

January 2016/\$10

Journal of the Air Force Association

# AIR FORCE

MAGAZINE

# 25

# YEARS at WAR





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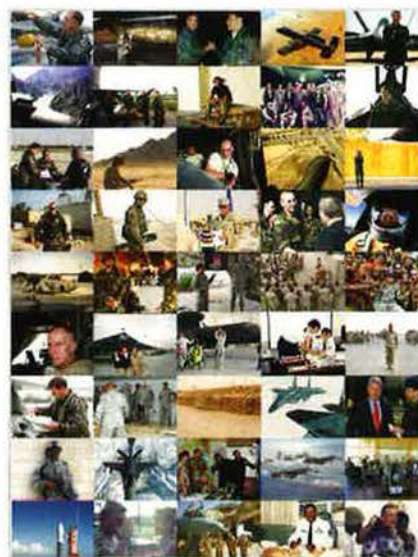
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**AIR FORCE Magazine** (ISSN 0730-6784) January 2016 (Vol. 99, No. 1) is published monthly by the Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Phone (703) 247-5800. Periodical postage paid at Arlington, Va., and additional mailing offices. **Membership Rate:** \$45 per year; \$30 e-Membership; \$110 for three-year membership. **Life Membership (nonrefundable):** \$600 single payment, \$630 extended payments. **Subscription Rate:** \$45 per year; \$29 per year additional for postage to foreign addresses (except Canada and Mexico, which are \$10 per year additional). Regular issues \$10 each. USAF Almanac issue \$20 each. **Change of address** requires four weeks' notice. Please include mailing label. **POSTMASTER:** Send changes of address to Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association. Copyright 2016 by Air Force Association.

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**AIR FORCE ASSOCIATION**

# The Sun Also Rises

**B** RITAIN'S new defense white paper signals big changes in that nation's military posture, calling for significant increases in airpower, intelligence, and special operations capabilities. Ten days after the ISIS attacks in Paris, the UK released the Strategic Defense and Security Review. Then Parliament voted in early December to authorize British air strikes against ISIS targets in Syria.

These moves marked an abrupt and welcome reversal of Britain's previous five years' direction. The last time the UK conducted such a review, it ushered in draconian defense cuts and an implicit withdrawal from the world stage. (See "Washington Watch: The Sun Sets," December 2010.)

Britain's reversal is timely, keyed to real-world security demands—and is a promising reminder that military austerity need not be permanent. Nations can and should adjust their defense plans when necessary.

"We can now treat [Iraq and Syria] as one theater and use our expertise against ISIS-Daesh in its heartland," said UK Defense Secretary Michael Fallon Dec. 11 at the Pentagon. "We have brought more planes to the region and we have more than doubled the number of missions that we fly by day and by night."

Fallon said the British jets would perform "precision strikes against key infrastructure: the oil well heads, the ammunition depots, the logistics, the command and control, the supply routes between Syria and Iraq."

This is significant because, although the UK was heavily involved in anti-ISIS operations in Iraq, until now targets in Syria were off-limits. ISIS doesn't recognize international borders, however, and its center of gravity is clearly in Syria.

"We have doubled our strike force in Cyprus, moving aircraft there immediately after the vote," Fallon said. "We have already been playing the second biggest part against these terrorists in Iraq. We're providing some 60 percent of the coalition's entire tactical reconnaissance and up to a third of the precision strike capability."

The UK will meet the NATO guideline for a minimum of two percent of GDP dedicated to defense. The additional funding significantly bolsters that nation's airpower. The UK is adding some \$18 billion to its defense spending plans over the next five years.

Under the 2010 plan, the RAF was to go down to six combat fighter squadrons by 2020. The SDSR plan buys back three operational squadrons, for a total of nine. It also authorized a service life extension and upgrade program for aging Eurofighter Typhoons and accelerated acquisition of the UK's first 24 F-35 strike fighters, to be jointly operated by the RAF and Royal Navy.

Plans in 2010 called for the Royal Navy's two new Queen Elizabeth-class carriers to be operational by 2023—but with only eight F-35s available to fly off of them. The accelerated program calls for the carriers to have 24 stealthy strike fighters available within eight years.

## The UK has abruptly changed course on airpower—for the better.

The UK is also sticking with its plan to buy a total of 138 Lockheed Martin F-35s.

The review reverses one of the most controversial decisions from 2010, when the UK chose to retire its Nimrod maritime patrol and attack aircraft. That decision essentially leaves Britain's Trident ballistic missile submarines undefended as they head out from port for the security of the high seas. To fill this gap, Britain now intends to buy nine Boeing P-8 anti-submarine warfare aircraft, and has renewed its commitment to modernize its nuclear deterrent force.

Other aircraft inventories will stay in service or be enlarged. For example, the SDSR calls for 14 Lockheed Martin C-130Js to remain in service until 2030 instead of 2022, while two additional Beechcraft King Air Shadow electronic intelligence aircraft will be purchased, for a total of eight.

The UK will move to replace its existing inventory of 10 General Atomics MQ-9 Reaper remotely piloted aircraft with 20 new aircraft under the "Protector" program, and it will purchase Airbus Zephyr high-altitude RPAs capable of operating at 70,000 feet.

The review smartly reflects what has changed since 2010. At the time, much of the world was deep in the throes of a worldwide financial crisis. Britain decided to balance the books partly by scaling back the military—cutting defense by nine percent and limiting the UK's role in the world.

British forces in 2010 were "overstretched, deployed too often without appropriate planning, with the wrong equipment, in the wrong numbers, and without a clear strategy," said Prime Minister David Cameron at the time, describing a "fundamental mismatch between aspiration and resources."

Five years on, there will be more aspiration and more resources. The UK has witnessed the rise of ISIS and a newly hostile and aggressive Russia that has waged war in Ukraine and illegally seized the Crimean Peninsula. Both counterinsurgency and major state-on-state war seem far more likely than they did just five years ago.

The SDSR's results "came as a pleasant surprise to generals who feared another round of cuts from a chancellor who has promised to balance the books over the next four years," noted the *Economist*.

Britain's recent decisions reverse much of the harm brought on by the 2010 cuts, bring on tangible military improvements that wisely bolster the nation's airpower capabilities, and expand an already leading role in the international war against ISIS.

These moves will help ensure the RAF and the UK remain leaders on the world stage.

The Obama Administration is entering its final year and will soon release its last defense budget. It would be wise to follow the UK's lead by stepping up the air war against ISIS. It should do so while also preparing for major power conflict and putting more money and equipment into the Air Force to sustain the effort. ★



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<sup>2</sup> LIMRA Trillion Dollar Baby—Growing Up: The Sales Potential of the US Underinsured Life Insurance Market, August 2011

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## No Longer a Distinction

Referring to Colonel Miranda's letter regarding "The Nightmare Before Christmas," I would add something that really bothered me about that operation [*"Letters: It was a Nightmare, All Right," December, p. 6*]. It was a fact that before those careless SAC targeting decisions during Linebacker II were made, the Air Force had never been turned back in battle. (See Cpl. Ellsworth B. Laurence's poem, "Men of the Fortress.") Reading Marshall L. Michel III's book, *The 11 Days of Christmas*, one will find on p. 154 the passage: "Though they did not realize it, the North Vietnamese defenses had done something that the Germans, Japanese, Soviets, Chinese, and North Koreans had never been able to achieve. They had made an American bombing raid abort a mission for fear of losses." Thanks to the bull-headedness of SAC operations during the Vietnam War, we can no longer claim that distinction of never having been turned back in battle.

Col. Frank Alfter,  
USAF (Ret.)  
Beavercreek, Ohio

## Hey, That Was USAF's Map

Just got the new November issue. I had to smile at the map on p. 32 [*"Boom on the Range," p. 30*]. You know, of course, the Navy is much more than just ships. Thus, I was amused at your cartographer's overwhelming use of a ship silhouette to indicate every Navy base, even when it was really a Naval Air Station featuring aircraft not ships. NAS Whiting, a training base for naval aviators, for instance, is inland, not approachable by sea. So is NAS Cecil Field. Kings Bay in Georgia is a submarine base. A silhouette of a "Boomer" submarine would have been much more appropriate. (Funny, when I was there going through advanced training in 1968-69, it was actually NAS Glynco, training various naval flight officers. It still retained a huge blimp hangar of the 1950s. But that was a long, long time ago.) NAS Key West is, indeed, an air station that often includes adversary squadron activities. And, naturally, NAS Pensacola is the "Cradle of Naval Avia-

tion," where future naval aviators still begin their flight training. It also is home to one of the greatest aviation museums in the world. No ships. I thought Air Force guys knew about such things. Maybe not. I still enjoy the magazine and have been a member for years.

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

## CAP Members

In response to Lt. Col. C. J. Clemens (Ret.) in the November issue, "Join Us, CAP," thank you for the invite [*"Letters, p. 7*]. Many of us are already members. I am ex-USAF (1972-77, -304X1 flight facilities), which led to a 38-year career with FAA techops, and have been a CAP member since 1998 and will continue to support AFA.

Dave Felber  
Florissant, Mo.

## No Ink

In regard to your article on the Iran nuclear deal, I would like to point out that Iran has not signed anything [*"Iran and the Bomb," December, p. 34*].

This is just one of the uncomfortable aspects of the "deal."

Joseph Dooley  
Kingston, Tenn.

## Airman Stone

Regarding your November issue story, "Stopping Terror On The Tracks," [*p. 24*]. As a US citizen, I'm proud of all three Americans who subdued a heavily armed terrorist on a Paris-bound train. As a former Air Force officer (1964-68),

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

I'm particularly proud of one of those heroes—A1C Spencer Stone. We shared two things in common—the Air Force's blue uniform and Lajes Field, the Azores, Portugal. Airman Stone was stationed at Lajes as a medical technician with the 65th Air Base Group. I was an Armed Forces Network detachment commander there from 1966-67. The Air Force has downsized Lajes from a wing to a group but maintains it as a vital military base. For those of us lucky enough to spend time there, it's also a precious patch of paradise in the North Atlantic.

The Portuguese word for pride is "brio," which expresses all of our feelings for A1C Stone.

Richard Reif  
Kew Garden Hills, N.Y.

## Buffy the Slayer

Thank you for the wonderful article on B-52s [*"BUFF Metamorphosis," December, p. 46*]. There is a mistake on p. 53, photo No. 1. The caption states this is a G model flying from Fairford, UK, but you state: "The eight TF33 engines have always produced a lot of smoke." G models were equipped with eight Pratt & Whitney J57-P-43WB turbojet engines. H models are equipped with the TF33-P-3 turbopan.

Trenton Twedt  
Radcliffe, Iowa

I enjoyed reading the article beginning on p. 46 titled, "BUFF Metamorphosis." Let me tell you a short story about my first experience with a B-52. I enlisted in the Air Force in July 1965. While we basic trainees were out marching at Lackland AFB, Texas, one day, our training instructor stopped the flight and told us all to look up at the airplane flying overhead. He said, "That's a B-52. They are getting old and won't be around much longer." That was 50 years ago! How wrong can a guy be! I retired from the Air Force as a senior master sergeant after 25 years. I'm pretty sure B-52s will still be going strong when I'm no longer around to look up and watch them fly over.

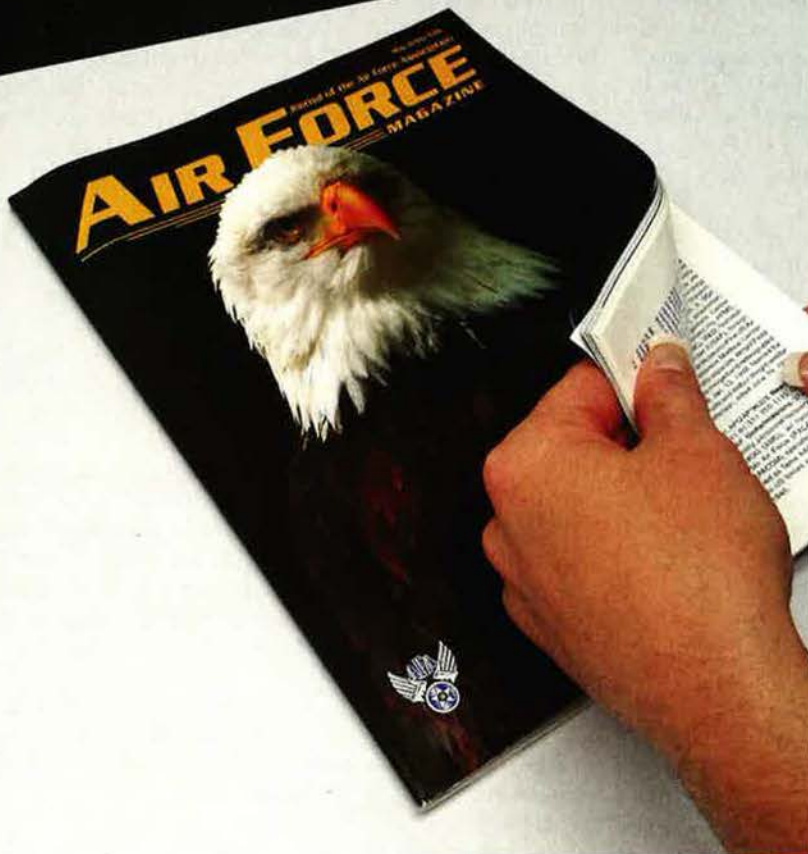
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## Manpower deficits; Air supremacy up for grabs; Visions of JSTARS; Pick two on space launch ....

### QUIET CRISIS

The Air Force has been hit with heavy demands and insufficient resources for so long that there are no easy solutions to its manpower problems. At the same time, the service finds itself challenged to perform one of its top core functions: gaining air superiority in any conflict, said Chief of Staff Gen. Mark A. Welsh III in an address to the Atlantic Council in December.

Speaking as the Defense Department puts the finishing touches on its Fiscal 2017 spending plan—the last Air Force budget Welsh will have a hand in, as he likely retires next summer—Welsh also wondered out loud where the money's going to come from to modernize the antiquated elements of USAF's nuclear deterrent. He also warned that the nation shouldn't put too much reliance on allies to share the military burden.

The nature of airpower has changed considerably in a short period of time, Welsh said. The "variety" of threats "is exploding on us, [and] the cost of everything is up significantly." Meanwhile, "the size of the Air Force is down."

Over the last 25 years, during which USAF was constantly involved in combat, "we have cut 200,000 airmen from our Active Duty Air Force," Welsh said. "That is 40 percent of the force gone. There is no excess capacity. You can't take people from one mission area and throw them at a problem in another one anymore."

In intelligence, surveillance, and reconnaissance, for which combatant commanders have an unquenchable thirst, Welsh said, "We have built a 35,000-person ISR enterprise over the last 10 years or so," even as "we have cut the Air Force [by] 50,000 people, which is essentially an 85,000-person cut to the rest of the mission areas" in the service.

"We're at 82 to 85 percent manning levels in virtually every mission area," he acknowledged, and there seem to be no higher levels coming. While there is heavy effort being applied to figuring out "different ways of using our people in a more efficient way," he also admitted that failure to do so "will wear them out."

He added that "if we lose them, we lose everything. We just can't afford to let that happen."

While Welsh said he hopes the damage to morale and capability is not "irreversible," he warned that manning "certainly is not going to reverse and go back to where it was before. We are not adding 200,000 airmen in the foreseeable future."

Welsh himself pushed hard for personnel cuts in 2013, when sequester forced USAF to ground more than a dozen squadrons of aircraft, and sequester seemed here to stay. At the time, though, it was thought there would be a reset period after large-scale withdrawals from Afghanistan and a reduction, particularly, in the need to maintain high rates of remotely piloted aircraft combat air patrols. The reset never came; the anti-ISIS fight—conducted almost exclusively from the air—began before the largest groups of combat troops came out of Afghanistan.

Even as manpower levels have dwindled, "our Air Force systems and infrastructure have aged ... dramatically," Welsh said. And while that has been happening, adversaries around the world have stepped up their technological capability.

"It's important for us to understand" in any discussion of the "Force of the Future" that "the capability gap" between the US and its adversaries "is closing, and it is closing fast. If we don't pay attention to this, airpower will no longer be an asymmetric advantage for the US military. The impact of that," he warned, "could be catastrophic."

The other services depend on the Air Force to control the sky to allow them "freedom to maneuver, freedom from attack," Welsh said. If USAF can't do that, "the US way of war will have to be adjusted."

"One of the real truisms of modern warfare is that without airpower, you will lose, and losing is not an option for us."

### THE GHOST OF GATES

Keeping air supremacy is "the biggest concern that we have," he explained. "We have to at least be able to provide local air superiority," he asserted, meaning an ability "to take apart new and integrated air defense systems that are much more capable than they had been in the past." While this could be done with old equipment, "it would ... cost us a lot more in terms of blood, sweat, and tears to get it done." USAF shouldn't get to that point, he said.

Welsh said the Air Force doesn't have "enough F-22s to provide air superiority in a theater of operations." The decision by former Defense Secretary Robert M. Gates to end F-22 production of the Raptor buy at 187 aircraft "took away our ability to do" theater-wide air superiority with the F-22, "which had been the plan. And so we have to augment the F-22 ... with something else." The other services don't have enough fighters to lend the Air Force for this mission, so it means USAF must upgrade the F-15C and keep it in service well past its planned retirement. That's not a free option, though: Without AESA radars, new weapons, and other improvements—funding for which is iffy—the F-15C, as it is now, "will not be competitive in another three to five years," Welsh asserted.

The F-35, which is stealthy and in production, wasn't designed for air superiority, but "we're going to have to use it for that," Welsh said. The F-35 was meant to be "a data integration platform that was multipurpose, ... able to do the precision work against integrated air defense systems and keep targets at risk and be a jack-of-all trades." Now it will have to be an air superiority machine as a primary mission, likely replacing the F-15C in that role eventually, Welsh said.

He acknowledged that with the Pacific Pivot, the US "took our eye off the ball for a while" with regard to Russia, saying now that Russia is "refocused" and improving its military capabilities, the US must move quickly to stay ahead.

Welsh warned against putting too much reliance on partnering with allies and asking them to share the burden. Some—he

mentioned Denmark—are “completely dependable, incredibly capable,” but can only contribute “a four-ship a day.” They “can’t bring the capacity they would like to bring and that’s what the US Air Force tends to bring to an air campaign.” And some true-blue friends simply won’t “go globally with us. It’s just not in their national interest. ... We [have] got to be careful about the idea that we can always have a partner plug in.” The Air Force must always have the ability to go where it needs to, in numbers, whether there’s a friendly host country in the neighborhood or not, Welsh argued.

Asked about USAF’s new cruise missile, the Long-Range Standoff weapon (LRSO), Welsh said the service is not yet discussing it “out loud.” But he took the opportunity to point out that US Strategic Command, not the Air Force, sets requirements and numbers for things like nuclear bombers and missiles, both ground-based and air launched. Adm. Cecil D. Haney, STRATCOM chief, puts “a very high priority” on the LRSO and Welsh said USAF and STRATCOM will likely jointly “keep options open” about whether LRSO will yield a conventional as well as a nuclear variant.

More broadly, Welsh said it’s “a lot of money to do everything” necessary to modernize the Air Force and Navy nuclear deterrent. It’ll likely be the Secretary of Defense, after several years of debate, who decides “the priorities” among a long list of needed items, such as “nuclear submarines, long-range strike bombers, LRSO, tail kits, B61s,” and recapitalization of the nuclear infrastructure, such as bomb making and testing facilities.

“We’re talking a lot of cabbage,” he said.

## NOT SO FAST ON JSTARS

While the Air Force fully understands what it wants and needs in a replacement for the E-8 JSTARS fleet—the service’s No. 4 acquisition priority—the Pentagon in November was still vigorously debating how the program should go forward. Senior leaders hinted it might not get into the Fiscal 2017 budget request.

William A. LaPlante, who left the job of USAF’s top acquisition executive in November, said that in the run-up to the 2017 budget choices, which are usually resolved around Christmas, there was still argument “outside the Air Force on whether you do this or you do other things.”

Speaking with reporters on the eve of his departure from the job, which he’d held for three years, LaPlante said the Air Force “is completely set on the requirement” for JSTARS recapitalization, which it determined, through a series of analyses of alternatives, to be a business jet-size aircraft with an

under-fuselage radar. That vision is one shared by combatant commanders, LaPlante said.

“The Air Force, and most of the classic warfighters, ... see it as a [battle] management platform—command and control,” but in other specialties, such as the Intelligence Community, “there are people who want to trade it for [the] unmanned Global Hawk, as a sensor,” or for other applications more finely tuned to “their kind” of intelligence, surveillance, and reconnaissance.

LaPlante said, “Those debates keep happening in a tough budget environment,” and he suggested the argument might not end in time for the budget call. He insisted, though, that the senior Pentagon leadership and Congress have provided “bipartisan” support for JSTARS recap.

Industry has also pressed the Air Force, saying the project can move faster than it has, but the delay is “not us,” LaPlante said. “We are all in.”

Welsh, speaking to the Atlantic Council, said the COCOMs have set “a real clear requirement” for JSTARS recap as a battle management platform and “want the capability to continue to be available to them in some way.”

If the issue is not resolved in time for the 2017 budget, he said, “we will keep the idea in the budget so that the idea doesn’t go away, because that’s what the combatant commanders want us to do.”

## TWO OUT OF THREE

LaPlante, asked to give his assessment of the state of Air Force acquisition, said the enterprise is “in good shape,” having exploited acquisition reforms and “cost realism” efforts that have saved “billions” of dollars, which were returned to various portfolios to buy, for instance, more munitions.

The latest effort, “should schedule,” is seeking to tighten up time frames—again, with the goal of spending less money. Part of the problem is that if programs go faster, there’s no money in earlier budgets to conduct them. Planners expected to spend those funds several years later, leaving them scrambling to find cash if the project goes quicker. USAF will “incentivize” speedier programs and leave budget flexibility to accommodate them, he said.

LaPlante also expressed skepticism that the Air Force will be able to accommodate demands from Congress to find new launch services that increase competition, “get us off” the RD-180 Russian-made rocket engine, and ensure two independent ways to get payloads to orbit.

“We’re struggling” to fulfill the law that mandates this approach, LaPlante said. He’s gotten “emotional” about the issue in explaining the situation to Congress “over and over,” saying it takes time to have competitions, certify new entrants, and get them on contract. In the meantime, few realistic RD-180 alternatives are available.

“I don’t think you can do all three in the next four or five years,” LaPlante said. “You’re going to have to pick two of those three.”

LaPlante said he was leaving because of a promise to his family that he would only do the job for three years, and he even overstayed that limit a bit to make sure the Long-Range Strike Bomber contract was awarded. He told *Air Force Magazine* he’s confident the award to Northrop Grumman will stand up against Boeing’s protest because during the last few months before the award, “we made sure every question they had was answered, and that every answer was documented. ... We took the time to make sure it was done right.”

USAF photo by Scott M. Ash



USAF is keeping mum on the Long-Range Standoff Weapon.

# Banned From the Boneyard

Long reluctant to send venerable military aircraft to the boneyard, lawmakers have decided to make it even more difficult for the Air Force to retire some of its oldest aircraft despite the high costs of keeping aging airframes flying.

The annual Pentagon policy bill, signed into law in November by President Barack Obama, contains several provisions blocking or restricting retirements of a number of aircraft, including the A-10, EC-130H, KC-10 tanker, E-8 JSTARS, and E-3 AWACS.

The airframes, lawmakers have publicly argued, are simply too important to the military's mission to do without, even in an era of fiscal belt-tightening that military officials warn will force trade-offs between current and future capabilities.

The retirement restrictions, though opposed by Air Force leaders, were to be expected, given the military's poor track record selling these proposals on Capitol Hill.

But Congress went one step further than usual in the Fiscal 2016 defense authorization bill, inserting a provision in the nearly 2,000-page conference report that dictates the size of the Air Force fighter fleet.

Specifically, the bill establishes that the Air Force sustain a fighter jet inventory of 1,900 aircraft, 1,100 of them combat-coded.

The service's current fighter fleet numbers about 1,965, according to the Defense Department's most recent 30-year aviation plan. But the fleet size was expected to dip slightly over the next several years as the Air Force sought to retire older jets, such as the A-10, even as it ramps up procurement of the fifth generation F-35A strike fighter.

"A quarter-century of near-continuous deployments, frequent aircraft divestments, and a decades-long procurement holiday has left us with the oldest and smallest Air Force in history," the Senate Armed Services Committee stated in its summary of the bill. "Therefore, the NDAA [National Defense Authorization Act] emphasizes the need to retain sufficient combat airpower capacity."

In the conference report, lawmakers pointed to the 2010 Quadrennial Defense Review, in which the Air Force determined it needs 2,000 fighters to execute the National Defense Strategy with some increased operational risk. Two years later, as the Pentagon grappled with budget caps, the service determined

it could make do with 1,900 aircraft, but would have to accept even greater operational risk.

Given ongoing operations against ISIS in Iraq and Syria and heightened tensions with Russia, lawmakers determined that dipping below that level "poses excessive risk to the Air Force's ability to execute the National Defense Strategy, causes remaining fighter squadrons to deploy more frequently, and drives even lower readiness rates across the combat air forces," according to the conference report.

In a move to prevent further retirements, the bill requires the Pentagon to submit lengthy detail any time it requests retiring a fighter as part of its annual budget submission.

That report, according to the bill, must include a rationale and analysis for the retirement, as well as an assessment of the effects of the retirement on the overall force mix. The only exceptions are for aircraft that the Air Force Secretary determines, on a case-by-case basis, are beyond repair.

Air Force leaders, however, continue to balk at Congress' resistance to aircraft retirements, arguing that it forces them to spend their limited cash on capabilities they have determined are no longer needed.

The A-10 retirements, for instance, were expected to save \$428 million in 2016 and \$4.2 billion over the next several years—no small amount in an era of belt-tightening. For an Air Force where the average age of aircraft is 27 years, that means less money to spend on investments in future capabilities.

Speaking at the National Press Club on Dec. 2, Air Force Secretary Deborah Lee James said the prohibitions on retiring the A-10 would force the service to rethink its budget plans for Fiscal 2017, due on Capitol Hill in February.

"We're not going to be able to do it all," she said. "So these are the kind of end game final decisions that are going to have to be made in the next month or two."

More broadly, James added, the service needs more money for next generation aircraft.

"You can't keep flying these aircraft forever and ever," James said. "I mean there are aircraft in our inventory that are not quite as old as I am, ... but they're aging and they're aging quickly just like some of us Secretaries of the Air Force. So we have got to modernize."

*Keeping the A-10 means rethinking Fiscal 2017 budget plans.*

USAF photo by TSgt. Nathan Lipscomb

By Robert S. Dudley

### No Barriers

"They [female service members] will be allowed to drive tanks, fire mortars, and lead infantry soldiers into combat. They'll be able to serve as Army Rangers and Green Berets, Navy SEALs, Marine Corps infantry, Air Force parajumpers, and everything else that was previously open only to men."—*Secretary of Defense Ashton B. Carter, announcing his decision to lift all gender-based restrictions on military service, Dec. 3.*

### Long Wait

"Today's historic announcement finally recognizes that our military is strongest when it prioritizes merit and capability, not gender—and it's about damn time."—*Rep. Martha McSally (R-Ariz.), retired USAF colonel and pilot, news release, Dec. 3.*

### Timing Is Everything

"ISIL [is] a dangerous organization like al Qaeda was, but we have hardened our defenses. The American people should feel confident that, you know, we are going to be able to defend ourselves and make sure that, you know, we have a good holiday and go about our lives."—*President Obama, CBS interview on Dec. 2—the day two ISIS-inspired terrorists killed 14 people in San Bernardino, Calif.*

### Open for Business

"We're in the business of killing terrorists, and business is good. We need to replenish our munitions stock."—*Secretary of the Air Force Deborah Lee James, statement about the pace of anti-ISIS flight operations, Dec. 3.*

### Out of Beer

"We're at 82 to 85 percent manning levels, in virtually every mission area. We can't reach in someplace and grab more manpower to fix a problem anymore, and so we have got to figure out different ways of using our people in a more efficient way or we will wear them out. ... As we've built a 35,000-person ISR enterprise over the last 10 years or so, we have cut the Air Force 50,000 people, which is essentially an 85,000-person cut to

the rest of the mission areas."—*Gen. Mark A. Welsh III, USAF Chief of Staff, remarks to the Atlantic Council, Dec. 1.*

### BUFF Time Machine

"It's like stepping back in time. I love the B-52, but the fact that this is still flying is really insane."—*Capt. Lance Adsit, 28-year-old pilot of a 50-plus-year-old B-52 bomber, during a training flight, New York Times, Dec. 5.*

### Rising Danger

"We're now at the precipice, maybe I should say the brink, of a new nuclear arms race. This arms race will be at least as expensive as the arms race we had during the Cold War, which is a lot of money. Today, probably I would not have said this 10 years ago but, today, we now face the kind of dangers of a nuclear event like we had during the Cold War, an accidental war. I see an imperative to stop this damned nuclear arms race from accelerating again."—*William J. Perry, former Defense Secretary (1994-97), on plans to modernize US nuclear forces, Defense Writers Group, Dec. 3.*

### An Islamic State

"ISIS now controls and holds vast territory, and they rule over 10 million people. No, they don't speak for all Muslims, but they do speak for quite a few."—*Kevin Hulbert, retired CIA operations officer, The Cipher Brief, Dec. 3.*

### Gone With the Wind

"Let me give you the punchline here: Iraq doesn't exist. Syria doesn't exist. And they ain't coming back. They're gone."—*Retired USAF Gen. Michael V. Hayden, former CIA director, referring to shifting geopolitical borders, Air Force Times, Dec. 6.*

### McCainonomics

"[To build a total of 2,443 F-35s], we would have to purchase 100 F-35s per year for more than 20 years at a cost of \$10 billion to \$12 billion a year. That seems unlikely. ... There may be some mismatch there. I'm not saying we shouldn't have 2,443. I just want to know how you get there."—*Sen. John McCain (R-Ariz.), remarks to reporters, Dec. 2.*

### Losing Altitude

"When I started out in this business, ... all of the technology of consequence, most of it, originated in the United States, and a great deal of it originated with the government. Now, neither of those is true anymore."—*Secretary of Defense Ashton B. Carter, remarks at Harvard University, Dec. 1.*

### "Little Montenegro!"

"Is NATO a military alliance or social club? The 'North Atlantic' Treaty Organization just invited Montenegro to join. With 2,080 men under arms, [it] is a military nullity. Having peacefully separated from Serbia years ago, Montenegro neither threatens nor is threatened by anyone. Adding it to NATO is like accumulating Facebook friends. They do little more than allow preening Washington officials to wander the globe gloating how popular the US is."—*Doug Bandow, former advisor to President Reagan and now senior fellow at the Cato Institute, op-ed in The National Interest, Dec. 7.*

### Decision and Indecision

"The way we are waging this war is immoral. As a young Marine officer, I was taught that achieving decisive results in warfare is critical. It even rises to the level of a moral imperative, because—as the Corps' tactics manual still puts the matter—"An indecisive battle wastes the lives of those who fight and die in it. It wastes the efforts of those who survive it as well. All the costs ... are suffered for little gain.' But the counter-Islamic State campaign generates little besides indecisive clashes."—*Aaron MacLean, Marine combat veteran, op-ed in Washington Post, Dec. 3.*

### Lost in Space

"In 2015 thus far, we have had 261 cases where we have been jammed from getting information from our satellites down to the ground segment. How many were caused by an adversary? I really don't know. My guess is: zero. [The cause is] almost always self-jamming."—*USAF Gen. John E. Hyten, head of Air Force Space Command, remarks at a conference of the Association of Old Crows, Dec. 2.*

## ★ screenshot



12.07.2015

*A USAF F-22, French air force Rafale, and a British RAF Typhoon fly in formation during an exercise at JB Langley-Eustice, Va., in early December. The exercise simulated a highly contested, degraded, and operationally limited environment such as in a conflict with advanced nations like Russia and China, so US and partner nation pilots and ground personnel could test their readiness.*



### **Combat, Special Ops Roles Opened to Women**

The Pentagon will open all military jobs to women, Defense Secretary Ashton B. Carter announced Dec. 3.

