilots together with the enlisted sensor operator students. In some classes, they sit side by side, receiving the same instruction. This is done deliberately, because in no other Air Force systems are officer and



The newly minted remotely piloted aircraft pilot wings.



USAF Chief of Staff Gen. Norton Schwartz pins remotely piloted aircraft wings onto the uniform of Capt. Steve Petrizzo during the graduation ceremony for the first RPA pilot class.

enlisted “aircrew” working side by side as a two-person team. Enlisted sensor operators must learn to communicate with their pilots and speak up if they see something wrong or need the pilot to move the aircraft to let the sensors have a better view, Runkle said. So far, there has been no reason for concern about fraternization or “any breakdown in good order and discipline.”

About half the sensor operators are cross-training from other enlisted career fields, he said; the rest are all fresh from basic training at Lackland AFB, Tex.

(Prior to the RPA Fundamentals Course, enlisted sensor operators go through two programs: the Aircrew Fundamentals Course and then the Basic Sensor Operator Training course. Over two months, they learn how electro-optical cameras work, how infrared detectors work, and how to manipulate the sensors on the aircraft. Although a radar sensor equips the MQ-9 Reaper, a radar element to the course hasn’t been added yet.)

The RPA Fundamentals Course gives a brief introduction to the systems on the MQ-1 and MQ-9, but is more of a general course on sensors and communications. One block of instruction centers on full-motion video, and how the RPA figures in the overall scheme of an air war.

There are also 11 hours of flying a desktop simulator “that models the sensors that are on the RPA.”

At the end of the course, students have a “capstone” event in which they must plan a mission to observe and attack a target.

“They work together as a team to come up with a plan to utilize all the

different air assets out there, how to mitigate all the threats, ... and obviously how to incorporate the RPA into their plan,” Runkle said.

All told, the program for nonpilots lasts about five months. That’s half the length of UPT, and with substantially less flying time. That figure doesn’t include training the betas on their ultimate weapon system, the Predator or Reaper, which takes place at Creech and can last several more months before the betas get their RPA wings.

A Bigger Net Needed

However, after the first two beta classes went through the program, it was decided to increase the flight screening phase by two weeks, “to give them more exposure to operations in three dimensions [to] increase their situational awareness and flight discipline skills,” Runkle said. The flight screening phase will increase the in-the-cockpit actual flying time from 18 to 30 hours.

“Right now, the feedback is mixed,” he noted. “Some of the betas are doing real well,” others are having some difficulty.

“The good news is, they’re all making it through training, and as expected, some are doing better than others. We hope that by adding some more flying time initially at Pueblo, that will help improve performance down the road.”

Asked if the beta program, if it continues to accrue flying hours and length, might begin to rival UPT in duration and cost, Lorenz said, “That’s an excellent point.” Time will tell if the RPA program winds up being as elaborate as UPT; the plan is that it will not, and

save both money and the time it takes to get new RPA pilots.

Lorenz said the Air Force must throw a bigger net to bring in RPA pilots. The service envisions “a crew ratio ... of 10 to one,” or 10 pilots to each aircraft.

“That is huge,” Lorenz said.

He believes that the ultimate mix of RPA pilots will include “a continuum” of experience, ranging from veteran pilots on other manned aircraft, to UPT graduates who go straight to RPAs, and finally to RPA pilots who have not flown operational manned aircraft. He hopes to have a compact disc ready by August which will be half game, half simulator of a Predator mission. Lorenz expects the disc will attract people to volunteer for RPA training.

Those who go through the beta program and successfully learn to fly either the MQ-1 or MQ-9 drones receive a newly designed set of wings and an aeronautical rating of RPA pilot. They also receive RPA Pilot Incentive Pay, which is equal to the Aviation Career Incentive Pay received by other pilots. They incur a six-year commitment to fly drones. In the future, RPA pilots are expected to be able to broaden their careers by moving into other fields.

However, for the moment, they are in such demand that “there has been an RPA enterprise freeze put in place,” an Air Staff official said. “Essentially, and with very few exceptions, pilots in the RPA enterprise will have to remain in it.” When the career field is “normalized,” RPA pilots will be able to take advantage of career broadening opportunities, and go to their professional military education courses without delay, he said.

No specific end-point was set for the beta test, but the establishment of the formal URT course means it will draw to a close late this summer. The URT course will be sharpened up, with elements added if Creech officials feel they should be.

RPA pilots will be tracked after they enter service, to see if, long-term, they perform any differently than their UPT counterparts. So far, five beta test classes, of about 10 students each, are in some stage of completion. However, the Air Staff official said that “due to the small sample size, ... it is premature to assign significance to ... early findings” of the Air Force Research Lab, which is conducting the study.

The creation of URT means it won’t be necessary to increase the numbers of UPT graduates each year, to fill the ranks of RPA operators. ■

Keeper File

“Lesson One” of the Gulf War

Rarely if ever has an American President promoted airpower more unequivocally than did George H. W. Bush at the US Air Force Academy's 1991 commencement. The Gulf War had just ended. In it, US fighter, bomber, and related forces had administered a startlingly swift and thorough beating to the forces of dictator Saddam Hussein. For Bush, the paramount lesson of the war was “the value of airpower.” Almost as important, he said, was his lesson two: the value of stealth.

As the world changes, our military must evolve and change with it. Last year, I announced a shift in our defense focus away from old threats and toward the dangers that will face us in the years to come. We need a more agile, flexible military force that we can put where it is needed, when it is needed. I also called for new technology in our defense systems. And I proposed a defense package to the Congress that meets these demands.

In the years ahead, defense spending will drop to below four percent of our gross national product, the lowest level in over 50 years. But we must spend that money in ways that address the threats that we are likely to face in the future. Although we developed this budget before the Gulf War, it anticipates very important lessons of that war—lessons that, frankly, some in the United States Congress now ignore.

Gulf lesson one is the value of airpower. I remember meeting with General McPeak [Gen. Merrill A. McPeak, USAF Chief of Staff] up at Camp David. In his quiet but forceful way, he told me exactly what he felt airpower could do. After he left, I turned to my trusted national security advisor—who's with me here today, a former political science professor here at the academy and a pilot, [Lt. Gen. Brent] Scowcroft—and said, “Brent, does this guy really know what he's talking about?” General Scowcroft assured me he did. And General McPeak, like the entire Air Force, was right on target from Day 1. The Gulf War taught us that we must retain combat superiority in the skies.

