

December 2012/55

Journal of the Air Force Association

# AIR FORCE

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MAGAZINE

## Operation Dominic

Foreign Fighters

DC Air Defense

The US and Australia



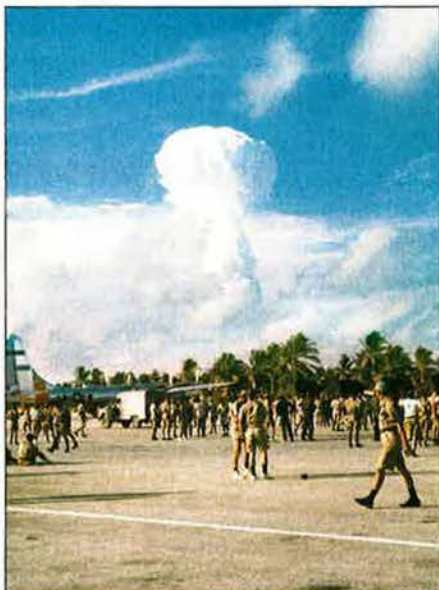
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**About the cover:** A "mushroom cloud" rises in the sky. See "Big Bang," p. 57. USAF photo via Walter J. Boyne.

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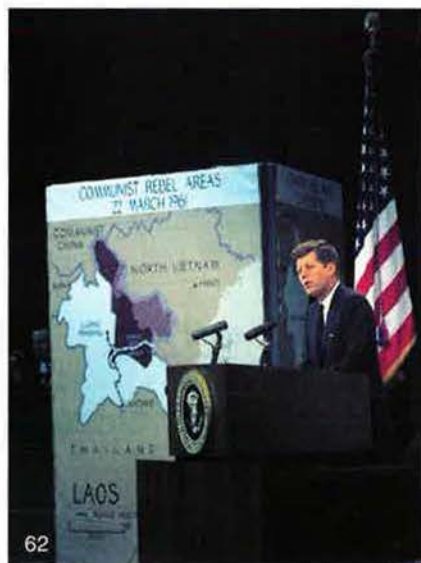


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## Walking on a Cliff

WASHINGTON, D.C., Nov. 16, 2012

**W**HETHER you bring isolated juries to mind by calling it sequestration, or prefer Federal Reserve Chairman Ben Bernanke's dramatic "fiscal cliff" description, at the time of this writing the nation is just seven weeks from a financial disaster.

Massive, governmentwide spending cuts will automatically kick in on Jan. 2 unless Congress takes action. Falling off the fiscal cliff would be disastrous for the nation, but lawmakers have failed to act to prevent it. The nation is now left to hope a bitterly divided, lame-duck Congress will come to its senses and reach agreement.

The issue has degenerated into such a partisan blame game that it is worth reviewing how we got here and what will happen if something isn't done.

To solve last year's debt-ceiling crisis, Congress passed the Budget Control Act of 2011. It enjoyed broad bipartisan support and was signed into law by President Obama.

One of the provisions in the act was a bipartisan debt-reduction "supercommittee" tasked with identifying a 10-year plan to reduce government spending by \$1.2 trillion. The committee failed to deliver a plan, leaving Congress until the end of this year to find \$1.2 trillion to cut. If it does not, sequestration kicks in to automatically reduce the spending.

By law, half the cuts will come from national security accounts and half from nonsecurity accounts. With just two exceptions, DOD's automatic \$56.5 billion cut (just the first of 10) next year will be across the board—meaning there is nothing to plan for.

War costs and uniformed military personnel costs are exempt, but every other account will be reduced. Operations, maintenance, procurement, research, development, test, evaluation, and military construction: All will be cut by approximately 10.3 percent beginning Jan. 2. The Pentagon is not allowed to move money around to protect the most important accounts.

If sequestration takes effect, some effects will be immediate, others will take years to develop. The law cuts budget authority, which is the permission to spend money. It does not

directly cut outlays, the checks the Treasury actually writes. Some money gets spent almost immediately, but weapons purchases can take years before the equipment is ready to be paid for.

Todd Harrison, senior fellow for defense budget studies at the Center for Strategic and Budgetary Assessments, says civilian government employees will be among the first to feel the pain.

"As many as 108,000 DOD civilians could lose their jobs in the weeks immediately after sequestration goes into effect," Harrison explains.

### **Sequestration is so painful Congress has no choice but to find a more reasonable alternative.**

Overall, operation and maintenance accounts will feel the most immediate bite. Some 69 percent of O&M expenses, which pay for items as diverse as spare parts, fuel, flying hours, and training exercises, are spent the year they are authorized.

Air Force readiness will almost certainly suffer within the first year if sequestration takes place. Simply put, the force will not be prepared to fight if it cannot train. Even repairs will be cut back, creating a backlog of broken equipment at a time when the Air Force's fleet, which has never been older, is worn down by years of war.

Procurement and industry face a slower moving problem. Under sequestration, the consequences will build slowly—but then linger.

Harrison notes that just 22 percent of Fiscal 2013's procurement authority would be spent that same year, but 33 percent would be spent in 2014, and 21 percent in 2015. The effects will therefore ripple through the defense industry for years.

New purchases will be curtailed, unit costs will rise, and planned purchases and upgrades will be canceled. Not only will there be less money, DOD will be forced to spend it less efficiently. Contractors are already wracked with uncertainty, not knowing what programs will be funded, what research they should conduct, and what

contracts are safe. DOD and industry research and development efforts that help make USAF the world's most advanced air force will be cut short.

All of this is on top of a DOD 2013 budget request that already cut \$487 billion from the military, compared to last year's long-range plan.

Declining budgets are not necessarily a problem, because the US is out of Iraq and ending the enormously expensive war in Afghanistan. And longer term, a strong military requires a strong economy. The crushing national debt must be reduced to protect America's economic strength.

But the Air Force—and our nation's security—will suffer if spending cuts are not made wisely. Sequestration is "really a singularly stupid way to take money out of the Defense Department," said Frank Kendall, DOD's acquisition chief, at a Nov. 5 conference. "It is a ridiculous way to do it. It doesn't allow us to prioritize; it doesn't allow us to align our spending with the strategy."

Sequestration is so painful Congress has no choice but to find a more reasonable alternative. Recent partisan history has shown lawmakers will not agree on that alternative.

To take a line from Winston Churchill, "Americans can always be counted on to do the right thing—after they have exhausted all other possibilities."

The nation is at the brink of the fiscal cliff, and the other possibilities are just about exhausted. It is time for Congress to either identify the spending cuts needed to avoid sequestration, or pass the buck and craft the legislation needed to delay it until the next Congress can solve the problem in the spring.

Defense is still somewhat of an afterthought in this entire fiscal debate. Larger arguments over taxes and entitlement spending dominate the negotiations. But the US faces a new recession and long-term damage to the defense industry and national security if this problem is not solved.

Without offering specifics, President Obama said Oct. 22 that sequestration "will not happen." For the sake of the economy and national security, he'd better be correct. ■

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**NORTHROP GRUMMAN**

## Thirteen Days

As of late, much attention has been turned to the U-2 program both old and new. *Airman* Magazine just ran a story about the current U-2 program, and the most recent media I have read is John T. Correll's article titled "High Noon" (*Air Force Magazine*, October, p. 32). Correll's overview of the famous 13 days of the Cuban Missile Crisis is extremely interesting to me as a historian. I felt he broke down the political and strategic situation very well. I actually found the information on Castro's role very interesting and had not known previously about Castro's apprehensions and frustrations with the Russians during this period. With his article, Correll almost brought the Cuban Missiles Crisis full circle for me.

I say almost because (and I admit I am partial) he left out Laughlin Air Force Base's role in serving our nation during such a critical time in its history. In October of 1962, U-2s from Laughlin, belonging to the 4080th Strategic Reconnaissance Wing, launched missions to photograph Cuba, and it was Laughlin's U-2s that discovered the Soviet Union was deploying ballistic missiles into the country. U-2 pilot Charlie Kern remembers helping launch a five-ship mission in the dark on an early stormy morning Oct. 14, 1962. Four of the U-2s returned to Laughlin, while the fifth landed at McCoy AFB, Fla.

Not only were most of the approximately 35 (all individually handmade, making them all different) U-2s at Laughlin "forward deployed" to McCoy, but many of the aerial casualties suffered were from Laughlin. Needless to say, Maj. [Rudolf] Anderson was a casualty, and little known is the fact that he forward deployed from Laughlin. Another casualty was Capt. Joe Hyde Jr., who perished only days after the crisis was over as the United States continued to monitor the removal of Soviet forces and weapons from Cuba.

Jack G. Waid  
Laughlin AFB, Tex.

I enjoyed and related to John T. Correll's "High Noon" as it brought back memories as a 21-year-old student at Florida State University in Tallahassee, Fla. In October 1962, I had to walk from my fraternity house across US Highway 90, a major east-west highway at the time (before Interstate 10), to get to classes. As a carefree and assuredly naïve student, I wasn't aware of what was going

on when crossing the already crowded highway, which was now clogged with slow moving convoys of military trucks with loads covered with tarps. I also recall a more than normal number of planes flying overhead. I later understood the traffic to be a part of the buildup for the Cuban missile crisis.

Jeff Allison  
Ken Caryl Valley, Colo.

## If It Looks Like a Drone ...

In the October issue, a letter writer objected to the use of the word "drone" in the August issue's article "RPAs for All" [*Letters: Droning On*, p. 8].

I was in the 100th Strategic Reconnaissance Wing, maintaining the photo and electronic intelligence variants of the AQM-34 family of Firebee drone variants. For security reasons, we were told to refer to the vehicles as special purpose aircraft (SPA), and this policy was not changed until the early '70s. At that time we were permitted to refer to the vehicles as drones, and this term was commonly used until the term remotely piloted vehicle (RPV) was coined a few years later. Still later, the common term became unmanned aerial vehicle (UAV). Now we call them remotely piloted aircraft (RPA), and the fact remains that it is still an unoccupied vehicle under computer or human control and fits the accepted definition of a drone.

CMSgt. David Matthews,  
USAF (Ret.)  
Fairborn, Ohio

## Be Smart and Lucky

Mr. Dudney presents an excellent summary review of our current space order of battle, including missile warning, navigation, communications, and weather capabilities [*"Game Changers in Space," October, p. 49*]. However, I am appalled at the uniform lockstep opinions of General Shelton and Lieutenant General Pawlikowski that the solution to the onrushing crunch to space funding is to go off on a new disaggregated architecture for our systems. The facts related in the article clearly show that evolved improvement in our space systems for missile warning (DSP), navigation (GPS), communications (DSCS and WGS), and weather (DMSP) provided steady improvement, in usable military capability, while revolutionary systems SBIRS, TSAT, and NPOESS provided disastrous

budget busts, enormous schedule delays, and outright cancellation after high sunk costs. The concept of simple, proliferated small satellites sounds plausible, but the evidence we have is dismal. Motorola tried it with Iridium in the commercial realm without success, and the classified programs tried it with the FIA system, leading to total cancellation.

The nation enjoys a deep reserve of technical capability among our laboratory personnel, university scientists, and industrial research experts who look to these leaders for guidance for the future of our constellations. At a time when we have already seen a \$500 billion reduction in the 10-year defense budget and the prospect of further cuts from "sequestration," one ought to steer this capability to small subsystem improvements to our vital satellites for marginal capability improvements in performance, or to replace parts not available due to obsolescence. If we are smart and lucky, we might hold on to this vital defense capability while much of DOD suffers drastic downgrade.

Lt. Gen. Aloysius G. Casey,  
USAF (Ret.)  
Redlands, Calif.

## Losing Altitude

I read your article "Losing Altitude" and came away quite dismayed. I have a hard time believing our Air Force leaders have mounted such a bad argument for air/cyberspace superiority that Congress and the American people are being led to believe the requirement for airpower is on the decline [*"Editorial," October, p. 4*].

I realize the pilot-to-pilot dogfights are a thing of the past, but this country requires air and cyberspace superiority now more than ever before. We [use] pilotless aircraft; our enemies are doing the same thing. Look at threats coming from North Korea in the development of their

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planned long-range arsenal. Because we are a superpower, our defenses are going to be chipped at, with increasing intensity. In order to maintain our status as a superpower, we require support for all forces, whether on the ground or in the air. I agree with the requirement for "boots on the ground"; however, reducing air support to the status of a glorified taxi service shows very limited future vision.

The saving grace of the October issue was the speech given by General Welsh, covered a few pages later in "New Boss, Bottom Line" [*Washington Watch*, p. 10]. In his speech he states no one else "can bring what we bring to the fight, and every real warfighter knows that. Don't ever doubt yourself or this service."

I think General Welsh and Editor John Correll should have met before the guest editorial was written.

MSgt. Dennis J. Dudley,  
USAF (Ret.)  
Medford, N.Y.

Emeritus Editor John T. Correll tells a compelling tale about the diminishing role of airpower in the military mix. His premise inadvertently exposes a more fundamental truth, i.e., the armed forces of the United States are not organized to meet 21st century threats. The following two facts are relevant: (1) The military services are currently organized along the same principles applied at their first formal organization in 1792, namely, the environment in which they fought, land and sea, with air added in the early 20th century, followed later by space and cyberspace; (2) and often overlooked, is that the current Chiefs of the four military services do not command a single combat unit. Beginning in 1986, under the Goldwater-Nichols Act, combat forces were placed into unified commands whose commanders report to the Joint Chiefs of Staff, not to the individual service chiefs. The nation's wars are fought by integrated forces.

These facts raise the question of why do we need four separate military services, each with their own planners advocating tactical and strategic positions and hardware that appear to be at odds with the joint combat operational needs? Duplication between the services in areas of training, education, logistics, base operations, administration, etc., is no longer justifiable and the source of a large waste of scarce defense dollars. In turn, this causes a high level of interservice rivalry for those scarce dollars, fueled by military, industrial, and congressional special interests. Joint planning is compromised by competing interests.

The solution is simple to state but difficult to implement because of the

many special interests. The solution is to create unified support commands that complement the unified combatant commands, thereby fully integrating the four services. This trend has already started but at a slow and reluctant pace. This is not a new idea, but it needs to be jointly planned, formalized in legislation, and implemented over several years. This will reduce the cost and size of the armed forces and actually make it a more "lean, mean, fighting machine" to meet 21st century challenges.

Lt. Col. C. W. Getz,  
USAF (Ret.)  
Fairfield, Calif.

After reading the [editorial] twice, I feel compelled to present some of my personal exceptions to the political game that has been going on for years to deplete the US Air Force to its lowest of readiness and upgrading of new aircraft.

Having been an avid aviation historian for over 65 years and also an avid historian of World War I, II, Korea, and Vietnam, I cannot believe that responsible leaders in our government seem to believe wars are won by the ground pounders. This is such an erroneous assessment. When the Air Force B-29 crew piloted by Colonel Tibbets and crew dropped the atomic bomb on Japan, it brought about an end to the war with Japan. Japanese leaders were prepared to defend their homeland at all costs if the American forces invaded Japan. The Japanese even buried some aircraft and hid tons of weapons in caves in the event of an invasion, with the intent of using such. I served in Japan at the end of World War II, and I witnessed what our atomic bombs did, which brought about an immediate surrender.

Correll's comment: "A consensus developed among politicians in and out of the Pentagon that the Air Force's main job was supporting boots on the ground. The QDR in 2005 declared 'irregular warfare' the dominant form of warfare. Funding was realigned and the Air Force and the Navy became bill payers for the ground forces." This is where I take exception, as ground forces are not going to win any future wars! It takes the Air Force and Navy to provide sufficient airpower to destroy strategic targets of the enemy. The Air Force has played an integral part in the war in Iraq and Afghanistan, and the ground forces would not have achieved many of their objectives had it not been for the Air Force aircraft.

Panetta said the force would "no longer be sized to conduct large-scale, prolonged stability operations." Correll also stated that the Air Force has already

been cut so much that to bounce back will be difficult. This is not the position that our Air Force should be in today or in the future. China has increased its defense spending by 11.8 percent and Russia at least 12 percent; whereas in the United States we have decreased our defense spending by at least 10 percent. Our responsible leaders in Washington had better have another cup of coffee and give serious thought to ensure that America will be the strongest country on the planet, to ensure our safety and freedoms. Airpower is here to stay, and it must be the best in the world!

Lt. Col. Donald E. Evett,  
USAF (Ret.)  
Bountiful, Utah

**Um, Sir?**

Thank you for taking on the Chief of Staff position. We need tough leaders. But ditch the zoot suit. Regarding October 2012 *Air Force Magazine*, "Washington Watch," p. 10: General Welsh looks like a Russian crown prince at an embassy ball. What is it? Come on, General LeMay would never wear that!! I wouldn't.

Michael W. Rea  
Savannah, Ga.

I hate the uniform. It appears the general is or was a member of the Air Force Band. Why this uniform has not received wider publicity is a true wonder. Thank God I retired in 1981 as a lieutenant colonel. Let's dump this Mitchell-era uniform.

Lt. Col. Ray T. Cwikowski,  
USAF (Ret.)  
Foley, Ala.

I realize that this is a ceremonial uniform for wear by the Chief of Staff, but I feel it sends the wrong message at a time when the Air Force needs to improve the image it projects. This costume would be more at home on a college football field at halftime than at a formal change of command ceremony for the USAF's top uniformed officer. Hopefully, this preposterous outfit will find its way to the farthest back corner of the general's closet—never to see the light of day again!

Anthony J. Rueber  
Schertz, Tex.

What is General Mark Welsh wearing on p. 10 of the October 2012 issue of the *Air Force Magazine*? It looks like a costume out of a 1920s musical comedy. Or is he trying to compete with the Army for ridiculous dress? What has happened to the plain blue suit?

Lt. Col. Robert W. Riegel,  
USAF (Ret.)  
Littleton, Colo.



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# Washington Watch

By John A. Tirpak, Executive Editor

**Pre-empt against cyber; 30,000 computers down; Delicate infrastructure targets; Moving on the sixth gen fighter; All comers welcome ....**

## **CYBER AT A PRE-9/11 MOMENT**

Massive cyber attacks that could wreak widespread disruption, physical destruction, and loss of life are now well within the capabilities of America's adversaries. The US military is preparing both to defend against them and respond—but not necessarily in kind.

That was the warning from Defense Secretary Leon E. Panetta in an October address to the Business Executives for National Security. Speaking in New York City, Panetta warned that cyber violence has leaped beyond simply hackers and criminals trying to steal information or create mischief. Instead, the US could well experience a "cyber Pearl Harbor" that would "paralyze and shock the nation and create a new, profound sense of vulnerability."

Panetta said the Defense Department doesn't have the lead in defending against a cyber attack—that job falls to the Department of Homeland Security—but it is heavily engaged in cyber defense and it would be up to the military to hit back, if US leaders deemed it necessary.

"We defend. We deter, and if called upon, we take decisive action to protect our citizens," Panetta asserted.

"If a foreign adversary attacked US soil, the American people have every right to expect their national defense forces to respond," he said. If the President orders a response, the armed forces "must be ready to obey that order and to act," Panetta intoned, clearly implying a physical retaliation.

He also said the US military should have authority to pre-empt a cyber attack if the signs of a looming massive assault are unmistakable.

"If we detect an imminent threat of attack that will cause significant, physical destruction in the United States or kill American citizens, we need to have the option to take action against those who would attack us to defend this nation when directed by the President," Panetta said.

To that end, the Pentagon is "now finalizing the most comprehensive change to our rules of engagement in cyberspace in seven years," Panetta said. "The new rules will make clear that the department has a responsibility, not only to defend DOD's networks, but also to be prepared to defend the nation and our national interests against an attack in or through cyberspace." These new rules make the department "more agile" and "provide us with the ability to confront major threats quickly."

While drawing down in almost every other area of the Pentagon budget, cyber defense spending is either holding

steady or increasing and is now above \$3 billion annually, Panetta said. It's important for adversaries to know that fact and that American cyber defenses are strengthening daily. He noted that great gains are being made in identifying the source of cyber attacks, no matter how craftily enemies try to cover their tracks, and this fact should help deter them.

"Our cyber adversaries will be far less likely to hit us if they know that we will be able to link [them] to the attack or that their effort will fail against our strong national defenses," Panetta said.

He detailed a number of recent attacks that illustrate the rapidly expanding scope and power of cyber warfare.

In the weeks before his speech, US firms were hit by a series of "so-called Distributed Denial of Service attacks,"

Panetta said. Though these sort of attacks are not new, "the scale and speed with which it happened was unprecedented."

He also revealed that in August, more than 30,000 computers in Saudi Arabia's state oil company, Aramco, got hit with what Panetta said was a "very sophisticated virus called Shamoon," which both replaced data with images of a burning American flag and overwrote everything else with "garbage" data. All of the machines were effectively destroyed and had to be replaced.

Days later, a similar attack was perpetrated against a

Qatar energy company, RasGas.

"All told, the Shamoon virus was probably the most destructive attack that the private sector has seen to date," Panetta said.

However, these assaults pale against the potential for much larger and deadly strikes, he said.

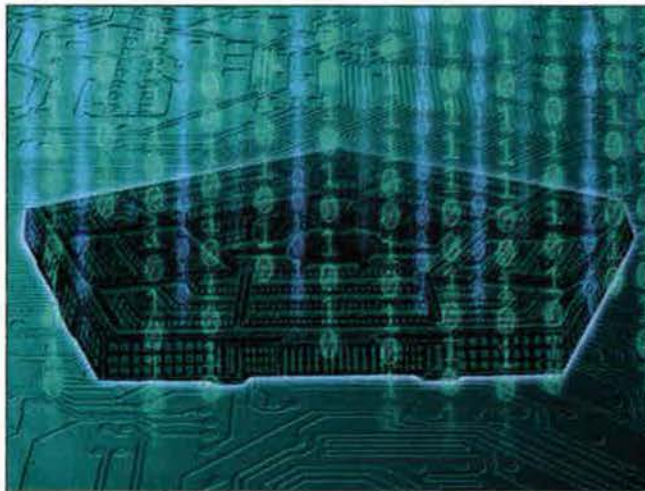
"We know that foreign cyber actors are probing America's critical infrastructure networks. They are targeting the computer control systems that operate chemical, electricity, and water plants, and those that guide transportation throughout this country," he said.

In some instances, "Intruders have successfully gained access to these control systems," Panetta said.

He warned that cyber intruders could derail passenger trains or trains carrying toxic chemicals, crash the power grid, contaminate water supplies, and "disable or degrade critical military systems or communications networks."

So immediate is this threat, Panetta said, that he described the nation in a "pre-9/11" status—except now, the nation is aware of the threat and is taking steps to be ready and respond.

"The good news is this: We are aware of this potential. Our eyes are wide open to these kinds of threats," and the



US is "on the cutting edge of this technology. We are the best and we have to stay there."

With the National Security Agency, DOD has developed "the world's most sophisticated system to detect cyber intruders and attackers" and is putting measures in place to "stop cyber attacks dead in their tracks."

Panetta said the US is cooperating and coordinating with allies in the cyber defense arena and is doing its utmost to share information and develop partnerships with the private sector, where so much of the cyber domain is located.

But that's not enough, he said.

"We've got to work with the business community to develop baseline standards for our most critical private-sector infrastructure; our power plants, our water treatment facilities, our gas pipelines. This would help ensure that companies take proactive measures to secure themselves against sophisticated threats, but also take common-sense steps against basic threats."

Panetta said that although awareness of the danger is increasing, "the reality is that too few companies have invested in even basic cybersecurity."

He urged Congress to act immediately to pass the "comprehensive ... bipartisan Cybersecurity Act of 2012," co-sponsored by Sen. Joe Lieberman (I-Conn.), Sen. Susan Collins (R-Maine), Sen. Jay Rockefeller (D-W.V.), and Sen. Dianne Feinstein (D-Calif.).

Continuing partisan gridlock on such a bill "frankly is unacceptable, and it should be unacceptable not just to me but to you and anyone else concerned with safeguarding our national security."

While awaiting that action, he said, government has been brainstorming ways around obstacles to a coordinated defense.

"They are considering issuing an executive order as one option to try to deal with the situation, but very frankly, there is no substitute for comprehensive legislation, and we need to move as far as we can in the meantime," Panetta said.

Before 9/11, "the warning signs were there," Panetta said. "We weren't organized. We weren't ready and we suffered terribly for that lack of attention. We cannot let that happen again."

He continued, "This is a pre-9/11 moment. The attackers are plotting. Our systems will never be impenetrable, just like our physical defenses are not perfect, but more can be done to improve them. We need Congress and all of you to help in that effort."

## SIXTH JUST GOT REAL

The Pentagon has at long last launched the first stage of a project to develop a successor to the F-22 and F-35 fighters, putting the Defense Advanced Research Projects Agency in charge of an 18-month, \$30 million "concept definition" effort to solicit ideas from industry, the Air Force, and the Navy. The start date for the project has not yet been set.

Industry has been impatiently awaiting word of a "sixth generation fighter" program for years, warning the Defense Department that without any new fighters to work on, its ability to offer world-beating air superiority designs will steadily erode. That consideration was clearly on the mind of Frank Kendall III, the Pentagon's acquisition, technology, and logistics chief, when he set the project in motion with an October memo.

"Our ability to design cutting-edge platforms of this type is already atrophying," Kendall said in the memo. Without action soon, the potential to have competitors to Lockheed Martin—which built the F-22 and now builds the F-35—"will shrink or be eliminated," Kendall wrote.

The competition will evaporate and America's technology edge in air combat "will not endure unless we provide [indus-

try] with a meaningful opportunity for leading-edge design, build, and test activities."

The US is already down to just three companies deemed capable of serving as a prime contractor in fighters: Lockheed Martin, Boeing—builder of the F/A-18E/F Super Hornet—and Northrop Grumman, which is Lockheed's principal partner in building the F-35.