"To succeed in our mission of national defense, we cannot afford to cut ourselves off from half the country's talents and skills," Carter said in a press conference at the Pentagon. "We have to take full advantage of every individual who can meet our standards."

The policy excluding women from combat roles was rescinded by then-Defense Secretary Leon E. Panetta in 2013, who directed that all positions be opened to women by Jan. 1, 2016. However, the Secretaries of the Air Force, Army,

and Navy, and the commander of US Special Operations Command were given three years to request exceptions.

Carter said about 10 percent of military jobs are still closed to women. The Marine Corps asked to keep some jobs closed, but Carter said he chose to make a decision that applies across the joint force.

### **Air Force Expands Base Security**

The Air Force has implemented a series of new steps to improve base security following an order from Defense Secretary Ashton B. Carter to improve the safety of military facilities after the July shooting at a recruiting center in Chattanooga, Tenn.

USAF photo SrA. Kayla Newman



Air Force Secretary Deborah Lee James said the service has increased the number of armed security forces on bases through multiple programs, has expanded force protection measures at off-installation facilities, and is working on a long-term mass notification system, according to a Dec. 3 release.

#### **Air Force Concerned by LRS-B Leaks**

The Air Force is unhappy about information published about the Long-Range Strike Bomber program when Boeing protested the contract award to Northrop Grumman in October.

"We did have a concern about end data that should not have been released," Chief of Staff Gen. Mark A. Welsh III said at an Atlantic Council event in Washington, D.C., Dec. 1. "It was made known to the press in some way, shape, or form and I think it's our duty to try and keep the process as pure as we can. And so that's why the Air Force highlighted that as an issue."

Welsh was referring to a *Forbes* magazine article claiming that both LRS-B competitors bid about half of what USAF thought the LRS-B would actually cost. William A. LaPlante, then USAF acquisition chief, labored to tell the press that USAF was required by law to factor in historical bomber costs when making LRS-B estimates.



### Study: Air Evacuation Could Worsen TBI

An Air Force-funded study conducted by the University of Maryland School of Medicine found that immediately evacuating patients by air to hospitals outside of the battle zone could cause “more damage to already injured brains,” according to a Nov. 30 summary of the study.

“This research shows that exposure to reduced barometric pressure, as occurs on military planes used for evacuation, substantially worsens neurological function and increases

**He’s Not Looking So Good:** USAF and Polish aeromedical evacuation personnel discuss the proper treatment of a simulated patient at Ramstein AB, Germany, Dec. 3. USAF specialists showcased their skills for the Polish medical officials to familiarize them with Air Force aeromedical evacuation techniques.

brain cell loss after ... [traumatic brain injury]—even when levels are kept in the normal range,” said lead researcher Alan I. Faden, a Maryland professor specializing in trauma.

He said that the study, published in the *Journal of Neurotrauma*, “suggests that we need to carefully re-evaluate the cost-benefit of air transport in the first days after injury.”

### Protecting LRS-B

Over the next few months, the Air Force needs to “figure out how to live with” significantly less funding in Fiscal 2017, while still looking to protect its major procurement programs—the Long-Range Strike Bomber, the KC-46 tanker, and the F-35, Air Force Secretary Deborah Lee James said.

Although budgeters are happy the bipartisan budget deal provides some relief for the next two years, the Pentagon as a whole faces a \$17 billion cut in 2017, James said. Still, USAF is committed to buying the top number in the range of 80 to 100 LRS-Bs the service has repeatedly said is required.

“The number is 100,” James said during a Dec. 2 speech at the National Press Club at Washington, D.C.

The Air Force announced Northrop Grumman won the contract to produce the LRS-B fleet in late October, with a target cost of about \$550 million per aircraft and an initial operational capability goal of the mid-2020s.

### Holloman F-16 Crashes, Pilot Ejects Safely

An F-16C from Holloman AFB, N.M., crashed during a training sortie over the White Sands Missile Range in November, officials announced.

The pilot successfully ejected before the jet impacted rugged terrain approximately 70 miles northwest of the base, near the city of Truth or Consequences, N.M. The 314th Fighter Squadron pilot was rescued in “good condition” and taken to a local medical facility for evaluation after the Nov. 25 incident, according to an Air Education and Training Command update.

The 314th FS stood up as Holloman’s second F-16 training squadron, relocating from Luke AFB, Ariz., to make room for F-35 training there in July. Holloman’s F-16 training squadrons report to the 56th Fighter Wing at Luke.

Loss of the aircraft is pegged at \$25 million and officials are convening an official investigation to determine the cause of the crash, according to the news release.



### Sticker Shock Shouldn't Factor in Number of LRS-Bs

Congress must not let budgetary concerns stand in the way of an adequate Long-Range Strike Bomber fleet, members of Congress said Nov. 17 on Capitol Hill.

"We have to stand firm with the numbers that the academics are telling us they need, the Pentagon is telling us they need, and, actually, the White House agrees that we need," Sen. Heidi Heitkamp (D-N.D.) said at the release of a Mitchell Institute report on the LRS-B.

Retired Lt. Gen. David A. Deptula, dean of AFA's Mitchell Institute, said the requirement for the B-2 fleet began at 132 and was gradually whittled down to just 20 aircraft. "We can't afford to let that happen again" with the LRS-B, he said.

Rep. J. Randy Forbes (R-Va.) said the LRS-B program is at a critical phase, and Congress "can't allow sticker shock to set in."

### Open Mission Systems for F-22 and F-35

Lockheed Martin is eyeing Open Mission Systems capability for the F-22 and F-35 and could begin fielding it in the next five to 10 years, company F-35 Program Manager Jeff Babione said in an interview with *Air Force Magazine*.

OMS will allow upgrades to be installed on the fifth generation jets without the need to change out large elements of internal hardware or cut into their stealthy skins, while also offering an opportunity for contractors with the lowest-cost, best solution improvements to compete for the work.

Both jets were designed in an era when hardware and software were heavily intertwined, and on the F-22 especially, different elements of the system had to be "federated"

### A Little to the Right

Retiring the A-10 Warthog attack jet will have to happen, but perhaps not as fast as the Air Force wanted, Air Combat Command chief Gen. Herbert J. "Hawk" Carlisle said Nov. 9.

Speaking with defense reporters in Washington, D.C., Carlisle said he'll use the A-10 as long as it's in the inventory—hence the deployment to Incirlik AB, Turkey, for the anti-ISIS fight—but delays in getting the F-35 may cause the Air Force to hold onto the A-10s a little longer.

The "majority" of A-10 retirements would move "two to three years to the right," but USAF would want to do some retirements "early," as now planned, because the service wants to retain the F-16s coming out of Hill AFB, Utah, to make room for the F-35. Some A-10 units would have to go to free up room for those F-16s.

Carlisle told reporters afterward that finding sufficient maintainers for the F-35 remains a "critical problem." USAF has looked at "contract maintenance" as a way to address "some" of the issue, as well as ways to improve retention, but there are "additive squadrons" with the F-35 buy that could lead to a maintainer deficit.

**Down Under, Up Over:** Australian Army Cpl. Teome Matamua and Sgt. Phillip McIlvaney watch a bundle of supplies drop from a C-130 to the Pacific island of Mogmog in the Marianas during Operation Christmas. Australian and Japanese airmen joined USAF airmen for the first time supporting the mission dropping critical supplies to the region. Operation Christmas is in its 64th year.



USAF photo by SSgt. Katrina M. Breslin

on a master processor to achieve sensor fusion. OMS will help speed upgrades to stay ahead of competitors rapidly catching up.

#### **European-Based CSAR Shifting to Aviano**

The Air Force is moving its European-based combat search and rescue capability from RAF Lakenheath, UK, to Aviano AB, Italy, to more quickly respond to needs across Europe, Africa, and Southwest Asia.

HH-60 Pave Hawks of the 56th Rescue Squadron and Guardian Angels of the 57th RQS, will relocate to Aviano in 2017, according to a US Air Forces in Europe-Air Forces Africa news release. The shift gives the units greater access to training airspace and opportunities with regional partners and allies, according to the release.

USAFE-AFAFRICA announced earlier this year that it is also moving CV-22s and MC-130s of the 352nd Special Operations Wing out of England to Spangdahlem AB, Germany, as part of an overall infrastructure review. During the same review, leaders identified Aviano as having excess capacity, making it the ideal site to absorb the five HH-60s and some 350 pilots, maintainers, Guardian Angels, and support personnel currently at Lakenheath, according to a second release.

#### **First AC-130J Prototype Declared Loss**

Investigators declared the first prototype AC-130J Ghost Rider gunship a total loss after the airframe was severely overstressed departing controlled flight during a test sortie from Eglin AFB, Fla., officials announced.

As a result of the incident, the mishap aircraft "exceeded its design limit load (DLL) to an extent that rendered it unsafe for flight and is considered a total loss to the Air Force," according to Air Force Materiel Command's Accident Investigation Board report, released on Nov. 6.

The crew was performing a high-angle sideslip 47 miles south of Eglin during handling tests of the developmental gunship when the aircraft departed controlled flight at 15,000 feet altitude over the Gulf of Mexico, according to the AIB. The AC-130J tumbled inverted before test pilots were able to recover controlled flight, entering a vertical dive, on April 21. The aircraft lost 5,000 feet altitude, pulled 3.19 Gs, and oversped the flaps' maximum allowed airspeed by 100 knots (115 mph) before returning to level flight.

The AIB determined the pilot's excessive rudder input and failure to quickly recover from uncontrolled flight were the primary causes of the mishap. Problems with the aircraft's warning system, pilot disorientation, confusion from being hit with unsecured equipment, and inadequate technical guidance contributed to the mishap.

The aircraft, serial No. 09-5710, also suffered a similar incident in February and has been grounded since the April mishap. A second AC-130J prototype was delivered to commence operational testing at nearby Hurlburt Field, Fla., in July. Loss of the aircraft is estimated at \$115.6 million.

#### **High-End Fight Comes to Langley**

F-22s launched a high-end anti-access, area-denial integration exercise with British and French fighters at JB Langley-

## **The War on Terrorism**

### **US Central Command Operations: Freedom's Sentinel and Inherent Resolve**

#### **Casualties**

By December 17, a total of 15 Americans had died in Operation Freedom's Sentinel in Afghanistan, and a total of 11 Americans had died in Operation Inherent Resolve in Iraq and Syria.

The total includes 25 troops and one Department of Defense civilian.

There have been five troops wounded in action during OIR and 68 troops in OFS.

#### **Pilots Awarded Mackay Trophy for Sinjar Flight**

Two F-16 pilots who flew an eight-hour night operation to break an ISIS assault on tens of thousands of stranded Yazidi civilians in August 2014 have made the "most meritorious" flight of that year.

The pilots, Capt. Gregory R. Balzhiser and Capt. David A. Kroontje, were awarded the Mackay Trophy for 2014 on Dec. 3 by the National Aeronautic Association during a ceremony in Arlington, Va.

Both deployed with the 13th Expeditionary Fighter Squadron from Misawa AB, Japan, and made up Ironhand Flight 41. They were called on to provide air support to protect 40,000 Yazidi civilians trapped on Mount Sinjar.

They flew four attacks during the mission, killing ISIS fighters and destroying ISIS blockades, armored vehicles, and an

observation post. The attacks helped Peshmerga forces the next day set up a safe egress corridor from Mount Sinjar.

#### **Human Error Blamed for Deadly Hospital Attack**

The air strike that destroyed a Doctors Without Borders hospital in Kunduz, Afghanistan, in October was a "tragic but avoidable accident caused primarily by human error," Army Gen. John F. Campbell, commander of US forces in Afghanistan, told reporters on Nov. 25.

The US investigation into the strike found that human error, compounded by systems and procedural failures, led an AC-130 crew to strike the hospital instead of a different building where there had been reports of combatants, Campbell said.

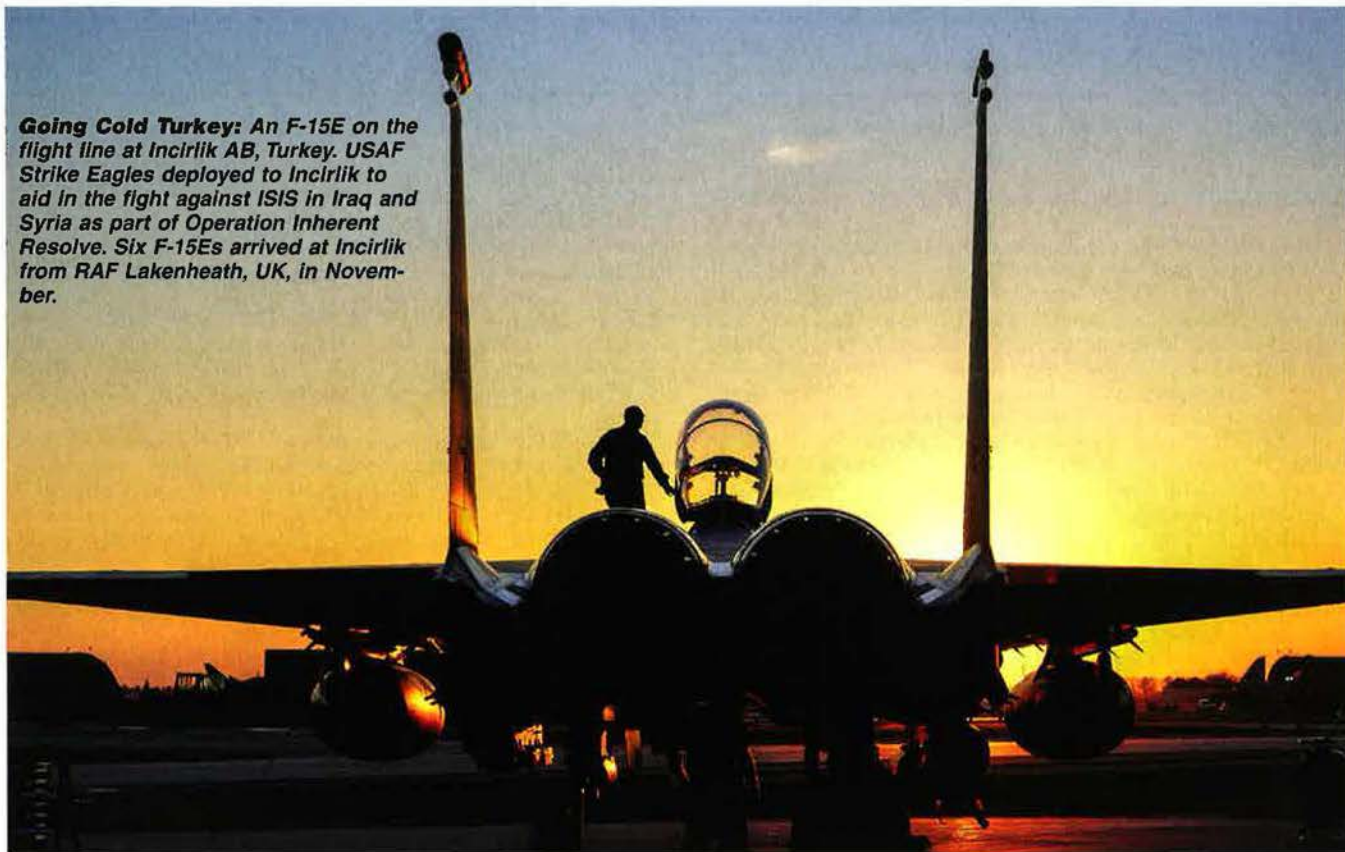
Thirty staff, patients, and assistants were killed, and 37 more were injured in the strike, the investigation found.

#### **Reaper Crashes in Afghanistan**

An MQ-9 Reaper crashed during a combat sortie near Bagram Airfield, Afghanistan, on Nov. 24. The remotely piloted aircraft was assigned to the 455th Air Expeditionary Wing and launched from Kandahar Airfield, Afghanistan, according to a wing press release.

The aircraft went down in a remote area away from any civilian population centers and it was a total loss,

**Going Cold Turkey:** An F-15E on the flight line at Incirlik AB, Turkey. USAF Strike Eagles deployed to Incirlik to aid in the fight against ISIS in Iraq and Syria as part of Operation Inherent Resolve. Six F-15Es arrived at Incirlik from RAF Lakenheath, UK, in November.



455th AEW spokesman Capt. Bryan Bouchard told *Stars and Stripes*. "The munitions onboard were also destroyed with the aircraft," he said.

The crash was not caused by enemy fire, and the RPA was obliterated to the point that the Air Force did not attempt to secure the crash site, according to the press. The cause of the crash is under investigation.

#### **Airmen Integral Part of Expeditionary Targeting Force**

Airmen will be "front and center" in the deployment of special operations teams to Iraq, service Secretary Deborah Lee James said on Dec. 2.

The teams, dubbed the "expeditionary targeting force," will be made up of about 100 troops and will "assist the Iraqi army and Kurdish Peshmerga to put even more pressure on ISIL," Operation Inherent Resolve spokesman Army Col. Steve Warren said. The force's special operators will conduct raids, free hostages, gather intelligence, and capture ISIS leaders, Warren said.

Air Force mobility forces will bring the troops to the fight, and battlefield airmen—such as combat controllers and pararescuemen—will be a part of the special operations teams. Air Force combat search and rescue crews also will provide support, James said during a speech at the National Press Club in Washington, D.C.

#### **Investigation Finds Civilian Casualties in Air Strike**

A US Central Command investigation determined an Air Force jet likely killed four civilians during a March air strike on an ISIS checkpoint in Iraq.

A redacted "15-6" investigation, released Nov. 20, states that an A-10 was tasked with striking an ISIS checkpoint on March 13 near al Hatra.

Before the strike, two vehicles pulled up to the checkpoint and parked in the target area. The drivers left their cars and spoke with ISIS members for about 40 minutes while other cars drove through. Staff in the Combined Air Operations Center watched the target, determined new cars were ISIS targets, and decided to continue with the mission.

After the A-10 fired its weapon, four individuals left the vehicles. The strike hit its target and destroyed the cars—killing the individuals. US Central Command spokesman Col. Patrick Ryder said the pilots were not aware of the individuals until after the weapon was fired. He said if the pilot and staff in the CAOC had known, they would not have conducted the strike.

An Iraqi citizen whose car was destroyed notified CENTCOM of the casualties, passing the message through a non-governmental organization. The civilians killed were not family members, so no payments have been made, and the Foreign Claims Act of 1942 prohibits the military from compensating for destructed property, Ryder said.

**Senior Staff Changes**

**RETIREMENTS:** Lt. Gen. Douglas J. Robb, Maj. Gen. Kelly K. McKeague, Brig. Gen. Bobby V. Page.

**CONFIRMATION:** To be ANG Brigadier General: Robert J. Becklund.

**NOMINATIONS:** To be Lieutenant General: John D. Bansemer. To be Brigadier General: Kenneth T. Bibb Jr., Angela M. Cadwell, Martin A. Chapin, James R. Cluff, Charles S. Corcoran, James H. Dienst, John J. Degoes, Sean M. Farrell, Chad P. Franks, Alexis G. Grynkwich, Timothy D. Haugh, Christopher D. Hill, Eric T. Hill, Samuel C. Hinote, William G. Holt II, Linda S. Hurry, Matthew C. Isler, Kyle J. Kremer, Mark A. Koeniger, John C. Kubinec, Douglas K. Lamberth, Lance K. Landrum, Jeannie M. Leavitt, William J. Liquori Jr., Michael J. Lutton, Corey J. Martin, Tom D. Miller, Richard G. Moore Jr., James D. Peccia III, Heather L. Pringle, Michael J. Schmidt, James R. Sears Jr., Daniel L. Simpson, Mark H. Slocum, Robert S. Spalding III, William A. Spangenthal, Edward W. Thomas Jr., John T. Wilcox II, Michael P. Winkler.

To be ANG Major General: Robert C. Bolton, Charles W. Chappuis Jr., Dawne L. Deskins, Timothy L. Frye, Paul D. Jacobs, Mark E. Jannitto, Edward P. Maxwell, Ronald W. Solberg, James K. Vogel, William L. Welsh, Wayne A. Zimmet. To be ANG Brigadier General: David M. Bakos, Vance C. Bateman, Sandra L. Best, Jeffrey C. Bozard, Todd M. Branden, William D. Bunch, Rafael Carrero, Larry K. Clark, Kevin D. Clotfelter, Marshall C. Collins, James N. Cox, Jason R. Cripps, Mark A. Crosby, Christopher S. Croxton, Francis N. Detorie, Ruben Fernandez-Vera, John T. Ferry, John

E. Flowers, Michael J. Francis, Vincent R. Franklin, Clay L. Garrison, Blake A. Gettys, Kevin J. Heer, Dana A. Hessheimer, Gene W. Hughes Jr., Clifford N. James, James T. Johnson, Gregory F. Jones, Marshall L. Kjelvik, James R. Kriesel, Ronald S. Lambe, Scott M. Lockwood, Andrew J. MacDonald, Stephen J. Maher, Matthew J. Manifold, Karen E. Mansfield, Maren McAvoy, Gregory S. McCreary, Stephen B. Mehring, Jessica Meyeraan, Billy M. Nabors, Jeffrey L. Newton, Peter Nezamis, Patrick R. Renwick, Stephen M. Ryan, Fermin A. Rubio, Peter R. Schneider, Gregory N. Schnulo, Greg A. Semmel, Ray M. Shepard, Marc A. Sicard, Paul R. Silvestri, Christopher A. Stratmann, Peter F. Sullivan Jr., Tami S. Thompson, Joseph B. Wilson, Gregory S. Woodrow.

To be AFRC Brigadier General: Lee Ann T. Bennett, Patricia N. Beyer, Richard M. Casto, Jonathan M. Ellis, James J. Fontanella, John P. Healy, Daniel J. Heires, Robert A. Huston, William R. Kountz Jr., Christopher W. Lentz, Albert V. Lupenski, Russell A. Muncy, Tyler D. Otten, Russell P. Reimer, Harold E. Rogers Jr., Tracey A. Siems.

**CHANGE:** Lt. Gen. (sel.) John D. Bansemer, from Dep. Chief, Central Security Service, NSA, Ft. Meade, Md., to Asst. Dir. of Natl. Intel. for Partner Engagement, Office of the Dir., of Natl. Intel., Washington, D.C.

**SENIOR EXECUTIVE SERVICE CHANGE:** Christopher Kapellas, to Dir., Human Resources, Washington Headquarters Svcs., Washington, D.C.

Eustis, Va., on Dec. 2.

Eight Royal Air Force Typhoon FGR-4s, and six French air force Rafale fighters will join the 1st Fighter Wing Raptors, squaring off against F-15Es and T-38s during the three-week exercise.

“The RAF and [French air force] are our vital strategic partners and allies in the current fight against extremism, and will be in any foreseeable future conflict,” 1st FW Commander Col. Pete M. Fesler said in a press release.

Some 500 multinational personnel took part in the exer-

cise Dec. 2-18, marking the first time the three air forces’ topline fighters have gathered for a single exercise, according to Langley.

**Big League Honors, Big Price Tag**

The Air Force and other military services have paid hundreds of thousands of dollars to professional sports teams for tickets, recognition, and the opportunity to perform flag details and on-field swearing-in ceremonies, according to a new report released by Sens. John McCain and Jeff Flake (both R-Ariz.).

The report, called “Tackling Paid Patriotism,” details how the Air Force and other services entered into contracts with baseball, football, basketball, hockey, and soccer teams, as well as NASCAR, and some of the things those contracts paid for. For example, the Air Force paid the Mets \$51,000, including \$10,000 for the opportunity to perform an on-field swearing-in ceremony in Fiscal 2014, according to the report.

**By the Numbers**

**1,763**

The number of F-35As the Air Force wants to buy. That number is good—for now, Air Combat Command chief Gen. Herbert J. “Hawk” Carlisle said. The Air Force is not ignoring Congress’ request for an updated assessment of how many F-35s the service needs, but delays that have been pushing the buy “to the right” may ultimately affect how many are bought, he noted. “As we look to the future and what we’re going to do, I think there is a decision to be made on how many F-35s we’re going to buy,” Carlisle said. However, he added, “it’s way too early to make that decision when we’re not even” at the point of declaring initial operational capability yet.

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# AIR FORCE ASSOCIATION



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# *Birthday*

1946

70 YEARS SUPPORTING THE AIR FORCE FAMILY

2016

# USAF: 25 Ye

Compiled by Frances McKenney, Deputy Managing Editor

## OPERATION DESERT SHIELD

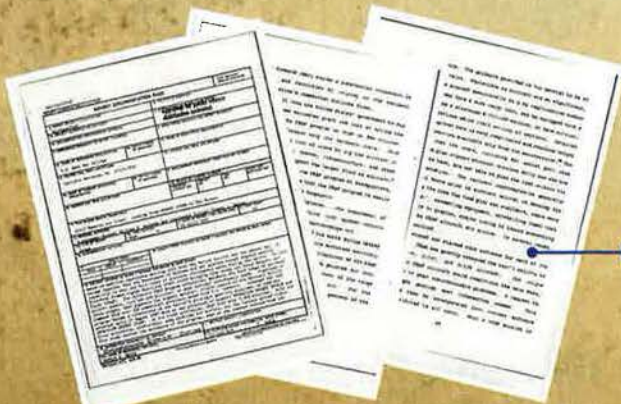
Operation Desert Shield began on Aug. 7, 1990, after the forces of Iraqi dictator Saddam Hussein invaded Kuwait. Desert Shield sought to defend Saudi Arabia and other neighboring countries from a possible Iraqi invasion.



Lt. Gen. Charles Horner, head of 9th Air Force and also US Central Command Air Forces at Shaw AFB, S.C., became the air boss of Desert Shield and Desert Storm. He commanded US and coalition air operations from August 1990 to April 1991. Horner described this snapshot as preflighting an F-16 AIM-9 at Shaikh Isa, Bahrain. He is a member of the Eglin Chapter, Fla.



The commander in chief of US Central Command, Army Gen. Norman Schwarzkopf, asked for development of an air campaign, and in the Pentagon, airpower theorist Col. John Warden led a think tank called Checkmate in planning it. Here, Warden (right) and the air campaign's principal attack planner, Lt. Col. David Deptula, discuss the plan in Checkmate. Today, retired Lt. Gen. Deptula heads AFA's Mitchell Institute for Aerospace Studies. Warden sent this photo from his strategy development company in Alabama, where he is a Montgomery Chapter member.



Many of the 430,000 troops arrived in theater via the Civil Reserve Air Fleet, commercial airplanes "called up" to augment military airlifters. Lt. Col. William Sessoms commanded the 1680th Airlift Control Squadron (Provisional) at Riyadh, Saudi Arabia, while Lt. Col. Thomas Maxson led the 63rd Aerial Port Squadron, Norton AFB, Calif., a West Coast embarkation point. Both men attended the Army War College at Carlisle Barracks, Pa., where they wrote this paper on CRAF's role in war: 5,400 missions ferrying troops and cargo. Sessoms is a member of the Charleston Chapter, S.C. Maxson belongs to the Strom Thurmond Chapter, S.C.

# ars at War

Commentators often say the US has been at war since 9/11/2001, but the Air Force has been flying and fighting nonstop for a full decade longer than that.

With Operation Desert Storm in January 1991, the US military began combat operations in Southwest Asia. Twenty-five years later, the Air Force continues to respond to what has been an unbroken string of contingencies worldwide.

These photos and mementos from personal collections tell stories of operations and exercises many Air Force Association members have supported.

These snapshots reveal that AFA counts among its members significant figures in Air Force history—and airmen who quietly performed their missions, out of the spotlight, with professionalism.

## OPERATION DESERT STORM

Operation Desert Storm began on Jan. 17, 1991, Baghdad time, after Iraq ignored UN Security Council resolutions and did not leave Kuwait. Nearly 2,000 US aircraft took part in the 42 days of operations before the cease-fire on Feb. 28.



F-117 pilot Maj. Gregory Feest dropped the first bomb of Desert Storm, releasing a 2,000-pound laser guided GBU-27 on a hardened bunker housing a radar-intercept operations center. He was some 50 miles inside Iraq. Feest had flown the Nighthawk from Khamis Mushait, Saudi Arabia. He was with the 415th Tactical Fighter Squadron at the time, deployed from Tonopah Test Range, Nev. Retired Maj. Gen. Feest is a Nation's Capital Chapter, D.C., member.

On Day One, F-16 pilot Capt. Michael Boera (right) clasps the hand of Lt. Col. Ed Houle, 10th Tactical Fighter Squadron commander, at Al Dhafra AB, United Arab Emirates. Both had just completed their first combat missions, bombing targets "east of the lakes," southwest of Baghdad. They had deployed from Hahn AB, Germany. "We left our families in a foreign country to go fight," points out now-retired Maj. Gen. Boera. He belongs to the Ute-Rocky Mountain Chapter, Utah.



OPERATION DESERT STORM (CONT. NEXT PAGE)

## OPERATION DESERT STORM (CONT.)



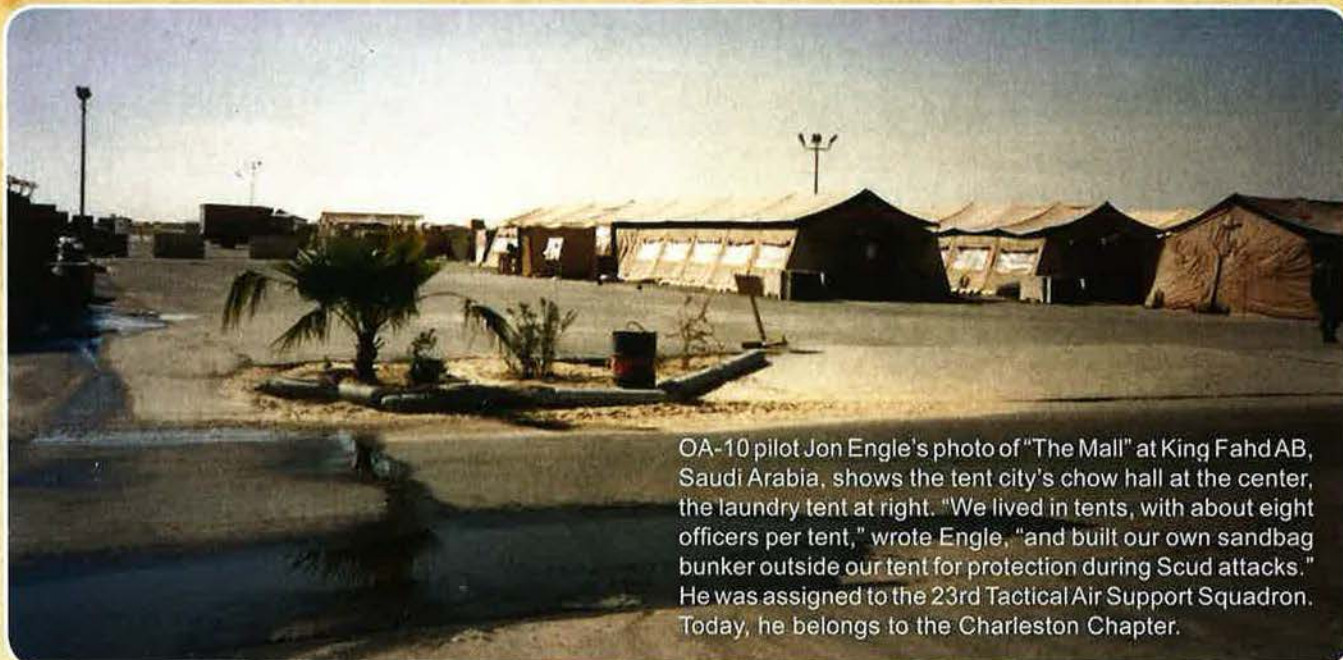
In Saudi Arabia, Schwarzkopf meets with Brig. Gen. Eugene Santarelli (right), who commanded the 4404th Composite Wing (Provisional). Today, retired Lt. Gen. Santarelli is a member of the Tucson Chapter, Ariz., an AFA national director, and a consultant.