Then there's Gulf lesson two: the value of stealth. Surprise is a classic principle of warfare, and yes, it depends on sound intelligence work. But stealth adds a new dimension of surprise. Our air strikes were the most effective, yet humane, in the history of warfare. The F-117 proved itself by doing more, doing it better, doing it for less, and targeting soldiers, not civilians. It flew hundreds of sorties into the most heavily defended areas without a scratch.

The F-117 carried a revolution in warfare on its wings. The next step in that revolution is the stealth bomber, the B-2. Not only for its contribution to nuclear deterrence, but also from the standpoint of conventional cost-effectiveness, the B-2 has no peer. It carries over 10 times the conventional load of an F-117 and can fly five times farther between refuelings. It gets to the job faster, with more tons of ordnance—without the force buildup and time we needed prior to Desert Storm—and without needing foreign airfields in the immediate proximity of a conflict. And it replaces B-52 aircraft approaching twice the age of you graduates—and I say that respectfully. Yet, last week, the House of Representatives voted to terminate the B-2, redirecting those funds at unnecessary weapons. Anyone who tells you the B-2 is “too expensive” hasn't seen flak up

“Commencement Remarks”

President George H. W. Bush
Falcon Stadium, US Air Force Academy
Colorado Springs, Colo.
May 29, 1991

Find the full text on the
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“Keeper File”

close lately. America needs the B-2 bomber, and I'm going to fight for it every inch of the way.

Gulf lesson three: We learned that missile defense works and that it promotes peace and security. In the Gulf, we had the technologies of defense to pick up where theories of deterrence left off. You see, Saddam Hussein was not deterred, but the Patriot saved lives and helped keep the coalition together.

That's one reason that we've refocused strategic defense toward Global Protection Against Limited Strikes or GPALS, as we call it. It defends us and our allies from accidental launches or from the missile attacks of international renegades. While the Patriot worked well in the Gulf, we must prepare for the missiles more likely to be used by future aggressors. We can't build a defense system that simply responds to the threats of the past.

Yet some in Congress want to gut our ability to develop strategic defenses. Last week the House irresponsibly voted to cut nearly a billion from GPALS and to kill its most promising technologies. I call on the Senate today to restore our missile defense programs, to safeguard American and allied lives, and to promote security.

Gulf lesson four, the most fundamental, is the value of people. People fight and win wars, and this nation never has fielded better fighting men and women than it does today. In 1980, 68 percent of those enlisting in the military had high school diplomas. Now it's 95 percent and climbing. The military has become our greatest equal opportunity employer. It offers everyone a chance, and it promotes people solely on the basis of merit. The men and women you will soon be leading are the best educated and most motivated anywhere, anytime, ever. ...

You graduates will find that no other combat force you encounter will have your skills, your technology, or support. You'll find that in world leadership we have no challengers. But in our turbulent world, you will find no lack of challenges. And I know you are ready. ■



Weasels, using themselves as bait,
cleared a path through the SAMs.

Wild Weasel painting by Keith Ferris.

Take It Down! The Wild Weasels in Vietnam

By John T. Correll

The Soviet SA-2 surface-to-air missile was already well known to US intelligence when the Vietnam War began. It had brought down Francis Gary Powers in a CIA U-2 spyplane over the Soviet Union in 1960 and an Air Force U-2 during the Cuban missile crisis in 1962. The SA-2 had a range of about 25 miles and accelerated to Mach 3.5 as it closed on the target. It was deadly against aircraft

at medium and high altitudes. Its NATO code name was Guideline, but to the airmen who faced it in Southeast Asia, it was simply “the SAM,” or sometimes “Sam.”

The first SAM sites in North Vietnam were detected in April 1965. US military commanders wanted to destroy them right away, but Secretary of Defense Robert S. McNamara refused permission, fearing that Soviet technicians might be killed

and the conflict would escalate. John T. McNaughton, assistant secretary of defense for international security affairs, ridiculed the need to strike the SAMs. “You don’t think the North Vietnamese are going to use them!” he scoffed. “Putting them in is just a political ploy by the Russians to appease Hanoi.”

McNaughton’s surmise was soon discredited. On July 24, 1965, an SA-2 shot

down an Air Force F-4C, the first of 110 USAF aircraft lost to SAMs in Southeast Asia. The White House approved a retaliatory air strike, but by the time it got there, the SAM batteries were long gone. Instead, dummy missiles had been placed at the site as a “flak trap.” The attacking aircraft were lured within range of concealed air defense guns, which shot down four of them.



In August, US Pacific Command set up an operation called “Iron Hand,” in which Air Force and Navy aircraft would try to destroy or defeat the SAMs. However, Iron Hand did not yet have the necessary tools, which were developed through a rush Air Force project named “Wild Weasel.” Two-seat F-100F fighters were outfitted with radar homing and warning (RHAW) gear to detect emissions from the SAM’s fire control radar. The F-100F was armed with a 20 mm cannon and rockets to mark or attack the target. Navigator/electronic warfare officers were recruited from Strategic Air Command to fly in the backseats and operate the special equipment.

A Classic Combination

In November, the first Weasels reported to the 388th Tactical Fighter Wing at Korat AB, Thailand, where they teamed up with F-105D fighter-bombers for Iron Hand missions, and began flying missions in December. The Weasels found and marked the SAM sites, and the F-105s attacked them with missiles and bombs. It worked reasonably well. The Weasels flew as escorts with F-105D strike flights, and when in SAM territory, they moved out in front. The main problem was that the F-100, flying at 400 knots, was too slow. The F-105s, coming along behind at

Weasels of Note

Two Weasel pilots from the Vietnam War were awarded the Medal of Honor:

- Capt. Merlyn H. Dethlefsen. On March 10, 1967, Dethlefsen was leading the second element of the Weasel flight from Takhli, escorting a large strike force against the Thai Nguyen iron and steel works north of Hanoi in North Vietnam. When the flight leader went down, Dethlefsen took over. His aircraft was hit numerous times and sustained severe damage, but he made five passes against the air defenses, suppressed the SAMs, and destroyed at least one SAM site. He remained in the target area for an incredible 10 minutes in the face of an intense flak barrage.

- Maj. Leo K. Thorsness. On April 19, 1967, Thorsness was leading the Wild Weasel flight from Takhli, escorting a strike force bound for the North Vietnamese military complex at Xuan Mai in the Red River delta. Thorsness and his EWO, Capt. Harold E. Johnson, were credited with taking on “most of North Vietnam,” including MiGs, SAMs, and air defense guns. They shot down a MiG-17 and probably got another MiG, unconfirmed, because the gun camera had run out of film. When they had expended their Shrikes and cluster bombs, they refueled and returned to the area to fly cover for rescue teams, armed only with their 20 mm cannon. Thorsness received the Medal of Honor and Johnson was awarded the Air Force Cross. Eleven days later, on their 93rd mission, they were shot down and spent the rest of the war as POWs.