By comparison, when the F-22 program was in its infancy, potential competitors included Boeing, McDonnell Douglas, Vought, Lockheed, Martin Marietta, General Dynamics, Fairchild, Rockwell, Northrop, and Grumman. Through mergers and acquisitions—a response to a steep post-Cold War drop in demand for capacity—those airframe houses have largely consolidated.

In the Pentagon's annual report to Congress on the defense industrial base, released in early fall, DOD noted the tactical aircraft research and development budget "is projected to decline with the end of F-35 development and an absence of any new fighter requirements" in the Future Years Defense Program, and it warned of the erosion of fighter design capability.

"This challenge is compounded by an aging aerospace workforce and dwindling interest from younger engineers in the aerospace domain," the report said, pointing out that there are already "shortages" in the availability of design talent.

Pentagon officials said the new DARPA-led effort will focus on channeling the ideas into a real system, and not serve as merely a hobby shop for ideas that never see production.

Results of the 18-month concept definition phase would transition into a five-year period when "multiple competing concepts may be demonstrated," according to Kendall.

The F-35 will provide a "decisive advantage" in air combat for the coming decades, but "it is not too early to begin consideration of the next generation of capability that will someday complement and eventually replace the F-35," Kendall said.

Indeed, the Air Force is already behind the power curve in developing a replacement for the F-22 by most assessments. That aircraft took 20 years to bring from drawing board to initial operational capability, and the earliest examples of the F-22 will reach the end of their planned life expectancies in the late 2020s, a scant 15 years away. Senior USAF leaders have acknowledged this is one reason they have slowed the pace of F-22 operations and are seeking to do more training in simulators, in order to make the fighter last long enough for its successor to arrive.

Air Combat Command asked industry for sixth generation fighter ideas in late 2010, but that effort simply informed an analysis of alternatives and apparently did not lead to a hardware program. Air Force Secretary Michael B. Donley said that year a sixth gen program was at least three years away.

Kendall's memo suggested a single fighter will replace both the F-22 and F-35, as well as the F/A-18. The Navy has been pursuing its own early effort toward such an aircraft with its F/A-XX project.

The F-22 was supposed to have served as the basis for the Naval Advanced Tactical Fighter, intended to replace the F-14 Tomcat as the Navy's chief interceptor and dogfighter. The Navy was even included on the source selection committee that chose the F-22, but the service terminated the program in favor of the less costly F/A-18E/F and, later, the F-35.

Kendall also admonished that there should be "no preconceived notions about the nature of air dominance a few decades into the future," and that any and all "innovative ... concepts" for the airframe, propulsion, sensors, weapons integration, and avionics will be considered. He said an unmanned concept, or an unmanned system working in coordination with manned aircraft, might prove to be the solution and that military evaluators shouldn't rule out any ideas. ■

## Superstorm Aid

Twelve C-17s and five C-5s carried power-restoration gear and experts to speed relief efforts in the wake of Hurricane Sandy, described by meteorologists as a "superstorm" that knocked out electricity to more than 10 million Americans in late October.

Active Duty, Air National Guard, and Air Force Reserve mobility airmen and machines from 12 bases across the US began staging at March AFB, Calif., Nov. 1. The crews boarded civilian power experts and loaded 632 tons of equipment and supplies, including 69 vehicles from the Southern California Edison utility company, for transport to Stewart Air National Guard Base in Newburgh, N.Y.

Among the vehicles were 10 cherry picker trucks, four line trucks, a flat-bed digger, eight "trouble trucks," and a mobile command center, according to Pentagon spokesman George Little.

Once offloaded at Stewart, the vehicles moved out for power-restoration activities in the New York area. "This operation demonstrates the strength of our air mobility system," said Col. James Finney, vice commander of March's 452nd Air Mobility Wing, a Reserve unit.

"By leveraging our reserve component[s], in partnership with our Active Duty airmen, we are able to provide rapid response to national requirements," he said. "This is Total Force global mobility at its finest."

## NY Air Guard Pitch In for Sandy

New York Air National Guardsmen deployed for relief efforts in the wake of Hurricane Sandy.

Seventy-five members of the New York Air National Guard's 105th Airlift Wing in Newburgh deployed to conduct relief operations in Manhattan. An equal number of airmen from the state's 107th Airlift Wing in Niagara Falls staged to Camp Smith Training Site just north of Peekskill Oct. 31, according to officials.

Both contingents were made up exclusively of volunteers. The New York Air Guardsmen were only one element of some 10,000 National Guard airmen and soldiers aiding in relief efforts across 13 eastern seaboard states in the days following the storm, according to the Pentagon.

Guard forces primarily provided communications, shelter, and engineering support; evacuation and security capability; high-water vehicle support; high-water search and rescue; debris removal; and transportation. (For more coverage of Hurricane Sandy, see box, p.19.)

## BAE-EADS Quit Merger Talks

The potential merger of defense industry giants BAE Systems and European Aeronautic Defence and Space Co. (EADS) was called off Oct. 10 as the companies responded to European government concerns.

The merger would have created the largest defense company—by far—in the world.

"BAE Systems and EADS believe that the merger was based on a sound industrial logic" and "would have delivered tangible benefits to all stakeholders," the companies said in a joint release the same day.

Reuters reported that German government resistance was the key stumbling block, though BAE Systems chief executive Ian G. King stated simply that the two companies were "disappointed" that they were unable to "reach an acceptable agreement" with government stakeholders.

King said the merger would have been a "unique opportunity" for both companies "to create a world-leading aerospace, defense, and security group."

## Youngest B-52 Hits 50

The last B-52H bomber delivered to the Air Force and still in service turned 50 years old on Oct. 26, manufacturer Boeing announced.

Stratofortress serial No. 61-040 is the youngest B-52 in the force and is assigned to Minot AFB, N.D. It flies with the 5th Bomb Wing and was originally delivered from Boeing's Wichita, Kan., production plant in October 1962.

Between 1952 and 1962, Boeing built 744 B-52s in eight different models.

Today, the Air Force's B-52 fleet comprises 76 H model aircraft, including two used as test aircraft at Edwards AFB, Calif.

Barksdale AFB, La., hosts the service's second combat-coded B-52 unit, the 2nd Bomb Wing, as well as Air Force

★ screenshot

USAF photo by SSGT. Craig Cisek

Reserve Command's 307th BW that runs the B-52 schoolhouse.

The Air Force intends to keep B-52s in service to around 2040.

#### **White House Pushes Fissile Ban**

The Obama Administration is renewing efforts to mandate an end to production of fissile materials for nuclear weapons through a Fissile Material Cutoff Treaty.

The Administration deems that securing a multilateral, verifiable agreement

is "too important a matter to be left in a deadlock forever," the State Department said, announcing the push Oct. 10. As a result, the US is consulting with nuclear powers, including China, France, Russia, and the United Kingdom, to "find a way to reach consensus and move forward," according to the State Department.

The treaty would be "the next fundamental step towards multilateral nuclear disarmament," as it would ban, for the first time, the production of fissile materi-

als for use in nuclear weapons or other nuclear explosive devices, stated the news release.

The State Department noted that the United States has not produced plutonium for weapons since 1988.

#### **Western Peacemaker**

The Pentagon issued its Western Hemisphere Defense Policy Statement in October, outlining the US military's mission and roles close to home in sup-



**11.06.2012**

*An F-16 launches from Osan AB, South Korea, for a sortie during operational readiness exercise Beverly Bulldog 13-01. The exercise tests airmen's ability to provide combat ready forces for close air support, counterair interdiction, air strike control, airlift, and communications in the defense of South Korea.*



port of the Obama Administration's new defense guidance.

"We will seek to be the security partner of choice, enhancing existing partnerships and pursuing new ones with nations whose interests and viewpoints are merging into a common vision of freedom, stability, and prosperity," according to the DOD document released Oct. 4.

In an era of tight resources, the Defense Department "will focus its security cooperation efforts" on activities that "enhance partnering bilaterally and regionally, based on shared security interests," the statement said.

"Specifically, DOD will support the role of defense institutions in addressing the threats of the 21st century, help partners develop mature and professional forces, and promote integration and interoperability."

The United States will also seek to strengthen "multilateral linkages and mechanisms for defense cooperation."

#### Second Hold for X-37B

The Air Force and United Launch Alliance delayed launching an X-37B reusable spaceplane atop an Atlas V rocket from Cape Canaveral AFS, Fla.,

**Drop It Like It's Hot:** A C-130J assigned to Little Rock AFB, Ark., performs an engine-running offload at Fort Polk, La. The aircraft performed a resupply mission during joint readiness training exercise *Decisive Action*, which emphasized joint forcible entry, noncombatant evacuation, wide-area security, and unified land operations in a joint service and interagency environment.

in October and aimed instead for a late November launch. The delays stem from the booster; Air Force spokeswoman Maj. Tracy Bunko affirmed that "there is no problem" with the X-37 vehicle itself.

The launch delay will give engineers more time to analyze the data from the anomaly of a Delta IV RL-10B-2 upper-stage engine during a GPS IIF satellite launch in October, according to ULA, which supplies both the Atlas and Delta rockets.

This mission, designated OTV-3, will be the second journey to space for the Air Force's first X-37 orbital test vehicle. This flight will demonstrate the craft is indeed reusable. The October launch was initially rescheduled for Nov. 13, before being pushed to the end of November.

"Although the Atlas V that will launch OTV-3 utilizes a different model of the RL-10 engine, ULA leadership and the OTV customer have decided to postpone the currently scheduled launch to allow

### Record Year for US Arms Sales

The United States "dominated" the world in conventional arms sales last fiscal year, totaling \$66.3 billion in arms transfer agreements to developing and developed nations, according to the Congressional Research Service.

"This is the highest single-year agreements total in the history of the US arms export program," CRS said in its report discussing FMS transactions during 2011.

US sales accounted for 77.7 percent of the world's total arms sales—\$85.3 billion—during 2011. Total arms sales had substantially increased from \$44.5 billion in 2010, according to the report released earlier this year.

However, authors Richard F. Grimmer and Paul K. Kerr said that much of the US spike was due to the atypical sale of \$33.7 billion of weapons to Saudi Arabia, including 84 new-build F-15SA fighters.

"The international arms market is not likely growing overall," they wrote. Instead, "the weakened state of the global economy" has "generally limited defense purchases."



an additional two weeks for the flight data anomaly investigation," said ULA officials.

At the beginning of November, ULA said the investigation was progressing well, but USAF and company officials were postponing the launch another two weeks to more thoroughly probe the problem and conduct a "thorough crossover assessment" for the X-37B OTV launch vehicle, ULA officials said Nov. 2.

### F-35 Funds Withheld

The Defense Department is withholding \$46.5 million in reimbursements from Lockheed Martin until the company fixes deficiencies in its earned value management system used to track F-35 program costs and scheduling.

That amount totals five percent of two F-35 production contracts and a smaller development agreement for Israel, according to a Bloomberg news report Oct. 26.

Lockheed Martin President Christopher E. Kubasik said the company had already made progress toward resolving the issue. Speaking in a teleconference in late October, Kubasik said, "We have a corrective action plan that has been approved, and we are executing to that."

He said Lockheed Martin is "having status checks monthly, and by all accounts, everybody is satisfied with the progress that we are making."

### Russian Nuclear Exercise

On Oct. 20, Russia conducted its largest strategic nuclear force exercise since the Soviet Union's collapse, deploying heavy bombers, submarines, and land-based ballistic missiles, according to the Kremlin.

Russia launched an SS-25 ICBM from the Plesetsk site in northwest Russia, while a submarine fired a long-range missile from the Sea of Okhotsk in Russia's Far East. Further, Tu-95 and Tu-160 bombers fired four cruise missiles that hit their targets on a testing range in the Komi region of northwest Russia, Reuters reported.

The Kremlin said Russian President Vladimir V. Putin gave a "high assess-

## F-35A Drops First Weapons

An F-35A dropped a 2,000-pound Joint Direct Attack Munition over the China Lake range in southern California, Oct. 16, marking the first time the Air Force variant of the fighter has dropped a bomb.

AF-1, flown by Maj. Eric Schultz, released the weapon from the F-35's left internal weapons bay, becoming the second F-35 overall to drop a weapon in flight.

The same Air Force F-35 also completed the first in-flight release of an AIM-120 Advanced Medium-Range Air-to-Air Missile three days later.

Pilot Maj. Matthew Phillips jettisoned the instrumented AIM-120 from one of the aircraft's two internal weapons bays over China Lake Oct. 19 test, according to Lockheed Martin.

A Marine Corps F-35B made the first-ever in-flight drop from a Lightning II when it released a 1,000-pound inert bomb in August.

The F-35A has four internal weapon stations—two in each of its two weapon bays—and has an additional three external weapon stations per wing, if not flying in stealth mode.

The fighter can carry a payload of up to 18,000 pounds, stated Lockheed Martin.

ment" to the units involved and the military's general staff "who all accomplished the tasks set and proved [the] reliability and efficiency of Russia's nuclear forces."

The exercises concluded one day after Putin reviewed nuclear forces' management and oversaw test launches of ballistic and cruise missiles that "reached set targets at various military testing grounds," Russian officials said.

### Super Hercs Cleared

Air Force operational testers have certified the new special mission Super Hercules variants as "effective, suitable, and mission capable," announced Lockheed Martin.

The Air Force is recapitalizing its legacy HC-130s and MC-130s with the new-build Combat King IIs and Commando IIs, modified versions of Lockheed's base C-130J model.

The company is under contract for 15 HC-130Js and 27 MC-130Js. USAF plans to procure a total of 37 HC-130Js and 85 MC-130Js overall, and 16 of the MC-130Js are slated to undergo postproduction conversion to AC-130J gunships.

The HC-130J Combat King II rescue aircraft and MC-130J Commando II spe-

cial mission tankers received certification after completing operational testing in October, according to the company.

### Special Mission C-130Js Ordered

The Air Force awarded Lockheed Martin \$889.5 million to supply 11 C-130J-based aircraft over the next two-and-a-half years, the Pentagon announced.

The order includes four HC-130J rescue aircraft for Air Combat Command, seven MC-130J special mission aircraft for Air Force Special Operations Command, and a single C-130J combat delivery airplane for Air Mobility Command, according to DOD's major contract awards release Oct. 23.

The order also includes a single KC-130J tanker aircraft for the Marine Corps, said company spokesman Peter Simmons. All of them will be delivered from Lockheed Martin's Marietta, Ga., plant by July 2015.

### Coed Departure?

In the wake of the sexual misconduct scandal at JBASA-Lackland, Tex., Air Force officials are considering switching to all-female military training instructors for female flights in basic military training.

"We're looking at everything, but at this point" switching to same-sex drill instructors isn't an option "we are aggressively pursuing," said Maj. Gen. Leonard A. Patrick, 2nd Air Force commander, who oversees BMT.

"We want to train like we fight," he continued. "We don't want to create something we'll have to overcome in the future. Young men are going to have to learn how to be supervised by women and vice versa."

In the meantime, Air Education and Training Command has mandated that at least one of the four assigned MTIs will be female when there are either two

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all-female flights or a brother and sister flight, said Patrick.

"When I start molding the young airmen, early on I want them to be exposed to all genders. It starts in BMT," Patrick said.

The Marine Corps is the only service to segregate basic trainees by gender, Patrick said during an October teleconference with reporters.

**Cyber CHAMP Missile**

During a test flight over the Utah desert in October, the nonexplosive missile known as CHAMP successfully knocked out electronic targets with a payload emitting high-powered microwaves.

CHAMP, which stands for Counter-electronics High-powered Microwave Advanced Missile Project, targeted personal computers and electrical systems without causing collateral damage to the two-story building on the range during the hour-long test.

"Today we turned science fiction into science fact," said Boeing's CHAMP program manager Keith Coleman. "In the near future, this technology may be used to render an enemy's electronic and data systems useless even before the first troops or aircraft arrive."

Boeing is developing CHAMP under an Office of the Secretary of Defense-sponsored project.

The company conducted the test with the Air Force Research Lab's Directed Energy Directorate at the Utah Test and Training Range Oct. 16.

**Devil in the Delta**

The Air Force is investigating why a

**USAF Hunts for a New Rescue Chopper**

The Air Force requested proposals from industry for a new combat rescue helicopter to replace its heavily worn HH-60G Pave Hawks, service officials announced Oct. 22.

The move signals "the official launch of this high-priority Air Force acquisition program," to restart the search for a new helicopter after USAF scuttled the CSAR-X program back in 2010, the service said.

USAF wants a fleet of 112 new helicopters, aiming to field the first around Fiscal 2016, with deliveries into the late 2020s, according to solicitation documents published Oct. 19.

The CRH's primary mission will be "to recover isolated personnel from hostile or denied territory," but it will also conduct ancillary missions such as civil search and rescue and medical and casualty evacuations of combatants, according to the official release.

Hover performance, combat radius, payload, and cabin space will be important factors in the Air Force's assessment of each bid. The Air Force wants "a product that meets the requirement at an affordable price," service officials said.

USAF funded two CRH test aircraft in its Fiscal 2013 budget request and plans to award the CRH contract in late September 2013, according to the RFP's cover letter, posted with the online solicitation.

The service got as far as selecting a new CSAR helicopter in 2010, choosing a variant of Boeing's MH-47 Chinook, but budget cuts caused the service to quit the project and reduce the scope of its requirements.

Delta IV RL-10B-2 upper stage engine malfunctioned during a GPS satellite launch in October.

The Delta IV successfully delivered the GPS satellite "into its proper orbit" despite the anomaly, but the incident was considered serious enough to warrant investigation, Air Force Space Command officials said in October. Gen. William L. Shelton, AFSPC commander, ordered the investigation.

"While the launch was ultimately

successful, the time-honored rigor and earnest process of an accident investigation board will serve us well as we attempt to determine the root cause of this anomaly," said Shelton. "In the end, our objective is continued safe and reliable launch for our nation." The Air Force's launch-manifest schedule was under review while the root cause was being determined, AFSPC officials said.

**500 C-17 Flights in Antarctica**

Airmen from JB Lewis-McChord, Wash., completed the 500th C-17 airlift mission to Antarctica Oct. 14, during the opening month of Operation Deep Freeze.

A McChord C-17, flying from Christchurch, New Zealand, under the call sign Ice 11, carried personnel and cargo bound for the research outpost at McMurdo Station, Antarctica. Upon the mission's completion, C-17s had transported more than 40,000 passengers and nearly 45 million pounds of cargo to Antarctica under Deep Freeze since 1999, McChord officials said.

"We are extremely proud of this milestone. Five hundred missions is a significant accomplishment," said Col. R. Wyn Elder, 62nd Airlift Wing commander.

Airmen of the 62nd Airlift Wing and Air Force Reserve Command's 446th Airlift Wing at McChord completed all 500 of the missions without a mishap, according to unit officials.

The Air Force plans to fly 48 missions during the 2012-2013 Deep Freeze season, providing logistical support of US scientific research through March.



USAF photo by A1C Marianne Santos

**A Little Change in the Weather:** A1C Andrew Caprio, deployed from JB Elmendorf-Richardson, Alaska, to Andersen AFB, Guam, replaces fuel lines on a munitions handling unit used for B-52 weapon loading. Maintainers are busy on the flight line at Andersen, and the work is especially challenging because they must quickly become accustomed to the shop and procedures.

### Operation Enduring Freedom

#### Casualties

By Nov. 14, a total of 2,147 Americans had died in Operation Enduring Freedom. The total includes 2,144 troops and three Department of Defense civilians. Of these deaths, 1,701 were killed in action with the enemy while 442 died in noncombat incidents.

There have been 17,992 troops wounded in action during OEF.

#### Afghan Air Force Graduates Pilots

Three Afghan Air Force pilot trainees at Shindand Air Base became the first fixed-wing students to earn their wings in Afghanistan in some 30 years, in a ceremony there Oct. 15.

They were also the first pilots to complete their fixed-wing training program entirely in Afghanistan—as opposed to instruction in the United States—since the beginning of NATO's air training mission in Afghanistan in 2007, according to 438th Air Expeditionary Wing training advisors.

"Now I am a pilot. I have a job to do to serve my country. That's all I wanted," said 1st Lt. Khan Agha Ghaznavi.

The airmen began initial flight screening in December 2011 and worked through their course of study, including more than 250 hours in the simulator and Cessna 182 and Cessna 208 aircraft.

The three airmen now proceed to advanced qualification training to become operational C-208 copilots, according to advisory officials.

#### Aeromed's Airplane-Side Dispensary

RED HORSE civil engineers opened a new crew-prep facility for the 455th Expeditionary Aeromedical Evacuation Squadron at Bagram Airfield, Afghanistan, at the beginning of October.

"The new facility is right on the ramp, closer to the aircraft, and closer to the Contingency Aeromedical Staging Facility," said 455th EAES Commander Lt. Col. Carla Marcinek during the ribbon cutting at Bagram Oct. 6. "This means we can work more efficiently, we can respond faster, and ultimately that translates to better patient care for our wounded."

The new building is twice as large as the previous structure and holds enough flight-ready medical equipment and supplies to accommodate transient crews, from places such as Kandahar Airfield, as well as 455th EAES nurses and medics.

Civil engineers from the 457th Expeditionary RED HORSE Squadron designed the facility, working closely with members of the 455th Expeditionary Civil Engineering Squadron to cut construction cost.

#### Third GPS IIF Satellite Operational

The 2nd Space Operations Squadron at Schriever AFB, Colo., accepted control of the third GPS Block IIF satellite, which launched earlier in the month, on Oct. 26.

A United Launch Alliance Delta IV rocket carried the Boeing-built positioning, navigation, and timing satellite designated SVN-65 aloft on Oct. 4.

"Everything went smoothly following the launch," said Col. Bernard Gruber, Space and Missile Systems Center's GPS director.

"This is the third GPS Block IIF that we've placed on orbit and the process seems to get better with each launch. We were able to decrease the timeline for checkout of the vehicle, and it's clear we're on the right track for future success."

Airmen of 2nd SOPS will control the satellite during its operational service life, along with members of Air Force Reserve Command's 19th SOPS.

The Block IIF satellites are designed for greater accuracy, a more robust and secure signal, and an extended service life over previous models. The first IIF satellite entered operational service in August 2010.

#### Vertigo Downed U-28A

Aircrew spatial disorientation caused the fatal crash of an Air Force Special Operations Command-operated U-28A on deployment to the Horn of Africa earlier this year.

All four crew members were killed when the ISR aircraft went down just outside Ambouli Airport, Djibouti, returning after a combat mission Feb. 18.

Evidence demonstrates the mission crew "did not recognize the position of the aircraft and, as a result, failed to take appropriate corrective actions," according to the report by AFSOC's accident investigation board.

"The crew never lost control of the aircraft" and "there were no indications of mechanical malfunction," an AFSOC news release said. The aircrew was assigned to the 34th Expeditionary Special Operations Squadron at Camp Lemonnier, Djibouti.

The aircraft, valued at \$14.5 million, was assigned to Hurlburt Field, Fla.

#### "Most Complex" Missile Test

The US military conducted its "largest, most complex missile defense flight test ever," Missile Defense Agency officials said.

The Oct. 25 drill, at the Reagan Test Site on Kwajalein Atoll in the western Pacific, involved the simultaneous engagement of three ballistic missile targets and two cruise missile targets to stress the integrated performance of the Army's Patriot Advanced Capability-3 and Terminal High Altitude Area Defense systems, as well as the Navy's Aegis Ballistic Missile Defense element.

Flight Test Integrated-01 was a combined developmental and operational live-fire exercise that included airmen in the 613th Air and Space Operations Center at JB Pearl Harbor-Hickam, Hawaii, and airmen, sailors, and soldiers operating near Kwajalein.

Initial indications are that THAAD "successfully intercepted" a medium-range ballistic missile target for the first time, while PAC-3 "near simultaneously destroyed" a short-range ballistic missile and a low-flying cruise missile over water, according to MDA.

The destroyer USS *Fitzgerald* also "successfully engaged" a low-flying submarine-launched cruise missile with an SM-3 Block 1A interceptor, but there was no indication the missile actually intercepted its target, according to an MDA news release.

#### AEHF-2 Aces On-Orbit Testing

USAF's second Advanced Extremely High Frequency military communications satellite, AEHF-2, completed on-orbit testing, bringing it a step closer to operational status.

Operators probed the satellite's individual performance as well as its cross-links with AEHF-1, and the legacy Milstar satellite constellation, said space officials at Los Angeles AFB, Calif.

The testing "successfully demonstrated the performance" of an all-AEHF constellation and also validated that "multiple AEHF satellites can operate seamlessly within a Milstar constellation," stated the Oct. 31 press release.

AEHF satellites will eventually replace Milstar. Like the legacy constellation, AEHF is designed to provide secure and reliable global communication to US leadership and military commanders.

The Air Force and its industry partners launched the Lockheed Martin-

## Senior Staff Changes

**RETIREMENTS:** Maj. Gen. David J. **Scott**, Brig. Gen. Jimmy E. **McMillian**. **AFRC RETIREMENTS:** Maj. Gen. Thomas R. **Coon**, Maj. Gen. Anita R. **Gallentine**, Maj. Gen. Stephen P. **Gross**.