A US team at the Royal Saudi Air Force Headquarters building in Riyadh worked in "The Black Hole," nicknamed because once people reported here for work, they seemed to disappear. Brig. Gen. Buster Glosson (seated), US Central Command Air Forces director of campaign plans, led the air campaign's development and implementation. Maj. Mark Rogers is on the phone in this photo. He explains: "This was a late night retargeting of the F-111Fs and F-117s due to weather." Standing second from left is Brig. Gen. Glenn Proffitt, 15th Air Division commander. Retired Col. "Buck" Rogers belongs to the Alamo Chapter, Texas.



"Revenge of the Warthog," by artist Mike Machat of the General Doolittle Los Angeles Area Chapter, depicts OA-10 pilot Capt. Jon Engle on Feb. 6, 1991. As a forward air controller, Engle confirmed for A-10 pilot Capt. Robert Swain that a "black dot" they saw flying below them was an Iraqi helicopter. Swain downed it, scoring the Warthog's first aerial kill. Engle commissioned this art work from Machat, who has more than 20 paintings in the Air Force Art Collection.





OA-10 pilot Jon Engle's photo of "The Mall" at King Fahd AB, Saudi Arabia, shows the tent city's chow hall at the center, the laundry tent at right. "We lived in tents, with about eight officers per tent," wrote Engle, "and built our own sandbag bunker outside our tent for protection during Scud attacks." He was assigned to the 23rd Tactical Air Support Squadron. Today, he belongs to the Charleston Chapter.



A1C John Hamilton Jr. (third from left) loads bombs onto an F-16 at King Khalid Military City, Saudi Arabia. Today residing in Rome, Ga., Hamilton was with the 17th Fighter Squadron, Shaw AFB, S.C. Notice two Mk 84s hanging off the wings? Then-Lt. Col. Gary North (see Operation Southern Watch) and 363rd Fighter Wing weapons and maintenance leadership devised a plan to get more bombs on target: Drop the wing tanks, double the weapons load, and do three quick-turn sorties. So instead of one jet on one sortie, carrying two 2,000-pound bombs, a four-ship completed 12 sorties daily carrying 48 bombs.



At King Fahd, SSgt. Frederick Schlenker of the 355th Aircraft Maintenance Unit removes a strut while rebuilding the C-sump section of the No. 1 engine in an A-10 from the 354th Tactical Fighter Wing. He was deployed from Myrtle Beach AFB, S.C. Retired SMSgt. Schlenker belongs to the Central Florida Chapter.

## JOINT TASK FORCE PROVEN FORCE

Joint Task Force Proven Force conducted some 5,000 sorties flown by the US from Incirlik AB, Turkey, against strategic targets in northern Iraq during the 1991 Gulf War. US European Command had organized the task force, with the air component coming from US Air Forces in Europe.

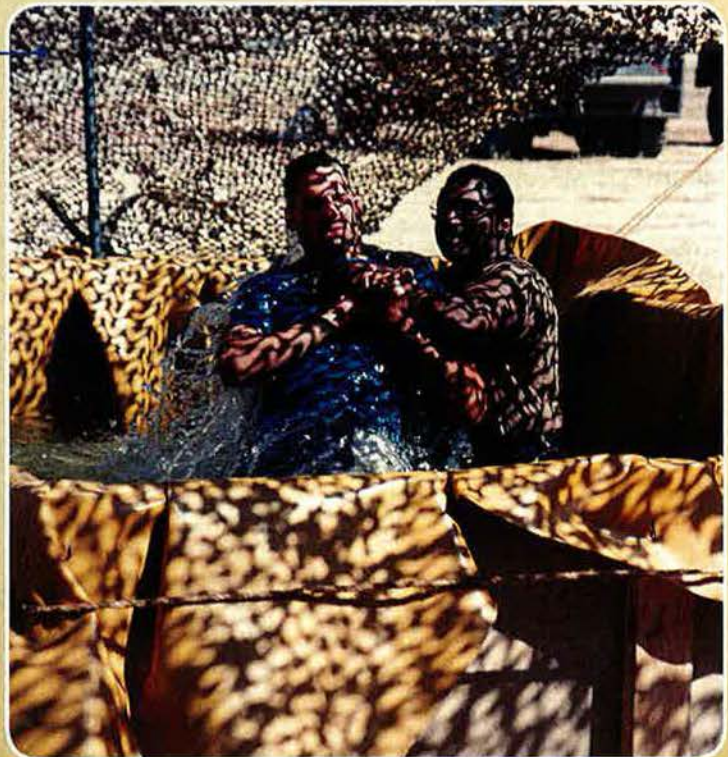


F-15C pilots Lt. David Sveden (left) and Capt. David Prather (next to him) scored the first USAFE air-to-air victories of the war. On Jan. 19, they each destroyed an Iraqi Mirage F1 with an AIM-7. Prather sent this photo of 525th Tactical Fighter Squadron pilots from his four-ship that day. Capt. Larry Ludwig is to his left. Capt. Steve Dingee (far right) would later get a helicopter kill on Feb. 11. Today, retired Lt. Col. Prather belongs to the Harry S. Truman Chapter, Mo.

## OPERATION PROVIDE COMFORT

Operation Provide Comfort began when Kurds in northern Iraq fled the country after the Gulf War. Those along the border of Iran and Turkey needed food, water, clothing, and shelter, and the UN authorized relief efforts in April 1991. Provide Comfort I ended in July 1991.

Chaplain Lawrence Keith (right) baptizes an airman in the tent city at Silopi, Turkey, in summer 1991. Maj. Keith had deployed in April from RAF Alconbury, UK, to this humanitarian services support base "five clicks" from the Iraqi border. He recalls that firemen constructed this baptism pool from rubber sheets lashed to a frame. Retired Lt. Col. Keith belongs to the Alamo Chapter.



Danger! C-130s dropped leaflets to warn people to stay on the road and avoid setting off a land mine.



Money dropping from the skies? The reverse side of this "bill" gave instructions on how to surrender, but to grab attention, this side was purposely designed to look like money.



At Incirlik, Capt. Judith Fedder paints an F-111's bomb with a message for Saddam from her husband's family, the Fixes of Acra, N.Y. She was a logistics officer stationed at Ramstein AB, Germany. Today Fedder is a member of the Donald W. Steele Sr. Memorial Chapter, Va. She retired last summer as a lieutenant general, the deputy chief of staff for logistics, installations, and mission support.

## OPERATION PROVIDE COMFORT II

Operation Provide Comfort II dovetailed with the previous one, running until December 1996. The mission by this time had evolved into enforcing a northern Iraq no-fly zone.

An Iraqi MiG-23 tested it on Jan. 17, 1993, and came up against Lt. Craig Stevenson. "Trigger" Stevenson launched an AIM-120 AMRAAM from his F-16, scoring Provide Comfort's only kill. A boomer sent Stevenson this photo, showing him refueling afterward. Note the missing AIM-120 and fuel tanks, writes Stevenson, today a member of the Billy Mitchell Chapter, Wis. During Provide Comfort, he was with the 23rd Fighter Squadron, Spangdahlem AB, Germany.



F-15 pilot 1st Lt. Brian Simpler (foreground) refuels from a KC-135 over northern Iraq in 1993. He was assigned to the 32nd Fighter Squadron, Soesterberg, Netherlands, deployed to Incirlik. Today he commands the 125th Fighter Wing based at Jacksonville Arpt., Fla., where he belongs to the Falcon Chapter, Fla.

## OPERATION PROVIDE PROMISE

Operation Provide Promise began in July 1992, delivering humanitarian supplies when Bosnia and Herzegovina became engulfed in a civil war after declaring independence from Serbia. The operation delivered nearly 160,000 tons of supplies, sometimes under hostile fire, before ending in January 1996.

14 EUROPEAN NEWS

THE TIMES TUESDAY MARCH 12 1993

Heightened threat to Americans delivering supplies undermines shaky East-West accord

### Moscow makes secret deal to send Serbs tanks and missiles

**By John Helyar**  
**WASHINGTON** — Moscow has made a secret deal to send Serbs tanks and missiles, according to a senior American official here, who says the deal is a major step towards a general European accord. The deal involves the sale of 100 tanks and 100 missiles to the Serbs, and is seen as a major step towards a general European accord. The deal involves the sale of 100 tanks and 100 missiles to the Serbs, and is seen as a major step towards a general European accord.

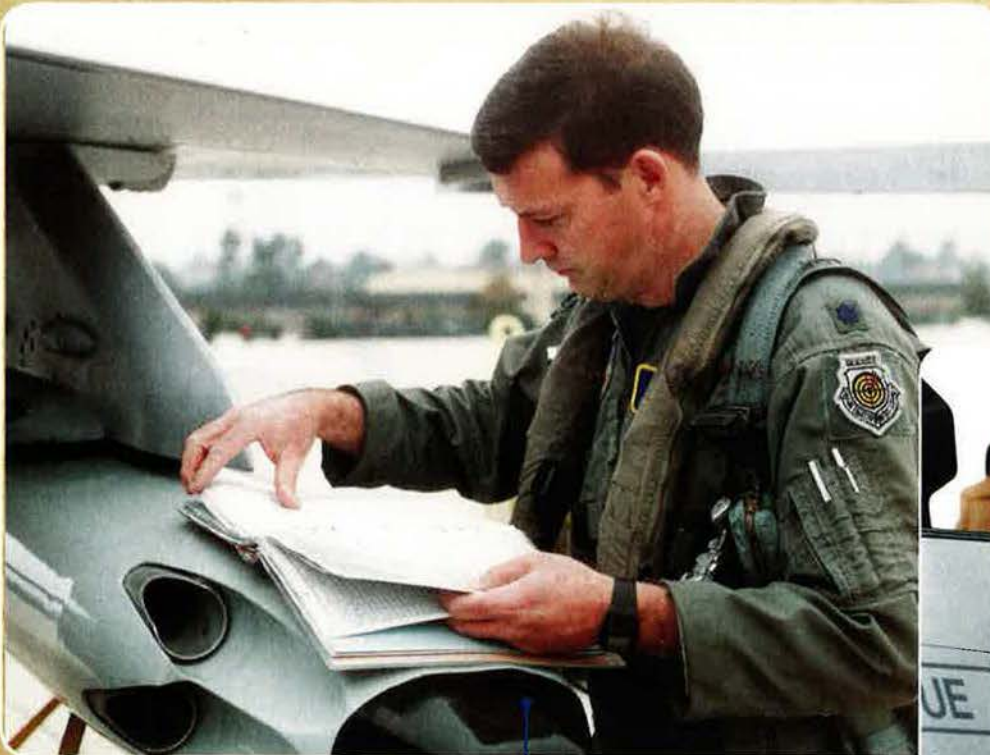


Flt. Lt. Murrell 'Tip' Stinnette, left, of the 435th Airlift Wing, describes the first airdrop of 22 tons of food into eastern Bosnia. The retired colonel is a member of the Gen. Charles A. Gabriel Chapter, Va.

Maj. Murrell "Tip" Stinnette of Rhein-Main AB, Germany, received AFA's David Schilling Award in 1993 for developing airlift and airdrop procedures as the 435th Airlift Wing's chief tactician for Provide Promise. C-130 aircraft navigator Stinnette saved this photo from *The Times* of London, showing him (right) describing the first airdrop of 22 tons food into eastern Bosnia. The retired colonel is a member of the Gen. Charles A. Gabriel Chapter, Va.

## OPERATION SOUTHERN WATCH

Operation Southern Watch, launched in August 1992 and lasting until early 2003, responded to UN Security Council Resolution 688 and enforced a no-fly zone in southern Iraq. It protected Shiite Muslims from attack by military forces of Saddam and discouraged Iraqi moves against Kuwait or Saudi Arabia.



At Shaw Air Force Base, Lt. Col. Gary North, 33rd Fighter Squadron commander, reviews maintenance forms while training for the upcoming deployment. North would make history in Southern Watch: On Dec. 27, 1992, he shot down an Iraqi MiG-25 that had crossed below the 32nd parallel. It was the first MiG kill by a USAF F-16 pilot and the first combat kill with the AIM-120 AMRAAM. Retired Gen. North is an AFA National Director.

## OPERATION PROVIDE RELIEF

Operation Provide Relief in August 1992 was a UN response to starvation in Somalia, brought about by drought and a civil war.



Col. Richard Mentemeyer presents soccer balls, donated by Lithia Springs Elementary School in Florida, to an orphanage in Mogadishu in 1992. Mentemeyer was the joint task force director of operations. He was also to restart the Somali police force. A *New York Times* article that he saved states: "Restoring the police force is the latest example of a broadening of the United States' mission, which has grown from protecting delivery of the relief supplies to patrolling roads, seizing weapons, and repairing some of the damage caused by civil war." Retired Maj. Gen. Mentemeyer belongs to the Denton Chapter, Texas.



At Al Jaber AB, Kuwait, Lt. Col. Gary Woltering, 8th Fighter Squadron commander based at Holloman AFB, N.M., poses with visiting journalist Ross Simpson. The F-117s deployed to Kuwait as part of a buildup that began in November 1997, after Baghdad balked at UN weapons inspections. Retired Col. Woltering is a member of the Tidewater Chapter, Va.

In 1997, now-retired TSgt. Tim Darrah took this photo of flight line expeditors at Al Jaber. Their truck's sign refers to pilots who grew mustaches on this deployment. Darrah deployed with the 74th Fighter Squadron, 23rd Fighter Group, Pope AFB, N.C. He now lives in Sumter, S.C.



Call sign Xena: A-10 pilot Michelle Vestal (far right) and other new captains stand at Al Jaber, with a Warthog and a hardened aircraft shelter—damaged during the Gulf War—as a backdrop. Vestal was with the 354th Fighter Squadron, Davis-Monthan AFB, Ariz., on her first of four combat deployments. Lt. Col. Vestal retired in 2014, with more than 2,000 A/OA-10 flying hours. She is from the Tucson Chapter.

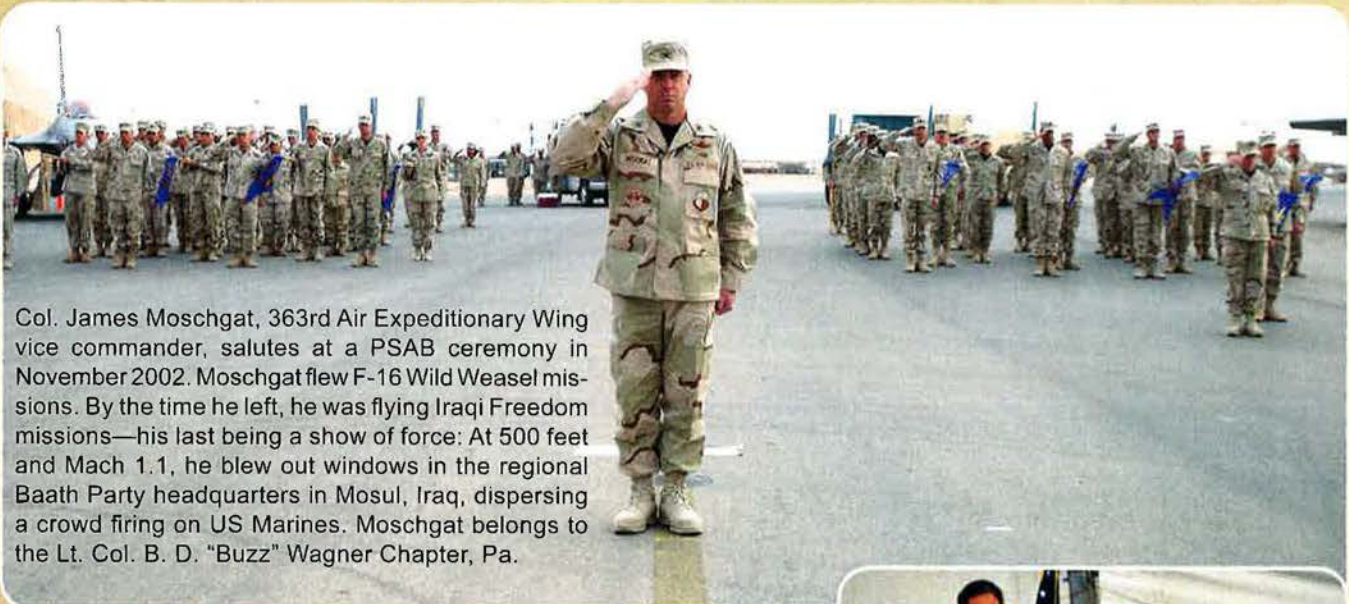
**OPERATION SOUTHERN WATCH (CONT. NEXT PAGE)**

## OPERATION SOUTHERN WATCH (CONT.)

In 1999, Lt. Col. Merrick Krause stands in front of "a hooch" at the Joint Task Force-Southwest Asia headquarters in Riyadh. He was the Pentagon Air Staff Checkmate strategist assisting Lt. Gen. Hal Hornburg, 9th Air Force and Central Command Air Forces commander, in planning how to "hold at risk enemy assets." The assets? Iraqi weapons and C2 nodes. Retired Col. Krause belongs to the Steele Chapter.



This group at the Combined Air Operations Center, Prince Sultan AB, Saudi Arabia, in 2002 includes: Brig. Gen. David Robinson (standing, fourth from left); Lt. Gen. Walter Buchanan III, the JTF-SWA commander (kneeling, left); and Lt. Col. Martha McSally (standing, right of the sign). Robinson—today a retired major general and a Hawaii Chapter member—was the CAOC's director. He sent this snapshot from his home on JB Pearl Harbor-Hickam. Buchanan belongs to the Gen. Charles A. Gabriel Chapter, Va. US Rep. McSally (R-Ariz.) was the first female fighter pilot to fly in combat, retired as a colonel, and belongs to the Tucson Chapter.



Col. James Moschgat, 363rd Air Expeditionary Wing vice commander, salutes at a PSAB ceremony in November 2002. Moschgat flew F-16 Wild Weasel missions. By the time he left, he was flying Iraqi Freedom missions—his last being a show of force: At 500 feet and Mach 1.1, he blew out windows in the regional Baath Party headquarters in Mosul, Iraq, dispersing a crowd firing on US Marines. Moschgat belongs to the Lt. Col. B. D. "Buzz" Wagner Chapter, Pa.

On deployment at PSAB in March 1999, TSgt. Franklin M. Newman III receives the Armed Forces Expeditionary Medal, presented by Maj. Mark Syzdek, 363rd Expeditionary Supply Squadron commander. Newman is a member of the Mount Clemens Chapter, Mich.



## OPERATION DENY FLIGHT

Operation Deny Flight, beginning in April 1993, was NATO's first combat operation. It enforced a no-fly zone over Bosnia, then in the midst of ethnic violence. Control of the operation fell to Allied Air Forces Southern Europe (AIRSOUTH).



The Lion of St. Mark decorates this pocket tab. Lt. Col. Lowell "Rick" Boyd wore it on his uniform at AIRSOUTH in Naples, Italy. He helped plan and implement Deny Flight and served as head of the Response Cell, coordinating between AIRSOUTH and the NATO CAOC at Vicenza, Italy. Retired Col. Boyd belongs to the Langley Chapter, Va.



CMSgt. Nicholas Davis—with snow-covered Vandenberg Hall in the background—was senior enlisted advisor at the Air Force Academy, 1993-97. Academy graduates from those years include A-10 pilot Michelle Vestal (see Operation Southern Watch) and Lt. Col. Nicole Malachowski, the first female Thunderbirds pilot. Malachowski belongs to the Steele Chapter. Davis served in USAF for 30 years and is a member of the Lance P. Sijan Chapter, Colo.

## OPERATION UPHOLD DEMOCRACY

Operation Uphold Democracy in September 1994 used a multinational peacekeeping force to restore democracy in Haiti. The operation transitioned to a UN mission that lasted officially until 1996. Three years later, in June 1999, US Rep. Ben Gilman (R-N.Y.) stated in Congress: "I imagine that many Americans are not aware that we still have troops in Haiti."



That month, Capt. Edwin Hurston deployed to Haiti from Travis AFB, Calif., as a hospital administrator with the 60th Medical Group. Among their duties: medical civic assistance programs for local residents. Hurston says, "Haitians would be in lines of as many as 1,000." This is the view from a hospice where a MEDCAP took place. Retired Col. Hurston is president of the York-Lancaster Chapter, Pa.



Lt. Col. Joe Wysocki's colleague photographed this Delta II, with its GPS II-24 payload, at Cape Canaveral, Fla., in March 1994. Wysocki was launch director for this shot, his last as commander of 1st Space Launch Squadron, Patrick AFB, Fla. Navstar GPS satellites were first used in combat in Desert Storm, enabling navigation, maneuvering, and firing, even during sandstorms. US forces later relied on it for humanitarian operations, like Haiti in 1994. Retired Col. Wysocki is a member of the Sijan Chapter.

## OPERATION DELIBERATE FORCE

Operation Deliberate Force, a NATO-launched air campaign on Serb-held Bosnia-Herzegovina targets, lasted from August to September 1995. It helped persuade the Serbs to agree to peace terms that December.



Maj. Robert Beletic flies the lead F-16 on a mission to Bosnia. Two French Mirages joined his two-ship for this photo. Beletic was the 31st Fighter Wing's weapons standardization and standardization and evaluation OIC at Aviano AB, Italy. He earned the 1995 Lt. Gen. Claire L. Chennault Award as USAF's outstanding aerial warfare tactician, having planned tactics for Deliberate Force raids where F-16s used laser guided bombs in combat for the first time. Retired Brig. Gen. Beletic is a member of the Mile High Chapter, Colo.

## OPERATION JOINT ENDEAVOR

Operation Joint Endeavor implemented and enforced the December 1995 peace accord signed by Bosnia, Croatia, and Serbia.



It was called an unmanned aerial vehicle back then, and MQ-1 Predator prototypes had already proved their capabilities before they began collecting intelligence for peacekeepers in the Balkans. After USAF received responsibility for the program in 1996, Col. James Clark, from the assistant vice chief of staff's office, went to assess its operations. Pictured here in Tazsar, Hungary, Clark always tells people how those first pilots operated the Predator from a converted NASCAR transporter trailer. He's been a force behind the Predator's development as a sensor-shooter ever since. "Snake" Clark was the AFA 1993 Member of the Year, the award's only Active Duty recipient.

CMSgt. Jim Finch, then Air Combat Command's senior enlisted advisor (a position now called command chief master sergeant), addresses airmen of the 27th Fighter Wing, Cannon AFB, N.M., in 1996. During the 1990s, the wing was assigned to ACC and deployed to Southwest Asia for training exercises, expeditionary rotations, and enforcement of no-fly zones over Iraq. Finch became the 13th Chief Master Sergeant of the Air Force in 1999. Today he belongs to the Alamo Chapter.





## OPERATION NORTHERN WATCH

Operation Northern Watch transitioned from Provide Comfort on Jan. 1, 1997, becoming enforcement of the no-fly zone in northern Iraq above the 36th parallel. It lasted until 2003.



During two 336th Fighter Squadron deployments, Capt. Eugene Anderson developed tactics to organize fighter and attack aircraft into coordinated formations to destroy Iraqi SAMs. This enabled flexible responses to Iraqi challenges. Anderson received the 1999 Chennault Award as USAF's top aerial warfare tactician. This photo shows him (seated, center) with F-15E pilots from Seymour Johnson AFB, N.C., deployed to Incirlik that year. Retired Lt. Col. "Geno" Anderson is a member of the Eglin Chapter.

TSgt. Scott Podeyn took this photo at Incirlik, where he was a weapons flight chief and weapons expeditor supervisor. He was with the 48th Fighter Wing, deployed from RAF Lakenheath, UK.



A 2002 *USA Today* article mentioned that pilots routinely dodged Iraqi AAA, but F-16CJ pilot Sean "Stroker" Gustafson got "revenge," when he fired a HARM at an Iraqi weapons installation. Here's Gustafson with his crew chief, MSgt. Amanda Light, after he landed back at Incirlik following that mission. Years later, Light was again Gustafson's crew chief for his final flight with the 93rd Fighter Squadron. Gustafson belongs to the Miami-Homestead Chapter, Fla.



Maj. Jeffrey Decker, logistics operations division chief, welcomes Secretary of Defense Donald Rumsfeld to Incirlik in June 2001. Alluding to intense Iraqi anti-aircraft fire during Northern Watch, *The New York Times* headlined this visit: "Rumsfeld Says Air Patrols Over Iraq Are in Ever Greater Peril." Decker is now logistics director for the KC-46 program at Wright-Patterson AFB, Ohio, and a member of the Gen. Russell E. Dougherty Chapter, Ky.



## OPERATION DESERT FOX

Operation Desert Fox commenced Dec. 16, 1998, after Iraq refused to allow UN weapons inspections to continue. US and British forces launched cruise missiles and air strikes against Iraqi targets for four days.



I'll be home for Christmas Eve: Capt. Randy Kaufman reunites with his family on Dec. 24—to the delight of 10-month-old Jaimee and Sandy Kaufman (left). Aircraft commander for Slam-04, Kaufman had just come off a 24-hour flight to Ellsworth AFB, S.D., from the Middle East. Slam-04 had been part of an integrated strike package in Desert Fox and was the first B-1B crew to drop Mk 82 bombs in combat. They destroyed a Republican Guard barracks. Kaufman belongs to the Tokyo Chapter.

## OPERATION ALLIED FORCE

Operation Allied Force, a 78-day NATO air operation over Serbia and Kosovo beginning in March 1999, was a response to genocide of ethnic Albanians in the Serbian province of Kosovo.

"Mayday, mayday, mayday, Vega 31," radioed F-117 pilot Lt. Col. Darrell Zelko before he bailed out. He'd been hit by Serbian air defenses, following his bomb run near Belgrade. From Tuzla, Bosnia, MH-53 pilot Capt. James Cardoso led a trio of search and rescue helicopters into Serbian airspace to rescue Zelko. Today, Cardoso is a member of the Waterman-Twining Chapter, Fla. He took this photo from a Pave Low flying over Albania during Allied Force.



President Clinton gets a briefing on the go at Spangdahlem Air Base from Brig. Gen. Scott Van Cleef, commander of the 52nd Air Expeditionary Wing in 1999. Under the leadership of Van Cleef—today AFA's Chairman of the Board—the 52nd AEW included F-16s and A-10s from Spangdahlem's 52nd Fighter Wing, F-117s from Holloman, and Active Duty and ANG A-10s. "We didn't even call it a 'war' for quite some time," wrote Van Cleef in 2003. "Nevertheless, for those who flew in it, OAF was war."

## OPERATION ALLIED FORCE (CONT.)

In spring 1999, the RQ-1 remotely piloted aircraft was in Bosnia for surveillance. Intel officer Maj. Mark Cooter, 11th Expeditionary Reconnaissance Squadron, stands in front of the operations cell and ground control station for the Predator in Tuzla. Cooter led the construction and initial standup of the site and was the squadron operations officer. Retired Col. Cooter is a member of the Wright Memorial Chapter, Ohio.



Flash forward to a wartime reunion—with pistols: On TDY from MacDill AFB, Fla., in 2008, Cooter, then CENTCOM's chief of ISR, caught up with his wife, Capt. Angelina Maguinness, a senior analyst, at Logistics Support Activity Anaconda, Balad, Iraq. Maguinness has deployed seven times in 12 years of marriage. This was the first time she crossed paths with her husband. Today, Lt. Col. Maguinness commands an intel analysis squadron. She belongs to the Wright Chapter.

Helmet bag in hand, Lee Alford (far right) poses with his four-ship mates at Aviano after an Allied Force mission. Alford was an F-16CJ flight commander at Spangdahlem from May 1998 to March 2001 and also flew Southern Watch missions in 2000. He is a member of the Tennessee Valley Chapter, Ala.



## OPERATION NOBLE EAGLE

Operation Noble Eagle homeland defense began in the hours after terrorist attacks in the US on Sept. 11, 2001. Noble Eagle's combat air patrols over key US sites and important events continue today.



"I was on alert at the 144th Fighter Wing, Det. 1, March ARB [Calif.] the morning of 9/11," recalls Col. Amos Bagdasarian. After several hours in runway-alert and battle-stations status, he and a fellow F-16 pilot launched for the first West Coast combat air patrol over Los Angeles. They flew for some eight hours, refueled by a KC-10. In this photo at Fresno ANGB, Calif., Bagdasarian (left) checks preflight paperwork in 2003, before one of his last CAP missions. He went on to become wing commander, 129th Rescue Wing, and is a member of the Fresno Chapter.

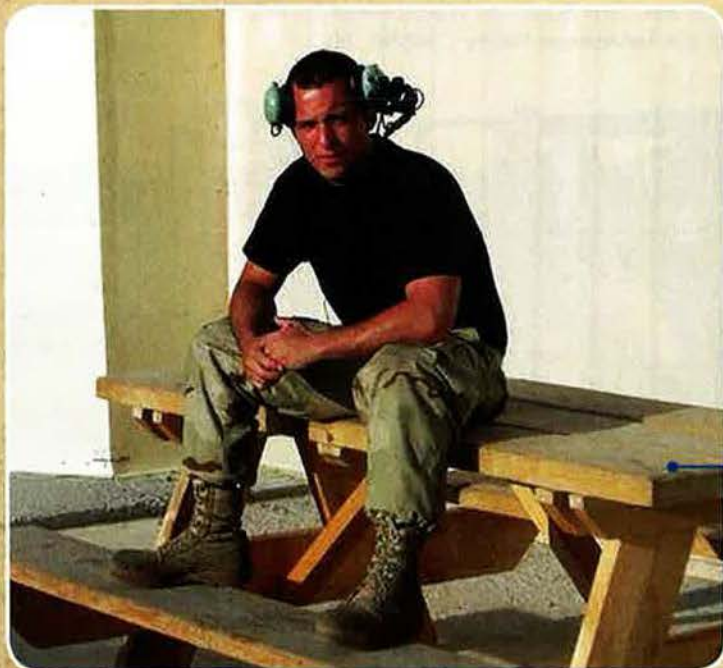
# OPERATION ENDURING FREEDOM

Operation Enduring Freedom—Oct. 7, 2001, to Dec. 28, 2014—launched as a response to the 9/11 terrorist attacks. Coalition aircraft struck terrorist and Taliban targets in Afghanistan.



Reservist TSgt. Stephen Guinty changes a turbine engine on an A/M32 generator at Al Jaber in April 2002. Deployed with the 442nd Fighter Wing, Whiteman AFB, Mo., Guinty was en route to Afghanistan. Today an Air Reserve Technician and a Whiteman Chapter member, Guinty has deployed for Southern Watch, four times to Afghanistan, and just returned from Estonia for Exercise Atlantic Resolve.

Lt. Col. Kenneth Philippart test-fires an AK-47 donated to the Afghan National Army in September 2006. "We got to test-fire them to make sure they were operable before turning them over to the ANA," explains Philippart, now retired and a member of the Tennessee Valley Chapter.



A1C Abraham Almonte takes a break at the Transit Center at Manas, Kyrgyzstan, in August 2007. He was there as a crew chief, 376th Expeditionary Aircraft Maintenance Squadron. Manas operated as a key transportation hub for 10 coalition countries, from 2001 to 2014, and 5.3 million coalition personnel passed through it. SSgt. Almonte is the immediate past president of the Keystone Chapter, Kadena AB, Japan.

In 2011, RAF Group Capt. Colin Da'Silva commanded Camp Bastion, a British base in Helmand province. Upper right, he prepares to fire a light anti-tank weapon on the range—"very excited to get it right," he comments. In a playful moment on Christmas, Da'Silva uses his hands for a landing pad, as a sergeant flies a Chinook model. Outside, dozens of real Chinooks lined the runway. Da'Silva is assistant air attaché, British Embassy, Washington, D.C., and a member of the Nation's Capital Chapter.