Fifteen Weasels were awarded the Air Force Cross for action in Southeast Asia: Maj. Robert S. Beale; Lt. Col. Earl G. Cobeil; Capt. John A. Dramesi; Capt. Kevin A. Gilroy; Maj. Gerald C. Gustafson; Capt. Jerry N. Hoblit; Capt. Harold E. Johnson; Lt. Col. James E. McInerney Jr.; Maj. Paul J. Mongillo; Maj. William P. Robinson; Capt. Fred Shannon; Capt. Rowland F. Smith Jr.; Maj. Bruce D. Stocks; Maj. Peter Tsouprake; and Capt. David H. Williams.

Two Weasels from the Vietnam War went on to become Air Force four-star generals. Chuck Horner, air boss in the Gulf War, was a Weasel at Korat in 1967. Joe Ralston, later vice chairman of the Joint Chiefs of Staff and NATO’s supreme allied commander in Europe, was a Weasel at Takhli in 1970.



Above left: Medal of Honor recipient Maj. Leo Thorsness (l) and his backseater, Capt. Harold Johnson, climb out of their aircraft after a Wild Weasel mission. **Above:** Medal of Honor recipient Capt. Merlyn Dethlefsen, pictured with his “Thud” at Takhli AB, Thailand.

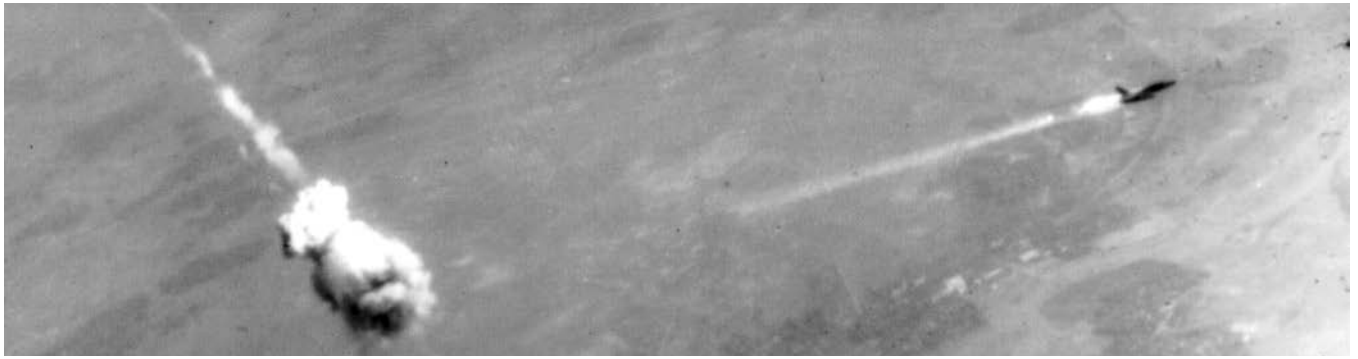
their preferred speed of 500 knots, had to weave to keep from overtaking the Weasels.

The obvious solution was to use the fast and sturdy F-105—known to all as the “Thud”—as the Wild Weasel aircraft. A number of two-seat F-105F trainers were promptly modified for Weasel duty. Like the F-100s, they had 20 mm cannons, but instead of target-marking rockets, they carried Shrike missiles, which homed on the SAM’s radar signals.

This was the classic Wild Weasel combination, replacing the F-100Fs, which flew

their last missions in July 1966. The first 11 of the F-105 Weasel aircraft arrived at Korat in May 1966, and another seven deployed to the 355th TFW at Takhli Air Base, also in Thailand, in July.

Unfortunately, the Air Force was not adding Wild Weasels as fast as the North Vietnamese were adding SAMs. By August, there were more than 100 SAM sites in operation. At first, they were clustered around Hanoi, but the coverage was soon extended to military and industrial areas as far south as Vinh.



The Weasels took a toll on the SAMs, but their own losses were stiff. All seven of the Takhli F-105Fs were shot down within six weeks. Success against the SAMs improved as the Weasels gained experience and developed better tactics, but 100 missions over North Vietnam—the number that counted for a full combat tour and a ticket home—was a difficult mark to reach. The saying among Thud pilots was that, “By your 66th mission you’ll have been shot down twice and picked up once.”

The early concept of Wild Weasel hunter-killer teams searching out and destroying SAMs did not last long. The Weasels were too few in numbers and all of them were required to escort the strike forces. The regular practice was for a four-ship Weasel flight to accompany the fighter-bombers when they went north. Ideally, all four aircraft in the flight would have been full-up Weasels, but there were never enough of them for that. Typically, the element leaders—flying in the No. 1 and No. 3 positions—were F-105F Weasels with F-105Ds in the wing positions. Sometimes only the flight leader was a Weasel.

All Weasel missions were into high-threat areas because that’s where the SAMs were. The Weasels, using themselves as bait, went in several minutes ahead of the main strike force to clear a path through the SAMs. “In essence, we would go in high enough to let somebody shoot at us and low enough to go down and get them,” said Maj. Leo K. Thorsness, leader of the Weasels at Takhli. If the site operators turned on the tracking radar or fired a missile, the Weasels would attack.

Each SAM site had five or six launchers, situated in a six-pointed star pattern around a 40-foot ring. The missiles were guided by a Fan Song radar in a van in the center of the ring. It took only six hours for the North Vietnamese to pack up the entire site and have it operational in a different location.

The SAMs were not effective below 3,000 feet, so the North Vietnamese covered this zone with anti-aircraft artillery, which

was particularly lethal at that range. When the Weasels eluded the SAMs by diving to lower altitudes, they entered the prime shooting gallery of the enemy guns.

The sites themselves were usually well camouflaged and difficult to see before the missile launched. However, when the Weasel aircraft was painted by the beam from the Fan Song, the crew got a distinctive crackle in their headsets. They called it the “rattlesnake.” The Fan Song needed about 75 seconds to acquire the target and fire the missile, which gave the Weasels time to home on the radar signal and shoot first.

Outwitting SAM

As employed against fighters in Vietnam, the SA-2 had a range of 17 miles, about twice the range of the Shrike, but Thorsness and his EWO, Capt. Harold E. “Harry” Johnson, found a solution. “We were consistently outgunned by 10 miles until Harry and I came up with the Shrike toss: Climb to 35,000 feet, plug in burner, pull nose up to 45 degrees—nearly stalled out,” Thorsness said. “We could hit SAMs about 35 miles away with this maneuver, a celebration day the first time we pulled it off.”