**CHANGES:** Brig. Gen. Balan R. **Ayyar**, from Cmdr., AF Recruiting Svc., AETC, JBSA-Randolph, Tex., to Dep. Commanding General, Detainee Ops., Combined Jt. Interagency Task Force-435, US Forces-Afghanistan, CENTCOM, Kabul, Afghanistan ... Maj. Gen. Walter D. **Givhan**, from Dep. Asst. Secy., Plans, Prgms., & Ops., Department of State, Washington, D.C., to Cmdr., Curtis E. LeMay Center for Doctrine Dev. & Education, and Vice Cmdr., Air University, AETC, Maxwell AFB, Ala. ... Maj. Gen. (sel.) Morris E. **Haase**, from Dep. Cmdr., Jt. Task Force, Horn of Africa, AFRICOM, Camp Lemonnier, Djibouti, to Dir., Intel., Surveillance, & Recon, DCS, ISR, USAF, Pentagon ... Maj. Gen. Steven L. **Kwast**, from Dir., Rqmts., ACC, JB Langley-Eustis, Va., to Dir., AF Quadrennial Defense Review, Office of the Asst. Vice C/S, USAF, Pentagon ... Brig. Gen. Scott F. **Smith**, from Exec. Officer to the Combatant Cmdr., SOUTHCOM, Miami, to Dep. Cmdr., Jt. Task Force, Horn of Africa, AFRICOM, Camp Lemonnier, Djibouti.

**SENIOR EXECUTIVE SERVICE CHANGES:** Rodney A. **Grandon**, to Dep. General Counsel of the AF, Office of the AF General Counsel, Pentagon ... Lawrence S. **Kingsley**, to Dir., Instl., Log., & Mission Spt., AFGSC, Barksdale AFB, La. ... Jeffrey D. **Specht**, to Exec. Dir., AF Office of Special Investigations, Office of the Inspector General, Marine Corps Base Quantico, Va.

**CHIEF MASTER SERGEANT CHANGE:** CMSgt. James A. **Cody**, to Chief Master Sergeant of the Air Force, USAF, Pentagon.

built AEHF-2 into orbit in early May. It arrived at its intended orbit in August and completed testing in late September.

### LAIRCM Layup Over

After a hiatus of more than one year, workers at Robins AFB, Ga., resumed installing the Large Aircraft Infrared Countermeasures System on C-17 transports.

LAIRCM features a suite of sensors and lasers that work together to thwart anti-aircraft missiles having infrared guidance. The system is also fitted on C-5s and C-130s.

By the beginning of November, sheet metal and aircraft mechanics, electricians, and hydraulics technicians from the 562nd Aircraft Maintenance Squadron had nearly completed the first aircraft since the work restarted, according to base officials.

"The pause in LAIRCM installations on C-17 aircraft was due to a delay in procuring the long-lead parts needed for the installation process," Robins spokeswoman Christine Miner said.

"Although previously contracted C-17 LAIRCM installations were completed in July 2010, contractual agreements for further installations were not definitized until September 2010. C-17 installations restarted upon parts becoming available in February 2012," she explained.

### Eagle Reversal

An expeditionary contingent of F-15Cs from Kadena AB, Japan, deployed to JB Elmendorf-Richardson, Alaska, to support the Alaskan NORAD Region this fall.

For the purposes of the deployment, pilots, maintainers, and support personnel from Kadena deployed as the 44th Expeditionary Fighter Squadron.

The unit is responsible for protecting the airspace around Alaska and "intercepting any aircraft attempting to enter US or Canada airspace," said Capt. Joshua Gunderson, 44th EFS electronic combat officer, in an Oct. 31 news release from Elmendorf.

"We are also responsible for intercepting any aircraft that originate within the US not following their flight plan and/or showing signs of suspicious activity," Gunderson said.

Typically, F-22s from Elmendorf-Richardson deploy to Okinawa and not the other way around.

The Kadena airmen took advantage of their time in Alaska to fly with Elmendorf's F-22s and to conduct low-altitude training in a mountainous region, something they cannot do at their home base.

### Forking Over the BACN

Northrop Grumman delivered its second specially configured Global Hawk remotely piloted aircraft this year to Grand Forks AFB, N.D., early this fall.

The most recent EQ-4B air vehicle arrived at Grand Forks Sept. 7, some four months ahead of its delivery schedule, according to a company release Oct. 23.

The aircraft is the second of two Battlefield Airborne Communications Node-equipped EQ-4Bs ordered in 2011, the first having been delivered in June, according to Northrop Grumman.

Factoring the loss of an EQ-4B over Afghanistan in August 2011, these deliveries bring the operational BACN-carrying Global Hawk fleet up to three.

The Air Force also operates three similarly equipped E-11A Global Express jets for overhead communications-relay tasks in theater and recently ordered the conversion of a fourth.

### California Sky Surfing

Two C-17s probed the fuel-savings potential of long-distance formation flying using automated control software to maintain position during recent trials at Edwards AFB, Calif. The Air Force Research Lab, in conjunction with Air Mobility Command, sponsors the project known as Surfing Aircraft Vortices for Energy, or Save.



**Come Fly With Me, Let's Fly, Let's Fly Away:** A B-1 takes off toward the Las Vegas strip during exercise Green Flag at Nellis AFB, Nev., Oct. 30. Green Flag provides realistic close air support training for airmen and soldiers preparing for deployment to Southwest Asia.

USAF photo by Val Geerpijs

## East Coast Air Bridge for Sandy

Air Mobility Command launched its largest Stateside humanitarian airlift since 2005 in the wake of Hurricane Sandy at the end of October, command officials said.

Under the overall coordination of US Northern Command, AMC C-5s, C-17s, and C-130s airlifted 3,312 tons of relief cargo and 723 emergency personnel in 269 sorties between Oct. 31 and Nov. 8, according to official tallies.

"The devastation from Hurricane Sandy has required the largest domestic humanitarian airlift of cargo since Hurricane Katrina," said AMC spokesman Roger Drinnon in a Nov. 9 statement. "It's simple: We're here to answer the call when it comes, whether across the globe or here at home."

Relief flights delivered 261 response and utility repair vehicles from staging bases as far away as California to restore the electrical grid, notably in New York City ahead of the rapidly advancing cold.

"The welcome mat is out at our bases. We are standing by and ready to support utility crews with staging areas, logistical assistance, or anything else they need to help restore power quickly," summed up NORTHCOM commander Army Gen. Charles H. Jacoby Jr.

Overall DOD response assets operating under Defense Logistics Agency control delivered humanitarian supplies and food to aid recovery from the storm in the hardest hit areas of West Virginia, New Jersey, and New York during the first week of November.

This included 253,000 gallons of gasoline and 157,000 gallons of diesel fuel to relieve shortages hampering recovery, nearly two million meals to displaced citizens, 112 pumps to drain flooded buildings, and 51 generators to provide emergency power, according to a DOD summary at the height of operations Nov. 5.

Nearly 7,700 Army and Air National Guard members from across the US were assisting in relief, damage assessment, debris removal, distribution of supplies, and law enforcement, the news release stated.

For comparison, AMC hefted a monumental 5,076 tons of supplies, evacuated 1,794 medical patients, and ferried 14,198 responder and relief workers during Katrina, command statistics show.

The study "involves two or more aircraft flying together for a reduced drag effect, like what you see with a flock of geese," explained AMC chief scientist Donald R. Erbschloe. The unique software allows pilots to "surf" the vortex of a lead airplane for long distances, thereby conserving energy. Analysis of initial data indicates that the trailing C-17 cut fuel burn by almost 10 percent while flying no closer than 4,000 feet from the lead aircraft, according to AFRL officials.

"The autopilot held the position extremely well, even close to the vortex," said test pilot Capt. Zachary Schaffer.

As a result of initial testing, AFRL believes this type of formation flying holds the promise of reducing fuel consumption by "millions of gallons" annually.

Trials at Edwards ran from Sept. 6 to Oct. 2.

### ADVENT Engine Tests

General Electric Aviation revealed that it has started testing a variable-cycle engine core it is maturing for the Air Force Research Lab's Adaptive Versatile Engine Technology program.

"The ADVENT engine is a revolutionary military engine" that "will enable the Air Force to meet the aggressive

performance targets required for future missions," said Jeff Martin, GE Aviation's general manager for ADVENT.

The tests will demonstrate "advanced core propulsion technologies," including lightweight, heat-resistant ceramic matrix composite materials," the company stated in a press release Oct. 4. The results are expected to be "a 25 percent improvement in fuel efficiency, a 30 percent increase in operating range, and a five- to 10-percent improvement



**Come Rain or Come Shine:** TSgt. Omar Nurse, a battlefield weather forecaster, uses a handheld wind and weather meter called a kestrel to check if current weather conditions match the main weather sensor data at FOB Shank, Afghanistan. The device can assess an exhaustive list of environmental factors.

in thrust compared to today's fixed cycle engines," according to GE.

This fall, AFRL awarded GE Aviation a \$394.7 million contract to continue its engine work through September 2016 under a follow-on Adaptive Engine Technology Development project.

ADVENT is scheduled to conclude with a full engine test in 2013.

### First Installment for More Satellites

The Air Force awarded Lockheed Martin an \$82 million contract to begin work on the fifth and sixth Space Based Infrared System missile warning satellites, GEO-5 and GEO-6.

This initial contract covers "complete nonrecurring engineering activities" and procurement of select "long-lead spacecraft parts," according to the company's announcement Oct. 25.

"By the Air Force acquiring satellites in bulk, rather than one at a time, we can significantly reduce costs by achieving economies of scale," explained Jeff Smith, vice president of Lockheed Martin's Overhead Persistent Infrared mission area. The recent contract serves to "sustain a steady production rate" over time, he said.

The Air Force is procuring these two satellites under a fixed-price contract structure. The first SBIRS geosynchronous satellite, GEO-1, is already in space, and GEO-2 is scheduled for launch in March 2013, according to Lockheed Martin.

GEO-3 and GEO-4 are still in various stages of fabrication.

### B-2 Upgrades Progress

B-2 stealth bombers will begin receiving new high-speed processing subsystems under a \$108 million low-rate initial production contract awarded to Northrop Grumman in October.

The work is part of the first increment of the B-2's Extremely High Frequency satellite communications program and will serve as "a smart, cost-effective way

to enable future combat capability on the B-2," said company B-2 modernization director Ron Naylor.

"Every current and future [B-2] upgrade program ... will benefit from the quantum leap in processing power and data-handling capacity provided by this new hardware and software," he said in a contract announcement Oct. 11.

The new hardware and software include an integrated processing unit, a high-capacity disk drive, and a network of fiber-optic cable, according to Northrop Grumman.

The Increment 1 hardware and software completed operational testing in July, said Naylor. The Air Force awarded the contract to Northrop Grumman, the B-2's prime contractor, on Sept. 28.

**MC-12 Training Stand-up at Beale**

In an Oct. 5 ceremony, officials at Beale AFB, Calif., activated the 306th Intelligence Squadron to train tactical systems operators for the MC-12W Project Liberty ISR aircraft.

The unit, which falls under the 361st Intelligence, Surveillance, and Reconnaissance Group at Hurlburt Field, Fla., will instruct more than 150 airmen each year, according to Beale officials.

"We will take the combat experience we have already and use new experience to build a strong pool of ISR airmen," said Lt. Col. Robb Rigtrup, the squadron's commander.

The squadron traces its heritage to the 6306th Reconnaissance Technical Flight that began as a photoreconnaissance unit in 1953, according to the base.

**CV-22 at 2,000 Hours**

A CV-22 tilt-rotor assigned to the 71st Special Operations Squadron at Kirtland

AFB, N.M., became the first USAF Osprey to surpass 2,000 flying hours. It hit the milestone on a training sortie on Oct. 15.

"As a first generation, multirole weapon system, the 2,000-hour mark demonstrates the operational triumphs of this unique airframe," said SSgt. Cameron Settle, 58th Aircraft Maintenance Squadron crew chief. "It has enabled the Air Force to see the concept in action, in order to evaluate the importance of the role this weapon system provides to our military."

The 71st SOS has been training Osprey aircrews since 2006. The aircraft was built in 2002.

**Backyard Campout**

California Guardsmen and contingency response airmen from Travis AFB, Calif., opened a simulated Middle Eastern forward base during crisis exercise Soaring Angel.

Held at nearby Fort Hunter Liggett, "the main goal of this exercise was to integrate with our partners to get significant training close to home at a reduced cost," said MSgt. Paul Spear of the 573rd Global Support Squadron.

More than 50 members of Travis' 621st Contingency Response Wing partnered with the ANG's 129th Rescue Wing from Moffett Field, Calif., for the nine-day exercise.

The Travis airmen got hands-on training in command and control, ramp coordination, aerial port activities, and security operations, according to Travis officials.

For the Moffett airmen, the exercise was valuable practice for deployments early next year to the Horn of Africa and Southeast Asia, said Lt. Col. Andrew Ferguson, 129th RQW plans officer. Soaring Angel concluded Oct. 17.

**Doubled RPA Training at Holloman**

Officials activated the 9th Attack Squadron as a second MQ-9 remotely piloted aircraft training at Holloman AFB, N.M., to deal with the service's increased demand for RPA operators.

"MQ-9 training requirements have doubled," said SMSgt. James Howard, 9th AS superintendent, in Holloman's Oct. 4 release. "By having two training squadrons, it enables us to train more students to meet that requirement."

"Last year, the US Air Force trained more RPA aircrew than traditional pilots, and that is a trend that is likely to continue," said Lt. Col. Jeffrey Patton, 9th AS commander.

The unit stood up Sept. 28 and will now train half of the Reaper operators receiving instruction at Holloman, in concert with the base's existing 29th AS.

Both units will share the base's fleet of 11 MQ-9s. The new squadron traces its history to the 9th Fighter Squadron, flying P-38s, P-40s, and P-47s during World War II.

**ICBM Payload Transporter**

The Air Force awarded Northrop Grumman a four-year, \$39.7 million contract to design, develop, test, and qualify a replacement payload transporter system for the Minuteman III ICBM fleet.

The existing payload transporter is nearing the end of its design life, and "the replacement transporter will provide an immediate improvement in security," said Mark Bishop, Northrop Grumman's program manager for the payload transporter replacement.

The upgrade will also "prevent potential supportability impacts from the aging system currently in use," he said in the company's news release Nov. 1.

Northrop Grumman is the Minuteman III's overall prime contractor in charge of sustaining the fleet, which USAF expects to operate out to 2030.

**Yeager Revisits Mach 1**

Retired Brig. Gen. Charles E. Yeager, the first man to officially break the "sound barrier" in level flight, on Oct. 14 recreated the feat exactly 65 years later to the minute—this time in the backseat of an F-15 fighter.

On Oct. 14, 1947, the then-24-year-old Yeager piloted the rocket-propelled Bell X-1 through Mach 1 over the Mojave Desert, achieving the feat at 10:24 a.m. on a flight from Edwards AFB, Calif.

Sixty-five years later, Capt. David Vincent, a 65th Aggressor Squadron pilot at Nellis Air Force Base flew the re-enactment flight out of the Nevada base.

Said Yeager of the anniversary flight, "I'm very familiar with the area and got a good view." ■



**You've Got a Friend:** 729th Airlift Squadron loadmasters guide a Southern California Edison utility vehicle onto a C-17 at March ARB, Calif., Nov. 1. Units across the country helped bring disaster relief to East Coast states hit by Hurricane Sandy.

USAF photo by SSgt. Caroline Hayward

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A photograph of an F-35 fighter jet on a runway. The jet is the central focus, shown from a low angle, highlighting its stealthy design and canards. In the foreground, a soldier in a camouflage uniform is walking from left to right, pulling a yellow dolly. The background consists of a green field and trees under a bright sky.

For a time, the US had a monopoly on nuclear weapons, too.

By John A. Tirpak, Executive Editor

# Here Comes Adversary Stealth

**E**ver since the early 1980s, when the Air Force introduced the F-117 fighter, the United States Air Force has held a monopoly on operational stealth combat aircraft. It still does. No other country can go into battle with low observable aircraft such as the B-2 bomber or F-22 fighter. Soon, the US will have another operational stealth fighter, the F-35.

In the past three years, however, three foreign stealth combat aircraft

designs—one Russian, two Chinese—have begun flight testing.

While stealth has been the cornerstone of USAF's air supremacy for some three decades, these recent developments in Russia and China have sparked concern among some that they may well mark the beginning of the end of America's long and overwhelming stealth supremacy.

For the most part, senior US military officials shrug off the new fighters, asserting that it takes more than simply

a stealthy-looking design to achieve low observability.

That is undoubtedly true. Combat-worthy stealth comprises a broad range of technologies, tactics, training, and techniques. It took 20 years to nurse the F-22 from the drawing board to operational status, during which time the Raptor suffered many costly setbacks. Bringing along the new F-35 will also take many years.

During the trial periods of earlier stealth systems, much had to be





*Lockheed Martin's F-35 (above) and China's new Shenyang J-31 (inset) are almost comically similar, but the Chinese aircraft is no laughing matter. If new foreign fighters turn out to be as stealthy as they look, US air supremacy may be at risk for the first time in decades.*



learned and relearned about materials, electronics, and sensors, not to mention the integration of all of those elements. Mastering the fine points of manufacturing, maintenance, and flight testing also took vast amounts of time, money, and patience.

The F-22 is still increasing in capability. Gen. Norton A. Schwartz, the recently retired USAF Chief of Staff, noted last year that the Air Force is “not backing away” from the challenge of potential stealth opponents and is investing billions in making the F-22 “all that we can make it be.”

Schwartz, in a rare commentary about normally classified capabilities, said the Air Force has “over \$2 billion” in stealth research and development accounts. The goal is to develop new technologies applicable to a sixth generation fighter, should such a project ever be deemed urgent.

These advanced technologies, reported Schwartz, include advanced sensors, materials, manufacturing, data links, apertures, high-resolution radars, and the like.

Thus, the appearance of three or four new, seemingly stealthy designs in the hands of near-peer countries is not seen as a “Sputnik moment,” as one top USAF official put it, and doesn’t demand a crash sixth generation technology program for USAF to stay ahead.

Just by looking at them, there is no way to know whether these new foreign fighters have all the ingredients necessary to achieve a true “fifth generation” stealth capability. Some

Sukhoi photo



**Russia's T-50 has thrust-vectoring engines, claimed to be capable of supercruise. Russia and India may build roughly 400 T-50s together and offer more for export.**

of them, in fact, may fall short of that standard for many years.

However, while the stealth challengers may not pose an immediate threat, they arrived sooner than expected by American intelligence. That fact, coupled with the rapid proliferation of computer technology and cyber espionage, leads some to speculate that the US edge in combat aircraft may be more perishable than US officials are letting on.

The latest Chinese stealth design to make its appearance goes alternately by the names J-21, J-31, and F-60. Asked in September about this fighter, Gen. Herbert J. Carlisle, the commander of

Pacific Air Forces, replied that it is a reminder that the US cannot afford to remain static in combat aircraft technology, because competitors are catching up fast.

“With respect to stealth capability, [China is] ... behind us, but they will develop and get better, and we certainly can’t rest on our position,” Carlisle said. “We’re going to have to get better.”

### What We Know

China is “first and foremost ... making gains that are improving capability and quality,” he said, and this signifies the three-decade advantage USAF has had in stealth isn’t representative of the advantage it will have in the future.

“That kind of time,” in which the Air Force enjoys a 30-year lead, “will not occur again, in my opinion,” Carlisle said.

He said he believes the US will retain a technological advantage in air combat, but the gap between fielded US systems and competitive counterparts will shrink.

“Given ... technology transfer, education, and where it’s going, and who’s participating in that, I think the advantages we have will still be there [but] they just won’t last as long,” said the PACAF commander.

The three main air combat challengers—discussed here in the order they appeared—are the Sukhoi T-50 (Russia), Chengdu J-20 (China), and Shenyang J-21/J-31/F-60 (also China).

■ **Russia’s T-50.** The T-50 has been touted by Russian officials as a near-

Photo via Russian Internet



**Exposed engine fan blades are a big no-no in stealth design. The T-50’s blades are clearly visible in this photo, though, suggesting Russia has more work to do.**

equal of the F-22, but with a substantially lower price tag. Russia intends to manufacture the T-50 fighter for its own forces and for the export market, a step Washington ruled out for the F-22.

The T-50 also goes by the name PAK FA, which, in Russian, translates roughly to “prospective new front-line aircraft system.”

The T-50 first flew in 2010. It does, in fact, bear some resemblance to the F-22, and is about the same size as the front-line USAF fighter. Moreover, Russia says the T-50 will be capable of supercruise, a key attribute of the F-22, in which supersonic flight is sustained without resort to use of fuel-guzzling afterburners.

Videos of flight tests suggest the T-50 enjoys only about the same level of maneuverability as seen in Russia’s best fourth generation fighter, the Su-35, and does not approach that of the F-22. Like the Su-35, the T-50 has canards and the ability to vector the thrust of its round exhaust nozzles.

Industry analysts point out that the T-50’s engine fan blades—a huge reflector of radar energy—are not entirely hidden when viewed from the front. Its engine exhausts also show little conformance to basic low observable design, showing none of the “sawtooth” features typical of an American stealth engine.

The engines seen in the now numerous images of the T-50 in flight may not be those that ultimately equip the fighter. However, its two known engine design shortcomings undoubtedly prevent the aircraft from coming close to achieving a radar cross section as small as that of the F-22 or F-35.

Russia and India have a longstanding agreement to cooperate on the T-50. According to Hindustan Aeronautics Ltd., the Indian version will debut in 2020 and begin squadron service with the Indian Air Force in about 2025. A Russian news service forecasts T-50 series production to begin in 2015, with operational status in the Russian Air Force to be achieved as early as 2018.

Russia plans to buy 200 to 300 T-50s. India’s acquisition goal is 144 by the end of 2030.

Including development costs, sources in India pegged the unit cost of the Indian model, called Fifth Generation Fighter Aircraft, or FGFA, at about \$140 million in current dollars.

“They [Russia] say they’re going to produce these in numbers,” said one industry expert who declined to be

## The Sincerest Form of Flattery

Air Force leaders have been reluctant to say publicly that the similarities among the F-22, F-35, J-20, J-31, and T-50 are attributable to industrial theft and cyber espionage, especially in the case of China.

However, Maj. Gen. Christopher C. Bogdan, deputy F-35 program manager, said in September that the F-35’s Autonomic Logistics Information System, or ALIS, has severe security weaknesses and “vulnerabilities.” ALIS contains vast amounts of information on the construction of the aircraft and the status of every one of the Lightning IIs.

Bogdan’s remarks suggest the F-35 technology has probably been compromised. (He has been selected for promotion to lieutenant general and command of the program.) Now, he says, the weaknesses have been plugged.

While it seems that the J-20 and J-31 designs benefitted from work done on the F-22 and F-35, basic engineering also undoubtedly played a role.

The late Ben R. Rich, former head of Lockheed’s “Skunkworks” and the executive and engineer who oversaw development of the SR-71 Blackbird and F-117, frequently said pioneering aircraft often resemble each other because “the math is the same for everybody.” He pointed out that Lockheed’s nonselected entry for the B-2 bomber closely resembled Northrop’s winning design. That, he said, was because both companies were working from identical specifications for range, payload, and radar cross section.

China may have supercomputers equal to or better than those in the US—and probably some stolen information about the F-22 and F-35 that will allow it to skip wrong turns and dead ends encountered in the development of those aircraft. That means it may be able to bring its new fighters to initial service on the timeline it suggests, despite what former Chief of Staff Gen. Norton A. Schwartz described as the “struggles” to mature stealth technology.

named. “But I think they have more work to do. I’d be surprised if this is not an intermediate step—a concept demonstrator, if you will—toward something else.”

This industry expert asserted that, if Russia does put this design into production as is, then it will have “something which is only stealthy in a fairly narrow range of view.”

Given the wait for the T-50, Russia has signed a deal with Sukhoi to buy

48 additional Su-35s—the climax of development of the Su-27 Flanker series—as a bridge to the new fighters. It is not stealthy in the classic sense, however.

Russia has said the more advanced models of the Flanker series enjoy some stealth because of its Digital Radio Frequency Memory, or DRFM. It is an electronic technique that captures radar energy and rebroadcasts it in a different frequency, affording



PACAF chief Gen. Herbert “Hawk” Carlisle, here greeting Chinese Army visitors, thinks America’s lead in stealth and other air dominance technologies is narrowing.

USAF photo by TSgt. Jerome S. Taylor



*Chengdu Aircraft Industry Group's J-20 may not have an analogy in Western air forces. The large, long aircraft seems to be designed for stealthy attack, not necessarily dogfighting.*

it some means of fooling search and track radars.

Industry experts said DRFM works under certain conditions but is vulnerable to active electronically scanned array, or AESA, radars, such as those employed on the F-22 and F-35, and planned to be part of the next major upgrade for F-15s and F-16s.

■ **China's J-20.** The Chinese J-20, designed by Chengdu Aircraft Industry Group, appeared in late 2010, and it's still not clear whether the first photos of it on the Internet were released by Beijing itself or were the work of "tailwatchers" keeping an eye on Chengdu's airport facilities.

Like the T-50, the J-20 bears a resemblance to the F-22, though mostly in its forebody. The intakes seem adapted from those on the F-35. The wing and tail are a departure from other stealth designs and little seems to have been done to reduce the radar cross section of the engine exhausts, although some sawtoothing is evident.

Given the J-20's length and center of gravity, it likely is not intended to be an especially agile fighter. The emphasis on frontal radar cross section reduction, its long body (longer than the F-22), and spacious weapons bay suggests the J-20 doesn't have an exact analogy in Western air forces.

*From another angle, the J-31 seems a ringer for the F-22. US officials hesitate to say espionage helped China design its new fighters, but the design similarities are many.*

Some believe that it may, in fact, be a stealthy strike platform, designed to be just stealthy enough to get close to a target, launch missiles, and retreat quickly.

These capabilities would imply that the J-20 has an anti-base or anti-shipping role. That would be logical, as the US is dependent on aircraft carriers and forward bases for sustained air action in the Asia-Pacific theater.

Moreover, Chinese military doctrine emphasizes neutralizing US

strengths—such as intelligence, surveillance, and reconnaissance systems and forward bases—early in any conflict.