During his assignment as the 1st Fighter Wing's top enlisted airman, CMSgt. Rodney McKinley also served from February to June 2003 as 379th Air Expeditionary Wing command chief. Here, he organizes a ceremony at Al Udeid Air Base in Qatar. McKinley became the 15th Chief Master Sergeant of the Air Force in 2006. He belongs to the Central Oklahoma (Gerrity) Chapter.

In case of enemy attack on Al Udeid, CMSgt. Barbara Taylor was to head for these bunkers. Taylor was the US Air Forces Central Command Band superintendent there from June to October 2008, in charge of four rock-pop bands that performed in Southwest Asia, Africa, and the Middle East. After a 30-year military career, Taylor retired in 2012 and became managing director of the Air Force Memorial.



It was 108 degrees in the shade. Sweat and hydraulic fluid dripped down the neck of Marine Corps Col. Frank Zaborowski as he waited for takeoff in this CH-53 at Camp Dwyer in Helmand province, Afghanistan. Zaborowski served as a logistics and engineering liaison for 2nd Marine Expeditionary Brigade from 2009 to 2010 at Kandahar Airfield, Afghanistan. Today he is AFA's senior director of CyberPatriot operations.



"Unforgettable moment," writes SMSgt. Tammy Bean. This photo captured a Marine (right), who had traveled from down range alone, being reunited with his military working dog at the Transit Center at Manas. Bean is today a Joint Staff executive assistant at the Pentagon. She served at Manas as an admin assistant with the 376th Expeditionary Mission Support Group from March to November 2012.

## OPERATION IRAQI FREEDOM

In March 2003, President Bush announced the start of Operation Iraqi Freedom. The US led a coalition to liberate the Iraqi people and disarm the forces of Saddam Hussein.



Maj. Dennis Davoren took this selfie in a U-2 spyplane, "somewhere above 70,000 feet." A Dragon Lady pilot for nine years, he says he also flew "the very first U-2 sortie over Afghanistan for Operation Enduring Freedom." Today, he is a member of the Chicagoland-O'Hare Chapter, Ill.

At the Air Force Academy in September 2003, 10th Communications Squadron Commander Lt. Col. Kristen Dotterway photographed MSgt. Paul Lagatta (standing left) and SSgt. April Malloy (on the ground). They're receiving self-aid buddy-care instruction during training. Dotterway pointed out that all troops—deploying or not—underwent basic first-aid and chemical warfare training. She belongs to the Joe Walker-Mon Valley Chapter, Pa.



Col. Scott Patton shot this from a Huey and calls it "Over Desert Crossroads." At the US Embassy in Baghdad from June 2013 to the following June, Patton was a senior advisor at the Office of Security Cooperation-Iraq, working with senior Iraqi Ministry of Defense and National Security Agency leaders. He is a member of the Tennessee Valley Chapter.



"Battle Rattle," TSgt. Tynisa Haskins labeled this photo, using slang to refer to her gear. Deployed in September 2007, Haskins was NCOIC, Legal Office, with a civil affairs brigade at Camp Slayer, Iraq. She says that next door to where she's standing in the photo was Saddam's Victory Over America complex. Today SMSgt. Haskins is president of the Thomas B. McGuire Jr. Chapter, N.J.



CMSgt. Joe Thornell (far right) and other senior NCO visitors study a sand table at Camp Arifjan, Kuwait, in November 2008. 586th Expeditionary Logistics Readiness Squadron airmen used this sand table, with its models of landmarks and threat areas, before embarking on convoys. Thornell was the 586th Air Expeditionary Group superintendent, based at Ali Al Salem AB, Kuwait. He belongs to the Dacotah Chapter, S.D.



MSgt. Donald Mascardo, surveys an airfield during an expansion project at Speicher Air Base in Tikrit, Iraq, in January 2008. Now retired, Mascardo lives in Stockton, Calif., and was with the 557th Expeditionary RED HORSE Squadron as an engineering superintendent.



Brig. Gen. Mark Barrett commanded 1st Fighter Wing, Langley AFB, Va., when the 40 F-22s of the 27th and 94th Fighter Squadron reached full operational capability in December 2007. This photo was taken in 2009, a year when the Raptors provided Noble Eagle coverage over Inauguration Day in the Nation's Capital, deployed as theater security packages in the Pacific, and headed for the first time to Southwest Asia for a multinational exercise. Retired Maj. Gen. Barrett is AFA's executive vice president.

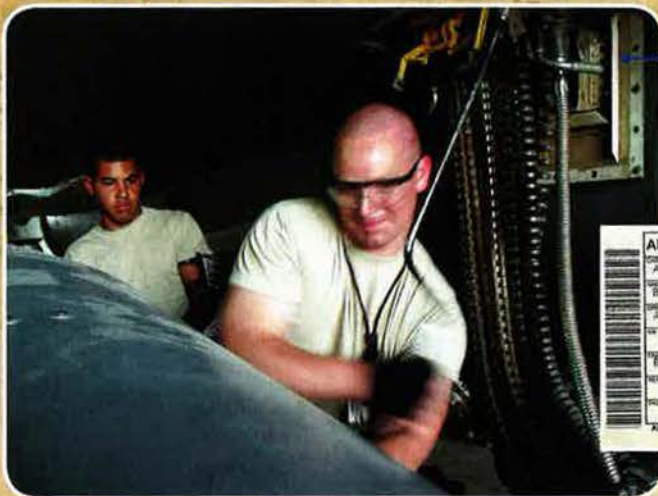


As 332nd Expeditionary Medical Group commander in 2003, Col. Brent Klein (standing to the left of the wooden riser) conducts a regular morning meeting for hospital staff members at Tallil AB, Iraq. Klein is a member of the Carl Vinson Memorial Chapter, Ga.



**OPERATION IRAQI FREEDOM (CONT. NEXT PAGE)**

## OPERATION IRAQI FREEDOM (CONT.)



Destination: Balad. SrA. Chad Westmoreland hand cranks 20 mm ammo into a 169th Fighter Wing F-16CJ, attached to 332nd Air Expeditionary Wing at Joint Base Balad in July 2010. A1C

Charles Pate assists. Their crew chief, MSgt. Bill Brockman, photographed them during their four-month deployment. Brockman served in the ANG for more than three decades and belongs to the Dobbins Chapter, Ga.

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## OPERATION UNIFIED PROTECTOR

Operation Unified Protector ran from March to October 2011, after Libyan leader Muammar Qaddafi's forces began targeting their own civilians during a civil war. The UN called on NATO allies to enforce an arms embargo and a no-fly zone and protect Libyans from attack.



Capt. E. Miranda Hernandez speaks at a ceremony in Souda Bay, Greece, promoting Damon Hill (right) to technical sergeant in September 2011. Hernandez, who is an AFA Emerging Leader, was officer in charge of the 1st Combat Communications Squadron's deployed element. She described this time as "nonstop work but in support of a good cause."

## OPERATION FREEDOM'S SENTINEL

Operation Freedom's Sentinel, beginning on Jan. 1, 2015, followed Enduring Freedom and continues the US and NATO presence in Afghanistan.



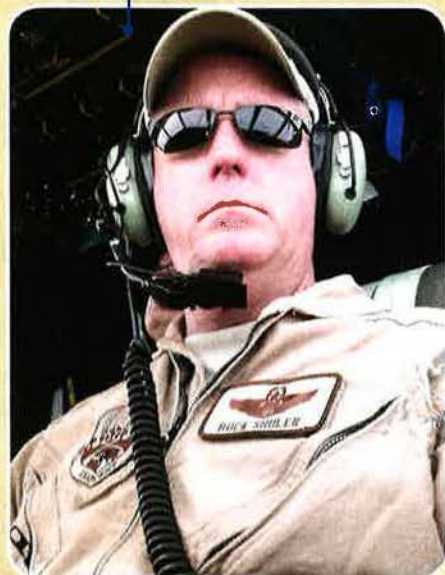
"I was on a 365—a one-year deployment," states MSgt. Josemaria Gonzalez (right). Today the Total Force aircrew management recruiting coordinator is stationed at the Pentagon. A year ago he was the squadron superintendent, 438th Air Expeditionary Advisory Squadron. In this photo he preflights an M240 and a 9 mm sidearm for a training flight from Kabul Arpt., Afghanistan. SSgt. Omar Rodriguez is at left.



## OPERATION INHERENT RESOLVE

Operation Inherent Resolve military actions by US Central Command and partner nations are part of the strategy to degrade and defeat ISIS in Iraq and Syria. Targeted air strikes began in August 2014.

On his fourth overseas deployment, Columbia Palmetto Chapter President and C-130 pilot Lt. Col. Buck Shuler, shown here in July 2014, flew resupply missions in Iraq, Afghanistan, Kuwait, the United Arab Emirates, Bahrain, Qatar, and Oman. His most memorable mission came in August 2014: Airdropping supplies to Kurds stranded on Mount Sinjar and surrounded by ISIS forces.



TSgt. Sharlene Shuler observes a practice mass-casualty event from a South Carolina ANG Black Hawk during Vigilant Guard 15. The three-state exercise in March 2015 practiced deploying force packages. Shuler is NCOIC, airfield management operations, 169th Operational Support Squadron, McEntire JNGB, S.C. The spouse of Lt. Col. Buck Shuler, she was the AFA 2012 South Carolina state member of the year.



In this April 2015 photo from Lt. Col. Sarah Williams, Capt. Matthew Schneider marshals a U-2 at a forward operating location. Today, the U-2 flies more than 16,000 hours a year. At Beale AFB, Calif., Williams is the 9th Maintenance Group deputy commander and president of the David J. Price/Beale Chapter. Schneider, 9th Maintenance Squadron's ops officer, belongs to the C. Farinha Gold Rush Chapter, Calif.



## EXERCISE PITCH BLACK AND EXERCISE TRI-SLING

Exercise Pitch Black, organized by the Royal Australian Air Force, in summer 2014 involved air forces from France, New Zealand, Singapore, Thailand, the UAE, and the US. Exercise Tri-Sling followed afterward—three weeks of dissimilar air combat training with Australia and Singapore.



A1C Aaron Church, in civilian life an *Air Force Magazine* senior editor, marshals a D.C. ANG F-16 while deployed to RAAF Base Tindal in Australia's Outback in September 2014. The 113th Wing participated in both exercises on this deployment as part of a Pacific theater security package. SrA. Church belongs to the Northeast Iowa Chapter.

## RESOLUTE SUPPORT

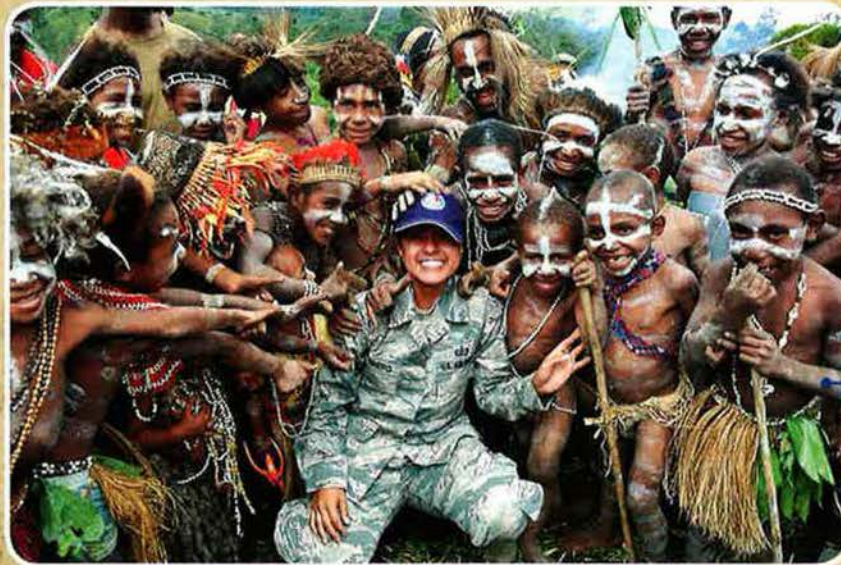
The Resolute Support train-assist-advise mission, led by NATO, immediately followed the December 2014 stand down of the International Security Assistance Force in Afghanistan.



On the drums, TSgt. Adam Green drives the rhythm for "Nighthawk," eight US Air Force Band musicians who deployed from JB Bolling-Anacostia, D.C., in February 2015. Green volunteered for this gig, spending 100 days in Southwest Asia. Favorite moments: organizing an "Al Udeid Idol" singing contest and shooting a music video with only cell phones, a laptop, and a digital camera as recording equipment. Green belongs to the Steele Chapter.

## OPERATION PACIFIC ANGEL

Operation Pacific Angel is a recurring humanitarian assistance program led by Pacific Air Forces and hosted by US Pacific Command. It has built partnerships with Pacific nations since 2007.



Toddlers in Goroka, Papua New Guinea, followed her around, writes Keystone Chapter's SSgt. Veronica Guerrero of the 18th Contracting Squadron, Kadena Air Base. The girls in the town were "fascinated by the fact that I wasn't married, that I didn't have kids, and I had traveled the world." Guerrero took this June 2015 photo during a thank-you celebration at a school she helped refurbish.

### End Note

When AFA members and others contributed their photos for this pictorial, they sometimes disclosed the personal cost of two decades of deployments.

One airman wrote: "Many of the pictures I had not seen in a long time, and they brought up some serious memories of things I have not worked through."

Another airman scrambled to get permission from others in the photo, thinking they might not want to be identified because they could deploy again.

After 25 years on nonstop operations, the vast majority of airmen now serving have never known a time when the Air Force was not at war. ★

# Counterforce, LeMay Style

*As graduation speakers go, Gen. Curtis E. LeMay was hard to top. Famed World War II commander, youngest general since Ulysses S. Grant, architect of Strategic Air Command, he was in his third year as Chief of Staff. LeMay had clashed bitterly with Kennedy and Johnson Administration officials on many occasions. He didn't hide his animosity. He told the 493 cadets he didn't want nuclear stalemate, preferring US nuclear superiority. Arms control threatened US superiority. Nuclear war was not inevitable; nuclear weapons made war far less likely. The US needed "counterforce"—the ability to destroy Soviet nuclear weapons in a disarming strike. Each one of these views was anathema to the wizards of Washington.*

**T**hrough development of nuclear energy and advanced aerospace systems, civilization has attained its greatest capacity for progress or for destruction. From many sources, we hear expressions of doubt concerning man's ability to avoid using this power for his destruction.

I do not share that doubt. It seems to me that modern weapons make it clear that the penalties for lapses in vigilance and misuse of power that have marred history are now prohibitive. This means that civilization, in order to survive and progress, must do better than it has in the past. And it is my conviction that, in recent years, civilization has done better, according to standards that are acceptable to our country and to the Free World.

It is also my conviction that the United States Air Force throughout its history has done much to make that improvement possible. My basis for that conviction is the record of Air Force operations through two world wars, the Korean War, and through a long roll of crises such as Lebanon, Formosa, Berlin, and Cuba.

For about the first half of that period, the Air Force was planning, testing, training, and fighting to produce the results that established it by 1945 as a dominant military instrument of national policy. Since that time, we have provided the major strategic deterrent to general war. In that role, we have convinced the potential enemy that the risks incurred by full-scale aggression are unacceptable. ...

It is vital to understand that these restraints have not resulted from a sudden and miraculous transformation in the attitude and the aims of world Communism. It is equally important to understand that these restraints have been imposed primarily by the superiority of US strategic forces, teamed with hard-hitting tactical elements. ...

Your first requirement will be to obtain continuing support for the maintenance of US strategic advantage. That advantage must be maintained as the cornerstone of our deterrent posture. ...

You therefore must not permit the requirement for strategic advantage to be obscured by arguments that describe the

## "Address to Cadets"

Gen. Curtis E. LeMay  
Chief of Staff of the US Air Force  
Graduation Address  
United States Air Force Academy  
Colorado Springs, Colo.  
June 3, 1964

Find the full text on the  
*Air Force Magazine's* website  
[www.airforcemag.com](http://www.airforcemag.com)  
"Keeper File"



present world situation as a condition of "mutual stalemate" and "mutual deterrence."

There is no evidence of stalemate in the present power balance. It still favors us by a clear margin. It is still determined by relative pace of actions going forward in all the areas of national endeavor—social, economic, and military. ...


The idea of using force to achieve total defeat of an enemy is now only one of the available choices. When you consider the damage levels that high intensity war can bring even to the nominal "winner," total defeat of the enemy may be the least desirable choice.

For the future we need to improve our methods of using weapons to gain precise, but limited, objectives for particular crisis situations. This would increase our capability to neutralize selected targets which are important to the enemy. If carefully applied, these actions could force him to back down from his initial aggression and negotiate our respective interest. ...

Now, as a final comment on strategy and operational concepts, I want to stress the importance of a counterforce concept of deterrence. By "counterforce," I mean the ability to destroy selective elements of the aggressor's strategic offensive systems, thereby reducing his capability to attack us.

I believe counterforce provides the best deterrent because it is based on a concept of destroying or neutralizing the military forces, which the enemy must depend on to gain a victory. And through this effective deterrence we achieve the principal objective of our military forces—that is, the full protection of American lives and property.

If deterrence should fail, counterforce provides for maximum limitation of damage under the worst possible conditions. Thus, counterforce, in situations involving either the success or failure of deterrence, provides the greatest dividend that we can gain from any strategy. ...

In my 35 years of service, I have seen aerospace power remold or set aside many traditional military concepts. Since 1945, it has compelled action on a broad and continuing basis to meet the hard requirements of our security as determined at the highest levels of national leadership. That action, though discomfiting to some, is essential to all. 

**E**nding four years of intense speculation, the Air Force declared in late October that Northrop Grumman would be the builder of the new Long-Range Strike Bomber. The announcement formally launches a 10-year effort to begin fielding a fleet of aircraft that can penetrate any air defenses and reach any target on the globe, in numbers that can both credibly conduct an extended air campaign and ultimately replace the existing, antiquarian fleet of B-52s.

Few new details of the project were released.

At a Pentagon press conference to announce the winner, Air Force Global Strike Command boss Gen. Robin Rand said the bomber will achieve initial operational capability in 2025.

"We very much need" the new aircraft "as the anti-access, [area]-denial threat contin-

ues to increase," he said. Air Force Global Strike Command will determine what constitutes IOC and will also decide what nomenclature—such as B-3 or B-4—the aircraft will receive. Rand stressed LRS-B is part of a "joint ... family of systems" also involving electronic attack and intelligence, surveillance, and reconnaissance systems. The new bomber is required to be capable of carrying nuclear weapons within two years of its conventional IOC.

Defense Secretary Ashton B. Carter, at the announcement press conference, said, "Building this bomber is a strategic investment in the next 50 years. It demonstrates our commitment to our allies, and our determination to potential adversaries, making it crystal clear that the United States will continue to retain the ability to project power throughout the globe long into the future."

Northrop Grumman bested a team of Boeing and Lockheed Martin on the project, which represents the first new bomber to get the go-ahead since Northrop's own B-2 went into production in the late 1980s. The last of 21 B-2s was delivered in 1997. Though there was heavy odds-making that the award—regardless of who won—might signal a huge shake-up among military airframers and trigger a series of mergers and acquisitions, the initial impact on stocks was mild. No companies immediately declared a new business strategy. Boeing and Lockheed Martin did promptly protest the decision.

Wes Bush, Northrop Grumman CEO and president, said in a press statement that as "the company that developed and delivered the B-2 Spirit stealth bomber, we look forward to providing the Air Force a highly capable and affordable" LRS-B.

# LAUNCHING THE



Photo from Northrop Grumman television commercial

"Our team has the resources in place to execute this important program, and we're ready to get to work."

A few days after the announcement, Boeing was briefed by top Air Force acquisition officials on how the winner was chosen.

#### A FULL-UP AIRCRAFT

The program has been highly classified since its inception, and the Air Force clearly means to keep it that way, offering little new information about the project. Not only are the shape, payload, and performance of the jet still tightly held secrets, the Air Force also declined to reveal any of Northrop Grumman's industrial team, the type of engines that will power the LRS-B, or even how many engines it will have.

Pratt & Whitney—maker of the F-22 and F-35 fighter engines—offered its congratulations to Northrop Grumman in a

public statement, but declined any further comment. The Air Force would not confirm or deny Pratt & Whitney's involvement in the program.

Unusually for a program of this size, Lt. Gen. Arnold W. Bunch Jr., deputy chief of Air Force acquisition, said the competitors chose engines on their own to best fit their designs and the whole airplane, as a package, is what the Air Force selected.

"The competition for all components of the aircraft [was] already done as part of the proposal," Bunch said. "It's a full-up aircraft, is what we have received."

No information was disclosed about where the aircraft will be built, or even the value of the contract. Service officials declined to identify any requirements (except cost), how the proposals had been evaluated, or how close the competition had been, except to declare that Northrop

Grumman had offered the "best value" solution.

An unnamed source selection authority made the ultimate call, but his or her choice was approved by Air Force acquisition chief William A. LaPlante, Air Force Secretary Deborah Lee James, and Pentagon acquisition, technology, and logistics chief Frank Kendall.

Speaking with reporters about the impending award a few days earlier, LaPlante said the tight secrecy is required because "we need to preserve, as long as we can, the advantage of what we're doing so that adversaries can't already be trying to build defenses" against the new bomber. For some time to come, USAF will "hold the

*The LRS-B program is highly classified. Payload, shape, type of engines, and performance are all shrouded in mystery.*

# THE NEW BOMBER

By John A. Tirpak, Editorial Director

**The LRS-B will be modular, advanced, and highly secret.**



**A B-2 built by Northrop Grumman during the production phase. The company was awarded the LRS-B contract, but Boeing, in partnership with Lockheed Martin, is protesting USAF's choice.**

most precious things” about the bomber “a little bit close,” LaPlante said.

A few days later, in a telephone interview with *Air Force Magazine*, LaPlante said the service has started work on a classification guide that will spell out what details—and when—the Air Force will reveal about LRS-B. He anticipated that some additional material might come out around the time the 2017 defense budget is presented to Congress.

The only hard requirement that USAF discussed for LRS-B is its cost. At the Pentagon press conference to unveil the winner, LaPlante explained that it was former Defense Secretary Robert M. Gates who set a ceiling flyaway cost—known as the APUC, or average procurement unit cost—of \$550 million apiece for the bomber in 2010 dollars.

“This was a key performance parameter established back then, ... specifically designed to ensure that we made the bomber affordable,” LaPlante explained. He then asserted that, based on independent cost estimates from the Air Force Cost Analysis Agency and the Pentagon’s own Cost Assessment and Program Evaluation shop, the actual cost of the LRS-B “will be \$511 million per

aircraft in 2010 dollars when procuring 100 aircraft.”

The Secretary of the Air Force said the service hopes to do “even better” than that. The AFCAA and CAPE estimates were “within two percent” of each other, LaPlante noted.

One defense business analyst described the unit cost figure as “eye watering.” Another said the fact that James believes the cost will be lower still is a clear indication that Northrop Grumman was “aggressive” in pricing its LRS-B proposal.

Bunch also acknowledged that \$1.9 billion has been spent on “risk reduction” efforts on the program so far and LaPlante said that the engineering, manufacturing, and development phase will cost \$21.4 billion in 2010 dollars—the baseline year of the program.

“This is a cost-reimbursable type contract with cost and performance incentives,” LaPlante said. “The incentives minimize the contractor’s profit if they do not control cost and schedule appropriately.” That means if Northrop Grumman meets its cost and schedule targets, it will receive the full—but unspecified—amount of fees under the contract. Missed deadlines or cost growth will reduce those fees—possibly

## BOEING’S PROTEST

Boeing, along with its partner Lockheed Martin, filed a protest of the LRS-B award on Nov. 6, starting the clock on a 100-day assessment by the Government Accountability Office to determine if there were any improprieties in awarding the contract to Northrop Grumman, and if there were, what remedies are needed.

In a press statement, Boeing questioned Northrop Grumman’s technical and financial ability to carry out the program, and suggested Boeing had offered a lower price, calling the selection process “fundamentally flawed.”

“The cost evaluation performed by the government did not properly reward the contractor’s proposals to break the upward-spiraling historical cost curves of defense acquisitions, or properly evaluate the relative or comparative risk of the competitor’s ability to perform, as required by the solicitation,” Boeing claimed. The company said it had offered “the best possible LRS-B at a cost that uniquely defies the prohibitively expensive trends of the nation’s past defense acquisitions.”

down to zero if the program slips badly in either arena.

Moreover, the contract sets out “options for the first five production lots, comprising 21 aircraft out of the total fleet of 100,” LaPlante explained. Those options are fixed price, indicating that the Air Force believes the selected design to be mature, based on well understood technologies.

LaPlante said the Air Force is no longer thinking in terms of “80 to 100” LRS-Bs, but is driving toward the 100 figure. If fewer than 100 are built, unit costs will be higher, he said.

The Air Force’s stated need for 80 to 100 LRS-Bs comes off as “squishy,” Mackenzie M. Eaglen, a fellow at the American Enterprise Institute, said at a recent Air Force Association Mitchell Institute for Aerospace Studies discussion about the new jet. The quantity range indicates the number is soft and that no hard analysis has been done on the requirement, Eaglen alleged, and Congress is likely to fund to the lower number. This is a problem because the real requirement is likely to be around 174 aircraft, she predicted.

In a study released in November by the Mitchell Institute, retired Air Force Lt.

Gen. Michael R. Moeller said the phaseout of the B-52 and B-1 fleets in the 2030s means the service will need more than 100 LRS-Bs, simply to achieve the sortie rates required in a future air campaign against a well-defended enemy.

“A modernized and capable Air Force bomber force of 150 to 200 aircraft is required to maintain America’s asymmetric advantage in long-range precision strike over any potential future adversary,” Moeller wrote in the report.

In the pre-award press conference, LaPlante explained that the program was scheduled to avoid any steep ramp-ups in production, which typically invite cuts when last-minute budget reductions must be found. LaPlante called the schedule and budget for the bomber “resilient” against tinkering by budgeteers, to make the program predictable and come in on time. Because changes add cost, no requirements have been altered since they were set in 2011.

#### PRICING IT OUT

“It was deliberately set up that way,” he said, “To make it easy for programmers to keep it funded.” What has caused many

program disruptions before, he said, is “assumptions of having to ... go to a high rate of production, and then the funding situation changes, the world changes, and that gets cut, and then we have the [death] spiral.” Multiply the unit cost of \$550 million “by a number that you get when you’re in steady state production—seven or eight—that’s something” affordable year after year, he said.

Indeed, it may have been this slow-and-steady approach to production that may have neutralized Boeing and Lockheed Martin’s strengths in producing large numbers of aircraft. One analyst said the notional schedule “is not much faster than hand-building” the airplanes.

To put the price of the LRS-B in perspective, the Air Force released information comparing the development and production costs of the B-1A/B and the B-2 with the LRS-B.

In inflation-adjusted Fiscal 2016 dollars, the B-1A/B programs required \$19.3 billion in development money, producing 100 aircraft at a flyaway unit cost of \$410 million each.

The B-2 program—for which a production capability of 132 aircraft was built but

The Air Force in turn said that while “it is every competitor’s right to file a protest, the Air Force is confident that the source selection team followed a deliberate, disciplined, and impartial process to determine the best value for the warfighter and taxpayer.”

Northrop Grumman said it was “disappointed” that Boeing and Lockheed Martin “have decided to disrupt a program that is so vital to national security.” The company said it had faith in USAF’s process and that it “took into full account the parties’ respective offerings and their relative capabilities to execute ... on schedule and on budget.” Northrop said its approach is “inherently more affordable and based on demonstrated performance and capabilities. Our record stands in contrast to that of other manufacturers’ large aircraft programs of the last decade.” This last comment was a clear dig at Boeing’s difficulties with the KC-46 tanker and Lockheed Martin’s overruns and delays on the F-35 fighter. Northrop Grumman noted it is “the

only company to ever design a stealth bomber” and insisted it had offered “the best solution” in the contest.

Officials familiar with the protest said Boeing was upset that the Air Force seemed to put high emphasis on past performance with bomber programs, not giving proper credit for technology advances since 1997, when the last B-2 was produced. The Air Force pointed out several times to reporters, however, that acquisition laws demand they count historical performance on similar projects.

Boeing and Lockheed Martin also suggested they hadn’t been properly credited for their ability to produce large numbers of aircraft, saying that Northrop’s yearly output is a small fraction of the Boeing team’s. The Air Force noted, though, that it plans to build only a small number of LRS-Bs every year, potentially negating the volume experience of the Boeing team.

The protest tactic has worked for Boeing before: In 2008, Boeing lost the KC-X tanker contract to Northrop

Grumman, teamed with EADS (now Airbus). The GAO determined that USAF hadn’t followed its own rules in the contest, threw out the result, and insisted the Air Force do the whole thing over. Boeing won on the re-compete in 2011, and is now building the KC-46. Boeing readily acknowledges that it underbid the fixed-price tanker program, and is now more than \$500 million in the red, eating any overages resulting from schedule delays and design mis-steps. However, an industry official observed that the LRS-B development contract is cost-plus: While Northrop Grumman would lose incentive fees for poor performance, the government would be on the hook for any overages.

If the GAO finds no issues with the process of the award, it could make that announcement sooner than 100 days. If there are issues, remedies could include small changes such as clarifications of bids or rescoring some elements of the contest, all the way up to throwing the whole thing out and ordering a new competition.

only 21 were bought—cost \$37.2 billion in development, with a \$1.5 billion unit cost.

Also expressed in Fiscal 2016 dollars, LRS-B development will cost \$23.5 billion, and the program will produce 100 airplanes at a unit price of \$564 million, versus the required \$606 million.

All comparisons include the cost of engines, provided as government-furnished equipment on the B-1 and B-2 programs, but contracted for by Northrop Grumman under the LRS-B program, a USAF spokeswoman said. Military construction costs were not included in the cost comparisons.

The unit cost will be averaged over the program's lifetime, so earlier ones will be more expensive and "the last one will be least expensive," LaPlante pointed out.

A different choice might have had significant industrial base ramifications. Had they won, Boeing and Lockheed Martin would have had a lock on the top three Air Force acquisition programs, including Boeing's KC-46 tanker and Lockheed Martin's F-35 fighter. Northrop Grumman, without a major aircraft prime contract, might have been subject to a merger or acquisition. Still, LaPlante insisted that "the specific industrial base was not at all a [criterion] in the source selection." He's also previously noted that with the recapitalization of the E-8 JSTARS and the T-X trainer competition coming up—along with a number of classified programs he would not discuss—the Air Force deems there to be enough work available to preserve competition among the major airframers.

In the pre-award press conference, LaPlante said prior performance on major programs was a key element in vetting offerors' costs. Boeing has had difficulties with the KC-46 tanker, giving up "all its schedule margin," James said in September, and the tanker was not deemed an especially tough technological challenge.

Lockheed Martin, though it has vastly improved its performance on the F-35 program, is still behind on software and

in fielding the global maintenance system to support the international program.

Northrop Grumman, however, is credited with having some real successes in open-architecture efforts involving the B-2 and other programs and is also credited with good performance on a highly classified high-flying reconnaissance aircraft program.

The number of LRS-B test aircraft, LaPlante said, would be comparable to that in the KC-46 program, employing four prototypes that will eventually join the 179-airplane fleet.

The LRS-B has been run by the Air Force's Rapid Capabilities Office, and LaPlante, in the pre-award press conference, said it will stay there for the foreseeable future.

The RCO, he said, "is a streamlined acquisition shop that does some of our most sensitive and important work." It has "an incredible track record" delivering cutting-edge capabilities, he said. "It's got our best people there, they love their jobs, they are there from six in the morning to nine at night." The only RCO product acknowledged by the Pentagon, he said, is the X-37B reusable unmanned spaceplane.

"Imagine that same kind of office that does a lot of other things—and I'm not talking about one-off things, [but] ... things that go into production. They're very good."