The next problem was to deal with the oncoming SAM. “The first stage booster that launches the SAM creates a good-sized dust storm on the ground, so if you happen to be looking in the right direction when it blasts off, you know that Sam is airborne and on the prowl,” said Col. Jack Broughton, vice wing commander at Takhli. “After the booster has done its job, it drops off and falls back to earth, leaving the propulsion to Sam’s internal rocket power. If you can see Sam, you can usually escape. It has little, stubby wings and it is going like hell, so it can’t turn very well. You can take it on just like another aircraft, and if you force it into a commit position and outturn it, it will stall out and auger in.”

At the warning cry of “Take it down!” the Weasels went into their most famous maneuver, the SAM break, a high-speed dive past the rising missile, followed by

An F-105 trails smoke just after a near interception by an SA-2 missile. The missile missed the aircraft, but the automatic fuse detonation threw fragments over a wide area.

a sharp pull up and change of direction. “Sometimes by descending you can even lose the SAM radar tracking you, or force the SAM to overshoot and pass harmlessly by,” said Capt. Don Carson, a Weasel at Korat. “If this does not work, at least you have one heck of a lot of airspeed you can use to make a break at the last moment and maybe make the SAM miss your aircraft.”

Another tactic, developed by Capt. Jerry N. Hoblit at Takhli, was to split the four-ship flight into two pairs, one Weasel element on the left side ahead of the strike force and the other on the right. This allowed them to provide more coverage, although at increased risk to themselves.

Sometimes the SAM site operators fired their missiles in groups of three. “The North came up with a new tactic we called Dr. Pepper, and the Weasels wound up dodging missiles coming at them from 10, 2, and 4 o’clock at the same time,” Broughton said. (Dr. Pepper soda pop bottles of the day featured a dial with 10, 2, and 4 o’clock marked.)

The Weasels were not only first in but also last out. Their presence was often enough to intimidate the SAM operators and make them turn off their radars. To maintain the suppression, some of the Weasels remained as a rear guard until the last of the strike flight had departed.

Beginning in late 1967, the F-105Fs were upgraded to an F-105G configuration, which had improved avionics. In addition, they got a better weapon, the AGM-78 Standard anti-radiation missile, which not only was faster than the Shrike but also had almost four times its range and a larger warhead. From March 1968 on, the Standard ARM steadily supplanted the Shrike.

The Weasels were less enthusiastic about another innovation—electronic countermeasures jamming pods. The

defensive advantages of an ECM pod were offset by the fact that the pod rendered the radar homing and warning gear useless. "Toward the end of our era there, I was given the option of carrying one Shrike and one ECM pod," Thorsness said. "I had confidence in the evasion tactics we developed and not a lot of confidence in the ECM pod, so we always went with two Shrikes for more killing power."

Weasel aircraft, already in short supply, were spread even thinner when some of the F-105Fs were modified for night and all-weather bombing under the Commando Nail program. Participants were also called "Ryan's Raiders," after the Pacific Air Forces commander, Gen. John D. Ryan, whose idea it was.

Some pilots flew both Wild Weasel and Commando Nail missions. Among those little impressed with the latter concept was Gen. William W. Momyer, commander of Seventh Air Force in Saigon, who would have preferred to use all of the F-105Fs to fight SAMs.

The Weasels, like other aircrews in Vietnam, were hampered by operational constraints. "Knowing that US rules of engagement prevented us from striking certain kinds of targets, the North Vietnamese placed their SAM sites within these protected zones whenever possible to give their SAMs immunity from attack," said Momyer. "Within 10 miles of Hanoi, a densely populated area that was safe from attack except for specific targets from time to time, numerous SAM sites were located."

"We could not, however, hit the SAMs that were unloaded and stacked in rows at Haiphong harbor," Thorsness said. "Sometimes the Russian ship was still unloading, but we could not touch the ship or SAMs. Stupid war!"

The effectiveness of the North Vietnamese SAM operators, measured by the number of US aircraft shot down compared to the number of missiles fired, declined from 5.7 percent in 1965 to less than one percent in 1968. The toll was further reduced by the intimidation factor; some SAM crews would shut down their systems for fear of Wild Weasel attack. Unfortunately, US losses were still high, because the North Vietnamese launched more missiles with each passing year. The worst year was 1967, when 3,202 SAMs were fired, bringing down 56 American airplanes.

The epic battle between Weasels and SAMs tapered off in 1968 with the halt of US bombing of North Vietnam. When the fighter wing at Takhli was deactivated

in 1970, most of the surviving Weasels pulled out of Southeast Asia, and those that remained were consolidated into a single squadron at Korat.

In January 1970, the Weasels began escorting RF-4C reconnaissance aircraft on flights over North Vietnam, but were tightly restricted in the circumstances under which they were allowed to fire on a SAM site. Under the "protective reaction" rules of engagement, a Weasel could not engage until the Fan Song radar was activated against it or an RF-4.

However, the North Vietnamese had upgraded their defenses. They tracked the US reconnaissance flights with long-range radars whose emissions the Weasels could not detect. The Fan Song, netted to these radars, could wait until the last minute to turn on. In one four-month period, some 200 SAMs were launched at US aircraft.

This set up a vast controversy in which Gen. John D. Lavelle, commander of Seventh Air Force, reasoned that the air defense system was thus activated whenever US fighters were present and that a protective reaction strike was justified. In 1972, it came to light that operations reports had been falsified to indicate that the RF-4s had been fired upon when, in actuality, the "preplanned protective reaction" strike was against targets developed by intelligence reports. Lavelle was summarily relieved from command, ordered back to the United States, and retired with a two-grade reduction in rank.

The Final Weasel Mission

The Lavelle imbroglio was still swirling in March 1972 when a large North Vietnamese force crossed the Demilitarized Zone in the "Easter Invasion." Suddenly, the war—and the bombing of North Vietnam—was back on.

The resumed air campaign in North Vietnam was named Operation Linebacker, which evolved into Linebacker II. Most of the US ground forces had been withdrawn under President Nixon's "Vietnamization" policy, so the Air Force and Navy launched an airpower buildup in response.

The Weasels at Korat were reinforced by a squadron from McConnell AFB, Kan., which raised to 28 the number of F-105Gs in theater and also brought in a new kind of Weasel: the F-4C. It had been understood from the beginning that

the F-105 could not be the final answer to the Weasel requirement. The Thud production line was closed and replacements for those lost were limited. An F-4C Weasel variant had been developed at the same time as the F-105 Weasel, and squadrons were based in Germany and Okinawa, at Kadena Air Base. The Kadena squadron deployed to Korat in October 1972, but had to fly its missions north armed with Shrikes. There was not enough space on the airframe for the Standard ARM.