At a trade show, Chengdu displayed a model of the J-20 with the weapon bays open, revealing a loadout of air-to-air missiles almost identical to that of the F-22.

If the model is accurate, then it could be that the J-20 also has an interceptor mission, to fire volleys of air-to-air missiles at incoming packages of at-



tack aircraft, or possibly as a killer of the E-3 Airborne Warning and Control System aircraft, large ISR platforms, or tankers.

China has acknowledged the existence of the J-20, but it hasn't declared whether the aircraft is a concept demonstrator or operational prototype. US intelligence officials have testified before Congress that they believe the J-20 has been in the works since the mid-1990s.

China has forecast that the J-20 will reach initial operational capability in 2018.

The J-20's first flight occurred in January 2011, coinciding with a visit to China by then-Defense Secretary Robert M. Gates. At the time, Gates said he believed his Chinese hosts were surprised by reports of the flight. Others saw the test as a deliberate snub of the American defense chief, who had forecast that a Chinese stealth fighter wouldn't appear much before 2020.

Gates had used this argument in his successful 2009 push to cap production of the F-22 at 187 aircraft.

■ **China's J-31.** The official September 2012 appearance of the Shenyang J-31 (sometimes called the J-21 or F-60) weirdly echoed the earlier debut of the J-20. The first photos of the aircraft in flight appeared on the Web shortly before Defense Secretary Leon E. Panetta visited China.

Given the story of Gates and the J-20, it seems this might have been China's way of sending the message that it has



**Pictures of China's "mystery airplane," shrouded in transport, began circulating in summer 2012.**

a vigorous aerospace enterprise with sufficient resources to develop two or more stealth designs simultaneously and that it intends to challenge the US in this arena.

Among non-American stealth aircraft, the J-31 most closely corresponds to the F-22 in shape. Moreover, the J-31's apparent center of gravity suggests tremendous agility—another trademark of the F-22.

Indeed, a September 2011 photo of the Shenyang airplane on the Internet was dismissed as notional, mainly because it bore such a strong resemblance to the F-22.

However, viewed from the front, the J-31's diverterless intakes strongly suggest an F-35 heritage. The initial frontal photos lacked sufficient resolution to show whether the engine fan blades are hidden within the fuselage, as they are on the F-22, F-35, and B-2.

Engine exhausts show little stealth shaping or stealth design considerations, though.

The landing gear of the aircraft is especially robust. The main gear resembles that of the US Navy's legendary F-14 Tomcat, and the nose gear features double wheels. These elements, taken together, suggest a possible naval role and capacity for operations from an aircraft carrier.

Unlike US carrier aircraft, however, the J-31 doesn't have readily apparent wing folds.

■ **China's Mystery Airplane.** In summer 2012, the Internet was astir with several photos and videos showing

an airframe being transported under a tarpaulin near Shenyang.

The image sparked robust debate among various armchair analysts and parlor Pershings, who mused about what the mystery aircraft could be.

One theory was that the aircraft was a durability test article of the J-31. Others who scrutinized the image said it had a shape more reminiscent of the F-35 than the F-22, meaning it was not a variant of the J-31 but rather something new.

It seems a good bet that Russia and China will follow through on stated plans to build hundreds of these putative fifth gen aircraft, as they have shown the technological capability to do so and have the hard currency to actually follow through.

Meanwhile, the Air Force will never have more than 185 F-22s. The production line has closed and restart costs are considered prohibitive.

Plans call for USAF to buy 1,763 F-35s, but that number seems likely to decline. In September, Secretary of the Air Force Michael B. Donley said the F-35 program will not be given any more money; therefore, additional "bills" will have to be met internally. That, he said, could lead to "reducing tails."

Gen. Mark A. Welsh III, who took over as USAF Chief of Staff in August, knows the challenge will be a long and difficult one.

"The pursuit of fifth generation fighter technology by other countries," he said in October, "is a reminder that we can't rest in developing and fielding our own fifth gen fleet." ■



Photo via chinesemilitaryreview.blogspot.com



**Intercepting single-engine Cessnas helps the D.C. Air Guard stay sharp for its busy air defense mission.**

*An F-16 sets up a cautious orbit above a Cessna that has wandered into simulated restricted airspace near Washington, D.C., in a Fertile Key-note exercise.*

Staff photo by Aaron M. U. Church

# CAPITAL DEFENDERS

By Aaron M. U. Church, Associate Editor

**A**TJB Andrews, Md., just 12 miles from the nation's capital, F-16s stand constant alert. These fighters are part of the 121st Fighter Squadron, District of Columbia Air National Guard. They would be true first responders in the event of attack on the American government.

Their assignment: Protect the President, Congress, and the Department of Defense from aerial attack.

"Given the place where we sit, there's not a whole lot of room for error," said Brig. Gen. Marc H. Sasseville, commander of the D.C. ANG 113th Wing. "This is a very target-rich environment."

That became only too apparent on Sept. 11, 2001, when al Qaeda rammed a hijacked airliner into the Pentagon and might have done greater damage had not a passenger revolt brought down United Airlines Flight 93 well short of the capital.

On that day more than 11 years ago, Sasseville was on routine alert at Andrews. He became the first D.C. ANG F-16 pilot sent up to intercept Flight 93. For him and many others, the day's events highlighted the need for a thorough overhaul of the post-Cold War US air defense mission.

The D.C. airspace was locked down in the weeks after 9/11. This proved to be an effective short-term defense against renewed attacks. However, maintaining a permanent flying ban was not realistic. Everyone knew it couldn't last, and it didn't.

Within weeks, flying activity began to return to a more normal state, with new limits established for where air traffic

could fly. With several major airports in the area, the narrow air corridors around the capital are jam-packed with commercial and government traffic.

Today, the 121st Fighter Squadron boasts what is by far the busiest aerospace control alert (ACA) section in the United States. It scrambles, on average, more than once a day—more than 3,800 times since the 9/11 attacks.

Andrews is just one of 16 alert sites in the continental United States. However, the fighter force based there scrambles twice as often as all the other air defense units combined, said Lt. Col. Christopher Hardgrave, 121st FS alert commander.

The alert F-16s are just the most obvious layer of the National Capital Region (NCR) Integrated Air Defense System. This network also features radars, command and control systems, Coast Guard helicopters, laser warning elements, surveillance cameras, and Army surface-to-air missiles.

Because the airspace around Washington, D.C., is so crowded and critical to national security, reliance on this defense setup is a high-stakes affair. Making good use of it requires close interagency cooperation. That takes constant exercising and rehearsal.

Alert pilots routinely exercise every kind of relevant activity, from individual tactics to mass coordination of fighter operations.

Frequent practice scrambles have served to minimize response times. Since fighters normally go aloft in two-ship formations, they can skirmish with each other often to gain valuable experience in intercepting flying targets.

In the real world, however, most unauthorized intrusions into restricted D.C. airspace are carried out accidentally by “low and slow” light civil aircraft. These are not easily simulated with fast fighter aircraft.

For more realistic training, the F-16s regularly fly against light aircraft, usually single-engine prop-driven Cessna 182s flown by pilots of the Civil Air Patrol. These Fertile Keynote exercises are staged twice each month. Ground controllers from the Eastern Air Defense Sector of NORAD guide the fighters to intercept. The activity also requires fighter coordination with the local civilian air traffic control system.

### Scramble

Each month NORAD hosts Falcon Virgo, a dead-of-night, live-fly exercise against multiple targets over Washington, D.C., and its environs. These exercises draw together the full command cast: the NCR Coordination Center, Joint Air Defense Operations Center, NORAD’s Eastern Air Defense Sector controllers, and more.

Falcon Virgo allows fighter pilots to practice their roles in complex scenarios—for example, the receiving of intercept handoffs from Coast Guard MH-65 helicopters or the interception of jet targets with the aid of night vision goggles.

Explained Lt. Col. Timothy Madden, 113th Operations Group commander: “It’s a building block approach. From the practice scrambles, to the Fertile Keynotes, to the Falcon Virgos, ... each layer brings more players in. ... [and] stresses different parts of the system.”

The goal is to make sure coordination will be close and seamless. “It’s a no-fail mission, so we have to make sure we’re ready,” he said.

The intensity of the preparation was on display on a late August day at Andrews. The alert klaxon suddenly sounded. Hardgrave and his alert wingman, Maj. Matthew R. McDonough, sprang from their seats at the alert facility and bolted through a short hallway to their launch-ready F-16s in the alert bays. The two pilots grabbed their helmets off the canopy rails and strapped in as technicians pulled the chocks and disconnected umbilicals.

The scramble was a Fertile Keynote. Though it was an exercise, both fighters were loaded with live weapons: AIM-9X and AIM-120 air-to-air missiles and a full load of 20 mm rounds for the F-16s’ internal cannon. The fighters always



Staff photo by Aaron M. U. Church

**F-16 Brave 02 flies over the Maryland countryside as it escorts a Cessna, piloted by a CAP volunteer, to an airfield outside the restricted flight zone around the nation’s capital.**

fly armed to respond to breaches of Washington, D.C., airspace.

Hardgrave and McDonough were still completing their checks even as they rolled to the runway threshold. After the tower granted clearance, Hardgrave, flying as Brave 01, released the brakes, and pushed full afterburner for a roaring climb out to altitude. Just 15 seconds after he became airborne, McDonough, Brave 02, began his roll, takeoff, and climb out.

As soon as they were aloft, the pilots immediately began coordination with NORAD’s Eastern Air Defense Sector—call sign Huntress—as well as air traffic control, clearing the fighter’s path through civil airspace.

Huntress issued the “investigate” order, tasking the F-16s to intercept and identify an unknown target of interest, in ACA vernacular, to the southeast of the capital.

“We have radars on the F-16s, but our scope is very narrow, so we need at least initial point-outs from Huntress,” said McDonough. Huntress passed information to the jets in a “nine-line,” a

standard format used to communicate a target’s description, heading, speed, and other vitals. It then directed the F-16s on a vector from a preset ground point to intercept the target.

While the F-16s were getting airborne, a lone Civil Air Patrol Cessna 172 entered the “restricted area” about 40 miles to the southeast of Washington, near NAS Patuxent River, Md. The CAP crew made a quick call to air traffic control—“Baywatch”—confirming that the area it was entering was clear of traffic, and then the Cessna crossed the no-go line at 5,000 feet altitude. It then described a slow, meandering course over the Chesapeake Bay.

The F-16s, hurtling through the air at a speed of nearly 575 mph, quickly closed within visual range of the Cessna. They turned to approach the intruder from behind, on the Cessna pilot’s side.

On the first pass, the F-16s looked for indications that the aircraft or pilot might be disabled or in distress. “At that point, we just passed word to Huntress, let them know what we were seeing,” explained McDonough.





To slow down the F-16s, Hardgrave and McDonough had deployed their speed brakes. Even so, the speed differential was so great that the pilots had only a few seconds to observe the intruding aircraft and relay its tail number, make, and markings to Huntress. Then, they overtook and shot past the Cessna.

The F-16s turned to make another pass, during which one of the Guard pilots tried to make radio contact. He asked, "Cessna 229NY. You have been intercepted. Advise. Do you require assistance?"

### Establishing Communications

The Cessna did not respond—a frequent occurrence in real-life intercepts.

The F-16 pilots observed that the Cessna pilot appeared to hear their message well enough and guessed that he might have lost power to answer via radio. They decided to try a different course.

An F-16 pilot said: "If your radio is disabled, but you are able to understand, please acknowledge with a wing rock."

At that, the Cessna emphatically responded, rocking its wings 45 degrees left and right. Communication was established.

## Volunteer Targets, Courtesy of the Civil Air Patrol

Ever since the round-the-clock alert mission began, the Civil Air Patrol has played a key role in air defense exercises around the nation's capital. CAP pilots and aircraft have been providing "low and slow" targets for interception practice by the D.C. Air National Guard's fast-moving F-16s.

This began shortly after the Sept. 11, 2001, airborne terror attacks in New York and Washington, D.C.

"In those days, ... this was all new, and we were going to try something that was literally dangerous," said CAP Lt. Col. Peter C. Hantelman, director of homeland security missions for CAP's National Capital Wing.

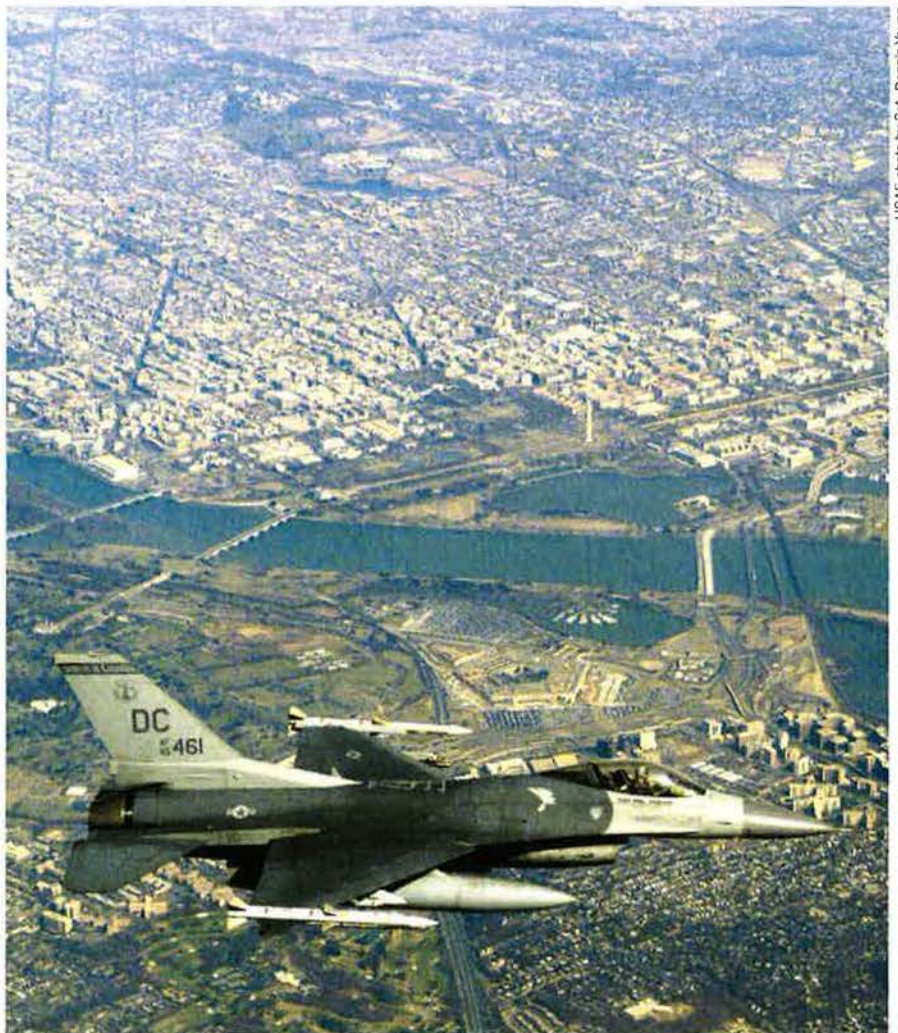
CAP is the official auxiliary of the Air Force. Its volunteer aviators have picked up burgeoning homeland security missions that now rival in frequency and number CAP's traditional search and rescue operations.

"Civil Air Patrol is a great asset to have," said Lt. Col. Timothy Madden, operations group commander of the D.C. Guard's 113th Wing. "They do a great job of simulating different [threats]. ... You get the basics of blocking and tackling, going out there making the basic intercept, making sure you get your procedures right."

Maryland, Virginia, and National Capital CAP wings average nine Fertile Keynote events per year.

During Falcon Virgo, CAP Cessnas carry extremely accurate GPS equipment to calibrate National Capital Region air defense radars and tracking equipment.

CAP crews also test and affirm the accurate functioning of the Visual Warning System—eye-safe lasers that warn pilots that they have strayed into restricted airspace.



An F-16 from the 121st Fighter Squadron flies a Noble Eagle mission over the Washington area. The 121st scrambles, on average, once a day.

USAF photo by S/A Dennis Young

“We directed him to go to an airfield that would take him out of the Capital Region and he effectively followed our orders,” said McDonough.

The FAA has two restricted zones around the sensitive center of Washington, D.C. One zone is within a sprawling area that includes both downtown Baltimore and Dulles Airport. This is designated as an Air Defense Identification Zone. Any aircraft entering this zone must maintain strict radio contact and use specifically designated transponder codes for radar identification. Within the ADIZ itself, at its very center, is a smaller Flight Restricted Zone encompassing all of Washington, D.C., and most of the area inside “the beltway.” Its airspace is strictly off-limits to all but a few government and law enforcement aircraft.

### Allahu Akbar

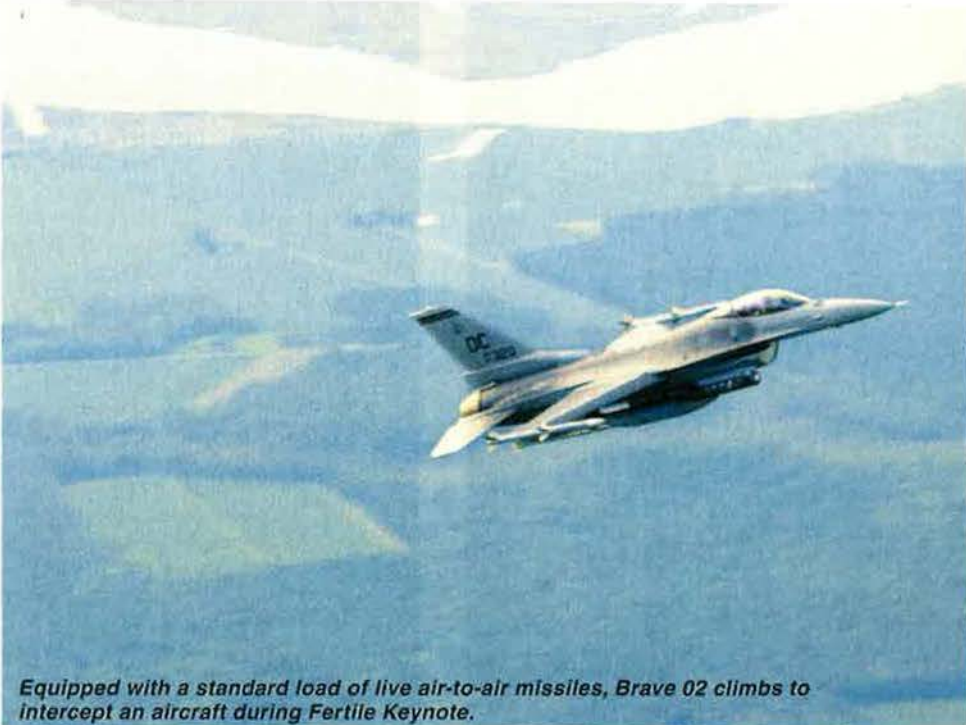
Most intercepts since 2001 have been cases where pilots simply failed to contact air traffic control or “squawked” the wrong transponder code.

“Most of the time, it’s just a misunderstanding or a lost position—almost all cases have been that,” said McDonough.

However, the few exceptions have been notable—and even bizarre. Example: In August 2010, the Navy lost control of an unmanned helicopter during tests at NAS Patuxent River. The Fire Scout chopper wandered several miles into restricted airspace before the Navy operators managed to rein it in.

During Fertile Keynote events, the F-16s usually fly several intercepts, breaking off and re-engaging to practice different scenarios. It is like cats playing with a mouse, observed CAP Lt. Col.

Staff photos by Aaron M. U. Church



*Equipped with a standard load of live air-to-air missiles, Brave 02 climbs to intercept an aircraft during Fertile Keynote.*

C. Peter Hantelman, exercise pilot and head of homeland security missions for CAP’s National Capital Wing.

Hantelman and CAP 1st Lt. Victor Sanguanboon piloted the Cessna during the late-August exercise. As McDonough deployed his air brakes to slow down for a second practice intercept, Hantelman raised the tension. The Cessna pilot radioed an emphatic, “Allahu akbar”—in Arabic, “God is Great”—followed by a string of threats.

Hantelman then turned the Cessna on a wingtip and broke sharply away from the fighter in a three- to four-G descending turn.

Brave 02 quickly overshot the maneuverable Cessna, but Hantelman didn’t get far. Brave 01 was still directly behind and nimbly banked to follow the Cessna.

Brave 01 reported the situation to Huntress and moments later received

orders to execute a “head butt”—that is, to issue a warning to the Cessna to desist from what it is doing or risk escalation.

Hardgrave in Brave 01 carefully approached the Cessna from below and thus remained hidden from the pilot’s view. Next, Hardgrave pulled the fighter directly into the Cessna’s path, lighting the F-16’s afterburner several hundred feet ahead of the small aircraft’s nose.

“We can also dispense flares to let him know that what he’s doing is not going to be well-received,” McDonough later explained.

To cope with the speed differential, the F-16s set up an elliptical orbit around the Cessna, handling the escort relay style. Since the target was “hostile,” the F-16s shifted their orbits to stay largely out of sight, approaching from directly behind.



*F-16s with the 121st Fighter Squadron prepare to launch at JB Andrews, Md. The alert facility sits just off the runway to allow the pilots to get airborne as quickly as possible in response to a potential threat.*



If an intruder, thus warned, fails to respond to orders to leave the area, Huntress will relay orders, up to the point of shutdown. Ultimately, a decision will be made up the chain and Huntress will pass along the orders, said McDonough. "If we're ordered to fire, unfortunately, we're ordered to fire."

That, in mock fashion, is what the F-16s wound up doing with the errant Cessna, according to a debrief at Andrews.

The aerospace control alert mission is a 24/7 job that continues uninterrupted through deployments, training exercises, and inspections. The exercise, training, and evaluation cycle for ACA mission is intense.

### Fortification

However, it is not the only task. The 15 ANG squadrons defending key points within CONUS under NORAD deploy and conduct state missions on top of the ACA alert.

"To do two missions at the same time is always a challenge," admitted Sasseville. "We're trying to basically fight two wars—the home game and the away game."

The squadron's fighters are split between combat deployment, training, and round-the-clock alerts. There are not enough airmen for all of these operations.

On a recent deployment to Bagram Airfield, Afghanistan, the D.C. Guard unit teamed with two other Guard F-16 outfits—the 119th Fighter Squadron from Atlantic City, N.J., and the 124th Fighter Squadron from Des Moines, Iowa—just to make the rotation pos-



Staff photo by Aaron M. U. Church

**CAP 1st Lt. Victor Sanguanboon completes postflight paperwork in the cockpit of a Cessna 172 after the exercise.**

sible. Plans had called for each unit to contribute four F-16s to a blended 12-fighter fleet.

As it turned out, due to the demands of the home-station mission, D.C. was only able to spare three F-16s. The New Jersey and Iowa ANG units took up the slack.

The dual mission poses a training challenge. It is far from easy to keep pilots prepared for defending the capital and for flying the demanding air-to-ground combat mission.

"The mission overseas and the [ACA] mission are completely different, ... and when you're doing one, you're not training for the other," said Sasseville. Switching back and forth can lead to "an atrophy of skills" if unit planners are not careful.

One possible solution: Develop two pilot pools, each optimized for a single task. The Air Guard has resisted the notion. "As a unit we decided that there's not going to be two separate operations

going on," said Madden. "When we're at home, everybody's partaking. ... I would say that probably 80 to 90 percent of the unit is out there sitting alert" at least once a month.

Because the unit comprises both traditional Guardsmen and active Guard/Reserve pilots, there is a core group of full-time pilots that, for the sake of continuity, sit alert up to eight times a month. Several of these dedicated ACA pilots deployed on the unit's last rotation to Afghanistan.

The Air Force has said it intends to fortify every Reserve and Air Guard fighter squadron with Active pilots and maintainers through an active association. So far, however, the D.C. Guard hasn't seen any such infusion.

"We've been able to do everything with volunteers," said Sasseville, but he warned, "That's not an endless, bottomless pit [of personnel]. ... There's an optempo issue. ... We have to make certain that we don't burn out our volunteers." ■

**R**ELATIONS between the Active Duty Air Force and its two reserve components are tense, maybe as strained as they ever have been. Allies of the Air National Guard and Air Force Reserve in Congress rejected force structure cutbacks proposed in the 2012 USAF budget plan. They argued that the Guard and Reserve bore a disproportionate share of the budget pain.

Congress did not pass the budget, meaning the Air Force started Fiscal 2013 on Oct. 1 funded by a continuing resolution. President Obama in late September signed the stopgap budget measure. It funds the federal government—and thus the Air Force—at 2012 levels for six months.

The measure halted, for the moment, any divestiture of Guard and Reserve aircraft. All parties are trying to figure out what went wrong and how to put things right again.

The budget proposed huge cuts in the Air Force's aircraft inventory, with all components losing some. However, the Guard had been tagged for more than 50 percent of overall aircraft reductions. Further, plans had called for cutting about 6,000 Reserve and Air Guard billets.

Gen. Mark A. Welsh III, the USAF Chief of Staff, and Michael B. Donley, the Secretary of the Air Force, emphasized the need to make wise choices in the coming months and years. They also made clear the Air Force can't

move forward without strong Guard and Reserve partners.

Welsh, addressing a September conference of the National Guard Association of the United States, said the Air Force, Guard, and Reserve must debate the issues and put requirements at the "front end of this process," not at the tail end. This was viewed as a signal of Welsh's desire to patch up the strained relationship with reserve components.

At the Air Force Association's Air & Space Conference, held in mid-September, Donley defended the proposed cutbacks, but he insisted on maintaining a strategic balance that "will not break" Active, Guard, or Reserve elements.

Lt. Gen. James F. Jackson, the head of Air Force Reserve Command, be-



# RESERVE RESET

By Marc V. Schanz, Senior Editor

**The Air Force Reserve needs clarity in future missions and infrastructure.**

lieves the next Future Years Defense Program, due out in early 2013, will offer an opportunity for a fundamental reset of the Total Force. The Reserve and Guard must be an equal partner from the outset, he said.