Like the team that developed and built the F-117 stealth attack jet, the RCO "is a small, empowered group of requirements people for warfighters, with acquisition people, with maintainers, who are all empowered, have protection of leadership, and they generally would streamline processes."

Though it has lots of oversight from within the Pentagon and the key defense committees in Congress, the RCO remains "lean and mean," LaPlante asserted.

"The size of this program office for LRS-B is about 80 people when you add them up nationally, because there are pieces of it that are in sustainment, there are pieces

of it that are doing materials," and other specialties at disparate locations.

He also said LRS-B has benefitted from "Red-Blue teaming" wherein one group is developing the technology while another is trying to devise ways to defeat it, and one feeds into the other.

"It's informed by intelligence, but it's not driven by intelligence; it's driven by physics and operations research," LaPlante said.

## STAYING AHEAD OF THE THREAT

The only "equivalent program," he said, was "our Air Survivability Program," an effort now 30 to 40 years old, that "has the same equivalent set of experts, and Lincoln Labs is the lead, ... and it is constantly trying to figure out ways to work stealth in the ... air part of that problem. ... It's ahead of the threat and it discovers physics, and it's figuring out where we need to go."

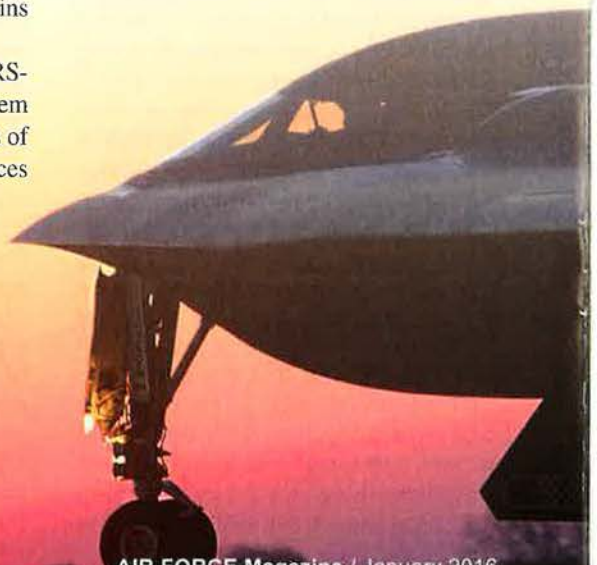
The LRS-B will be built using an open missions systems architecture: The government will own the design data on avionics and other subsystems so that upgrades—expected to come every other year or so—can be competed. This is yet another way the Air Force expects to keep costs down, LaPlante said.

"We want to rapidly upgrade" the airplane to be able to stay ahead of the threat, he explained. LRS-B will therefore remain highly adaptable to changing conditions, and the business approach is "healthy for the industrial base."

The LRS-B arose from the ashes of the Next Generation Bomber program, itself an evolution of what was called the "2018 bomber" of the early 2000s.

Bunch, in the pre-award press conference, said that after the NGB was canceled

**A B-2 taxis in 2014 during Exercise Global Thunder. The next generation Long-Range Strike Bomber is expected to bring state of the art 30 years forward.**





in 2010—because Gates believed it was too expensive—“team experts from all the services” and the Office of the Secretary of Defense studied the rapidly worsening anti-access, area-denial situation, evaluating the relative merits of standoff systems, unmanned aircraft, cruise missiles, “and the cost associated with those.” They also “looked at the reusability of those things” and how useful they would be against the toughest targets.

LRS-B requirements were based on “the flexibility, endurance, the reusability, ... all of those aspects that [determined] that a long-range strike bomber was the right program to ... provide that capability and fill that requirement” for the whole of the Defense Department, he said.

“It was not just the Air Force saying we want to go do this, it was an entire team ... from across DOD,” Bunch explained. Further analysis of how many aircraft are typically in training, depot, and test indicated that 100 airplanes was the right number.

Adversaries, Bunch said, “have watched what we have done for many years with airpower. They have evolved. They continue to evolve to make us stand off more as they try to minimize our capabilities to strike targets.” The new jet will provide the national command authorities “the option to strike any target, any time.”

Integrating the many penetration technologies that went on in development after the B-2 was terminated “is not easy” and the LRS-B’s development will be “challenging,” LaPlante acknowledged. But because the aircraft is based on technologies largely in-hand and well-understood, “we don’t ... have

to invent the subsystems as we’re inventing the system.”

At the same time, “just because it’s existing [technology] or mature doesn’t mean it’s not advanced, ... not incredible,” LaPlante insisted.

Unusual for any system, the LRS-B actually went through a preliminary design review “as well as manufacturing readiness reviews” on both competitors’ aircraft, LaPlante revealed. The level of technological maturity of the chosen design “is higher, I would say, than any other developmental program that we’ve tried to initiate at this phase for a new aircraft.”

He said, “It’s not just that some of this stuff has been wind-tunneled or prototyped or flown,” but that some of the components that will be on the LRS-B “are being used today, operationally.”

To ensure the aircraft will be maintainable, he also noted that maintainers from the B-2 program were part of the program office, to ensure that the low observable capabilities of the bomber can be maintained at operationally useful rates.

A spokeswoman said later that the LRS-B is not, however, expected to offer a huge leap in maintainability versus the B-2, but will be “comparable” in this regard. Initial maintenance will be provided through contractor logistics support, but ultimately the Air Force intends an organic capability, she said.

Bunch said the bomber will have a “flexible weapons load,” suggesting the effort ongoing with the B-2 to be able to carry dissimilar types of ordnance will be baseline to the LRS-B.

Kendall, in a 2015 assessment of the Pentagon’s acquisition system, said he

has become concerned that in the effort to contain costs by reducing risk, the Pentagon may have swung too far and perhaps should accept greater risk to preserve its technology edge. Asked if LRS-B is reaching far enough to be a genuine advancement, LaPlante said it is.

“I think it has the right balance to it,” he said. Without the block upgrade approach, there would be “system pressures” to demand almost impossibly high capability from the first version, because program people wouldn’t believe “they’ll have another chance” to get those desired capabilities.

He said he thinks the program succeeds at being advanced because “you have all the hooks and ... plans to upgrade the next version of it. So that’s where I think we did it, ... by being modular and open.”

Though none of the Pentagon or USAF leaders who spoke about the LRS-B mentioned its potential as an unmanned platform, a USAF spokeswoman confirmed it will be “provisioned to enable future unmanned capability. Any decision to move to an unmanned configuration would be made in the future.”

The Air Force said the program, having passed Milestone B, will now move into the development phase. “We will continue to provide Congress with annual updates on the program’s progress at the appropriate classification levels,” the spokeswoman said. At future milestones, more information will be revealed, “typical of any other acquisition program.”

The first unit to receive the LRS-B will be the 419th Test Squadron at Edwards AFB, Calif. ✪



USAF photo by A1C Joel Pfeister

In April a massive earthquake shook Nepal, killing more than 8,000. USAF sprung into action to help.

# Airlift to Nepal

By Jennifer Hlad, Senior Editor



**J**ust hours after a devastating earthquake hit Nepal on April 25, 2015, airmen all over the world sprung into action. By May 26, the US Air Force had flown 171 sorties, airlifting 800 tons of cargo and more than 860 passengers in and out of Nepal on C-17 Globemaster IIIs and C-130 Hercules airplanes, all part of the massive joint effort to help survivors in the remote country northeast of India.

Airmen, equipment, and supplies from Air Force bases in Japan, Guam, Hawaii, and Alaska contributed to the effort, helping deliver aid quickly to those who needed it. Commanders said the mission underscored the importance of joint training and international partnerships while giving airmen a unique opportunity to use their skills in a mission they said was immensely rewarding.

More than 8,000 people died when the 7.8 earthquake hit Nepal, and thousands more were trapped in the rubble or displaced as entire villages were flattened. As the casualties mounted, the Nepalese government declared a state of emergency, clearing the way for an international humanitarian response.

Planners at the 618th Air Operations Center (Tanker Airlift Control Center) at Scott AFB, Ill., received an initial notification from US Transportation Command around noon on April 25 that the US Agency for International Development would be asking for help transporting urban search and rescue teams, said Col.

Brian Lindsey, one of the directors of operations at the TACC.

They immediately began looking at what that mission would require and what countries US airplanes would need to fly over to reach Nepal, said Brian Erts, division chief of the special assignment airlift division. It typically takes 21 days to get diplomatic clearance to fly into Nepal, Erts said, and the planners also needed to secure 55 separate clearances for the airplanes to pass through other countries' airspace on the way there.

"Because Nepal is not a standard place for air mobility aircraft to go through, just finding routes" was a challenge, Erts said.

#### ON THE FRONT LINE

Additionally, the lead planner needed to determine what had to go on the aircraft, the most effective route, and the logistics of an air refueling so the first airplane could get to Nepal quickly.

"There were a whole lot of different constraints ... to include could we even land anywhere in Nepal, and if we could, what kind of services they would have," Erts said.

Planners also didn't know the condition of the airfield after the massive earthquake, Lindsey said.

Sixteen hours after the initial notification to the 618th AOC, the first C-17 left JB McGuire-Dix-Lakehurst, N.J., for Dover AFB, Del., to pick up 70,000 pounds of equipment, some 70 passengers, and six search and rescue dogs. The crew ran into

problems with loading and maintenance, finally making it back to New Jersey 24 hours later, said Maj. Jeremy Kahoe, an aircraft commander with the 6th Airlift Squadron, 305th Air Mobility Wing.

Kahoe and his crew had been scheduled as backup to fly a mission to JB Andrews, Md., that weekend, but instead were chosen to fly the C-17 from New Jersey to Al Udeid AB, Qatar, where another crew would fly the airplane to Kathmandu, Nepal.

The mission included meeting a tanker from McGuire-Dix-Lakehurst over Scotland for an air refueling, because the flight was about 15-and-a-half hours long. The crew was excited to be able to participate.

"This was the first support that the US was giving to this effort, so we were involved at the front line," transporting a team from Fairfax, Va., to begin the relief effort, said Maj. Greg Gaudet, a pilot on the mission.

The second C-17, from the 437th Airlift Wing, flew from JB Charleston, S.C., to March ARB, Calif., to pick up another urban search and rescue team and two trucks full of heavy-duty equipment. From there, the crew flew back to Charleston, where another 437th AW crew flew the airplane to Ramstein AB, Germany. There, Lindsey said, an Air National Guard crew from the 164th Airlift Wing in Memphis, Tenn., agreed to extend its original mission so it could fly the aircraft to Kathmandu and back.

"It reinforced my faith in the Total Force concept that we have here, because when

*Residents pick through the rubble in Singla, Nepal, after the earthquake last April. Entire villages were destroyed.*





USAF photo by A1C William Johnson

**An urban search and rescue specialist and her dog board a USAF C-17 at Dover AFB, Del., bound for Nepal.**

we asked, the Guard responded,” Lindsey said. “They responded with flying colors.”

Even as Air Mobility Command was coordinating the first two flights into Nepal, the Pacific Air Forces staff was planning how they could help in the response.

“One of the challenges of this [area of responsibility] is that humanitarian assistance, disaster relief missions are the most likely missions that we’ll ever do,” said Brig. Gen. Michael A. Minihan, who at the time of the earthquake was the deputy director of air and cyberspace operations for PACAF. “We were working hard within hours [of the earthquake], because we knew the big role that we would play.”

Still, the military does not respond without a request from USAID and the State Department, he said, and works directly for those agencies in a whole-of-government approach in such cases.

Partnerships with other countries are also critical in humanitarian assistance disaster response missions, he said, and to prepare, the Air Force does specific training and exercises with other countries, focused on those types of missions.

“There is no way that the United States military could do this alone,” Minihan said. “The partnerships are essential to mission success.”

In this case, airmen knew immediately that “the heart of the Air Force response would be C-17s and that [there would be an] enormous need for strategic airlift,” but the response also would require a tactical airlift capability, personnel recovery, medical personnel, and the 36th Contingency Response Group out of Guam, he added.

Capt. Brint Ingersoll, the 36th CRG’s operations officer, said the unit had seen news reports about the earthquake and knew they might be asked to help, but the USAID team had to get to Nepal and assess the needs on the ground before any other US groups got involved.

Once those teams arrived, Ingersoll said, they asked the military for rotary lift to take supplies out to the affected areas and airfield



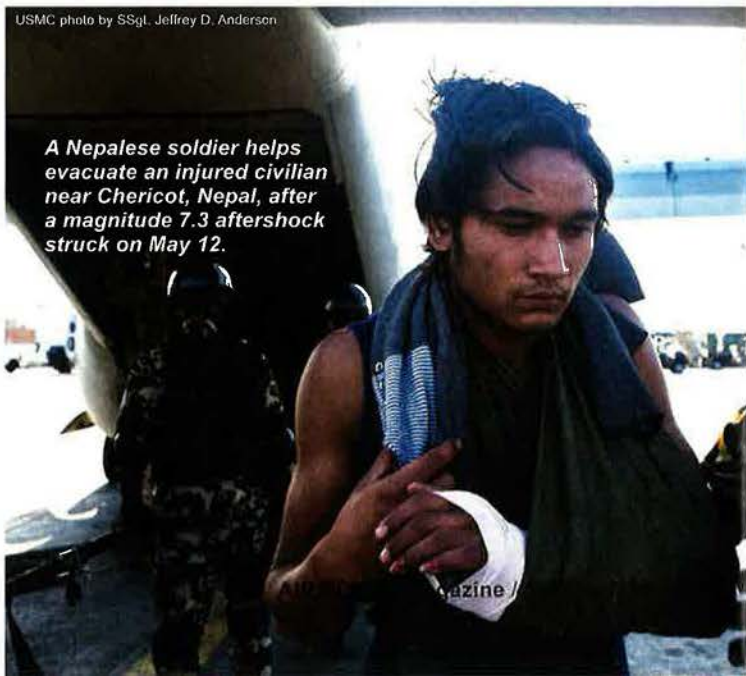
USAF photo by SSgt. Alexander Martinez

**Brig. Gen. Michael Minihan (r), in charge of coordinating the joint US air component part of the disaster relief effort, and Royal Thai Armed Forces Gen. Surapong Suwana-adth walk to the flight line at U Tapao Royal Thai Navy Airfield, Thailand. US and Thai armed forces worked together to support the Nepal government and people after the quake.**

logistics to expedite aid supplies through the airport in Kathmandu. The Marine Corps provided the helicopters—transported along with their crews to Nepal by Air Force C-17s—while more than 30 airmen from the 36th CRG were tasked with providing airfield logistics.

### A CHAOTIC ENVIRONMENT

However, getting the aircraft, marines, and airmen into Nepal was still a challenge. The country’s only major airfield was swamped with civilian and military aircraft from all over the world, and the airfield managers had to ration slot times. The 36th CRG finally arrived on May 5, one day before US Pacific Command stood up Joint Task Force 505 to support the humanitarian efforts.



USMC photo by SSgt. Jeffrey D. Anderson

**A Nepalese soldier helps evacuate an injured civilian near Chericot, Nepal, after a magnitude 7.3 aftershock struck on May 12.**

The 36th CRG's first challenge: finding a place to put their forklifts, tents, generators, and other equipment at the crowded airport. Next, they had to coordinate with the authorities on the ground to begin helping.

"In a chaotic environment, there's no clear boss walking around with a flashing sign saying, 'I'm in charge,'" said Col. Lee Anderson, commander of the 36th CRG. But the unit takes pride in its ability to go into a situation like that and make it work, he added.

The airmen built an operations center, got communications working, and reached out to the World Food Program, DHL, and Nepalese authorities to help speed up the flow of cargo.

"Within 24 hours, I think we had done a pretty good job of building a nest, getting operational, and engaging and interfacing with the other people on the airfield," Anderson said.

In U Tapao, Thailand, Minihan—who had been selected as the Joint Air Component Coordination Element director and 618th Air Expeditionary Task Force commander—was overseeing the airpower portion of the joint military effort. There was already an Air Force presence there, augmented with air mobility assets, including C-130s from Yokota Air Base in Japan and KC-130Js from MCAS Iwakuni, Japan, Minihan said.

The 36th CRG was the main Air Force effort in Kathmandu, along with a small contingent of airmen at the marine headquarters there, and some pararescuemen.

"We had all the right kind of airmen in the right kind of places to be able to coordinate, along with the Marine partners and the other services, to make sure that there were absolutely no gaps in the capabilities of what was needed for the operation," he said.

The CRG off-loaded more than 4.2 million pounds of cargo from 94 aircraft, sending 360 truckloads of supplies to 13 Nepalese districts.

Two airmen who are native Nepali speakers and an airman who speaks a Hindi dialect similar to Nepali volunteered for the relief effort, adding another element to the international coordination and helping other airmen communicate more effectively with local authorities and the injured, Anderson said.

Having those airmen on the team "was enormously valuable," he said. "Language barriers, culture barriers, trust barriers, all of that fell away relatively quickly."

One of the native Nepali speakers, SrA. Manoj Khatiwada, said at the time that he wasn't sure how he would react to seeing the destruction in the city where he was born and raised.

"I am happy that I am here, but I am sad to see this happen to Nepal," said Khatiwada, an aerospace medical technician with the 21st Medical Operations Squadron.

Airmen with the 36th CRG were able to help a Nepalese team work on and repair the runway in Kathmandu when it was closed for a few hours each day, Anderson said.

Then on May 12, about a week after the 36th CRG arrived in Nepal, a 7.3 aftershock rocked the country. Buildings in Nepal are mainly brick and mortar, and when they come down, "they come down badly, just as a pile of bricks," Anderson said.

Civilians who were inside the airport when the aftershock hit came barreling out onto the runway, unsure as to the safety of the building.

Ingersoll said, "As soon as the earthquake happened, they broke down doors," adding another dynamic to an already chaotic situation.

The team that had been working on the runway went back out with the Nepalese team to make sure the airfield was still safe for traffic, while other airmen used the supplies they had brought to set up a casualty triage center on the flight line.

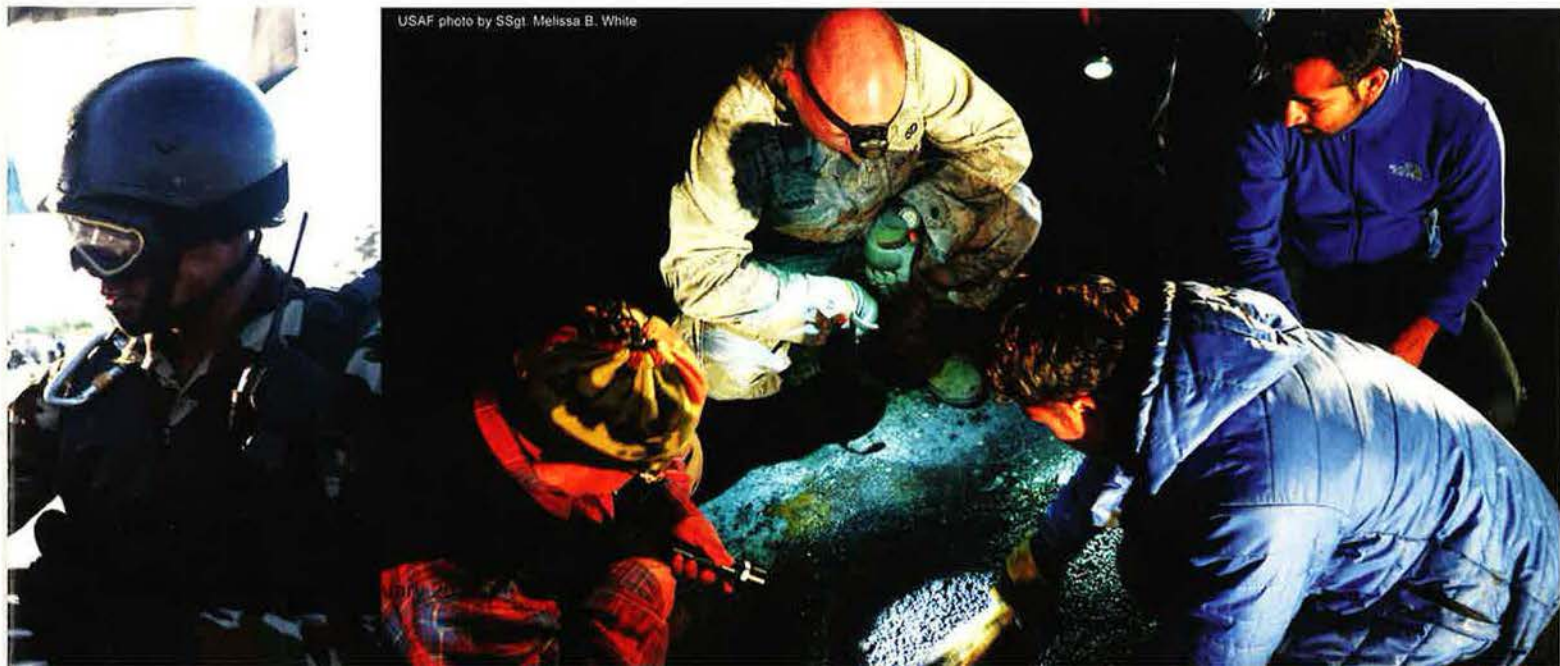
The marines launched UH-1 Hueys and MV-22 Ospreys to the affected region, and MSgt. Joe Damian, an independent duty medical technician-paramedic, joined one of the crews to help injured Nepalese citizens being medevaced from remote sites to the triage point at the airport. Damian ended up flying casualty evacuation missions with the marines for the next two days on nine sorties.

Navy corpsmen, Nepalese ambulance crews, and medics with the USAID search and rescue teams pitched in at the triage point, Anderson said. CRG airmen treated 59 injured victims.

"It really sounds small, but it was enormously powerful just to be able to set up a tent to use as a triage site," Anderson said. "Sometimes the small things are big."

Yet as the task force was working to help earthquake victims that day, a helicopter carrying six marines and two Nepalese

**USAF Capt. Clark Morgan and members of the Civil Aviation Authority in Nepal repair damage to the runway at Tribhuvan Airport.**





**Above:** Airmen from the 36th Contingency Response Group and US marines prepare to unload a UH-1Y Huey helicopter from a USAF C-17 at Tribhuvan Airport, Nepal. USAID disaster responders requested rotary lift to take supplies to remote areas of the mountainous region. **Above left:** SrA. Manoj Khatiwada, a US airman born in Nepal, with pallets of relief supplies at Tribhuvan.

soldiers disappeared. It was later found to have crashed in the mountains.

Defense Secretary Ashton B. Carter said he was devastated to hear that everyone aboard the helicopter had died. "This tragedy is a reminder of the vital but dangerous role that American service members play in delivering humanitarian assistance and disaster relief," he said.

### DRIVING THROUGH FOG

Capt. Damion Liu, an acting aircraft commander with 535th Airlift Squadron at Joint Base Pearl Harbor-Hickam, was in Guam on another mission following the aftershock when he learned his unit was being rerouted to assist with the relief efforts.

Liu flew to Thailand, where he transported Marine helicopters to and from Japan in a C-17 before getting the chance to go into Nepal as one of the last US flights into the country, he said. Flying conditions into Nepal were very hazy, and the approach was steep because of the mountains around the airfield.

"I'll always remember that approach," he said. "We could see a little bit, but it's kind of like driving through a fog. ... You could see the city start to come through, and then you're doing your best to redirect your eyes and trust your instrumentation to lead you to the runway."

Liu said he and the crew had planned to load about 45,000 pounds of cargo onto the airplane, but ended up leaving Nepal with 107,500 pounds of cargo instead, including 22 passengers from the CRG, five vehicles, and lots of supplies.

Despite the C-17 being on the ground for just two hours and 41 minutes, he said the crew was "pumped" to help in the relief effort.

"Our whole crew was extremely eager to get into it, to be part of the mission ... because that's what we do," he said. "There's just that want to go over and help."

Ingersoll said assisting in Nepal was the "single most rewarding experience" he's had in 15 years in the Air Force. MSgt. Corey Long, a ramp coordinator with the 36th CRG, agreed.

"I think everyone takes a lot of pride in being able to work in Nepal. Situations like that are the reason I stayed in the Air Force and continue to serve," he said.

The mission wasn't the first time the Air Force has played a key role in a disaster relief situation, but it was unlike the response to Typhoon Haiyan in the Philippines in 2013 and the 2010 earthquake in Haiti, Anderson and Long said.

One of the biggest challenges in the Philippines was the weather, Long said, and there was not a good flow of information

there about aircraft coming in. In Haiti, Anderson said, airmen "slept in tents next to the runway and didn't have a shower for 10 days." However, in Nepal, the team stayed in a hotel in Kathmandu, which still had power, water, and other services.

"In Nepal, the chaos, the devastation, was 100 miles away. In Haiti and Tacloban [in the Philippines], the devastation was 10 feet away. It creates a very different lens for what you're doing as a responder," Anderson said.

The short notice made the mission different from most other missions AMC flies, said Ertz, the supervisor of the planning shop at the 618th AOC.

"We do fly a lot of missions that are ... anywhere from presidential support to USO tours, Marine units deploying around the world. So we do get a lot of missions going to a lot of out-of-the-way locations, but very rarely do we actually have an impact where we are saving lives and delivering such urgently needed cargo," he commented.

The mission showed the importance of being ready to go anywhere at any time, to "always be ready for the unexpected," said Gaudet at JB MDL. It revealed how critical "soft power" and working collaboratively can be, Ingersoll and Anderson said.

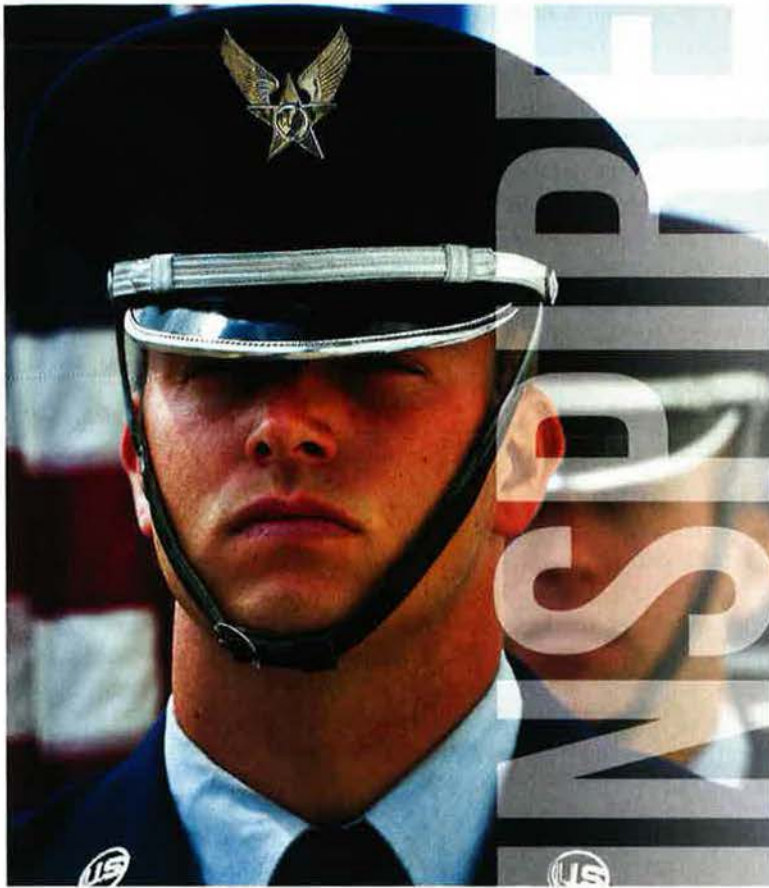
"It comes down to relationships and understanding other people," Anderson said.

Maj. Gen. Lawrence M. Martin Jr., assistant deputy undersecretary of the Air Force for international affairs, said responses like the one in Nepal—including more than a dozen other nations—"don't just suddenly happen."

Partner countries "utilized their air mobility aircraft to transport relief supplies into the country and evacuate citizens from the disaster zone," Martin pointed out. "A lot of work had to be done to develop those capable partners before they were ready to respond to this contingency."

Minihan said it was inspiring to see the airmen's response through it all.

"The airmen don't need to get up for a mission like this. They're up for it every single day," he said. "Their attitudes and their efforts not only project airpower precisely, when called on, but their attitudes are a force multiplier itself. They bring an attitude that ensures mission success no matter what the challenges are." ❁



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**S**ix years after the MC-12W Liberty rushed into combat to fill a pressing need for eyes over the battlefield in Iraq, Project Liberty came to an end at Beale AFB, Calif. On Sept. 16, 2015, crews flew the last MC-12 sortie before Air Combat Command stood down the mission, transferring the aircraft to the Army, civilian contractors, and a new special operations unit in the Air National Guard.

A month after the last flight at Beale, pilots of the 427th Reconnaissance Squadron and sensor and tactical systems operators from the 306th Intelligence Squadron came home from their final deployment to Bagram Airfield, Afghanistan—returning for the first time as a group.

Since the first aircraft was deployed to JB Balad, Iraq, in 2009, aircrews had logged an astonishing 400,000 combat flying hours and more than 79,000 sorties over both Iraq and Afghanistan—more than 1,000 sorties a month.

“Those men and women flew their butts off. ... That’s an extraordinary ops tempo that their nation levied upon them and they met that challenge and they were extraordinarily successful,” 9th Reconnaissance Wing Commander Col. Douglas J. Lee told *Air Force Magazine* in an interview at Beale.

“Seeing a program go start to end in such a short time that also had such an impact—it’s so hard to quantify how many people were saved because there was an MC-12 flying overhead,” added 427th RS Commander Lt. Col. Joseph M. Laws. MC-12 crews put human eyes, as well as highly capable intelligence systems, live video, and sensors over the battlefield, giving ground troops a nearly all-weather capability that remotely piloted aircraft simply could not match.

“No one wants the MC-12 to go anywhere. It’s just finding the right place for that skill set,” explained Laws. “It belongs more in special operations.” Thirteen of the 41-strong fleet are going to the Oklahoma Air National

Guard to form a new mission supporting Air Force Special Operations Command. Eight went to the Army for conversion into Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) aircraft, and contractors will fly the remainder, continuing the mission in Afghanistan.

