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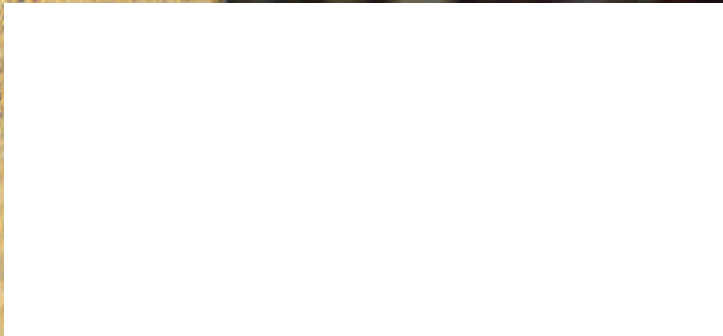
JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE

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24



40



About the cover: Jordanian officers watch as an F-16 prepares for takeoff at the Falcon Air Meet 2009 in Jordan. See "USAF and the Gulf," p. 30. Photo by TSgt. Caycee Cook.

- 2 **Editorial: Justice Rejected**
By Adam J. Hebert
Lavelle and Schwalier continue to be judged by the absurd standards of earlier eras.
- 24 **Experience, Efficiency, and Risk**
By Marc V. Schanz
The Air Guard has built its most capable force ever, but its aircraft are approaching a cliff.
- 30 **USAF and the Gulf**
By John A. Tirpak
The Air Force is the catalyst for cooperation among Persian Gulf air arms.
- 36 **Nuke Fix, Phase II**
By Megan Scully
It's not just the weapons that were neglected.
- 40 **Airmen in the Hurt Locker**
By Aaron Church
Air Force EOD technicians are saving US, Iraqi, and Afghan lives—but at enormous costs to themselves.
- 46 **Never-ending Stratofortress**
Photography by Ted Carlson
Minot's 5th Bomb Wing keeps ancient B-52s combat ready.
- 54 **The Long Road to Missile Defense**
By James Kitfield
Hitting a bullet with a bullet is hard, so layered defenses are the way to go.
- 58 **Victor Alert**
By Rebecca Grant
For decades, airmen across Europe stood ready to launch their nuclear-armed fighters against Warsaw Pact targets.
- 64 **The Poltava Debacle**
By John T. Correll
The US would stage B-17s in Russia, to strike targets deep in German territory. It sounded like a good idea.
- 70 **DOD Senior Leadership Photochart**
Compiled by June Lee
Who's who in the Obama Administration's Pentagon.
- 74 **The High Intensity Life of Patrick Fleming**
By Walter J. Boyne
By the time he died at 38 in the very first B-52 crash, Fleming had served impressive careers in both the Air Force and Navy.
- 78 **Spying on the MiGs**
By Jeffrey T. Richelson
Everything from spy satellites to future four-stars crawling through mud gathered intel on supersecret Soviet fighters.

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- 4 **Letters**
- 8 **Washington Watch**
- 10 **Chart Page**
- 12 **Air Force World**
- 18 **Senior Staff Changes**
- 19 **Index to Advertisers**
- 22 **Verbatim**
- 69 **Field Contacts**
- 73 **Flashback**
- 82 **AFA National Leaders**
- 83 **AFA National Report**
- 87 **Unit Reunions**
- 88 **Airpower Classics**

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Justice Rejected

JOHN Lavelle and Terryl Schwalier should have been vindicated by now.

Lavelle, the commander of 7th Air Force in Vietnam, was sent home and forced to retire with a double demotion to major general in 1972 for allegedly ordering unauthorized air strikes against North Vietnamese military targets. Lavelle insisted he had authorization for the air strikes, but died in 1979 with his reputation in shambles.

In 2007, newly declassified recordings proved President Nixon knew of and authorized Lavelle's actions. Last August, President Obama nominated Lavelle for posthumous promotion to full general, his final rank in Vietnam. Sen. Carl Levin (D-Mich.) and Sen. John McCain (R-Ariz.) pledged to act quickly on the nomination.

Lavelle's supporters are still waiting.

In December, Levin and McCain announced the Senate Armed Services Committee would not vote on Lavelle's nomination because they had too many unanswered questions. In a letter to Defense Secretary Robert Gates, they said declassified documents "contradict the conclusion" that Lavelle had authority to conduct so-called protective reaction strikes.

Many things from the Vietnam era are contradictions, but rather than use all of the available information and take a vote, the senators took the easy way out and kicked the nomination back to DOD.

Rules at the time prohibited US aircraft from hitting North Vietnamese targets unless engaged first, but Lavelle had been told repeatedly to more aggressively interpret the rules of engagement. He decided to consider the North's always-on ground control intercept radars "enemy action," allowing the US to attack. The absurd alternative was to repeatedly fly aircraft over targets and let the North Vietnamese shoot at them so the US could then strike back.

Lavelle ordered a few dozen protective reaction strikes against enemy targets and told his subordinates to always report enemy action. Lavelle considered the enemy GCI radar enemy action, but did not clearly communicate this to his subordinates.

Paperwork regulations led some subordinates to overzealously fabricate attacks against them. Still, there is "no evidence Lavelle caused, either directly or indirectly, the falsification of records, or that he was even aware of their existence," DOD announced last August. "Once he learned of the reports, Lavelle took action to ensure the practice was discontinued."

Levin and McCain may be looking for clarity, but Vietnam rarely offered it. The rules of engagement constantly changed, cover stories obscured the

Lavelle and Schwalier continue to be judged by the absurd standards of earlier eras.

truth, top officials' public and private statements were frequently different, and outright lies were common.

Numerous White House tapes show Nixon was aware of and even authorized the strikes. "You don't have to wait till they fire before you fire back," Nixon said at one point. "Remember, I told [Defense Secretary Melvin] Laird that. And I meant it. Now Lavelle apparently knew that."

Laird wrote *Air Force Magazine* in 2007 to say, "In my meetings with Gen. John Lavelle I told him that my order on 'protective reaction' should be viewed liberally. ... The new orders permitted hitting anti-aircraft installations and other dangerous targets if spotted on their missions, whether they were activated or not."

Lavelle never denied the strikes or the orders he gave to protect his aircrews.

Like Lavelle, Schwalier's case ran into roadblocks. Schwalier was the man in charge in 1996 when terrorists used a massive truck bomb to attack Khobar Towers, a US military housing complex in Saudi Arabia. The attack killed 19 airmen and injured 240. Newly installed Defense Secretary William Cohen made Brigadier General Schwalier the scapegoat for the attack by overturning a previously approved promotion, besmirching his name and effectively ending his career.

Schwalier twice appealed the decision, and was twice supported by

the Air Force Board for Correction of Military Records—once on technical grounds and once to correct an "injustice." By law, the board's decisions should be final, so the matter seemed settled: Schwalier would get his second star and would no longer be blamed for the deaths of airmen killed by terrorists.

Nothing was settled. Schwalier still awaits redemption, because both the 2004 and 2007 Air Force decisions to promote him in retirement were overturned by the Office of the Secretary of Defense. Schwalier is now suing to get his honor back, and has asked a US District Court to reinstate the should-have-been-final Air Force decisions restoring his rank.

Several Khobar Towers investigations found no American at fault because the real problem was faulty intelligence. But in 1996, America did not yet appreciate the danger of international terrorism, so a lynch mob mentality seized much of Washington after the attack.

Someone had to be responsible, the mob brayed, so Cohen settled on Schwalier. Even though he had put 130 security improvements in place during his year in the desert, Schwalier should have done more to protect his troops, Cohen said.

The subsequent years made clear terror attacks are not security lapses but acts of war. Terrorists bombed the US embassies in Kenya and Tanzania in 1998, and attacked the Navy destroyer *Cole* in 2000. Like Schwalier, Cmdr. Kirk Lippold, *Cole's* commander, was later denied promotion.

Most people's perceptions of terrorism changed for good after the 9/11 hijackings, but both Lavelle and Schwalier continue to be judged by the absurd standards of earlier eras. In Vietnam, appearances were often treated as more important than airmen's lives. In 1996, Americans did not appreciate the terror threat or fully accept the fact that terrorists are the ones to blame for the people they kill.

The Senate and the US District Court for the District of Columbia, respectively, should act now to clear the names of Lavelle and Schwalier. These sordid affairs have gone on far too long. ■

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Word for Word

[John T. Correll's] article "The Real Twelve O'Clock High" was fascinating, informative, and entertaining as only he can write. I've read it twice [*January*, p. 70].

When I retired in 1979, I talked leadership at USAA for 16 years until 1995. I had a nine-hour workshop (three hours per day, three days), and I used the film as a training aid. I averaged eight workshops per year for 12 years—I've seen the film well over 100 times: I know all the lines.

The film portrays different leader styles most accurately. The insights about the film and actors vs. real crew members gave me information I've always wanted to know. Thank you, thank you.

CMSAF Robert D. Gaylor,
USAF (Ret.)
San Antonio

It was with a great deal of interest that I read the article "The Real Twelve O'Clock High." I remember going through Officer Training School at Lackland AFB, Tex., during the fall of 1962 and watching that movie as part of leadership training. The movie made a great impression on me as it solidified leadership concepts that previously had been somewhat vague.

I am now (and have been for seven years) a member of the Political Science Department faculty at the University of Miami in Coral Gables, Fla. Our department conducts a master's degree program in public administration, and I teach a graduate level course in leadership and organizational behavior. I use "Twelve O'Clock High" in the early part of the course as a means to demonstrate effective and ineffective leadership styles.

In the early 1950s, Ohio State University and the University of Michigan conducted separate studies related to leadership. Both universities arrived at the same conclusion: that effective leaders have a great deal of concern for their people, and a great deal of concern for accomplishing the mission.

In the movie, Colonel Davenport demonstrated a great deal of concern

for his people, but very little concern for accomplishing the mission. As a result, the 918th Bomb Group was beset with problems which resulted in operational screw ups and high casualties.

When General Savage becomes the group commander, his focus shifts dramatically to mission accomplishment, even going back to basics, including practicing formation flying. Over a period of time, the group's combat losses diminish, morale begins to increase, and the group's aircrews begin to develop a sense of pride in what they are accomplishing.

Concurrently, General Savage's leadership style shifts from extreme focus on mission accomplishment to a style with a great deal of emphasis on both mission accomplishment, as well as concern for his people. The dramatic moment of the story occurs when Savage has his mental breakdown. The lesson here is that many times, most especially in a combat environment, a leader's concern for both mission accomplishment and concern for his people are not always compatible. When faced with this dilemma, a leader must place mission before people.

I am sure that there are many readers who have been in that situation, knowing full well that a combat mission may result in having aircrews killed or wounded. This dilemma is probably more prevalent in the Army and in the Marines.

I am very sorry to see that the Air Force no longer uses "Twelve O'Clock High" as a leadership training device. With a few minutes spent telling young audiences about the background of the movie, as well as leadership dilemmas and what leadership is all about, the movie could

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easily be brought back for use in the many leadership teaching environments that the Air Force conducts.

Lt. Col. Ramon E. de Arrigunaga,
USAF (Ret.)
Coral Gables, Fla.

I am sending you a heads-up about the character Maj. Harvey Stovall in "Twelve O'Clock High." Mr. John Correll writes that the real-life counterpart did not exist or the character was probably named after Stoval Field in Ariz. This is not true.

My grandfather, Col. William Howard "Hank" Stovall, deputy chief of staff, Eighth Air Force, was the person on whom that character was based. Lt. William H. Stovall, Yale class of 1916, flew in World War I with the 13th Pursuit Squadron, 2nd Fighter Group, with Maj. Carl Spaatz. He also knew Monk Hunter in World War I, as he and Hunter took the boat over to France together. My grandfather was one of the original founding officers of the Eighth, as he had re-enlisted on Dec 10th, 1941, and had gotten back in touch with both Spaatz and Hunter following the outbreak of our country getting into World War II. He and Sy Bartlett and Beirne Lay knew each other through his association with General Spaatz.

My grandfather served with Hunter, Kepner, and Spaatz in World War II. Even though he was in Fighter Command, and not Bomber Command, Sy Bartlett told him that the character of Maj. Harvey Stovall was a character portrayal of him. He was involved in the "Bolero Movement" from the beginning, as he helped to gather the first 180 aircraft to send over to England in 1942. I hope this clears up the missing information about Maj. Harvey Stovall.

Michael Gavin Carter Webster
Horn Lake, Miss.

The Vets Were There

Once again a great article about Desert Storm in your January issue. I do have to take issue with the author's statement, "Only a few senior commanders had combat experience" ["Desert Storm," January, p. 40].

When my squadron (706th Tactical Fighter Squadron, Air Force Reserve) of A-10s landed, we had seven Vietnam Veterans (five OV-10, one A-37, and one F-100), plus our wing commander (F-105). We were tasked to speak to the other six squadrons on the "fog" of war. The average pilot's age in our unit was 42 years old. We all stayed in the Reserve because we all wanted another shot at combat. We also managed to bring all our planes and people back safely.

Col. Craig Mays,
USAFR (Ret.)
Mandeville, La.

Think About Base Security

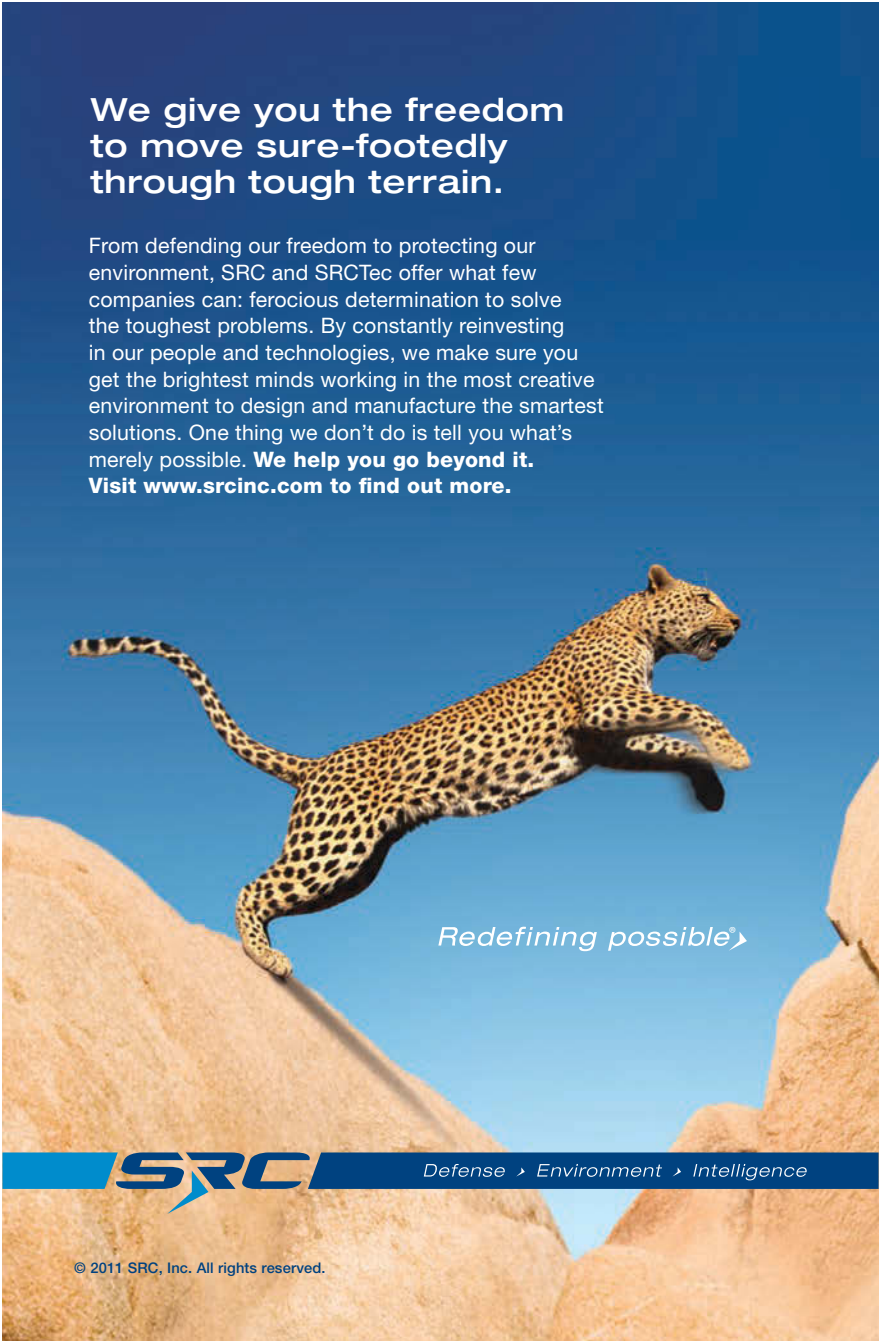
Since it wasn't mentioned in the article, I hope that the Air Force's most recent technology vision paper has not ignored the growing vulnerability of our air bases ["Over the Horizons," January, p. 34]. The importance of examining technologies that could make future air bases less vulnerable is apparent in the recent report of a wargame conducted by Australian analysts which showed the US losing because airfields on Taiwan were taken out on the first day. Instead of concentrating only on technologies that enhance our ability to operate from our current air bases with their long, hard runways and concentrated support facilities, as has

generally been the case in the past, it would be wise for airmen to consider how land forces adapted to advances in the firepower's lethality by abandoning their use of forts. In this case we would emphasize STOVL and STOL technologies that would make possible air base concepts using dispersal, mobility, and deception to reduce the vulnerability of our aircraft when they are on the ground.

Lt. Col. Price T. Bingham,
USAF (Ret.)
Melbourne, Fla.

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Letters

ly spent two weeks in China visiting some of the haunts of Hump pilots. Your article "Pacific Push" indicates an increasing hostility on the part of [China's] military toward the US military, and the move to Guam a signal of US determination to keep a presence in the Western Pacific [January, p. 46]. While that is certainly a viewpoint determined by significant intelligence and knowledge, our visit indicated a genuine respect and gratitude by Chinese citizens for the US help during World War II. In Hong Kong, Kunming, Lushio, Pianma, Dali, and Nanjing, our members were honored with repeated ceremonies. We were told that the Chinese public is now aware of US sacrifices during the war. Two new museums have been recently dedicated to honor the Flying Tigers and CNAC, as well as the American military. In Nanjing, a beautiful monument lists the names of more than 2,200 Americans lost fighting for China against Japanese invasion. An addition was added in 2009 to display documents and memorabilia of US fliers while Glenn Miller music plays as background. It was comforting to know that there is recognition of our role by the public if not the government.

Robert L. Willett
Merritt Island, Fla.

Bye-Bye Blackbird?

Thanks for the walk down memory lane ("Going Nowhere Fast" by Jeffrey T. Richelson) [p. 56]. The SR-71 was an awesome asset, one I was proud to be associated with, and presented a capability that wasn't adequately replaced for years. I'd forgotten how hard the Air Force tried, unsuccessfully, for years to kill it. Its demise was ultimately used to successfully argue the appropriations case for the new stealth assets then being rolled out, but happened well ahead of the end of its operational value.

Lt. Col. Scott A. Wilhelm,
USAF (Ret.)
Kansas City, Mo.

On behalf of the men and women who worked with the SR-71 Blackbird program over many years, I would like to thank Jeffrey T. Richelson for his story, "Going Nowhere Fast" (p. 56, January), informing the readers about the demise of the aircraft. There have been many stories about who was in favor of keeping the SR-71s and who was not. Richelson's article was well-balanced and right on target.

The SR-71 is the only platform I know of that could penetrate hostile territory, accomplish wide-area synoptic coverage, and still survive. Its ability to simultaneously gather radar, optical,

and Elint intelligence in one pass over a high-threat area is unsurpassed.

Col. Richard Graham,
USAF (Ret.)
Plano, Tex.

"Going Nowhere Fast" raised disturbing questions about past leadership of the US Air Force, and it has worrisome implications for today. It is apparent from your article and other open-source trade press that for a decade the Chiefs and their staffs engaged in bureaucratic obstructionism and creative foot-dragging in order to prevent the return of the SR-71s to operational service. It is troubling that these actions were taken while disregarding valid and urgent operational requests. But senior generals are charged with juggling requirements and allocating limited funding. Hard, unpopular decisions are often required that are in hindsight sometimes found to be suboptimal.

A far more serious problem is the obvious and successful attempt to subvert the will of Congress. Our democracy is built on the bedrock concept of overall civilian control of the military. What does the future hold if senior officers can act, albeit in good faith, in what they feel are the best interests of the service when such actions are contrary to the expressed instructions of our elected representatives? Congress saw the need for the Blackbirds to fly again and allocated funding to do so. The USAF leadership wanted to keep the aircraft retired; they refused to spend the money, and they ignored congressional orders. Is this the way we want our military personnel to respond, putting their plans for the operation of the Air Force ahead of the will of the people, as voiced by Congress?

Lt. Col. Ed Cobleigh,
USAF (Ret.)
Paso Robles, Calif.

Welcome Back, ROTC?

Mr. Hebert's editorial, "Replanting ROTC," captures succinctly the issue of returning ROTC to the Ivys [February, p. 4]. At the peak of the anti-Vietnam protests, a regent at a prestigious Midwestern university said it best: ROTC does not exist to bring the military to the campus; it exists to bring core American values into the military. It is the principal function of our armed forces to stand as a line between America and those who seek to destroy America. There is a direct link between our ability to remain a free nation and the intellect nurtured by our university system. Denying ROTC as a matter of university policy rather than making it a matter of intellectual choice smacks

of snobbery and a Pollyanna vision of true learning. My Ivy, Georgetown University, has long recognized its critical role in developing leaders for the broadest spectrum of American society, including the armed forces.

Truly, Don't Ask, Don't Tell was never the issue but the guise by which certain Ivys deny ROTC. Doing so curtails a university role in shaping American policy, thereby affecting critical outcomes. The Harvard School of Government, catering to midcareer and senior military officers, produces excellent managers, but that is not enough. Many times, the clearest thinking and best ideas on critical issues come from the junior officer ranks. When certain Ivys prohibit ROTC, they tacitly surrender academic and leadership high ground.

Our adversaries around the world are defeated first and most certainly by intellect developed through the American university system. In fact there is no crisis, national security or otherwise, facing America that cannot be solved by the brain power and leadership being developed in our university classroom.

The Ivys denying an ROTC presence is akin to a sausage factory denying components of a successful recipe; the product is not quite right. Even worse in the case of a university, no matter its storied history, it is a down payment on irrelevance. Get back in the game Ivy, America deserves it. There is more at stake than sausage.

Lt. Col. Tom Brannon,
USMC (Ret.)
Ridgecrest, Calif.

Flashback

My comments regarding "Flashback," p. 79 of the January 2011, *Air Force Magazine*: Colonel Stapp was a medical doctor and also a mechanical engineer. One reason he did these tests was, he could not as a medical doctor request or place someone other than himself in harm's way.

Murphy's Law also spread like wildfire throughout the R&D community because of a comment made by Capt. Edward A. Murphy to Colonel Stapp following a test, when no data was collected. At the time of the incident, I heard that Murphy's statement to Stapp was, "The wires were crossed; no data."

Colonel Stapp was given formal recognition by the American Society of Mechanical Engineers for the work he did at the deceleration track in New Mexico.

Maj. Paul L. Landry,
USAF (Ret.)
San Antonio

Leaders?

As far as the "Leadership Lacking" comment on the article "Etchberger, Medal of Honor" is concerned, my

question is what kind of leader/leaders would direct individual actions in direct violation of Geneva Convention rules [*"Letters: Leadership Lacking?" January, p. 6*]? Should we expect others to "play by the rules" when we don't?

I found the letter subtitled "Cost-cutting Recommendations" quite interesting. I don't know why the recommendation wasn't also to eliminate Naval Aviation—if the Marines can get close air support from the Air Force, why can't the Navy get theirs as well? The Marines do fight quite well, so maybe we should

increase their end strength and totally eliminate the Army—think of those cost savings. I think one reason the Marines have been so successful is because they have ready access to all needed assets. I think anyone who has been in a command position will agree that to truly control your destiny, you need to have the assets when needed, and that doesn't mean request them from a sister service or unit.

Col. Thom Weddle,
USAF (Ret.)
Minneapolis



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A bomber back on top?; DOD in a deepening crisis; No more tanker disruptions

TOP FIVE LIST

After a long absence, a new bomber is back on the Air Force's list of its top five acquisition priorities, but turbulence in the F-35 program may see some of the other priorities swapped around in the months ahead.

The list was announced by Air Force Secretary Michael B. Donley in January, as a preview of the defense budget released in mid-February. Speaking to a group in Arlington, Va., comprising mainly industry officials, local Air Force Association members, and air attaches, Donley called the list a "broader summary" of USAF investment priorities.

Topping the list—as it has for most of the last decade—is the KC-X tanker, which Donley said remains "central to joint, interagency, and coalition operations in peace and at war." Final offers were submitted by Boeing and EADS North America in February; members of Congress have said they expect a tanker selection to be announced sometime this month.

The second priority for the Air Force is the F-35A fighter. The service is depending on the F-35 program to replace its F-16s, which are aging out of service at a rapid rate. Donley said a slowdown of the F-35 program directed by Defense Secretary Robert M. Gates—to allow more testing and development before full-rate production—means that the Air Force is almost certain to have to fund a service life extension program, or SLEP, of the F-16 fleet.

"We are committing resources [to] that" in the Future Years Defense Program, Donley explained. Although it was not certain in January whether an F-16 SLEP would go forward, "I think that question is more of a 'how much' and 'when' and 'what kind' rather than 'if,'" he said.

The third priority on the list is intelligence-surveillance-reconnaissance. Specifically, the Air Force is planning to replace most, if not all, of its MQ-1 Predator remotely piloted aircraft with larger, more capable MQ-9 Reapers. Donley said such an effort was in doubt until recently, due to tight funds, but the identification of \$34 billion in overhead and process savings throughout the Air Force has freed the money up to buy the "most advanced" Reapers. The Air Force continues to move toward a goal of having 48 Reaper "orbits"—a 24-hour-a-day capability over a given area—by the end of Fiscal 2011 and 65 by the end of Fiscal 2013.

The new penetrating bomber element of a long-range strike "family" of systems is now the fourth-highest acquisition priority for the Air Force, Donley said. That broad description also encompasses "ISR, ... electronic attack weapons, and communications." He said the need for secrecy would prevent the Air Force from revealing too many details of the new program.

The bomber was absent from Air Force priority lists for several years, the most recent being one mentioned last fall, which placed military space systems at No. 4.

"In contrast to the program that was canceled in 2009," Donley said, referring to the Next Generation Bomber, "development of this new bomber will leverage more mature technologies [which] we think will reduce the risk in the program, allow us to deliver with greater confidence, on schedule and



Illustration by Erik Simonsen

Is it the return of the future bomber?

in quantities sufficient to support the long-term sustainment of long-range bomber capabilities after the current fleets of B-1s and B-52s retire."

He added, "We'll constrain the requirements for this platform, and there is certainly more emphasis on affordability." The aircraft will be designed primarily for a conventional mission, with nuclear capability added as a later block improvement.

On Donley's list, space systems—specifically, "space control and space situational awareness capabilities"—now weigh in as the fifth priority. The Air Force is focusing on "stronger management of our space programs to ensure we operate effectively in the increasingly competitive, congested and contested space domain that has been described in our national policy and our National Security Space Strategy documents."

The new priorities list is almost the same as the one issued in 2006, with the exception of the then-No. 2 item: a new combat search and rescue helicopter. That program, described by then-Chief of Staff Gen. T. Michael Moseley as a "moral imperative" to ensure timely recovery of downed airmen, has disappeared. The CSAR-X program has for now been replaced by a plan to field a modestly improved version of the current HH-60 Pave Hawk.

Air Force officials said the new priorities list may change yet again before too long. The F-16 SLEP may assume such cost and prominence that it will warrant its own spot among the top priorities, bumping space control systems off the top five list.

COSTLY UNFINISHED BUSINESS

In an unusual sign of unity after several years of contentious relations, Defense Secretary Robert M. Gates and the defense industry called on Congress in January to quickly pass the Fiscal 2011 defense appropriations bill, signaling a financial train wreck if the Pentagon had to continue operating under a continuing resolution.

Gates said the Defense Department was in a deepening “crisis” because Congress had not gotten around to finalizing the 2011 budget but instead was forcing the department to continue operating at 2010 spending levels. Gates, speaking with reporters en route to Ottawa, Canada, said the practical effect of the continuing resolution was a \$23 billion cut to defense spending.

“I have a crisis on my doorstep,” Gates said. The Pentagon’s Fiscal 2011 budget request was \$549 billion, but 2010 spending levels totaled \$526 billion.

Defense and aerospace industry groups—including AFA—as well as individual company CEOs signed letters to new House Speaker John Boehner (R-Ohio), urging him to get Congress to take a final vote on the spending bill.

In Washington in December, Gates had said that without action, the Pentagon would be “without the resources and flexibility needed to meet vital military requirements,” a statement the industry groups quoted in their letter to Boehner.

They said the absence of a formal spending bill would cost jobs, cause production breaks in major weapon systems, and incur costly delays in development programs.

While the actual shortfall would be about \$19 billion, the \$23 billion figure quoted by Gates is due to the higher levels of spending on health care and personnel costs. These are “fact of life” bills that must be paid and which are growing, placing “additional strains on the department,” the industry groups said.

The Pentagon is not the only department affected, and the industry groups voiced their similar concerns for critical programs at NASA, the Federal Aviation Administration, and other government agencies.

A similar letter was signed by the CEOs of 14 major defense and aerospace contractors, noting not only the immediate effects of the continuing resolution, but that the repercussions on programs would be felt “for many years to come.”

One side effect of the CR would be that spending would continue on programs the Pentagon and NASA have identified for termination—literally throwing good money after bad.

Congress instructed the various agencies to spend at 2010 levels at least until the fourth of this month, but there was no promise of quick action to address the situation. In fact, a number of new members, particularly those under the “Tea Party” standard, have urged that government spending as a whole be rolled back to 2008 levels. Many have also called for defense, as one of the largest federal accounts, to bear its share of the austerity.

The Pentagon has already offered \$78 billion in spending reductions over the coming five years. Gates instructed the armed services and defense agencies last summer to find overhead efficiency savings of, collectively, \$100 billion over the five-year plan, promising they could keep the savings and redirect them to combat and modernization needs.

The various DOD agencies responded with nearly \$180 billion in efficiencies—counting federal pay freezes and including troop reductions—of which Gates allowed them to keep the promised \$100 billion and offered much of the rest toward federal deficit reduction. He accurately predicted that some members of Congress would greet the figure by saying the Pentagon hadn’t done enough cutting, while others would say, “We’ve gone too far.”

Anticipating a drawdown of forces in Afghanistan, Gates has called for a reduction in the size of the Army and Marine Corps of about 42,000 troops; the Air Force and Navy would hold at currently authorized levels. He also terminated a Marine Corps amphibious vehicle and slowed, but did not terminate several other programs.

One member of Congress who objected to Gates’ cuts—specifically, planned troop cuts, which would not go into effect until 2015—was Rep. Howard McKeon (R-Calif.), the

new chairman of the House Armed Services Committee. As long as the war in Afghanistan is ongoing, McKeon said, it’s nonsensical to talk about cutting troop levels.

In a January hearing, McKeon said he won’t support any plan “that will leave our military less capable and less ready to fight.” Separately, McKeon fired back at media editorials that suggested congressional opposition to cutting defense was merely a manifestation of pork-barrel politics. It is not Congress’ place, he wrote, to simply “rubber stamp” the wishes of the Defense Secretary.

Gates told reporters in late January a continuing resolution is “the worst of all possible kinds of reductions” being discussed, as it would not be done with thought and care.

“Frankly, that’s how you hollow out a military, even in wartime,” he said.

FROM A THOUSAND CUTS

Air Force officials said if they are forced to operate on a continuing resolution throughout this year, they would have to tap modernization programs to pay housekeeping bills, to the tune of \$5.8 billion: \$1.2 billion in personnel and \$4.6 billion in operations and maintenance.

That would cut deeply into newly announced plans to buy additional MQ-9 Reapers and equipping the entire F-



Lockheed Martin photo

F-35 remains a top priority.

15E fleet with new advanced radars. The service also could potentially reduce its planned buy of F-35 fighters, already planned for a Gates-directed slowdown to allow more testing time before full-rate production. The effect could be that the Air Force would buy only 10 F-35As in 2011, instead of the 23 planned. That, in turn, would exacerbate the growing shortage of fighters caused by the aging-out of the F-16, which the F-35 is to replace.

Potentially even more disruptive would be the effect on the KC-X tanker program, which the Air Force hopes to finally get launched this month. The Fiscal 2010 spending level for KC-X is about \$300 million, less than half the \$863 million the service needs to get a contractor on contract and developing the new aircraft in Fiscal 2011. Already nearly a decade behind schedule, the Air Force can scarcely afford further delays in the KC-X.

In February, US Transportation Command chief Gen. Duncan J. McNabb said, relative to new machines with new engines, the existing tanker fleet is using old technology that wastes fuel. He urged no further disruptions to the tanker acquisition effort.