"There are a lot of things that happened on the Hill, and that caused some problems," Jackson said in a September interview. "But I'm sure we can get to a better place on the other side."

Ever since he assumed his new post this summer, Jackson has argued that the Reserve's 75,800 members have a large part to play in finding a way forward as budgets roll back.

Some Reserve missions are unique to the component. These include, for example, aerial spraying carried out by

the 910th Airlift Wing at Youngstown, Ohio, or the work of the "Hurricane Hunters" of the Reserve's 53rd Weather Reconnaissance Squadron at Keesler AFB, Miss.

The Reserve also provides 60 percent of the Total Force's aeromedical evacuation capability, 50 percent of its flight inspection units, and 40 percent of its strategic airlift. Reservists make up 10 percent of both Air Force special operations forces and the intelligence field, according to recent data from Reserve headquarters. The Reserve also is slated to play increasingly significant roles in several emerging and expanding mission areas.

What's more, Reserve officials expect these proportions to go up for a

simple reason: The Reserve force is experienced, relatively inexpensive to maintain, and requires minimal support infrastructure. These are salient points for USAF leaders facing tough decisions on where and how to bed down future capabilities.

Requirements continue to add up across the globe, even as combat operations in Afghanistan wind down. Combatant commanders have not scaled down their demands for airpower capability. If anything, they have gone up. Indeed, there is concern that such demands are becoming unrealistic.

"We need to have an honest discussion as to what the requirements are" for the combatant commanders, Jackson said.



*Airmen from the 3rd and 477th Aircraft Maintenance Squadrons perform a hot pit refueling with an F-22 at JB Elmendorf-Richardson, Alaska. The Reserve receives high praise from Active Duty commanders for its work in air operations worldwide.*

USAF photo by TSgt. Dana Rossio



USAF photo by MSgt. Jeff Walston

**TSgt. Edward Ector (l), 5th Maintenance Squadron, hands SSgt. John Slaughter (r), 307th Maintenance Squadron, a radio transmitter radome at Minot AFB, N.D. Both Ector, who is Active Duty, and Slaughter, a Reservist, are communications navigation systems technicians.**

The only way to meet demands as they are projected, noted Jackson, is to make use of every part of the force. This is especially true of the Title 10 Air Force Reserve. Unlike the Air National Guard (organized under Title 10 for federal service but also Title 32 for its state obligations), the Reserve does not develop its forces and cadre to fit state requirements. Nor does it have obligations to fulfill state missions.

### BRAC Pain

In his address to AFA's Air & Space Conference, Jackson pointed out that the Reserve currently maintains 34 wings at 56 locations but that Air Force Reserve Command "owns" only 10 bases, meaning that, in most cases, the Reserve shares space with Active Duty units.

"There is efficiency and effectiveness at consolidated locations, and we need to continue to look at those," Jackson said.

The Guard and Reserve already have endured a great deal of unit shifting and mission changes in recent years. These moves came about as a result of the 2005 round of Base Realignment and Closure, or BRAC, decisions.

Because the force has already suffered hardships caused by BRAC, reserve component leaders were taken aback by the scope and magnitude of the latest proposals, which would have doubled down on the turbulence.

"Some of our units have gone through three missions in the last decade or so," Jackson said.

He went on to suggest that this process of moving and retraining Reservists

and shuffling aircraft has taken a toll on actual capability.

"If you're going to give us a new mission, there is a time where you're not going to have that capacity and capability for the nation," Jackson said.

As an example, he pointed to the BRAC-induced move of the 927th Air Refueling Wing from Michigan to MacDill AFB, Fla.

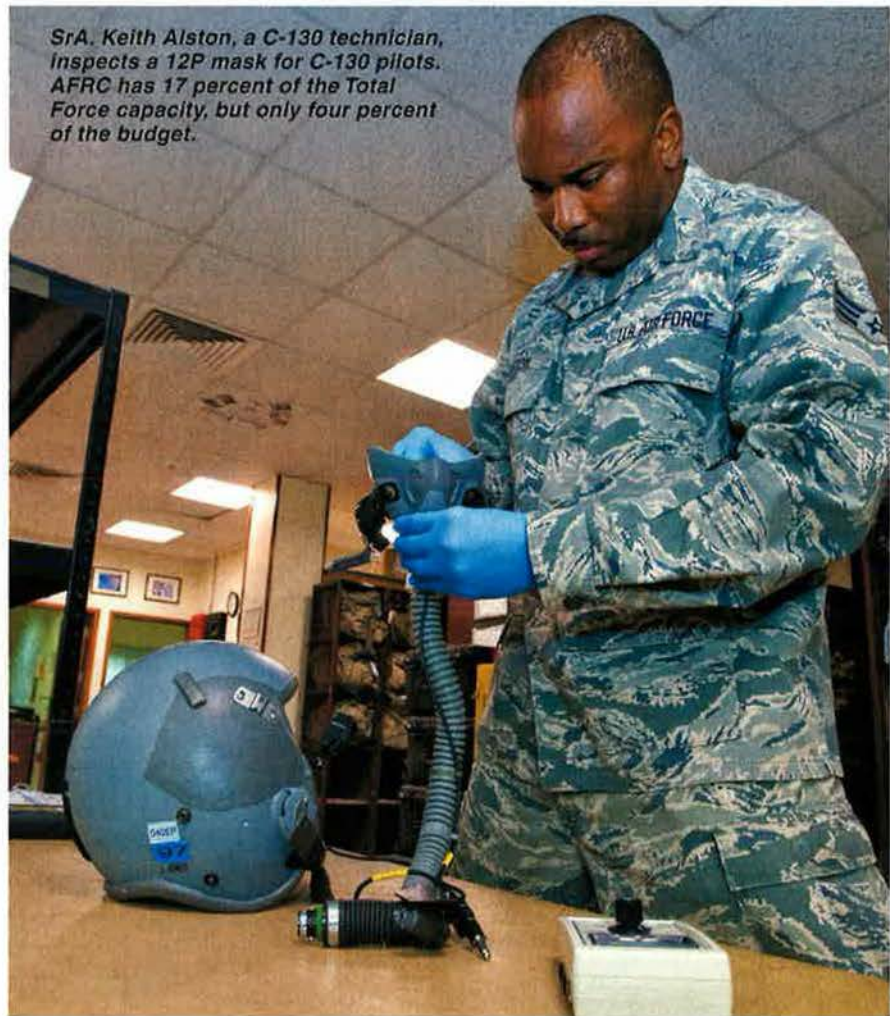
"We were able to do that because [as Title 10 forces] we could move manpower and support, ... but there was a lapse in time where that expertise was not available" to Air Mobility Command, he added.

Some 25 percent of the wing's personnel moved to the new location in Florida, he said, and the wing is "just now" getting back to the level of operation expected of it.

Jackson and other senior Reserve leaders, both officer and enlisted, have been visiting units across their command in recent months. Reservists want to know how big upcoming changes are going to affect them and their families.

"There is apprehension," said Jackson. "We've been in the spotlight a lot lately, [and] they want reassurance."

Jackson predicted growth in the number and importance of active associate constructs, where Active Duty airmen work alongside Reservists in Reserve organizations.



**SrA. Keith Alston, a C-130 technician, inspects a 12P mask for C-130 pilots. AFRC has 17 percent of the Total Force capacity, but only four percent of the budget.**

USAF photo by SrA. Bryan Swirnik

Example: Air Combat Command has agreed to place 167 Active Duty F-16 pilots and maintainers at Reserve bases in Florida and Texas.

“We think it’s a good construct,” Jackson said of active associations.

The Reserve has since 1968 been engaged mostly in so-called classic associations—that is, groupings where Reserve units join with Active Duty units at Active Duty installations.

Today, the Reserve has approximately 115 associations across USAF.

New missions will be important to the Total Force balance in the years ahead. Since 9/11, the Reserve has expanded into mission areas such as irregular warfare, special operations, cyber warfare, and space operations.

“We have 17 percent of capacity for the Air Force, and we do it on four percent of the budget,” Jackson told the crowd at the AFA conference, adding that it’s nearly impossible to tell the difference between Active, Guard, and Reserve airmen in the field. “If you go to a deployed location, ... you will know that there is a seamless operation going on.”

The Reserve recently released a new vision and mission statement. Its priorities parallel those of the Active Duty component but puts them in the context of Reserve needs. There are four guiding principles.

First, the Reserve must continue to exist as a strong “strategic reserve” even as it provides combat ready forces for use in operational deployments.

Second, it must strengthen the “Reserve triad”—encompassing the families, employers, and careers of Reservists—and ensure that each Reserve airman receives the best possible opportunities to advance.

Third, it will push to expand Total Force initiatives—not only in air and space but also in the new cyberspace arena.

Fourth, the Reserve will push for equipment and facilities modernization.

The next few years will offer major challenges, Jackson said. He acknowledged that the Reserve’s airmen will be forced to adapt in many different ways.

“We are going to be pushing [them], we can’t look backwards,” said the Reserve commander. AFRC has “to be that effective and efficient capacity the nation needs.”

### Ironing Out the Differences

Jackson argued that the Reserve must have “pieces of every mission” and must keep looking to adapt to new and evolving roles. The Reserve leadership wants to preserve hard-won institutional knowledge from a decade of wars.

The Reserve continues to grapple with many of the force structure disagreements that were at the heart of the implosion of the 2013 Air Force budget submission.

In some mission areas, the use of highly experienced Reserve members can provide useful leverage for accomplishment of large tasks. Jackson specifically noted the contribution Reservists

have made in working with Active Duty airmen at Air Force Space Command, Schriever AFB, Colo., as well as in the burgeoning cyber realm.

Jackson said the Reserve receives high praise from Active Duty commanders for their work in air and space operations centers (AOCs) around the world. The Reserve has three squadrons working in various AOCs, providing some 15 percent of USAF’s personnel for the mission.

Some personnel disagreements between the Active force and the two reserve components have been ironed out at the Air Staff level and at the commands, Jackson said.

New procedures, for instance, allow either Reservist or Active Duty supervisors to write a performance report. This will prove important in future pairings of different components.

Reserve leadership has been working with Active and Guard officials on problems of applying Air Force Instructions (AFIs)—policy and doctrinal statements—across the Total Force.

“We’ve been looking at every AFI ... with three components and asking, ‘How do we fit those into a single AFI with component differences?’” Jackson said.

He said that, while there are clear differences between Title 10 and Title 32 forces, many such issues have been resolved to the satisfaction of all three components.

As an example of a new concept that has been proved in recent years,

*Reservists from the 414th Fighter Group, Seymour Johnson AFB, N.C., run through an operational readiness exercise at Homestead ARB, Fla. The 414th led a Total Force integration team at the exercise.*



USAF photo by MSgt. Wendy Lopedote



**CMSgt. Tyler Outten (l) and Maj. William Palmatier, Reservists with the 919th Special Operations Wing, accompany then-USAF Chief of Staff Gen. Norton Schwartz as he pilots an MC-130E Combat Talon on his final flight as an Active Duty officer.**

Jackson pointed to the 302nd Airlift Wing, Peterson AFB, Colo. There, the Reserve runs the wing while an Active Duty squadron associates with its operations. The unit played a prominent role in the summer's heavy firefighting season in the Mountain West, using to great effect its Modular Airborne Firefighting Systems.

As Jackson put it, "They share the same facility. They share the same aircraft. You have force development both on the Active Duty side and on the Air Force Reserve side." The results of these efforts, he added, are being used to "knock down some of the barriers" to success at other locations.

Jackson observed that the Reserve would be a good fit with the Air Force's formal training unit mission for some legacy aircraft, particularly the A-10 and F-16 fleet.

#### Understanding the Dual Nature

He believes the same is true for the FTU programs for the new F-35 and KC-46. The Air Force will be bedding down these new aircraft in years just ahead. Jackson asserted that the Reserve needs to make known its views and wishes in the Pentagon and on Capitol Hill.

"We've said this in public, and Congress doesn't like it very much,

but we need to look hard at what is the most efficient way of basing for those two platforms," Jackson said.

The Reserve and Air Force Secretariat are discussing this issue now.

The Reserve's largest footprint is in Air Mobility Command. Some 45,000 Reserve members currently support AMC's flying missions. However, the Reserve has begun building a substantial presence in the areas of homeland defense and global strike.

At Barksdale AFB, La., Reservists at the squadron level can perform a flying mission with the B-52 in conventional and nuclear strike missions and also get numbered air force experience at 8th Air Force.

They can also serve in headquarters assignments at a USAF major command at the same base, as Barksdale is the home of Air Force Global Strike Command.

"For a participating traditional Reservist, that might be ... very good," Jackson said. "They stay at one location almost the whole time and get all the pillars of development."

This sort of development is important for the Reserve. Just as the Air Force is now reinvigorating its message inside the Pentagon and on Capitol Hill, so too must Reservists be able to tell their story, Jackson said.

"We need leaders who understand and can communicate the dual nature of the Air Force Reserve," Jackson said, and lay out the ways in which it differs from the Active Air Force and the Air National Guard. ■



**Active Duty and Reserve maintenance and support personnel board a C-17 before deploying to Andersen AFB, Guam. Senior Air Force leaders say it's nearly impossible to tell the difference between Reserve, Guard, and Active airmen in the field.**



By Robert S. Dudley

## On Bombing Iran

"When David Ben-Gurion declared the foundation of the state of Israel, was it done with American approval? When Levi Eshkol was forced to act in order to loosen the siege [of Israel] before 1967, was it done with the Americans' support? If someone sits here as the Prime Minister of Israel, and he can't take action on matters that are cardinal to the existence of this country, its future, and its security, and he is totally dependent on receiving approval from others, then he is not worthy of leading. I can make these decisions."—*Israeli Prime Minister Benjamin Netanyahu, interview on Israel's Channel 2, as quoted in the New York Times, Nov. 5.*

## China's First-Class Force

"This is the second entirely new fighter design that's emerged from China in the last two years, which suggests a pretty impressive level of technical development. ... [Beijing] has been extremely deliberate and well-funded and persistent, and it's starting to bear fruit. What you're now seeing since the early '90s is the slow emergence of a first-class regional military power."—*Sam Roggeveen, Lowy Institute in Sydney, Australia, on the maiden flight of China's J-31 fighter, Reuters, Nov. 2.*

## The Lost Decades

"The reason the [current USAF] fleet is so decrepit is because, for the first 10 years after the Cold War ended, policymakers thought the United States was in an era of extended peace. Then it spent the next 10 years fighting an enemy with no air force and no air defenses. So airpower was neglected for 20 years, and today the Air Force reflects that fact."—*Loren B. Thompson, Lexington Institute, Associated Press, Nov. 4.*

## Seeing the Invisible

"Uncritical support of all things martial is quickly becoming the new normal for our youth. Hardly any of my students at the Naval Academy remember a time when their nation wasn't at war. Almost all think it ordinary to hear of drone strikes in Yemen or Taliban attacks in Afghanistan. The recent revelation of counterterrorism bases in Africa elicits no surprise in them,

nor do the military ceremonies that are now regular features at sporting events. That which is left unexamined eventually becomes invisible, and as a result, few Americans today are giving sufficient consideration to the full range of violent activities the government undertakes in their names."—*Aaron B. O'Connell, assistant professor at United States Naval Academy, op-ed in the New York Times, Nov. 4.*

## Problems of Assault ...

"Problems of sexual assault are getting worse, they're not getting better. Everything that has been tried has not worked."—*Secretary of the Air Force Michael B. Donley, San Antonio Express-News, Oct. 23.*

## ... and Leisure-Suit Larrys

"He said to me, 'It's Friday afternoon, why don't you take off your blouse and get comfortable?'"—*TSgt. Jennifer Smith, alleging misconduct on the part of a senior officer, New York Times, Nov. 2. Smith has filed a formal complaint.*

## Not Yet, But It's Early

"When people ask, 'What kind of armament, what kind of weapons can this thing carry?' we basically say, 'Well, pretty much the US arsenal.' Granted, the air-to-air role isn't quite there yet."—*Col. Russell Hart, bomber operations chief at Air Force Global Strike Command, on the B-52 bomber, Air Force Times, Oct. 21.*

## Morning in Mideast? No.

"We all agree that the Iranians are determined to turn into a military nuclear power. ... To tell you the truth, out of long experience of the Middle East, I am extremely skeptical about the chances that it [use of sanctions] will lead the ayatollahs to sit together at any point in the foreseeable future and decide to give up their intention to go in the footsteps of Pakistan and North Korea and turn into a military nuclear power. They think of themselves as a major regional power from the dawn of history. ... Don't misread me. We would love to wake up one morning and learn, against my expectations, the ayatollahs gave it up. I don't believe it will happen."—*Israeli Defense Minister Ehud Barak, The Times (London), Oct. 31.*

## Horse Holders?

"As the duties of the uniformed service Chiefs have converged with those of the civilian Secretaries of the Army, Navy, and Air Force, the latter have become redundant appendages. Eliminating those positions would save money and streamline management. ... In the 1950s, the Army reexamined its table of organization and equipment. It found that an artillery battery contained one soldier whose presence and function were unexplained. The position was that of the man who, during combat, had held the horses that drew the caissons carrying the guns. The horses had gone, but not the personnel slot. Let's retire another set of horse holders."—*Harold Brown, Secretary of Defense 1977-1981 and Secretary of the Air Force 1965-1969, op-ed in the Washington Post, Oct. 18.*

## Wobbly Air Dominance

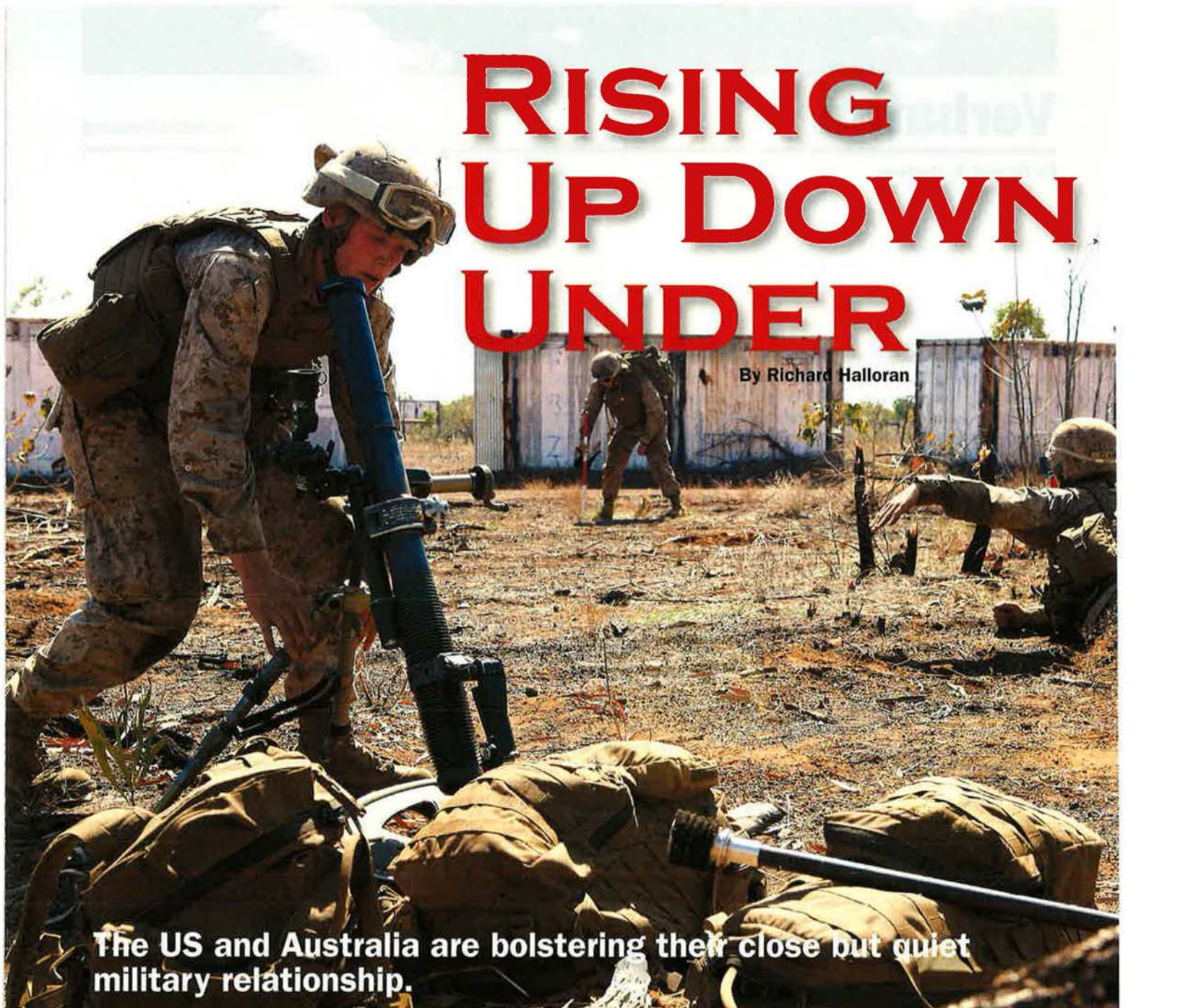
"Our ability to design cutting-edge platforms ... is already atrophying [and the] potential for viable future competition in this area will shrink or be eliminated. ... Our technological advantage in this area will not endure unless we provide [to industry] a meaningful opportunity for leading-edge design, build, and test activities. ... We should have no preconceived notions about the nature of air dominance a few decades into the future."—*Internal memo written by Frank Kendall III, undersecretary of defense for acquisition, Bloomberg, Oct. 22.*

## Cost of Neglect

"Anyone wondering what Afghanistan will look like if we abandon the war or draw down troops too rapidly should look to Iraq, where a residual force would almost certainly have halted the current re-emergence of al Qaeda. Or to Syria, where more moderate forces are being increasingly overrun by hard-line Islamists. Or to Yemen, where al Qaeda in the Arabian Peninsula has carved out territory and an operational headquarters to plan attacks against America. Or to Libya, where the facts about Benghazi are still trickling out, but where we know that an al Qaeda-affiliated group was behind the deadly attack."—*Retired Army Gen. John M. Keane, former vice chief of staff, Wall Street Journal, Oct. 22.*

# RISING UP DOWN UNDER

By Richard Halloran



**The US and Australia are bolstering their close but quiet military relationship.**

**A**USTRALIA, long a close US ally, has become an even greater asset as the US has put new emphasis on security in the Asia-Pacific region. In large part, that added weight is based on Australia's strategic location, its robust democracy, and the cultural similarities between Australians and Americans.

"Australia is a key component in how we operate in Southeast Asia and South Asia," said Pacific Air Forces Commander Gen. Herbert J. Carlisle in an interview in the PACAF headquarters at JB Pearl Harbor-Hickam, Hawaii. "Australia is a component of how we manage our relationship with the [People's Republic of China] and

how all our friends and partners in the region manage their relations with the PRC."

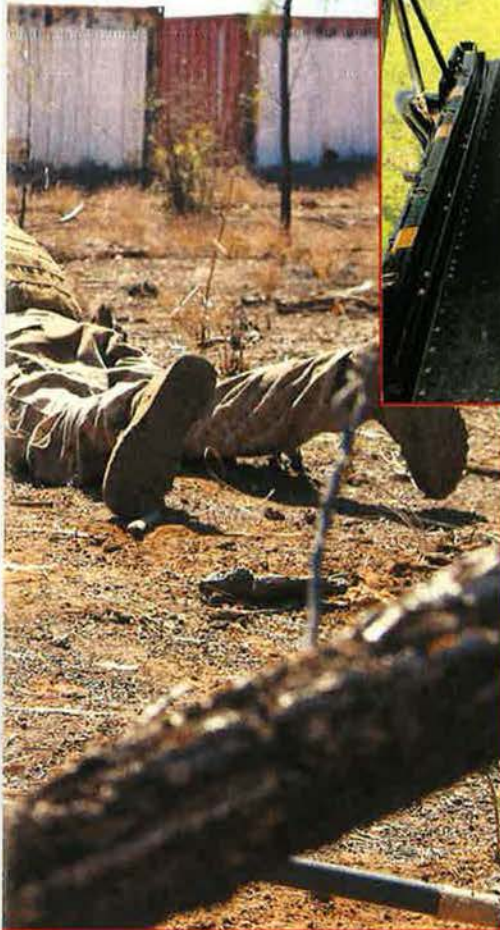
## **An Indispensable Alliance**

Since the Obama Administration devised a new national security strategy, military planners in Washington, D.C., and Hawaii have been tasked with refocusing their attention to Asia and the Pacific. As the "pivot" evolves, it has become evident that the strategy is mostly meant to reassure allies and friends that the US, war weary from Iraq and Afghanistan, will stay the course in Asia. Moreover, it seeks to deter a potential adversary in China and a present enemy in North Korea.