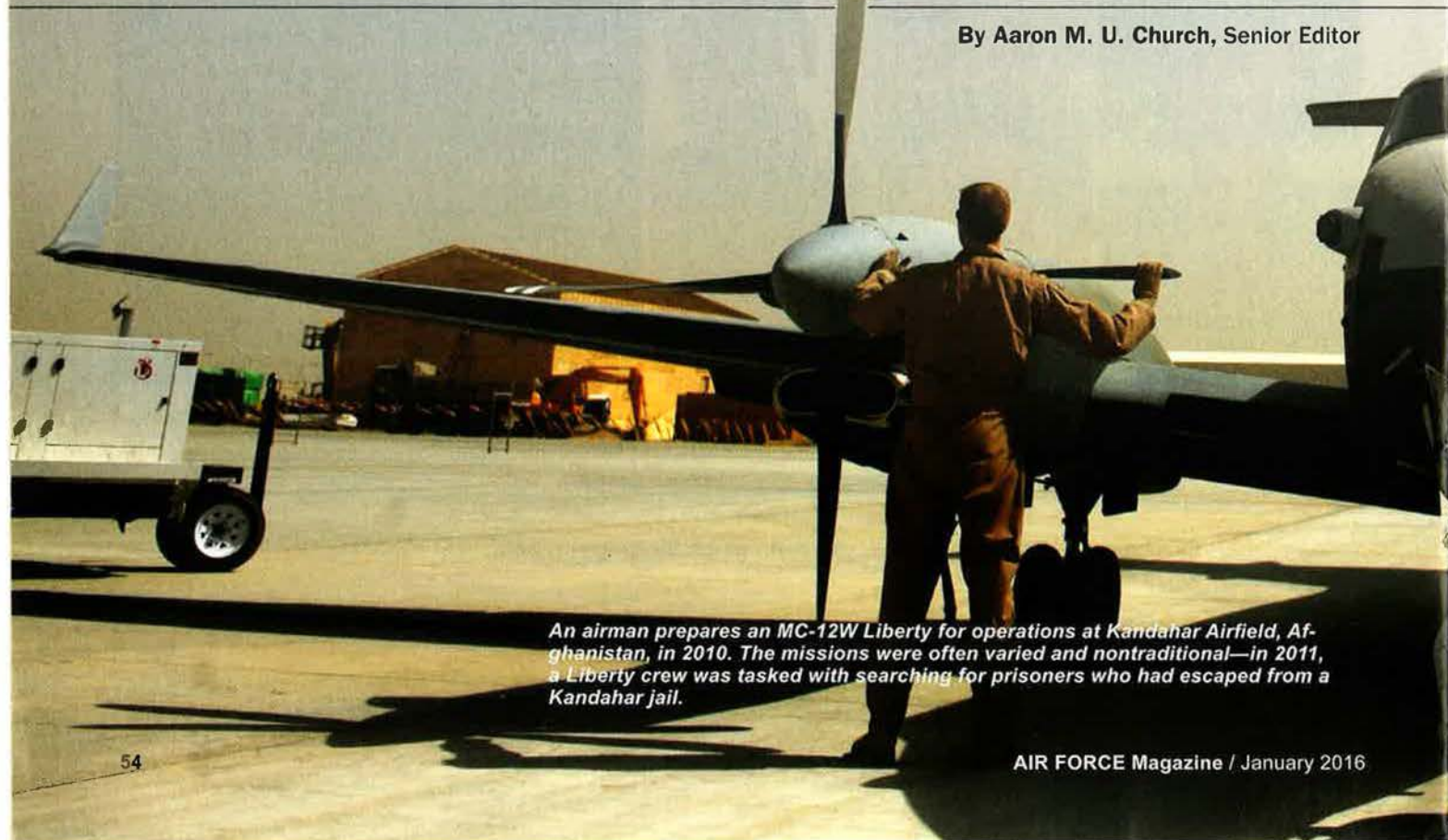
## EARLY DAYS

When the MC-12 first went into action, it deployed so quickly—less than a year from drawing board to combat employment—that crews were still figuring out how to use it while flying actual combat missions, said 9th Operations Group Commander Lt. Col. Darren B. Halford, who led ACC’s initial stand up of the mission. “We gave them very little guidance. It was all ingenuity, blood, sweat, and tears to figure out how to make that all work.”

Laws, who joined the MC-12 program test flying the aircraft for their initial combat deployment, recalls that in the early days, instructors

# Liberty Comes Home

By Aaron M. U. Church, Senior Editor



An airman prepares an MC-12W Liberty for operations at Kandahar Airfield, Afghanistan, in 2010. The missions were often varied and nontraditional—in 2011, a Liberty crew was tasked with searching for prisoners who had escaped from a Kandahar jail.



phoned him from the schoolhouse at Key Field in Meridian, Miss., asking for guidance on using the MC-12's mission equipment. "I have no idea," he replied jokingly. The MC-12 came together so speedily that all he could say was, "We tested it, it met all the parameters, good luck with that!"

During the MC-12's initial deployments to Balad in June 2009 and Bagram six months later the directive was simply to "go get the job done," and the aircrews just "figured out how to do it," defining the tactics, techniques, and procedures as they went.

Project Liberty was born out of a Secretary of Defense directive to rapidly increase real-time aerial intelligence gathering capabilities, and it "was thrown together really quickly with people from all across the Air Force," explained a 427th RS pilot. "They said, 'Here's the platform.' It was up to the airmen to figure out how to make it work.

Pulling crew members from many aircraft types and jobs in the Air Force

brought a wealth of knowledge and experience that made the MC-12 a potent tool. "Somehow in the magic of taking people from all different aspects of the Air Force, they figured out how to use this special system equipment on the airplane, ... to bring all of those forces together to either kill or capture a bad guy, or just keep the friendlies safe," Laws explained.

Early last year, a 427th pilot flew an MC-12 on one of the most memorable missions of her career, over the mountains, just west of the aircraft's deployed base at Bagram. She received a radio call, that set her crew on edge, from US forces under fire. They are normally "cool, calm, and collected, ... but in this particular instance, there was something about the guy's voice on the radio" that indicated his team was in mortal danger, she said. The valley was cloaked in low clouds, making it impossible to employ an RPA, so the MC-12 flew over the peaks and into the valley.

"There were mountains above us, which is not a comfortable place to

be in as a pilot, but we had to get below the clouds in order to get eyes on" the target, she said. Breaking out of the clouds, her crew spotted the insurgents' firing position and called in an A-10, swiftly ending the engagement. "The shooting stopped, so just knowing that we were able to play a role in that" made it worth the risk, she said. On another recent mission, a sensor operator spotted a civilian wandering into the target area just after a weapon release. "He called out a 'shift cold,' which means that they move the weapon away, and saved the lives of several Afghan citizens," said the pilot.

Building trust is now a major focus of allied effort. "That's what we're trying to do right now—show the Afghan people that we're not there as conquerors; we're there to help them protect themselves," she said. "It was a neat experience to be there and see how well-received that was."

During the lead-up to the Afghan parliamentary elections, an MC-12 crew

## USAF's MC-12 capability is dispersing after six intense years of combat.



USAF photo by SSGT. Eric Harris



*An MC-12 lands at Kandahar after a mission over Afghanistan.*

flew a night mission to locate and gather intel on a suspected terrorist. The crew relayed information to ground forces that were then able to mount a raid and capture a suicide bomber who was planning to blow himself up at a packed political rally. "This guy was actually supposed to go and blow himself up in the next 12 hours," recounted the crew's tactical systems operator. Working in conjunction with the ground troops, the crew "potentially saved hundreds of innocent lives," the TSO said.

The MC-12 proved ideal for these sorts of missions, moving at "just the right speed for exactly what we need to do," explained Lt. Col. Shaio Zerba, 306th Intelligence Squadron commander, the unit overseeing MC-12 sensor and tactical systems operators. In addition to spotting improvised explosive devices, watching over convoys and forward operating bases, and observing the enemy's "pattern of life," MC-12s have been charged with all manner of unique, and even bizarre, ad hoc tasks. Crews have been asked to track down escaped prisoners, locate abandoned equipment, and try to parse out the allegiance of insurgent bands.

When some 400 Taliban fighters escaped during a mass jailbreak from Kandahar in April 2011, a crew was tasked with locating the jailbirds. "They

had me looking for people not wearing shoes, because that's how we could tell they were escaped convicts," recalled the crew's sensor operator.

Each community shaped a different aspect of MC-12's development. "Airlifters had great insights on crew resource management," whereas the fighter pilots contributed to developing combat tactics, techniques, and procedures," especially for coordinating kinetic strikes, Halford observed.

At first, even crew members' roles were undefined, and airmen completely changed the original concept for conducting battlefield ISR. "When we started out, we thought the pilots were just going to be driving the bus," noted Laws. Sensor operators were expected to use the camera and talk to the troops, while the tactical systems operator worked the ISR suite "doing his or her own thing," he said.

Instead, crews quickly began intense collaboration, sharing information, dividing tasks, and working together to put the aircraft in the best position to aid friendlies on the ground. The copilot was replaced by a mission crew commander, with a laptop computer to coordinate the crew and "advise the good guys on the ground," explained Laws.

The MCC "changed the entire dynamic of how we operated the air-

plane," making the crew a cohesive team that understood one another's roles and could enhance each other's effectiveness. Though the aircraft were upgraded with improved systems over time, "the biggest upgrade has been the airmen executing the mission," Laws said.

## FINAL DEPLOYMENT

Now that the MC-12 is transitioning from ACC to a niche capability in ANG supporting AFSOC, the Air Force is keen on retaining this hard-won expertise. "The MC-12 was the perfect solution" in Iraq and Afghanistan, explained Halford, but without expertise, it's just a fancy executive aircraft with some sensors.

Figuring out how to conduct counterinsurgency operations in Iraq and Afghanistan was initially a struggle for the Air Force, and as a result, the MC-12 community is working hard to pass on the lessons and tactics to the Army, contractors, and ANG to carry on the mission.

During the final six-month deployment at Bagram, pilots and sensor and tactical systems operators flew jointly crewed missions under Army leadership, until contractors took over. The Army won't conduct the MC-12's exact mission, though its EMARSS

platforms will remain flying in a similar role.

Many of the MC-12 contractors, however, are airmen who have left the service. The same core cadre of former airmen “are going to be continuing the program, so that’s really the strength of this mission,” said the 427th pilot, who deployed twice on the MC-12, including the final mission last year.

Transitioning from direct combat to the advisory and assistance role in Afghanistan in 2014 didn’t significantly alter the MC-12 mission. What it did change was the mission partners. Army aviators initially began augmenting 9th RW aircrews under Air Force control before swapping roles and taking the lead for the final deployment rotation. “There was a lot of trepidation in the beginning, switching over to Army rules. As it turns out, professional aviators are professional aviators, and they’ve been doing this for a long time, too, so it wasn’t as rough as we thought it might be,” explained Laws.

The transition was eased by Air

Force crew members initially teaching the Army operators so that “tactically, it was very much the same” despite the shift from Air Force instructions to Army field manuals, commented the 427th pilot. The two services had cultural differences to overcome, but “it ended up being a tremendous, joint success story,” Halford said.

The informality and integration between Air Force officers and enlisted aircrew was initially a shock to the Army. Airmen are accustomed to cooperating seamlessly with officers in combat, without regard to rank, but Army culture is much more formal, the TSO stated. After flying in mixed aircrews for several missions, the Army enlisted crew overcame their initial hesitancy to direct officers and quickly began to “really mesh as a crew all together,” recalled the TSO.

“At the end of the day, we’re all working together as a crew in order to achieve one goal,” something the Army crew soon warmed to, he said. “The Army clearly has a different approach

to some things, but they’re not new to flying Kingairs,” Halford added.

“It’s a pretty incredible relationship we’ve developed with the Army. I don’t know that any other program has ever done anything quite like this,” Laws said. Many of the Army aircrew had previous experience as infantry and were able to give their Air Force partners a “real idea of what the guys on the ground were thinking,” said the 427th pilot.

As US and NATO forces drew down, crews increasingly worked with Afghan National Army troops advised by only a handful of US special operations forces. This added new challenges, especially given Afghans’ “different sense of focus,” as the pilot put it. Unlike US and coalition forces, the Afghans will “stop for smoke breaks whenever they want,” regardless of air

*Two years after the fatal crash of Indy 8, the theater at Beale AFB, Calif., was dedicated as Independence Hall. The ceremony featured pictures of the four crew members.*



## Crash of Indy 8

Project Liberty suffered its only combat loss on April 27, 2013, when an MC-12W Liberty, call sign Independence 8, crashed some 110 miles northeast of Kandahar Airfield, Afghanistan, killing pilots Capt. Brandon L. Cyr of Scott AFB, Ill., and Capt. Reid K. Nishizuka from Beale AFB, Calif.; sensor operator SSgt. Richard A. Dickson from Tinker AFB, Okla.; and tactical systems operator SSgt. Daniel N. Fannin of Beale.

After locating an insurgent target, the crew executed a climbing turn to avoid weather and establish an orbit—but inadvertently dropped below the aircraft’s stall speed. The MC-12 entered a left spin from 20,000 feet. It sharpened into an unrecoverable spiral dive, overstressing the aircraft and snapping off a wingtip before impacting the ground.

While the diversity of crews pulled from numerous Air Force aircraft benefited the MC-12’s tactical development, the crash demonstrated its risks. Accident Investigation Board President Brig. Gen. Donald J. Bacon cited inexperience flying the MC-12 as a key contributing factor in the accident. The crew were “highly respected airmen and

combat veterans with 4,846 combat flying hours and 836 combat sorties [among] them,” according to the AIB report.

However, due to the urgent nature of the program and because manning was never fully normalized, a large number of “flow-through” airmen were “loaned to the program from other weapon systems” for nine months at a time, before returning to their original units and jobs. This created “continuous inexperience in the program” especially among pilots who often completed their MC-12 training and certification in combat, due to a shortage of instructors, Bacon noted.

The 9th Reconnaissance Wing held a memorial service at Beale AFB, Calif., in honor of the crew on April 25, 2014. “These were ordinary people, fathers, brothers, sons, and husbands, who responded in an extraordinary way during an extreme situation,” 9th Operations Group Deputy Commander Lt. Col. John Polkowski said at the service.

On the second anniversary of the crash, the wing dedicated the base theater as Independence Hall and unveiled an artist’s rendering of a memorial that now stands in front of it.



Staff photo by Aaron M. U. Churchill



USAF photo by Staff Robert M. ...

support burning fuel overhead as they sit, she observed. That being said, the few advisors' ability to "get this often ragtag group of people with not a lot of discipline to come together when they needed ... was impressive," she said.

MC-12s were in the thick of the fight until the end, supporting Afghan forces' attempt to retake the provincial capital of Kunduz after it fell to the Taliban in September—a month before the final crews returned to Beale. They also supported troops in the perennially troubled province of Helmand, where insurgents renewed their offensive against coalition-backed Afghan forces, prompting the Obama Administration, in part, to slow troop withdrawals.

#### ON TO OKLAHOMA

A few days after the final Stateside training sortie, and even before the final aircrews returned from Afghanistan, the Army flew the last MC-12 out of

Beale. "It's really hard to shut down a program," admitted a sensor operator. "The only thing that makes me feel OK about it is the fact that we're handing it off" to an Oklahoma ANG unit soon to be designated the 137th Special Operations Wing.

As the 137th Air Refueling Wing, the unit flew its final KC-135 sortie from Tinker AFB, Okla., in June and moved to nearby Will Rogers ANGB, where it took delivery of its first MC-12 in July. Five Active Duty TSOs from Beale are the initial instructor cadre that will begin standing up the new MC-12 schoolhouse at Will Rogers in early 2016. Since the Mississippi Guard ran the initial MC-12 schoolhouse before mission qualification training moved to Beale in 2011, shifting back to the Guard brings it "full circle," said Zerba, who leads the 306th IS standing up the school.

Since the MC-12 predominantly supported special operations on the

*Above left: MC-12 Liberty crew members disembark at Beale after a six-month deployment in Afghanistan. Theirs was the final USAF MC-12 deployment. Above: Col. Douglas Lee speaks during a ceremony at Beale as he assumed command of the 9th Reconnaissance Wing.*

ground, AFSOC is the most logical permanent home, and given the small fleet size, the Guard is the ideal host, officials said. As ACC divests the MC-12, crews were most proud of the fact that they saved lives and were linked every step of the way with the troops they worked to protect on the ground, Zerba said. "I would love to be a part of the MC-12 program for the rest of my career because I'm so proud of what it's accomplished," added Laws.

Being part of MC-12 from the beginning to the end made the handoff "a bittersweet moment," Laws said, echoing the sentiments of many of the more than 2,200 airmen who worked on the aircraft. ★

*An L-3 Communications contractor prepares an MC-12W for takeoff on the final sortie from Beale, Sept. 16.*



USAF photo by A1C Ramon A. Adelan



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**USAF's first big conventional air raid of Desert Storm proved unexpectedly dangerous.**

# Package Q



*F-16s line up to take on fuel from a KC-135 during Operation Desert Storm.*

**By Peter Grier**

**S**waying under his parachute, Maj. Jeffrey S. Tice broke out of cloud cover at about 3,000 feet. He was descending toward marshland—a bad sign. In the Iraqi desert, water attracted people.

There were black rectangles about two miles off. As he neared the ground Tice realized they were tents. Was that campfire smoke rising from the encampment? No, it was automatic weapons fire. Somebody down there was shooting at him.

Tice tried to collapse half his chute to turn away and present a more difficult target. That was hard, as it was not exactly maneuverable. He hit the sand in perfect position, jettisoned the

parachute, grabbed his rescue kit, and started to run.

“I got about three or four Jesse Owens-style strides away before they shot up the ground in front of me,” Tice says today.

He stopped and held up his hands. The shooters formed a rough circle. There were about a dozen—Bedouin tribesmen, not Iraqi police or the elite Republican Guard.

“Most of them didn’t have teeth or shoes but they had brand-new AK-47s,” Tice says.

It was Jan. 19, 1991. For Jeffrey Tice the Gulf War was about to enter a new and arduous phase: captivity.

Somewhere nearby, the wreckage of his F-16 was burning. Tice had been shot

down by a radar guided surface-to-air missile while participating in the Package Q air strike, a major US effort to hit strategic targets in downtown Baghdad.

Package Q did not work out as US war planners had expected. Small glitches combined to make the overall results of the strike unsatisfactory, according to the postwar *Gulf War Air Power Survey*. The Air Force lost two F-16s: Tice’s and an aircraft piloted by Capt. Harry M. “Mike” Roberts. Both men were members of the 614th Tactical Fighter Squadron, the “Lucky Devils,” flying out of Qatar.

But these losses did not daunt those actually fighting the air war. If anything, they energized them. Over the door

leading out of the 614th TFS operations building, someone painted a sign, referring to the two pilots. It read, "God Bless Tico and MR." Before every mission for the rest of Desert Storm, pilots leaving reached up and slapped those words.

"My guys didn't back up one inch," says now-retired Air Force Lt. Gen. Bruce A. Wright, who in 1991 was a lieutenant colonel and 614th commander. "Once their brothers were shot down, they were committed to take the fight to Saddam Hussein like never before."

Package Q, launched 25 years ago this January, was the largest air strike of the Gulf War. Though it involved many different types of coalition aircraft, its main force was composed of F-16s. It likely remains the largest operational F-16 mission of all time.

It was born of success. The US air war against Iraq began on Jan. 17, 1991. Its first two days went very well. The US

and its allies flew thousands of sorties, destroying Iraqi early warning radars, airfields, and other strategic targets. Iraqi aircraft were reluctant to rise to the challenge and largely ceded control of their nation's airspace to the opposition.

### A COMPLEX OPERATION

But these initial attacks did not target Baghdad in force. The Iraqi capital was protected by a Soviet-style air defense system of overlapping anti-aircraft artillery and optical and radar guided surface-to-air missiles. In the war's opening hours the only coalition aircraft that ventured "downtown" was the stealthy F-117 Nighthawk. This limited the immediate damage to critical Iraqi government buildings and other command and control targets.

Package Q was meant to change that. Launched the third day of the war, its main targets were in downtown Baghdad

and environs. Planners intended it to level important government buildings, dealing a psychological blow to the Saddam Hussein regime and Iraqi populace, while underscoring that coalition forces could reach any target in Iraq.

The central strike force was composed of 72 F-16s: 56 from the 388th Tactical Fighter Wing, based at Al Minhad in the United Arab Emirates, and 16 from the 401st Tactical Fighter Wing, based at Doha in Qatar. Each carried two 2,000-pound bombs. They were supported by eight F-15s to provide air cover and eight F-4G Wild Weasels and two EF-111s to jam and attack enemy radars.

The plan's operational challenges were evident from the beginning. The complexity of the operation would require aircraft from four different bases to take off at four different times before rendezvousing and refueling south of Iraq's border, over Saudi Arabia.

## NO CHAFF, NO FLARES, NO PROBLEM

During the Package Q air strike into Baghdad on Jan. 19, 1991, Emmett Tullia outflowed at least six Iraqi surface-to-air missiles and lived to tell about it. A famous head-up display video of his dancing with SAMs remains a teaching tool in the Air Force today.

Then-Major Tullia flew one of the F-16s assigned to attack an oil refinery in Baghdad near a bend in the Euphrates River. Intelligence indicated that the Iraqis had grouped substantial defenses in the area.

Still, Tullia was surprised at the intensity of the ground fire as he approached the target. Anti-aircraft shells were creating a virtual carpet of smoke and shrapnel in the sky, mostly at altitudes from 10,000 to 12,000 feet.

"I didn't expect such a big effort on their part," he says.

The first SAMs appeared just prior to roll-in. There were two of them, SA-2s.

"I turned around, saw them coming up. They went beneath us and overshot," Tullia says.

He was getting some additional missile warnings but he dived in and delivered his bombs on the now-burning refinery. As he pulled off and headed south the electronic countermeasures warnings escalated. He was now the hunted, not the hunter.

He looked back and saw two missile plumes. He wondered if they were directed at him, and it quickly became clear they were.

"Then I go, 'Oh, no, time to start maneuvering,'" Tullia says.

He jettisoned his wing tanks to lighten up his F-16 and make it more nimble. Tullia remembers thinking the effect of this move was pretty impressive—it really did make a difference.

These two missiles also over-

shot and detonated harmlessly above his aircraft. He turned back onto the egress heading. But then two more SAMs came at him, from his left and right rear quadrants.

Tullia began dancing in earnest, waiting until the last second before a hard turn to cause the missile to overshoot and detonate far enough away to avoid shrapnel damage to his fighter.

At this point he was separated from the right of his flight and losing altitude due to his defensive maneuvers.

"It was challenging because I didn't have a lot of chance to gain airspeed," he said.

He'd punched his wing tanks and did not have a lot of remaining fuel. Using the augmented thrust could have made it impossible for him to return to base.

"I was gambling that maybe in military power I could still get enough speed to maneuver. I was lucky because it did work out," he says.

Finally he was out of the SAM envelope and heading for south of

the border at high altitude. A fellow 614th TFS pilot lagged back to keep him company. In the end, Tullia was surprised he had enough fuel to make it back. He landed in Qatar, pulled right off, and shut it down.

"I don't know how much gas I had left. It couldn't have been much," he says.

Walking around the F-16 afterward Tullia and his crew chief discovered that his chaff and flares had not dispensed. He had avoided those missiles without countermeasures, utilizing his flying prowess alone.

"I was kind of surprised," he says, drily.

For this exploit, Maj. "E.T." Tullia was later awarded the Distinguished Flying Cross.

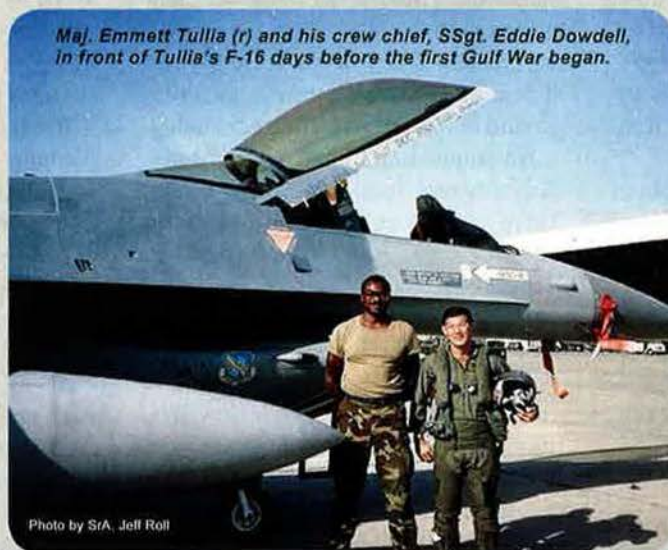


Photo by SrA, Jeff Roll



In addition, Package Q's air tasking order reached commanders so late that some slated to participate in the strike received the orders after completing exhausting missions on Jan. 18.

When digging into plan details, leaders of the 401st TFW discovered some unexpected changes. Their original primary target had been a suspected nuclear research facility southeast of Baghdad. Overnight the ATO had changed that to three major sites in downtown Baghdad.

In practice this meant US F-16s would start striking targets on the capital's outskirts and then work their way in toward a city center alerted to attacks.

"Such an approach would maximize the exposure of the F-16 train to enemy air defenses; however, it was too late to change the order in which the mission subsets would attack targets," wrote the authors of the *Gulf War Air Power Survey*.

The plan seemed risky but doable to the F-16 crews themselves. They felt that earlier attacks intended to suppress enemy air defenses had worn down Iraq's capabilities, and that the Wild Weasels and EF-111s would be able to handle what remained.

"We felt pretty confident it wouldn't be as difficult as it seemed on paper," says Tice.

For the 614th TFS, Operation Desert Shield and Desert Storm had been unusual from the beginning. In late August 1990, it had deployed to Doha, where no US aircraft had ever been stationed. The base was so bare the unit brought a suitcase of money to help pay for setting up flying operations. The only person present to greet them on the ramp was US Ambassador Mark G. Hambley, remembers Wright.

Initially "we operated really out of the back of a KC-10," says Wright.

The first few nights they slept in a nice downtown hotel. Then someone pointed out this was a security risk;

they moved to the base and lived on the floor of a condemned Qatari barracks. "Gourmet" MREs made up the meal service for weeks. Eventually a mobile kitchen arrived. Hot food seemed a treat.

Training, in part, meant flying with Canadian CF-18s and French and Qatari Mirage F-1s. The Iraqis had similar Mirage aircraft, and the 614th's allied compatriots taught them more about the airplane's limits and capabilities than US intelligence ever could.

On the first day of combat operations the base was under an Alarm Red—indicating possible incoming Scud missiles—as the squadron prepared to launch. All 16 of the 614th crew chiefs refused to stop work to put on chemical protection gear—or move to safety—until their aircraft and pilots were safely underway.

The squadron's first targets on the morning of Jan. 17 were two Iraqi-held

## HORSESHOES, HAND GRENADES, AND SA-6s

Capt. Harry M. "Mike" Roberts was nearing the southern edges of Baghdad, approaching his target—an air defense headquarters—when a following F-16 called for him to "break."

Roberts had already managed to defeat an SA-2 surface-to-air missile fired in his direction. Now he had a new enemy: a more capable SA-6 radar guided SAM.

At the "break" warning he rolled his aircraft onto its back. He saw the missile and did a last-second hard turn to try and force it to overshoot.

It did, somewhat. Then its warhead exploded and shrapnel flew into the exposed belly of the F-16.

"Initially I thought it had missed," says Roberts.

It had not. At least, it had not missed by enough. The airplane lost power and began to go out of control.

Roberts looked over his left shoulder and saw "tons of smoke." He tried to restart the stalled engine. No luck.

The nose pitched toward the ground. He tried to correct it. Nothing happened.

"I figured it was time for me to get out," he says.

Roberts ejected at about 20,000 feet. He started to fall, face down. Just as he thought the fall was lasting a little too long, his parachute deployed.

As he broke through a cloud layer he could see Baghdad off to the north. The prevailing wind was from the northwest, so at least he was not being blown closer to the city.

As he got lower he could see that he was near a four-lane highway. He could also see tracers coming in his direction. There were cars stopped along the road. "A welcome party," he says.

He landed a few hundred yards away from the highway. Roberts dropped his chute and grabbed his survival kit and ran. He did not get far. A mob of angry, AK-47 toting civilians blocked his path.

"I put my hands up and they kind of swarmed around me and took me," he says.

They stripped him of everything they could. They left him his flight suit and survival vest—but only because they could not figure out how to remove them.

Iraqi troops showed up and took control. They stuffed Roberts in the back of a station wagon and drove him to a nearby building, where they blindfolded him and began the first of what would become many interrogations.

"Cujo" Roberts—like Maj. Jeffrey S. "Tico" Tice—was beaten harshly in this initial phase of his captivity, and eventually both POWs appeared in a propaganda video that the Iraqis released to the international news media.

These videos had the opposite effect of what was intended. They were a shot of adrenaline for American morale.

Back in Torrejon, Spain, Roberts' wife Patty was waiting in a base hospital for a prenatal checkup. She looked up at a TV screen tuned to CNN—and saw her missing-in-action husband, alive. Back in Qatar, Roberts' and Tice's fellow pilots were elated.

The tactical call signs of the POWs became the names for flights of the 614th TFS for the rest of the war. "Tico" and "Cujo" flew every day.

In Baghdad the two pilots were held near each other.

"We were always in solitary confinement. They did not like us to communicate," said Roberts.

On Feb. 23, 2,000-pound bombs from F-117s hit the Iraqi headquarters where they were being held. Miraculously, they survived the building's virtual destruction.

After that they were moved constantly.

Then, one day a guard went cell to cell, telling them the war was over and they would be going home. They presented the prisoners with real food: a slice of orange and sprig of parsley on a ceramic plate.

"They were trying to make nice or something," says Roberts.

It was true—the war was over. All the POWs were released to the International Red Cross. They spent one last night in Baghdad before flying to freedom.

"Besides them not feeding us, beating the hell out of us, and doing nothing for us, it was not a bad time I guess," Roberts says today.



Capt. Mike Roberts went on to command the Ohio ANG's 178th Fighter Wing.



air bases. Initial strikes were highly planned and generally against fixed installations. During this initial phase of Desert Storm 614th pilots learned several things: The weather in the Iraqi theater of operations could be marginal, and Iraqi air defenses were generally uncoordinated. Iraqis threw lots of AAA and surface-to-air missiles into the air but they'd quickly learned to leave guidance radars off, lest US anti-radiation missiles come down their throats.

"We got pretty comfortable the first two days that our electronic combat was going to work pretty well," says Wright. "It looked like the Iraqis were not going to turn anything on."

Then came Day Three—the day that changed everything for the Lucky Devils.

For Tice, Package Q was his second combat mission, as he'd served as a maintenance officer the first day of the war. Since the 614th was based as close to the Iraqi border as any US squadron, it was assigned lengthy and difficult flights, and this was one of them: downtown Baghdad.

Much of the strike force was assigned to hit a suspected nuclear site. But Tice was leading an eight-ship formation with another strategic target: a large oil refinery on a bend of the Tigris River.

The whole package was supposed to begin by flying up the western side of Iraq, leaning toward Syria. That was intended to make it appear as if they were hunting Scud launchers in the desert.

**Above: Maj. Jeffrey Tice (l) and crew chief Mick Bretz in front of their aircraft just days before the Package Q mission. A radio malfunction on the F-16 forced Tice to fly a spare jet (here). It was shot down in Iraq.**



US Army photo by CW2 Kevin Belanger

Then it was student body right, and dash for Iraq's capital city. Everyone was scheduled to be over target at approximately the same time.

Pilots were confident that US equipment and tactics could shut down Iraq's defensive command and control system, but that did not mean the attack was a stroll in the sand.

"Was it a dangerous mission? Absolutely. Baghdad was the most heavily defended piece of real estate in the world at the time from the point of view of the pilot," says Tice.

For Tico, things began to go slightly off from the beginning. His radio was bad, so he had to switch to a spare aircraft. Weather was abysmal, with thick cloud from 2,000 up to 14,000 feet.

Then Package Q timing began to drift. Tankers at their tracks south of the Iraqi border approached their release points too early. They throttled back to minimum speed, making it difficult for their accompanying fighters. Some almost stalled and had to light afterburners to stay airborne, according to the *Gulf War Air Power Survey*.

"That's where things started to go a little bit wonky," says Tice.

Two of the eight aircraft in his formation had to turn back due to the tanker issue and thick weather. Two turned back due to a maintenance issue. He proceeded into Iraq with four.

About 20 miles north of the border a burst of AAA came through the clouds, exciting some of the US pilots. Then a Wild Weasel fired a HARM, which can climb up to 70,000 feet before diving down toward its radar target.

Things quieted down. Everybody made their right turn and sped in to Baghdad. Some of the F-16s found their primary targets obscured by weather. But Tice did not.

"As I turned into my target area it was a proverbial sucker hole, a huge clear area right over the top of the oil refinery. There was plenty of room to see everything," he says.

From a distance he could not discern any problems, such as visible SAMs or other defensive fire. He and his formation moved in, each aircraft targeting a refinery cracking tower. It looked like his formation would have an easy time.

It wouldn't. For one thing, the F-4 Wild Weasels did not accompany the F-16s over downtown Baghdad. They may have run short on fuel due to the long mission, or fired all their HARMs. Whatever the reason, the Lucky Devils were on their own.

"About that time is when the world lit up underneath us," says Tice.

The good news was that most of the defensive fire seemed to be visually guided. The Iraqis had been watching and seen both Tico's flight and another group of F-16s passing high above. They were just throwing AAA and SAMs into the sky and hoping for a hit.