North Vietnam had about 30 SAM sites in operation, and during Linebacker, they fired 4,244 missiles at US aircraft. The Weasels teamed with F-4E fighter-bombers to wipe out SAM sites, radar vans, and launchers with cluster bombs and other munitions. The final mission of the Weasels in Vietnam was to escort the B-52s in the Linebacker II bombing of Hanoi in December 1972.

There were some F-105s left at the end of the war, but their day was over. All models of the Thud had taken terrible losses and those not shot down were wearing out. Forty-six Weasel F-105s and two Weasel F-100Fs were lost in combat.

The number of SAMs destroyed is uncertain. "A Soviet general who served with the North Vietnamese air defense forces claimed that they were provided with 98 missile systems and 7,500 missiles and finished the war with 45 sites and 2,300 missiles," said Hoblit, who has collected a trove of data about the Weasels and the SAMs.

To the number, whatever it is, must be added the beneficial effect of suppressing and deterring the SAMs through intimidation. There is no way to figure how many US airmen lived through the war because of the efforts of the Wild Weasels.

The next-generation Weasel was the F-4G, introduced in 1978. It was a modified version of the F-4E, larger than the F-4C, and it could employ either the Standard ARM or the new AGM-88 HARM.

The F-4G remained in service for 20 years, and performed with distinction in the Gulf War.

The Wild Weasel mission today is performed by specially trained F-16CJ crews, carrying on the tradition established by the F-100s and F-105s in combat over North Vietnam. ■

John T. Correll was editor in chief of Air Force Magazine for 18 years and is now a contributing editor. He wrote two previous articles on Wild Weasels for Air Force Magazine, "Full Day," about Leo Thorsness (June 2005), and "Calculated Courage at Thai Nguyen," about Merlyn Dethlefsen (February 2006).



Security (CIAS) at the University of Texas, San Antonio. He served 19 years on active duty with the US Air Force and recently retired as a Reserve colonel.

At CIAS, White has run college-level security competitions for years. He had long thought that younger tech-oriented teenagers would be enthralled by playing in their own competition. With lots of help from AFA, White found out he was right.

AFA saw *CyberPatriot* as an aerospace education initiative with the potential to have a national impact. Beginning in 2008, AFA pulled together money, equipment, and expertise to set up the first round—*CyberPatriot I*—in just 12 months.

This initial competition, held in 2009, was a prototype event. It drew in eight high school teams from Air Force JROTC and CAP units located close to the Orlando, Fla., site of AFA's annual Air Warfare Symposium.

CyberPatriot Gets

This time, AFA expects some 1,000 high schools to square off in search of the top prize.

By Peter Grier

CyberPatriot is scaling up. The Air Force Association's innovative high school cyber security competition has new corporate sponsors and big plans for expansion in the 2010-11 school year.

The first two rounds of *CyberPatriot* games, held in February 2009 and 2010, featured teams of teenagers drawn from Air Force Junior Reserve Officer Training Corps and Civil Air Patrol units. In the upcoming round, JROTC members from all services and interested teams with no military affiliation will also be eligible.

"We want to reach the broadest possible demographic," S. Sanford Schlitt, AFA Vice Chairman of the Board for Aerospace Education, said at a May 12 event at the National Press Club in Washington, D.C. Registration for the competition began the next day.

A grant from Northrop Grumman has helped make possible this step to full nationwide deployment. Raytheon has also joined the effort as a *CyberPatriot* strategic partner.

Every year, US youth are exposed to more and more complicated technology—and more and more complicated cyber threats, noted Diane G. Miller, director of operations for Northrop Grumman's Cyber Security Group and *CyberPatriot* program manager.



Top: Team Doolittle, the winning group from Clearfield High School, Clearfield, Utah. Above: CAP Team Cochran, the third place team, from Torrance, Calif., with Siobhan Moran, from SAIC, observing.

CyberPatriot intends to teach students how to fight back against electronic adversaries. "Defending and protecting our cyber-enabled world is a national priority," said Miller.

CyberPatriot is patterned after the National Collegiate Cyber Defense Competition. The founder of the college-level contest, Gregory B. White, is the director of the Center for Infrastructure Assurance and

Organizers did not really know what to expect—in particular, the extent to which the contestants would truly engage with the challenge presented to them. They worried that the teenagers would find the computer security challenges to be too hard or, worse, just dull.

They needn't have been concerned. The kids were so involved in the competition that

when Team Spaatz from Osceola High School in Kissimmee, Fla., was named the winner, people heard the cheering in the next hall.

"You'd have thought it was the finals of the Olympics," said AFA Chairman of the Board Joseph E. Sutter.

CyberPatriot II built on this success. It brought together more than 200 five-member AFJROTC and CAP teams from 44 states and Japan. After three online qualification rounds, the eight surviving finalist teams competed in the championship round, held in February in Orlando.

This time, the winner was AFJROTC Team Doolittle from Clearfield High School, Clearfield, Utah. CAP Team Curry from Burlington, N.C., came in second, and CAP Team Cochran from Torrance, Calif., finished in third place.

"This was a great learning opportunity, and just a lot of fun for the teams," said Kit K.



AFJROTC competitors from Newburgh Free Academy, Newburgh, N.Y.

ts Serious

Workman, Team Doolittle's coach, following the February victory. "They worked hard, and it was exciting to see them rapidly gain skills. They are definitely more interested in the cyber security career field as a result."

CyberPatriot III will be a truly national, full-scale competition. For the first time, any interested US high school student will be eligible, whether or not he or she is affiliated with the military.

In one division, the competition will feature some 500 JROTC and CAP teams, while in another, 500 unaffiliated students will compete. Teams in both divisions will work through parallel online training and qualification rounds to pick finalists for an in-person showdown at the new AFA CyberFutures Conference, scheduled to take place in April 2011 at the Gaylord National Resort & Convention Center at National Harbor, Md., near Washington, D.C.

Tens of thousands of teenagers ultimately will be involved in this competition, said AFA officials. Win or not, they will gain exposure to the vital and fast-growing field of cyber defense technology, at an age when many youths are beginning to think about the direction of their careers.

"The Air Force certainly needs more cyber defenders, and it's important to the nation as a whole," said Sutter. "*CyberPatriot* excites, it motivates, and it teaches."

AFA intends to recruit teams by asking members in its chapters around the nation to spread the word at the grassroots level. As

a presenting sponsor, Northrop Grumman will provide both funds for *CyberPatriot* expansion and expert employees to train and mentor participants.