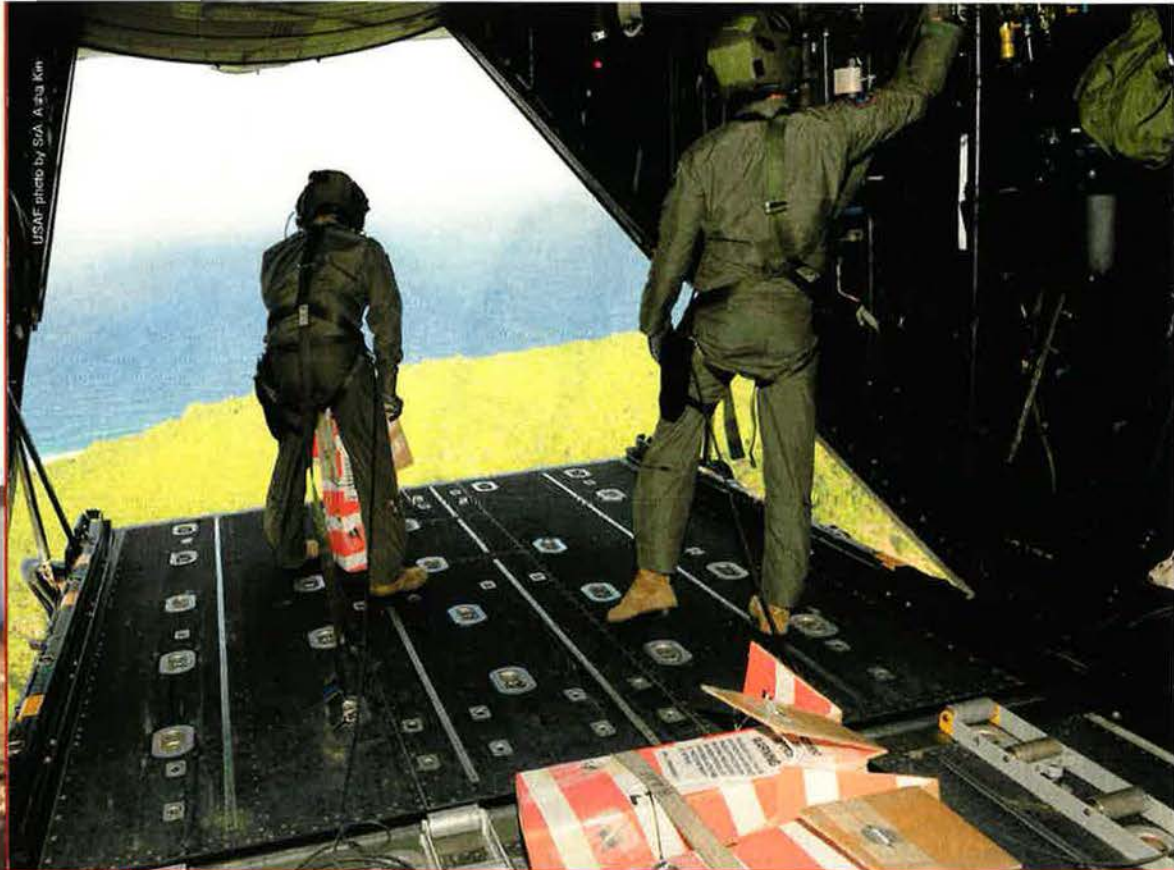
Under the new guidance, the US continues to expand military, economic, and political relations and also is building relations with the Philippines and Indonesia, the archipelago on the southern flank of the South China Sea. Singapore and the US have been security partners since 1990. And the US and Vietnam, which has its own wary relations with China, have begun a gradual reconciliation.

However, Australia is the critical relationship in the southwest Pacific.

President Obama, in an address to Parliament in Canberra, Australia, in November 2011, said: "Our alliance continues to be indispensable to our future."



USMC photo by Lance Cpl. Ian McIlhannon



USAF photo by S/A Aisa Kim

*Left: US marines set up a 60 mm mortar during a training exercise in Australia, Southern Frontier 2012, with the Australian Defense Force. Above: Royal Australian Air Force Flt. Sgt. Josh Kelly and Warrant Officer Randolph Jachimowicz offload boxes over Guam during the multilateral exercise Cope North. Australia, Japan, and the United States work together in Cope North to enhance cooperative air operations.*

Even with the fiscal problems in the US, the President said, “reductions in US defense spending will not—I repeat, will not—come at the expense of the Asia-Pacific.” Obama said that “we see our new posture here in Australia” and that rotating US Marine Corps units through northern Australia and obtaining greater USAF access to Royal Australian Air Force bases “will allow us to respond faster to the full range of challenges, including humanitarian crises and disaster relief.”

The US underscored its new reliance on Australia in November when a powerhouse American delegation met in Perth with their Australian counterparts to discuss further US access to Australian

training sites. Secretary of Defense Leon E. Panetta, Secretary of State Hillary Rodham Clinton, the Chairman of the Joint Chiefs of Staff, Gen. Martin E. Dempsey, and the commander of US Pacific Command, Adm. Samuel J. Locklear III, made the case for the US.

In recent months, PACAF, Marine Corps Forces Pacific, US Army, Pacific, and the US Pacific Fleet have been building on already extensive contacts with Australia’s armed services.

The US Marine Corps completed its first six-month rotation of a rifle company at Robertson Barracks in northern Australia. Over the next few years, USMC officers said, they plan to expand those rotations to 2,500 marines in a marine air ground task force, or MAGTF, comprising infantry, armor, and artillery units, plus an air element of helicopters and jet fighters, and a logistics element.

The marines will both train by themselves and with Australian units. Eventually, as the first rotation did, the marines will deploy from Australia to train with the armed forces of Indonesia, Malaysia, and other Southeast Asian nations with whom the Australians maintain good relations.

US Army, Pacific, also wants to deploy troops to Australia but without duplicating what the marines are doing. The Pacific Army could draw on mechanized units equipped with Stryker armored vehicles, paratroopers for forced entry from above, signals and engineering troops, air defense, and military intelligence units, plus medical and humanitarian assistance teams.

The Air Force, on the other hand, plans to rotate bombers, tankers, airlifters, and fighters through Australia as it did in Europe during the Cold War, said Carlisle. A continuous bomber presence already is routine at USAF’s Andersen Air Force Base, on the central Pacific island of Guam. A B-52 bomber and KC-135 tanker from Andersen recently stopped at RAAF Darwin, in northern Australia, for 48 hours. Rotations of F-22 fighters and C-17 airlifters also are in the offing.

PACAF has about 20 Australian officers embedded in its ranks now, including one at Hickam in the 613th Air and Space Operations Center, which is one of five AN/USQ-163 Falconer air control systems worldwide. The 613th AOC is the weapon system through which Air Force or joint force



air component commanders exercise command and control of air, space, and information forces for operations in the Asia-Pacific region.

The integration “will continue and increase,” Carlisle said. He added, “I see the United States and Australia working in a much more multilateral way.”

During Cope North, an exercise centered on Guam, PACAF and Japan Air Self-Defense Force aviators were joined for the first time by RAAF fliers for a two-week drill. Staff officers said aviators from South Korea were invited to observe Cope North 2013 with the possibility that they would later become full participants. That remained to be seen, however, given the current tense relations between South Korea and Japan.

### Testing AirSea Battle Concepts

In a move visibly reflecting the priority on military relations with Australia, US Army, Pacific, has named an Australian major general, Richard Maxwell Burr, as a deputy commander. Army officers emphasized that Burr would not be a liaison officer but a leader with command authority serving alongside another deputy commander,

USAF photo by A1C Lauren Taylor-Garcia



*Top: USAF Lt. Col. Mike White reviews the maintenance log for an F-16 at Andersen AFB, Guam, before a mission for Cope North. 2012 marked the first time Australian airmen participated in a Cope North exercise. Above: Gen. Herbert “Hawk” Carlisle speaks to members of the 18th Aggressor Squadron at Eielson AFB, Alaska. The 18th participated in an exercise from Guam, testing AirSea Battle concepts.*

US Army Maj. Gen. Roger F. Mathews. Both report to the US Army, Pacific, leader, Lt. Gen. Francis J. Wiercinski.

Burr has led Australian Special Forces task groups in Iraq and Afghanistan,

commanded the regiment that is home to Australian Special Forces, and commanded a division. US Army officers said he will be engaged in contingency operations, supervise annual exercises,

and oversee engagements in South Asia and the Pacific island nations.

Middle-ranking Australian and Canadian officers also fill operational billets in US Pacific Command and its components, while Japan and South Korea assign liaison officers. However, having an allied general posted to a leadership position is unusual.

In a move similar to that of the Army, the US Navy's Pacific Fleet last summer appointed an Australian commodore, wearing one star, to command the maritime component of the biennial multilateral exercise Rim of the Pacific, or RIMPAC.

Commodore Stuart C. Mayer was the first allied officer invited by the US Navy to assume that command. The 2012 RIMPAC was the 23rd version of the drill in which a record 46 ships and 25,000 people from 22 nations took part.

The Pacific Fleet, which has long had aircraft carriers, surface ships, and submarines call at the port of Perth, on the southwest coast of Australia, is seeking something more to maintain a continuous presence in the Indian Ocean. Naval officers have talked about a small detachment at the base HMAS Stirling in Perth (HMAS meaning Her Majesty's Australian Ship, with naval bases having the same designation). A similar detachment at a Singaporean naval base facilitates repairs and resupply needed for operations in the Indian Ocean. Neither the Australians nor the Americans are considering a permanent base.

In the joint arena, a key provision of the new AirSea Battle concept is access to air and naval bases of allies and partners and to enlist their forces for the common defense. Australia fits neatly into that concept. The question is whether Congress will provide funds to move it ahead.

"That's the challenge now," Carlisle said.

Even so, he indicated that PACOM already has begun to train with the new concept in mind. The Valiant Shield exercise in September, although a US-only operation, was intended to test AirSea Battle concepts. Centered on Guam, Valiant Shield pulled together nine USAF units, including a detachment of the 613th AOC from Hawaii, the 90th Expeditionary Fighter Squadron's F-22s from Alaska, the 69th Expeditionary Bomb Squadron from North Dakota, the 12th Reconnaissance Squadron's Global Hawks



USAF photo by S/A Adria Kin

**USAF Capt. Leo Romero flies a KC-135 from the 909th Air Refueling Squadron, Kadena AB, Japan, during an air refueling mission for Cope North 2012. Australia hosts no permanent US bases, so exercises are key.**

from California, and the 18th Aggressor Squadron from Alaska. The Navy brought the aircraft carriers USS *George Washington* from Yokosuka, Japan, and USS *John C. Stennis* from Bremerton, Wash., on the way to an Indian Ocean deployment. In addition, there were nine surface ships; five patrol, recon, and attack squadrons; three marine squadrons; and several submarines.

During the exercise, F-22 pilots spotted targets and relayed information to a submarine that launched a land attack cruise missile on target.

Engagement, intelligence sharing, and trade—especially with China—top the list of challenges when it comes to expanding US security relations with Australia. In the pursuit of engagement, commanders at PACOM and its components are eternally on the road visiting counterparts in Asia and the Pacific, a time-consuming effort because of what is known as the “tyranny of distance.”

#### **Eternal Roadshow**

Shortly after he took command at PACOM in March, Locklear recalled that in a former assignment he could fly to any point in Europe within three hours. From Hawaii, he noted, three hours is not halfway to *anywhere* in Asia—an obstacle that is overcome by long, grueling flights in airplanes with superb suites of communications.

Engagement, however, remains key to success in the Asia-Pacific region. PACOM is constantly looking for ways to reach out to allies and friends in multilateral exercises, simulations, and seminars on the premise that people who talk to each other are less likely to shoot at each other. At the very least, by nurturing partnerships, the US will have cultivated contacts to forge coalitions of the willing.

In November, Prime Minister Julia E. Gillard issued a White Paper entitled “Australia in the Asian Century.” Among its key points concerning the US:

“Our alliance with the United States has been the cornerstone of our defense and security policy. ...

“The alliance is driven by shared values, a long history, and a common set of aspirations. ... It has never required us to abandon our independent national interests. ... [The alliance] impels us to understand and take into account the views of our partner.

“We consider that a strong and consistent United States presence in the region will be as important in providing future confidence in Asia’s rapidly changing strategic environment as it has been in the past.

“We will continue to support US engagement in the region and its re-balancing to the Asia-Pacific, including ... deepening our defense engagement with the US and regional partners.”



USN photo by Mass Comm. Spc. 1st Class Michael O'Day

**Royal Australian Navy Commodore Stuart Mayer pilots a patrol boat during RIMPAC, near Hawaii. Mayer was the first foreigner to command a RIMPAC maritime component.**

"Australia really helps us in that respect," Carlisle said.

Canberra has fashioned connections all over Asia and the Pacific. As a member of the British Commonwealth, Australia shares a common history with eight other nations in Asia, including Singapore, Malaysia, and India to the west and with nine Pacific nations such as Samoa, Solomon Islands, and Tonga to the east.

Indonesia, the archipelago that stretches for 3,200 miles across what Australians call the "Near North," has long loomed large in Australian consciousness, once as a potential threat of invaders, later as a developing nation and trading partner. It is home to 250 million people, 86 percent of whom are Muslims, the largest Islamic population in the world.

Australia also has been a member, along with Britain, Malaysia, New Zealand, and Singapore, in the Five Power Defense Arrangements since 1971. In intelligence, Australia is a member of the "Five Is," sometimes labeled the "Five Eyes," an intel-sharing community comprising Australia, Britain, Canada, New Zealand, and the US.

From the establishment of the satellite-tracking station and long-range listening post at Pine Gap, in the middle of Australia, in the late 1960s, the US and Australia have swapped information, a practice that has increased since

the end of the Cold War. Today, that coordination is said to be close, with Australians posted in Pacific Command's intelligence center with nearly total access to its operations.

Australia's expansion of trade with China, however, has raised eyebrows by some who fear eventual Chinese domination of the Australian economy, Chinese political influence, and the loss of Australian jobs. But the minister for trade, Craig Emerson, said in the spring that China "is a big part of the Asian success story and of Australia's own economic success." Emerson said he saw China as an opportunity. Both the Obama and Bush Administrations have contended that engaging China with trade served to integrate China into the world economy and reduce a security threat from Beijing.

The South China Sea has garnered particular attention under the new defense strategy because half of the world's shipping passes through those waters—more than through the Suez and Panama Canals combined. It is a vital passage for all Asian economies, including China. However, Beijing's dependence on shipping through the region makes China's surging economy and military

modernization more vulnerable—a point not lost on Chinese leaders or American planners.

The waterway plays a lesser role in the American economy, but is an essential sea-lane for US warships transiting between the Pacific and Indian Oceans—a quicker, more affordable route than if ships had to sail south of Australia.

China's rise has made many Australians, like many people throughout Asia, a tad nervous. Disputes over tiny islands in the East and South China Seas have brought that issue into focus. In a recent speech, Australian Minister for Foreign Affairs Bob Carr said: "Our national interest is to ensure the great success story of this century, the Asian economic transformation, is not distracted by strategic competition in the South China Sea."

### Visit Anytime

From an Australian point of view, the fresh attention from the Americans has been welcomed, within limits. An Australian diplomat several years ago was asked whether his government would permit the US to set up a base there. He shook his head with a smile and said: "No. But you're welcome to visit anytime."

That attitude, which approved US military units to come and go—but not to set up permanent bases—has appeared again in recent months. Australian diplomats said their government has begun a review of the "strategic environment" as Australian forces, like those of the US, are being withdrawn from Afghanistan. In addition, Australia is finishing peacekeeping operations in East Timor and the Solomon Islands and bringing troops home.

Last year, Minister for Defense Stephen Smith conducted a quasi-official posture review that was to inform the drafting of a new defense white paper to be published in 2013. It said: "Access to facilities and training areas in Australia has become more important to the United States' regional posture."

The minister concluded that, since the 1951 San Francisco Peace Treaty that ended World War II, the alliance between his nation and the US "has been the indispensable bedrock of Australia's strategic security and defense arrangements." ■

*Richard Halloran, formerly a New York Times foreign correspondent in Asia and military correspondent in Washington, D.C., is a freelance writer based in Honolulu. His most recent article for Air Force Magazine, "Storm Clouds Over the South China Sea," appeared in the August issue.*

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# The Early War

**D**uring World War II, war planners enjoyed a special status in the ground Army and in its virtually independent aviation arm, the US Army Air Forces. War plans were the link between forces and combat. Thus, the writing of good war plans was vital.

In the post-World War II era, the responsibility for carrying out national war planning passed from individual armed services to the Joint Staff, composed of personnel from the three services and civilians. These plans were delivered for review and acceptance (or rejection) by the Joint Chiefs of Staff, Secretary of War (later, of Defense), and the President.

The advent of atomic weapons might not have changed everything about planning, but it came close. In the early days of the Cold War, the bomb and Strategic Air Command held a special position: SAC's atomic-armed bombers formed the main US striking arm. SAC was a

USAF-only combatant command, but it answered operationally to the JCS.

Even before the end of World War II in 1945, it was clear that the main enemy in the postwar world would be the Soviet Union. By 1950, communist China was assumed to be yet another adversary. For allies, the US counted on Britain, many Western European nations (coalescing under the North Atlantic Treaty Organization), and several countries in Asia.

## 196 Atomic Bombs

War planners had a good idea who would be friends and who would be foes, if war came.

However, planners faced three major constraints: money, personnel, and foreign bases. All three of these commodities were lacking in the immediate postwar era.

Two decades of economic depression and world war had left the world's economies in tatters. People in the democratic West wanted an end to rationing, austerity, and belt-tightening, so military calls

for large defense expenditures fell on deaf ears.

In this era, the key to military security would lie in the wise choice of weapons and methods able to meet national objectives effectively and efficiently. The logical answer seemed to be atomic weapons.

The early atomic bombs were large and heavy—around 10,000 pounds. Only large bombers such as the B-29, B-50, and B-36 were powerful enough to carry them. Because of this fact, it was all too apparent that the Air Force would play the dominant role in US war planning.

The Air Force's atomic bomber capability seemed to address two of the three major concerns.

First, atomic-armed airpower did not cost anywhere near as much as the maintenance of massive conventional land, naval, and aviation forces.

Second, the atomic air weapon required far fewer uniformed troops than would be needed for an all-conventional deterrent.

However, atomic airpower did nothing to ease the third constraint, the lack of overseas bases. Because the heavy bomber had relatively short ranges (and



**In the late 1940s, the Soviets had millions of men under arms, but the US had nuclear weapons and airpower.**



# Plans

By Phillip S. Meilinger

USAF photo



because practical air refueling had not yet arrived), the US would still need to acquire foreign footholds from which to operate them. Big conventional forces would undoubtedly require even more.

With these capabilities, constraints, adversaries, and allies on the table, postwar US planners set to work.

The first joint plan was developed in 1946. It held that, should the USSR attack any US allies on its periphery, Washington would respond with air-delivered atomic bombs—196 of them, to be exact. These would devastate 20 urban centers in the Soviet Union. The goal was to cripple Soviet war-sustaining industry and destroy a significant fraction of Moscow's military power.

Planners acknowledged that the attacking B-29 force, launching from Britain, Italy, India, and China, would be sure to

suffer losses (the plan foresaw up to 35 percent attrition), but they were convinced that a sufficient number of bombers would get through and complete their combat missions.

Interestingly, the war planners had no access to reliable information about the size and shape of the atomic stockpile. They erroneously assumed that a large number of bombs would be immediately available for use. At the time, the entire US atomic weapon stockpile consisted of a meager nine bombs.

As the plan worked its way up to President Harry S. Truman, defense officials knew they had gone far toward establishing reliance on strategic air attack as the primary response to Soviet aggression.

Next came a war plan called Pincher. It was created to deal with a hypothetical Soviet invasion of the Middle East and its oil



*Airmen line up in front of a massive B-36 as another one flies past. Early atomic bombs were so heavy and cumbersome only the largest bombers could carry them.*



*A Boeing B-50 in flight. Heavy bombers were to play a key role in all scenarios imagined in early Cold War war plans.*

fields, combined with a near-simultaneous Soviet attack on Western Europe.

The planners knew that the Soviet military would offer a formidable challenge. It would put into action 113 tough ground divisions. Its satellite nation allies would deploy 84 additional ground divisions. In stark contrast, the Western allies would be able to muster only 17 divisions.

In assessing this scenario, the Joint Staff prognosis for the West was grim. The planners believed the Red Army would surely overrun most of the continent, although there was a hope that the US and its allies could make a stand in either Italy or the Iberian peninsula and avoid being shoved out of Europe entirely.

The obvious conclusion was that the equalizer would have to be atomic air-

power. It would, presumably, halt the offensive at some point and begin to destroy the enemy forces.

After the air campaign, the US would carry on the war as resources permitted. Pincher also noted that forward air bases, not then available, would be necessary to carry out the atomic air offensive.

Pincher foresaw that the US would use Britain as the major base from which it would launch counterattacks against the Soviet Union. The plan envisioned a gradual buildup of American forces, a military blockade of the Soviet Union, and an atomic air offensive against the war-making capacity of the Soviet Union.

The plan said that America's most critical targets would be located in the Moscow and Caucasus regions,

but Pincher offered no detailed target analysis for the air campaign.

In fact, intelligence data on the Soviet Union was not available in sufficient detail to allow the planners to do much more than talk in generalities.

The Joint Chiefs never officially approved Pincher. However, the JCS agreed to use it for planning purposes.

### **Bushwacker and Halfmoon**

The next major turn in war planning came in 1948. In an effort to drive the US and the Western Allies out of the western sectors of Berlin, Joseph V. Stalin ordered a land blockade of the embattled German city. The specter of starvation loomed. So did the specter of war.

At this point, joint planners presented Bushwacker. This longer-range war plan was built on a notional war in 1952. The assumption was that the Soviet Union would not, at that time, have acquired its own atomic bomb. Moscow's forces would, however, possess chemical and biological weapons, fearsome in their own right.

Under Bushwacker, the Western goal would exceed simply restoring the status quo ante; it would be to push the invaders out of Eastern Europe and back within their 1939 boundaries, before Stalin connived with Hitler to carve up Poland.

This plan also relied on a strategic atomic air campaign for the main offensive. In a new wrinkle, Bushwacker maintained that Navy aircraft carriers would also take part. Within the planning organization, opinion diverged on the question of whether carriers would be



*A column of Soviet T-54 main battle tanks. Planners feared hordes of tanks such as these would someday rumble across Western Europe.*

confined to conventional operations or would also employ atomic weapons.

Two months after the Joint Staff presented Bushwacker, it offered Halfmoon, a short-range plan covering the first year of a projected war with the Soviet Union.

Halfmoon, like its predecessors, posited a Soviet invasion of Europe. The scenario was this: Western Allies in western Germany, vastly outnumbered, would retreat to the Rhine and then offer whatever resistance they could muster. The expectation was that the Red Army would overrun most of the continent and allied forces would depart from French and Italian seaports, à la Dunkirk in 1940.

Britain would likely remain secure, the planners concluded. From bases there and in the Middle East and Okinawa, the US would begin the counterattack some 15 days after the Soviet attack. This, of course, would have to be an atomic air offensive using Air Force heavy bombers. As the planners sized matters up, it would be a long slog.

Significantly, the new plan postulated a role for each of the three US military services. The Air Force's SAC force—the queen on the chessboard—would dominate the initial phase of the counterattack, working virtually alone to decimate Soviet forces and war-making potential.

The Navy was to sweep the seas of the Soviet fleet, institute a naval blockade of key port cities, and contribute to the air offensive.

The plan also provided that, at some unspecified point in the action, Washington would launch a land invasion to defeat any residual Soviet forces and retake the continent.

Initially, Halfmoon was not well-received by the Joint Chiefs. They were displeased that it contained no projections for military operations beyond one year of combat. Eventually, however, the JCS looked past Halfmoon's shortcomings and approved it, making it the first postwar plan to get their seal of approval.

In early 1949, Halfmoon was updated, expanded, and renamed Trojan.

The Halfmoon-Trojan effort constituted a critical step forward in planning. For one thing, it had a detailed targeting annex for the air offensive. It identified 70 specific industrial centers for atomic attack by SAC bombers.

The attacks were scheduled to require 133 atomic weapons—eight of which would be dropped on Moscow and seven



Eisenhower Presidential Library photo

**President Dwight Eisenhower meets with Soviet Premier Nikita Khrushchev at Camp David. The bombastic Soviet leader kept war planners on their toes.**

“may miscalculate and start the war we are trying so hard to avert.”

The comment summed up the essence of nuclear deterrence that would endure throughout the Cold War.

### A Temporary Monopoly

Atomic weapons had taken war planning onto a new plateau. Even so, defense planners received from their White House masters little help identifying major threats and US goals in the event of war.

It was not clear that atomic bombs would be available in sufficient numbers or even whether they would be authorized for use in a crisis. It took until September 1948 for President Truman to officially announce this decision.

Another issue confronting US political and military leaders concerned the viability of preventive or pre-emptive war.

National security professionals knew that the US monopoly on atomic weapons would not last. They frequently debated the idea of capitalizing on the West's temporary advantage to reduce the threat of the Soviet Union before it had a chance to become an atomic power itself.

The question boiled down to this: Should the US strike first—now—to disarm the Soviet Union, or should it use atomic bombs only in retaliation for an enemy first strike, after the USSR has acquired its own weapons?