#### MEETING SAM

But the SAM fire was heavy enough to be a nuisance as the F-16s maneuvered into their target. And then Tice's radar warning receiver buzzed. Somebody—not him—had a radar guided SAM on his tail. Tice called for the targeted aircraft to break right, but it didn't make the turn in time. Missile shrapnel hit the F-16's fuselage.

"That was Mike Roberts. I was pretty busy," says Tice. "I didn't get to pay much attention to what happened after his missile hit."

Then Tice released his weapons on the refinery cracking tower. It went up in a beautiful series of secondary explosions. Over his shoulder he could see his target area would not be making oil for some time.

He did not look long. SAMs continued to ripple after him. Later, US intelligence determined that the Iraqis fired between nine and 12 missiles at Tice and his wingman in a one-minute period. Most were ballistic, meaning unguided.

The receiver buzzed again, and this time, "I knew a missile had been launched at me," says Tice.

The SAMs left contrails and were easily visible. Tice had between three and five seconds to plan his response. That seems like a blink, but in practice time slowed down, he says, due to temporal distortion.

At first he thought the missile was pointed away from his aircraft, then he saw it arcing toward him. He waited until the last moment, and then did a sort of barrel roll around the SAM. Per training, he was trying to give it a square corner to turn, something it could not do. He had been told that if it were 33 feet away when the proximity fuse exploded its warhead, his F-16 would remain relatively safe.

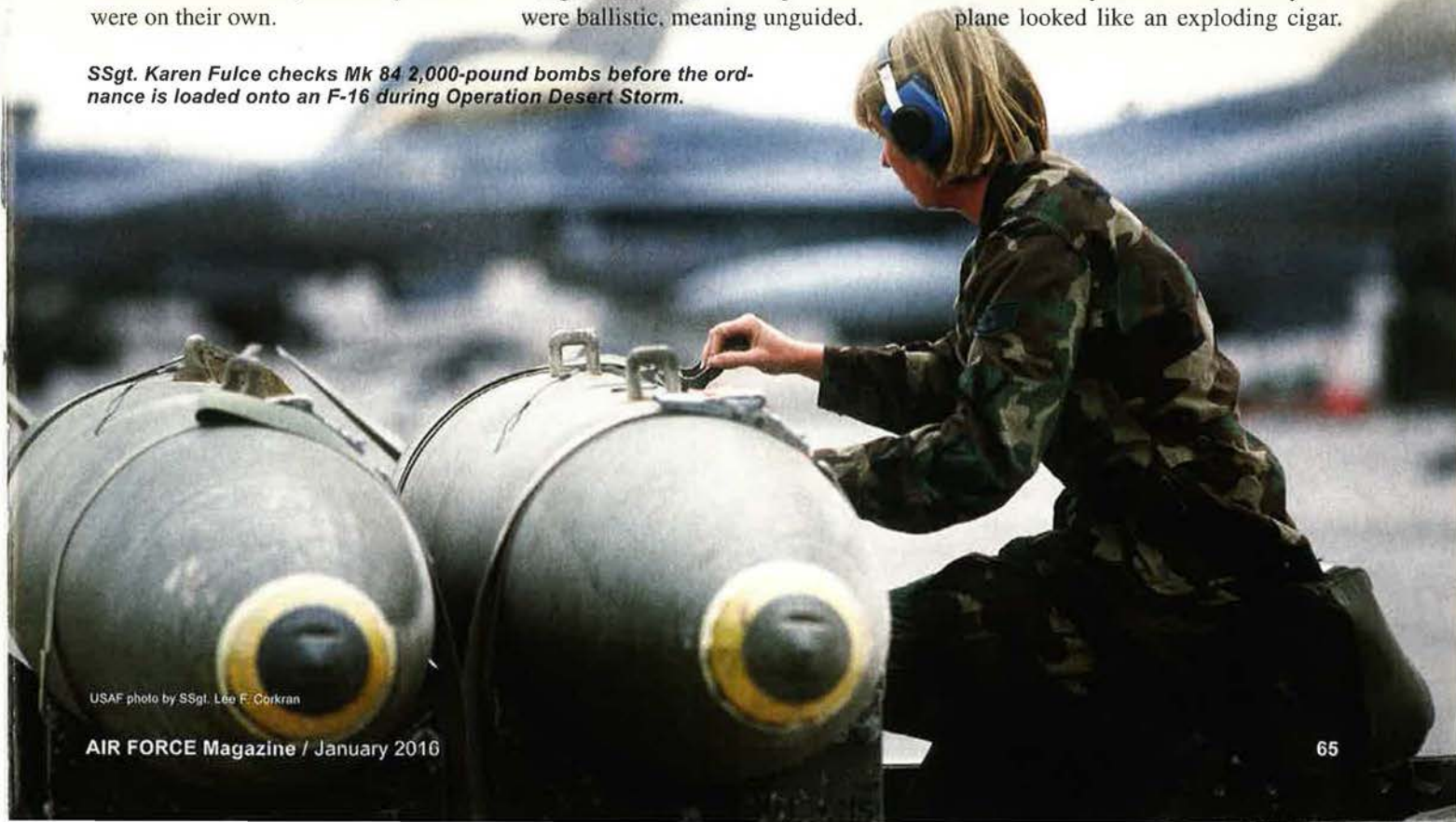
"I had a 32-foot day," he says.

Shrapnel riddled his aircraft. Fortunately, he had managed to prevent the SAM from exploding in front of his canopy; that would have killed him. The bad news was that the F-16's controls had stopped responding.

Eventually the aircraft came back to life as back-up systems kicked in. But Tice was now underpowered and lacking most of his instruments. He separated his external stores, and one of the fuel tanks rolled up and hit the already-damaged horizontal stabilizer.

"Essentially the back end of my airplane looked like an exploding cigar.

*SSgt. Karen Fulce checks Mk 84 2,000-pound bombs before the ordnance is loaded onto an F-16 during Operation Desert Storm.*



USAF photo by SSgt. Lee F. Corkran

There was stuff burning and I couldn't do anything about it. The airplane was still producing thrust. I let it take me as far as it was going to go," says Tice.

That turned out to be some 200 to 150 miles north of the Iraqi border. The F-16 essentially decided it was done flying. It glided for a while, and then Tice decided it was time to go. He grabbed the ejection handle and pulled. Nothing happened. He began to prepare for an emergency manual jettison of the thick polycarbonate canopy.

Except something was happening. Time had slowed so much, due to the continued temporal distortion, that tenths of a second seemed like forever. Suddenly Tice was face down in the cold air, canopy tumbling away, strapped in the ejection seat.

At 14,000 feet, the altitude where oxygen is thick enough to breathe, the full parachute came out. The temporal distortion and confusion began to clear away. He had survived the shutdown and ejection. He was now descending

at a rate of approximately one minute per thousand feet.

"I had 14 minutes, roughly, of time to figure out what's going on around me and get another plan going here," says Tice.

## LUCKY DEVILS

For the 614th TFS maintenance troops back in Doha, this was the day the seriousness of the war hit home.

"It affected our wing top to bottom and it changed the war for our entire

## VIPERS AND WEASELS IN THE DESERT

In August 1990, Capt. Philip M. Ruhlman was chief of standardization and evaluation for the 401st Tactical Fighter Wing. When his squadron deployed to Qatar at the start of Desert Shield the only ordnance they had traveled on the wings of their F-16s.

When the unit landed in Doha and popped its canopies, the heat sucked the oxygen out of the pilots' lungs and there was nothing but sand to be seen.

For some weeks they thought their deployment might be temporary. In October 614th TFS commander Lt. Col. Bruce A. "Orville" Wright straightened them out.

"Orville said, 'Unpack your bags, fellas, we ain't going home till this is over. He shifted our mind-set,'" says Ruhlman.

American expatriates in Qatar treated the airmen well. One construction company executive asked what they wanted for Christmas dinner. They said Mexican.

"He had 30 people for tacos and margaritas," Ruhlman remembers.

As conflict drew nearer the 614th flew air defense missions near the border. Iraqi helicopters sometimes popped up on the other side, trying to drag the Americans over the line into preset flak traps.

Plans for the beginning of the war were closely held. First mission launches on the fateful day of Jan. 17 were at dawn, meaning the pilots had to arise around 2 a.m. When they walked into the dining hall the staff announced that the midnight meal was over and they were closed.

"We said 'No, you're not. We want some breakfast.' The whole base had no clue," says Ruhlman.

That morning Ruhlman was part of a four-ship mission to bomb an Iraqi-held airfield in Kuwait. They were supposed to bomb the concrete in front of aircraft shelters to seal the doors. US intelligence believed Scud missiles might be inside the buildings.

When he crossed over the border for his first combat mission, it was like a dream, Ruhlman remembers.

"Your heart's beating a lot. This is what I had trained my whole life to do, this moment," he says.

He rolled in and put his bombs on target. His blood was pumping so much after release that he pulled on the stick too hard and slowed down. The rest of the flight was running for the exits. He was lagging—and his radar warning was going off. An SA-2 air-to-ground missile was chasing him down from behind.

At that moment an F-4G Wild Weasel saved his life.

"I heard them say 'Magnum.' Within five seconds, they nailed the site that was trying to shoot me."

Deprived of the tracking signal from its ground radar, the SA-2 went unguided in the air and veered away.

Ruhlman flew a morning mission on Jan. 19, the day of Package Q, so he was trying to sleep when the pilots returned from their flight into Baghdad's air defenses.

Loud discussion about Package Q's two downed pilots woke him, and airmen gathered at a makeshift juice bar in their dorm's open-air quadrangle.

They watched the head-up display video of "Cujo" Roberts' jet exploding.

"It shocked us," Ruhlman says. There seemed no way Roberts could have survived.

Then, a few days later, their comrades appeared miraculously on CNN in Iraqi propaganda videos. They didn't look good, but they were alive.

The Iraqis may have intended the video to depress US morale, but for the 614th it had the opposite effect.

"In three days, we went from the lowest low to the highest high. It was amazing," says Ruhlman.

As the war progressed the unit settled into a routine. F-15s shut down the air-to-air

threat and Wild Weasels countered the SAM threat.

At one point Ruhlman and his wingman found themselves flying without Wild Weasel cover. So they faked some F-4G cover, by imitating the Weasel's distinctive chatter.

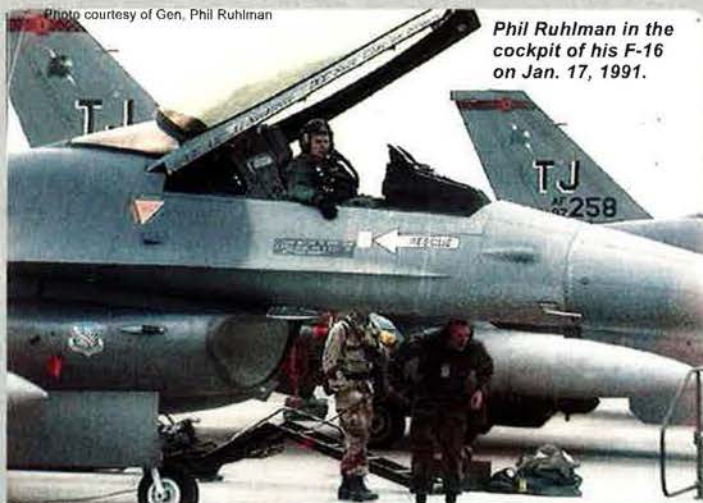
"Hey, Viper, we're here," said Ruhlman.

Detecting an operational SAM radar in the area, Ruhlman said, "Magnum," faking a HARM launch. The radar immediately turned off.

As Desert Storm neared its end the squadron spent much of the time hunting Republican Guards in the desert. They didn't go into downtown Baghdad again.

After Iraq's defeat, US prisoners of war were released and flown to hospital ships in the region. The 614th was allowed to send two pilots with a big canvas bag full of comestible treats to greet Tice and Roberts.

The former POWs' stomachs shrank so much during their captivity they couldn't eat or drink their gifts, Ruhlman said, but aside from that hitch it was "certainly a great reunion."



base,” says Mike Kopack, who was an E-4 sergeant and crew chief for the 614th in Qatar.

Among other things, Kopack was top aircraft decontamination NCO for the wing. So on Jan. 19 he was standing on hard-packed sand near the end of the runway, wearing a chemical suit, waiting for the return of the aircraft from the Package Q strike. He remembers that the radio net seemed quiet—in retrospect, more quiet than normal.

When the first F-16 appeared it came straight in, with no overhead break. That was unusual, and unusual was rarely good. Kopack started to count the airplanes, as was his habit. He quickly noticed something.

“What’s that under the wings?” he asked.

“They’ve all blown their wing tanks and those are the tank mounts,” said someone else.

Kopack’s count came up two short. He hoped that maybe the missing aircraft had been forced to stop in Bahrain or Saudi Arabia for fuel. Somehow he knew that wasn’t the case.

Decontamination inspection was skipped for the day. The aircraft taxied directly to the ramp and Kopack and his decon team raced back in their truck. That is when they heard the news about the two lost pilots.

After that the maintenance crews did what they could: rearming and refueling the aircraft as quickly as possible so the F-16s could return to the air and search for the missing men.

“A lot of unrecorded records were set in the next few minutes,” says Kopack today.

Within an hour they saw head-up display tapes of the mission. Roberts had taken a hit amidships and his aircraft had just exploded. It did not look survivable, but someone had seen a canopy come off, so there was a sliver of hope that Roberts had ejected. As for Tice, he had made it halfway back to the Saudi border and ejected under controlled circumstances.

“We felt pretty confident that if he could get hunkered down until dark there was a good chance that we’d get him back,” writes Kopack.

Mike Roberts was alive. He had ejected and landed close to a major Baghdad highway. Stripped of all but

his flight suit and survival vest by an angry mob of civilians, he was turned over to Iraqi intelligence and interned in a Baghdad prison.

Within days the outside world knew he and Tice had survived, as film clips of their captures appeared on CNN.

For his part, Tice had no time to hunker down. At first, his Bedouin captors screamed at him and threatened him with firearms. Later, after discovering pictures of his wife and children in his vest, they gave him a place of honor next to their chief at a meal inside their tents.

But the next day they drove him to a town and turned him over to Iraqi authorities. After that his problems got worse. He was beaten and tortured with electric shocks, delivered through wires wrapped around his head. He called it the “talkman.” It would blow out pieces of his teeth.

Other than that he was in solitary confinement for five of the six weeks he was imprisoned. He was in a Baghdad building, in a cell that had nothing but a ventilation louver, not a real window, looking south.

At sunset every night he would get beneath this louver to watch the bombs falling on the city. The sequence was always the same: The ordnance would fall, the airplanes would leave, and then the sirens would sound and anti-aircraft fire would begin.

In other words, the Iraqis were unable to detect and defend against the F-117s and cruise missiles hitting Baghdad.

“Because of them being out of sequence I knew this war would not last long,” says Tice.

On the night of Feb. 23, the F-117s hit his prison, located in a Baath Party headquarters in Baghdad. Their target was a bunker underneath the building.

Four bombs blew most of the structure apart. The overpressure lifted Tice in the air and threw him around the cell. Miraculously, the wing where he and his fellow coalition prisoners were incarcerated was largely undamaged. None were hurt. An Iraqi fire brigade came in the morning to extract them. They thought the prisoners would be dead.

“I used up six of my nine lives in Iraq,” says Tice.

Taken blindfolded to a new prison, treatment began to improve. An Iraqi guard told him in broken English that if he needed something, to ask. Food and water improved in quality and quantity.

Finally, in early March, a guard came and asked his name. “You’re going home soon,” the guard said.

Tice did not believe it. He thought it was some sort of psychological torture.

Thirty minutes later another guard ordered him out of the room. “Turn to your right,” he said.

Tice was near the end of a line of prisoners.

“I didn’t like the way this was going,” he says.

The first person in the line reached some double swinging doors and went through.

At the bottom of a set of stairs, just in front of the door to the outside, was an Iraqi. As each prisoner passed, the Iraqi sprayed him with perfume.

Outside stood a representative of the International Red Cross. “You’re now under our control,” the Red Cross official said. Tice was flown out of Baghdad on March 6.

## MIXED BAG

Package Q was neither a failure, nor a smashing success. A number of elements, from weather to timing to the premature exit of electronic warfare assets, combined to increase the danger to US pilots.

“The raid illustrates how a number of small incidents—or frictions—none of which by themselves are necessarily serious, can contribute to a less than satisfactory outcome: in this case the loss of two F-16s,” concluded the *Gulf War Air Power Survey*.

Coalition airpower continued to pound Iraq and established virtual dominance over Iraqi skies by the end of the war. But Air Force planners learned from Package Q that Baghdad’s defenses were lethal, and it was not worth it to send large conventional forces to attack the capital—especially since the stealthy F-117 could attack the city with much less risk. ❁

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*Peter Grier, a Washington, D.C., editor for the Christian Science Monitor, is a longtime contributor to Air Force Magazine. His most recent article, “Iran and the Bomb,” appeared in December 2015.*

An E-3 AWACS on the ramp at McChord AFB, Wash. So far, USAF has upgraded nine of 27 AWACS aircraft to Block 40/45, completely modernizing how air battle managers process sensor data.



**T**he E-3 Sentry Airborne Warning and Control System has flown continuously in the Middle East for more than 20 years, but its most recent deployment is the most notable since the aircraft began watching Iraq in the early 1990s.

On Nov. 18, an E-3G—the first AWACS outfitted with the Block 40/45 upgrade to deploy—landed at a base in Southwest Asia, complete with brand-new overhaul of the cockpit and mission control systems. The aircraft went to war utilizing large-scale upgrades that come at a cost of \$2.7 billion for mission computing and communications, to handle a new generation of air warfare.

For the E-3 itself, “the airframe will fly well into the 2030s,” said Col. Patrich Skendziel, the division chief of C2 weapon system requirements for Air Combat Command, in an interview with *Air Force Magazine*. “It’s been maintained very, very well throughout its lifespan. ... Plus we bought the airplanes

brand-new when we initially bought them, so now it’s just a matter of keeping the airplane viable as technology evolves.”

As of November, nine of the 27 E-3s at Tinker AFB, Okla., had received the Block 40/45 upgrades with crew certification. The service flies four more AWACS aircraft, with two assigned to Kadena AB, Japan, and two at JB Elmendorf-Richardson, Alaska.

The Block 40/45 system reached initial operational capability in June 2014 and was immediately put through the paces at Red Flag at Nellis AFB, Nev., in August and at exercise Northern Edge 2015 over the Joint Pacific Alaska Range Complex near Elmendorf. In Alaska, two E-3Gs from the 964th and 966th Airborne Air Control squadrons surveyed and controlled almost 100 fighters and bombers in a 300-mile radius, according to an Air Force news release on the exercise.

“It provides more situational awareness,” said 1st Lt. Breann Hermann, a 964th AACS air weapons officer, in the release.

# VA CS For the st Century

By Brian W. Everstine, Pentagon Editor



E-3 fleet is now deployed with its biggest upgrade ever.

USAF photo by SSgt. Jacob Bailey

ize it, and now you can build unlimited air-  
reliable and more technologically advanced.”

**A**R command and control missions during the  
testing and honing the advanced equipment  
s that took part in the exercises performed  
service confidence to move forward on its  
loyment of the upgraded jets to the Middle  
S, in the exercises, performed “well enough  
ombat theater,” even years before the fleet  
ditional capability. Skendziel said.

he combat theater is the culmination of many  
ing and building standard operating proce-  
the mission in any combat or contingency  
d Col. David M. Gaecke, commander of  
ntrol Wing at Tinker. “What the E-3 brings

to the fight is essential combat commanders, both in  
the air and on the ground.”

The Air Force began the E-3 Sentry in October 1975,  
taking a Boeing 707/3 commercial aircraft straight from the  
production line and outfitting it with the massive 30-foot-wide  
radar dome, along with control systems in the cabin for  
up to 19 specialists. The first E-3s were delivered  
to Tinker in 1977, then began flying missions at home  
and in operations abroad.

These missions range from small operations in Grenada to  
air wars in Yugoslavia and Afghanistan, with the aircraft  
proving it can deploy overseas. The AWACs help set up an air campaign  
overseas. The AWACs crews deployed constantly  
in the years since they joined the fleet, using a massive  
radar to track and coordinate allied aircraft in all weather  
and providing a real-time view of battlespace to a joint air  
operations center.

During flight, the jet tracks friendly and hostile activities and provides location information for aircraft.

Decades after the Air Force service used the same commercial airframe for a new fleet, the E-8C Joint Surveillance Targeting and Radar System. Air Force officials have recently announced the production line and dwindling numbers is a reason the service needs to move forward and acquire the E-8s with a new commercial aircraft.

Some of the 707s were leased as "cattle cars" before the service bought them in the 1990s for conversion, and since then costs have grown. Air Force Chief of Staff Mark A. Welsh III said in September at the Air Force Association's Air & Space Conference. Combatant commanders have all agreed that now is the time to move away from the E-7 frame for the JSTARS mission, Welsh said.

However, the E-3 fleet has remained comparatively healthy and will be able to fly safely into the future. The jet needs technological upgrades, service-life extensions and other modifications needed for a less healthy E-3G fleet saw a mission completion rate of 82 percent, with the service's E-8C fleet lagging behind at 76 percent. But it is not just an issue of the E-8 fleet that is the cause of the scattered past of the E-3 fleet, Skendziel said.

"When the JSTARS were purchased with a lot of service life already used up, and they came from a bunch of different airlines and the maintenance records that came with them weren't always that complete, it was a cycle of those airplanes."

The E-3707s, on the other hand, were brand-new when USAF acquired them, "and the Air Force has held the maintenance and sustainment responsibility out its lifecycle, so we've had very good control of how well those airplanes have been maintained," Skendziel said.

Everything in its area—both helps to provide location information for aircraft. Flying its E-3 fleet, the same commercial airframe for a new fleet, the Joint Surveillance Targeting and Radar System. Air Force officials have recently announced the production line and dwindling numbers is a reason the service needs to move forward and acquire the E-8s with a new commercial aircraft. leased as "cattle cars" before the service bought them in the 1990s for conversion, and since then costs have grown. Air Force Chief of Staff Mark A. Welsh III said in September at the Air Force Association's Air & Space Conference. Combatant commanders have all agreed that now is the time to move away from the E-7 frame for the JSTARS mission, Welsh said. However, the E-3 fleet has remained comparatively healthy and will be able to fly safely into the future. The jet needs technological upgrades, service-life extensions and other modifications needed for a less healthy E-3G fleet saw a mission completion rate of 82 percent, with the service's E-8C fleet lagging behind at 76 percent. But it is not just an issue of the E-8 fleet that is the cause of the scattered past of the E-3 fleet, Skendziel said. "When the JSTARS were purchased with a lot of service life already used up, and they came from a bunch of different airlines and the maintenance records that came with them weren't always that complete, it was a cycle of those airplanes." The E-3707s, on the other hand, were brand-new when USAF acquired them, "and the Air Force has held the maintenance and sustainment responsibility out its lifecycle, so we've had very good control of how well those airplanes have been maintained," Skendziel said.

The Air Force, beginning in 2003, selected both the E-3 and E-8, along with the RC-135, for a common airframe, referred to as the E-777. The multimission aircraft would take over the E-3's airborne warning and control operations, along with air-to-ground targeting, intelligence collection and communications. The service began the program in 2003, but the program was canceled in February 2005. The service began the program in 2003, but the program was canceled in February 2005. The service began the program in 2003, but the program was canceled in February 2005.

The program was canceled in February 2005 due to cutbacks as it grew too complex.

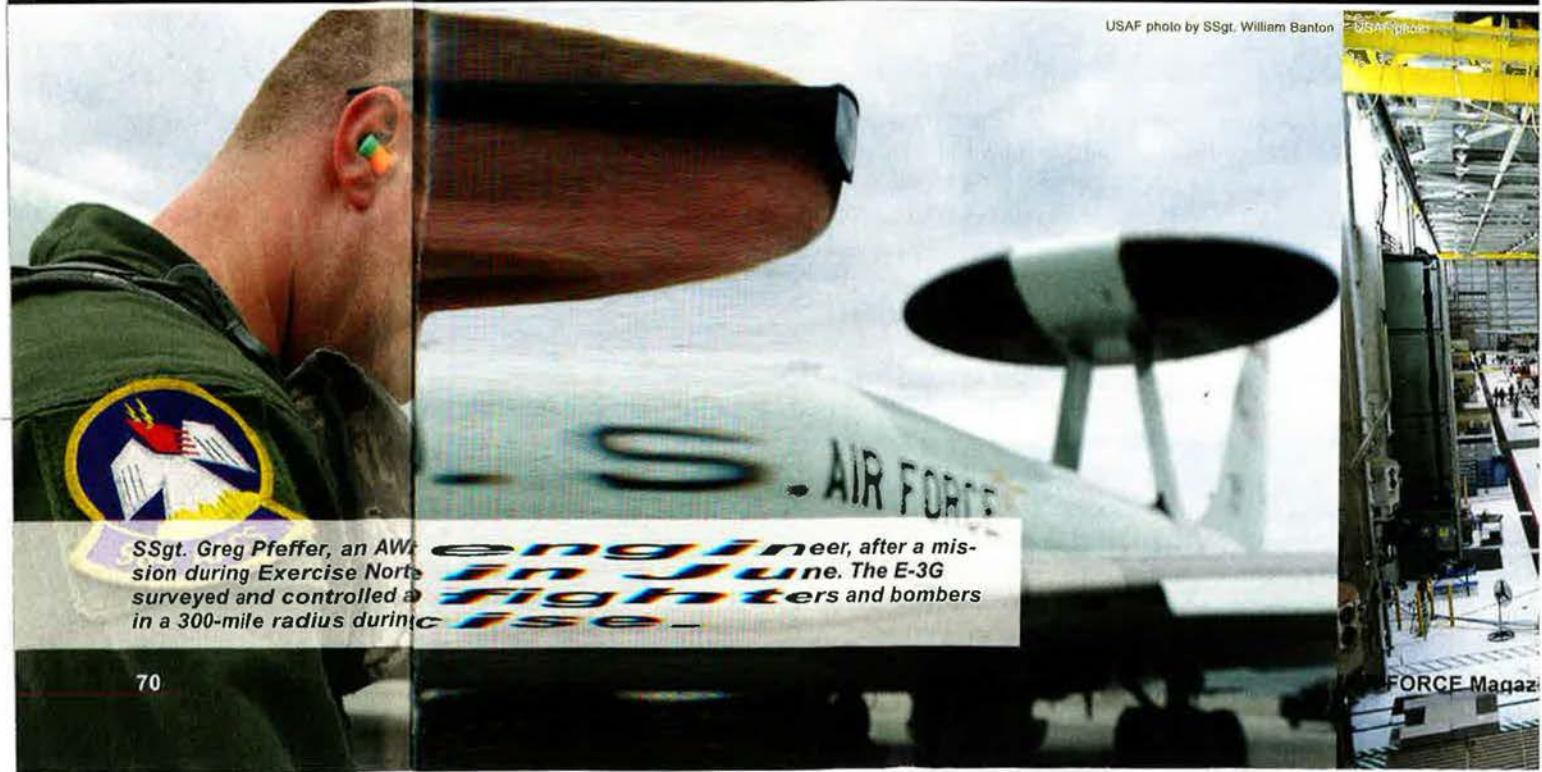
The service has since moved forward with recapitalization, looking to award a contract to be delivered by 2023, but today's plans are to use the existing E-3 airframes as the preferred airframe for airborne warning and control.

The Air Force began testing the \$2.7 billion program in 2006, with the program entering production three years later. While components were modified in the late 1990s, the current program is the largest overhaul of the AWACS fleet ever delivered.

"This modification represents the most significant change in the 35-plus-year history of the E-3 and our crewmembers' ability to execute the control mission, while providing a building block for future upgrades," said Gaedecke, the command and control release when the aircraft deployed in November 2009.

### LOST IN TRANSLATION

In 1999, the AWACS went through a joint program to improve its radar system and electronic countermeasures. The upgrade program was a partnership between the 552nd Air Control Wing and the E-3 System Program Office at Hanscom. The program was held at the Oklahoma City Air Logistics Complex; another program by Boeing that aims to turn around five E-3s per depot cycle and upgrades are "meticulously



SSgt. Greg Pfeffer, an AWACS engineer, after a mission during Exercise Northwind in June. The E-3G surveyed and controlled a 300-mile radius during the exercise.



Air Combat Command can maintain its deployment schedule, Skendziel said.

The hardware onboard the Air Force's older E-3 fleet dates to when it started flying in the late 1970s, and while the massive radar brings in copious amounts of data, crews onboard were limited by old computers' ability to translate that information.

The upgrade is like moving from "an Atari to an Xbox" game system, completely modernizing how air battle managers handle sensor data. The aircraft's systems process information with a much higher capacity and at a faster rate, both simplifying the work onboard and increasing the output. That means more efficient control on a mission and simplified training at home because the human-machine interface is "so much more intuitive," Skendziel said.

"It takes the same amount of sensor data that was coming into the airplane before the upgrade and it allows the crew to translate that information and then to turn it out and put it out over either the radios or the data links to the joint air component at a much higher capacity and at a much faster rate," he said. "It has really sped up the tempo on the better battle management that the E-3 crews can now produce."

Part of the Block 40/45 upgrade is replacing the aircraft's interrogation system and modern Link 16 radios. The upgrades are driven by AWACS' requirement to keep up with the jets it controls, as the service brings in more fifth generation fighters.

The first new interrogation system was installed at Hanscom in July, with the modern AN/UPX-40 system expected to improve an AWACS' ability to track low-flying aircraft by eliminating ground clutter signals that have confused other radars. The \$60 million contract, awarded to Telephonics Corp., began delivery in 2015, with all 31 Air Force E-3 slated to receive the new system.

"The UPX-40 dramatically improves the detection of weak signals or maneuvering targets at maximum range and improves detection of targets at all ranges," said Nick Grudziecki, the deputy program manager of the AWACS Next Generation Identification Friend or Foe office at Hanscom,

in a release announcing the first installation. "The new interrogation capabilities also provide faster detection of friendly targets."


While the Block 40/45 upgrades are installed, the service is working with the NATO E-3 fleet on an avionics upgrade system called DRAGON to move to a modern glass cockpit. The \$1.4 billion program will replace the aircraft's 40-year-old avionics with modern digital instrument displays and subsystems that meet requirements from the Federal Aviation Administration and the International Civil Aviation Organization to "keep the airframe viable in all airspaces around the world," Skendziel said.

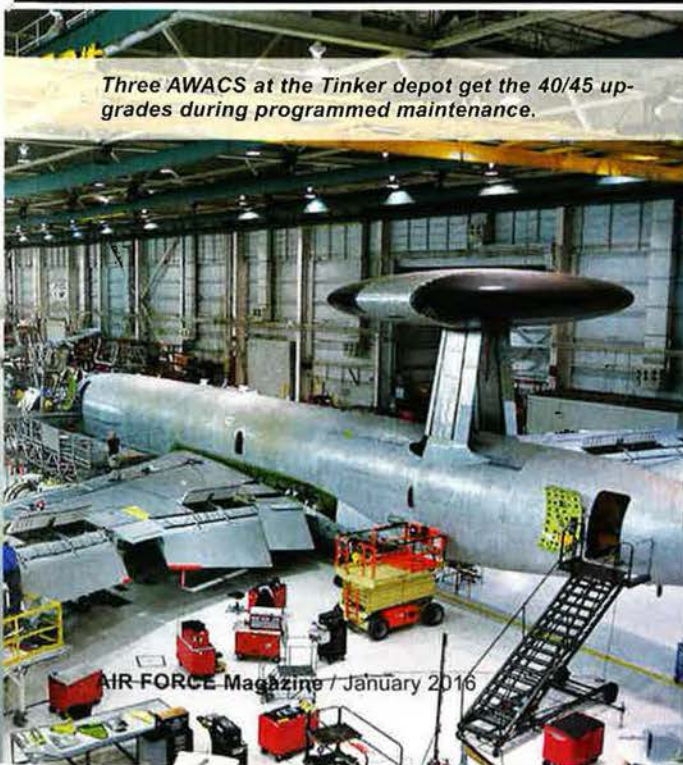
These upgrades, with a planned initial operational capability date of 2021, streamline operations enough that it will allow the service to eliminate the navigator position, lowering the required crew size from four to three, according to the Air Force.