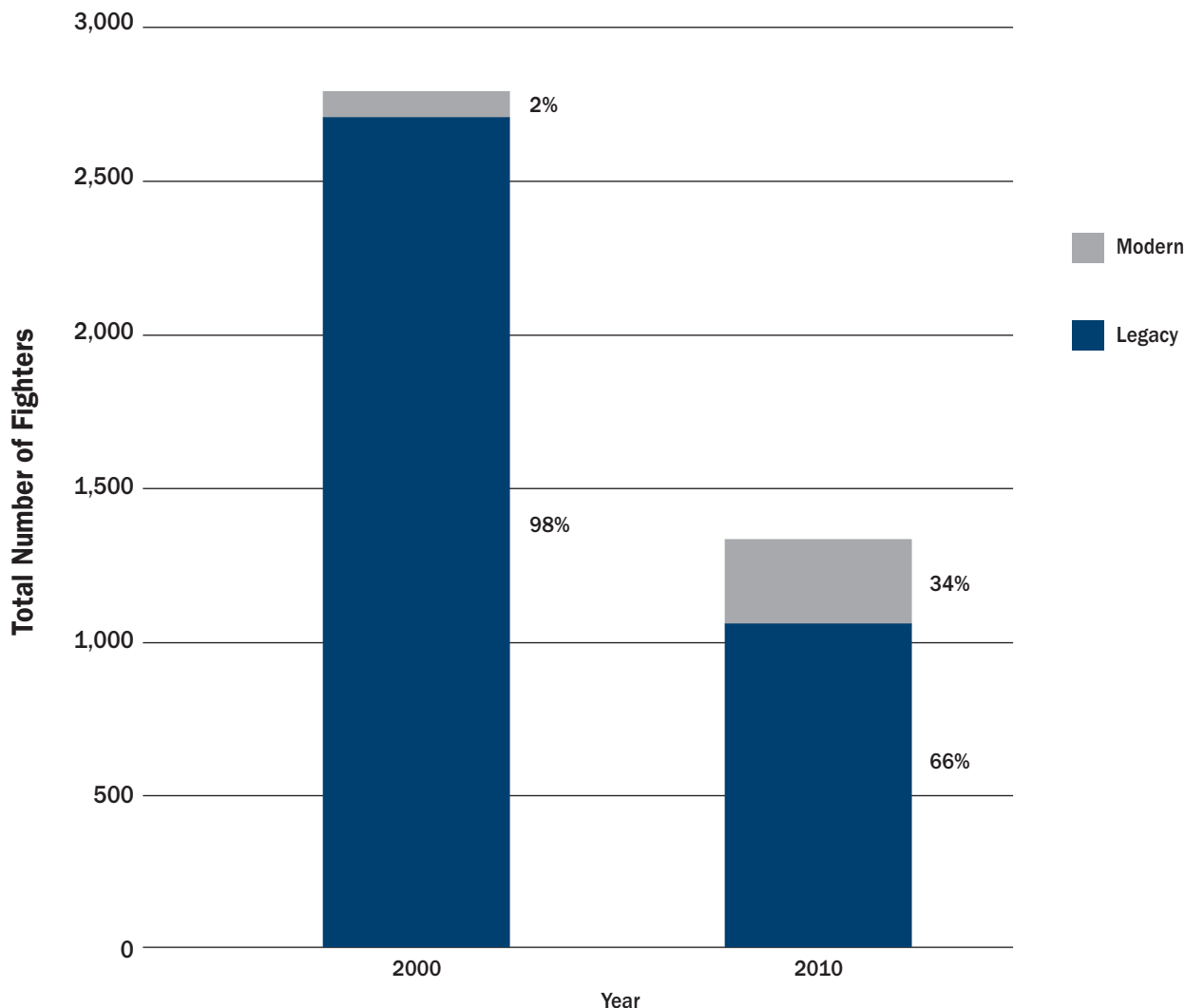
Other major USAF programs potentially thrown off track without an appropriations bill include the C-130J, the Light Mobility Aircraft, and a Wideband Global Satellite. ■

China's Fighter Force—Smaller, Better

China's People's Liberation Army Air Force is in the throes of a far-reaching fighter makeover. Since 2000, the PLA Air Force has cut by half the size of its fighter force—mostly by phasing out decrepit 1950s-era designs. At the same time, it has acquired many more modern fighters. As a result, China's fighter force, which was two percent modern in 2000, is today

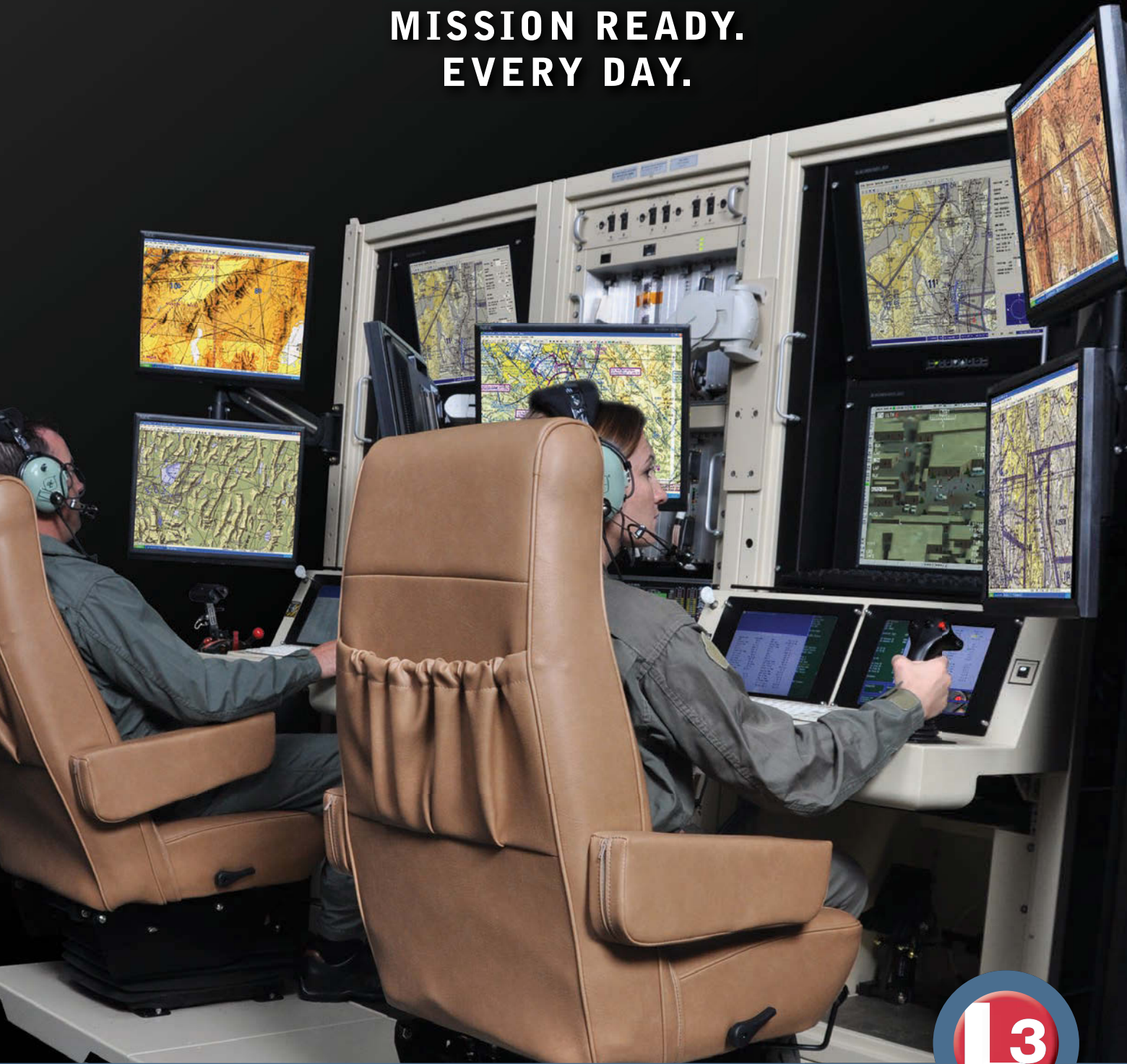
34 percent modern. ("Modern" fighters are fourth generation types such as the Su-27, Su-30, J-10, and J-11, as well as third gen fighters outfitted with advanced radar or avionics.) The pursuit of quality over quantity in fighters is part of Beijing's broader push to field a military capable of fighting and winning a modern, technology-intensive war on its periphery.

Comparison of Modern and Legacy Chinese Fighters



Source: "Report to Congress, 2010," US-China Economic and Security Review Commission, Washington, D.C., November 2010. Extrapolated from International Institute for Strategic Studies, *The Military Balance: 2010* (London: Routledge, 2010), p. 404; and IISS, *The Military Balance: 2000-2001* (London: Routledge, 2000), p. 197.

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Airman Dies in Afghanistan

TSgt. Leslie D. Williams, 36, of Juneau, Alaska, died due to a noncombat incident in Afghanistan, Jan. 25, the Defense Department announced.

Williams, assigned to the 4th Maintenance Group at Seymour Johnson AFB, N.C., was at Bagram Airfield.

Williams was interred with full military honors in Juneau Feb. 2.

NAFs To Merge, Says Donley

The Air Force will consolidate numbered air forces in Hawaii, Texas, and Germany as part of broader efforts to shed roughly \$33 billion in overhead costs to become more efficient, Air Force Secretary Michael B. Donley said Jan. 12.

Thirteenth Air Force at JB Pearl Harbor-Hickam, Hawaii, will be inactivated and combined with the staff of Pacific Air Forces at Hickam, Donley said during an Air Force Association-sponsored event in Arlington, Va.

This new combined staff will have a single integrated headquarters and will operate the air and space operations center at Pearl Harbor-Hickam supporting US Pacific Command.

The Air Force will also inactivate 19th Air Force at Randolph AFB, Tex., consolidating its staff with Air Education and Training Command headquarters, also based at Randolph.

USAF will inactivate 17th Air Force at Ramstein AB, Germany, merging its staff with that of headquarters, US Air Forces in Europe; the unit will support both US European Command and US Africa Command. The timeline for the consolidations remains to be decided, but could begin as soon as Fiscal 2012, Donley said.

Kehler Now at STRATCOM

Gen. C. Robert Kehler took command of US Strategic Command at Offutt AFB, Neb., in January, succeeding Gen. Kevin P. Chilton, who has retired.

Defense Secretary Robert M. Gates presided over the change-of-command ceremony, which was attended by more than 1,000 people. Chilton had led STRATCOM since October 2007, capping 34 years of USAF service.

Kehler had previously headed Air Force Space Command at Peterson

AFB, Colo. He had commanded AFSPC since October 2007, and inherited that job from Chilton as well. Kehler previously served as STRATCOM's deputy commander.

Fiel To Head AFSOC

Lt. Gen. Eric E. Fiel, vice commander of US Special Operations Command since June 2010, is scheduled to become the next head of Air Force Special Operations Command. He will succeed Lt. Gen. Donald C. Wurster, who is retiring. Dates for Fiel's assumption of command and Wurster's retirement were not immediately announced.

Wurster, with 38 years in uniform, has headed AFSOC since November 2007. Fiel is a master navigator with more than 2,000 flight hours in AC-130 gunships, MC-130 special-mission aircraft, and training aircraft.

New START In Effect

The new strategic arms reduction treaty (New START) into force in February, following ratification of the agreement by both the US and Russian legislatures. Secretary of State Hillary Rodham Clinton and Russian Foreign Minister Sergei Lavrov exchanged the instruments of ratification.

"We commit ourselves to a course of action that builds trust, lessens risks, and improves predictability, stability, and security," Clinton said in remarks immediately following the exchange, which took place Feb. 5, in Munich, Germany. She added, "Our countries will immediately begin notifying each other of changes in our strategic forces. Within 45 days, we will exchange full data on our weapons and facilities, and 60 days from now, we can resume the inspections that allow each side to trust, but verify."

With New START now in place, the United States wants to engage Russia in additional arms control issues. Clinton said she and Lavrov intended to discuss "nonstrategic and nondeployed nuclear weapons" and modernizing "the regime on conventional forces."

Under New START, the United States and Russia will each reduce their deployed strategic nuclear forces to 1,550 warheads and 700 deployed delivery vehicles inside seven years.

USAF photo by SSgt. Brian Ferguson

★ screenshot

Gates: China Open to Talks

China's military leadership has agreed to consider starting a strategic dialogue with the US military on cyber, missile defense, nuclear, and space issues, Defense Secretary Robert M. Gates said in January.

Speaking at a joint press conference with Chinese Defense Minister Gen. Liang Guanglie, Gates said the talks would help "create an environment in which the chances of a miscalculation

or a misunderstanding are significantly reduced." Gates, in China on a three-day visit long postponed by his hosts, said the discussions would be part of the two nations' broader strategic and economic dialogue.

The US has been trying to strengthen military-to-military contacts with China in hopes of convincing Beijing that greater military transparency on China's part is in the mutual interest of the two countries. Gates said he's "optimistic and

confident" that Chinese military leadership is committed to improving bilateral ties. An agreement establishing a new working group to develop framework for enhanced cooperation was signed as a result of the trip. The group is to have several meetings this year.

Mullen Issues 2011 Guidance

Defending "vital national interests" in the Middle East and Central Asia, eroding the Taliban's influence in Afghanistan,



02.07.2011

A C-130 drops supplies through blustery winds to International Security Assistance Forces troops stationed at Forward Operating Base Sweeney in Zabul province of Afghanistan. The base is located at 6,500 feet elevation, in the mountains halfway between Qalat, Afghanistan, and the Pakistan boarder. Supplies have to be air-dropped or trucked in over austere, sometimes unnavigable, roads.

Baltic Fighter Squeeze

European budget cuts are making it tougher to provide air sovereignty assets to NATO members without their own air arms, according to Maj. Gen. Mark O. Schissler, US Air Forces in Europe's director of plans, programs, and analyses.

NATO fighters have provided air sovereignty to Baltic member states Estonia, Latvia, and Lithuania since their accession to the Alliance in 2004. However, defense cuts are making it harder to sustain that help, Schissler said in a January interview.

"Having good security" in the form of air sovereignty is one way NATO prevents conflicts, Schissler said. However, with limited defense resources, Baltic states often feel "threatened by both the proximity and the size of the Russian force," he noted. Having a NATO force "capable of providing defensive security" both reassures them and stabilizes NATO's relationship with Russia.

"It's working now," he said, but "some of the key nations [with] some of the best defensive capability are looking at significant reductions" of more than a third of their forces. Those cuts will eat into "the numeric supply of fighters and fighter squadrons here on the continent," Schissler said. "What exists now, and what will exist in two years, five to 10 years, will probably be significantly different," he added. Such reductions will make the air policing mission more difficult.

USAF F-15s from RAF Lakenheath, Britain, ended a four-month rotation to Siauliai AB, Lithuania, in January, having flown 66 training sorties and intercepted three unauthorized aircraft. The Lakenheath Eagles handed the mission off to German F-4s on Jan. 5.

working with Pakistan to deny al Qaeda safe havens, and assisting Iraqi security forces to mature and defend Iraq are the top strategic priorities of Joint Chiefs Chairman Adm. Michael G. Mullen.

The priorities were set in an annual guidance issued Jan. 5 by the Chairman on how to achieve strategic objectives laid out in the National Security Strategy.

Mullen also wants to improve the health of US military forces, and plans to issue instructions for adoption of a "Total Force Fitness" program changing how the Pentagon assesses service members' well-being and effectiveness. The attention is necessary, given the lingering emotional and physical strains of combat, and an upward trend in the suicide rate among uniformed personnel.

Finally, Mullen seeks to balance global strategic risk, calling for "a ready, forward presence and available forces that can meet the full scope" of US security commitments.

ACC Creates Rescue Division

Air Combat Command at JB Langley, Va., has created a personnel recovery division, designated A3J, which will fulfill its responsibilities to organize, train, and equip dedicated Air Force rescue forces. It will also train USAF personnel at risk of being on their own in a combat or survival situation.

"Part of our job entails producing well-trained rescue forces to execute recovery operations, but there's another important piece: ... to ensure that anyone who is at risk of isolation is properly

trained and prepared to handle those challenges" said Lt. Col. Todd Worms, A3J chief.

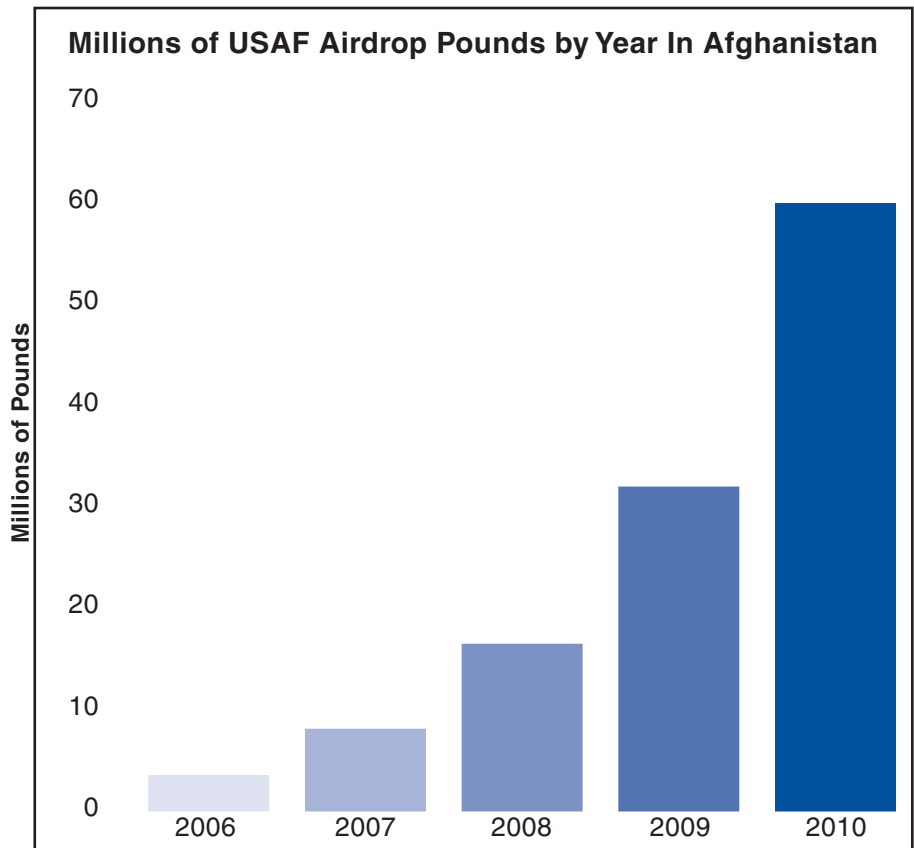
ACC officials announced the new division in January, though it began forming the unit in December. In August 2009, the Office of the Secretary of Defense approved personnel recovery as a USAF core function. Shortly thereafter, Air Force Chief of Staff Gen. Norton A. Schwartz approved an operational concept for personnel recovery.

Panel: More Women in Combat

The Congressionally chartered Military Leadership Diversity Commission, in a report slated to be released this month, is expected to recommend lifting the ban on women in direct ground combat.

Military policy prohibits women from serving in combat units below the brigade level. "We are saying, 'Let's remove barriers,'" said retired Army Lt. Gen. Julius W. Becton Jr., commission vice chairman.

According to a draft of the panel report circulated in January, President Obama and Congress will be asked to pursue 20 separate initiatives toward developing a "demographically diverse leadership that reflects the forces it leads and the public it serves." Today, women make up 14.6 percent of the military and 19.2 percent of the Air Force. Retired



Airdrop poundage in Afghanistan has nearly doubled each year since 2006, according to Air Forces Central. In 2010, USAF dropped a record-shattering 60.4 million pounds of material to forward areas in Afghanistan.

USAF Gen. Lester L. Lyles chairs the 31-member panel.

Canada To Go for F-35

Canadian Defense Minister Peter G. MacKay in January reiterated Canada's commitment to buy the F-35 strike fighter—and in a timely manner.

"It's clear that it's the intention of... the government of Canada to proceed with the purchase. This is a solid decision," MacKay said during a press conference with Defense Secretary Robert M. Gates in Ottawa during Gates' official visit to Canada.

Last July, the Canadian government announced its intent to procure 65 F-35s to replace its aging CF-18s. Responding to calls by Canada's Liberal Party to cancel those plans, MacKay voiced fears that "in addition to losing a preferential place in the production line," Canada would face an "operational gap" as the CF-18s reach the end of their service lives.

"There is a very... sweet spot in terms of the delivery time," he noted during the Jan. 27 press briefing.

All Eyes on Gorgon Stare

The Air Force won't deploy Gorgon Stare intelligence-surveillance-reconnaissance pods to Afghanistan until the bugs have been shaken out of the system, despite a desire to field the units as quickly as possible.

The Air Force intended to introduce the new, podded system for the MQ-9 Reaper in Afghanistan late last year. However, extensive operational testing at Eglin AFB, Fla., found the system to be "not operationally effective and operationally suitable," according to a Jan. 25 press release.

Now, Gorgon Stare will not be fielded "until the theater commander accepts it," said USAF spokesman Lt. Col. Richard Johnson.

In its first increment, the pod features nine video cameras, each capable of streaming live overhead imagery of a separate area, a vast improvement over the Reaper's current single-camera arrangement.

"This is a very advanced technology the Air Force is developing rapidly" to meet combat requirements, said Johnson, commenting in the wake of reports by the *Los Angeles Times* that the electro-optical and infrared cameras had trouble tracking humans during the day and larger objects, such as vehicles, at night. The *Times* was quoting a draft memo leaked from Eglin's 53rd Wing, dated Dec. 30.

Until these issues are resolved, testers advised against fielding Gorgon Stare until USAF and industry officials resolved the problems. Johnson explained the tester's evaluation was later revised to reflect several fixes that have already been implemented.

Fitted to a single MQ-9, one Gorgon Stare pod set will eventually be able to provide persistent surveillance over a city-size area.

USAF photo by Capt. Erik Saks



Injured but Undaunted: SrA. Brandon Cullen Towle, a tactical air control party member, after being awarded a Purple Heart medal by Gen. Norton Schwartz at Bagram Airfield, Afghanistan. Wounded during an attack on FOB Connolly, Afghanistan, Cullen Towle pulled an Afghan interpreter to safety and called in air strikes on the enemy's position.

C-27 Grinds to a Halt

The Air Force's C-27J Spartan fleet was grounded at the end of December after discovery of metal shavings in the fuel cells of all eight delivered aircraft. Though the cause was not yet clear, officials expect "it's something left over from the manufacturing process," said Col. Gary Akins, acting deputy director of Air National Guard air and space operations.

The three aircraft assigned to Robins AFB, Ga., have since been cleared to fly, but Spartans assigned to the ANG's 179th Airlift Wing at Mansfield Lahm Airport in Ohio, and the two aircraft undergoing predelivery modifications at contractor L3's plant in Waco, Tex., remained grounded at the end of January as workers awaited spare parts.

Desire to deploy the tactical airlifter to Afghanistan is great, and Guard officials said they feel pressure to deploy the aircraft to theater as early as this month, despite the groundings which have delayed aircrew training on the new airframe.

USAF is building a fleet of 38 C-27s for the Air Guard, undertaking in-theater resupply of ground forces.

Schwalier Files Lawsuit

Retired Brig. Gen. Terry J. Schwalier filed suit in US District Court on Jan 20, 2011, in a bid to reverse punishment handed down to him after the 1996 Khobar Towers bombing. Named as defendants in their official capacities are Defense Secretary Robert M. Gates and Air Force Secretary Michael B. Donley.

Schwalier was commander of the 4404th Provisional Wing at Dhahran, Saudi Arabia, when terrorists attacked base housing at Khobar Towers on June 25, 1996. Nineteen airmen died and 240 more were injured in a massive truck bomb blast.

Three Air Force investigations found Schwalier had significantly improved base security during his tenure as wing commander and absolved him of any blame. However, Defense Secretary William S. Cohen took punitive action and rescinded Schwalier's previously approved promotion to major general on July 31, 1997.

Schwalier's petition for his rank to be restored to major general on the retired rolls was twice approved by the Air Force Board for Correction of Military Records, in 2004 and 2007, and was twice stopped by OSD. In 2007, the AFBCMR voted unanimously to "correct an injustice" and restore Schwalier's rank.

The case charges DOD overstepped its authority by interfering with the Air Force Board for Correction of Military Records. Under the Administrative Procedures Act passed by Congress, AFBCMR decisions are final. Air Force lawyers made a similar argument rebutting the OSD general counsel's interference when OSD overturned the AFBCMR's 2004 decision.

Schwalier is suing now because he has "exhausted all other alternatives" and because a group of private individuals have come forward to help with expenses, he told *Air Force Magazine*. "It was a hard decision to make."

"A number of supporters said, 'You need to keep fighting this battle,'" Schwalier said. According to his attorney Edward R. Rodriguez Jr., a group of about 25 private individuals contributed to attorneys' fees for the case. Schwalier and Rodriguez declined to name the individuals, but Schwalier said he was "humbled" by the response.

"I'm suing the SECDEF because his office illegally interfered with the BCMR process and compelled the SECAF to overturn what is supposed to be a final and conclusive decision," Schwalier said. "I'm suing the SECAF because his office let that happen—because he yielded his congressionally given authority to an OSD lawyer."

"It is a novel and unusual case," lead plaintiff's attorney David P. Sheldon told *Air Force Magazine*. "Congress said their decisions on this statute are final," so DOD cannot "be arbitrary and capricious" by attempting to overturn decisions under the statute. "I have never seen this in 20 years of practice," said Sheldon, an expert in military appeals.

In fact, Schwalier's legal team contends that his case is "the first and only time" DOD has interfered with an Air Force records correction and "the first time DOD has interfered with a Secretarial records corrections decision based on a board for correction of military records recommendation by any department."

The case has been assigned to Judge Rosemary Collier. The defendants have until March 20 to respond. An OSD spokeswoman said she would not comment on active litigation.

Regarding the Air Force's two previous decisions to promote Schwalier to major general on the retired rolls, Sheldon said USAF "has acted in a thoughtful way, and but for OSD's unlawful influence, they reached the right decision."

—Rebecca Grant

Former B-2 Engineer Gets Prison

A federal judge in Hawaii sentenced Noshir S. Gowadia, 66, a former Northrop Grumman B-2 engineer, to 32 years in prison for selling military secrets to China.

"This case has set the example for interagency cooperation focused singularly to protect Americans from harm," said Brig. Gen. Kevin J. Jacobson, commander of the Air Force Office

of Special Investigations, in a Justice Department news release following the Jan. 24 sentence.

In August 2010, a jury convicted Gowadia on 14 counts, including willfully communicating classified national defense information to the Chinese government and other unauthorized individuals, violating the Arms Export Control Act, conspiracy, and money laundering.

US officials said the information he provided assisted the Chinese in developing a stealthy cruise missile.

Gowadia, a naturalized US citizen living in Hawaii, has been in custody without bail since his arrest in 2005.

Spain Bars Tankers

US military aircraft are barred from refueling in Spain's airspace, effective Feb. 1, Defense Minister Carme Chacon announced in January.

The prohibition was among many affecting US military aircraft that previously have enjoyed wide latitude in using the airspace of Spain, a NATO ally.

Besides the aerial refueling ban, US officials must also request permits in advance and provide more details on military flights transiting Spanish airspace, and any flights approved must be flown on instrument, not visual flight, rules.

Chacon said these new rules are meant to improve Spanish control of its airspace. They are part of the revision to the bilateral US-Spain agreement governing military cooperation that Spain requested.

The two nations last revised this document in 2003. Spanish bases at Moron and Rota have long hosted US military aircraft.

Brits Train at Offutt

British personnel are training at Offutt AFB, Neb., to operate RC-135 Rivet Joint electronic surveillance aircraft to be acquired and flown by the Royal Air Force. Offutt is home to the 55th Wing, USAF's sole operational Rivet Joint unit.

The first of nearly 100 RAF personnel arrived in January, with training slated to continue throughout this year.

Most of the RAF airmen have first-hand experience operating their service's Nimrod R1 reconnaissance aircraft, which is being phased out before acquisition of RC-135s.

Crews will participate in USAF's standard RC-135 course work, requiring three to five months, depending on crew member roles. Once qualified, crews will fill positions on USAF Rivet Joints until Britain's RC-135s are delivered around late 2013 and reach full operational capability.

Phantoms in a Renaissance

Members of the 82nd Aerial Target Squadron at Tyndall AFB, Fla., have begun flying F-4 Phantoms on target-towing missions on Tyndall's aerial gunnery practice range over the Gulf of Mexico.

"This is just another way the venerable Phantom continues to serve the

Operation Enduring Freedom—Afghanistan

Casualties

By Feb. 15, a total of 1,468 Americans had died in Operation Enduring Freedom. The total includes 1,466 troops and two Department of Defense civilians. Of these deaths, 1,141 were killed in action with the enemy, while 327 died in noncombat incidents.

There have been 10,351 troops wounded in action during OEF.

JTACs in High Demand

The Air Force more than doubled the number of joint terminal attack controllers in Afghanistan from 2009 to 2010. It attributed the spike from 53 JTACS to 134 to the increase in use of bombs, missiles, and strafing attacks, collectively reaching the “highest level since the war began,” reported *USA Today*.

Col. Richard Gannon, air operations commander in Kabul, told the newspaper that the high demand for airpower is tied to supporting NATO ground troops in the face of a resilient enemy.

In October, Afghanistan-based JTACs broke a new record, coordinating 1,000 close air support missions in which aircraft fired or dropped live ordnance, surpassing the previous mark of 984 CAS missions with weapons release. The old record was set in June 2008.

The high demand for JTACs comes at a cost, however: The airmen currently spend nearly as much time deployed as they do at home station.

To Afghanistan via Lithuania

US Transportation Command has struck a deal with Lithuania to expand the northern distribution network into Afghanistan. The agreement allows an alternative route for shipment of nonlethal cargo such as construction materials, said Brig. Gen. Christopher J. Bence, deputy director of TRANSCOM's operations and plans directorate.

The pact adds the Lithuanian seaport of Klaipeda to the network, allowing TRANSCOM-contracted companies to move cargo through Belarus, Russia, and Uzbekistan into Afghanistan.

About 100 shipping containers reached the port in December, transiting through Lithuania on Jan. 15, according to a TRANSCOM spokeswoman.

“Competition is good. ... As we have expanded different routes, we get better rates, ... and the command also helps the economies of those countries that sign agreements,” Bence said.

New Heights in Airdrop

Airdrop poundage in Afghanistan has nearly doubled each year since 2006, according to Air Forces Central.

In 2010, USAF aircraft dropped a record-shattering 60.4 million pounds of material to forward areas in Afghanistan, compared to 32.2 million pounds in 2009. The remote deployment of forces and lack of extensive infrastructure in Afghanistan have driven high demand for aerial provisioning and resupply from the war's opening days. Last year's surge of an additional 30,000 US troops has pushed that demand higher still.

“These airdrops are critical to sustaining ground forces at austere locations where other means of resupply aren't feasible,” stated Col. David Almand, who served as air mobility director in the combined air and space operations center in Southwest Asia in 2010. See chart, p. 14.

Air Force nearly 50 years after it began service,” said Lt. Col. Gregory Blount, 82nd ATRS director of operations.

The F-4 Phantom IIs are replacing Lear jets contracted as target tugs by the Navy.

“Due to costs, the Navy contract for use of the Lear jets was being cut, and

we had no other way to accomplish this training. The F-4 was the perfect platform to tow the banner and ensure we kept [pilots'] aerial gunnery proficiency,” said Lt. Col. Ryan Luchsinger, 82nd ATRS boss.

Squadron officials said the F-4 is a cost-effective training support solu-

tion, saving the Air Force an estimated \$750,000 annually.

Nuclear Center Fully Operational

The Air Force Nuclear Weapons Center at Kirtland AFB, N.M., responsible for the cradle-to-grave sustainment of USAF's nuclear weapons, has reached full operational status.

To reach this milestone, AFNWC staff increased and stabilized weapon storage and production areas, completed several nuclear surety inspections, strengthened partnerships with nuclear stakeholders, and formed an integrated team dedicated to pursuit of continuous improvement.

Gen. Donald J. Hoffman, head of Air Force Materiel Command, declared full operational capability on Jan. 20, during an AFNWC change-of-command ceremony.

Mobility Units Under New Roof

The Air Force Expeditionary Center at JB McGuire, N.J., gained responsibility for five Air Mobility Command organizations that formerly reported to 18th Air Force at Scott AFB, Ill., Jan. 6.

The center now oversees the 87th Air Base Wing at McGuire, 628th ABW at JB Charleston, S.C., 627th Air Base Group at JB Lewis-McChord, Wash., 43rd Airlift Wing at Pope AFB, N.C., and the 319th Air Refueling Wing at Grand Forks AFB, N.D.

It relieves 18th Air Force to focus almost exclusively on worldwide mobility operations, tasking the center with the added responsibility of evolving AMC mission sets, while continuing to specialize in expeditionary combat support training.

“This realignment intends to better position AMC to successfully carry out its current mission and meet future challenges,” said Lt. Gen. Robert R. Allardice, 18th Air Force commander.

KC-10 Hits Two Decades Abroad

Two KC-10s recently surpassed an unbroken 20 years of deployment to the Middle East. The Air Force dispatched the tankers to the Persian Gulf area in January 1991 during the opening salvos of the first Gulf War, and they have supported US and coalition combat operations in Southwest Asia ever since.

The milestone came Jan. 17, just two months shy of the KC-10's 30th anniversary in USAF service.

The pace for KC-10 aircrews and maintainers has slackened only slightly since the first Gulf War, the largest aerial refueling operation in history.

“Last year, [our unit] had 1,400 incidents where KC-10s and their aircrews supported US and coalition troops in contact with the enemy,” said Lt. Col. Johnny L. Barnes II, commander of the 9th Air Refueling Squadron at Travis AFB, Calif.

Senior Staff Changes

RETIREMENTS: Gen. Carrol H. **Chandler**, Gen. Kevin P. **Chilton**, Lt. Gen. Frank G. **Klotz**.