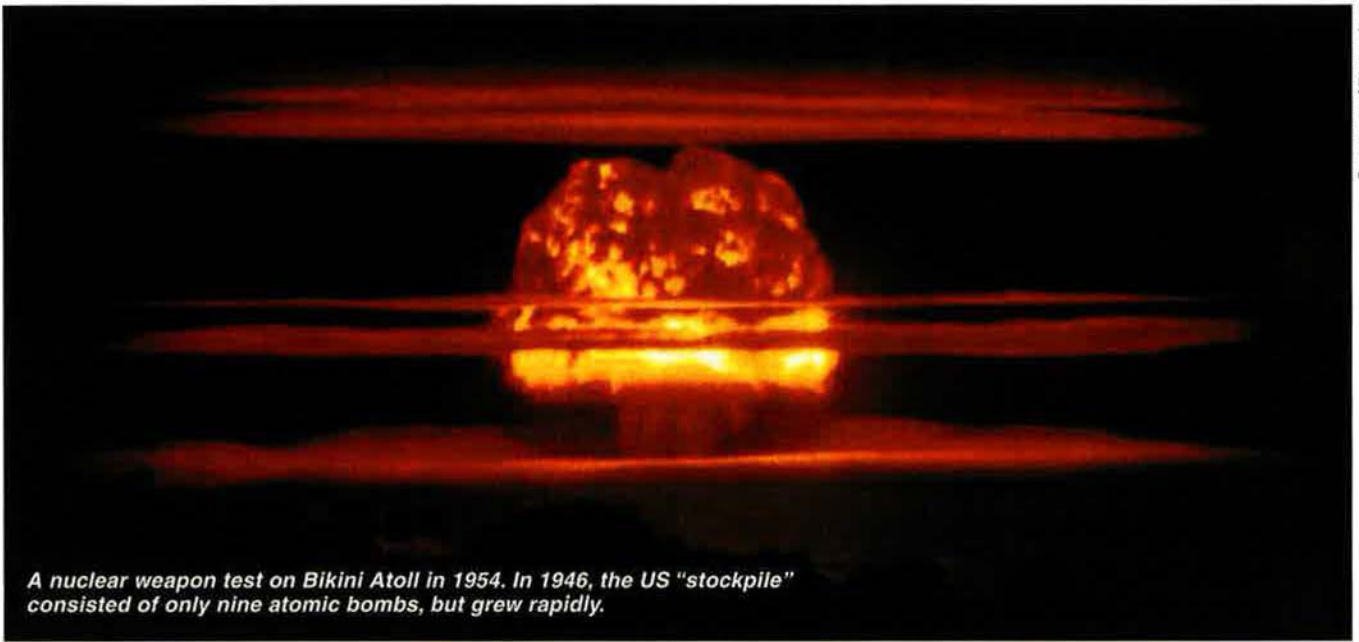
Then-Lt. Gen. Curtis E. LeMay, the SAC commander in chief, was a key figure in the debate. At a commander's conference, he swatted aside the idea of taking the first blow in a war.

“I think we in the military ought to do something about educating the people that we do not have to take the first blow,” he argued. He then clarified, “I didn't mean by that statement that we should go out and attack Russia tomorrow. I do mean that there are many ways of determining when you are going to be invaded. One is to wait until somebody hits you on the head with a ball bat and then determine whether he is mad at you; the other is to start to swing and hit when the blow lands. That is what I'm talking about.”

**Gen. Curtis LeMay, shown here on a Navy ship watching an atomic bomb test in the early 1950s, did not want the US to “take the first blow” in a nuclear war.**



USAF photo



A nuclear weapon test on Bikini Atoll in 1954. In 1946, the US "stockpile" consisted of only nine atomic bombs, but grew rapidly.

LeMay's predecessor, Gen. George C. Kenney, seconded LeMay's belief. In a letter to the Air Force Chief of Staff, Gen. Hoyt S. Vandenberg, Kenney stated that he was "worried about the time elapsing from the day that the whistle is blown before we can launch our first atomic strike."

He feared a surprise attack would greatly reduce US war-making capability. "It is going to be so difficult to shorten the time before we can start effective retaliation that this in itself constitutes another argument for re-examining our national attitude toward fighting what has been wrongly termed a preventive war," said Kenney. "It would not be a preventive war, because we are already at war."

Retired Gen. Dwight D. Eisenhower, on becoming President early in 1953, launched Solarium, a wide-ranging study of national security policy in an atomic-armed world. His civilian planners presented three options, one of them involving preventive war against the Soviet Union.

It appears that Eisenhower never seriously considered accepting that option; as he was taking the Solarium briefing, he commented acidly, "You can't have this kind of war. There just aren't enough bulldozers to scrape the bodies off the streets."

Even so, Eisenhower relied firmly on SAC and its now-nuclear capability, commenting in 1959 that he expected deterrence would remain successful, but in the event it failed, the job of SAC was to "hit the Russians as hard as we could."

Translation: The Kremlin might start a nuclear war, but the United States would finish it.

The rapid growth of the atomic and now-nuclear stockpile, combined with

the dramatically smaller size of devices beginning around 1950, meant the Army and Navy were able to develop their own special weapons.

The Army, for example, built an atomic artillery round. Within the Air Force, fighter aircraft were able to carry smaller bombs. The same was true of Navy aircraft.

### Massive Retaliation

The Far East Air Forces commander pushed for deployment of atomic weapons to his theater, under his control. The same was true in Europe, and in 1952 NATO's Supreme Allied Commander, Europe, acquired atomic weapons. By early 1952, SACEUR had been assigned 80 atomic weapons, to be delivered by aircraft of US Air Forces in Europe. The carriers would be not only medium-range B-29 and B-50 bombers but also F-84 fighters.

Eisenhower had directed a "New Look" at defense policy, and in October 1953 issued a national security statement. All talk of balanced forces was jettisoned, and Eisenhower instead called for major change.

"The United States should make clear to the USSR and communist China, in general terms or with reference to specific areas as the situation requires, its intention to react with military force against any aggression by Soviet bloc armed forces. ... In the event of hostilities, the United States will consider nuclear weapons to be as available for use as other munitions."

This was the genesis of what came to be called, in the famous formulation of Secretary of State John Foster Dulles, the policy of "massive retaliation."

Eisenhower was clear on priorities. When the Army Chief of Staff pushed for more funds for his service, the President exploded, exclaiming, "The only thing we fear is an atomic attack delivered by air on our cities."

Building up the Army was senseless, he said. The problem with the Army Chief was "he's talking theory—I'm trying to talk sound sense."

Eisenhower could not have put his view more plainly. The Soviet Union did not fear a large US Army. It feared SAC bombers. Massive retaliation would rely on these implements of war.

American war plans between 1945 and 1955 were more or less alike. They were rudimentary and military leaders knew this, but planning was essential, and just going through the process offered important benefits. Noted one military historian about the period: "If war plans do not establish the precise course of a conflict, they do set the general course of strategic operations."

The common denominator in all of the Joint Staff's early Cold War plans was the assumed dominant role of strategic atomic and then nuclear airpower. While the details changed over the years, that aspect, as everyone now knows, remained constant. ■

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**I**n December 1972—40 years ago this month—the US executed Linebacker II, the largest B-52 bombing campaign of all time. The period from Dec. 18 to Dec. 29 saw the huge USAF bombers mount shattering strikes on North Vietnamese railways, airfields, surface-to-air missile storage sites, petroleum dumps, and other infrastructure targets around Hanoi.

B-52 crews flew 729 nighttime sorties. Their Air Force and Navy fighter escorts provided another 769 sorties for

suppression of air defenses, combat air patrol against MiGs, escort, and chaff dispensing.

By the time the Linebacker II campaign was finished, North Vietnam was “on its knees,” in the words of National Security Advisor Henry A. Kissinger. It was ready and willing to sign a peace agreement that included the return of American prisoners of war.

The price was high. Communist defenses downed 15 B-52s, containing 92 bomber crew members. According to

airpower historian Walter J. Boyne, eight of these airmen were killed in action or later died of their wounds. Twenty-five were missing in action. Thirty-three became prisoners of war. Only 26 were recovered alive before capture.

Linebacker II stemmed from the breakdown, in late 1972, of promising negotiations aimed at ending the Vietnam War.

The so-called Paris Peace Talks between Kissinger and North Vietnam’s Le Duc Tho had brought the sides close to

# Linebacker III

**The massive air campaign was hard-fought and deadly, but it finally brought North Vietnam back to the negotiating table.**

By Rebecca Grant



agreement in October 1972. President Richard M. Nixon was so optimistic about the tentative peace agreement reached on Oct. 8, 1972, that, on Oct. 23, he suspended all US bombing north of the 20th parallel.

Not long afterward, however, Hanoi began to renege on its undertakings, and the peace talks moved toward collapse.

This infuriated Nixon, who vented his frustration in a Dec. 10, 1972, telephone conversation with Anatoly Dobrynin, the Soviet ambassador to

the United States. (The recording was declassified in 2008.) "It's ... hard for me to understand how they can go back on what we had agreed on," Nixon told Dobrynin. "[Soviet leader Leonid] Brezhnev and I, and your government, we got bigger fish to fry than this damn thing."

To Nixon, "this damn thing" was the Vietnam War; the "bigger fish" was detente between the two superpowers, which the Vietnam War threatened to derail.

Nixon pressed the Soviet Union to put pressure on its belligerent client Hanoi. The tactic did not work. Gen. Alexander M. Haig Jr., the Army officer who was serving as deputy national security advisor, brought the bad news to Nixon on Dec. 12.

According to Dobrynin, said Haig, "Hanoi claims it's Kissinger who's intransigent and that there were many issues unresolved." The Dobrynin message made it clear North Vietnam was in no hurry to resume talks or sign a treaty.

*Maintainers work on B-52 engines. They had to work day and night to keep the massive Lineback II offensive in the air.*



To break the logjam and extricate the US from the Southeast Asian quagmire, Nixon needed an extraordinary act, and he soon decided what it would be.

Nixon had already laid the groundwork for an air campaign option. On Nov. 30, 1972, he convened a White House meeting with the Joint Chiefs of Staff to discuss contingency plans. The original concept was for three to six days of B-52 strikes. The plans were to be put in motion if talks broke off or if talks succeeded but North Vietnam later violated the cease-fire agreement.

Nixon wanted a military action that would be, in his words, "massive and effective." The President added, "Above all, B-52s are to be targeted on Hanoi," North Vietnam's capital city that had enjoyed sanctuary status for most of the war years.

All concerned in the planning knew that only overwhelming heavy bomber attacks could make a major difference in the delta during bad weather, historian Wayne Thompson wrote in his book *To Hanoi and Back*. Thus, Nixon believed he had one option left: to bomb prime military targets near Hanoi—and bomb them hard.

### And We Can't Do That

The Nixon Administration's willingness to use the bomber weapon became apparent in a Dec. 12 Nixon-Haig conversation:

Nixon: "We're not going to wait until the end of Christmas if we have to do the bombing."

Haig: "No. ... And if the talks break off or recess, I think we've got to really pick it up. We've got to put the heat on them. ... They no sooner get a concession from us on an old issue like the DMZ [demilitarized zone] or our civilians then they pocket our concession and reopen the issue again to get another one."

On Dec. 15, Nixon dictated to Kissinger a five-page, single-spaced memorandum, instructing him on what to say in a special press conference on Dec. 16.

Nixon wrote, "You should point out on the plus side that, as far as the war is concerned, as we enter this Christmas season, we can all be thankful that no draftees are going to Vietnam, that our casualties have been at either zero or near-zero levels for the last three months, that no Americans are engaged in ground combat, and that, for the first time since the war began, both sides are negotiating seriously to try to find a peaceful settlement."

Nixon said that Kissinger "should also point out that the President insists that the United States is not going to be pushed around, blackmailed, or stampered into making the wrong kind of peace agreement."

Nixon, hashing over final details with Kissinger on that same day, reviewed American options.

"It's been a long war," said Nixon, as Kissinger listened. "We have to realize that there isn't much else left to do unless you're going to nuke them"—here, Nixon pauses—"and we can't do that."

Nixon continued, "What else is there to do then? We've done everything. They'll say, talk to the Russians. We have. Talk to the Chinese? We have. Talk to the North Vietnamese? We have. Bomb them? We have. Mine them? We have."

The Linebacker II operation kicked off on Dec. 18, 1972. The US position as cabled to Hanoi by Kissinger was that the North was "deliberately and frivolously delaying the talks." If Le Duc Tho would agree to return to Paris, the US would cease bombing within 36 hours.

Control of the overall campaign was in the hands of USAF Gen. John C. Meyer, commander in chief, Strategic Air Command.

The risks of Linebacker II were hard to assess in advance. B-52 crews had been flying in the Vietnam War theater for years, with the loss of 13 aircraft. Each loss stemmed from an accident of some sort, save for one. On Nov. 22, 1972, a B-52D from U Tapao RTAB, Thailand, fell victim to a SAM blast.

Col. James R. McCarthy had recently taken command of the 43rd Strategic Wing on Guam. Large crowds of crew members packed in for three mass briefings.

McCarthy recounted in an Air Force monograph, "As the route was shown on the briefing screen, I said, 'Gentlemen, your target for tonight is Hanoi.' It must have been effective, because for the rest of the briefing you could have heard a pin drop."

The pilots knew that, up north over Hanoi, the North Vietnamese had emplaced thick SA-2 air defenses and backed them up with anti-aircraft artillery. They were supplemented by a rejuvenated force of up to 145 fighters, including MiG-21s.

B-52s flew to waypoints to circle around the zone and penetrate from specific angles. Their chief protection from SAMs lay in chaff clouds dispensed by fighters, electronic jamming from escort aircraft, and electronic countermeasures from their own aircraft. Each BUFF carried four .50-caliber tail guns to deal

with any MiG that might slip in behind.

On Night No. 1 of the campaign, a total of 129 B-52s from Guam and U Tapao attacked in three waves, but the communist SAMs proved deadly. The missiles claimed three B-52s plus one Navy A-7 attack aircraft and one F-111 lost for unknown reasons after its bomb run.

North Vietnamese MiGs suffered a loss, too. B-52D tail gunner SSgt. Samuel O. Turner shot down a MiG-21—scoring the first ever B-52 aerial victory.

Capt. Michael H. Labeau, a B-52 radar-navigator, belonged to an augmented crew led by Capt. Robert J. Morris Jr., a pilot from Kincheloe AFB, Mich.



Labeau flew a Night No. 2 mission from Guam. "It was not particularly dangerous," Labeau judged. Their target that night was not right "downtown" and "we did not see a MiG."

Disaster struck on Night No. 3. SAMs and MiGs blasted away at bomber formations. Six B-52s and an A-6 from USS *Enterprise* were shot down. Five B-52s were hit in post-target turns.

Maj. Dick Parrish that night was the radar-navigator in a B-52G in the final cell. The pilot and copilot saw one B-52 on fire and another explode from a direct hit. After bomb release and the turn for home the sky grew quiet.

Both pilots took one last look out the window just as two SAM indications popped up on the scope. "The next thing



I knew," said Parrish, "we were in a steep, descending right turn."

The B-52 dove away as the SAMs exploded above them.

Two more B-52s were lost on Dec. 21. SAC was already implementing new tactics to change routes to the target. Because of losses, commanders also decided to redistribute some crews from Guam to U Tapao, Labeau said.

The crew from Kincheloe was among those rotated to U Tapao. Labeau flew again on Dec. 24 to hit a railroad target.

"At that time the railroads were not heavily defended," said Labeau, but missiles still met them. "The North Vietnamese were trying to hit the lead

for maximum effort on Dec. 26. Plans called for seven streams of bombers to converge on Hanoi targets. As recalled by 1st Lt. Robert M. Hudson, who was a B-52 copilot on the raid, it was the night "we got bagged."

The size of the Dec. 26 mission meant that the normal preflight activity was overloaded and confused.

"People were briefing in hallways," Labeau remembered. "Targets were late, aircraft assignments were late, intelligence was late, the data you took out to the airplane with you was late," he said.

### Come on, Bob

Labeau's crew, which included Morris and Hudson, was assigned to B-52D No. 56-0674 and briefed for the mission as Ebony 3. SAC kept the B-52s in formations of three to maximize coverage from the electronic countermeasures. The original Ebony 2 ground-aborted, and the Morris-Hudson-Labeau airplane moved up as call sign Ebony 2.

As Labeau recalled, "A lot of little things went wrong that in isolation wouldn't have made a difference but in combination created the difference that we got hit."

First, their regular tail gunner became incapacitated and Hudson called for a replacement. Cook had just finished his shift as the gunner assigned to wait on alert. All crews had briefed and stepped to their airplanes when the call came. "A truck came by to pick me up," he said. "We started down the runway as I was strapping in."

An engine fire warning lit up on takeoff. Ebony 2 circled over the Gulf of Thailand to get the engine pod shut down, and so now it was behind the other aircraft. Everything became rushed. Flying time from U Tapao to the target might take as little as 45 minutes.

The crew members never gave a thought to turning back, however. For one thing, they didn't want to they explained in recent interviews. For another, SAC had a "press on" rule, and the Ebony 2 crew knew that dropping out would eliminate all protection for their lead airplane.

Soon the SAMs were popping up. Intelligence reports had suggested the North Vietnamese might be nearly out of SAMs, but that obviously was not the case over Hanoi on Dec. 26.

"They were barrage firing all at one time," said Labeau.

"It was apparent this was no F Troop doing the aiming," said McCarthy, who

was flying from Guam as an observer.

Ebony 2 was coming in from the west and was vulnerable. Because it was part of a two-ship cell, "we stuck out," said Labeau. Countermeasure defenses were lower with one less bomber, too.

Morris and Hudson watched for SAM launches. If a particular SAM's flight path could be seen, it could be avoided, Hudson said. If a pilot saw a SAM on the left, they pushed the B-52 into a dive to the right, so as to make the SAM explode far above the aircraft. "The B-52 is much more maneuverable than you think," Hudson remembered.

Just minutes out from the target, the crew scanned the sky for more SAMs and prepared the bomb run. However, they were down an engine, and they never did quite achieve the planned release airspeed. Procedure called for opening the bomb bay 60 seconds before the release point. Local tactics cut that to 30 seconds. Ebony 2's slow airspeed delayed the bay opening even further.

As they approached the release point, Hudson and Morris didn't see any SAM launches, but they had a blind spot. They didn't see a SAM that came under the aircraft, recalled Hudson. At the last moment, the onboard electronic warfare officer, Maj. Nutter J. Wimbrow III, spotted something and declared calmly over the intercom, "We're going to be hit."

The SAM's proximity fuse detonated its explosive payload on the left side of Ebony 2. The cockpit windows blew out. The radome was sheared away. Decompression sent objects flying around the crew spaces. Rushing air screamed through the crew spaces and made it hard to hear speakers on the intercom. Damage inside the cockpit was severe in the extreme.

Copilot Hudson looked over at the pilot, Morris. He had died instantly.

Radar-navigator Labeau came on the intercom, saying, "Come on, Bob, we've got to get the bombs off the airplane."

Labeau was speaking to Morris, who was dead, and not copilot Bob Hudson. Still, Labeau's sharp comment snapped Hudson out of his momentary shock, and he addressed the problem at hand.

Hudson got the crippled B-52's nose up and turned the big bomber toward the target. Labeau was able to get all the bombs off and away and then directed the bomber south on a heading that was the quickest way out of trouble.



airplane. They were still trying to radar-guide the missiles."

In another B-52 that night was tail gunner TSgt. James R. Cook, who had flown numerous missions. Tail gunners scouted for MiGs and called out evasive maneuvers to defeat SAM shots, and the D model was best for this because of the visibility from the tail. In a mission on Dec. 24, three missiles came up, and Cook called them out. The B-52D dove to evade. They all scooted by the tail and exploded, Cook recalled.

Operations paused for Christmas Day. Planners and crew members prepared

**Above: Vietnamese soldiers and newsmen swarm over the wreckage of a US B-52 shot down just northwest of Hanoi, Dec. 18, 1972.**



**President Nixon in 1972 speaks with South Vietnam's President Nguyen Van Thieu on the steps of Saigon's Independence Palace, the home and workplace of Thieu during the war. Behind them are (l-r) Henry Kissinger, South Vietnamese Vice President Nguyen Cao Ky, and Ellsworth Bunker, then ambassador to South Vietnam.**

A second SAM hit.

"The whole plane bounced when that second hit came along," said Cook, the tail gunner.

The B-52D rolled on its back.

"The decision was made to bail out," said Labeau.

Downstairs in the aircraft, he and the navigator, 1st Lt. Duane P. Vavroch, sat side by side.

"We looked at each other," recalled Labeau. "I said, 'Get out!'" The navigator ejected. "There's now a big hole beside me," said Labeau.

He pulled the ejection handle. The hatch below opened, his seat swung a few degrees back—and nothing happened. Labeau found to his surprise that he was still in the B-52 with the seat stuck partway through the ejection sequence. He yanked on the black and yellow handles again.

"I don't know how many times I pulled," he said, "but it eventually shot me out of the airplane."

Meanwhile, Cook was still in the tail. He'd disconnected his oxygen line and then blown the gun turrets away to open the bailout hatch, but he could not wriggle through the opening. Every time he tried, the parachute pulled him back into his seat. At over 30,000 feet, his oxygen ran out quickly. He passed out.

McCarthy, on another B-52, was departing the Hanoi area when he saw "a brilliant explosion" in the sky. It was Ebony 2, hit by a third SAM.

Amazingly, the force of the explosion blew tail gunner Cook out of the hulk of the bomber. He was unconscious, but his parachute opened automatically.

Hudson was also in his parachute but in trouble. The force of the ejection dislocated his hips, and he suffered broken ribs where he had not tightly fastened his straps. His mask had filled with blood from a blown-out sinus cavity. He tore the mask off to breathe. The clip banged and cut his face in the cold slipstream of air.

As he descended in his parachute, Hudson was shot in the left shoulder by riflemen on the ground. "They were waiting for me," he said.

Because of the severity of the pain in his ribs and hips, Hudson did not notice his gunshot wound.

### The End

For his part, Cook woke up in two feet of water, coughing. He was captured within minutes. He had suffered two broken legs, a broken back, and fractures in a shoulder and elbow. Soldiers wired his wrists and ankles together, put him in a motorcycle sidecar, and drove him to Hanoi.

Labeau and Hudson separately were picked up by villagers and turned over to North Vietnamese Army regulars.

In the "Hanoi Hilton," the notorious prison used to hold captured American airmen, Labeau found he was one of the least injured of the new POWs.

He spent the first week caring for about a dozen injured airmen, including navigator Vavroch, Air Force F-4 crew members, and Navy fliers.

At length, the imprisoned airmen noticed that the B-52 bombing attacks were no longer shaking the ground. "We were pretty sure that, once bombing stopped, something positive would happen," said Hudson.

He was right. The air campaign of Linebacker II had forced the North Vietnamese to accept US terms and declare that Hanoi would soon return to the peace talks in Paris.

Cook, the Ebony 2 tail gunner, was repatriated; both legs were amputated and he was medically retired from the Air Force. Also returned were navigator Vavroch, copilot Hudson, and radar-navigator Labeau. The latter two recovered from their injuries and were retrained to fly the F-111. The remains of the pilot, Morris, and the crew's electronic warfare officer, Wimbrow, were repatriated in 1977.

The Dec. 26 and Dec. 27 attacks marked the apex of Linebacker II. On Dec. 28, Kissinger called Nixon to tell him Hanoi had accepted the proposal to return to the peace table and get serious about an agreement.

Nixon: "No conditions?"

Kissinger: "No, it's all of ours accepted."

Nixon (later): "What significance do you attach to all this?"

Kissinger: "I think they are practically on their knees. ... For them to accept this ... is a sign of enormous weakness."

Kissinger then noted that many critics in Washington were challenging the use of such heavy B-52 raids.

Nixon emitted one short, mirthless laugh.

"The main thing now, Henry, is we have to pull this [peace treaty] off. ... My view is we talk and we settle."

Within 34 hours of the conversation, the US declared Linebacker II to be at an end. On Guam, the last B-52 on the last raid landed just after noon, local time, on Dec. 30, 1972.

Peace talks resumed in Paris on Jan. 8, 1973. Cease-fire accords were signed on Jan. 27, 1973.

Shortly afterward, the US began bringing home its prisoners of war. ■

*Rebecca Grant is president of IRIS Independent Research. Her most recent article for Air Force Magazine was "New-Look Leadership" in the November issue.*

# Big Bang

By Walter J. Boyne

**In 1962, Operation Dominic regularly lit up the sky above the Pacific Ocean with nuclear yields up to 700 times the size that destroyed Hiroshima.**



**I**n 1962, with the Cold War at a particularly tense moment, the United States and the Soviet Union competed in the staging of fantastically complex atmospheric nuclear tests. The US effort, code-named Operation Dominic, featured the best brains in American nuclear science.

The nuclear blasts produced under Dominic were many and awesome. They regularly lit up Pacific Ocean skies (and the space above) with nuclear yields ranging from fairly small up to some 700 times the size of the 12 kiloton weapon that leveled Hiroshima.

Dominic required the use of more than 100 aircraft, 40 warships, and 28,000 uniformed service members. Highly

*Everyone has stopped to watch the awe-inspiring development of the mushroom cloud. Not visible are the scores of aircraft still gathering data from the drop, some at a safe distance, some penetrating the cloud itself at grave danger to the crew.*

prestigious scientific laboratories lent their talent and support to the Atomic Energy Commission and Defense Department. Widely scattered diagnostic stations soaked up data over an area exceeding 15 million square miles.

Dominic was planned and executed in record time. For all that, it proved to be the largest and the most successful nuclear test program in US history. And, oddly enough, the impetus for Dominic came as a result of a failed arms control effort.

*The ground crew who serviced the Operation Dominic B-52s did an amazing job at Barbers Point NAS, Hawaii. They worked hand in hand with the specialists who conducted the sensitive and intricate loading operations.*



USAF photos via Walter J. Boyne

In 1958, the US, Soviet Union, and Britain tacitly entered into a joint moratorium on nuclear testing. Up until that point, all three nuclear powers had more or less freely carried out their own atmospheric testing, to the alarm of nuclear disarmers around the world. The moratorium was politically popular.

In 1961, newly elected President John F. Kennedy sought to extend the existing joint moratorium that had held for three years. Kennedy's efforts proved futile, however. He was impaired in his ambitions by, among other things, the political fallout of the abortive US-backed Bay of Pigs invasion, which sought to overthrow Cuban leader Fidel Castro, a Soviet client.

### Here Come the Soviets

On Aug. 30, 1961, Moscow announced its intent to resume atmospheric nuclear testing.

True to its word, the USSR in the next month began a major series of 59 nuclear tests. These included the detonation of the largest atomic device ever seen. The "Tsar Bomba" exploded with a force equivalent to some 63 megatons of TNT. Soviet bomb makers had tried a radical approach and had succeeded, ratcheting up Western fears about mounting Soviet capabilities.