This year, the contest will open with a new and expanded online training component. This will both teach participants principles of general computer security awareness and prepare them for the specific competitive task they'll face.

Science Applications International Corp.—a founding partner—will provide the competition platform. The contest will begin when a team downloads a software-created image of a server, a "Virtual Machine," which is connected to a scoring server at SAIC. This scoring server is part of SAIC's CyberNEXS commercial cyber defense trainer. As the competitors will soon find out, this Virtual Machine is flawed. The team's job is to fix it.

Half the teams will proceed to a second round, which will feature a more complex online problem. Subsequent rounds will reduce the competitors, until 17 teams remain. These teams will win trips to the CyberFutures Conference and the final showdown.

It is no secret that the US needs more cyber defenders—and soon. The nation's networks face persistent attacks, including complex criminal hacker schemes, and

cyber espionage from China and other nations.

And the US is in the position of defending the most cyber "coastline" in the world. It has the world's largest economy and most advanced military, and both are highly dependent upon the smooth operation of networked computer systems and databases.

"We'd become debilitated if they were out of use," noted Northrop Grumman's Miller.

That is one reason Secretary of Defense Robert M. Gates ordered the creation of US Cyber Command, a subunified command that falls under US Strategic Command. The new unit reached initial operational capability on May 21.

"This command is not about efforts to militarize cyberspace; rather, it is about safeguarding the integrity of our military's critical information systems," said Army Gen. Keith B. Alexander, Cyber Command commander and director of the National Security Agency, at his confirmation hearing in April.

In this field, safeguarding is more difficult than attacking, note experts. Hackers only have to find one chink in a system's cyber armor to do their damage. Defenders must mount a broad effort that takes into account the way hackers work, even as they struggle to keep systems up and in business.

CyberPatriot organizers note that they teach defense, not offense. "It is not a hacker competition," says AFA's Schlitt.

Instead, *CyberPatriot* aims to use its game-like format to excite US youth and get them into a career field in which the US will need tens of thousands of new specialists a year for decades to come. ■

Peter Grier, a Washington, D.C., editor for the Christian Science Monitor, is a long-time defense correspondent and a contributing editor to Air Force Magazine. His most recent article, "Science Right From the Start," appeared in the March issue.



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MULTI V I E W



AFA National Report

natrep@afa.org

By Frances McKenney, Assistant Managing Editor

Neither Rain, nor...

Hosted by the **Everett R. Cook Chapter** in Jackson, Tenn., the Tennessee State Convention featured Air Force Association Chairman of the Board Joseph E. Sutter and Army National Guard Col. Arthur W. Oliver as keynote speakers—and a record-breaking 16 inches of rainfall and flooding.

Amidst torrential rains, the convention got under way on April 30, with an awards banquet attended by nearly 50 guests. Among the honorees: MSgt. Brian R. Fisher, of the 332nd Recruiting Squadron, and TSgt. Richard Blankenship, of the 345th Recruiting Squadron, named Recruiters of the Year; the 164th Airlift Wing from Memphis Airport, named Outstanding ANG Unit; and Capt. Derek Wrench, 164th Logistics Readiness Squadron, honored as Outstanding Guardsman.

According to Cook Chapter President James A. Van Eynde, hotel staff woke up guests at 3:30 a.m. the next day to usher them into a lower interior area because of a tornado warning. A few hours later, the AFAers held their business meeting, re-electing their current state officers: from the **Gen. Bruce K. Holloway Chapter**, President Alfred M. Coffman Jr., Secretary Derick E. Seaton, and Treasurer Pauline K. Morrissey. Dan F. Callahan III of the **Maj. Gen. Dan F. Callahan Chapter** was re-elected vice president.

Sutter reported that when convention-goers headed home that day, a foot of rain had already accumulated in Jackson, located west of Nashville. It took Cook Chapter Treasurer Glenn Fuller five hours, in driving rain, to get home to Memphis.

RED HORSE in the Reserve

In North Carolina, a recent **Scott Berkeley Chapter** meeting featured a Rapid Engineer Deployable, Heavy Operational Repair Squadron, Engineer unit—better known as RED HORSE.

Guest speaker Col. Timothy Lamb heads Air Force Reserve Command's new 567th RED HORSE Squadron, established at Seymour Johnson AFB, N.C., in November 2008.



AFA Board Chairman Joe Sutter congratulates cadets from North Side High School, Jackson, Tenn., whose unit was named tops in the state at the Tennessee State Convention. Left to right: Trey James, Sutter, Natalie Haynes, Rico Wade, and Frank Perry.

Chapter President Michael E. Hartsfield reported that Lamb spoke about the history of RED HORSE and its contribution to the War on Terror.

Lamb mentioned “the father of RED HORSE,” Brig. Gen. William T. Meredith, who began his career as a private in the US Army Corps of Engineers in 1941. Meredith led construction of airports in India and received a battlefield commission in 1943, after an ambush cut off his patrol for two weeks, forcing the men to walk 127 miles out of enemy territory. In 1961, Meredith began restructuring civil engineering organizations to provide direct combat support. The results were PRIME BEEF (Base Engineer Emergency Forces) and RED HORSE.

Hartsfield said that the chapter members, gathered at a local barbecue restaurant for this meeting, were mostly active duty retirees and asked Lamb about commanding a Reserve unit. They wondered, for example, where the squadron members come from (four states, it turns out).

Hartsfield said he invited Lamb to address the chapter not only because

he heads the base's newest unit but because they are both Reservists and in the same career field. “Most of our speakers are from the flying side of things,” Hartsfield explained.

RED HORSE: Air National Guard

In Virginia, the **Tidewater Chapter** has benefitted from RED HORSE construction know-how, as well as the generosity of a host of Community Partners.

The 203rd RED HORSE Squadron, Virginia Air National Guard, recently began work on a parade float that the chapter hopes to debut on Veterans Day.

Membership Dues To Increase

On Sept. 13, 2009, AFA convention delegates approved the first association dues increase since 2001. (Previous increases were in 1993 and 1997.) One-year membership will increase to \$45; three-year membership to \$110; and life membership to \$600. The increase will be implemented for all categories on July 1. The delegates also directed a review of the dues structure. The review will begin in 2012.

More photos at <http://www.airforce-magazine.com>, in “AFA National Report”

The float will feature a Christen Eagle II kit aircraft, minus the engine, modified to look like a T-6 Texan II. Robert Felten of Virginia Beach donated the frame.

In May, RED HORSE volunteers CMSgt. Robert Laws, MSgt. Dennis Boyd, MSgt. Andre Davis, and TSgt. Terence A. Sheridan provided the muscle and a vehicle to move aircraft sections to a 203rd facility at Camp Pendleton in Virginia Beach, where the float building will take place and where it will be stored in between parades.