CHANGES: Brig. Gen. (sel.) Casey D. **Blake**, from Cmdr., Defense Contract Mgmt. Agency, Lockheed Martin Marietta, Marietta, Ga., to Dep. Cmdr., CENTCOM-Jt. Theater Spt. Contracting Command, Afghanistan ... Maj. Gen. (sel.) Norman J. **Brozenick Jr.**, from Dir., Plans, Programs, Rqmts., & Assessments, AFSOC, Hurlburt Field, Fla., to Cmdr., Special Ops. Command, PACOM, Camp H. M. Smith, Hawaii ... Brig. Gen. (sel.) Stephen A. **Clark**, from Cmdr., 27th Spec. Ops. Wg., AFSOC, Cannon AFB, N.M., to Dir., Plans, Programs, Rqmts., & Assessments, AFSOC, Hurlburt Field, Fla. ... Lt. Gen. Eric E. **Fiel**, from Vice Cmdr., SOCOM, Pentagon, to Cmdr., AFSOC, Hurlburt Field, Fla. ... Brig. Gen. Samuel A. R. **Greaves**, from Vice Cmdr., SMC, AFSPC, Los Angeles AFB, Calif., to Dir., Plans, Prgms., & Analyses, AFSPC, Peterson AFB, Colo. ... Brig. Gen. Scott M. **Hanson**, from Cmdr., 321st Air Expeditionary Wg., Air Forces Central, ACC, Baghdad, Iraq, to Spec. Asst. to the Vice C/S, USAF, Pentagon ... Brig. Gen. Scott W. **Jansson**, from Dir., Iraq Security Assistance Mission, US Forces-Iraq, CENTCOM, Baghdad, Iraq, to Cmdr., Defense Log. Agency Aviation, Defense Log. Agency, Richmond, Va. ... Maj. Gen. Robert C. **Kane**, from Commandant Air War College, AETC, Maxwell AFB, Ala., to Dir., Global Reach Programs, Office of the Asst. SECAF, Acq., Pentagon ... Brig. Gen. Lee K. **Levy II**, Cmdr., 402nd Maintenance Wg., Warner Robins ALC, AFMC, Robins AFB, Ga., to Dir., Log., AMC, Scott AFB, Ill. ... Maj. Gen. Bruce A. **Litchfield**, from Cmdr., 76th Maintenance Wg., AFMC, Tinker AFB, Okla., to Spec. Asst. to the Cmdr., AFMC, Tinker AFB, Okla. ... Brig. Gen. Robert D. **McMurry Jr.**, from Cmdr., Airborne Laser Sys. Prgm. Office, ASC, AFMC, Kirtland AFB, N.M., to Dir., Iraq Security Assistance Mission, US Forces-Iraq, CENTCOM, Baghdad, Iraq ... Maj. Gen. David J. **Scott**, from Dir., Operational Capability Requirements, DCS, Ops., P&R, USAF, Pentagon to Dir., Air & Space Ops., USAF, Ramstein AB, Germany ... Brig. Gen. (sel.) Howard D. **Stendahl**, from Command Chaplain, ACC, JB Langley, Va., to AF Dep. Chief of Chaplains, USAF, JB Bolling, D.C. ... Brig. Gen. (sel.) Roger W. **Teague**, from Cmdr., Space Based Infrared Systems Wg., SMC, AFSPC, Los Angeles AFB, Calif., to Vice Cmdr., SMC, AFSPC, Los Angeles AFB, Calif.

SENIOR EXECUTIVE SERVICE CHANGES: Jeffrey C. **Allen**, to Dir., Instl. & Log., AFSPC, Peterson AFB, Colo. ... Gregory J. **Weaver**, to Dep. Dir., Plans & Policy, STRATCOM, Offutt AFB, Neb.

The Air Force's 59 KC-10s have a projected structural service life extending beyond 2043.

Better Angels in Flight Testing

Flight testing of a new parachute known as the Guardian Angel is under way at Edwards AFB, Calif. The new system allows people to descend at a slower and safer rate in the thin air of high mountain operations, such as Afghanistan.

"With the current systems, the descent rate is too fast at high altitudes," explained 2nd Lt. Jonathan Sepp, airdrop engineer with Edwards' 418th Flight Test Squadron.

Specifically designed for USAF pararescue, the new system could replace designs now in use with the Air Force "and the rest of the military once it's approved," stated Sepp.

Guardian Angel is trifunctional, meaning it can be used for freefall, static-line, or tandem jumps. "It's going to allow

Raise the Flag: An F-15 from the 65th Aggressor Squadron takes off from the runway at Nellis AFB, Nev., for a training mission during Red Flag 11-2. Some of the goals of Red Flag exercises include large force integration and better coalition interoperability, but the main focus is giving airmen life-like combat experience against "enemy" forces.

USAF photo by TSgt. Michael R. Holzworth



Vital Signs of Critical Care

Like many other Air Force specialties, Critical Care Air Transport Teams are too few in number, have too much to do, and are indispensable.

CCATTs comprise three trauma specialists that accompany injured service members on their journey from front-line combat posts to a hospital or other care facility that will ultimately treat their wounds. The team frees forward hospitals to perform simple “damage control surgery”; to quickly “stop bleeding, prevent contamination, and get airway control of a patient”; and hand a patient off “to where there’s more capability and resources,” said Lt. Col. Raymond Fang, director of trauma at the US military hospital in Landstuhl, Germany.

Before CCATTs were created, field medical staff was forced to accompany patients en route, straining front-line hospitals.

However, CCATT is a low-density, high-demand capability, and with the war in Afghanistan, the teams are “heavily stressed continually manning all these positions,” said Fang. To meet requirements, USAF called on the Air National Guard for help, unearthing an unexpected goldmine of talent. Trauma physicians and specialists in the Guard—some in nonmedical specialties—quickly expanded the specialized CCATT pool, bringing a high level of experience at little to no additional cost, and with only a short certification program.

With a shrinking number of intensive care units in military hospitals, the experience is invaluable.

“There’s not a wealth of critical care experience in the active duty,” explained Fang, but “Guard people, that’s what they do in their everyday job.” He added, “The Air Guard brings a lot of enthusiasm, and they bring a huge amount of personal expertise.”

In addition to willingness and talent, the Guard is highly efficient. “The day before I left, the military wasn’t paying me to be doing anything,” quipped Brig. Gen. John D. Owen, Air Guard physician and organizer of ANG’s CCATT mission. Leveraging a force of civilian trauma doctors, critical care nurses, and respiratory therapists who bring their “day-to-day experience” to the job allows the Guard to bring a level of care “as high or higher” than active duty, Owen said.

“We’re able to bring an incredibly qualified group of people forward to answer the nation’s call to take care of our wounded soldiers,” said Owen. Those contributions, he summed up, are “truly a national treasure.”

people to land in a safer manner, carry more gear, and accomplish the mission more effectively than they could’ve with the parachute systems we currently have,” said Sepp.

Testing was slated for conclusion in February.

Stormchasers: Alaska Edition

Hurricane-chasing aircraft, their crews, and ground support teams are operating from Alaska, switching from their warm-weather missions mostly in the southeast US.

Airmen and WC-130Js from Air Force Reserve Command’s 53rd Weather Reconnaissance Squadron at Keesler AFB, Miss., are now operating from JB Elmendorf, Alaska, collecting data from winter storms in the Pacific Ocean bound for the continental United States.

Known as the “Hurricane Hunters,” the squadron monitors tropical storms over the Atlantic and the Gulf of Mexico during warmer months, employing specially modified C-130s. It then heads for Alaska each January.

Reservists are currently aiding the National Oceanic and Atmospheric

Administration to generate more accurate winter forecasting models over the Pacific region. “That [information] can be crucial for residents living in harm’s way,” said Lt. Col. Roy Deatherage, aerial reconnaissance weather officer with the squadron. “These forecasts provide people in the path of the storms with warnings that can save lives,” he added.

The Hurricane Hunters will remain on Pacific winter watch through April 30, returning to warmer skies this spring.

C-130 Ops Merge at Elmendorf

Airmen of the newly formed 537th Aircraft Maintenance Unit at JB Elmendorf, Alaska, began working alongside Air National Guardsmen of the 176th Wing in January, maintaining the C-130s that will operate from the Alaskan base.

As part of BRAC 2005, the 176th Wing is relocating from Kulis ANG Base to nearby Elmendorf, both of which are in the Anchorage area.

The Guard wing brings with it the C-130s of the 144th Airlift Squadron. Active duty airmen of Elmendorf’s 537th Airlift Squadron will participate in operating the aircraft, and 537th AMU airmen will help maintain them.

The Guard is going to own all the airplanes. “The idea is that with the 537th AS utilizing the Guard resources, we are going to augment the Guard’s maintenance capability,” said CMSgt. William Holm, 537th AMU chief.

Vandenberg Plans 11 in ’11

The 30th Space Wing at Vandenberg AFB, Calif., will likely boost its space launches from 10 in 2010 to 11 this year.

Col. Richard Boltz, 30th SW commander, told the local chambers of commerce, “2011 is shaping up to be just as busy a time for us,” reported the Vandenberg area’s *Lompoc Record*.

The first launch of the year, on Jan. 20, was the West Coast’s first ever Delta IV Heavy launch. The 235-foot-tall vehicle carried a classified intelligence satellite. A successful Minotaur shot followed Feb. 6. An Atlas V, with a payload of classified intelligence satellites, is slated for liftoff March 12. Also, a Minotaur mission is on the departure board for Aug. 10, to place a military payload in space.

NASA plans to loft at least three rockets carrying government and commercial payloads. Vandenberg officials aim to increase Minuteman operational test shots from three last year to four, and the base is slated to serve as the landing site for an Air Force X-37B reusable unmanned orbital vehicle.

WWII Airman Receives DFC

A former B-17 navigator from World

Index to Advertisers

Alenia.....	Cover II, 23
Boeing.....	Cover IV
Broad Superintendents Academy.....	7
Hawker Beechcraft.....	3
L-3.....	11
Pilatus.....	21
SRC.....	5
USAA.....	Cover III
AFA Corporate Membership.....	85
AFA Member Benefits.....	63
AFA Resume Service.....	86
AFA Spotlight On.....	86
AFA Upcoming Events.....	45

Remember Europe?

Military leaders around the world who are preoccupied with the Asia-Pacific Theater—at the expense of Europe—are taking “a dangerous view,” warned Maj. Gen. Mark O. Schissler, US Air Forces in Europe’s director of plans, programs, and analyses.

In a January interview at Ramstein AB, Germany, Schissler said, “It concerns me when people are ready to discount Europe and NATO. I think it’s a vital relationship and we need to remain balanced across the globe.”

The United States should maintain the strong, stabilizing posture that has enabled peace in Europe, while equally cultivating relationships in the Pacific to confront emerging threats, Schissler asserted. Europe is home to bases critical to US mobility and force projection worldwide, as well as allies that have stood beside the US through the Cold War and stand beside it today in Afghanistan. US leaders must not overlook European countries, with which the United States shares many common interests, responsibilities, and values, he noted.

At the same time, yielding to budgetary pressure, many European allies have cut deeply into defense spending, and there are worrying signs the US may not be far behind.

“I don’t think our Defense Department will be much different from the defense departments in European nations in terms of sizing and reductions,” meaning European allies may not be able to indefinitely rely on the US to backfill capacity, he said.

The US and NATO continue to confront the same challenges to European security, but “dollars and Euros will be tighter,” he said. The Alliance faces “difficult decisions” in the next five to 10 years.

War II has received a long-overdue Distinguished Flying Cross in recognition of valor on a mission 67 years ago.

In the skies over Germany, 2nd Lt. Robert L. Giles saved a crewmate’s life on April 18, 1944. After a German fighter critically mauled his bomber, Giles helped the B-17’s severely wounded bombardier to safely escape the aircraft before it went down. Giles himself had suffered an arm wound. Both men were captured upon reaching the ground. They remained POWs until May 1945.

Giles was awarded the DFC in a ceremony at Kirtland AFB, N.M., Dec. 29. In April 2010, Giles received the Air Medal for actions during the same mission.

“I never thought that I did anything that any person wouldn’t have done under the same circumstances,” said Giles.

Vietnam War Airmen Identified

The remains of two airmen missing in action from the Vietnam War have been identified as Col. James E. Denany, 34, of Kalamazoo, Mich., and

Maj. Robert L. Tucci, 27, of Detroit, the Defense Department announced Jan. 12.

Flying an F-4D Phantom, the two men were shot down on Nov. 12, 1969, while escorting an AC-130 gunship over Laos during a night strike mission. The intensity of anti-aircraft fire prevented a formal search for the downed crew at the time.

Based on human remains and artifacts received from villagers near Ban Soppeng, Laos, joint US-Laotian teams conducted three excavations, beginning in 1999, ending their work in 2009. They recovered wreckage and human remains that eventually led to the identification of both airmen.

The remains were returned to the families, and both men were buried with full military honors in the Dallas-Fort Worth National Cemetery Jan. 14.

Korean War Remains Identified

Defense Department forensic experts have identified the remains of 1st Lt. Robert F. Dees, an F-84 pilot from Moultrie, Ga., missing in action during the Korean War.

On Oct. 9, 1952, Dees’ F-84 crashed while attacking enemy boxcars on a railroad near Sinyang, North Korea.

Airborne searches over the battlefield at the time failed to locate Dees or his aircraft. DOD forensic scientists used dental records to identify Dees’ remains from among thousands of US service personnel repatriated and buried in Hawaii in 1956, marked simply as “unknown.”

Dees’ remains were returned to his family. He was buried with full military honors Jan. 22 in Ozark, Ala. ■

News Notes

■ President Obama has approved Defense Secretary Robert M. Gates’ plan to disestablish US Joint Forces Command in Norfolk, Va., as a cost saving measure. Obama said the disestablishment would take effect at the discretion of the Defense Secretary.

■ The first two of 15 former South Korean T-38 trainer aircraft have arrived at Holloman AFB, N.M., for regeneration. The rebuilt aircraft will be assigned to JB Langley, Va., to provide a dissimilar air combat training aircraft for F-22 pilots.

■ Beginning in March, airmen deployed in combat roles to Afghanistan will wear the new Operation Enduring Freedom camouflage pattern, or OCP uniform. Initially the uniform only will be worn by airmen in roles outside the wire; it will later be standard in theater.

■ The 36th Wing’s second of three RQ-4 Global Hawk remotely piloted aircraft touched down at Andersen AFB, Guam, Jan. 7. The Global Hawks

are being based on Guam to enhance US airborne intelligence-surveillance-reconnaissance coverage of the West-ern Pacific.

■ AeroVironment’s Global Observer remotely piloted aircraft successfully completed its first hydrogen-fueled flight at Edwards AFB, Calif., Jan. 6. Flying four hours and achieving an altitude of up to 5,000 feet, the RPA aims to provide a cheap alternative to satellite surveillance.

■ Members of Air Force Reserve Command’s 445th Airlift Wing began C-17 training at Wright-Patterson AFB, Ohio, Jan. 20. USAF intends to replace the wing’s 10 C-5As at Wright-Patterson with eight C-17s by the end of Fiscal 2012.

■ KC-135 operations have temporarily moved from Fairchild AFB, Wash., to Spokane and Grant County Airports, as Fairchild’s 50-year-old runway undergoes replacement. Formerly Larson Air Force Base, Grant County Airport in

Moses Lake, Wash., will absorb the bulk of Fairchild’s flight operations.

■ The Air Force plans to establish 10 new MQ-1 Predator and MQ-9 Reaper remotely piloted aircraft squadrons this year, spread between both active and reserve components. USAF aims to procure equipment and train crews to sustain 65 combat air patrols by 2013.

■ Nellis AFB, Nev., has been chosen to host the new joint military working dog training program. The 99th Security Forces Group teaches the course. It will replace one held in Yuma, Ariz. Plans are for nine classes annually with 20 teams each.

■ The 76th Airlift Squadron’s Gulfstream C-20H distinguished visitor transport marked the type’s first combat-zone deployment, returning to Ramstein AB, Germany, Feb. 1, after 10 months in Afghanistan. Aircrews clocked 700 hours, transporting 95 distinguished visitors and 1,100 total passengers. ■

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No Exit

"Abu Ghraib and its follow-on effects, including the continued drum-beat of 'torture' maintained by partisan critics of the war and the President, became a damaging distraction. More than anything else I have failed to do, ... I regret that I did not leave at that point."—*excerpt from Known and Unknown, the memoir of former Secretary of Defense Donald H. Rumsfeld, published Feb. 8.*

Torture at Club Gitmo

"A 48-year-old former Taliban commander dropped dead, apparently of a heart attack, after exercising on an elliptical machine in the prison camp at Guantanamo Bay."—*from Los Angeles Times story about the demise of detainee Awal Gul, Feb. 4.*

Calling Madame Defarge

"The worldwide euphoria that has greeted the Egyptian uprising is understandable. All revolutions are blissful in the first days. The romance could be forgiven if this were Paris 1789. But it is not. In the intervening 222 years, we have learned how these things can end. ... Yes, the Egyptian revolution is broad-based. But so were the French and the Russian and the Iranian revolutions."—*Syndicated columnist Charles Krauthammer, writing in the Washington Post, Feb. 4.*

All You Need Is Love

"Starting this year, no American will be forbidden from serving the country they love because of who they love."—*President Obama, State of the Union address, Jan. 25.*

Retirement Planning

"Development of this new bomber will leverage more mature technologies, and we think will reduce the risk in the program, allow us to deliver with greater confidence on schedule and in quantities sufficient to support the long-term sustainment of long-range bomber capabilities after the current fleets of B-1s and B-52s retire."—*Secretary of the Air Force Michael B. Donley, in remarks to reporters in Washington, D.C., about prospective launch of a new long-range strike program, Jan. 12.*

Go With Pharaoh

"Look, Mubarak has been an ally of ours in a number of things, and he's been very responsible. ... I would not refer to him as a dictator."—*Vice President Joseph Biden, remarks made in PBS "NewsHour" interview, Jan. 27.*

Previously, They Were Alive

"After the great increase in American drone attacks, we see very few fighters, particularly foreign militants. Previously, they used to roam around in large numbers fearlessly."—*Aslam Wazir, shopkeeper in Mir Ali, Pakistan, as quoted in Washington Times, Jan. 16.*

Let the Next Guy Do It

"Two of the JSF variants—the Air Force version and the Navy's carrier-based version—are proceeding satisfactorily. By comparison, the Marine Corps' short takeoff and vertical landing variant is experiencing significant testing problems. ... I am placing the STOVL variant on the equivalent of a two-year probation. If we cannot fix this variant during this timeframe and get it back on track in terms of performance, cost, and schedule, then I believe it should be canceled."—*Remarks about the F-35 Joint Strike Fighter by Secretary of Defense Robert M. Gates, Jan 6.*

Inchon, September 1950

"Our nation's amphibious capability remains the Corps' priority."—*Statement by Gen. James F. Amos, Commandant of the US Marine Corps, Jan. 6.*

Amphib-o-nomics, Simplified

"The EFV ... has already consumed more than \$3 billion to develop, and will cost another \$12 billion to build, all for a fleet with the capacity to put 4,000 troops ashore."—*Gates, regarding cancellation of the Marine Corps' Expeditionary Fighting Vehicle, an amphibious craft, Jan. 6.*

Get the Net

"That's the [US] attitude: 'We're gonna change mosques into cathedrals.' That's an attitude that pervades, I'm here to say, a large percentage of the Joint Special Operations Command. ... This

is not an atypical attitude among some military. It's a crusade, literally. They see themselves as the protectors of the Christians. They're protecting them from the Muslims [as in] the 13th century. And this is their function. ... They have little insignias, these coins they pass among each other, which are crusader coins."—*Vaunted journalist Seymour Hersh, remarks in Doha, Qatar, as recounted by Blake Hounshell in Foreign Policy Magazine, Jan. 18.*

We'll Always Have Inchon

"I personally think he [Gates] is trying to destroy the Marine Corps. If you take away their core competency [amphibious warfare], you're not going to have a Marine Corps anymore."—*Rep. Duncan Hunter (R-Calif.), former marine, in blast at Gates on EFV decision, in Politico, Jan. 6.*

Uh, Which Military Was That?

"As a woman, I found the US military to be one of the best places to work because they had completely removed sex from the equation. It is the most un-sexist environment I have ever worked in. ... It is not quite natural."—*Emma Sky, British advisor to US commanders in Iraq, quoted in Washington Post, Jan. 9.*

Strangers in the Night

"America doesn't know its military and the United States military doesn't know America."—*Adm. Michael G. Mullen, Chairman of the Joint Chiefs of Staff, in speech at National Defense University in Washington, D.C., Jan. 10.*

Gorby Un-Mania

"He tricked us! I knew he would betray us!"—*The late Saddam Hussein, quoted in New York Times, Jan. 19. The Times story, based on Iraqi archives, refers to Saddam's Feb. 24, 1991, blast at then-Soviet leader Mikhail S. Gorbachev, who had failed to prevent a US ground invasion.*

Sure To Be Helpful

"Officials Provide Advice on Post-Deployment Intimacy Issues."—*Actual headline on American Forces Press Service item, Jan. 27.*



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Experience, Efficiency, and Risk

By Marc V. Schanz, Senior Editor

The Air Guard has built its most capable force ever, but its aircraft are approaching a cliff.

An F-15 maneuvers into position beneath the refueling boom of an Air National Guard KC-135.

USAF photo by Amn. Whitney Amstutz

Lt. Col. Tim Moses, like his fellow Air Guardsmen at the Toledo, Ohio, 180th Fighter Wing, wears many hats, and depending on the day and the circumstance, you could find him in the cockpit of an airliner or behind the controls of an F-16 chasing one down in US airspace.

“We respond to threats, all types of situations,” Moses, the wing’s air sovereignty alert (ASA) commander and a Delta Air Lines pilot in his civilian job, said in December. Many of the pilots in the wing’s 112th Fighter Squadron, in addition to being volunteers, are also civilian pilots with years of experience flying in both domestic airspace and abroad, while deployed with the squadron. The average major in the unit has around 1,000 flight hours under his belt already, a number any active duty squadron would be pleased to tout.

As part of his duties, Moses oversees aircraft for the alert rotation, their maintenance, the security forces, coordination with civil authorities, and air traffic management—not counting what happens when he takes off on alert, dispatched by NORAD and 1st Air Force.

On the ground at Toledo Express Airport, Moses is an Air Guardsman in what is known as Title 32 status: in service of

his state’s adjutant general, who answers to the governor. Moses said, “As soon as we are on an active scramble, we are put into a Title 10 status,” the legal designation for Guard forces employed under the auspices of the President—no different than when his unit mobilizes for an overseas deployment.

It is this combination of responsibilities—at one moment, a part-time Guardsman, and a moment later operating on the front lines of Operation Noble Eagle or even deploying abroad—that has brought the health of the Air Guard to the forefront.

Meeting Critical Missions

“We are the most capable ANG we’ve ever been,” said Lt. Gen. Harry M. Wyatt III, director of the Air Guard, in a December interview. Since the Guard is now so closely tied to its active component partners, both deployed and in homeland defense operations, Wyatt said many of the problems are familiar, such as older equipment needing recapitalization while also transitioning out of some missions and getting into others that will be critical to the Air Force’s future.

All of the expansion has come with a cost. In addition to the painful BRAC losses of legacy fighter missions, for example, the Air Guard now owns 30

percent less airlift than it did when response efforts to Hurricane Katrina mobilized in 2005. As a result of planned reductions in the C-5 fleet, the Air Guard will lose 12 C-5As from Stewart ANGB, N.Y., by 2012. They will be backfilled eventually by eight C-17s, USAF announced in November. More announcements are anticipated.

At a November 2010 senior leadership conference, with all states and territories represented, the ANG posed itself a question: “2025: Are We Ready?” The point of the question, Wyatt said, was to re-evaluate the state of the force today and how it got to the point of being an operational force tied closely with today’s wars.

The Air Guard is more tightly tied to the health of the active duty Air Force than ever before—and is critical to meeting missions at home and around the world. The Department of Defense plans and constructs should be updated to reflect this reality, some leaders suggest. “If I had been here four or five years ago, ... before our last round of [base closures], I would have said that most of our states’ territories would have fought to the death to preserve those missions that we had for 50 years, 55 years,” said Air Force Gen. Craig R. McKinley,



SrA. Jordan Gunterman crouches on the cargo ramp of an ANG C-130 at Bagram Airfield, Afghanistan. Since 9/11, more than 146,000 Air Guardsmen have deployed overseas, many more than once.

USAF photo by Capt. Erick Saks



Two C-130s from the Wyoming ANG wait on the ramp at Bagram, before embarking on a mission.

chief of the National Guard Bureau, last September.

In the five years since the last BRAC round, the NGB and ANG, working with the states and senior Air Force leadership, have embraced new concepts, missions, and ways of doing business. “Our airmen have understood that to survive in the 21st century, we’ll need to transform ourselves, we’ll need to be adaptable, we’ll need to be versatile,” McKinley said.

By the end of this year, the restructuring from the 2005 BRAC legislation will be complete. But questions about force shaping remain unanswered—as does the Guard’s future role in the Total Force. Sharing equipment and missions is no longer an option, many in the Guard feel.

Wyatt noted in December he is in talks with USAF leadership to try to build an “active associate” concept with some of the Guard’s C-27J units, as they are now solely owned by the ANG. Beyond the utility, the reason is simple and the flip side of the Guard’s efficiencies: A mission that becomes the sole province of the Guard is one that could decay over time, as it is the province of Guard funding streams.

Unlike in the past, as with the F-22 program, the Guard and active duty need to be involved with developing platforms and capabilities from the get-go, and

should not have to play catch-up later on, Wyatt noted. After years of duty in an operational expeditionary force construct, most Air Guardsmen are not looking to return to the days of hand-me-downs, nor can the Guard become an organization primarily associated with the homeland defense mission, as its unique capabilities would suffer as a result.

“It leads you down a road of becoming a single source operation,” McKinley

said when asked of the possibility of the Guard being a dedicated homeland defense force. “It leads you down the road of becoming more of a constabulary force that would not serve the nation well or as effectively.”

This fact is at the root of the modernization problems facing the Air Guard and USAF’s remaining legacy fighter fleet, particularly those that perform the ASA mission. While ASA units do fly homeland defense, the range of



Lt. Gen. Harry Wyatt (center), Air National Guard director, speaks with SMSgt. Robert Porter (l) and then-Brig. Gen. Gary Saylor during a visit to the 266th Range Squadron in Idaho. Saylor is now the adjutant general of Idaho.

scenarios and threats faced are diverse. Also important to remember is that these same aircraft remain integral to the air and space expeditionary force (AEF) construct and domestic Title 10 operations, meaning the units must be ready for everything from disaster relief to full-scale combat operations.

Lt. Col. David Garner, a Florida Air National Guardsman and F-15 pilot by background, is the deputy chief of the combat operations division at the 601st Air and Space Operations Center at Tyndall AFB, Fla., the nerve center for 1st Air Force's homeland defense and air sovereignty activities in the US. Garner ensures units such as Moses' have the assets and tools required to carry out alert sorties, respond to radar intercepts, and if necessary, transition to large events—such as providing security for the Vancouver Olympics in Canada in February 2010.

Looming Fighter Bathtub

As Guardsmen, "we are the manning pool, [but] it's a seamless venture." When a Title 10 event occurs, we put on our authorizations, Garner said, but if you came in off the street, you couldn't tell who was Guard or active duty. There's a great amount of continuity and coordination, he said.

A 109th Aircraft Maintenance Squadron crew chief walks the wing during a preflight inspection of an LC-130 at JB Pearl Harbor-Hickam, Hawaii.

New Units, New Missions

A great deal of change in the Air National Guard's force structure has occurred since 2005. Today, six states (Arizona, California, Nevada, New York, North Dakota, and Texas) are home to remotely piloted aircraft units in the Air Guard, and ANG flies 25 percent of overseas drone combat air patrols.

In New York, the 174th Fighter Wing at Hancock Field in Syracuse is the first Guard unit to operate the MQ-9 Reaper, and is also home to the Air Force's only Reaper maintenance schoolhouse. The Guard has stood up a remote split operations unit for MQ-1 Predator operations at the Springfield, Ohio, ANG base. It was a follow-on mission to the wing's F-16 training mission, and the ANG hopes to replicate the effort at other locations. Senior ANG leadership is working with Air Combat Command to increase RPA mission locations to get up to Defense Secretary Robert M. Gates' goal of 65 continuous orbits in Southwest Asia—with plans in the works for up to five more RPA units in the Guard.

The growth is not limited to the RPAs, as the new C-27J transport will bed down at several Air Guard units. The first is Ohio's 179th Airlift Wing at Mansfield Lahm Airport, which received its first aircraft in August 2010, and was expected to have all four by February. The formal training unit for the new mission will be based at Key Field, Miss., USAF announced in December. In addition to Mansfield, the 38-airframe fleet will bed down at units in Connecticut, Maryland, Michigan, and North Dakota, with USAF indicating it will place some in Great Falls, Mont., as well.

The Air Guard is expanding rapidly into new missions, such as space operations and even the nuclear mission (with an associate squadron of Air Guardsmen now flying the B-2 at Whiteman AFB, Mo., as well as a stand-alone security forces squadron stationed at Minot AFB, N.D., working to protect missile fields). Long-standing concerns with USAF about oversight of part-time Air Guardsmen have been assuaged, as very stringent and continuous evaluation protocols have been put in place for Guardsmen serving in the nuclear mission. The Colorado and Wyoming ANG are expanding efforts in space command and control activities, and the Florida ANG contributes to the space launch mission at Cape Canaveral Air Force Station to such a degree that Air Force Space Command and US Strategic Command are offering alternate site locations for Guardsmen involved in C2.

The senior leadership in both the NGB and the ANG stress that the nation's Guardsmen have unique skills, experience, and operational constructs. Because of this, Guard officials feel well-positioned to move forward a debate about affordability—particularly at a time when the Department of Defense top leadership has indicated budget austerity will not be optional in the years ahead.



USAF photo by S/A. Gustavo Gonzalez



SSgt. Ebon Mitchell attaches body panels to an F-16 during a 300-hour phase inspection at JB Andrews, Md. The ANG's F-16 Block 30s had been slated to retire by 2018.

To carry out air defense, however, airplanes are needed—and it appears the ANG and USAF will be keeping some around longer than planned.

ANG and USAF officials anticipate new investments in the force's F-16 fighter fleet beginning in the Fiscal 2012 budget. However, Wyatt said in December, the extent of these improvements to the service life of older F-16s and increased capability in newer blocks will be closely tied to the health of the F-35 program.

The problem has been several years in the making, exacerbated by the F-35's sluggish development program. "About two to three years ago, mainly the [Air Guard] was saying, 'Hey, we have a looming fighter bathtub and gap between when the F-35 comes in and the F-16s begin to age out,'" Wyatt said. This was before the program experienced a schedule slip of 13 to 15 months last year. There are renewed indications, as of December, that Defense Department acquisition boss Ashton B. Carter's programwide Joint Strike Fighter review will feature unwelcome news. "We think there will be some sort of announcement pretty soon, [that] there will be a further delay in the ramp up to [F-35] full production," Wyatt said.

While USAF and the Air Guard are now moving out on sustaining the legacy fleet, Wyatt and others hasten to point out that ASA fighters do more than respond to domestic alerts, and many units are written into operations planning for overseas contingencies and could be mobilized to fight in a crisis. "We can't just discount the

[ASA] fleet." They do alert, air and space expeditionary force rotations, and are "written into plans," Wyatt said.

The Air Force remains committed to the F-35 as the future of its tactical air fleet, said then-Lt. Gen. Philip M. Breedlove in November, when he was serving as the Air Staff's head of operations, plans, and requirements. "We have already begun the discussion of how we move the current tacair fleet to the right, in time, such that we maintain that operationally viable capability that we need," he said. The specific fighters involved would include F-16 Block 30 aircraft comprising most of the ANG's air sovereignty fleet, slated to exit the inventory by 2018—well before the arrival of replacement F-35s.

Embedded, Critical Capabilities

In addition to the oldest Block 30 F-16s, there would also be a need to invest in upgraded radar and avionics for some F-16 Block 40s and Block 50s, some flown by the Guard, but most residing in the active duty inventory. USAF senior leadership has indicated it will begin setting aside dollars in the Fiscal 2012 budget for upgrades across the F-16 fleet, to bridge the gap to the F-35's arrival. "We will need to look at some of our newer F-16s to put the right amount of capability on to address [threats], which [continue] to rise across time," Breedlove noted. These investments would involve some sort of structural modification to almost all Block 40 and Block 50 aircraft, as well as new avionics in some, such as new communication and navigation tools, and even new radars in some instances.

As little as two decades ago, the Guard was still often viewed as a parochial organization flying handed-down aircraft.

All this has changed, especially after 9/11. Since then, more than 146,000 Air Guardsmen have deployed overseas in support of combat operations, many on second and third voluntary tours, according to NGB numbers. This has transformed the Air Guard into a battle-hardened, expeditionary force in addition to being traditional homeland defenders.

After the November leadership summit, Wyatt said his directorate plans to work with the adjutants general and states to conduct an internal review of the condition of the Air Guard, to figure out which missions the organization is best suited for, what can be done most efficiently and cost-effectively, and to work to secure and invest in those areas.

The ANG needs to know, over the next few years, what it needs to do "between now and [2025], ... so when we get there, we will be the operational force this country needs with a front-line capability, but also an effective and efficient force used for our role here at home," Wyatt said.

The pitch for National Guard force structure was summarized in a July 2010 white paper authored by McKinley. Unlike the active duty, with its prodigious logistical tail and support costs in terms of services, facilities, benefits, and other expenses, Guardsmen cost a fraction of an active duty military member, until they are placed in paid-duty status. The use of these forces in the last 10 years has been extensive, as many critical capabilities are embedded in the Guard.

The Air Guard operates annually using less than seven percent of the Air Force's budget, according to NGB's 2010 numbers, makes up 19 percent of USAF personnel, and still maintains between 30 and 40 percent of the Air Force's fighter, tanker, and airlift capability.

More importantly, McKinley suggested, as US involvement in Iraq and Afghanistan winds down, America will be looking to reallocate spending, making a ready, accessible, and cost-effective National Guard a part of a solution to balancing national security and fiscal concerns. "Planners and decision-makers must understand how the National Guard can help," he wrote.

Critical to utilizing these efficiencies is examining associate constructs,

missions where active duty airmen are paired with Guardsmen, often on the same equipment.

A new concept emerging from the BRAC round called for “active associate” units, placing active duty airmen in Air Guard units dispersed across the country, working with platforms ranging from airlifters and tankers to the F-22 stealth fighter. In July 2010, the Hawaii ANG’s 154th Wing took delivery of its first F-22s, and the 199th Fighter Squadron became the first Air Guard-led associate Raptor unit, sharing flying and maintenance with the active duty 15th Airlift Wing at Joint Base Pearl Harbor-Hickam.