The cockpit upgrades will also include a weather radar that predicts wind shear, an enhanced ground proximity warning system, improved engine warnings, a digital flight deck audio distribution system, and crew alert system, according to the DRAGON program office release at Hanscom.

The jet has been flying continuously in the Middle East for more than two decades—rotating from its home station in Oklahoma to bases throughout Southwest Asia, while still constantly being called on for homeland protection and humanitarian missions. The plan for the most recent deployment wasn't made in response to Operation Inherent Resolve, though the jet will stay busy flying in support of the aircraft targeting ISIS in Iraq and Syria.

Despite the new systems on the E-3 fleet, the mission isn't new.

"The E-3 has been in the desert since well before 9/11," Skendziel said. "We were flying Northern Watch and Southern Watch out of Turkey and Saudi Arabia. ... That's actually something some of the joint services don't always recognize, that the AWACS and the Air Force [have] been in the desert since ... the first Gulf War." 



Three AWACS at the Tinker depot get the 40/45 upgrades during programmed maintenance.



SSgt. Daniel Van Horn, an AWACS E-3G surveillance technician, prepares for a mission above Alaska during Northern Edge.

# Down and Deadly

USAF photo



In South Vietnam, allied troops on the ground received air support from many different types of fixed wing and rotary wing aircraft, which were flown by all four US services. Some aircraft were notable for their ability to mount low-altitude operations. Two of the most prominent were the A-1 Skyraider and AC-47 gunship, both seen in action in these photos. The A-1 is considered by some to have been the finest prop-driven ground support aircraft ever built. The AC-47 was likewise legendary for the sheer firepower it could generate.

[1] USAF A-1 Skyraider of 6th Special Operations Squadron dives to unload bombs in a close air support mission. [2] Crew of a USAF AC-47 gunship—the famed “Puff the Magic Dragon”—pours nighttime fire on a target in 1966. [3] In this 1966 action, an A-1E pummels a Viet Cong position with a white phosphorous bomb.



Photo by Larry Burrows



USAF photo



Published by the Air Force Association

# WINGMAN

「Gen. Lori Robinson  
PACAF commander」

**Also**

Chairman's Welcome  
Meet the AFA President  
AFA Chapter News



# CHAIRMAN'S WELCOME

By Scott P. Van Cleef

With this sixth edition, *Wingman Magazine* transitions from a stand-alone publication to a regular section within *Air Force Magazine*.

What does the change mean for you?

*Wingman's* lead feature will be shorter, so it'll get to the point—fast—but you'll see a *Wingman* every month instead of only three times a year.

*Wingman* will continue to highlight chapter news with bold graphics and a lively layout.

It will continue to run articles by the AFA staff reporting on the association's initiatives and programs.

Most of all, *Wingman* will continue to publish—and need—stories about our airmen and members, written by members. That has always been an underlying premise: AFA members would provide the majority of the content.

AFA has about 200 chapters throughout the country. Many are strong and vibrant

while others are challenged in remaining locally relevant.

Highlighting our varied and broad-based chapter programs that honor our Air Force heritage, support our airmen and their families, and support STEM—science, technology, engineering, and math—and aerospace education, *Wingman* will appeal not just to our current members but to the public at large. This is a great tool to highlight who we are and what we do.

*Wingman* will provide concrete examples of what engaged chapter volunteers do for their community. It will inspire everyone to help AFA grow and to tell the Air Force story.

Let us hear from you. AFA members should email their article ideas to: [wingman@afa.org](mailto:wingman@afa.org). ✪

*Scott P. Van Cleef is the Air Force Association's Chairman of the Board.*



## MEET THE PRESIDENT

### Larry Spencer, AFA President

Retired Gen. Larry O. Spencer became the Air Force Association's president in late August and received a formal welcome at the National Convention and Air & Space Conference in September.

Spencer had been USAF's vice chief of staff since July 2012 and retired after 40 years of service.

He succeeds Craig R. McKinley, who took a new position with the National Defense Industrial Association, and Mark A. Barrett, who was acting president for seven months.

As AFA president, Spencer directs the association's professional staff, with responsibility for management and operations. This encompasses professional development events across the country and aerospace education initiatives. Spencer is also publisher of *Air Force Magazine*.

"General Spencer's leadership and success in the Air Force is inspiring," commented Scott P. Van Cleef, AFA's chairman of the board.

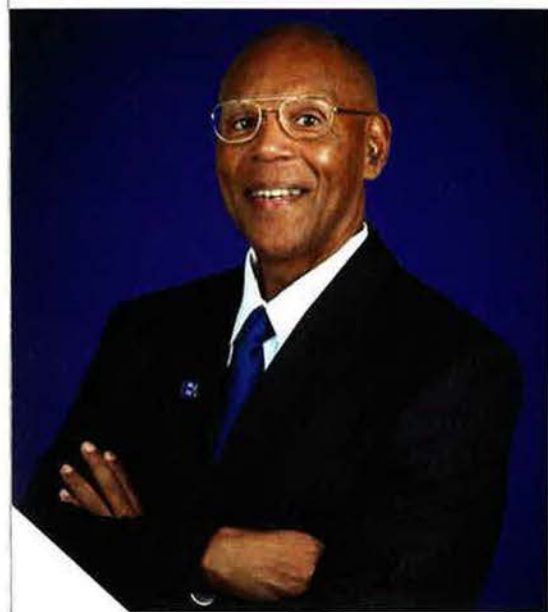
Spencer began his career in the enlisted ranks and rose to become a four-star general. He received a bachelor's degree in industrial engineering technology from Southern Illinois University, Carbondale, and was commissioned in 1980 through Officer Training School, where he was a distinguished graduate. He was also the distinguished graduate from Squadron Officer School and the Industrial College of the Armed Forces. He holds a master's degree

in business management from Webster College in St. Louis and graduated from Marine Corps Command and Staff College.

Among his notable assignments, he was vice commander of the Oklahoma City Air Logistics Center; the first Air Force officer to serve as assistant chief of staff in the White House Military Office; and comptroller and then director of mission support at a major command. He held positions within the Air Staff and Secretariat and was director of force structure, resources, and assessment on the Joint Staff.

Spencer's military awards include the Defense Distinguished Service Medal, Distinguished Service Medal, Defense Superior Service Medal, Legion of Merit with two oak leaf clusters, Meritorious Service Medal with four oak leaf clusters, and the Air Force Commendation Medal.

He has had several articles published on military finance and garnered many awards in that field, among them the Air Force Comptroller of the Year 1991, the American Society of Military Comptrollers 2002 Best Major Command Comptroller in DOD, and the Air Force Eugene M. Zuckert Management Award for 2007. He also has had two awards established in his honor: the Air Force's Gen. Larry O. Spencer Innovation Award and the Air Force Comptroller's Gen. Larry O. Spencer Special Acts and Services Award. ✪



# CHAPTER NEWS

By June L. Kim, Associate Editor

Updates from across the United States on AFA's activities, outreach, awards, and advocacy.

## GREAT LAKES REGION MEETING

The Air Force Association's Great Lakes Region held a two-day meeting in Indianapolis last fall and invited AFA's vice president of member and field relations, Kari Hahn, as guest speaker. Festivities began with a banquet Friday night at Fort Harrison State Park Inn and nearly three dozen people attended. Hahn spoke during the banquet and she "gave an absolutely outstanding presentation," said Region President Paul A. Lyons. She showed "the human side of the Air Force Association." Lyons presented Hahn with a \$1,000 check, donating to AFA's Wounded Airman Program.

The following day, more than two dozen AFA leaders reconvened for a business meeting. There, Hahn spoke on "matters relevant to field leaders," said Lyons. Bill Grider, an outgoing AFA National Director, also spoke, helping "us better understand both the challenges and opportunities facing AFA," said Lyons. At the meeting, it was also announced that Chuck Hassel will serve as the new Indiana state president.



Photo via Paul Lyons

Great Lakes Region President Paul Lyons (center) says it had been years since all four of the region's state presidents had managed to attend the annual regional meeting. L-r: Mil Campo who was then Indiana state president; Jeff Liffick, then Ohio state president; Lyons from Indiana; Kentucky State President Curtis Meurer; and Michigan State President Bill Day.

## THANK YOU, LEGISLATIVE LIAISONS

The Nation's Capital Chapter in Washington, D.C., held a reception for the Air Force's 2015 Total Force legislative liaisons last summer. The chapter chose four divisions from the Office of the Secretary of the Air Force, the Air National Guard, and the Air Force Reserve and selected 10 individuals for their service, performance, and dedication, said Chapter President Bruce VanSkiver.

From the Secretary of the Air Force's Legislative Liaison Office the chapter recognized Lt. Col. Sirena Morris, MSgt. Eliza Stahl, and Lara Battles. From the Secretary of the Air Force's Financial Management & Comptroller Office it recognized Lt. Col. Jay Alonzo and Garry Sauner. From the Air National Guard's Legislative Liaison Office it recognized Lt. Col. Derek Tate and Donna Warren. Lastly, the chapter recognized from the Air Force Reserve's Policy and Integration Office Lt. Col. William Vaughn, SMSgt. Edna Gardner, and Sonya Wood.

The 10 awardees were invited to Ruth's Chris Steakhouse in Arlington, Va., and more than 100 people attended the reception. "It's an annual program that we do," said VanSkiver.



Photo by Ken Goss

Nation's Capital Chapter President Bruce VanSkiver celebrates with the Air Force's 2015 Total Force Legislative Liaison team in June. L-r: VanSkiver, Lt. Col. James Alonzo, Donna Warren, SMSgt. Edna Gardner, Lara Battles, Garry Sauner, Sonya Wood, Lt. Col. Sirena Morris, MSgt. Eliza Stahl, and Lt. Col. William Vaughn.

## “WARMED MY HEART”

In September, Central East Region President Gavin MacAloon had the pleasure of escorting Frank Coorsen, a founding member of Maryland’s Thomas W. Anthony Chapter, to AFA’s Air Force Anniversary Dinner. The dinner was held in conjunction with the Air & Space Conference. For the occasion, Coorsen, a retired master sergeant, donned his old dress blues.

On the tech expo floor, they met TSgt. Tamara Acfalle, one of the 12 Outstanding Airmen of the Year who was honored at the conference. Acfalle marveled at Coorsen’s master sergeant insignia dating from 1970. She “asked for a picture with Frank, which he happily agreed to,” said MacAloon. Coorsen called MacAloon the following day to thank him and asked for the photo with Acfalle. Unfortunately, it was taken on her phone, but “I’m happy to say that an Outstanding Airman is not hard to find,” said MacAloon. AFA’s manager of awards and scholarships, Jill Westeyn, connected him to Acfalle and MacAloon was able to get the photo to Coorsen. “It sure warmed my heart,” said MacAloon.



Photo by Gavin MacAloon

TSgt. Tamara Acfalle admired the old master sergeant insignia on Frank Coorsen’s uniform. Coorsen (right) belongs to the Mile High Chapter (Colo.).

## RPAS, USAF, & THE CIA

The Seidel-AFA Dallas Chapter (Texas) invited retired Lt. Gen. John H. Campbell to speak at a quarterly meeting last year. Campbell, the associate director of central intelligence for military support at the CIA in the early 2000s, spoke about “his past assignments and highlighted his work with remotely piloted aircraft for the Air Force and the CIA,” said William A. Solemene, chapter communications director. Members of the 295th Thunderbolt Squadron, a nearby Civil Air Patrol composite squadron, presented the colors.

Campbell retired in 2003 after more than 30 years in the Air Force. Before he worked for the CIA, he was the vice director of the Defense Information Systems Agency.



Photo by Anne Harper

Retired Lt. Gen. John Campbell takes a photo with a CAP color guard.

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## A NOD TO THE ROMANS

Members of the Paul Revere Chapter in Massachusetts attended a Patriot Honor Guard Roman Ball last August. The chapter, one of the sponsors for the ball, donated \$1,000 to the Hanscom Air Force Base unit in support of its work, said Chapter President Paul Zauner. The evening began with an awards ceremony, followed by dinner and dancing, with some men dressed as Roman soldiers. This was a nod to the honor guard heritage, dating back to the Roman Praetorian Guard, said Zauner, noting that the Air Force Honor Guard has a Praetorian helmet on its military emblem. The event, held at Hanscom, drew approximately 175 people, all of whom were part of organizations that supported the Hanscom honor guard, said Zauner.

Hanscom's Patriot Honor Guard provides honors at military funerals for Active Duty Air Force, retired, and veterans. It also participates in community and base-related events, Zauner said.



Photo via Paul Zauner

Paul Revere Chapter President Paul Zauner (far left) and his wife, Susan, stand next to Paul Marotta, Hanscom Federal Credit Union board chairman; Col. Mike Vogel, 66th Air Base Group commander; MSgt. Jason Jernigan, Patriot Honor Guard superintendent; SMSgt. Aaron Marley, outgoing Patriot Honor Guard superintendent; and David Sprague, Hanscom FCU president.

## SUPPORT FOR THE WOUNDED WARRIORS

AFA members in Colorado helped collect and distribute refreshments to the Air Force Wounded Warrior adaptive sports program in July. Rebecca Decker and Kristen Christy of the Lance P. Sijan Chapter took on this project to buy water and snacks from chapter funds, said Linda S. Aldrich, chapter vice president. The two volunteers went to the Equine Adaptive Sports Program at the Air Force Academy and distributed bottled water, fruit, protein bars, and electrolyte powder to the athletes.

The Air Force Wounded Warrior adaptive sports program hosted the equine program as a means for therapy to nearly four dozen athletes and caregivers. They participated in horseback riding, rock climbing, a ropes course, and other outdoor activities.

AFA's Wounded Airman Program also sponsored the welcome reception. Go to [www.afa.org/wap](http://www.afa.org/wap) for more information.



Photo via Rebecca Decker

Rebecca Decker (left) and Kristen Christy (right) flank program volunteers.

## A BETTER WAY TO PAY

New credit cards and payment systems are designed to deal a blow to data thieves.

If you're fed up with worrying about credit card fraud, take a look in your wallet. A partial solution may already be there in the form of a new, hi-tech card with a microchip on the front.

If you don't have one yet, you probably will soon. As of 2014, most major financial institutions, including USAA, started issuing these "smart cards" to their account holders.

The new cards may look familiar to service members who have lived abroad, as the technology has been common in Europe for years.

In addition to the magnetic stripe cards that US consumers have used for decades, the new cards now contain a small integrated circuit—visibly embedded on the surface—that makes it next-to-impossible to duplicate or otherwise forge the card.

Smart cards represent a big step forward in payment technology, narrowing the gap of vulnerability that had allowed clever criminals to make fraudulent charges and wreak havoc on the finances of unsuspecting consumers.

"The problem with magnetic stripe cards is that the account information is simply stored on the card and not encrypted, so it's relatively easy to steal," said Rick Swenson,

USAA's assistant vice president of enterprise fraud prevention and detection. "Smart cards actually interact with payment terminals to authorize transactions through encrypted messages, so your account information is never exposed to fraudsters."

But as smart cards proliferate in the United States, your favorite stores are busy upgrading their payment terminals to accept the more sophisticated technology. It will take some time before US cards will only rely on the chip. MasterCard and Visa had set a deadline of October 2015 for retailers to make the conversion, lest they be held responsible for any fraudulent charges at their stores.

### LEAVE THE PLASTIC AT HOME

As an extra level of security, other new payment technologies are allowing shoppers to forgo carrying credit cards altogether. The most prevalent innovation in the mobile payments world is Apple Pay, which allows iPhone users to store credit card data securely on their devices and make in-store or online purchases using their phones.

"There have been other attempts at this type of 'pass-and-pay' wireless technology, but Apple Pay is a step up in terms of security,"

said Swenson. "It uses a unique device account number to process transactions, so your actual credit card information stays secure. It also requires your fingerprint to make a purchase."

### ON THE HORIZON

This method of combining encrypted data with biometric screening factors is the way of the future, he said.

"As time goes on, verifying your identity will be less and less about something you know, such as a PIN or account number," said Swenson. "It's becoming more about something you have in your possession [a smart card is one example] or something you are: a fingerprint, retinal scan, or voice print."

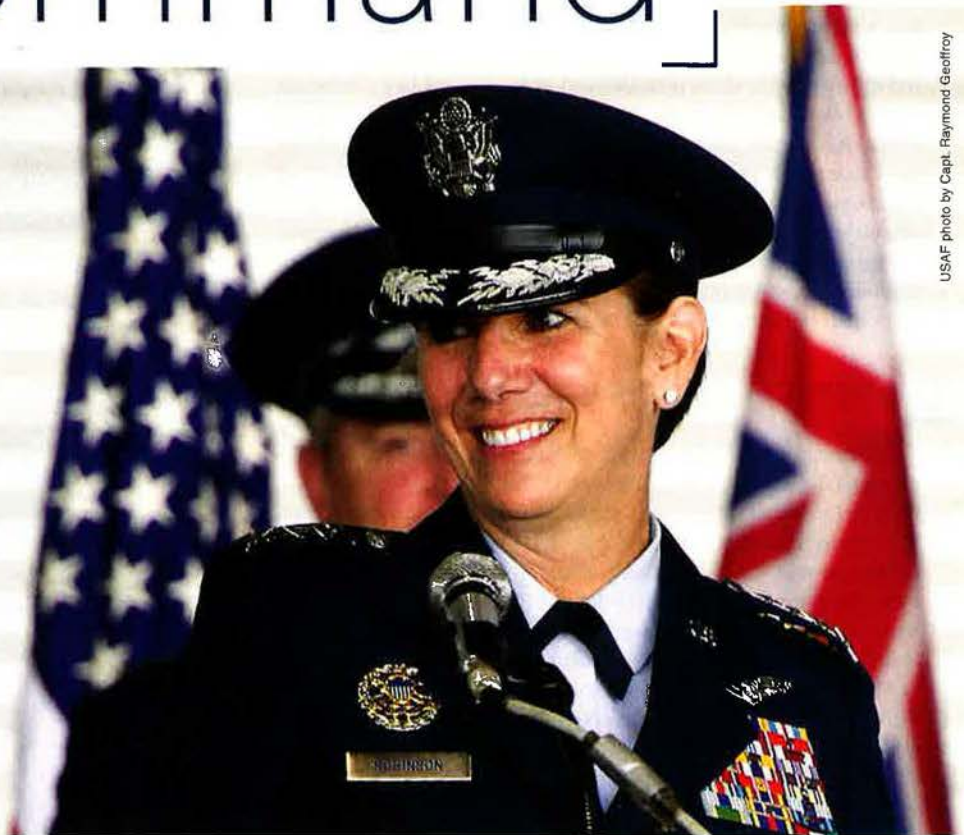
Does that mean consumers can stop worrying altogether? Not quite, said Swenson.

"It's always important to protect yourself. The bottom line is there will always be bad people out there, and we'll always be working to stay one step ahead," he said.

Content provided by USAA, a member benefit partner of the Air Force Association.

# In Command

By Richard Halloran



USAF photo by Capt. Raymond Geoffroy

Gen. Lori Robinson addresses airmen at the 2014 PACAF change of command ceremony.

About the time 2nd Lt. Lori J. Howard began her career in the Air Force, the Chairman of the Joint Chiefs of Staff, Army Gen. John W. Vessey Jr., told a congressional committee the presence of women in the armed forces had caused changes “even greater than nuclear weapons.”

Vessey later said, “We’ve taken a male institution in a very short period of time and turned it into a coed institution ... and it has been a traumatic exercise for us.”

Howard weathered the traumatic exercise and is today Gen. Lori J. Robinson, commander of Pacific Air Forces and the air component commander for US Pacific Command at JB Pearl Harbor-Hickam, Hawaii.

Robinson, who came up through the ranks as an air weapons controller trained to feed tactical information and direction to pilots in battle, is the first woman to lead an Air Force combatant command. She brushes that aside saying, “I am a commander. I am a general. I am an airman. And I happen to be a woman.”

On a wider canvas, Robinson’s appointment as PACAF commander reinforced the arrival of women to the very top ranks of the armed forces. The first female four-star was Army Gen. Ann E. Dunwoody, who headed Army Materiel Command from 2008 to 2012.

Next was Gen. Janet C. Wolfenbarger, the Air Force’s first female four-star, and head of Air Force Materiel Command, beginning in 2012. Then came Robinson, who pinned on her fourth star in October 2014. At AFMC, Wolfenbarger was succeeded by Gen. Ellen M. Pawlikowski in June 2015.

In the Navy, Adm. Michelle J. Howard became vice chief of naval operations in 2014. The Marine Corps, smallest of the services, has yet to have a woman promoted to four-star rank.

In an interview, Robinson said mentors, mostly fighter pilots, helped train her. Among them were Brig. Gen. John P. Jumper, Col. Ronald E. Keys, and Lt. Col. T. Michael Moseley, all of whom later became four-stars. “They taught me how to do my job and it didn’t matter that I was a woman,” Robinson said.

She became proficient as an air weapons controller. At first, skeptical F-15 pilots “thought they didn’t need controllers anymore because they had this new airplane that has a huge radar,” Robinson said. They discovered, though, that they did need the controllers, and “it was the F-15 community that wanted to add weapons controllers to the Fighter Weapons School” at Nellis AFB, Nev. The best compliment came from a group

of pilots who said, “When we go to war, we want Lori on the radio.”

## USAF LED THE WAY

Some Air Force officers pointed to the end of conscription after Vietnam as having contributed to the advancement of women in military service. Those were the days of the “hollow force,” when all services had difficulty recruiting competent people. The shortages, and the military’s drive to improve its professionalism, efficiency, and combat effectiveness, opened the way for women to advance in the ranks.

The Air Force led the way, and women now comprise 20.1 percent of its officer corps and 18.8 percent of the enlisted force—most among the services.

Robinson’s early days as a weapons controller had tense moments. In a drill over Nellis, Robinson saw on her sensors that Jumper, then a wing commander, was unaware that his fighter was in the sights of an “adversary.” She warned Jumper, but his reaction was a tad delayed and he got “shot down.”

After landing, Jumper stormed into the debriefing and thundered, “I died and it was your fault.” Robinson replied, “No, sir, it was not” and asked that the video of the action be replayed. It showed that Robinson had



warned Jumper that an adversary had locked on, but he had failed to heed her.

Jumper, she said, "looks at me and says, 'You're right.'" Asked what had gone on in his cockpit, he said, "I don't know what was going on in my cockpit; she's the only one who had a clue."

### "ARE YOU OUT OF YOUR MIND?"

Robinson said her father, retired Col. George Howard, once asked if she wanted to go to the Air Force Academy. "Are you out of your mind?" she replied. "I've been doing this Air Force thing for 18 years and I've had enough."

At the University of New Hampshire, however, she joined AFROTC thinking "after four or five years, I'll figure out something to do after I grow up."

Her first four years in the Air Force were routine. She trained as an air weapons controller and spent a year with a squadron in the Philippines.

Those were the days, in the mid-1980s, when the attitudes of senior male officers toward women were not always supportive.

operations officer at US Pacific Command. Later, when it seemed two Air Force careers might not work for them, their family, and their careers, David Robinson transferred to the Reserve and flew with an airline. He retired from the Air Force Reserve in 2008 as a major general.

Drawing on that experience, Lori Robinson said: "When I counsel young dual married people, I tell them to sit down and talk about the boundaries they are willing to accept before the military puts them in the position where they must have that conversation. And renew that conversation again and again. How far apart are you willing to live? How long are you willing to live apart? As your careers evolve, does somebody's career take a front seat?"

Robinson spent much of her mid-career in school and gained experience in staff work before serving in three vital stints as a commander, beginning with two years at the 552nd Operations Group at Tinker AFB, Okla. Its mission is to provide surveillance, warning, and control to combat forces. The group had four flying squadrons of E-3

flown by a squadron from the United Arab Emirates went well and when she visited the UAE squadron's expeditionary base in Afghanistan, she was clearly welcome.

"When I walked away from that experience, I had learned that what was important was my rank and my ability to make decisions and do my job."

As a lieutenant general, Robinson was vice commander at ACC until October 2014, when she assumed command at PACAF.

### FIRST DAYS ON THE JOB

On her first day, she met with her commanders and senior staff to give them what she called "unambiguous guidance" about who she was, what she expected from them, and what they could expect from her. She said, "My leadership style was to sit back and watch for a few months, not to do immediate changes because sometimes you change and make the staff or command thrash for no reason."

She also talked about "the importance of setting the right climate and culture of dignity and respect for everybody."

## Lori Robinson has been received based on performance and position—not the fact she is female.

It was also a time of turbulence within the community of air weapons controllers, especially at Nellis. It was the "home of the fighter pilot" and provided the world's most advanced training in weapons and tactics. The Fighter Weapons School devised new courses, and reorganization brought the usual bureaucratic turmoil.

The freshly minted captain seemed to thrive in the turmoil. Robinson said Gen. Mark A. Welsh III, now Chief of Staff, once asked her: "Lori, did you put your head down to go along to get along?" She replied that she had. She hadn't sought to be the first woman at any given assignment.

### REASONS TO STAY IN

Reminded that she had planned to serve in the Air Force only to fulfill her ROTC obligation, she gave three reasons for staying on—two serious and one flip: "I love what I do, I hope I'm making a difference—and I haven't grown up."

Robinson met and married then-Maj. David A. Robinson, an F-16 pilot flying with the USAF demonstration squadron, the Thunderbirds. Both Robinsons are AFA members.

The Robinsons next had a tour together, she as chief of current operations at PACAF headquarters in Honolulu; he as an air

AWACS aircraft, two training squadrons, and a support squadron.

While with the 552nd, Robinson was deployed for three months to Southwest Asia as vice commander of the 405th Air Expeditionary Wing.

Next was a year (2004-05) commanding the 17th Training Wing at Goodfellow Air Force Base in Texas. The 17th was a mixed bag of schooling in intelligence, cryptology, surveillance, reconnaissance, foreign languages, and firefighting.

Then in 2007 it was back to Tinker for 15 months as commander of the 552nd Air Control Wing, tasked with providing battle controllers and equipment worldwide.

Robinson's path to the top job at PACAF diverged from that of her three immediate predecessors. Each, as a brigadier general, commanded a wing and then, as a lieutenant general, a numbered air force.

Instead, Robinson served on the Joint Staff as a brigadier general and in the Air Force's legislative liaison office as a major general before becoming deputy commander of US Air Forces Central Command in Qatar.

Robinson allowed that she had been apprehensive about how she would be treated in the male-dominated Arab culture. After an operational decision she made, a mission

Robinson has been to China twice. On both trips she had long discussions with Gen. Ma Xiaotian, commander of the People's Liberation Army Air Force and member of the powerful Central Military Commission. When the Chinese received her, she said, "all that mattered was that I was the commander of Pacific Air Forces."

At the Zhuhai air show, Robinson made a point to the Chinese, who are known to not understand the key role played by senior enlisted troops in the US armed forces. For a banquet, Robinson asked the crew of a USAF C-17 and other visiting USAF airmen to wear service dress and showcase their chevrons. She said the airmen "were sitting next to the Chinese demonstration team, ... who wanted to know about the chevrons and who ... these people [were]."

Robinson averred: "It is one of our strategic edges." ★

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*Richard Halloran, formerly a New York Times foreign correspondent in Asia and military correspondent in Washington, D.C., is a freelance writer based in Honolulu. His most recent article for Air Force Magazine, "The US, Japan, ... and China," appeared in June 2014.*

## Jaguar



The Jaguar was an important first-line strike aircraft for the Royal Air Force and France's air force from the mid-1970s through the mid-1980s. The twin-engine Jaguar was built by SEPECAT, a consortium of British Aircraft Corp. and Breguet (later Dassault). Jaguars were exported to Oman, Ecuador, Nigeria, and India—where it still is in active service.

The Jaguar was an orthodox swept-wing, single-seat supersonic monoplane. However, it had a strange history. Conceived as a trainer, it evolved into a rugged Cold War attack aircraft of impressive power and nuclear bite. Twin engines were selected for survivability. Ease of maintenance was key. Component production was split 50/50 between Breguet and BAC, and assembly took place in Britain and France. France's A variant

emerged first, to mixed reviews. Britain's later Jaguar S—called GR1 in the RAF—was more sophisticated, with advanced nav-attack systems. Jaguar has been upgraded to provide excellent service for decades.

Jaguar entered operational service in 1973, assigned to support land forces resisting a Soviet assault and to conduct tactical nuclear strikes. The fighters did not see actual combat until 1977, when France sent them to fight Polisario rebels in Mauritania. French Jaguars saw considerable action in Chad. Though past its prime in the 1990s, Jaguar won praise for reliability and precision striking ground and naval targets in Kuwait in the Gulf War. The fighter also did well in the Balkan wars of the 1990s. Indian Jaguars also saw action against Pakistan.

—Robert S. Dudley with Walter J. Boyne

**This aircraft:** Royal Air Force Jaguar GR3A—#XX117 "PA"—as it looked in February 2005 when assigned to No. 16 (R) Squadron, RAF Coltishall, Britain.



USAF photo by SMCpl. John Chapman

A British Jaguar flies over Iraq during Operation Northern Watch in 2000.

### In Brief

Designed by SEPECAT (Breguet-British Aircraft Corp.), built by SEPECAT, Hindustan Aeronautics ★ purpose attack ★ first flight Sept. 8, 1968 ★ number built 616 ★ crew of one or two ★ **Specific to A/S:** two Rolls-Royce/Turbomeca Adour Mk 101 or 102 turbofan engines ★ defensive armament two 30 mm DEFA or ADEN cannons and two Magic or AIM-9 AA missiles ★ load 10,000 lb of bombs, rockets, missiles, nuclear weapons ★ max speed 1,056 mph ★ max combat radius 564 mi ★ weight (max T/O) 34,612 lb ★ span 28 ft 6 in ★ length 55 ft 2 in ★ height 16 ft ★ service ceiling 45,900 ft.

### Famous Fliers

**RAF Notables:** DFC—William Pixton, Michael Gordon, Malcolm Rainer, Jez Milne ★ AF Cross—Jerome Connolly, William Pixton, Stephen Griggs; Dave Bagshaw (4,000 flying hours) ★ Keith Collister, J. Marsden (KIA Gulf War training); Ian Hall (author of *Jaguar Boys*); Terry Carlton (first op commander); T. M. Bushnell (first fatality, 1976); Stephen

Griggs (shot down, accidentally, by RAF F-4, 1982); Andy Blythe, Paul Shakespeare (last flight, 2007). **France Notable:** Michel Croci (KIA, Chad, 1984). **India Notables:** D. R. Nadkarni (first commander), M. McMahon, J. S. Sisodia, S. C. S. Adhikari, D. C. Kumaria, D. D. S. Kumar, S. P. Tyagi, N. A. K. Browne. **USAF Notable:** David Buteau (exchange pilot, died in accident, 1986). **Test pilot:** M. Bernard Witt (first flight).

### Interesting Facts

Flew first RAF bombing raid in Europe since World War II (Bosnia, 1994) ★ in Indian exercise, successfully "sank" US carrier ★ called "Shamsher" ("Sword of Justice") in India ★ dropped eight kiloton French nuclear bomb on Mururoa Atoll ★ features overwing launch rails for air-to-air missiles ★ was first RAF aircraft designed in metric ★ requires 30 minutes for engine change ★ made landings and takeoffs on British highway, German autobahn with full weapons load ★ credited with sinking or damaging 15 Iraqi vessels ★ nicknamed "Big Cat" and "Desert Cat" ★ posted Gulf War readiness rate of 98 percent.



Illustration by Zaur Elyanbekov

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