Hoy Construction Co. of Norfolk donated the trailer, and the RED HORSE volunteers prepared it so the airplane can be mounted on it.

Led by Chapter President William M. Cuthriell, chapter members have volunteered for the float building and have lined up several Community Partners to cover everything from technical support to painting the aircraft to providing decals and signs for the float.

Drill in Virginia

With a performance by special guests, the US Air Force Honor Guard from JB Bolling, D.C., as inspiration, AFJROTC cadets competed in the Virginia State AFA Drill Championship in April. The **Tidewater Chapter** and **Richmond Chapter** cosponsored the event.



In North Carolina, Scott Berkeley Chapter President Michael Hartsfield presents a thank you gift to guest speaker Col. Timothy Lamb of the 567th RED HORSE Squadron, Seymour Johnson AFB, N.C.

More than 450 cadets from 23 units gathered at Atlee High School, just outside of Richmond, Va., for this fifth annual competition.

The cadets competed for 59 awards and trophies in categories such as color guard, armed and unarmed regulation,

armed and unarmed exhibition, and inspection. Cadets from E. C. Glass High School in Lynchburg won the state champion trophy, taking first place in the color guard and inspection divisions.

Tidewater Chapter President Allan G. Berg noted that all Virginia chapters

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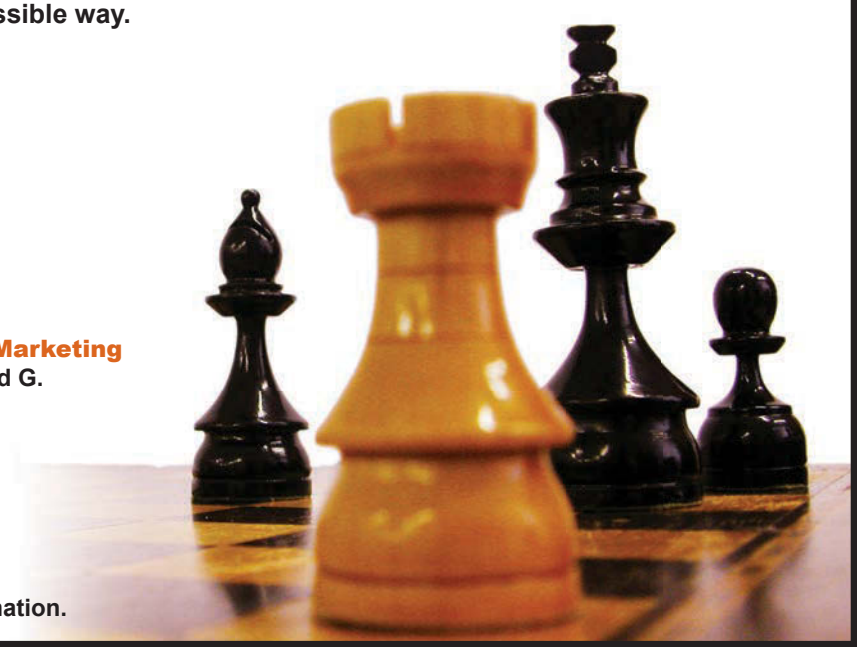
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have a hand in this drill meet, providing financial support.

McChord Awards

The latest awards banquet organized by the **McChord Chapter** in Lakewood, Wash., received tremendous support from Community Partners, says Chapter President Tommy L. Carson.

“We have so many Community Partners that stepped up and contributed to the awardees,” he wrote in an e-mail. A hotel donated a night’s stay, restaurants donated meals, and some of the other Community Partners—whose numbers approach 150—donated cash and AFA memberships.

Among those who received AFA awards for outstanding performance were: Capt. Jonathon Waller, MSgt. Angela Fernandez, MSgt. Thomas Prochazka, TSgt. Lara Koler, SrA. Joshua McCabe, and civilian Charles Thornton.

Carson said their unit commanders took part in the awards ceremony, describing the day-to-day work and community service of each recipient. “They know the awardee better than anyone,” commented Carson, “and [this] is a great way to get them involved in this annual awards event.”

Guest speaker was Lt. Col. Bruce Beyerly, commander of the 5th Air Support Operations Squadron at JB Lewis-McChord, Wash. The unit provides tacti-

cal air control party personnel to three Stryker brigade combat teams. Last year, Beyerly served at Contingency Operations Base Speicher, near Tikrit, Iraq, as senior Air Force advisor to the 25th Infantry Division.

Home to a Medal of Honor

In April, the **Richmond Chapter (Va.)** held a luncheon meeting at the family home of the late Col. William A. Jones III, the Vietnam War Medal of Honor recipient.

Chapter Secretary Elizabeth H. Jones and Anne Gilfillan—daughters of the Air Force hero—and Rusty Gilfillan, Anne’s husband and also a chapter member, hosted the AFA group. While Chapter President Harper S. Alford manned a grill, cooking up hamburgers and hot-dogs for lunch, some of the 22 visitors toured the house.

The two-story Victorian Queen Anne-style farmhouse is located in Warsaw, Va. The original structure was burned during the Civil War, so the present house dates to about 1888.

William Atkinson Jones, a US Representative who served in Congress from 1891 until his death in 1918, built it. Jones sponsored the Philippine Autonomy Act of 1916, committing the US to granting the Philippines its independence.



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AFA National Report

The Jones house contains memorabilia associated with that event.

The Congressman's grandson lived for a time in Warsaw but grew up in Charlottesville, where today an AFA chapter is named in his honor. As a special operations squadron commander in 1968, Lieutenant Colonel Jones led an A-1 Sandy mission to rescue a downed pilot in North Vietnam. AAA hit his Skyraider, and fire engulfed the cockpit. Though severely burned, Jones flew the A-1 back to base in Thailand and relayed the position of the downed pilot. He later died in a private airplane accident in Virginia before he could formally receive his Medal of Honor.

The medal is among the items displayed at the home.

More Chapter News

■ From Tallahassee, Fla., **Col. H. M. "Bud" West Chapter** Vice President John E. Schmidt Jr. and Gary B. Sharpe drove north some 40 miles across the border into Georgia to attend an AFJROTC awards banquet at Thomasville High School in April. Schmidt presented an AFA medal to cadet Kendra Osborn. ■

reunions@afa.org

Reunions

8th Tactical Fighter Wg, Itazuke AB, Japan. Oct. 13-16 at the Hilton East in Tucson, AZ. **Contact:** Bob Delaney (520-878-0555) (del@dakotacom.net).