Classic associate units, in which Guardsmen are assigned to active duty facilities, are also being expanded. The Air Force announced in December that it is aligning elements of the New Mexico ANG’s 150th Wing and the Air Force’s 58th Special Operations Wing at Kirtland AFB, N.M., with the primary mission being flight training for HC/MC-130Ps, HH-60 Pave Hawks, and UH-1s.

Many of these constructs were directed out of BRAC, but only now are the Air Force and Air Guard doing a holistic examination of how successful the efforts have been. A lot of the realignments “did not have intended goals or objectives for those associations, and certainly no metrics for cost or military effectiveness,” Wyatt said.

Just over a year ago, Wyatt noted, Air Force Chief of Staff Gen. Norton A. Schwartz asked the Air Guard to go back and look at some of the arrangements established through BRAC and some identified through the USAF’s old Future Total Force initiatives. The goal is to examine how these constructs are functioning, what military capability they provided, and how cost-effective they were. “We have gone back and started that process with [Air Combat Command] and [Air Mobility Command] and are finding some that are working pretty darn good and providing exactly what they thought they would,” Wyatt said of the progress of the review. “We have found others we have had to tweak a little bit.”

Associate constructs with fighter units at Hill AFB, Utah, and JB Langley, Va., are due for change in the near future.

Some constructs have not been developed fully, such as the “community basing” effort with the Vermont ANG’s 158th FW, which involved the station-

ing of junior active duty airmen in the community of Burlington, Vt., where they received training and mentoring from experienced Air Guard members.

Associations with Air Force Reserve units transitioning from KC-135s to C-130s out of Niagara Falls Arpt./ARS, N.Y., and an arrangement splitting KC-135 operations at Tinker AFB, Okla., between the Oklahoma ANG and the Reserve’s 507th Air Refueling Wing have also undergone some organizational challenges, including funding and manning, but appear to have stabilized and are producing solid mission capable rates for the aircraft.

Guard officials say the restructuring holds great promise in the future, but there remains some significant work to do to address the proper training, equipping, and sustaining of the Air Guard and USAF. Despite the efficiencies inherent in the Guard’s force structure, it continues to be dependent for most development and acquisition matters, and relies heavily on overseas contingency operations funding to pay for manpower mobilization hours.

The Existing Iron

The Guard has the benefit of operating outside of a “Fortress America” approach to our national defense, Wyatt observed, having always operated, lived, and worked from communities, not bases (66 of the Air Guard’s 88 wings are co-located with civilian airfields).

Despite the proliferation of homeland taskings since 9/11, from ASA to disasters, there has been little work done to figure out who foots the bill for these operations, Wyatt said. “DHS is in the homeland defense arena, but is not that old, so many of the funding mechanisms are not plugged in,” he said.

The Guard would love a steady funding stream, but much needs to be done about determining where those funds come from. Budgeting and funding lines must be secured to ensure Guardsmen get the appropriate number of military personnel authorization days each fiscal year, even as overseas deployments are likely to shrink in the coming years.

Scarcity also has implications for existing iron. For the Air Guard’s part, Wyatt sees a need to rebalance assets, or what he refers to as “leveling our fleet” across the components. With the Air Force’s combat air force reduction and BRAC to be concluded, adjustments

are especially needed in the fighter force where most of the more modern fighters are in active duty squadrons.

Historically, the active duty has 24 primary aircraft authorizations in a fighter squadron, whereas a Guard squadron has 18 PAA, Wyatt and others point out. But despite their smaller unit size, years of deployments to Southwest Asia have proved Guard units can handle rotations of 12 of their aircraft fairly handily, Wyatt noted. “There are ways to preserve the life of these units and preserve the experience of these pilots and maintainers ... by doing some fleet leavening across the fleet.”

The concept of utilizing the Guard abroad in place of active duty personnel is gaining traction in other areas. In January, the Air Guard began flying Critical Care Air Transport Team missions from Ramstein AB, Germany, to Southwest Asia and back to Europe or the US, helping to ease the burden of aeromedical evacuation operations on the active duty Air Force. The Air Guard will put at least one CCATT on each rotation flying from Ramstein for the next two years, and is looking to combine cooperation with the Reserve in the effort as well.

On average, the Guardsmen flying and maintaining aircraft are far more experienced in their platform than the average active duty airman (as many Guardsmen are prior service to begin with). It is this experience that makes Guard participation in new missions and in associations with active units so constructive in the long term.

There is a close symbiotic relationship between the active and reserve component when it comes to manpower, and too much poorly thought out tinkering with force structure could lead to unintended consequences. Most importantly, leaders from Wyatt down to heads of individual units share the belief it is not in the long-term best interest of the Air Force and Guard to prematurely close units such as those flying older F-16s, as something more valuable than the aircraft will be lost; the cumulative experience of the pilots, maintainers, and crews could be lost and would be hard to replace.

“A fighter pilot, in my opinion, does not reach [the] peak until about seven or eight years in the cockpit,” Wyatt noted.

“Take a look at how you build a cadre that is experienced across the board. That takes 30 to 40 years. ... If you take that down, I don’t think we can afford to build it back.” ■

An aerial photograph of a desert landscape. A prominent feature is a large, winding river that flows through the terrain. In the background, a city with several tall buildings is visible. The sky is clear, and the overall scene is captured from a high altitude, likely from an aircraft. The text is overlaid on the lower half of the image.

USAF and the

The Air Force is the catalyst for cooperation among Persian Gulf air arms.

By John A. Tirpak, Executive Editor

An F-22 Raptor in 2009 maneuvers during a multinational exercise in the CENTCOM area of responsibility. In Southwest Asia, multilateral exercises are difficult to arrange, but vital.



Gulf

The Air Force today enjoys excellent relations with the air arms of Gulf Cooperation Council nations, with which it partnered 20 years ago to help reverse Saddam Hussein's invasion of Kuwait. These relationships have been critical in securing access and support for subsequent operations in Iraq and Afghanistan.

Because it mentors and brokers a wide range of Gulf airpower associations, USAF has a relationship with the region's Air Chiefs that can provide speedy red-tape cutting when crises erupt, access to air facilities, and myriad forms of cooperation.

The culture of the US Central Command region is "really ... all about personal relationships," said Lt. Gen. Gilmary Michael Hostage III, chief of US Air Forces Central Command. The Gulf Cooperation Council nations—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates—have a framework for multilateral military cooperation.

However, as a practical matter, most of their military activities are bilateral in nature. To organize activities such as multinational exercises, the US often plays the role of coordinator.

"In this region, multilateral is difficult," Hostage observed.

In an interview, Hostage said he is traveling constantly to meet regional air and defense Chiefs, US ambassadors, and country teams—there are 20 nations in CENTCOM's area of responsibility—"to develop a personal relationship so we can work regional issues and bilateral issues with them." Those duties come on top of his responsibilities as the chief of air operations for Operation Enduring Freedom in Afghanistan and Operation New Dawn in Iraq. About 65 percent of his time is spent managing the air war; the rest is partner relations.

In fact, it was partly because of the punishing pace of personal military visits with regional air leaders that Gen. Norton A. Schwartz, Air Force Chief of Staff, split the AFCENT commander job in two in 2009, when Hostage took

over. Previously, the AFCENT boss was also dual-hatted as commander of 9th Air Force, but in order to allow the AFCENT commander enough time to concentrate on running the air war while keeping in close contact with regional allies, Schwartz split off the job of running Stateside 9th Air Force functions.

Once Mideast combat operations wind down, the plan is that the AFCENT air boss and 9th Air Force jobs will be reunited.

"There's a long history ... between the countries, and the different tribes that they've organized into the countries," said Hostage. "There's a lot of residual feeling that makes multilateral difficult. They very much prefer bilateral, both with each other and us."

The collective willingness to engage bilaterally with the US "makes it a little easier to get the quasimultilateral efforts," Hostage explained.

There are a number of exercises that AFCENT helps coordinate, but despite hopes in 1990-91 that the Desert Storm ad hoc coalition might lead to a more



USAF Lt. Gen. Michael Hostage (l), head of AFCENT, and Jordanian Prince Faisal bin Al Hussein observe a live fire demonstration during Falcon Air Meet 2010 at a Jordanian air base. The annual exercise was adjusted in 2010 to be a learning exercise, in part to discourage competitiveness and encourage participation.

formal multilateral military air arrangement, such an organization is still elusive. In a variety of ways, the Air Force serves as a go-between, helping its Gulf air allies train and work together. One typical event is the Falcon Air Meet, held annually in Jordan. It illustrates, however, how “tricky” it can be to keep comity among the participants, Hostage said.

The air meet “initially was a competitive gathering,” Hostage explained, but “in this region ... nobody’s willing to go back home and say they lost ...

to one of their Gulf neighbors. That’s kind of painful.” Because the number of participants was dwindling, “this year [2010] we adjusted the format a bit to be more of a learning exercise.”

The training topic chosen was close air support, and there was good participation by many nations, some from out of the area. Although there were no actual troops on the ground, and Hostage said it was not meant to simulate any particular real-world conflict, procedures for coordinating with ground-based tactical

controllers and other techniques were explained and practiced.

“We pretty much figured the idea of a learning exercise will tend to bring more participants. And they still have a competitive element; people have a chance to show how good they are,” Hostage noted.

Very Sensitive Nations

In regional exercises, the participants “fly missions with each other, units fly together, they talk tactics together, they mission-plan together. So there is interchange.” However, there are not yet any permanent, formal network links between the nations, and the pace of expanding to larger exercises is slow.

About four times a year, regional air forces come together for Iron Falcon, geared toward providing junior pilots with experience in leading mission packages and large operations.

“This is not a weapons school,” Hostage noted, “and it’s not a basic-level exercise. It’s specifically focused on helping a four-ship flight lead become a mission commander, able to lead a large mission package, and it’s getting him up to the level of coordination it

L-r: Two F-16s, one belonging to USAF’s 20th Fighter Wing and one from the Jordanian Air Force, a US Navy F/A-18 Hornet, and a Pakistani Mirage fly in formation over Wadi Rum during Falcon Air Meet 2010, which focused on close air support.



takes to do a multicapability mission,” coordinating electronic support, strikers, etc., “in a coherent fashion.”

Another annual exercise is Eagle Resolve, which Hostage said centers on “consequence management”: helping partner countries prepare “to deal with a crisis or an emerging crisis” stemming from a natural disaster or massive attack. Partner countries take turns hosting the event and choosing a particular aspect of the theme that they would like to explore.

There are no vestiges left of the old Operation Southern Watch arrangements in which US fighters, stationed in Kuwait, Saudi Arabia, and other regional countries would patrol the airspace of Iraq. All the GCC countries and France and Britain still have representatives at Hostage’s combined air and space operations center (CAOC), however.

Gulf partner countries don’t contribute forces to US and coalition combat or support operations in Afghanistan or Iraq, but they do permit the US to use a variety of bases and infrastructure in the region. Hostage said he is not at liberty to discuss the various contributions the partners make—even to the point of being unable to name the location of his forward headquarters in the region, which is otherwise an open secret.

“The nations are very sensitive to being portrayed as aiding or hindering anything that’s going on,” he said. However, relationships with the Gulf nations are good and “to varying degrees, ... they are supportive.”

His chief rule is not to endanger the relationships, achieved through years of building trust and familiarity. No military requirement is allowed to trump that rule, Hostage said.

“I tell them all the time, the relationship we have is far more important to me than some particular operational need, so if there’s something I’m asking that’s going to cause you a problem, tell me, and I’ll find a different way to do what I need to do.”

The benefits of such an approach are many. Hostage said he can pick up a phone and call a friend in charge of another air force and smooth over problems far faster than would be possible if he had to “send a diplomatic note and wait and see if the embassy can get permission for me to talk to the Air Chief.” Likewise, regional Air Chiefs can call him up “and in 30 minutes, I can hop on a plane [and] be



USAF photo by TSgt. Caycee Cook

USAF Lt. Col. David Meyer (standing) briefs Jordanian fighter pilots at Mwaffaq Salti AB, Jordan, during a Falcon Air Meet.

down there in an hour-and-a-half, in his office, and we can work out some issue or problem.”

Ten years ago, the GCC countries were planning to pursue a number of joint air functions, to include a regional, non-US-led combined air and space operations center, a joint fighter weapons school, and even a shared airlift capability, similar to NATO’s fleet of joint AWACS aircraft. None of those initiatives has reached fruition yet, Hostage said.

“There is no regional CAOC, other than mine,” he said, but he hastened to add that each nation has its own AOCs “that are modeled very similar to the way ours is constructed,” and each manages its own air defense.

Scarfig Up Airlift

“We have some pretty robust interchanges with them, showing them how we organize, what a CAOC does, how we organize the command and control of air, and we’re making significant progress with them in that regard.”

For now, the US is helping to manage the “seams” between those areas of air sovereignty, but Hostage believes that, in time, the countries will manage the seams themselves.

A near-term goal is the development of an integrated air and missile defense network in the region.

“Right now, I’m kind of the nucleus of the integrated air and missile defense,” according to Hostage. “And I’m happy to be that, because I’ve got a lot of stuff to protect,” while working with GCC countries to “make a collective

attempt to [develop] that integrated air capability.”

A facility to host the integrated air and missile defense is being built in the UAE now, and “we’re starting to work on a schedule for ... hosting some workshops and exercises with our regional partners.” Officials are not yet prepared to discuss a timetable for standing up the capability.

The joint airlift function fell by the wayside when countries began pursuing their own airlift fleets.

“It would seem to make sense that somewhere down the road,” the GCC countries might pursue a coordinated airlift organization, Hostage said, but for now the countries are looking at their own airlift requirements.

“The Arab culture is very much about helping the poor,” Hostage explained, “and there’s a strong urge on the part of the different GCC nations to reach out and help somebody [who’s] in distress,” such as the victims of the Pacific tsunami or the earthquake in Haiti.

“The lack of organic lift has frustrated this,” because in the immediate aftermath of a crisis, available commercial airlift is “scarfed up” by aid organizations and other countries, so the Gulf nations “have a hard time competing” to hire those assets.

Qatar bought two C-17s in 2009 and has made some “dramatic efforts” responding to the earthquakes in Haiti and Chile, Hostage said. “It’s gotten the interest of a lot of other regional partners, who say, ‘Hey, maybe we need our own organic airlift to send aid elsewhere.’”



Kuwait has made a request to purchase a C-17, as well.

AFCENT is not involved in the provision of weapon systems or even basic military training to Gulf region countries. Those tasks fall under the Defense Security Cooperation Agency. AFCENT's function is to facilitate operational military air cooperation among the nations.

A Steady Partnership

The Gulf nations are in the midst of a long program of modernizing their air equipment, a process exemplified by the recent announcement that Saudi Arabia will buy dozens of the most sophisticated F-15s and upgrade its older Eagles to the same standard. These would be added to the Saudi arsenal of Eurofighter Typhoons and Tornado fighter and attack aircraft.

Saudi Arabia is not alone in fielding aircraft that are, in many cases, among the most advanced versions of their type. The UAE fields the F-16E/F, the most sophisticated variation of the F-16, and better than that flown by the US itself. The UAE is thinking about upgrading its French-built Mirage 2000s to more sophisticated Rafale fighters.

Oman and Bahrain also fly the F-16. Kuwait operates F/A-18s.

Collectively, the Gulf nations will soon operate modern combat air forces far larger than USAF could ever deploy to the region, and by way of comparison, collectively rival the air arms of Britain and Japan.

Asked about the latest Saudi sale, Hostage said the US and Saudi Arabia "have had a very long and productive relationship ... on the order of 30 to 40 years." While the relationship has "waxed and waned in terms of strength

A C-17 from the 437th Airlift Wing at JB Charleston, S.C., overflies Egypt during Bright Star, a multinational airdrop exercise. The Pyramids of Giza are in the distance.

or closeness, ... it's been a very steady relationship." The new sale "I think will just strengthen" relations between the air forces, he said.

Hostage thinks the Saudis will phase out some of its older aircraft from its forces when the new machines arrive.



Photo by Kevin Whitehead/Jetwash Images

A Qatar Air Force C-17 taxis for a test flight in 2009 in Long Beach, Calif. Qatar bought two C-17s and used them to offer aid to Haiti and Chile after massive earthquakes.

“I don’t think they can afford such a huge increase in size, or justify it, really,” if such a culling didn’t take place, he said.

Iran, the most belligerent state in the Middle East, has an assortment of older aircraft received from France, Russia, China, and even the US, dating back to the days of the Shah. Iran has indigenously upgraded many of these older fighters, which include US-made F-4s, F-5s, and F-14s, French Mirage F-1s, and Russian MiG-29s.

According to various reports, mostly from Russian news services, Iran has been negotiating deals to buy new J-10 or F-1C fighters from China and Su-27 fighters from Russia.

Although AFCENT isn’t involved with the transfer of weapons to Gulf region countries, as an ally, the US does talk to GCC countries about their requirements and tries to help them find solutions that truly fit their needs.

For example, Hostage said, the Gulf nations have seen that USAF is “extremely effective” with the use of remotely piloted aircraft, and “all of our partners out here say, ‘Oh, I really want that.’”

The infrastructure required to make an RPA capability successful “is huge, and not cheap,” Hostage said—a point he repeatedly stresses to the Gulf nations.

The satellite and processing, exploitation, and dissemination infrastructure needed for RPAs “is tremendous,” Hostage noted. The partners quickly realize the system is more than just buying a few RPAs. When they realize this, “it can be daunting.”

“They’re all very interested, and right now, they’re not there yet,” with regard to acquiring an RPA capability on the order of a Global Hawk or Reaper, either as individual nations or as a group.

Hostage said that in talking with allies about their hardware needs, “what I harp on all the time is, you start with your requirement. You say, ‘What is the problem I’m trying to solve,’ [then] look for a system that will answer those questions.”

Too many times, he said, “people want to buy the system and then say, ‘How can I use this?’ And it rarely is the right system if they just buy the first shiny thing they see.”

Although the US routes many aircraft through the Middle East every day, it is the International Civil Aviation Organization (ICAO), and not the US or any military organization, that controls Gulf airspace.



USAF photo by SSgt. Michael B. Keller

Jordanian (l) and United Arab Emirates (r) F-16s fly in formation during a multinational exercise in Southwest Asia. The UAE is a member of the Gulf Cooperation Council.

“I obviously fly airplanes in it just like any other nation does. We file flight plans internationally, and then we abide by those flight plans,” Hostage said. The US can also fly through the area under rules of “due regard,” in which it simply looks out for and avoids other air traffic.

But the Persian Gulf is a relatively small body of water, and many nations surround its periphery, so the only “international airspace” is “really a strip down the middle of it,” Hostage noted.

NATO Model Does Not Apply

For combat or combat-support missions, ICAO flight plans take USAF aircraft to the frontier of Iraq or Afghanistan, at which point, “they come under my control,” Hostage said.

Iraq was the threat that brought the other Gulf nations together; indeed, it was fear of being drawn into the Iran-Iraq war that led the GCC to be formed in 1981.

Now that Saddam is gone, however, Hostage said the GCC countries seem to be looking forward to welcoming Iraq into multilateral air exercises once it is equipped to do so.

Although Iraq only has some trainer, surveillance, and cargo aircraft, it has been approved to buy F-16 fighters, which will allow it to perform its own air sovereignty mission in a few years. However, “right now, there’s not much of an Iraqi Air Force to partner with,” Hostage observed.

Iran has not necessarily taken Iraq’s place as the feared regional hegemon binding the Gulf nations and the US

together, Hostage said. “I would not say that there is any particular adversary or threat out there to hold them together. What binds them together is their history, their geographic proximity, and centuries of relationships.”

The NATO model, Hostage said, “doesn’t really apply. ... I would say [the United States is] probably a unifying element drawing them together, more so than a particular adversary.” The presence of the US, he allowed, is “certainly a catalyst” for cooperation.

Even if the US didn’t have a presence in the Gulf, the regional nations would likely “make efforts to work together,” but it would be more bilateral. The US, he said, provides an impetus for multilateral exercises because it simply can’t afford to conduct duplicative exercises separately with each nation—and the GCC states know that.

However, regarding Iran, “just like everybody else in this region, we pay attention” to what it’s doing, Hostage said. While some analysts—notably Anthony H. Cordesman of the Center for Strategic and International Studies—believe that Iran’s non-nuclear military capability is remaining fairly static, “I think you’ll find there are opinions that go in opposite directions from his,” both up and down, Hostage noted.

“Nobody really knows except the Iranians, and they’re not going to tell us.”

The best approach, Hostage said, is probably the one he’s taking: “We’re hoping for the best, planning for the worst.” ■



Nuke Fix, Phase II

It's not just the weapons that were neglected.

By Megan Scully

For years, nuclear modernization was a back-burner issue for both the military and the American public.

Efforts to modernize the nuclear force, its support equipment, and related infrastructure received little attention. A skilled and knowledgeable workforce—once highly sought after and valued during the Cold War—was relegated to the background as the national laboratories began to show serious signs of age.

A confluence of events has now pushed the nation's nuclear inventory and enterprise into the spotlight, exposing problems with crumbling infrastructure. Many proponents of modernizing the nuclear force say the past neglect will require a decade-long investment plan to correct.

The series of problems with nuclear weapons and components in 2006 and 2007 led to renewed focus on the nuclear force and efforts to correct deficiencies affecting the service's nuclear weapons arsenal. This included the activation of Air Force Global Strike Command, dedicated strictly to nuclear matters. The major command has the weighty mission of providing for safe, secure, and effective forces for nuclear deterrence and for global strike, and it now oversees the nation's ICBMs and nuclear-capable bombers.

The State of the Arsenal

As the Air Force was righting its nuclear structures, intense political debate was under way concerning the New Strategic Arms Reduction Treaty

with Russia. The state of the nuclear arsenal and infrastructure dominated the debate as Republicans sought to secure greater long-term commitments from the White House to modernize aging missiles, labs, and other equipment.

Meanwhile, an engineering failure at Wyoming's F. E. Warren Air Force Base in October, which temporarily took a squadron of intercontinental ballistic missiles offline, helped push concerns about the nation's nuclear capabilities even higher.

The Air Force launched an investigation into the matter and stressed the incident was isolated. At no time, officials said, did the Air Force completely lose communications with the missile squadron, which could have been controlled by an airborne command and control platform if necessary.



USAF photos by SSGT. Chad Thompson

son, who served as deputy commander of US Strategic Command in the mid-1990s and supported treaty ratification, called the incident at Warren an “isolated malfunction.” He warned Congress in October against doing “something foolish like not ratify the New START because of this isolated occurrence.”

In the end, the White House won 71 Senate votes to approve New START just before Congress adjourned for Christmas. But the lingering concerns about nuclear modernization—which Republicans hammered throughout the months-long debate on the accord—resulted in an additional \$4.1 billion pledged for nuclear programs. The White House had already laid down a marker for an \$80 billion investment over the next 10 years; the added \$4 billion over

five years came at the insistence of Republicans, many of whom still voted against the treaty.

Arizona Sen. Jon Kyl, the No. 2 Republican in the Senate and his party’s point person on treaty negotiations, cited a litany of concerns in voting against the treaty. But he lauded the Administration’s commitment to modernization funding and stressed debate on the treaty helped bring to light the needs of the aging nuclear force.

“I think as a result of focusing on our nuclear arsenal, which we had to do by looking at this treaty, we also learned that we have a very big challenge in this country,” Kyl said just before the Senate voted on New START. “And fortunately and parallel with the treaty, we worked on this challenge, the issue of how we



Above: A two-man maintenance crew is lowered into a launch training facility at F. E. Warren AFB, Wyo. **Right:** A maintainer from the 90th Missile Maintenance Squadron practices measuring procedures on a Minuteman III training missile. For years, the nuclear force’s aging infrastructure received scant attention.

“The safety and security of the weapons system was never in doubt,” Gen. Carrol H. Chandler, then Air Force vice chief of staff, said in October. “There are things we need to work on, there’s no doubt about that.”

Still, the widely publicized incident occurred at a crucial time for the Obama Administration, as it was trying to sell reluctant Republican senators on New START. Retired Lt. Gen. Arlen D. Jame-



Left: A 47,000-pound missile support system is hoisted out of a launch training facility at Warren. While it's being repaired and refurbished, maintainers will perform corrosion control and other preventive maintenance in the silo. Below: An inert Minuteman III ICBM is lofted into space from Vandenberg AFB, Calif. Minuteman missiles are being upgraded and modernized.

can modernize our nuclear facilities and nuclear force and the delivery vehicles of the triad that would deliver those vehicles.”

Exactly how the money should be spent remains to be seen, with Kyl and others acknowledging the need for flexibility in spending as the needs of the nuclear force become clearer each year. This is a far cry from the situation throughout much of the 1990s and 2000s, however, when nuclear infrastructure suffered from what can charitably be described as benign neglect.

“Nuclear folks felt like the red-headed stepchild” within the Air Force, said Adam B. Lowther, a research professor and analyst at the Air Force Research Institute at Maxwell AFB, Ala., in a recent interview. Airmen “began to buy into this view that ‘we’re not important anymore,’” Lowther explained. The undercurrent was, “we were critical during the Cold War, but now that the Cold War is over, we’re not important anymore.”

The new investment is certainly welcome, but Lowther said it is “tough to say what is most in need because, for the most part, the entire nuclear enterprise is 40 years old or older.”

What is clear, however, is that the list of funding needs for the nuclear force over the next decade will include a lot of support and test equipment—the unglamorous stuff essential to maintaining the arsenal.

At the Air Force Association conference in September 2009, Lt. Gen. Frank G. Klotz, then commander of Air Force Global Strike Command, acknowledged the Air Force has neglected some of those critical pieces of the nuclear enterprise. “Before you can load a bomb on a bomber or place a warhead on top of an ICBM, there is a series of checks of the weapon itself as well as the ...

connections to the platform that all have to be performed by various types of test equipment,” Klotz said. “It’s not a very glamorous part of the business, but it’s an absolutely key and essential aspect of the business, and quite frankly, we have underinvested in that.”

A Positive Trend

Klotz, who retired and handed over Global Strike Command to Lt. Gen. James M. Kowalski in January, said the service was developing a roadmap for the Air Force’s needs for test equipment, as well as loaders, vehicles, and trailers necessary to maintain the bomber and ICBM fleet.

But the pendulum may now be swinging in the other direction, with additional attention being paid to the second- and third-tier pieces of the nuclear arsenal that have gone largely ignored since the end of the Cold War, officials say. “I can see a very positive trend starting to happen out there as far as modernization for those things that ... we perceived [weren’t] sexy,” Brig. Gen. Everett H. Thomas, then commander of the Air Force Nuclear Weapons Center at Kirtland AFB, N.M., said in September 2010.

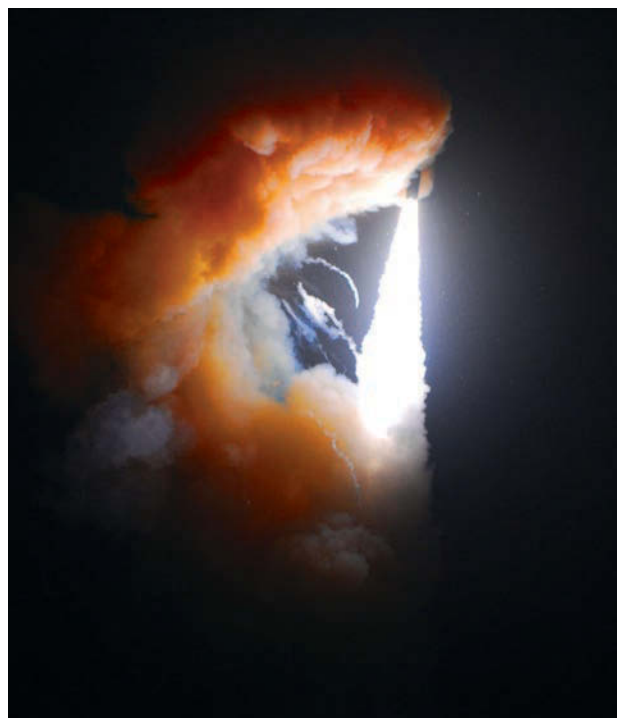
Pointing to Air Force successes, Thomas ticked off an investment of \$8.5 billion to upgrade and mod-

ernize the ICBM arsenal, specifically the Fast-Rising B-Plug Kit security system for the Minuteman III and the new Environmental Control System, an improvement to the missiles’ launch control centers, ensuring electronics and ground support systems are maintained at specified preset temperatures.

But Thomas, now vice commander of Global Strike Command, pointed to a lack of investment in operational test and evaluation, which has led to sustainment issues within the arsenal. Thomas said the Air Force is identifying all the pieces of its nuclear fleet that have been overlooked since the end of the Cold War—a task that will become all the more important as the United States prepares to cut the number of strategic nuclear weapons in its arsenal by about a third to adhere to New START.

“The smaller we get, the more attention we’ve got to pay ... to everything because it all needs to work,” Thomas said.

Another investment area for the military’s nuclear weapons is the decades-old national laboratories and facilities critical to sustaining nuclear weapons. “Everything in the labs themselves was



built for the Manhattan Project and shortly thereafter,” Lowther said. “Everything is old and in need of replacement.”

During the September 2010 AFA conference, Gen. Kevin P. Chilton, then commander of US Strategic Command, did not mince words when he highlighted the poor state of some of the country’s nuclear facilities.

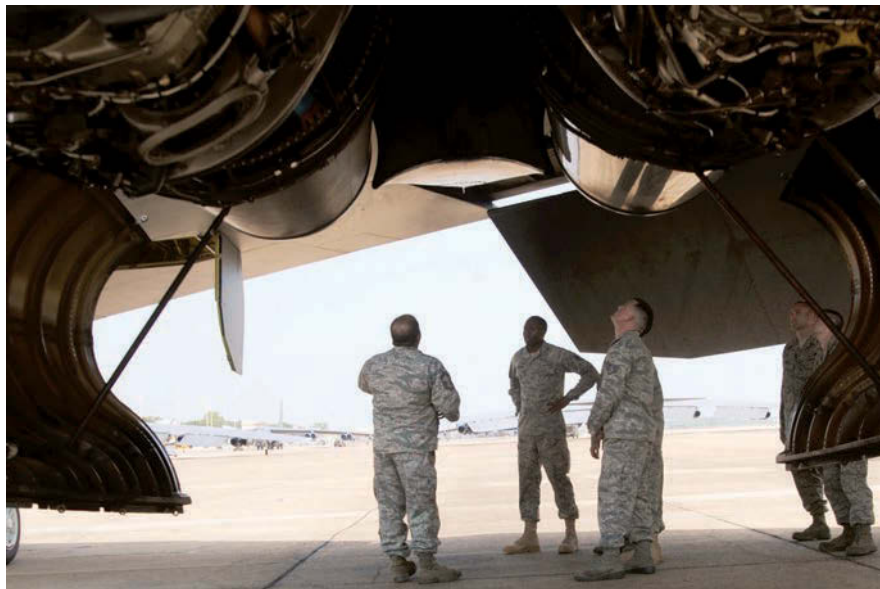
“You would be appalled if you visited Oak Ridge, Tenn., and saw our uranium facility, which was built during the Manhattan Project,” Chilton said. “That’s how old it is.” In addition to Oak Ridge, Chilton said the military must upgrade the Los Alamos National Laboratory in New Mexico, where plutonium research, development, and processing is done. “If you’re going to have a nuclear weapons program, you must have a first-class plutonium and first-class uranium facility to do that,” Chilton said. “That’s just absolutely fundamental.”

The directors of the country’s three national laboratories—George H. Miller of the Lawrence Livermore National Laboratory, Michael R. Anastasio of the Los Alamos National Laboratory, and Paul J. Himmert of Sandia National Laboratories—have all raised concerns about long-term funding for nuclear programs. But in a Dec. 1 letter to the leaders of the Senate Foreign Relations Committee, the lab directors said their concerns have been assuaged by the additional \$4.1 billion added to nuclear investment plans.

The laboratory directors said the additional dollars would “provide adequate support to sustain the safety, security, reliability, and effectiveness of America’s nuclear deterrent within the limit of 1,550 deployed strategic warheads established by the New START treaty with adequate confidence and acceptable risk.” The extra money—which would pay for enhanced surveillance, pensions, facility construction, and other items—“would establish a workable funding level for a balanced program that sustains the science, technology, and engineering base.”

Chilton also sees a side benefit to modernizing labs: It would keep the highly skilled workforce at the aging facilities happy. “If you really want people to perform and do their job right, you take care of them in their workplace,” he said. “You give them quality spaces to work and do their work.”

The workforce itself is in need of investment, with many of the engineers and other workers trained during the Cold War nearing retirement age. With little emphasis placed on the nuclear arsenal for the last two decades, the



USAF photo by SrA. Brittany Y. Bateman

Airmen from the 2nd Maintenance Squadron, Barksdale AFB, La., inspect a B-52 engine. With organizational changes largely complete, USAF is turning its attention to nuclear infrastructure.

military is having difficulty recruiting replacements. Losing too much skill from the workforce without time to properly train a new generation of experts would mean decades of human capital are lost.

Meaningful and Challenging Work

“If you let the expertise and the knowledge go away and all that’s left are the books that they wrote, well, when you go back and look at those books you’ll find out they weren’t written very well because a lot of what they did was in their [heads],” Chilton said. The key, he added, is not only giving them quality workplaces, but also meaningful and challenging work.

Complicating that, Chilton acknowledged, is that the next crop of nuclear scientists will never be allowed to do weapons testing.

“In many respects, we will have a scientific base that has never seen a nuclear test,” Lowther said. “The scientists are aging out.”

With no tests on the horizon, the key to providing scientists with fulfilling work will be funding programs to make weapons safer and more effective and secure, Chilton said. The Nuclear Posture Review, released in 2010, reaffirmed the need for a nuclear deterrent and the sea-air-land triad and may go a long way to ensuring there will be a steady workflow for the next generation of the nuclear workforce.

“It calls for improvements in safety, security, and effectiveness, and it takes no options off the table for consideration by future engineers and scientists in providing what this country needs for future nuclear weapons in our inventory,” Chilton said of the review.

Funding, however, may not be the only solution to sustaining the workforce. The Air Force, Lowther said, needs to change its cultural mindset regarding both the nuclear arsenal and the workforce that modernizes and sustains them.