91st BG Memorial Assn (WWII). Sept. 29-Oct. 3 in Dayton, OH. **Contact:** Jim Shepherd (714-970-5540).

98th BG/BW Veterans Assn. Sept. 12-16 in Savannah, GA. **Contact:** Bill Seals (281-395-3005) (colbillyseals@hotmail.com).

390th SMW, Davis-Monthan AFB, Ariz. Oct. 27-31 at El Tropicana Hotel, San Antonio. **Contact:** Elaine Lasher, PO Box 17916, Tucson, AZ 85731 (520-886-7157) (redsnooty@comcast.net).

Airborne Battlefield Command & Control Center veterans. Oct. 7-10 at the Ramada Plaza in Dayton, OH. **Contact:** Ken Witkin (301-758-8365) (abccc_association_president@verizon.net) (abcccassociation.org/abccc_reunion.html).

Assn of Former Office of Special Investigation Agents. Sept. 15-19 in Colorado Springs, CO. **Contact:** Dick Law (afosisa@aol.com).

B-47 Stratojet Assn. Sept. 23-26 in Omaha, NE. **Contact:** Dick Purdum, 13310 South 26th Ave., Bellevue, NE 68123 (402-291-5247) (dickpurdum@cox.net).



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Karmursel AS, Turkey (1957-61). Sept. 18-21 at Beach Cove Resort, Myrtle Beach, SC. **Contact:** Pete Johnson (704-243-6769) (pjohnson010@carolina.rr.com).

Korean War veterans and families. July 27 in Washington, DC. RSVP requested. **Contacts:** J. Norbert Reiner, 6632 Kirkley Ave., McLean, VA 22101 (703-893-6313) or Tony Dzierki, 6610 Greenview Ln., Springfield, VA 22152 (703-451-5591).

Malden AAF, Mo., all personnel. Sept.

9-11 in Malden, MO. **Contact:** Barb (573-276-2279) (www.maaps.net.).

Mt. Hebo AFS, Ore., including 14th Missile Warning Sq, 689th AC&WS, 689th Radar Sq, and civilian employees. Sept. 11-12 in Tillamook, OR. **Contact:** Van Silas (541-779-0723) (k7vs@arri.net).

Tan Son Nhut Assn. Oct. 7-10 in San Antonio. **Contact:** George Plunkett (viet62@aol.com). ■

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Jeff Platte
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State Contact

DELAWARE: Richard B. Bundy, 39 Pin Oak Dr., Dover, DE 19904 (302) 730-1459.
DISTRICT OF COLUMBIA: Curt Osterheld, 2416 Stryker Ave., Vienna, VA 22181 (202) 302-5046.
MARYLAND: Robert Roit, P.O. Box 263, Poolesville, MD 20837 (301) 349-2262.
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Region President

Richard Taubinger
12 Century Ct., Roseville, CA 95678 (916) 771-3639.

State Contact

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914 Highway 90 W, Holt, FL 32564 (850) 305-2855.

State Contact

FLORIDA: Jim Connors, 914 Highway 90 W, Holt, FL 32564 (850) 305-2855.

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Region President

John McCance
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State Contact

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State Contact

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Region President

Mark J. Dierlam
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State Contact

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State Contact

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John Toohy
1521 Soplo Rd. SE, Albuquerque, NM 87123 (505) 294-4129.

State Contact

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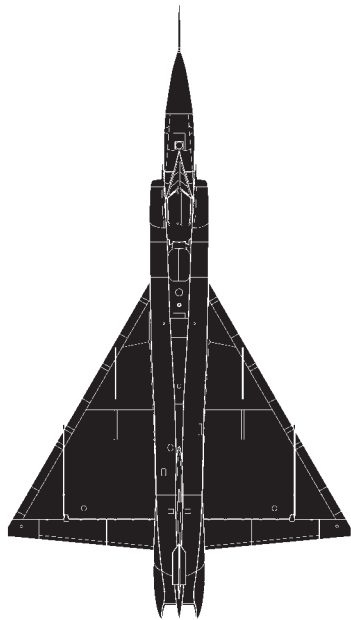
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Artwork by Zaur Eylanbekov

F-102 Delta Dagger



The F-102 was the world's first supersonic all-weather jet interceptor and the US Air Force's first operational delta-wing aircraft. Consolidated Vultee led the nation in exploiting the delta-wing concept pioneered by Alexander Lippisch in Germany, with the first production item being the beautiful, sharp-edged Delta Dagger.

The YF-102 was a scaled-up version of the XF-92 experimental aircraft, but its first flight was a disappointment; it was not able to achieve supersonic flight, as anticipated. During a four-month-long major rework, the design was modified to conform to Richard T. Whitcomb's Area Rule. The fuselage was lengthened and reduced in diameter at the mid-section. "Whitcomb bodies" were added to the

rear fuselage and a P&W J57 engine was installed. The revised YF-102A achieved supersonic flight on Dec. 21, 1954. The Air Force gave a production go-ahead, and the fighters rolled out.

The F-102 became the backbone of Air Defense Command, an outfit charged with engaging and defeating any intruding Soviet bombers. Production F-102s initially received the sophisticated Hughes MG-3 fire-control system, but this was later updated. The fighter served briefly during the Vietnam War as bomber escort, FAC, and ground attack. They were armed with air-to-air missiles housed in an internal weapons bay. The F-102 served ably until it was finally retired in 1976.

—Walter J. Boyne

This aircraft: F-102A-90-CO—#57-0775—as it appeared in 1969 when assigned to California Air National Guard's 196th Fighter-Interceptor Squadron, Ontario Arpt., Calif.



In Brief

Designed, built by Convair ★ first flight Oct. 24, 1953 ★ crew of one ★ number built, 1,000 ★ **Specific to F-102A:** one PW J57 turbojet engine ★ armament six AIM-4 air-to-air missiles; 24 2.75-in rockets ★ max speed 825 mph ★ cruise speed 606 mph ★ max range 1,000 mi ★ weight (loaded) 31,500 lb ★ span 38 ft 1 in ★ length 68 ft 3 in ★ height 21 ft 2 in.

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Interesting Facts

Nicknamed "the Deuce" ★ designed without a gun (first for a USAF fighter) ★ became world's first operational supersonic delta-wing aircraft ★ used often in Vietnam War as a FAC aircraft ★ suffered combat losses (15) during SE Asian War, but only one air-to-air loss ★ flown by Turkey's air force in combat over Crete ★ converted after combat service to QF-102A piloted drones and PQM-102A unmanned drones ★ led to F-106 Delta Dart and some aspects of the B-58 Hustler.



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