“During the Cold War, if you worked in the nuclear enterprise, you knew what you were doing was critical to the security of the nation,” he said. “You were devoted to it because you knew how critical it was.” The activation of Global Strike Command and the Administration’s stated commitment to the triad in the Nuclear Posture Review have “gone a long way” to reaffirming the military’s commitment to its nuclear force, Lowther said.

But with the country’s focus on irregular warfare and nonstate enemies in the last 10 years, questions remain about what role nuclear weapons will play in the future of the country’s defense, and how committed the nation will be to sustaining, maintaining, and modernizing them over time.

“A fundamental question, that has not been answered, is how important are [nuclear weapons] to the nation and the existence and survival of the nation,” Lowther concluded. ■

Megan Scully is a national security reporter for National Journal in Washington, D.C. Her most recent article for Air Force Magazine, “Thinking Outside the Wire,” appeared in the August 2010 issue.

Air Force EOD technicians are saving US, Iraqi, and Afghan lives—but at enormous costs to themselves.

Airmen in the Hurt Locker

By Aaron Church, Associate Editor

Improvised explosive devices are the enemy's weapon of choice in Iraq and Afghanistan. To combat the deadly threat posed by IEDs, the Air Force's explosive ordnance disposal career field has been thrust into an unexpectedly central role in today's wars.

Self-described as a "square peg" in an Air Force focused on aircraft, EOD's pre-9/11 combat history centered on clearing bases of unexploded bombs after they came under attack. They were a small, rarely used, and little-known service specialty. Now, combat is the norm and the statistics are telling.

Fourteen EOD airmen have been killed in Iraq and Afghanistan since 2005, making it one of the most hazardous professions in the Air Force. In just five years, the Air Force has awarded more than 70 Purple Hearts to EOD techs, with some airmen earning more than one.

TSgt. Alejandro Rodriguez makes notes during a mission in Afghanistan. EOD airmen in the field today must be infantrymen and forensic detectives as well as bomb technicians.

Operations in Iraq have largely quieted compared to the situation a few years back, but “the scenarios in Afghanistan are a lot more aggressive,” said SSgt. Roger Hughes, an EOD technician with the 20th Civil Engineer Squadron EOD Flight, Shaw AFB, S.C. TSgt. Alejandro Rodriguez, just back from a nine-month tour in Afghanistan, said the Taliban isn’t afraid “to go toe-to-toe with you in a fight.”

Just south of Kabul, in Afghanistan’s Logar province, Rodriguez noted, “troublemaker” villagers in the region kick into high gear every summer, harassing the Army’s nearby combat teams, mining roads, setting ambushes at key choke points, and keeping EOD techs in high demand.

Buried along the roadways, IEDs—ranging from mere plastic bottles with homemade explosives to large artillery shells—are invisible even to Rodriguez’ trained eye, forcing him to rely on hard-earned experience to keep himself, his team, and allied forces alive.

If you’re only looking for IEDs, he said, “you’re going to be surprised.”

EOD teams have to think like the enemy, accounting for every detail of the terrain and situation—bottlenecks, exposed areas, culverts—identifying ideal ambush points, always imagining the worst. This requires intuition and initiative. The only real way to find a device before it finds you, Rodriguez noted, is up close. “If you assume that your vehicles are going to do the work, then unfortunately, ... you’re going to lose a lot of vehicles and possibly get a lot of people hurt,” he said.

Despite a convoy of mine-resistant vehicles, ground-penetrating radar, metal detectors, and robots, success requires leading the convoy on foot. “Dismounts” are the way business is done in Afghanistan.

As the summer fighting season began in Logar province, Rodriguez’ team was tasked to lead a route-clearance package through an area well-known for enemy activity. Little more than a dirt path, the road scarcely left room for a mine-resistant, ambush-protected (MRAP) armored vehicle or Buffalo ordnance disposal vehicle to maneuver.

Turning off the secure road, Rodriguez and the dismount team set to work clearing the embankments, alert for key indicators such as command wires or signs of recent disturbance—the hallmarks of a hidden IED. The vehicles attracted little enemy attention, trundling along at a walking pace. The Buffalo’s job of digging up an explosive charge begins only after EOD

has found and disabled a device. The enemy is clever, has grown accustomed to the patterns and tactics of clearance convoys, and knows full well that the operation depends on the dismount team.

One False Step

As the team approached the road, machine-gun fire erupted from concealed positions.

“They wanted to keep us ... away from the road so that we couldn’t detect those indicators,” Rodriguez said. The enemy slipped away and tried to trick the EOD team into thinking it had the upper hand, then attacked from another direction. It’s a common tactic—“just a constant back and forth harassment.”

Pinned down several times by heavy machine-gun fire, Rodriguez relentlessly pushed onward. Despite the enemy’s efforts, he managed to locate the IED.

As soon as he began disabling the device, a sniper’s bullet rang out, narrowly missing him.

“What I first thought was, ‘Get down. I don’t want to get shot.’” Very much alone,

exposed, and sharing cover with an IED, “you know that just one false step and it could be ‘game over,’” he recalled. “Some guy [is] trying to get a bead on me right now, and I’m not really sure where he’s shooting from.”

Forty-five tense minutes of machine-gun and sniper fire stranded Rodriguez in the open, before a momentary lull permitted a call for air support. An F-15E arrived quickly overhead, making four passes.

“Just the presence of air support is enough,” said Rodriguez. Though the pilot was unable to pinpoint the enemy using the Strike Eagle’s Sniper targeting pod, the thunderous “show of force” sent the insurgents scurrying for cover, buying a transient moment of calm.

Fighter aircraft “are in high demand, so usually they don’t stick around. ... I [had] a small window to get this done,” remembered Rodriguez. Working briskly, he carefully removed the IED’s initiator, signaling the Buffalo to unearth the explosive charge with its rake-like mechanical arm. As the



SSgt. Roger Hughes is helped into an 85-pound bomb disposal suit during training at Shaw AFB, S.C. With incessant deployments, EOD shops are in constant flux, meaning home duties and training take the hit.



The arm on a Buffalo mine-protected vehicle reaches for a suspected IED. Buffalos can make it safer to unearth an IED but cannot replace a trained EOD technician's ability to distinguish hazards on foot.

Buffalo gingerly lowered the charge to the side of the road, a tracked robot scuttled over, expertly manipulated by the airmen, and deftly disabled the bomb.

We “got it pulled out of the road, got it destroyed, and then we were able to press on. ... [It was] really stressful, ... but we had to just make the best we could out of it,” recalled Rodriguez. “As soon as the birds left, they started shooting again, but we were cleared.”

While EOD makes great demands on airmen and extracts a heavy toll, the job satisfaction and camaraderie are exceptional.

“We are an extremely close-knit community,” said SSgt. Eric Farley of the 22nd Civil Engineer Squadron EOD Flight, McConnell AFB, Kan. Placing your life in the hands of a teammate demands absolute trust, he noted.



Widely disparate ranks must be able to talk to each other as equals on the team, he said, because “each person’s life is dependent upon the other. ... The newest guy can see things” that a higher-ranking veteran might not.

Combat only accentuates the bond, added SSgt. Beau Chastain, 22nd CES EOD equipment noncommissioned-officer-in-charge, at McConnell. “You form a bond with people that is unlike any other. ... By the time you’re done, you’re basically all brothers.”

With three deployments to Iraq, two to Afghanistan, and one to Saudi Arabia between them, Farley and Chastain are the norm within the EOD community. For most in their shop, if they haven’t already earned an Air Force Combat

Action Medal, “then we’ve qualified for it, and the paperwork just hasn’t been submitted yet,” Chastain noted.

More satisfying still is witnessing the gratitude of people whose lives have been snatched from destruction.

“You get to see immediate results,” Chastain said, adding that in Iraq, entire families are often targeted by insurgents. “When you go and save the guy’s home and everything he owns ... from being destroyed, you get to see firsthand the thanks that they have for you. ... You can look the guys in the face that you just helped to save—it’s instantly rewarding.”

Above: Rodriguez wades through an irrigation canal in Afghanistan’s Logar province, following thin copper wires stretching between a trigger device and a well-hidden IED. Left: Hughes surveys the rubble-strewn crater left from a detonation near Tikrit, Iraq.



Rodriguez and an armor-clad fellow EOD technician assess options for destroying an explosive device during a long-range reconnaissance sweep in Afghanistan.

Airmen have occasionally even rescued entire villages from situations where insurgents have “land-mined every road going in and out,” charging villagers a toll to enter or leave, Farley said.

“If you’re able to take care of all that and open those roads back up and get commerce moving again in and out of towns,” or get ground forces under way again after they were stopped dead in their tracks by an IED, it’s “a rewarding feeling,” Farley said. “You show up, do your job, and the mission continues,” Chastain added.

Minute Men

The volume of IEDs encountered in Iraq and Afghanistan quickly overwhelmed DOD and coalition capacity to protect ground forces, demanding that the Air Force help fill the gap. Instantly, EOD’s role blossomed from support to one of front-line combat as well. In the ground-based battle, “the pilots aren’t on the front lines,” Chastain pointed out. This has demanded a revolution of thinking as well as training.

“It’s pretty ridiculous to talk now about what we were doing back in the day,” said Hughes, the EOD technician from Shaw who had just returned from a third tour in Iraq.

“In ’05, we had just basic Humvees with a steel plate welded to the door and an ATV rack on the back with our robot. We looked like the Beverly Hillbillies running around Iraq disarming IEDs.”

He said, “It took our people a little bit to realize what was going on out there.”

When attached to an Army or Marine unit, “[if] it’s their job to go through neighborhoods kicking in doors, well, guess where we’re going?” Chastain said.

Austere forward operating bases without firing distance of the enemy—rather

than improved air bases with their associated comforts and support services—are the new reality for EOD teams.

“From leaving our post and on our way to an IED, we are infantry. Once we arrive, we’re EOD techs,” Chastain stressed.

The EODs have a daunting menu of skills to master. They must be familiar with the idiosyncrasies of many nations’ munitions; must know how to safely disarm a bomb; must have extensive knowledge of electronics; and must have combat infantry skills such as small-squad tactics and mountain warfare—and apply it all often in the course of a single mission.

EOD airmen have had to swiftly adapt their training to seamlessly integrate with Army, Marine Corps, or even British or Canadian security teams in the field. What other units train for months to be able to do, EOD must do in minutes.

From the time airmen are briefed by a security team to the time they walk out the door as an element of that team may be as little as 15 minutes. Thanks to improved combat training and experience, the EODs understand the ground forces’ briefings and can help verify a plan for the mission, Hughes explained, asserting that now, “we don’t have to be just EOD guys; we can be a productive member of that group.”

While training has come a long way, the change in mission has also demanded a change in mindset, with EODs taking much more responsibility for their own safety and the safety of the elements they are embedded with. EOD airmen have had to learn this point the hard way, Rodriguez said.

“We were showing up and assuming the Army knew what they were doing, ... and we were taken on some wild rides. ... We’d say, ‘Take us to that IED,’ ... and before you know it, you arrive on

EOD Airmen Killed in Action in Iraq and Afghanistan

TSgt. Walter M. Moss Jr.
March 29, 2006
Baghdad, Iraq

MSgt. Brad A. Clemmons
Aug. 21, 2006
Taji, Iraq

Capt. Kermit O. Evans Sr.
Dec. 3, 2006
Al Anbar province, Iraq

SrA. Elizabeth A. Loncki
Jan. 7, 2007
Baghdad, Iraq

SrA. Daniel B. Miller Jr.
Jan. 7, 2007
Baghdad, Iraq

TSgt. Timothy R. Weiner
Jan. 7, 2007
Baghdad, Iraq

SrA. William N. Newman
June 7, 2007
Balad, Iraq

TSgt. Anthony L. Capra
April 9, 2008
Golden Hills, Iraq

TSgt. Phillip A. Myers
April 4, 2009
Helmand province, Afghanistan

SSgt. Bryan D. Berky
Sept. 12, 2009
Bala Baluk, Afghanistan

TSgt. Anthony C. Campbell Jr.
Dec. 15, 2009
Helmand province, Afghanistan

TSgt. Adam K. Ginett
Jan. 19, 2010
Kandahar, Afghanistan

SrA. Michael J. Buras
Sept. 21, 2010
Kandahar, Afghanistan

SrA. Daniel J. Johnson
Oct. 5, 2010
Kandahar, Afghanistan

scene and you get out of your truck, and you have an IED staring you right in the face, because they ‘took you to the IED,’” he said. “We had to get smart real quick,” not only integrating into the ground force team but learning to quickly assess whether Army or Marine Corps units are prepared to provide security for an IED removal.



Airmen in Afghanistan lead a route-clearance package on foot, searching for the merest hint of disturbance which may indicate the presence of a hidden IED.

EOD teams have had to become much shrewder. “The attitude has changed. We’re no longer, ‘Hey, I’m EOD. I’m special. You have to take care of me.’ [We’re] an integrated part of that maneuver element, ... and we assume the responsibility for the safety of the unit as well,” Rodriguez observed.

While the work is rewarding, the pace is relentless and the transitions frequent. At McConnell, the cycle is simply a way of life.

“I’ve adjusted to, every nine months, ... packing my stuff and leaving for another six-month deployment,” Farley explained, admitting that “at that nine-month mark, I start to get a little antsy.”

As soon as the EOD techs return from theater, “we’re beginning the mental preparation for the next deployment. It’s a never-ending roller coaster ... of ups and downs,” Chastain added.

The transition between deployment and home station is a strain. In theater, every day is stressful and the tempo frenetic. Checking every street sign, vehicle, and culvert for explosives and scrambling to catch enough sleep to go back out the next day is simply the deployed way of life. “You do that for six months straight and then you come home, and you go from that to boring,” Chastain said.

Repeated every six to nine months, the cycle is jarring in the extreme, and the pace has its price. The return to “normal” life can be tricky. Resetting the mindset from combat to business as usual—only to head almost right back out to combat—is a tremendous challenge. “To me personally, it’s always more nerve-racking coming home than it is leaving to go, because I ... know what to expect when [I] go on a deployment,” Chastain noted.

“Coming home, after six months in an austere environment,” to a wife and small children is something EOD techs are often unprepared for.

“Basically, they have to get to know you again, and you have to get to know them again, because you’re both different people” from when the deployment began.

“If they would give us more civilians to relieve some of that Stateside burden” between deployments, Chastain noted, airmen could do a better job of ramping up for deployments and recovering afterward. A few civilians—two each joining EOD at Shaw and McConnell—have been hired to bring some measure of continuity to the units, which are in constant flux. While most EOD airmen cannot imagine doing any other job, they readily admit that they, their families, and the EOD force as a whole are reaching the point of exhaustion.

Reaching a Critical Point

Retention of senior noncommissioned officers is flagging. That, and combat fatigue among airmen and lack of operational continuity at home stations, are taking their toll on the force.

“Right now, our master sergeant manning level is right around 40 percent,” noted Capt. Dustin Kozlowsky, EOD flight commander at McConnell. The Air Force is so desperate for EOD techs that “we’re not allowed to cross-train into another specialty,” Chastain added. Although the Air Force has attempted to train more airmen into the career field, EOD school is extremely difficult, with an attrition rate as high as 75 percent for enlisted candidates, and 25 percent for officers. For obvious reasons, airmen cannot be rushed through the school; a graduate not fully qualified is potentially disastrous.

“I think the answer is probably not to do that,” Chastain said dryly.

Air Force EODs jumped in to relieve the combat strain on their EOD brethren in the Army and Marine Corps, but they still have their regular Stateside missions, which they take up as soon as they get home. Those include clearing live-fire training ranges and performing protective sweeps for US and foreign heads of state, missions that can come at the rate of “a dozen per week,” Farley said.

With roughly 900 of the total 940 EOD personnel deployed within the last year, EOD techs at home station are stretched too thinly to meet forcewide needs. Some tasks, such as range clearance, simply fall by the wayside.

Combat stress compounds the pressure on EOD techs. “Some of these guys need some serious help. ... I’m talking now PTSD [post-traumatic stress disorder] or traumatic brain injury” incurred by airmen who have literally lived through explosions, said Rodriguez.

“Our career field right now is reaching a critical point. We have guys that have been put in extremely difficult situations downrange,” and “we need to just do the best we can as an Air Force to alleviate the strain on these guys at home station, so they can have some of that time to reintegrate with their families before they have to just go right back out the door again and do it all over again,” he asserted.

“We’ve sustained and we’ve managed to do the job, [not] because things are great, but it’s just because it’s in our character,” Rodriguez said. The Air Force has taken steps to begin helping EOD specialists. It developed a postdeployment course specifically for EOD airmen. “It did help a lot of individuals to get some things off of their chests,” said Chastain, who went through the course.

In the end, “it just end[ed] up being the camaraderie, just to sit around and talk to one another and share experience we’d gone through and reflect on the good times as opposed to the bad,” Chastain said. Farley said an EOD deployment is a “double-edged sword.” While the techs are pumped up to do the job they’re trained for, and “that, I think I could say, we all enjoy doing, ... if you’re headed out the door and you don’t have that apprehension, if you’re not scared, then there’s something wrong with you,” he said.

EOD is a family, “at least for me,” Hughes admitted. “I’m away from home a lot” leaving behind a wife and little girl, and “it’s getting harder and harder. ... But having these guys around makes it a little easier once we get there.” ■


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B-52 bombers from the 5th Bomb Wing, Minot AFB, N.D., form up over Wyoming during a training mission.

Minot's 5th Bomb Wing keeps ancient B-52s combat ready.



Never-ending Stratofortress

Photography by Ted Carlson

After nearly 50 years of service—the last one was delivered in 1962—the Air Force’s B-52H Stratofortresses continue to serve as a critical element of the nation’s long-range strike force. Minot Air Force Base in North Dakota is one of two homes for the B-52s. The other is Barksdale AFB, La. The only USAF bomber still capable of carrying nuclear cruise missiles, the B-52’s size allows it to haul a massive ordnance load. 111 At Minot (l-r), TSgt. Kyle Bergstedt, TSgt. Jamie Mikus, TSgt. Shane Martin, and SrA. Ethan Payne download an octet of AGM-86B Air Launched Cruise Missiles from a B-52’s bomb bay. With retirement of the stealthy AGM-129, the 1980s-vintage AGM-86 is the only nuclear cruise missile in USAF service. 121 A1C Jorge Miranda



works on a B-52 of the 69th Bomb Squadron. 131 A B-52H, engines turning, holds short for takeoff. 141 SrA. Alvyna Euta-Filo, SrA. John Williams, and A1C Justin Lowery of the 5th Operational Support Squadron at Minot prepare crew helmets in the life support shop.





11 A 5th Bomb Wing B-52 co-pilot's view of refueling from a KC-135 tanker, somewhere over Montana. Aerial refueling is a critical aspect of any mission for the fuel-ravenous B-52, and must be practiced constantly. *12* Payne (l) and Martin download AGM-86Bs from a Common Strategic Rotary Launcher. *13* B-52s await a mission on the Minot ramp. Note the tail of one of the behemoths extend-

ing outside a hangar. *14* Bristling with antennas, satellite communication domes, electro-optical systems, and electronic warfare blisters, a B-52 banks hard over Montana during a training mission. Wrinkles in the fuselage are a design feature to accommodate flex in the wings, which can be as much as a dozen feet, depending on the maneuver and the amount of fuel in the wings. *15* B-52 co-pilot

Capt. Brandon Wheeler maintains formation with another B-52H during a training mission over Montana.

111 Minot's fire emergency services flight puts out a burning simulated B-52 carcass during a "Broken Arrow" exercise. Broken Arrow refers to an accident involving nuclear weapons. **121** The mock B-52 is made of sturdy stuff and has "burned" countless times. **131** Fire trucks attack the mock burning BUFF with water. **141** Security forces SrA. Brent Thielemier (l) and SrA. Stephen Burt scramble to secure the perimeter around a simulated Broken Arrow during an exercise at Minot. **151** A Lightning targeting pod on a B-52 wing is one of many new tools fitted to the bombers in the last decade. The pod permits the aircraft to designate targets for laser guided bombs. **161** Only the B-52 can carry the 750-pound M117 general-purpose bomb.



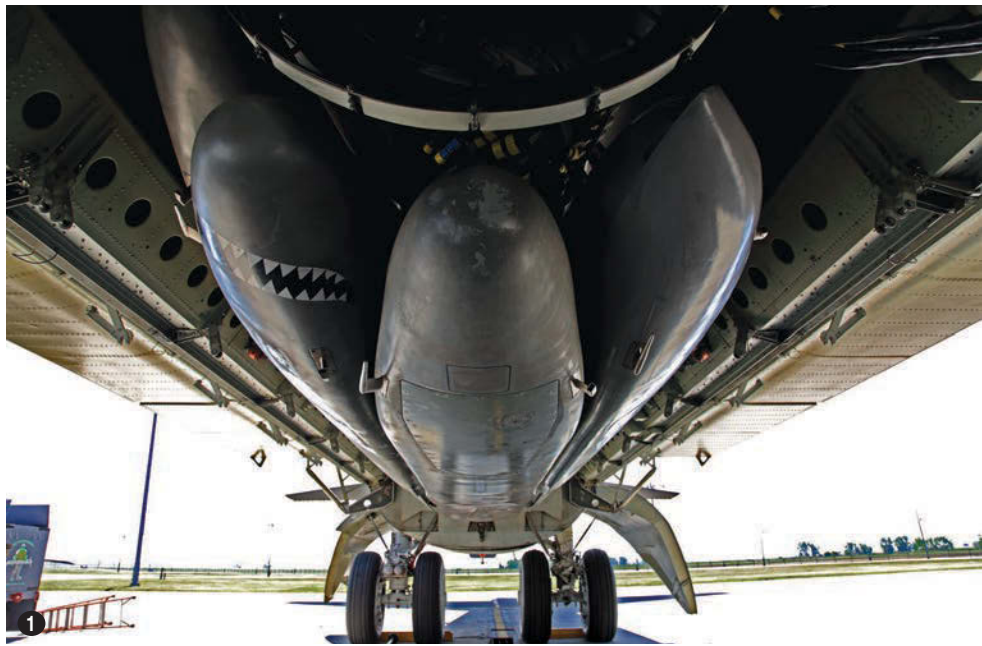


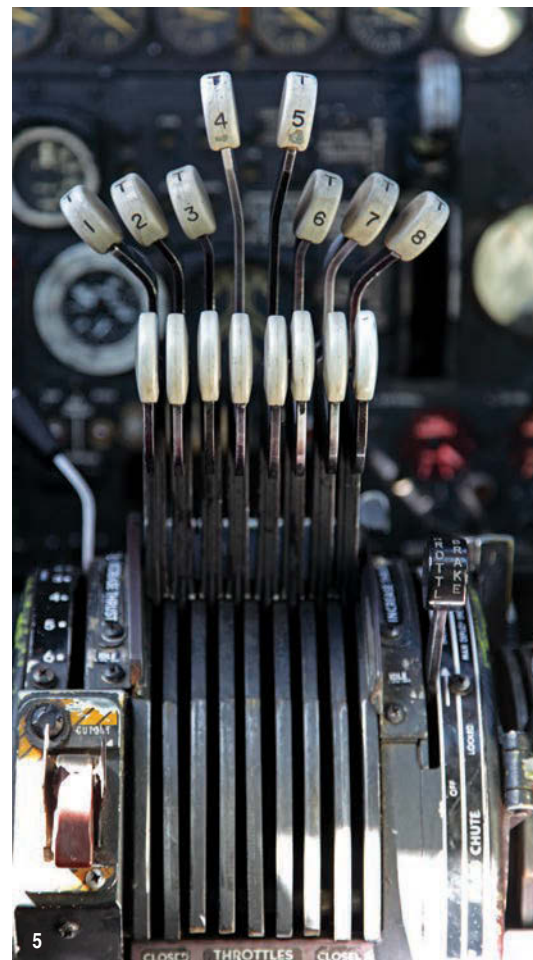
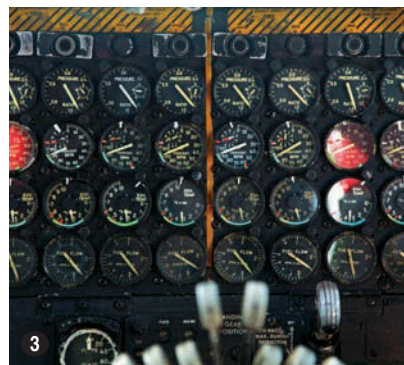
11 A B-52H rests on the ramp at Minot. **12** Payne readies a rotary launcher rack of AGM-86Bs. **13** A lineup of B-52s, seemingly freshly painted. **14** A UH-1N Huey bearing security forces patrols the flight line. All aspects of nuclear weapons operations—especially security—have received a huge

boost in the last few years. **15** “Beauty shot” of a Stratofortress cruising over Montana. The B-52 has always flown in a slightly nose-down attitude, giving it a sinister, shark-like look in the air. Originally built to house a crew member and a cannon, the extended tail now carries an array of electronic

warfare systems meant to protect the airplane from ground and missile attack.

11| A rotary launcher full of nuclear AGM-86Bs fills a B-52's bomb bay. The B-52 can deliver the widest range of weapons in the Air Force inventory. Many of their training versions are pictured on this page. 12| A submarine-killer sea mine designed to be dropped from a BUFF. 13| One of the B-52's newest weapons is the stealthy, conventional AGM-158 Joint Air-to-Surface Standoff Missile, or JASSM. 14| CBU-103 Wind-Corrected Munitions Dispenser cluster bombs. 15| Designed to get at deeply buried targets, the 5,000-pound GBU-28 bunker buster was hastily developed during the 1991 Gulf War. 16| The GBU-38 500-pound version of the satellite guided Joint Direct Attack Munition. 17| The ADM-160 Miniature Air Launched Decoy, meant to fool enemy radars; it can also protect fighters operating the same area.





11 Looking like something out of “Antiques Roadshow” and attesting to the B-52’s 50-year-plus history, this co-pilot’s control yoke has weathered countless missions but gets the job done. **12** Security forces personnel, including SrA. Alex Ballard (foreground), in position during a Broken Arrow exercise at Minot. **13** A far cry from today’s “glass cockpit” controls, steam gauges giving

status on each of the B-52’s eight engines still dominate the aircraft’s “front office.” **14** Mikus (background) and Bergstedt position a loader to take an ALCM out of a B-52’s bomb bay. **15** The well-worn throttles of the B-52—the only jet aircraft flying today with eight engines—belie long and honorable service, but many years of duty still lie ahead. Air Force plans call for retaining the

B-52 as a “standoff” platform for another 30 years, meaning the grandchildren of today’s B-52 pilots could fly the same machines as front-line combat aircraft—not as air show or museum pieces. ■

The Long Road to Missile Defense

Hitting a bullet with a bullet is hard, so layered defenses are the way to go.

By James Kitfield

Nearly since the dawn of the nuclear age, America has sought a reliable defense against the world's most fearsome weapons: nuclear-armed ballistic missiles. In recent months, the continued determination and resiliency behind that quest, and the elusiveness of the goal, were on clear display.

At its Lisbon Summit on Nov. 19, the NATO Alliance agreed for the first time to cooperate with the US in building a missile defense system to protect Europe, consistent with the Obama Administration's proposed Phased Adaptive Approach. This system will center on improvements in space-based sensors and land-based radars, and on upgrades of the Navy's existing Aegis Ballistic Missile Defense System.

On Dec. 15, the Pentagon's Missile Defense Agency tested the "hit-to-kill" capability of the Ground-Based Midcourse Defense (GMD) system. For this test, an intermediate-range ballistic missile target was launched from Kwajalein Atoll, in the Republic of the Marshall Islands, with Air Force

A Ground-Based Interceptor is launched from Vandenberg AFB, Calif., during a test in late January 2010.

USAF photo by A1C Anglina Davis

early warning satellites and a Sea-Based X-Band Radar successfully acquiring and tracking the missile. A long-range interceptor missile then launched from Vandenberg AFB, Calif. The Exoatmospheric Kill Vehicle deployed into space, but failed to intercept the target. This latest test of the GMD system was a repeat of a January 2010 exercise, which was also unsuccessful.

Then, in late December, the Obama Administration's signature nonproliferation initiative nearly floundered over the concerns of Senate Republicans that it might inhibit future US missile defenses. Ultimately the New START was ratified by the Senate 71 to 26, but only after Republicans insisted on rewriting the resolution of ratification accompanying the treaty to reaffirm US plans to build a missile defense system in Europe over Russian objections.

Meanwhile in early January, the speaker of Iran's Parliament, Ali Larijani, publicly declared his country's plans to boost its program to field more advanced short- and medium-range missiles, even as Iranian leaders continue to ignore international pressure to abandon a suspected nuclear weapons program.

All of those recent milestones reveal fundamental truths about the decades-long US effort to field a viable missile

defense system to protect the homeland, allies, and deployed military forces. "Hitting a bullet with a bullet" on a global scale and in the compressed timeline necessary to intercept a missile in flight remains one of the most daunting and expensive challenges the United States has ever undertaken.

A Growing Threat

The Obama Administration's proposal and NATO's adoption of a Phased Adaptive Approach built around upgrades of existing technology promises to accelerate the effort to field a layered missile defense system capable of attacking short- and intermediate-range ballistic missiles in all phases of flight, a key goal of the Defense Department's Missile Defense Agency.

Perhaps most importantly, the continued determination of rogue nations such as Iran and North Korea to pursue nuclear weapons and long-range missiles proves threats are rapidly evolving. The need to counter rogue nations with viable missile defenses is becoming more urgent. The need to defend against the limited arsenals of those countries, however, is also more achievable than realizing President Reagan's vision of a Cold War shield against the Soviet Union's thousands of ICBMs.

"Although the US and Russia are reducing their strategic arsenals, North Korea and Iran remain on a dangerous nuclear path," said Air Force Gen. Kevin P. Chilton, then head of US Strategic Command, the lead combatant command for missile defense integration and advocacy.

Testifying before Congress last year, Chilton noted that Iran's successful February 2009 satellite launch and North Korea's similar attempt a few months later moved those countries a step closer to acquiring ICBM capability that could threaten much larger areas of the world.

"The recently completed [Ballistic Missile Defense Review] notes the growing threat of ballistic missiles as they become more flexible, mobile, survivable, reliable, and accurate from greater ranges," testified Chilton, who retired in February. "Countering the growing desire among many states for such cost-effective weapons and symbols of national power requires sustained and carefully designed missile defense investments."

Developing the "layered architecture" of a Ballistic Missile Defense System that can target ballistic missiles in all phases of their flight, anywhere US interests are threatened, requires

In August, Iran test-fired its 29-foot-long Fateh ballistic missile. Iran has announced intentions to boost its missile program.



Photo by Vahid Reza Alayi via usknowiran.blogspot.com

what MDA calls a “complex system of elements.” Key nodes include space-based sensors and ground- and sea-based radars for launch detection and missile tracking; ground- and sea-based interceptor missiles for destroying ballistic missiles in flight; and perhaps most importantly, an integrated command and control battle management and communications network acting as a central nervous system, constantly testing the synapses that link sensors, radars, and interceptor missiles and components from all the individual armed services.

“The Ballistic Missile Defense System is in some ways an almost uniquely joint enterprise, with the Pentagon’s Missile Defense Agency interfacing with the major combatant commands, all of the armed services, and various joint functional component commands to bring all of their capabilities together behind the single mission of missile defense,” said Col. John Kress, chief of the missile warning, missile defense, and surveillance operations division at Air Force Space Command. “I can’t think of another military enterprise of a comparable scale and degree of joint interoperability.”

Early Warning Evolution

Indeed, to understand the critical role the Air Force plays as the “eyes and ears” in that complex system and throughout its operations, you have to look to the eastern scrub plain of Colorado. On the outskirts of Colorado Springs are Peterson and Schriever Air Force Bases, home to Air Force Space Command, the Missile Defense Agency’s Missile Defense Integration and Operations Center, and US Strategic Command’s Joint Functional Component Command for Integrated Missile Defense. Colorado Springs is also home to US Northern Command, the North American Aerospace Defense Command, and the Cheyenne Mountain Air Force Station, making it as close to a solar plexus for the Ballistic Missile Defense System as exists in any single location.

During the Cold War, the missile warning mission was primarily conducted by 1,200 men and women who toiled in the subterranean city burrowed into Cheyenne Mountain. They routinely prepared for an ICBM attack in an underground complex protected by 27-ton concrete and steel blast doors, floating on a bed of more than 1,000 steel springs, the better to

How an Intercept Would Work

To understand the “complex system of elements” the Missile Defense Agency is constructing to provide a layered defense against missile attack, consider a hypothetical Iranian missile attack on Europe or the United States sometime in the foreseeable future.

Immediately upon launch, the missile will be detected by state-of-the-art infrared sensors aboard the Air Force’s constellation of SBIRS and STSS satellites, and by SPY-1 radars aboard Navy Aegis ballistic missile defense cruisers stationed in the Persian Gulf.

Early detection is critical, because missiles are easiest to detect and most vulnerable in the initial “boost phase” of flight, when missile exhaust is bright and hot and no countermeasure decoys have deployed. The boost phase “window” for engagement closes in five minutes or less, meaning interceptors must be stationed relatively close by.

That’s one reason MDA is increasing the number of Aegis ballistic missile defense cruisers and destroyers to 38 by Fiscal 2015, and focusing on major block upgrades to increase the range and capability of its Standard Missile-3 interceptors. If an Iranian weapon is a short- or intermediate-range missile aimed at installations in Europe and it reaches the midcourse phase of its flight, by 2018, Aegis Ashore interceptor batteries stationed in Romania and Poland will target it.

An ICBM targeting the US will coast in space for as long as 20 minutes in its midcourse phase of flight. During this time, it will be tracked by an advanced network of sensors and radars, including the Air Force’s SBIRS constellation and a Sea-Based X-Band Radar.

The largest X-band radar in the world, the mobile Sea-Based X-Band Radar can provide precise tracking of target missiles of all ranges, and discriminate between actual missiles and countermeasure decoys. This information will then be fed into the ground-based command, control, battle management, and communications system, which will launch interceptors from bases in Alaska and California.

The last chance to intercept the Iranian missile will come in its terminal phase, once it re-enters the atmosphere. A short- or medium-range missile in terminal descent might run a phalanx of interceptors, including the Army’s Terminal High Altitude Area Defense (THAAD), which is now being fielded; the Army’s Patriot Advanced Capability-3 (PAC-3), already deployed worldwide; and the Aegis Sea-Based Terminal Defense System using the SM-2 Block IV missile.

The vision behind this complex, multilayered defense system is that the whole is greater than the sum of its many parts.

cushion them from a potential thermonuclear blast.

Since the end of the Cold War, the operations center had focused on the more modest threat of a single missile or handful of missiles launched from North Korea and targeting the United States. During frequent drills, AFSPC’s constellation of Defense Support Program early warning satellites detect a missile launch from their geosynchronous orbit 22,000 miles above Earth, using infrared sensors to detect heat from the missile and booster plumes against the cool of the Earth’s background. This data is cross-referenced with a global network of US ground-based radars, including AFSPC’s Ballistic Missile Early Warning System.

After double-checking data and estimating the missile’s flight time and likely impact point, the Cheyenne Mountain operators practice communicating the warning over redundant

communications lines to the Pentagon, White House, and US Strategic Command. In fact, practically the only thing the operations center couldn’t do during the roughly 28 minutes it would take a North Korean ICBM to reach the United States is to take any action to stop it.

The Ballistic Missile Defense System now being developed and fielded by MDA is designed to fill that critical gap in defensive capability.

Much of the C2 work once conducted at Cheyenne has now migrated to MDA’s Missile Defense Integration and Operations Center and Strategic Command’s Joint Functional Component Command for Integrated Missile Defense. Both synchronize global US missile defense operations.

Air Force Space Command’s role as the backbone of the early warning and tracking system, however, has not changed dramatically since the Cold

War. “From our perspective, we still bring to the table global observation and early warning of missile launch, and then we feed that information into the broader missile defense architecture,” said Kress. Although all of the services operate sensors that feed into the broader BMDS, he notes the Air Force system of DSP satellites and ground-based radars still provides the broadest coverage of potential long-range missile launches.

Critical Constellation

“While DSP satellites are a Cold War system, they have been upgraded over the years to better detect the launch of smaller, shorter range missiles, though they have some limitations in that regard in terms of ‘scan rate’ and infrared spectrum,” said Kress. “That’s why our primary focus is to transition from the DSP to SBIRS [Space Based Infrared System] as soon as possible. ... SBIRS will have much better capability in terms of detecting shorter and intermediate-range missiles, and in tracking all missiles more precisely, hopefully right up until the point of intercept.”

Like a number of elements of the BMDS, however, the SBIRS program has been beset by delays, technological problems, and cost overruns. The program was restructured by MDA, for instance, with a lower tier constellation of SBIRS satellite reconfigured as the Space Tracking and Surveillance System. The STSS program launched two demonstrator satellites in 2009 to provide proof of concept. The higher altitude constellation of proposed SBIRS satellites has yet to launch into geosynchronous orbit.

“Sustainment of our early warning radars and fielding of the ... SBIRS geosynchronous constellation are essential to maintaining timely threat warning and attribution,” said

Chilton in testimony last year. “However, though SBIRS geostationary orbit was originally programmed to launch in 2002 as a replacement for DSP, we have not yet launched a single SBIRS satellite. ... [So] we face ongoing challenges to sustaining our missile warning constellation’s long-term health. The SBIRS geostationary orbit satellite constellation is critical to any missile defense architecture.”

Not only is the BMDS designed to give the United States multiple chances to detect, track, and intercept enemy missiles, it will also sow doubt in the mind of any future adversary calculating the chances of a successful attack versus the costs of retaliation. The greater the doubt, the more the calculus is tipped toward deterrence.

“A basic fundamental ... about missile defense is [that] it’s not a foolproof shield,” said Army Lt. Gen. Patrick J. O’Reilly, director of the MDA, at a symposium



US Navy photo

A Standard Missile-3 is launched from the cruiser Lake Erie during a joint MDA and Navy test. The SM-3 successfully intercepted a threat target minutes later.

last year. “But the more layers you add, the much better effectiveness you have. ... There is not one single system out there that would provide the type of protection that I think any of us would be satisfied with. But when you combine systems, you get to a very high level of protection.”

If the United States were to become involved in a regional war in the future, he said, a viable missile defense could prevent the conflict from escalating into a strategic conflict by deterring missile attack.

It’s a “fact that the psychological and political objectives of deterring opponents, and reassuring allies, are really built on the precepts that you have a physical and credible deterrence against the use of ballistic missiles,” O’Reilly said. ■

James Kitfield is the defense correspondent for National Journal in Washington, D.C. His most recent article for Air Force Magazine, “Rethinking the QDR,” appeared in the October 2010 issue.

USAF photo



Technicians work on a SBIRS satellite. The constellation has yet to be launched into geosynchronous orbit.

For decades, airmen across Europe stood ready to launch their nuclear-armed fighters against Warsaw Pact targets.

Victor Alert

By Rebecca Grant



For decades in the Cold War, the North Atlantic Treaty Organization depended on fighters with tactical nuclear weapons. Navy carrier-based attack aircraft provided the first tactical nuclear forces. Then the US Air Force put nuclear-capable F-84s on alert in England in 1952. Over the decades, Quick Reaction Alert forces supported shifting concepts of NATO strategy from the forward strategy of the early 1950s to flexible response of the 1980s.

“Theater nuclear forces fill what would otherwise be a critical gap between strategic deterrent and conventional forces,” noted USAF Col. David L. Nichols in a 1976 article

for *Air University Review*. Keeping fighters with nuclear weapons ready to launch was not without its difficulties—or controversies. Over the years, thousands of pilots and a handful of very prominent aircraft from the F-84 to the F-15E would learn the rigors of a mission that became known as Victor Alert.

The main reason for arming short-range fighters with nuclear weapons was to provide more firepower for NATO.

The job of positioning nuclear weapons in quick reaction range fell first to B-29 detachments in England. But the Truman Administration was forced to change this strategy after Stalin’s Soviet Union detonated its own atomic bomb in 1949. Nuclear weapons in Communist

hands led to all-out preparation for a serious defense of Europe.

In the spring of 1950, a report from the Office of Secretary of the Army Gordon Gray argued for “a fundamental and immediate change in emphasis based on realization that strategic bombing will not hold Western Europe or defeat Russia.” As a matter of urgency, the US must prepare to defend “on a line as far east as possible” and to push a counteroffensive to repel Soviet attack.

In Washington, the term was a “forward strategy” for NATO. With the Korean War under way, the North Atlantic Council approved the forward strategy for NATO in late September 1950. Tactical nuclear weapons were essential to the strategy.



Photo by Bruce Aro

Under questioning from Sen. J. William Fulbright in early 1951, NATO's first supreme allied commander, Europe, Gen. Dwight D. Eisenhower, dispelled any mystery about the willingness of American forces to use nuclear weapons.

"To my mind, the use of the atomic bomb would be on this basis: Does it advantage me, or does it not, when I get into a war? Now, ... if I thought the net was on my side, I would use it instantly," Eisenhower said. "The United States is not going to declare war or conduct an aggressive cam-

Top: An F-105 lands at Moron AB, Spain, in 1964. Right: An F-105 in an alert shelter. F-105s were purpose-built for the nuclear mission.



USAF photo

A zero-length launch of an F-100D. Note the "special weapon shape" under the left wing. The F-100 took on the nuclear mission from the F-84.

paign. It is merely going to defend itself. ... I believe in using what we have in defending ourselves."

Eisenhower's war plans called for 50 divisions and plenty of nuclear-armed fighters to hold massed Soviet armies in what he called a "bottleneck" across Europe. With this posture, the US would be committed, but the Soviets would

know NATO meant only to defend, not attack.

The job of tactical nuclear weapons was to provide targeting options in Eastern Europe and make it too risky for the Soviets to concentrate conventional forces and firepower, as low altitude airbursts of nuclear weapons could decimate them.



Fighters with nuclear weapons instantly became a hinge of credibility in NATO's ability to deter Soviet attack. Of course, the catch was aircraft carrying those tactical nuclear weapons had to be ready at a moment's notice. NATO could not rely on attack aircraft launched from carriers in the Mediterranean and Baltic regions.

USAF responded by pairing fighters and nuclear weapons in a mission known under many names. Quick Reaction Alert, or QRA, was favored by analysts.

To pilots and crews, the mission was Victor Alert.

F-84s were already a staple of USAF force structure when the decision to modify the F-84G for the nuclear mission came down in late 1950.

The job of preparing the first USAF tactical nuclear fighters in Europe fell to the 20th Fighter Wing. In November 1951, the wing moved to Langley AFB, Va., transitioning to F-84Gs, and in 1952, the wing was ready. The wing deployed aircraft to Great Britain, with crews trained for both nuclear and conventional missions.

The Mk 7 nuclear weapon was purpose-built for the new mission. The so-called "30-inch nuclear bomb" was a breakthrough in its own right. At just 1,680 pounds, it was far lighter than the 10,000-pound devices designed for bombers of the late 1940s.

Still, it was a tight fit aboard an F-84. Lacking ground clearance when hung under its fighter, the Mk 7 had a lower fin stowed in a retracted position on the ground, which extended once the fighter was airborne.

The Mk 7 had a yield of about one kiloton—considerably less than the

15-kiloton device detonated at Hiroshima. Low yields soothed doctrinal concerns in two ways. First, it was thought NATO ground forces would not be hampered by such low-yield bursts. In turn, the ability to maneuver ground and air forces on a battlefield after low-yield detonations increased the credibility of the arsenal.

Delivery techniques were another matter. This was no straight, level run borrowed from B-29s. In the days before digital cockpits, accuracy depended on the skills of pilots and some startling tactics.

Toss Bombing

F-84Gs equipped for the delivery of nuclear weapons used the Low-Altitude Bombing System, where the aircraft would approach its target at low altitude, pull up sharply, toss its nuclear bomb, then loop and fly back in the opposite direction to escape the nuclear blast. Regular practice was the only way to keep pilots up to speed on the maneuver.

After the F-84s, next to take on the mission was the F-100. "The F-100 was powerful enough to carry one of the recently miniaturized fission weapons," recalled onetime fighter pilot and astronaut Buzz Aldrin in his 1989 book *Men From Earth*. Aldrin remembered, too, "the tense monotony of sitting nuclear alert, with our planes fully fueled at the end of the ramp, each with a streamlined nuclear weapon slung beneath its left wing."

Another young pilot among those flying F-100s in Europe at the peak of the Cold War was Charles A. Horner, the future commander of the Desert Storm air campaign.

He recalled the rigors of the nuclear alert mission. To remain qualified for the nuclear alert, pilots had to drop a certain number of practice bombs every six months and certify on their target. They also had to describe to a board how the weapon worked, and talk through their mission and the command and control procedures. This included who could release them to go on the mission and what arming procedures had to be used.

The Super Sabre's speed made it a natural for an over-the-shoulder delivery technique where the bomb was released with the aircraft's nose pointing up. The dummy nuclear weapon separated from the fighter, soared upward, until its weight turned it, nose down, to plunge toward the target.

Even in the 1950s, tactical nuclear aircraft were not without controversy. In 1959, France demanded all US nuclear weapons and delivery aircraft vacate French soil. The 49th Tactical Fighter Wing moved its nuclear alert F-100s to Spangdahlem Air Base in West Germany. However, the concept was so vital NATO allies also invested in forces for Quick Reaction Alert.

However, while France went its own way, other NATO air forces adopted tactical nuclear capability to supplement the Alliance's firepower. "The West German Luftwaffe and other NATO air forces are building up a huge fleet of F-104G Starfighters, and the American tactical air forces in Europe are heavily committed to the F-100 and F-105," noted Leonard Beaton in an article for the *New Scientist* in May 1962. "Such aircraft are probably the main tactical nuclear weapon carriers of the day, but being an old-fashioned arm, they attract less attention," Beaton surmised.

By the 1960s, the nuclear mission was standard and pilots were flying an aircraft purpose-built for it, the F-105 Thunderchief.

The "Thud" gained glory in its exploits in combat over Vietnam. However, when Republic Aviation started its program for the F-105 nuclear fighter-bomber in 1951, the idea was to replace the F-84 with a faster fighter specifically designed to be a tactical nuclear workhorse. The first prototype of the F-105 flew in 1955 and USAF took deliveries of production aircraft beginning in 1958.

Key to the design of the F-105 was the 15-foot-long internal weapons bay for a nuclear bomb. Its Pratt and Whit-

DOE photo



An F-84 carries a 30-inch nuclear weapon. The newly miniaturized nukes weighed just 1,680 pounds, far lighter than the weapons designed to be carried on bombers.

ney J75 engine gave it an impressive 26,500 pounds of thrust.

Speed was a Thud virtue. In 1959, an F-105B flown by Lt. Gen. Joseph Moore set a world speed record and claimed the prestigious Bendix Trophy. “Nothing in the world could outrun her at low altitude,” praised F-105 pilot Don Henry.

Bases like Osan in South Korea and on Okinawa in Japan also became prime sites for F-105s on nuclear alert. Rotating squadrons of F-105s provided quick reaction at Osan. Their targets included locations in North Korea, China, and the Soviet Union. “My target was a North Korean airfield. I studied that same target for three years,” recalled former USAF Capt. Charles G. Hofelich in an October 2010 interview with the *Charlotte Sun* newspaper of Port Charlotte, Fla. Time on alert was called “the pad” and pilots grew accustomed to the 72-hour alert cycles. Hofelich, who was stationed on Okinawa, had few qualms about it. “I’d rather be in the air delivering a nuclear bomb than receiving one,” he said.

American pilots and NATO allies were not the only ones mastering tactical nuclear procedures. Beginning with the Su-7, the Soviet Union equipped its Frontal Aviation (tactical air force) fighters with nuclear bombs, too.

As both East and West piled up nuclear arsenals, the tension between the Quick Reaction Alert forces ratcheted up. By the late 1970s, the US had 1,000 aircraft—not including USAF B-52s—capable of carrying tactical nuclear weapons. As many as 324 F-4s and 156 F-111s were in Western Europe, while two Navy carriers added nuclear-capable A-6s and A-7s on the flanks.

A 1977 report from the Congressional Budget Office elaborated on the new pressures. “NATO must be seen to have the capability and determination to use these forces if necessary,” said the CBO. Enough NATO theater nuclear weapons must be able to survive a Soviet attack, and be able to threaten an appropriate response, CBO added.

Secretary of Defense Harold Brown left no doubt the nuclear fighter bases in the West were targets for Soviet attack. “We would expect them to try, at the outset of an attack, to hit targets such as command centers, nuclear storage sites, airfields supporting nuclear delivery aircraft,” Brown testified in 1979.

This meant NATO’s nuclear fighters—now primarily the F-111 and F-4—had to get off their airfields fast.

McPeak’s Life on Victor Alert

In 1962, Capt. Tony McPeak was pulling Victor Alert in the F-100 at RAF Station Woodbridge in England.

“My first Victor Alert (VA) target is the airfield at Peenemünde, on the Baltic—the site of Germany’s rocket-development effort during World War II and, at the moment, home station for an East German fighter regiment,” Merrill A. McPeak, who went on to become Air Force Chief of Staff, writes in *The Aerial View*, a forthcoming book.

“We keep a bulky target folder, which includes all these details, locked in a safe at the VA facility. In the event of a launch order, we’ll grab this folder and take it with us as we run to the aircraft. But at night or in bad weather, an F-100 pilot would find it quite impossible to give much attention to maps, target photographs, checklists, and the like. Incapable of sustaining anything longer than momentary hands-off flight, the plane requires constant attention. In theory, if you memorized every detail of the planned flight, you could concentrate on flying the aircraft and just might find the target. At least, that’s the premise.

“The target folder also contains a Moshe Dayan-style eye patch. As we strap in and crank up the airplane, we’re supposed to put the patch on under our crash helmet, covering one eye. It’s tough enough navigating with two eyes but, inbound to the target, nuclear bombs will be going off all around us, with a real risk of flash blindness. Using the patch, we’ll protect one eye, giving us two shots at getting there. ...

“All aircrews must participate in the so-called Human Reliability Program, a documentation nightmare with enough tricky paperwork to guarantee technical noncompliance. It’s supposed to ensure the mental and psychological fitness of anyone with access to nuclear weapons. ...

“We all drink too much and many are uncivilized to the point of clinical certifiability,” McPeak continues.

“None of this is disqualifying under the HRP. Paradoxically, were we to admit any (quite sensible) reservations about the benefits of launching an F-100 into the night and gloom to make one-eyed vertical delivery maneuvers over a designated ground zero, we’d be debarred and removed from the rolls.”

The F-111 wings in England in the 1970s were tasked with quickly launching up to 60 aircraft under certain war plans. F-111s could carry multiple B61 warheads.

The B61 was an external weapon designed in the 1960s to withstand the stress of fighter maneuvers such as supersonic flight, low-level ingress, and pop-ups prior to weapons release. During exercises, as many as three squadrons of F-111s had to be started from carts at once. Black clouds of smoke rose over the airfield as the F-111s taxied at 15-second launch intervals.

A Changing Strategic Context

Of course, fighters weren’t the only nuclear platforms. By the 1970s, NATO bristled with a vast array of tactical nuclear weapons. Systems included the Nike Hercules air defense missile, Honest John surface-to-surface missile, 155 mm and eight-inch nuclear howitzer shells, anti-submarine warfare weapons, plus nuclear land mines and dual-capable aircraft gravity bombs. It all added up to what NATO strategists called “flexible response.”

Yet by the 1970s, new questions emerged about the tactics of nuclear fighters. The sheer number of fighters on Quick Reaction Alert made analysts and diplomats nervous. A 1974 Brookings Institution book advocated terminating Quick Reaction Alert, “which many analysts believe increases the possibility of a nuclear exchange because systems kept on QRA constitute a standing invitation to pre-emption.”

The reaction from the Warsaw Pact proved Victor Alert must have been working: Soviet negotiators expressed great interest in limiting nuclear-capable tactical aircraft as arms control talks got under way in the 1970s.

With new Ground Launched Cruise Missiles in development, strategists, too, debated the continuing role for Quick Reaction Alert. Ultimately, NATO would not back away from the flexibility offered by QRA.

“A strong argument can be made that the USAF merits a ‘well done’ for this mission, particularly if one bases that evaluation on the ambiguous metric of deterred enemy attacks,” wrote Lt. Col. Richard L. Hodgkinson in a 1981 article



for *Air University Review*. Hodgkinson cited the new questions about Quick Reaction Alert.

The strategic context for NATO was changing.

Tactics, doctrine, and equipment put the emphasis on strengthening conventional forces in the 1980s. High-level talk ran to the possibility of fighting a war without use of nuclear weapons.

In the end, the high-level debate on theater forces in nuclear strategy had little impact on USAF airmen. They were still entrusted with the alert mission. From 1982 onward, the new F-16 picked up additional duties as a nuclear fighter-bomber. F-16 squadrons with a nuclear mission were known as “triple doc” squadrons since they also maintained proficiency in air-to-air and conventional air-to-ground missions. These F-16s sat Victor Alert at bases including Ramstein Air Base in Germany.

Under NATO’s quick response mandates, two aircraft from each squadron in a wing of three squadrons might be on alert, with B61s loaded, at all times. The aircrews had to demonstrate they could take off within 15 minutes of an alert order.

The fighter wings also trained for air defense and conventional attack roles. Aircrews preferred the weekend alert missions—so as not to miss regular flying during the week. The rules allowed alert aircrew to move about on base and even dine at the officers club, as long as they could get back to

the aircraft and airborne in less than 15 minutes.

The F-16s on Victor Alert exercised the capability in two ways. First was the scramble, under firm rules. Pilots scrambled into the cockpit, powered up the aircraft, and copied down the targeting message sent from headquarters.

The firm rule was never to taxi with the nuclear weapons loaded. Usually a security forces member or vehicle blocked the jet aircraft in its shelter just to be sure. Everything about a Victor Alert scramble was intense, from the security forces with sidearms to the live ammunition on the F-16s. A single mistake could cause the entire fighter wing to be decertified.

As Long as There Are Nukes

After the scramble, there was still a mission profile to fly. Weapons loaders removed the nuclear weapons and security forces returned them to storage. Once the weapons were secured, pilots would return to fly the nuclear mission profile—without the weapons loaded.

One refinement was the tasking of selective response aircraft.

Under the selective response mission, fighters would have retaliatory targets to hit after a Soviet attack. These small, selective nuclear strikes were envisioned

An F-111 takes off for a mission over West Germany. The F-111s could carry multiple B61 tactical nuclear bombs.

in hopes of deterring escalation to all-out nuclear exchange.

As the Cold War entered its last decade, the alert culture was still deeply embedded in the tactical forces providing extended deterrence. Even a minor failure led to the immediate firing of the wing commander.


The mission continued. In 1988, USAF began work on new software to certify the F-15E to carry nuclear weapons. Ultimately, nuclear-capable F-15Es joined the 48th Wing at RAF Lakenheath in England.

Tactical nuclear weapons for premier fighters remain a source of military strength even in the changed and expanded NATO of the 21st century. US Air Forces in Europe pilots no longer sit Victor Alert. However, F-16s and F-15Es do retain the ability to move back to an alert posture and arm up with nuclear weapons if necessary.

In time, the F-35 will take over the role. As Secretary of State Hillary Rodham Clinton said in April last year, “We should recognize that as long as nuclear weapons exist, NATO will remain a nuclear alliance.” ■

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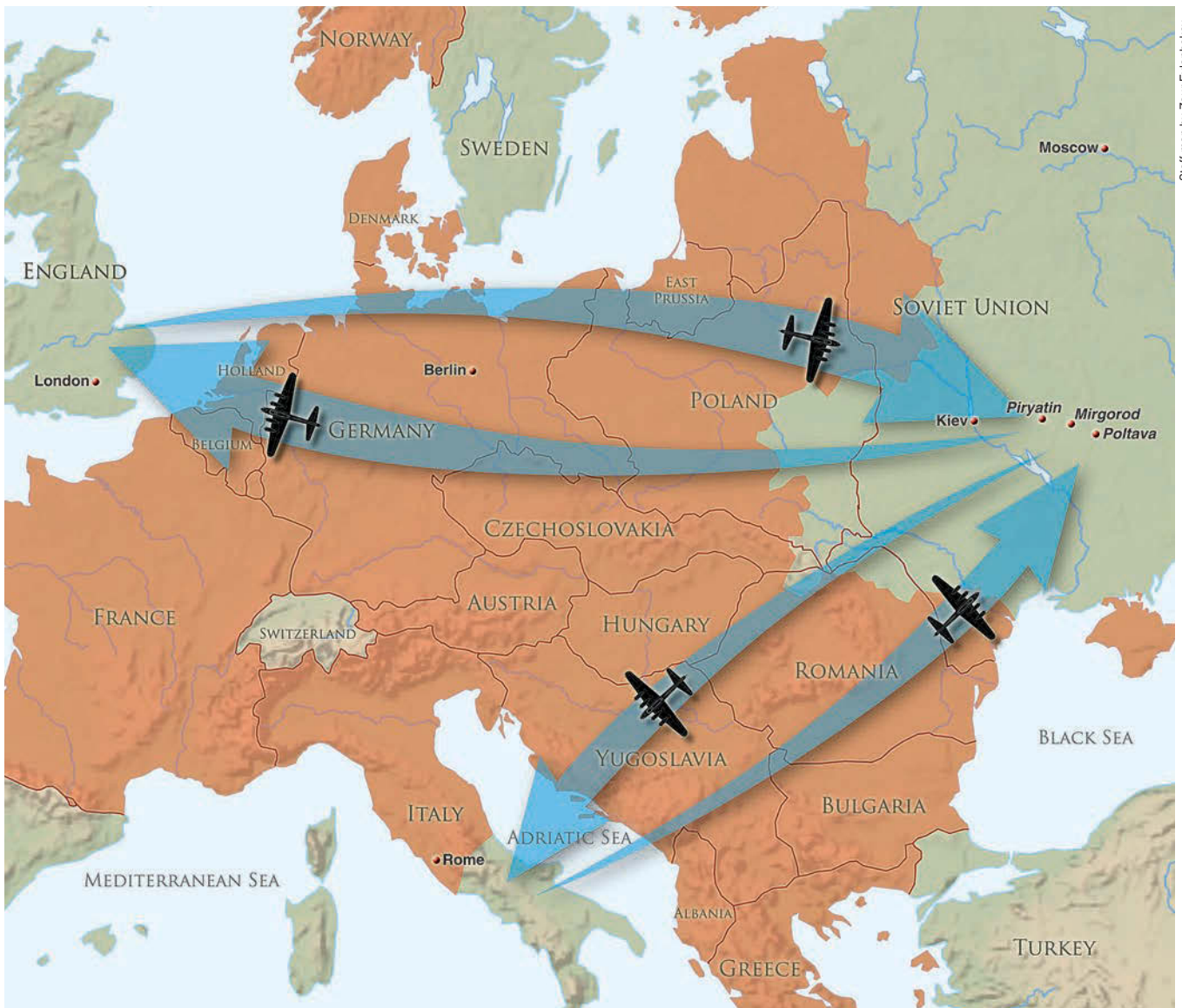
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Staff map by Zaur Eylanbekov

In the fall of 1943, the Germans moved many of their armament plants eastward, out of convenient range for Allied bombers flying from England. In order to bring the plants under attack, Gen. Henry H. “Hap” Arnold, commander of the Army Air Forces, proposed “shuttle bombing”—staging US aircraft into and out of airfields on the Russian front, which was much closer to targets in eastern Germany and Poland.

If B-17s could land at bases in Soviet territory instead of making the long round trip back to England or Italy, they could reach what would otherwise be the most distant targets. They could fly additional missions while deployed to the Russian bases and strike still more hard-to-reach targets on the flight home.

Arnold hoped the shuttle bombing would force the dispersal of German fighters, ease the fighter threat over western Europe, and draw Luftwaffe units away from Normandy before the



The Poltava Debacle

By John T. Correll

The US would stage B-17s in the Soviet Union, to strike targets deep in German territory. It sounded like a good idea.

impending D-Day invasion. In October 1943, Arnold secured approval from the Combined Chiefs of Staff to pursue the idea. The British agreed to cooperate but declined to take part, regarding it as little more than a stunt.

President Franklin D. Roosevelt was enthusiastic about the project and proposed it to Soviet leader Joseph Stalin at the Big Three conference in Tehran in November.

W. Averell Harriman, US ambassador to the Soviet Union, and Maj. Gen. John R. Deane, chief of the US

military mission in Moscow, continued the negotiations.

Stalin was reluctant. He was by nature suspicious and distrusting, and as Harriman pointed out, "We have to realize that the establishment within the country of armed forces of a foreign nation under their own command has never before been permitted to my knowledge in the history of Russia, and there are many inhibitions to break down."

Stalin approved the use of Russian bases "in principle," but working out the details with the Soviet bureaucracy was a slow and tedious process. The shuttle bombing operation, code-named "Frantic," did not begin until June 1944.

The Hidden Agenda

However, there was considerably more than that to the story. Bombing German industrial targets was not the only US objective in Operation Frantic, and not even the most important one. The main goals were of a more political nature.

Roosevelt fervently wanted to build a cooperative relationship with the Soviet Union. In the summer of 1943, Stalin accused the Allies of not doing their part in the war effort and failing to follow through on establishing a second front in France. A major motive for the shuttle bombing was "the desire to demonstrate to the Russians how eager the Americans

were to wage war on the German enemy in every possible way," said the official AAF history of the war.

Arnold hoped that Operation Frantic would be a first step toward use of Soviet bases elsewhere, notably in Siberia, from which US bombers would be able to reach targets in Japan. The Soviets employed their airpower to support the Red Army but they put little stock in strategic bombing. If the shuttle missions were successful, they might help change the Soviet assessment of bombers and lead to better cooperation.

The United States poured massive amounts of equipment, war materiel, and supplies into the USSR through Lend Lease, but in dealings with the Soviets, the compromises usually went one way: The Americans gave in to whatever the Soviets insisted on.

"The President favored what might be called a two-phased approach to the Soviets," said historian Lloyd C. Gardner. "It was his belief that the crucial transition period after the war should be used to build trust among the Big Three. As that trust grew, presumably, the tendency to act unilaterally would fade away of itself. Whatever had to be conceded to reassure Stalin during the war would be redeemed when the transition to a more open world was complete. Admittedly, this was all quite vague in Roosevelt's mind."

Once again in Operation Frantic, the Americans had misjudged Stalin and the Russians. "Soviet Russia had a deep distrust of the United States and had no intention of collaborating during or after World War II except in those instances in which the Soviet Union would benefit," said Glenn B. Infield, who recounted in *The Poltava Affair* the problems and warning signs ignored or underestimated by the Americans in their determination to make the operation work.

Bases in Ukraine

The Soviets permitted the Americans to use three airfields in Ukraine. The one closest to the battle front, Piryatin, was about 100 miles east of Kiev. Mirgorod was 50 miles beyond that, and it was 50 further on to Poltava.

Piryatin, being the westernmost of the bases, was the location for the US fighters, which did not have as much range as the bombers. Poltava was the main base for the B-17s, as well as joint Soviet-American headquarters throughout the operation. The bombers used Mirgorod as well.

Lt. Gen. Carl A. Spaatz, commander of US Strategic Air Forces in Europe, was in charge of the operation. Rotational



A Soviet sentry guards remains of two B-17s at Poltava. Forty-three B-17s were totally destroyed and 26 damaged by the Germans during the June 22, 1944, raid.



B-17s from the 97th and 99th Bomb Group land at Amendola Airfield, Italy, after the first shuttle bombing raid. In the foreground, a C-35 waits to take Lt. Gen. Ira Eaker back to Ukraine.

aircraft and aircrews would be drawn from Eighth Air Force in Britain and Fifteenth Air Force in Italy. USSTAF Eastern Command was set up at Poltava to run the Russian end of things. The Russians would allow Eastern Command no more than 1,200 permanent party personnel. Maj. Gen. Robert L. Walsh took command of Eastern Command in June, reporting to Deane in Moscow.

There was considerable work to do. The Germans had left the bases in ruins when they retreated the previous September. All of the necessary facilities, including hangars and control towers, had to be built. Most of the permanent party and all of the shuttle crews would be housed in tents.

At Poltava, one runway was 3,300 feet, the other 1,900 feet. B-17s needed runways at least a mile long. There was no time to construct hard-top runways so mats of pierced-steel planking were laid down instead. The Americans provided the planking and the Soviets contributed the labor, much of which was performed, to the amazement of the Americans, by women.

Everything, including high-octane gasoline, vehicles, most rations, and 12,393 tons of pierced-steel planking, had to be shipped in, either by air through Tehran or by ship to Murmansk and south from there by rail. The Soviets supplied meat and fresh vegetables. In a stipulation that would prove to be critical, the Russians would not allow US fighters to perform air base defense. The three airfields would be defended by Soviet anti-aircraft batteries and Yak-9 fighters.

Frantic Joe

Much had changed in the six months it took to get Operation Frantic organized and started. The Red Army advanced faster than expected, and by June was surging through the Ukraine and pushing the Germans back into Poland and Romania. That left the shuttle bases farther from the front and reduced their operational value. The Russians, more confident of victory than before, were less willing to have foreign forces based in their territory, especially in the politically unstable Ukraine.

The first mission was named “Frantic Joe.” Spaatz had intended that Eighth Air Force would fly it. The most lucrative targets were on the way from England to the Ukraine, but with the D-Day invasion imminent, Spaatz assigned the mission to Fifteenth Air Force in Italy and chose Lt. Gen. Ira C. Eaker, commander of Mediterranean Allied Air Forces, to lead it in person.

Eaker wanted Frantic Joe to bomb aircraft plants in Latvia and Poland, which American aircraft could not ordinarily reach, but the Russians would not clear those targets. Eaker had to settle for striking a railway yard in Hungary, as close to Italy as it was to Russia. It was not a particularly important target, but it was all that the Russians would approve.

Frantic Joe launched from Italy the morning of June 2 with 130 B-17s and 69 P-51 escort fighters. Eaker flew as copilot on one of the B-17s and led the bombers into Poltava and Mirgorod after a seven-hour flight. The fighters landed at Piryatin.

Eaker was greeted in Ukraine by a host of senior Soviet officials as well as by Harriman and Deane. The welcome was warm and duly recorded by about 20 US, British, and Russian war correspondents who were there taking notes and pictures. The arrival got worldwide publicity, which had a mixed effect. Stalin was not pleased with all the stories about how the Americans were helping him win the war in the east.

Soon after landing, Eaker flew to Moscow, where the reception and discussions lasted until 4 a.m. Eaker spent 10 days in Russia, and the D-Day invasion began while the Frantic Joe contingent was in-country. Spaatz cabled Eaker to stay in Russia for a few more days as a threat to the German rear and perhaps draw some airpower away from Normandy. On June 6, US aircraft flying from the Ukraine bases attacked an airfield in Romania. Eaker led the task force back to Italy on June 11, bombing an airfield in northeastern Romania en route.

Frantic Joe was regarded as a big success. The mission had “enormous immediate and long-term importance,” said James Parton, Eaker’s aide and Fifteenth Air Force historian, who accompanied Eaker on Frantic Joe. “For the immediate, it opened a third air front for the strategic bombardment of German war industries; for the longer future, it was America’s most dramatic effort to establish a complete, trusting relationship with Russia.”

Unfortunately, Frantic Joe was also the high point of the entire operation.

Fissures, already present but unseen or disregarded, would soon tear the shuttle bombing partnership apart and call into question the initial wisdom of it. After that first Frantic mission, all of the bomber operations were flown by Eighth Air Force, although Fifteenth Air Force provided some of the fighters for subsequent missions.

Disaster at Poltava

The second mission, known as Frantic II, took off for Ukraine June 21, led by one of the stars of Eighth Air Force, Col. Archie J. Old Jr.

From the departure point off the English coast, it was 1,554 miles to Poltava, so the B-17s used auxiliary "Tokyo tanks," which gave them considerably greater range with their combat loads. The task force, which consisted of 114 B-17s, and 70 P-51s, bombed an oil plant south of Berlin on the way East.

Beyond Warsaw, the Americans noticed a single-engine German fighter keeping pace with them. It ducked into the clouds when the P-51s went after it. It was a lone Me-109, and it had already reported the position of the bombers to the Luftwaffe. An He-177 reconnaissance aircraft followed the B-17s into Poltava and took pictures. The Russians would not allow the US fighters at Piryatin to intercept it.

The reconnaissance film was soon delivered to the Luftwaffe base at Minsk, where the Germans had sent medium bombers, He-111s and Ju-88s, to await the next US shuttle mission to Russia. They took off for Poltava at 8:45 p.m., and were joined en route by Me-109 and FW-190 fighters. As they crossed the Russian lines, they encountered several Yak fighters, shot one down, and chased the others away.

At 12:30 a.m. on June 22, the first German airplane swept over Poltava, dropping flares to illuminate the field. Close behind came the strike force of 150 bombers. The attack lasted for almost two hours, unhampered by anything resembling an air defense. The Luftwaffe destroyed 43 of the B-17s on the ramp and damaged another 26. Fifteen P-51s and assorted Russian aircraft were destroyed as well. The German bombs ignited 450,000 gallons of high-octane fuel, which had been brought to Poltava with grievous effort. Most of the munitions in the bomb dump were also lost. The Russians would not clear US fighters to take off and attack the Germans.

"Russian anti-aircraft and fighter defenses failed miserably," Deane said. "Their anti-aircraft batteries fired 28,000



Maj. Gen. Robert Walsh (r, with cigarette) listens to a mission report at Poltava, as Capt. Henry Ware (c), a speaker of Russian on Maj. Gen. John Deane's staff, interprets.

rounds of medium and heavy shells assisted by searchlights without bringing down a single German airplane. There were supposed to be 40 Yaks on hand as night fighters, but only four or five of them got off the ground."

The Luftwaffe struck Mirgorod and Piryatin the next night, but the aircraft had been dispersed to other locations. Again, the attacks lasted for two hours, and again, no Soviet fighters showed up.

The surviving American aircraft departed for Italy June 26, striking an oil refinery in Poland on the way. The same day, Deane requested permission for a P-61 Black Widow night fighter squadron to deploy to Ukraine to defend the bases. The proposal was strung out and sidetracked until the Americans finally dropped it.

With fuel in short supply in the Ukraine, there were no B-17 deployments in July. However, to keep the operation from lapsing completely, Spaatz ordered two fighter-only shuttles, Frantics III and IV, from Italy in July and early August. They struck airfields in Romania and other targets but were peripheral to the basic purpose of the shuttle mission.

The American desire to continue the operation was so great that two more bomber shuttle missions were ordered. Frantics V and VI deployed from England Aug. 6 and Sept. 11, even though there had been no change in provisions for air defense.

Nose Dive in Attitude

"The German strike on Poltava cast a pall on Frantic," said historian Mark J. Conversino, who dissected the failure of the shuttle bombing operation in *Fighting*

With the Soviets. "By July, even transient aircrews who were on the ground for only a few days noticed that relations between the Americans and Soviets were showing signs of tension and strain," Conversino said.

The new Soviet attitude was a sharp change from the welcome accorded to Eaker and Frantic Joe. It was seen not only in everyday encounters between Russians and members of the Eastern Command permanent party but also in official obstructionism and harassment.

A long list of factors may have contributed to the deterioration, including "fraternization" with local women, Russian resentment of Americans' material wealth, fights and other confrontations inflamed by excessive drinking on both sides, the black market trade in American products, and the general Soviet dislike of large numbers of foreigners in their country.

These problems, familiar from other places and other wars, do not fully explain the sudden and pervasive chill that descended on the relationships in Ukraine. Eastern Command officials concluded that the change was directed by Stalin, who had developed second thoughts about Operation Frantic.

"Stalin saw victory clearly in his hands and felt much less reason to seek American aid or be cooperative with USSTAF," Parton said. "But, with Muscovite wile, neither he nor his spokesman simply said Eastern Command was no longer necessary. Instead, they began a deliberate campaign of delay and sabotage."

Stalin did not want to share credit for the Red Army's success. Even more important, he did not want the Allies to



MSgt. John Bassett and MSgt. Michael Cajolda get help from Lenin Boykov, a Russian maintainer, as they work on a visiting task force bomber.

share in postwar control of the vast territory liberated or conquered in eastern Europe. This would become dramatically apparent in the course of the last shuttle mission, Frantic VII.

As the Soviet armies approached Warsaw, the patriot force, the Polish Home Army, rose and attacked the Germans on Aug. 1. The Russians halted their advance, and Germans turned their full efforts on the Poles. US officials in Washington asked USSTAF to undertake a supply drop mission. B-17s could not complete an England-Warsaw-England round trip, so it could not be done without use of the Frantic bases. The Soviets refused permission, even after appeals to Stalin from Roosevelt and Churchill.

“Stalin was furious,” the Russian news agency RIA Novosti explained in its retrospective of events in 2005. “He realized that the pro-Western Polish leadership wanted to liberate the capital without the help of the Red Army, so that they could later restore the prewar anti-Soviet cordon sanitaire.” Said more directly, Stalin did not want to share postwar control of Poland with the Polish. It suited his purposes to let the Germans eliminate the competition.

On Sept. 11, Stalin finally agreed to a Warsaw airdrop shuttle mission and Frantic VII, with 107 heavily loaded B-17s, took off from England Sept. 18. The sad outcome, in the words of the official Army Air Forces history, was that the bombers “circled the area for an hour and dropped 1,284 containers with machine-gun parts, pistols, small-arms ammunition, hand grenades, incendiaries, explosives, food, and medical supplies. While at first it appeared that the mission

had been a great success and so it was hailed, it was later known that only 288, or possibly only 130 of the containers fell into Polish hands. The Germans got the others.”

The Russians would not clear a second supply drop and before the Red Army offensive resumed, the Germans had extinguished the Warsaw insurrection, in which some 250,000 Poles were killed.

US Lingers and Leaves

Frantic VII was the last of the shuttle missions. The straightforward military objectives had been overcome by events. Poltava was now so far from the German front that it had little strategic value. The United States had captured the Marianas in the Pacific and B-29s could reach targets in Japan from there. The use of bases in Soviet Siberia was no longer that important.

Nevertheless, US and AAF leaders were unwilling to let Operation Frantic go or concede its failure. Soviet foreign minister V. M. Molotov bluntly told the Americans that the Russians wanted their bases back. By October, all but 200 Eastern Command caretakers had left, but USSTAF held onto an aircraft recovery and repair operation at Poltava, hoping to reactivate Frantic in the spring.

Soviet obstructionism intensified, bogging down US flights and movements. Every transaction was a struggle. The United States turned Eastern Command stockpiles, including tons of pierced-steel planking, over to the Russians,

who received the bounty with the usual lack of grace. One of the transfers was a warehouse full of food, including thousands of cans of peaches. The Russians complained that they were 10 cans of peaches short of the listed inventory.

The last Americans finally left Poltava July 23, 1945, and the shuttle bombing experiment was over at last. During the course of it, a total of 1,030 US bombers and fighters had deployed in Operation Frantic. They flew 2,207 sorties to or from Ukraine. In addition to the aircraft destroyed by the Germans at Poltava, five B-17s and 17 fighters were lost in combat.

The planners expected 800 bomber sorties a month. In June, August, and September 1944—there were no bomber sorties in July—Operation Frantic produced only 958 sorties in which bombers reached their targets, and that included 107 in the supply mission to Warsaw. All of the targets bombed on Frantic missions could have been struck without using Russian bases and with less effort. “Some of the attacks would probably not have been regarded as worth making but for the desire to use those bases,” said the official AAF history of the war. The anticipated diversion of German air defenses did not happen. The Luftwaffe did not redeploy any of its fighters to the east.

“From a political viewpoint, President Roosevelt was determined that he could use a wartime friendliness with Stalin to develop a successful postwar relationship,” Harriman said. “Before he died, he realized that his hopes had not been achieved.”

Almost 70 years later, the failure of Operation Frantic is still studied and analyzed. Some accounts emphasize the sustained American effort to establish military cooperation. Infield makes a different and darker assessment in *The Poltava Affair*, which he subtitled *A Russian Warning, An American Tragedy*. In his interpretation, the concessions and compromises carried forward into the Cold War.

“This ‘backing down’ by the Americans never stopped throughout the entire lifetime of ‘Operation Frantic’ and there is little doubt that this lack of firmness affected the postwar relations between the United States and the Soviet Union,” Infield said. “Stalin used ‘Operation Frantic’ to probe the Americans to see what manner of men they were and to test their mettle.” ■

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Compiled by June Lee, Editorial Associate

(As of Feb. 14, 2011)



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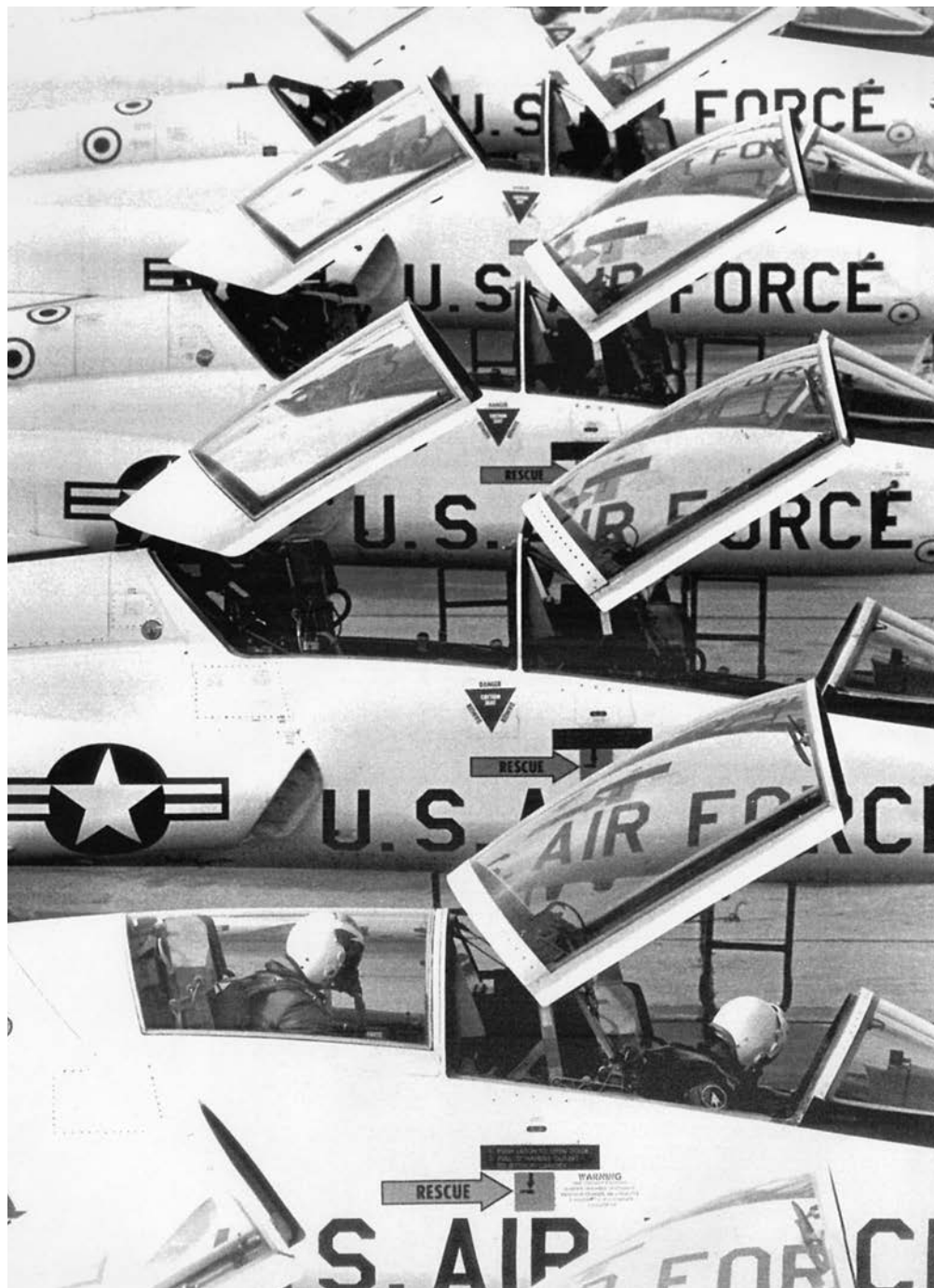
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Open Talons

Northrop Grumman photo



The T-38 Talons in this unusual, hall-of-mirrors shot were already old when the photo was taken in 1985. A Talon prototype first flew in 1959; it entered service in 1961. Northrop built 1,187. By the time these models lined up, the Talon was nearly a quarter-century old and had trained 56,000 USAF fighter pilots. Yet the twin-turbojet, Mach 1.3 trainer is still serving as USAF's advanced training aircraft for students selected to fly fighters. The latest, upgraded version of the aircraft is the T-38C, which was delivered in 2002.

By the time he died at 38 in the very first B-52 crash, Fleming had served impressive careers in both the Air Force and Navy.



The High Intensity Life of Patrick Fleming


By Walter J. Boyne

Photos courtesy of Rhode Island Aviation Hall of Fame/Fleming family



Patrick Dawson Fleming was a 19-victory ace flying Navy Grumman Hellcats in the Pacific Theater during World War II. He then went on to become an outstanding Air Force test pilot and commander until his life was cut short on Feb. 16, 1956, in the first crash of a B-52. Few men ever packed so much into such a short military career.

In less than nine years in the Air Force, Fleming flew as a test pilot at Wright Field in Ohio and Edwards Air Force



Left: A B-47 makes a jet-assisted takeoff from Eglin AFB, Fla., in 1953. Fleming helped transition the B-47 from test program to operational asset. Below left: Patrick Fleming in the cockpit of a B-52, the aircraft type he eventually died in.

Base in California, led a bomb group in Strategic Air Command, played a key role in the adaptation of the B-47 into service, became an authority on nuclear weapons, conducted deep-black overflights of the Soviet Union, and led the introduction of the Boeing B-52 into service at Castle AFB, Calif., as deputy wing commander.

An Army “brat,” Fleming was born on Jan. 17, 1918, son of Maj. Percy Fleming. He first attended school at Fort Stotsenburg, about 45 miles from Manila in the

Philippines, and later went to Lanier High School in Montgomery, Ala.

Already in love with flying, he worked nights in a filling station to earn money for flying lessons. In 1935 he enlisted in the Navy, serving first aboard *Hull*, a destroyer, then transferring to the carrier *Saratoga* (CV-3). There his love of flight was reinforced as a second-class seaman whose job was to reposition the arresting hooks of aircraft after they had landed.

Fleming had an engaging personality and obtained the support of Capt. William F. Halsey Jr., later a five-star fleet admiral, to go to Annapolis. After attending the Naval Academy Prep School in Norfolk, Va., he entered the academy on July 8, 1937. With war a real prospect, the need for naval officers accelerated the academy program, and he graduated on Feb. 7, 1941.

Aviation, Not the Sea

At the academy, Fleming became friends with a younger midshipman, the future Vice Adm. Gerald E. Miller. They served in the same battalion, and Miller recalled the lean and muscular Fleming as an impressive individual, calm and mature. The two men worked out together, specializing in the rope climb, then an Olympic sport.

Fleming was also serious about his academics, particularly those relating to flight, spending long hours practicing Morse code and instrument flying in the single Link flight simulator available at Annapolis.

It was clear he was already dedicated to aviation, rather than the sea. At the time, however, sea duty was mandatory for new academy graduates, and Fleming worked for the next two years as a torpedo and catapult officer on the light cruiser *Cincinnati*, performing convoy duty in the south Atlantic.

Always talking and dreaming of flying, Fleming finally got his wish, but not until World War II was in full swing. He was sent to flight training at Naval Air Station New Orleans and then Pensacola, Fla., earning his wings in 1943. He received operational training at NAS Jacksonville, Fla., before carrier training on the Great Lakes.

A talented pilot, he gained his first test experience on assignment to develop and test night fighting equipment and tactics in Project Affirm (originally Argus) at NAS Quonset Point, R.I.

The experience he gained was invaluable when, in March 1944, he joined VF-80 (“Vorse’s Vipers”), aboard the 27,100-ton-carrier *Ticonderoga* (CV-14).

Once in combat, Fleming initiated a Frank Luke-style string of victories. He started his combat career on Nov. 5, 1944, by shooting down a Japanese Zero near the Fort Stotsenburg school he had attended in the Philippines.

He subsequently scored multiple victories, the first on Dec. 14. The F6F-5 Hellcats from *Ticonderoga* began fighter sweeps in support of the Allied landings on Mindoro in the Philippines. His VF-



Fleming climbs into his airplane before a 1945 mission. On Dec. 14, 1944, his squadron shot down 19 enemy aircraft, with Fleming accounting for four.

80 squadron shot down 19 aircraft from a mixed flight of 28 Zeros and Oscars, with Fleming credited with four kills. His shipmate, Lt. Richard Cormier, also got four.

On Jan. 3, 1945, VF-80 attacked Formosa, and Fleming shot down three more aircraft, the enemy growing more ferocious as the war neared its conclusion. Attacking Formosa on Jan. 21, 1945, *Ticonderoga* underwent a 40-minute assault by kamikaze aircraft. A Zero scored the first hit, killing some of the anti-aircraft crews, and Fleming joined other pilots to man the guns.

When a second kamikaze airplane crashed into the bridge, Fleming was knocked overboard by the debris from the explosion. Picked up by a destroyer, he was transferred, with the rest of his group, to *Hancock* (CV-19). *Ticonderoga* was extensively damaged, with 143 killed, 202 wounded, and 36 airplanes destroyed.

The aerial power of the United States was dominant in the Pacific, but the Japanese had responded desperately with kamikaze attacks. To defend against them, the Navy raised the number of fighter aircraft located on carriers from 36 to 54 and later, to 73.

Some units reorganized, and a fighter-bomber unit, VBF-80, split off from VF-80. The 29-year-old Fleming became its executive officer.

On Feb. 16, Fleming led nine VBF-80 Hellcats in an attack on Japan itself. As his flight strafed Mobara airfield, Fleming engaged opposing Zeros, shooting down five. On the very next day, he concluded his scoring rampage with four more vic-

tories. By Feb. 17, 1945, he had flown six combat missions and shot down 19 enemy aircraft. Records show Fleming scored 10 victories with VF-80 and nine more with VBF-80.

Test Pilot

Fleming returned to the United States in March as the fourth ranking naval ace. After 30 days of leave, during which he saw his daughter Erin for the first time, he was sent to Naval Auxiliary Air Station Ream Field near San Diego as a squadron commander. He was soon promoted to lieutenant commander, serving on board the carrier *Boxer* (CV-21). Selected to be a test pilot, he was assigned to the air proving grounds at NAS Patuxent River, Md.

For Fleming it was time for a decision, and he elected to transfer to the US Army

Air Forces. In one four-hour period, he resigned from the Navy, joined the USAAF Reserve, and was immediately transferred to active duty as a lieutenant colonel.

His Navy test pilot experience led to his assignment to the Wright Field Test Pilot School, Class 47.

Fleming later became chief of the Fighter Test Section. Among his first assignments was testing the Republic P-84 Thunderjet and giving demonstration flights at operational units receiving the aircraft.

The jet fighters of the era were extremely short ranged, and one concept had them towed behind bombers until reaching a combat zone. There the fighters would be cast free to protect the bombers, hopefully hooking up again after the battle to be towed home.

Fleming tested the idea in an early Lockheed P-80A fitted with an attachment bar to link to a towline. On Sept. 23, 1947, Fleming took off in the P-80 to link up with an airborne B-29. After several frustrating attempts, he succeeded in latching on to the towline and was towed through the air for 10 minutes.

However, when he tried to release the tow bar, nothing happened. After struggling with it, he flew forward, beneath the B-29, where the tow bar suddenly snapped backward, blocking his forward view. He landed safely, and mercifully the program was canceled.

He was also involved with Air Force representation at the 1948 Cleveland Air Races, flying demonstrations. Fleming stayed at Dayton through 1949.

Already identified as a "comer," Fleming was given a broad experience in test flying including a familiarization flight on Oct. 6, 1949, in the same Bell



Fleming in a Hellcat. By the time he left Navy service for the Air Force, Fleming had 19 kills in just six combat missions.

X-1 Chuck Yeager had used to break the sound barrier, *Glamorous Glennis*.

Fleming's career now followed a path placing him in the forefront of Air Force planning. In 1950 he worked at the Boeing plant in Wichita, Kan., on the B-47 service test program. He next served with the 4925th Test Group at Kirtland AFB, N.M., supervising the association of new types of nuclear weapons with specific types of aircraft.

The B-47 was the star aircraft of the SAC fleet, and in 1951, Fleming went to the 306th Bombardment Wing at MacDill Air Force Base in Florida, the first operational B-47 wing. On Aug. 9, 1951, he flew a B-47 nonstop from Alaska to Kansas, setting a distance record—2,800 miles—for airplanes of this type.

Of Fleming's many secret missions, the most hazardous and the least reported occurred in October 1952, a part of Project 52 AFR-18.

The program used two modified B-47Bs from MacDill to deeply penetrate Siberia via widely different routes. Two top crews were selected for the mission and briefed by Gen. Curtis E. LeMay personally. The primary crew was led by Col. Donald E. Hillman, deputy commander of the 306th, with Maj. Lester E. Gunter as copilot and Maj. Edward A. Timmins as navigator. Fleming, then a colonel, led the backup crew. It consisted of Maj. Lloyd F. Fields as copilot and William J. Reilly as navigator.

The approved route took the B-47s from Eielson AFB, Alaska, north to a refueling point near Point Barrow, then west past Wrangel Island to a point near Ambarchik, Russia. It then turned southeast, to parallel the length of the Chukotskiy peninsula to Provideniya, then east to return to Eielson. The two B-47s took off on Oct. 15, 1952, following the two KC-97 tankers assigned to them for support. After refueling, Fleming flew to an area over the Chukchi Sea, taking up a racetrack pattern.

The mission went off smoothly, despite Hillman's aircraft being tracked by MiGs. The flight lasted nearly eight hours and covered roughly 3,500 miles, 800 of them in Soviet territory. LeMay quietly decorated both men and their crews with the Distinguished Flying Cross. The citations read only that the awards were given for "extraordinary achievement while participating in aerial flight."

Fleming's next assignment was as deputy wing commander of the 93rd Bomb Wing at Castle AFB, Calif. The 93rd was the first operational unit to receive



Fleming as deputy commander of the 93rd Bomb Wing.

the new Boeing B-52, with the first one arriving on June 29, 1955.

The transition of the 93rd BW was unusual in that it phased in the B-52 while retaining its primary combat-ready mission with the B-47. Initially the 4017th Combat Crew Training Squadron was established for crew training, but this task was eventually taken over by the bomb squadrons, with the 4017th performing ground instruction.

The First B-52 Crash

As usual, Pat Fleming threw himself into his work, checking out in the B-52 and becoming a flight instructor in the new bomber. With more than 7,000 flying hours, he was one of the most experienced pilots in the wing, and was slated to move to SAC headquarters as director of requirements in the early spring of 1956.

Fleming was never one to spare himself, and despite having flown more than 130 hours in the last 90 days, he elected to fly as instructor pilot on what proved to be the first crash of a B-52.

The aircraft, 53-0384, took off at 10:34 for a routine training flight. Over Sacramento, Calif., at 38,000 feet, nearly seven hours into the flight, the B-52's right forward alternator failed. The other three alternators failed shortly thereafter and the crew compartment depressurized. Aircraft Commander Maj. Edward L. Stefanski lowered the landing gear and began descending.

The crew became aware of JP-4 fuel on the floor of the lower crew compartment. There was a report of fire and

the compartment filled with smoke. At 33,000 feet, one of the two observers in the lower crew compartment ejected. At 32,000 feet, copilot Maj. Michael Shay, unable to communicate with Stefanski, ejected. There was a violent explosion in the lower crew compartment, and the second observer there also ejected.

The tail gunner, MSgt. Willard M. Lucy, jettisoned the tail turret and attempted to bail out, but was pinned by G forces. The aircraft leveled out temporarily at about 10,000 feet, and Lucy was able to parachute from the airplane.

Witnesses on the ground near Tracy, Calif., saw a massive explosion completely destroy the aircraft at an estimated altitude of 8,000 feet. Of the eight crew members, four parachuted to safety, three receiving major injuries. Three men died in the explosion and crash. The eighth crew member was Fleming.

The accident report revealed the primary cause of the accident was the disintegration of the turbine wheel of the right forward alternator. Fragments penetrated the No. 1 cell of the forward body fuel tank. Multiple fuel leaks spilled onto the alternator deck, ignited by either electrical shorts or the high temperature of the turbine fragments. When the crew compartment depressurized, the fuel and fire entered the crew compartment.

The accident report revealed that Fleming, already badly burned, left the aircraft at about 22,000 feet, either through an ejection hatch or by being blown out of the aircraft. He pulled his rip cord, but his parachute failed because the heat had melted his shroud lines and the canopy detached. The accident report noted that the canopy, while damaged, would have allowed a safe descent if it had remained attached.

Fleming was initially reported missing, but his body was found eight miles from the crash site, a sad end to an extraordinary career. He was 38. Among his many decorations were the Navy Cross, three Silver Stars, a Bronze Star, five Distinguished Flying Crosses, and four Air Medals.

Berne Lay Jr., in a tribute to Fleming in the April 1956 issue of *Air Force Magazine*, wrote that Fleming was an airman who "sought and found complete mastery of his trade. He was a pro." ■

Walter J. Boyne, former director of the National Air and Space Museum in Washington, D.C., is a retired Air Force colonel and author. He has written more than 600 articles about aviation topics and 52 books. His most recent articles for Air Force Magazine, "Hog Heaven" and "The Last of the Diver-bombers," appeared in the December 2010 issue.

Everything from spy satellites to future four-stars crawling through mud gathered intel on the supersecret Soviet fighters.

SPYING ON THE MIIGS

By Jeffrey T. Richelson

LOCKED in a vault somewhere may be a study of how the United States has gathered intelligence on multiple versions of the MiG fighter, the intelligence reports produced, and their accuracy.

If thorough, it would run to several thousand pages, for there was a great deal the US wanted to know about MiGs, and some of this knowledge could save lives and win battles. The Air Force, CIA, and other agencies gathered and analyzed intelligence on where they were produced, how many were produced, the production process, technical specifications, deployments, operations, and the sale or transfer to other nations.

The study would also be highly classified as the Intelligence Community employed human sources, communications intelligence, imagery, open sources, covert acquisition and exploitation of the airplanes, as well as a little help from friends.

In 1948, the Cold War heated up when the Soviet Union began its blockade

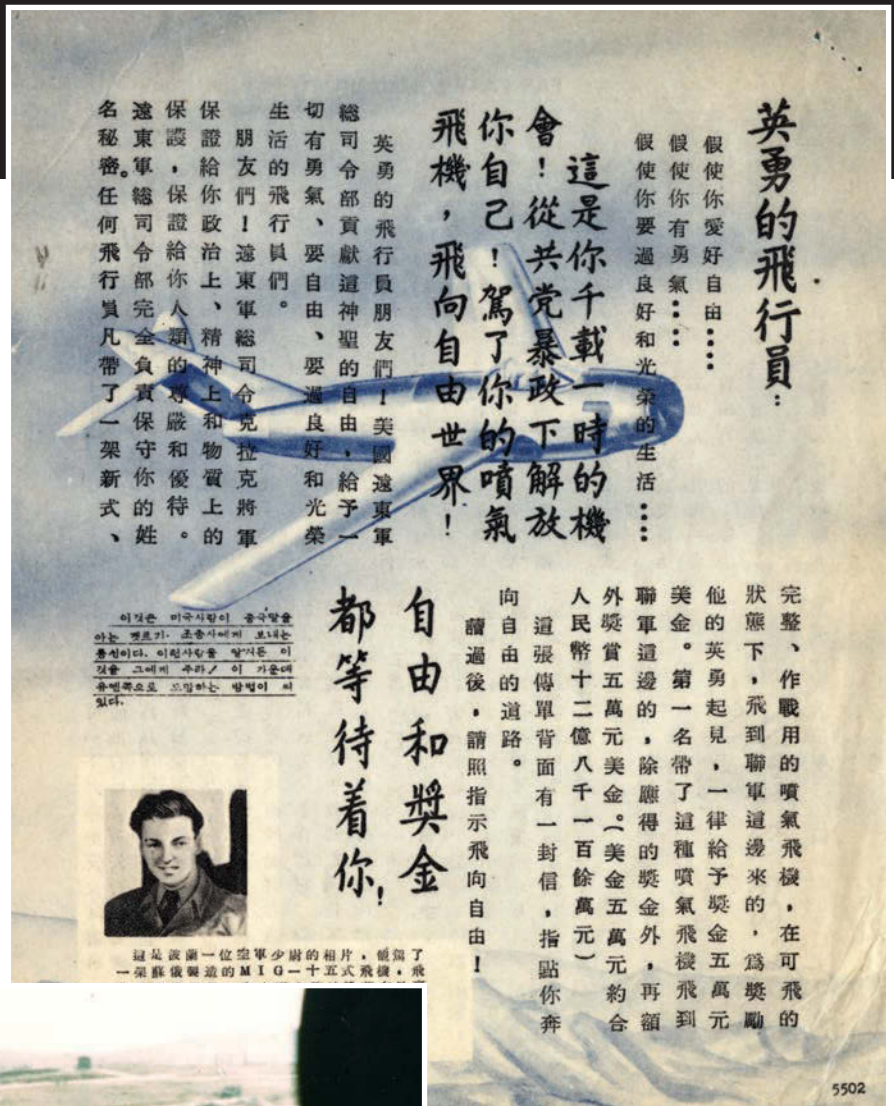


Photo via National Museum of the US Air Force



of West Berlin. The Soviet supply of MiGs to its Eastern European satellite air forces only heightened the threat they posed to US and allied air forces.

Above: A leaflet offering a \$100,000 reward to any pilot who delivered a MiG to US forces. The leaflets were dropped on North Korean bases in the last months of the Korean War. Left: On the ramp at Kimpo AB, South Korea, the MiG flown by a North Korean defector.

Then the Cold War turned hot in Korea with Soviet-piloted MiG-15s, based in China, battling it out with F-86 Sabre fighters. In August 1950, RB-29 reconnaissance aircraft spotted the arrival of 122 MiGs in northeastern China.

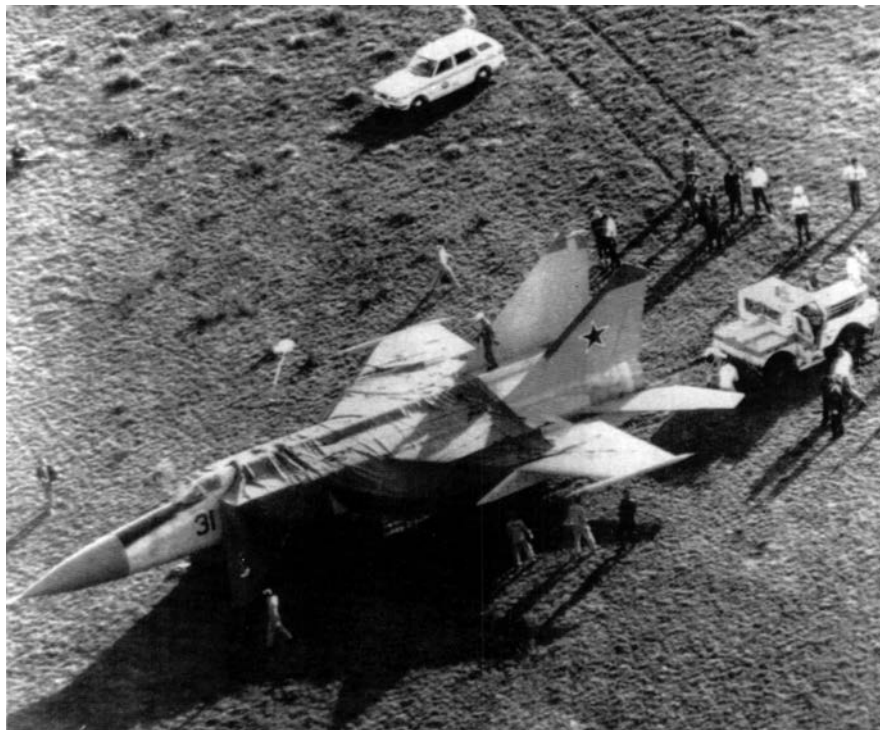
There was more than imagery to analyze. According to a former Central Intelligence Agency official, the US had “a lot of communications intelligence” about MiG activity in Korea—although the switch from HF to VHF communications in 1951-52 sent Air Force Security Service personnel scrambling to re-establish their intercept capability. This intelligence was gained by radio intercepts in combat, during which the Russians lapsed into their native language, making the nationality of the pilots clear.

But the US also wanted a MiG of its own. In early 1951, the allied Air Force commander in Korea was asked to obtain a complete MiG-15, and US forces succeeded in retrieving a shot down aircraft. Then in 1953, a North Korean pilot took off in his MiG-15 and didn't land until he reached the South. Aerodynamic examination of this airplane revealed design prowess, but the MiG's electronics and engine technology were far behind those of the United States.

America's spies also monitored MiGs in the Soviet Union and Eastern Europe. High-quality cameras on the roof of the US Embassy in Moscow photographed MiGs as they flew over the nearby Kremlin during air shows.

Starting in July 1956, the US had U-2 aircraft photograph airfields and factories, and MiGs futilely tried to intercept them. In October 1957, pilot Hervey S. Stockman brought back good photography of MiG bases on the Kola peninsula as well as a MiG-19 right below his aircraft. Those photographs gave a true picture of the MiG, in contrast to officially released, often doctored Soviet photos.

Spies also gathered human intelligence. In 1952, a CIA source reported on technical details observed on MiG-15s in East Germany. In April 1957, the



AP photo

A Soviet MiG-25 is covered with sheets after its pilot, Victor Belenko, landed at Hakodate Airport in Japan in a successful bid to defect to the US.

CIA distributed a report, the product of a joint CIA-Air Force effort focused on technical details of the MiG-15 and MiG-17 aircraft in the Hungarian Air Force. Among the details was information on the MiG-17's net weight, fuselage, wing structure, propulsion, electronics, tail warning radar, and armament.

Obtaining Manuals

One product of such collection efforts was an April 1954 CIA report regarding production of the MiG-15 at factories in Kuybyshev and Novosibirsk between 1950 and 1952. Other products could be found, by the end of the decade, in monthly issues of *Air Intelligence Digest*, published by Air Force intelligence. The first four issues of 1959 each carried a MiG article. One reported on the revised version of the MiG-19 Farmer, changes first observed in May 1957—including improved engines and armaments.

U-2s continued to return images of MiGs across the world into the 1960s, from MiG-21s at the newly completed

Santa Clara airfield in Cuba on Sept. 5, 1962, to a 1964 sortie revealing 34 MiG-15s and -17s at another recently built airfield at the time, Phuc Yen in North Vietnam.

The following two years produced more than photographs. By November 1965, the US had obtained (and the Air Force's Foreign Technology Division had translated) the Soviet *Manual on the Techniques of Piloting and Military Use of the MiG-21F-13*. Included in its 265 pages were chapters on target search and interception and aerial combat between MiG-21s and enemy fighters, which included the range (three to six miles) to achieve a maximum kill probability using the airplane's R-3S rockets.

The next year, the US had more than a manual in their hands, when an Iraqi Air Force captain flew a MiG-21 to Is-

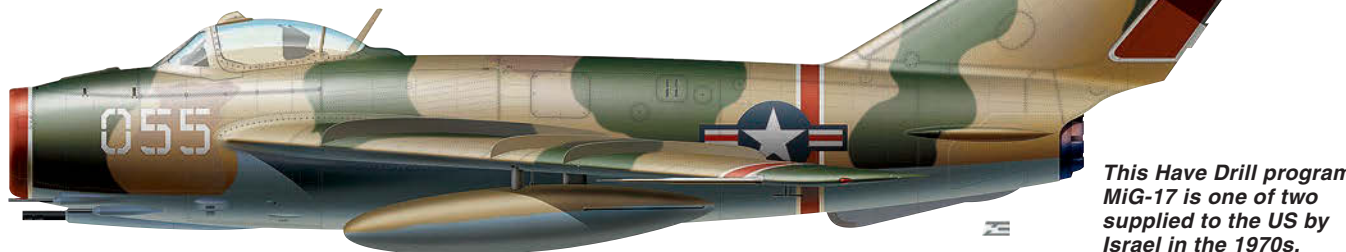


Illustration © Zaur Eylanbekov/Air Force Magazine

This Have Drill program MiG-17 is one of two supplied to the US by Israel in the 1970s.



This MiG-21, pictured in a Navy fighter-adversary squadron hangar, was flown by a defecting Cuban Air Force major to NAS Key West, Fla., in 1993.

rael. After being examined in Israel, its next home was Groom Lake in Nevada, where experts flew it and identified a number of significant aerodynamic limitations.

During those years, the CIA's National Photographic Interpretation Center was busy exploiting MiG imagery provided by overhead sensors. Back then, with the war in Vietnam expanding, a major concern was the number, models, and distribution of MiGs in the North. In February 1966, NPIC again reported on Phuc Yen, revealing that on Dec. 23, 1965, seven MiG-21 aircraft and four canvas-covered aircraft were photographed at the airfield.

NPIC also reported on images of MiGs in flight over North Vietnam and China. One image was the first of the airplane flying over North Vietnam. A December 1966 report noted images of two aircraft in flight—one armed with two Atoll air-to-air missiles, while the other carried at least one UB-16-57 rocket pod—the first time any MiG-21 in North Vietnam was identified with rocket pods.

Open and human sources contributed to the effort to monitor the acquisition and production of MiGs to nations outside the Soviet Bloc. A May 1965 CIA report, "Soviet MiG-21 Factories in India: Progress and Prospects," cited six sources, including two *Times of India* articles plus State Department and air attache reports. The report included information on the Soviet-Indian agreement, the location and functions of planned factories, as well as the construction schedule, projected

costs, and India's plans to produce basic components from raw materials and its dissatisfaction with previously purchased MiGs.

US intelligence agencies continued to monitor MiG-21s in Eastern Europe and the Soviet Union, as indicated by the 1969 National Intelligence Estimate on Warsaw Pact general-purpose forces. The estimate noted that the latest, all-weather model of the MiG-21 constituted more than 95 percent of the aircraft in Soviet air defense regiments, and the airplane was produced in eight or nine versions—with the latest variant, identified in East Germany, as having "improved payload capabilities and improved air intercept radar."

Better Than Photographs

On June 15, 1971, a Titan-3D rocket propelled into orbit on its first mission what is generally agreed to be the most complicated piece of reconnaissance hardware ever developed. The KH-9 or Hexagon photographic reconnaissance system (with a resolution of one to two feet) would eventually replace the Corona satellite system as America's means for searching large areas of foreign territory, particularly the Soviet Union.

As Corona evolved since its debut in 1960, the US had been able to get an ever more accurate MiG order of battle, with intelligence on airfields, training fields, and deployments. But the KH-9 was a significant improvement, and its ability to photograph huge chunks of territory with high resolution meant, according to former senior NPIC official Dino A. Brugioni, the CIA's

MiG order-of-battle report "wasn't an estimate anymore."

Then, in 1974, US intelligence provided the first suggestion that MiG-23s had been acquired by the Syrian Air Force.

A declassified and sanitized April 4, 1974, message from the CIA to the White House states, "[deleted] the Soviet Union has supplied Syria with MiG-23 fighters and trained Syrian pilots in their operations." Since the document is stamped "Comint Channels," the deleted words are almost certainly, "According to communications intelligence" or some equivalent. The report also noted, "There is no evidence available to confirm the presence of MiG-23 aircraft in Syria, but such reports have come in recently with increasing frequency."

In 1978, a Cuban refugee reported that a new contingent of MiGs had arrived in Cuba, a claim confirmed by satellite reconnaissance. To provide further details, President Jimmy Carter ordered the resumption of SR-71 missions over the island, which he had halted in 1977. The concern was whether the MiGs included not only MiG-23s, but MiG-27s, the ground-attack version of the MiG-23, which could be armed with nuclear weapons and reach deep into the United States.

However, several differences between the airplanes could not be detected from overhead photography, even SR-71 imagery. What proved to be decisive to imagery interpreters were photographs of the aircraft appearing in a Cuban magazine—photographs apparently not altered. Close examination of those images convinced the relevant NPIC interpreters that the MiGs were indeed MiG-23s.

By the late 1970s, the US was gaining a better appreciation of the MiG—an appreciation that could not be obtained from photographs.

On Sept. 6, 1976, Soviet pilot Victor Belenko flew his MiG-25 Foxbat to Japan where, before the airplane was returned to the Soviets, it was disassembled and analyzed in minute detail by US experts, revealing, according to former CIA officer Robert Clark, it "was substantially less spectacular than ... described in intelligence estimates."

In 1977, the Constant Peg program, a continuation of the aggressor squadron effort begun earlier in the decade in Nevada, kicked off.

Under both efforts, American pilots flew against MiG-17s, MiG-21s, and

MiG-23s obtained through still-classified means. US pilots were aided by their understanding of MiG training operations, an understanding based in part on the communications monitoring and tracking of operations, conducted from Tempelhof air station in West Berlin. One added piece of intelligence obtained from those flights, former Air Force Chief of Staff Gen. Merrill A. McPeak said, was that “the first turn they made was eye-watering. But if you could survive the first turn and take the fight vertical, the MiG [pilot] was quickly out of energy and out of ideas.”

During congressional testimony in 1984, Gen. Lawrence A. Skantze, the Air Force’s vice chief of staff, showed a briefing slide describing some of the capabilities of the Soviet MiG-29 Fulcrum fighter: an attack capability “optimized for counter air,” an “increased thrust to weight ratio,” a look-down shoot-down capability, and an “improved combat radius.” A photograph of the aircraft taken by a spy satellite was also displayed.

That July, USAF Maj. Michael V. Hayden (a future four-star general and National Security Agency and CIA director) began a two-year tour as the air attache at the US Embassy in Sofia, Bulgaria. More than two decades later, Hayden recalled his experience gathering intelligence on MiGs, telling the Senate Select Intelligence Committee, “I’ve crawled in the mud to take pictures of MiG-23s taking off from Bulgarian airfields so I could understand what type of model it was.”

Later in 1984, the quest for intelligence about MiGs once again involved SR-71s and the possible Soviet provision of MiGs to a troublesome nation in Central America.

Early in 1982, a memo from the CIA’s deputy director for intelligence, Robert M. Gates, noted the “construction of several airfields in Nicaragua that are potential MiG fighter bases continues.” Then in October 1984, intelligence analysts reached the conclusion MiG-21s were probably being crated and loaded on *Bakuriani*, a Soviet ship, apparently headed for somewhere in Central or South America.

The ship was tracked across the Atlantic by satellites until weather conditions caused the analysts to lose the vessel. An SR-71 mission over the Gulf of Mexico reacquired the ship, and its imagery indicated Cuba was not its destination. On Nov. 7, it arrived in the port of Corinto, Nicaragua.



USAF photo by SSGT Joshua Strang

A MiG-29 purchased from Moldova in 1997 is transported for display at the National Air and Space Intelligence Center at Wright-Patterson AFB, Ohio.

The ship’s arrival was soon followed by SR-71 missions over the port. They not only photographed the port area, but created window-rattling sonic-booms—emphasizing US annoyance at the prospect of MiGs in the hands of the Sandinistas. No MiGs ever made it into the inventory of Nicaragua’s air force—either because pressure led to their being returned or because there never were MiGs on *Bakuriani*.

More Mysterious Stealth Fighters

In 1990, an election defeat cost the Sandinistas their grip on power. But Cuba was still firmly in the hands of Fidel Castro, and the US continued to report on MiGs in Cuba. A Feb. 26, 1990, brief from the National Intelligence Council, “MiG-29s in Cuba,” reported Cuba had received at least seven of the aircraft and would probably fill out a 12-squadron fighter force. It also noted a squadron of MiG-29s—which would probably be combat ready in mid-1991—“would modestly improve Cuba’s ... capacity to threaten US reconnaissance flights.” Specifics of the airplane’s characteristics and capability were included in a figure depicting the combat radius of the MiG-29 for different missions and profiles.

The 1990s also presented opportunity for new acquisitions. In March 1991, in the aftermath of the Persian Gulf War, a team from the Joint Captured Materiel Exploitation Center arrived at Jalibah

Air Base in Iraq. They returned with a MiG-29 nose, providing Air Force intelligence personnel with a Slot Back I radar and the Fulcrum’s infrared search and tracking system.

Later in the decade, Air Force intelligence personnel were able to acquire more complete versions of the MiG-29, the result of spending money rather than fighting a war. In October 1997, the US purchased 21 fighter aircraft from the Republic of Moldova—including the MiG-29UB. According to the National Air and Space Intelligence Center, after “undergoing years of study” and employing “all the [center’s] foreign materiel exploitation” resources,” the MiG-29 was displayed in front of NASIC headquarters at Wright-Patterson AFB, Ohio.

While nearly two decades have passed since the collapse of the Soviet Union, the need to collect intelligence on MiGs has not ceased. Russia continues to produce and sell assorted versions of them.

In 2007, it unveiled the MiG-35. In March 2010, India agreed to purchase 29 MiG-29s for almost \$2 billion. Of more concern was a September 2009 report that Russia would probably be delivering MiG-29s and, possibly, MiG-31s to Syria. The MiG doesn’t hold a monopoly on the fighters at which US intelligence analysts want a good look: Since 2010, both Russia and China have flown, for the first time, indigenously made stealth fighters. ■

Jeffrey T. Richelson is a senior fellow with the National Security Archive in Washington, D.C., and author of 10 books on intelligence and military topics. His most recent article for Air Force Magazine, “Going Nowhere Fast,” appeared in the January issue.

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By Frances McKenney, Assistant Managing Editor

Another Success in San Antonio

For Air Education and Training Command, the news about their symposium only gets better. Last year, they set an attendance record. This year, they broke it. More than 3,800 people gathered in San Antonio for the annual conference, held in January, and one of the big draws was the technology exposition, organized by the **Alamo Chapter**.

Air Force Association Chairman of the Board S. Sanford Schlitt was a guest of honor for the two days of events, along with keynote speakers Secretary of the Air Force Michael B. Donley, Gen. Douglas M. Fraser, head of US Southern Command, and CMSAF James A. Roy.

The symposium featured some 100 presentations, organized into categories such as training and educational innovations, national security, and leadership. Topics ranged from North Korea's "nuclear diplomacy" and the US response to the earthquake in Haiti, to using social media and USAF recruiting.

As for the exposition, former AFA Board Chairman John J. Politi and Alamo Chapter Executive Vice President Michael P. Nishimuta headed the chapter's team effort. Politi rounded up sponsors, while Nishimuta worked with vendors. The two lined up 133 exhibitors.

Politi noted that the first symposium five years ago had so few exhibits, it could hardly be called an expo. He said Gen. William R. Looney III, then AETC commander, asked the chapter to get involved in the symposium and expo, knowing that AFAers had experience in this area. The chapter stepped in for the second symposium and has steadily built it up ever since.

The chapter has many tasks in the symposium-expo project. It arranges for some of the presentations given by speakers from the defense industry, for example. It pays for part of the AETC formal ball that serves as the culminating event. Chapter member David Pope, assisted by SMSgt. Cynthia Barrowman, put together an executive-level dinner for Air Force VIPs, including major command vice commanders in town for their own conference, held in conjunction with the symposium.



Photo by Joel Martinez

At an AETC symposium luncheon, AFA Board Chairman Sandy Schlitt (second from right) is introduced by Gen. Douglas Fraser to 2nd Lt. Darrell Moyers. At right is Gen. Edward Rice Jr., AETC commander. Fraser heads US Southern Command. Moyers is from the 17th Training Wing, Goodfellow AFB, Tex.

More photos at <http://www.airforce-magazine.com>, in "AFA National Report"

This year, the chapter even spurred a competition among military booths, with Chapter President Randy Coggins awarding first place to the 59th Medical

Wing for a professional display that got the message across. The booth highlighted critical care air transport team (CCATT) capability.

Seeking Photos of AFA Cold War Veterans

The magazine seeks personal, candid, unofficial photos of current AFA members serving during the Cold War.

The Cold War spans Sept. 2, 1945, to Dec. 26, 1991.

We're looking for a photo of you in Cold War service. Pictures can be from the US or overseas areas, **but not from the active war zones of the time**. Examples of the types of photos we are seeking are in earlier scrapbooks in the September 1995, July 1996, and October 1996 issues of the magazine at www.airforce-magazine.com.

Please mail a photo of yourself and a detailed description to: Cold War Scrapbook, *Air Force Magazine*, 1501 Lee Hwy., Arlington, VA 22209-1198.

Photos will be returned.

Include a phone number or e-mail where we can reach you.

Deadline is May 1.

Photos selected will be published in *Air Force Magazine's* "Cold War Scrapbook" in the August issue.

Most of the nearly 4,000 airmen at the symposium and expo were attracted to high-tech items displayed by Lockheed Martin, BAE, and Alenia North America, Politi said in a telephone interview. The airmen, he said, had “a ball playing with the simulators.”

Also In San Antonio: Cyber Salute

In December, a team of high schoolers from San Antonio received recognition from the city and the **Alamo Chapter** as the area’s top finishers in initial rounds of AFA’s CyberPatriot III competition.

Several organizations, including the Greater San Antonio Chamber of Commerce, SAIC, and Boeing, honored Jose Banda, Robert Flores, Mario Puente, Lawrence Roberts, and Clint Sierra from the Alamo Colleges’ Information Technology and Security Academy with a luncheon.

San Antonio Mayor Julian Castro presented the students with the inaugural Mayor’s Cyber Cup. The five team members earned it by scoring the best among 21 teams in the area. According to Michael P. Nishimuta, chapter executive VP, San Antonio had more teams competing in CyberPatriot than any other city in the US.

Gen. Richard E. Webber, 24th Air Force commander from Lackland AFB, Tex., gave the luncheon keynote address. He spoke about the importance of building a workforce capable of protecting the nation’s information security.

The Alamo Chapter presented each student on the winning team with a \$1,000 scholarship. The students also received personalized Air Force-style bomber jackets from NCI Corp.

CyberPatriot competitions aim to inspire high school students to take up careers in cybersecurity or other science, technology, engineering, and mathematics disciplines.

Swipe This Idea

Military personnel typically accumulate a hodgepodge of educational credits both military and civilian.

FortWayne Chapter President John Kirkwood, a retired Air Force colonel and adjunct professor at Indiana University-Purdue University Fort Wayne, Ind., knows this well. He says the school found this out, too, when some 400 Army Guardsmen, airmen from the ANG’s 122nd Fighter Wing, Reservists, and veterans enrolled.

IUPFW Chancellor Michael A. Wartell began various approaches to making the university “military friendly” and turned to the Fort Wayne Chapter.

With the group’s approval, Kirkwood got involved in selecting a military-

student services coordinator for the university, and “vet rep” Joyce Vaughan began the job in November. Among the first things she determined was that the school needed help in evaluating Community College of the Air Force transcripts and also needed more common access card readers.

By swiping a CAC through such a reader, a military member can access service records. This helps school officials determine benefits and grant due credit, particularly for military training, schooling, and experience.

The Fort Wayne Chapter voted to act as a bridge between the university and the local 122nd FW. Kirkwood and Chapter Treasurer Paul A. Lyons then took Vaughan to meet officials in the wing’s field support squadron.

As a result, the 122nd lent the university six CACs from excess inventory

in January and designated a point of contact for the school.

Essentially, IUPFW now has what Kirkwood jokingly calls “a hotline”—the ability to directly telephone the right person at the Guard unit for help in “decoding” anything military.

With a Grant From AFA

The **Scott Memorial Chapter** president, Alan H. Gaffney, periodically visits local Air Force JROTC and Civil Air Patrol units, distributing complimentary issues of *Air Force Magazine* and talking up AFA’s mission and programs.

At Dupo Community High School in Dupo, Ill., Gaffney has strived to build a relationship with the AFJROTC unit headed by retired Maj. Michael T. Conley, the senior aerospace science instructor, and retired SMSgt. John D. Solomon, the ASI. So in November, when Conley was

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looking over a list of available grants on the AFJROTC headquarters website, it was no wonder that AFA's AFJROTC grant caught his eye.

The \$250 awards promote aerospace education-related activities, anything from buying textbooks or DVDs to field trips. The Dupo AFJROTC unit applied for funds to take cadets on an excursion with its partner Columbia (Ill.) High School to the St. Louis Science Center. Just a couple weeks later, AFA selected the unit and nine others nationwide to receive the grants.

In December, 28 students spent all day at the Science Center and its planetarium. The grant covered their transportation, admission, and lunch. The kids had been studying astronomy, and Conley commented that even though they had read textbooks and looked at PowerPoint presentations beforehand, the planetarium program was able to "put a lot of meaning" into the information.



The Scott Memorial Chapter pointed the way to an AFA AFJROTC grant that allowed these students to visit the St. Louis Science Center—especially its planetarium.

Rickenbacker Remembered

Joined by several members of Ohio's **Capt. Eddie Rickenbacker Memorial Chapter**, AFJROTC cadets from Westland High School in Galloway, Ohio, conducted their annual graveside memorial ceremony for the chapter's namesake.

World War I ace Edward V. Rickenbacker, a native of Columbus, Ohio, was

a race car driver before volunteering for military service. During the war, he started out as a military driver in France but soon talked his way into flight school in Tours. He eventually earned 26 aerial victory credits, four of them for balloon busting, and also received the Medal of Honor. After World War I, he led Eastern

Airlines, guiding it through a period of huge growth. He died in 1973, at age 82.

Chapter member Melvin H. Gerhold, who retired from the Air Force and became an AFJROTC instructor at Westland High in 1966, organized the first Rickenbacker memorial service in the mid-1970s as a way to educate

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youngsters about the legendary pilot from their area.

More than two dozen cadets participated in the latest remembrance, held at Greenlawn Cemetery in October, the month of Rickenbacker's birth. The ceremony included a color guard and prayers led by student chaplain Kathryn Snyder. Cadets Haley Maynard and Daria Mosel had researched Rickenbacker's life story and read their paper to the audience gathered at his grave site.

The cadets' aerospace science instructor is retired SMSgt. Clement L. Francis Jr., a chapter member.

Some of the chapter members attending the service had been present at some of the first memorials. This included Robert Dean, Richard J. Luckay, and Richard H. Coots Jr., who helped conduct the event one year as a Westland High School AFJROTC cadet himself. Gerhold, the original organizer, died in December 2010.

Home-for-the-Holidays Ball

The **Falcon Chapter** in Jacksonville, Fla., helped the local Northeast Florida Chapter of the US Air Force Academy Parents Association carry out its annual all-service military ball in December. The black-tie formal takes place when cadets

from five service academies—including the Merchant Marine Academy—are home for winter break.

This year, Falcon Chapter President Robert V. Bilik was among the guests.

Earlier last year, Anne Bloch, the local parents group president, had made several presentations about the event to the Falcon Chapter, seeking their support.

Chapter donations of \$200 eventually sponsored tickets for five cadets to attend the ball, held at Naval Station Mayport.

Attendance increased from 120 midshipmen and cadets in 2009 to 185, this

past December, reported Greg Bloch of the parents group.

More Chapter News

■ In Indianapolis, the **Central Indiana Chapter** hosted an AFA booth at a veterans appreciation event, sponsored by US Sen. Richard G. Lugar (R-Ind.) and the Military-Veterans Coalition of Indiana. Held at the Defense Finance and Accounting Service facility at the former Fort Benjamin Harrison, the November event included a luncheon and information fair with booths for veterans', state, and federal organizations. They provided information on health care,



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benefits, and finances. Central Indiana Chapter VP Milford E. Compo and member Harold F. Henneke manned the booth. Compo said they highlighted AFA's support for science, technology, engineering, and math activities and the CyberPatriot program in local high schools.

William W. Spruance, 1916-2011

Retired Brig. Gen. William W. Spruance, an AFA National Director Emeri-

tus, died in his sleep Jan. 15. He was 94.

Born in Wilmington, Del., he was commissioned in 1939 on graduation from Princeton University. He first served in the Army's Second Armored Division, but during World War II transferred to the Air Corps and began flying transports over the "Hump" in the China-Burma-India theater.

After the war, he became an official in the Delaware political arena. He was a founding member of the state's

Air National Guard, retiring in 1976 as the state's assistant adjutant general for air.

He survived a T-33 crash in 1961 and thereafter gave numerous presentations on flying safety and crash survival.

Along with his untiring commitment to AFA, General Spruance had also been chairman of the board of trustees of Embry-Riddle Aeronautical University. ■

Reunions

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3rd Field Hospital, Saigon, including former patients and medical, support, and attached staff. Sept. 9-10 at the Holiday Inn Mart Plaza in Chicago. **Contact:** Duane Thompson (888-348-7398) (info@3field.rmhc.org).

13th BS, all eras. May 19-23 at the Doubletree Hotel in Washington, DC. **Contact:** Jerry Dorwart (970-416-1691) (gedorwart@comcast.net).

55th ARS, Forbes AFB (1955-63). May 19-22 in McKinney, TX. **Contact:** Don Mathers, 2930 SE Skylark Dr., Topeka, KS 66605 (785-267-2645) (domat@aol.com).

55th and 58th Weather Recon Sq. June 8-10 in Branson, MO. **Contact:** C. R. Layton (918-446-6945) (conradlay@aol.com).

100th BW, Pease AFB, NH. Oct. 12-16 in Dayton, OH. **Contact:** Alan Jankowski, 20 Carmarthen Way, Granville, OH 43023 (740-587-4116) (740-975-1119) (100th-bombwingreunion.org).

340th BW. Sept. 8-11 in Branson, MO. **Contact:** R. Barnhill, 277 Sandhill Rd., Lonoke, AR 72086 (501-676-2305) (rjbarnhill@aol.com).

354th Tactical Fighter Wg, Desert Storm (1991). May 27-30 in Myrtle Beach, SC. **Contact:** Joe Barton (jbarton355@aol.com).

455th/91st SMW. Sept. 21-25 in Bountiful, UT. **Contact:** Dave Schuur (410-987-7520) (djschuur@verizon.net).

485th Tactical Missile Wg. June 9-12 in Layton, UT. **Contact:** Stu Flood (801-725-9222) (stu_flood@yahoo.com).

601st Tactical Control Assn, Germany. Oct. 19-23 in Oklahoma City. **Contact:** Hap Haggard, 6860 E. Rosewood St., Tucson, AZ 85710 (520-591-1966) (haphagg@aol.com).

667th, 932nd, 933rd, and 934th AC&WS

Iceland Radar sites. May 29-June 2 in Nashville, TN. **Contact:** William Chick (littlechick@msn.com).

AF Public Affairs Alumni Assn, all retired, active duty, and civilians, including band members. May 12-14 at the Hilton Garden Inn in Fairfield, CA. **Contact:** John Terino (703-239-2704) (johnterino@afpaaa.org).

AF Tech. Applications Ctr. May 12-15 at the Lions Gate Hotel in McClellan Park, CA. **Contact:** Charlie Penn (916-391-6956).

Air Rescue Assn and Pedro Rescue Helicopter Assn. Oct. 19-23 in Branson, MO. **Contacts:** Marilyn Nicholas (316-686-0430) (mnicholas8@cox.net) or Ken Pribyla (703-619-1385) (kprib@verizon.net) (www.reunionproregistration.com/airrescue.htm).

Arizona State University AFROTC Class of 1961. May 12-13 in Tempe, AZ. **Contact:** Jay Norton (480-897-0379) (nimrodj@earthlink.net).

Army Air Corps Pilot Classes (WWII). Sept. 8-11 in Charleston, SC. **Contact:** Stan Yost, 13671 Ovenbird Dr., Fort Myers, FL 33908 (239-466-1473).

Battle of the Bulge veterans. Sept. 20-25 in Columbus, GA. **Contact:** Ralph Bozorth, 608 Treaty Rd., Plymouth Meeting, PA 19462 (484-351-8844) (ralph@veteransofthebattleofthebulge.org).

Cadets, including support personnel. April 29-May 1 at Silver Wings Field in Eureka Springs, AR. **Contact:** Errol Severe (479-253-5008) (av1cadet@arkansas.net).

C-130 personnel who were stationed at Dyess AFB. April 28-30 in Abilene, TX. **Contact:** Capt. Sarah Scaglione (325-696-3078) (sarah.scaglione@dyess.af.mil).

Ground Electronics Engineering Installation Agency/Mobile Depot Agency/

Engineering Installation. June 14-16 at Treasure Bay Casino Resort in Biloxi, MS. **Contact:** Skip Klinger (skipklinger@cuisp.com).

Jolly Green Assn, and all members of rescue community. April 31-May 1 at the Ramada Beach Resort in Fort Walton Beach, FL. **Contact:** Lee Massey (850-863-3131) and for reservations (800-874-8962).

PA AACS. July 12-14 at the Hampton Inn in DuBois, PA. **Contact:** Ed Rutkowski (814-371-7167).

Pilot Tng Class 56-M. April 27-30 at the LaQuinta Motel in Webster, TX. **Contact:** John Mitchell (703-264-9609) (mitchelljf@yahoo.com).

RAF Alconbury baseball team, including all Alconbury and B-66 personnel (1959-61). May 27-29 at the Hilton Garden Inn in Franklin, TN. **Contacts:** Carol Bartolomucci (bartmusic10@gmail.com) or Arlene Marcley (amarcley@charter.net).

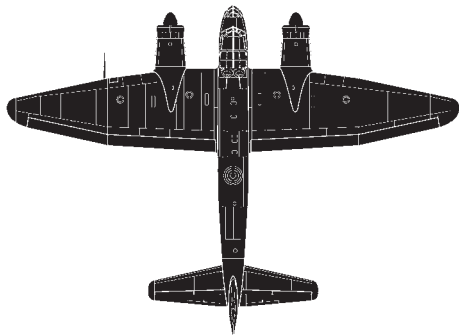
TAC Recon Assn, all personnel and aircraft types. Sept. 22-25 at the Hilton Double Tree Hotel in Austin, TX. **Contact:** Charlie Loflin (512-249-1954) (lofce@earthlink.net).

USAF Helicopter Pilot Assn. June 22-25 in Jackson, WY. **Contact:** L. Allred, PO Box 81, Afton, WY 83110 (307-885-5233).

Seeking members of the **UPT Class 71-06** for a reunion. **Contact:** J. D. Caven, 474 Brookhaven Ln., Sunrise Beach, MO 65079 (573-374-8275) (jcaven002@charter.net). ■

E-mail unit reunion notices four months ahead of the event to reunions@afa.org, or mail notices to "Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.

Ju 88



Germany's Ju 88 medium bomber was the most versatile of all aircraft in the Luftwaffe's World War II inventory. The Junkers-designed airplane served as a bomber, dive-bomber, fighter-bomber, torpedo bomber, night fighter, barrage-balloon destroyer, flying bomb, communications airplane, engine test bed, mine-layer, and reconnaissance system. It was built in numbers greater than all other German medium bombers combined.

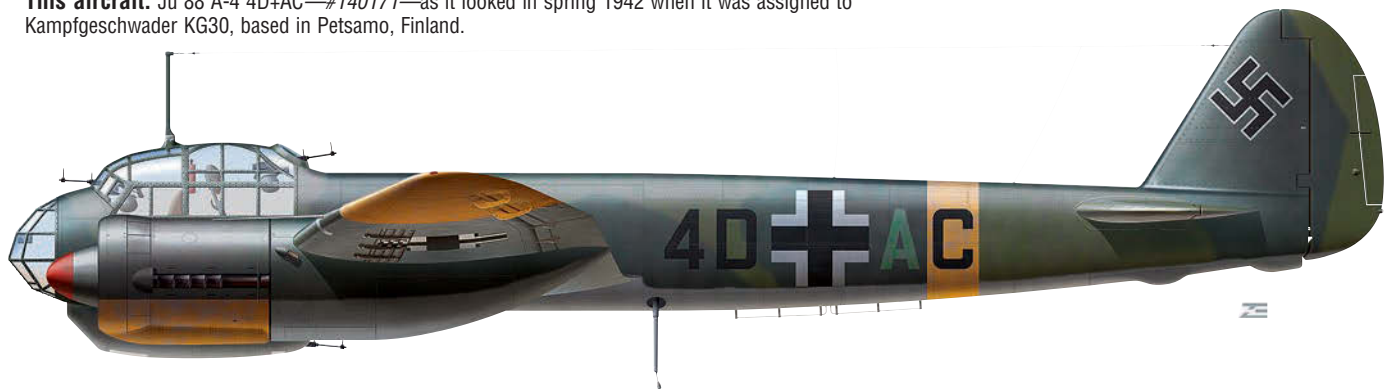
The Ju 88 was not designed as a multipurpose aircraft, but it evolved into one. It was conceived in the mid-1930s as an answer to Hermann Goering's demand for a "schnellbomber" (high-speed bomber). It was an all-metal, flush-riveted, cantilever, two-spar wing aircraft, and the basic

structure remained almost unchanged throughout its life. However, it ran into early difficulties and underwent many engineering changes before entering combat in September 1939.

The Ju 88 took part in the early Norwegian, and Western Front attacks. It was prominent in the 1940 Battle of Britain, in which it suffered heavy losses. The highly maneuverable Ju 88 fared well in the East, where it could operate from primitive airfields. Ju 88 units attacked Soviet strips and troop positions at low level, wreaking havoc. The airplane went on to fight on every front, in a wide variety of roles, and was unsurpassed in an anti-shipping role.

—Walter J. Boyne

This aircraft: Ju 88 A-4 4D+AC—#140171—as it looked in spring 1942 when it was assigned to Kampfgeschwader KG30, based in Petsamo, Finland.



In Brief

Designed by Junkers ★ built by Junkers, Arado, Henschel, Heinkel, Dornier, Volkswagen ★ first flight Dec. 21, 1936 ★ crew of four—pilot, bombardier/gunner, engineer/gunner, radio operator/gunner ★ number built 16,000+ ★ two Junkers Jumo 211 inline V-12 engines ★ **Specific to Ju 88A-4:** armament (typical) one 13 mm and two 7.92 mm machine guns ★ bomb load 4,500 lb ★ max speed 292 mph ★ cruise speed 190 mph ★ max range 1,700 mi ★ weight (loaded) 31,000 lb ★ span 65 ft 7 in ★ length 47 ft 3 in ★ height 15 ft 11 in.

Famous Fliers

Decorated Pilots: Erwin Fischer, Joachim Helbig, Herbert Isachsen, Alfons Muggenthaler, Heinrich Paepcke, Heinrich Schweickhardt. **Aces:** Martin Becker, Helmut Lent, Gerhard Raht, Heinz Roekker, Heinz Struening, Prince Heinrich zu Sayn Wittgenstein, Paul Zorner. **Record Setters:** Kurt Heintz, Ernst Siebert. **Notables:** Theodor Rowehl, Hajo Hermann.

Interesting Facts

Set world records of 321.5 mph over 1,000 km (621.4 mi) course and 310.6 mph over 2,000 km course ★ flown by Germany, Italy, Bulgaria, Hungary, Romania, Finland ★ captured and flown by three German enemies—Britain, France, Soviet Union ★ carried Lichtenstein radar and upward-firing "jazz music" guns for night fighting ★ became "Mistel" guided bomb when cockpit was replaced by 8,350-pound warhead ★ nicknamed "Dreifinger" ("three fingers," from long engine cowlings) and "The Maid of All Work" (play on "Jack of All Trades") ★ became (March 3, 1945) last German aircraft downed over England ★ now displayed in the National Museum of the United States Air Force.



German crewmen rest next to their Ju 88A variant, summer 1942.

Deutsches Bundesarchiv (German Federal Archive)



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