Even more important, however, the resumption of tests sparked a new outburst of world concern about nuclear fallout and its effects on humans.

Kennedy thus found himself in a tough spot. The US had, in fact, begun Operation Nougat, a series of tests of low-yield devices, but the tests were conducted underground in Nevada. "Going atmospheric" was certain to provoke a new round of world condemnation.

Kennedy made his choice; on Oct. 10, after the Soviet Union's first new blasts, he approved resumption of America's own atmospheric testing. Washington issued a public announcement of the move on Nov. 2, 1961. The Atomic Energy Commission already had put together contingency plans for weapons that would weigh less but of-

fer higher nuclear yields. Given that head start, the US planned to resume live tests within a few months.

The President gave final approval on March 2, 1962. A start date of April 1 was laid down. Operation Dominic was born.

The Joint Chiefs of Staff assigned responsibility for the operation to Joint



*It was not unusual to work 24 hours while a mission was going on. Backup pilot, assistant operations officer, and information officer Capt. Walter Boyne stands in front at left. Crew commander Maj. Bob Edmund stands at right with the phone.*

*A typical "mushroom cloud" was impressive, extending for thousands of feet, but it was not nearly so awesome as the flash of the explosion itself, burning much brighter than the sun.*



USAF photo via Walter J. Boyne

Task Force 8. Army Maj. Gen. Alfred D. Starbird, a 6-foot-5-inch-tall combat veteran who had already supervised a number of nuclear tests, was selected as its commander. He was to report jointly to the AEC and JCS. Starbird's scientific deputy was to be William E. Ogle of the Los Alamos Scientific Laboratory in New Mexico. Air Force Maj. Gen. John S. Samuel was deputy commander of JTF 8.

Starbird's first problem was that most of the personnel with experience in atmospheric tests had been reassigned to other duties. A massive recall of knowledgeable test talent was necessary to meet the stiff requirements and ultra-tight schedule of Operation Dominic. In contrast, the Soviet Union had maintained its test programs intact and was able to proceed swiftly.

JTF 8 set the main goals for the expedited test program:

- Proving, through testing, of existing and new thermonuclear weapon designs.
- Determining whether airborne diagnostic analysis was sufficiently accurate to replace the land-based systems.
- Checking effects of a nuclear weapon on electromagnetic pulse phenomena.
- Exploring effects of a detonation environment on incoming ballistic missile warheads.

The program was concerned about the degree to which both ground and air

crew personnel were exposed to radiation and what the effects might be. This was a particularly sensitive area; radiation effects of past nuclear tests had led to the deaths of many participants.

All B-52 drops were designed to be air bursts, minimizing contamination problems. The obvious hazards to the air crews were also noted, the most dangerous being the possibility of a premature explosion of the weapon after drop.

### Islands in the Sea

Operation Dominic unfolded over a vast Pacific area, extending from a spot a few hundred miles off San Diego to Johnston Island, some 3,500 miles southwest. Operational command centers were located at Christmas Island and Johnston Island.

The test explosions ranged from a depth of 650 feet underwater to a height of 248 miles—that is, in near space.

Twenty-four of the airdrops were made in a target area south of Christmas Island, while five were made in the Johnston Island area. All five successful space shots were made at the Johnston Island site.

In 1962, Christmas Island was a possession of Britain. Britain had conducted hydrogen bomb tests in 1958 on the island. At the time of Operation Dominic, some 400 Gilbert Island natives lived there, harvesting copra from the coconut palms.

The naval tests were demonstrations of the most advanced weapons in the inventory. In Operation Frigate Bird, the submarine USS *Ethan Allen* was operating nearly 1,725 miles east-northeast of Christmas Island.

It fired a Polaris A-1, on May 6, 1962, in the first ever complete test—from launch to detonation—of an American strategic missile. The missile's re-entry vehicle flew more than 1,000 miles downrange before blazing into the atmosphere to detonate in an airburst of some 600 kilotons at 11,000 feet. The target area was about 500 miles from Christmas Island.

In the other Navy program, Operation Swordfish, the destroyer USS *Agerholm* was positioned 460 miles south-southwest from San Diego. An operational anti-submarine rocket, the RUR-5 ASROC, with a nominal 10 kiloton yield was selected at random for the test.

The test was used to demonstrate the ASROC's effectiveness against a target and examine what its side effects might be for US Navy defensive systems. To determine this, four destroyers and a submarine were placed one and two miles distant from the target raft. The test was also to check on the radiation hazard to the launching vessel.

The regular destroyer crew carried out its mission successfully, firing the ASROC



*Of the hundreds of B-52s built, RB-52B serial No. 52-0013 was one of the few that actually dropped a live nuclear weapon. On Dominic missions, its call sign was Cow Slip Two. 52-0013 is on exhibit at the National Atomic Museum located near Kirtland AFB, N.M.*

at the raft floating about 4,400 yards away. The rocket impacted within 20 yards of the raft, detonating 40 seconds later at a depth of 650 feet. The explosion left a huge circle of radioactive foam that took days to dissipate.

An American possession, Johnston Island served as the site for Operation Fishbowl, the space element of Dominic. An atoll of just over one square mile in size, Johnston is located 860 miles west-southwest of Hawaii.

Operation Fishbowl consisted of five successful missile launches designed to detonate in space nuclear weapons with yields running from a very low kiloton rating to more than 1,000 kt. These tests sought to provide data on the effects of nuclear detonations as defensive weapons against incoming re-entry vehicles.

The Johnston Island missile tests incurred Dominic's only major operational failures. On four occasions, malfunctions forced the range officer to destroy the missile. In one, the vehicle and weapon blew up on the launchpad, contaminating the area with radioactive material. The repair and cleanup delayed resumption of the program for nearly three months.

However, five successful spaceflights provided invaluable data as they lit up the atmosphere in a wild mixture of colors. On July 9, the spectacular exoatmospheric effects of a blast were watched in awe by people more than 800 miles away in Hawaii and 1,600 miles away on Kwajalein.

The blast, code-named Starfish Prime, took place at an altitude of 248 miles and gave a 1,450 kt yield. An enormous area of the sky was illuminated with a varicolored aurora lasting for several minutes in some places.

The electromagnetic pulse from the detonation caused power surges on Oahu that set off burglar alarms and knocked out some street lighting. Starfish Prime caused damage to solar panels on several orbiting satellites.

**Tightrope, Checkmate**

The warhead on this test was a direct descendant of the familiar Mk 28 thermonuclear bomb and was also used on Thor, Atlas, Jupiter, and Titan missiles.

The penultimate Johnston Island shot, dubbed Kingfish, used the Thor missile. It was a massive success. With detonation at an altitude of 60 miles,

Kingfish's yield of just under 1,000 kilotons created a fireball at about 600 miles altitude and disrupted Pacific radio communications for three hours.

Launching nuclear weapons by the rockets of the time was clearly more challenging than making airdrops. After three consecutive failures of the Thor missile, two attempts were made using the Nike Hercules. Both failed. The last Johnston Island launch, dubbed Tightrope, used the Nike Hercules successfully. One successful shot, Checkmate, used an Army Recruit first stage and the XM33 Strypi rocket.

All of the Dominic airdrops were made by B-52 bombers provided by Strategic



*Here, Boyne (r) is shown the latest information from Christmas Island. Communications with headquarters was surprisingly light, perhaps because the flight operations were the most routine of the complex series of events taking place.*

Air Command and the Air Force Special Weapons Center. They flew missions out of NAS Barbers Point, Hawaii. Twenty-four drops from April 25 through July 11 brought about the release of more than 23 million tons worth of explosive energy just south of Christmas Island.

On test missions, aircraft included B-47s, WB-50s, KC-135s, RC-121s, C-130s, U-2s, C-54s, C-118s, B-57s, and H-21s. These aircraft were employed directly in the tests. Additional aircraft of every type were used in other roles.

The Los Alamos and Lawrence Livermore Laboratories each furnished 12 nuclear devices, ranging in size from a diameter of 12 inches to 56 inches, in length from 25 to 149 inches, and in weight from 160 to 9,162 pounds. Efficiency was measured by the yield-to-weight ratio (kt/kg) which ranged up to 4.96 on the Bighorn test.

Each detonation offered data for a broad variety of tests—for instance, regarding chorioretinal burns, the effectiveness of protective gear, the attenuation of radar signals, and airborne thermal measurements. Other experiments generated information on electromagnetic pulse effects and shock overpressures.

The yields were determined after detonation by radio-chemical sampling. One important result was a determination that advanced airborne diagnostic systems could collect data from nuclear airdrops.

On each mission, a B-52 would arrive in the test area and then fly a 16-minute race-track pattern. During these 16 minutes, the ground- and air-based instrumentation was fine-tuned, with adjustments made for any variations in weather. The target could be one of seven different barges moored in the target area, each equipped with strobe lights, beacons, and radar reflectors.

The dozens of orbiting support aircraft meshed like gears in a clock, each one timing its position so that it would be in the optimum spot to gather data when the nuclear device detonated. The drop aircraft's path to the east-southeast was monitored on a second-by-second basis by JTF 8 headquarters. After the detonation, effects were measured in increments of one-millionth of a second.

On three of the 24 missions, the B-52 executed a breakaway maneuver to escape the blast. On the remaining 21 missions, BUFFs flew over the target and used a parachute-retarded bomb to slow descent and give the bomber crew ample time to escape.

The average accuracy for the drops was 897 feet, while the average timing error



USAF photo via Walter J. Boyne

**Operations officer Lt. Col. Richard McVay stands in the center of an admiring SAC crew, next to the young Hawaiian woman who provided the cake. McVay had flown as an observer on two previous missions that had aborted. When word came in that the current mission was successful, an impromptu celebration took place.**

was 3.5 seconds. On four missions, there was a zero error in timing. There were two occasions when the device within the bomb failed, resulting in what was termed a “fizzle.” These malfunctions were not charged against the B-52 crew, but against the Livermore Radiation Laboratory where they were designed.

### Far Brighter Than Daylight

The drops were made at altitudes ranging from 25,000 to 45,000 feet, at a 450 knot airspeed. The resulting mushroom clouds usually rose to about 60,000 feet.

One Dominic veteran recalled the events in this way:

“The night was smooth but absolutely pitch black, without a light showing anywhere. Because we were using a parachute-retarded bomb, we elected not to use either the thermal curtains or protective goggles. ... The pitch black night simply disappeared as the bomb’s blazing heat illuminated the sky from horizon to horizon, far brighter than daylight. It was as if the bomb had destroyed the night. The explosion was not just a flash, but a sustained light that seemed to grow even brighter before it slowly began to dim. As the long seconds passed, the light collapsed in a curious fashion, like a deflating balloon, coming back in from the horizon. And then it was night again.”

He went on:

“Our radar/bombardier was a crusty veteran of World War II, better known for his salty wit than his philosophy. As soon as he released the bomb, he hurried up to

the cockpit to view the results. When the light finally subsided, he said in a quiet tone, “They should make every head of state see this once a year. Then they’d know what they were playing with.”

The general assessment was that Operation Dominic had been conducted with amazing accuracy and skill. It provided data that improved US nuclear weapon technology, ensured the safety and reliability of weapons in storage, and increased the yield-to-weight ratios.

Each nation closely monitored the other’s tests, with Russian “fishing trawlers” constantly on patrol just outside the areas designated for tests. US Navy ships and aircraft maintained a constant patrol to ensure that they kept their distance.

In October 1962 came the Cuban Missile Crisis. It brought the two superpowers close to the nuclear brink, injecting a huge dose of caution into thinking in both Moscow and Washington.

The two superpowers signed another atmospheric test ban agreement in 1963. Underground testing continued for years, but never again did the US or USSR conduct an atmospheric test. ■

*Walter J. Boyne, former director of the National Air and Space Museum in Washington, D.C., is a retired Air Force colonel. He has written more than 600 articles about aviation topics and 40 books, the most recent of which is How the Helicopter Changed Modern Warfare. His most recent article for Air Force Magazine, “The Berlin for Lunch Bunch,” appeared in July.*

The focus in Southeast Asia would soon shift to Vietnam, but in 1961, Laos was front and center.

# The Opening Bell in Laos

By John T. Correll



Photo via Vietnam News Agency

*A Pathet Lao unit listens to one of its members read a letter of commendation from its commander.*

**T**he first crisis John F. Kennedy faced as President was in Laos. On Jan. 19, 1961, the day before his inauguration, he met with his predecessor, Dwight D. Eisenhower, in the White House.

Eisenhower and his aides brought Kennedy and his advisors up to date on the civil war in Laos where government forces were on the verge of being overwhelmed by the combined strength of the communist rebels—the Pathet Lao—and their North Vietnamese allies.

According to Clark Clifford, who was taking notes for the Kennedy team,

Eisenhower stated, “If Laos should fall to the communists, then it would be just a question of time until South Vietnam, Cambodia, Thailand, and Burma would collapse.” Eisenhower acknowledged he was passing on a dangerous “mess” and told Kennedy, “You might have to go in there and fight it out.”

Things went from bad to worse.

By March, communist forces, supported by Soviet airlift and supplies, threatened the royal Laotian capital at Luang Prabang and the seat of government at Vientiane.

Kennedy disclosed the scope of the problem in a televised press conference

March 23, using a backdrop of three maps with red markings showing how much territory the Pathet Lao had captured in the previous six months.

“It’s quite obvious that if the communists were able to move in and dominate this country, it would endanger the security of and the peace of all Southeast Asia,” he said, and that “no one should doubt our resolution” for the independence of Laos.

Historian Lawrence Freedman, in the book *Kennedy’s Wars*, noted the crisis “tends to be forgotten because it was eventually subsumed into the larger Vietnam problem and did not result in





**Laos served mainly as a buffer zone between her more powerful and antagonistic neighboring nations.**

any direct American military commitments, but until the last few months of his life, it took up more of Kennedy's time than Vietnam."

Special Counsel and Kennedy confidant Ted Sorensen agreed. "During his first two months in office, Kennedy devoted more time and task force studies to this subject than to any other," he said.

Eventually, a cease-fire and an international agreement at Geneva brought a façade of stability to Laos, and Kennedy was able to turn his attention to other matters, including Vietnam. In actuality, the fighting in Laos continued with the United States deeply involved in both clandestine and conventional conflicts. The US Air Force flew its last combat mission in Laos in April 1973, almost three months after the cease-fire in Vietnam.

The crisis of 1961 had its roots in the breakup of the French colonial empire

in Indochina, which once consisted of Vietnam, Cambodia, and Laos.

### Land of the Pork Chop

The kingdom of Laos existed for 600 years, but was a cohesive nation in name only. Most of it was mountainous, with the open and level ground lying mainly around the Plain of Jars in the middle of the country and along the Mekong River on the border with Thailand. There were no seaports, no railroads, and no paved roads in the hinterlands. The remote villages had little interest in other parts of the country or in the distant government in Vientiane.

"Laos is neither a geographic nor an ethnic or social entity, but merely a political convenience," said Bernard B. Fall, war correspondent and historian of the conflicts in Indochina. There was an "absence of a feeling of national unity,"

he said. "Patriotism in Laos is at best a furious regionalism."

The shape of Laos has been likened to a pork chop, which is symbolic of the way it has been traditionally seen by others. At the time, Laos had boundaries with six neighboring nations that used Laos freely for their own purposes. At best, it served as a buffer zone between the more powerful nations that surrounded it. Laos had no strategic value in its own right. US Secretary of State Dean Rusk called it "the wart on the hog of Vietnam."

Laos had been a French protectorate since 1893, but colonial rule was interrupted by the Japanese occupation in World War II. When the Japanese left, the viceroy, Prince Phetsarath Rattanavongsa—a member of the junior branch of the royal family and acting Prime Minister—declared independence, and the national assembly deposed the king.

In 1946, French troops from reoccupied Vietnam parachuted into Laos, overcame the ill-trained Laotian forces, and restored the king in a constitutional monarchy within the French Union. Phetsarath went into exile, but his two younger brothers, who were part of his short-lived government, would dominate Laotian politics for the next 30 years.

Prince Souvanna Phouma was Phetsarath's minister of public works and Prince Souphanouvong was commander of the armed forces. Souvanna Phouma would be Prime Minister four times between 1951 and 1975. He was an engineer, educated in France, was courtly, westernized, pragmatic, and steady. His destiny, Fall said, was "that of being an intermediary between irreconcilable extremes."

Souphanouvong, the "Red Prince," was Souvanna's half-brother, but his mother was a commoner unlike Souvanna's mother, who was of royal blood. He was more accomplished than Souvanna in many respects but his abilities were less recognized. When he returned from France with an engineering degree of his own, he was insulted by the low-paying job he was offered. He went to Vietnam where he spent the World War II years and met Ho Chi Minh, leader of the communist Viet Minh, who became his patron.

After the French returned, Souvanna Phouma worked within the system and was chosen Prime Minister for the first time in 1951. Souphanouvong joined forces with the Viet Minh who were fighting the French in Vietnam. In 1950, he founded the communist Pathet Lao and established his stronghold in the rugged northeastern province of Sam Neua.



**Boun Oum**



**Souvanna Phouma**



**Prince Souphanouvong**

The United States did not approve of colonialism but sided with the French because of concerns about the spread of communism. The Eisenhower Administration, like the Truman Administration before it, was under pressure not to make deals with the communists in Indochina.

### Dominoes and Coups

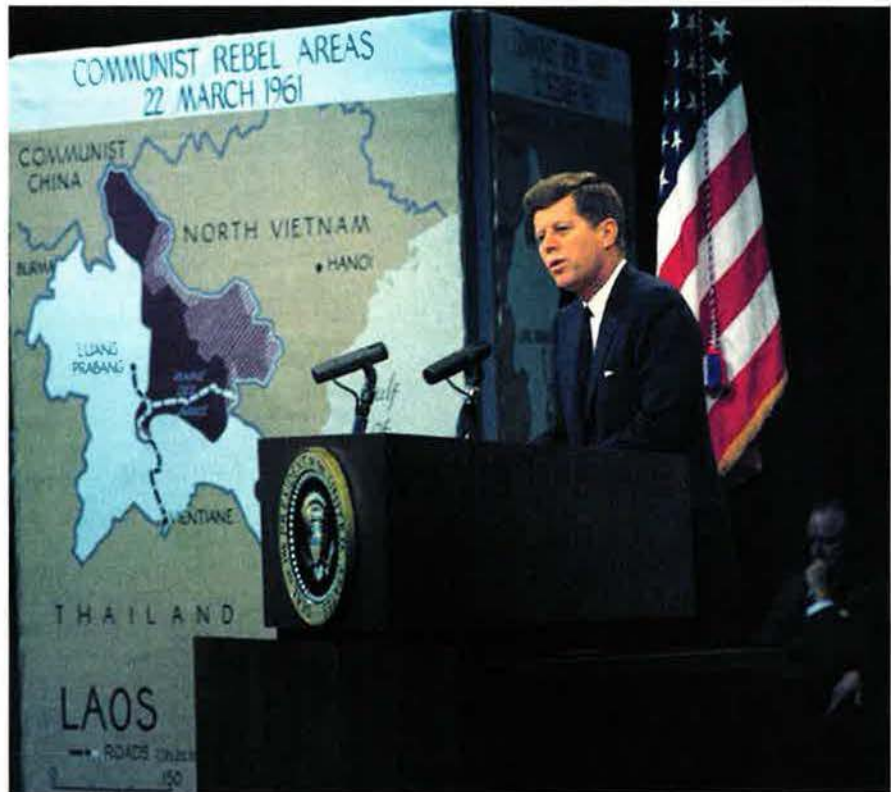
At a news conference on April 7, 1954, Eisenhower proclaimed the “Domino Theory”—which became the basis for US policy until the end of the Vietnam War 20 years later. “You have broader considerations that might follow what you would call the ‘falling domino’ principle,” Eisenhower said. “You have a row of dominoes set up, you knock over the first one, and what will happen to the last one is the certainty that it will go over very quickly.”

French rule of Indochina came to a crashing end with the Viet Minh victory at Dien Bien Phu in May 1954. In July, an international conference in Geneva imposed a settlement, partitioning Vietnam and declaring Laos and Cambodia independent. The United States was not a signatory to the accord but agreed to abide by it and supported the Royal Laotian Army with a cash subsidy and covert military advice. The CIA was active in Laos from 1955 forward. “The Eisenhower Administration spent some \$300 million and five years in the hopeless effort to convert Laos into a clearly pro-western, formally anti-communist military outpost on the borders of Red China and North Vietnam,” Sorensen said.

The resilient Souvanna Phouma was named Prime Minister for the second time in 1956 and established a coalition including Souphanouvong and the Pathet Lao. The rising communist influence led the United States to cut off financial aid and in 1958, Souvanna was forced out.

Between December 1959 and December 1960, the government changed hands repeatedly in a series of coups and countercoups. With US help, a pro-western general, Phoumi Novasan (ironically, once chief of staff to Souphanouvong) took control in a coup in December 1959 and clamped down on the Pathet Lao. Phoumi had the support of his cousin, Field Marshal Sarit Thanarat, leader of Thailand.

In August 1959, on a day when Phoumi was out of town, an obscure paratroop captain named Kong Le managed to seize Vientiane and invited Souvanna Phouma to establish a neutralist government. Thus Souvanna became Prime Minister for the third time.



White House photo by Cecil Stoughton

**President John Kennedy uses a color graphic at a press conference on March 23, 1961. He didn't make public at the time that a US contingency force was on alert in Asia, or that 300 marines and 16 B-26 bombers were covertly positioned in Thailand.**

Souvanna and Kong Le joined in a partnership with the Pathet Lao and obtained airlift support from the Soviet Union. On Dec. 8, Souvanna relieved the headstrong Kong Le from command but the next day, Kong Le deposed Souvanna. However, Souvanna refused to resign and departed into exile, and a leftist minister was appointed to replace him.

Phoumi chased Kong Le out of Vientiane Dec. 16 and set up a new government with yet another Laotian prince, Boun Oum, as Prime Minister. The real power

was Phoumi, who retained portfolios as deputy Prime Minister and minister of defense. Kong Le established a new base of operations on the Plain of Jars.

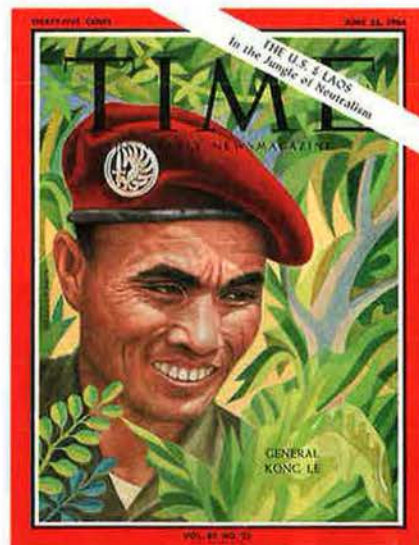
As 1960 began, the situation had devolved into a multisided civil war. The main battleground was the Plain of Jars, a rolling grassland 500 square miles, where hundreds of ancient stone jars dotted the landscape.

### Kennedy's Options

The meeting with Eisenhower was not Kennedy's first knowledge of the Laotian crisis. It was covered along with other national security issues in sessions with his transition team. “Whatever's going to happen in Laos, an American invasion, a communist victory, or whatever, I wish it would happen before we take over and get blamed for it,” Kennedy mused to Sorensen.

The Royal Laotian Army was notoriously poor at fighting and in January, an attempt by Phoumi to drive Kong Le off the Plain of Jars failed. Kennedy was far from enthusiastic about continuing to support Phoumi. “If that's our strong man, we're in trouble,” he said.

The situation got worse. In March, Pathet Lao and North Vietnamese moved into the Laotian panhandle where the Ho Chi Minh Trail was formed as an infiltration route to South Vietnam. Kong Le



**Kong Le on Time Magazine's June 26, 1964, issue.**

broke out of the Plain of Jars, pushing the Royal Laotian Army backward. The road to Vientiane lay open but amazingly he did not take advantage of it. As an alternate and more effective force to fight the communists, the CIA recruited some 5,000 Hmong tribesmen and their charismatic leader, Vang Pao.

In March, a US Interagency Task Force produced a "17-step escalation ladder" in which the high option was the deployment of 60,000 US troops supported by airpower. In April, the Joint Chiefs raised the projection of the force required from 120,000 to 140,000 with possible authority to use nuclear weapons.

One fact Kennedy left out of his March 23 press conference was that a US contingency force was on alert in Asia and 300 marines and 16 propeller-driven B-26 bombers were pre-positioned covertly in Thailand in case the communists made a run for Vientiane.

Kennedy still subscribed to the Domino Theory. "Quite obviously, if Laos fell into communist hands, it would increase the danger along the northern frontiers of Thailand," he said in April. "It would put additional pressure on Cambodia and would put additional pressure on South Vietnam, which in itself would put additional pressure on Malaya."

According to Sorensen, Kennedy decided he had four choices. He could let the Pathet Lao take Laos, which was unacceptable to him. He could provide enough military backing for the pro-Western forces to win. "This was in effect the policy he inherited," Sorensen said, but he ruled out a land war in Laos. Third, he could accept partition of the country, but that would leave him vulnerable to criticism from his political opponents. The fourth choice, and the one he took, was to negotiate for the restoration of a neutralist government. That meant "supporting as premier the same Souvanna Phouma whom this country had previously condemned," Sorensen said.

Kennedy sent the message by diplomatic backchannels to the Soviets and the Chinese that he was open to settlement but was prepared to intervene militarily if needed to prevent a hostile takeover of Laos.

### The Fraudulent Peace

The International Control Commission, which had overseen the 1954 Geneva Accords, was reactivated. A cease-fire took effect May 11, but negotiations for a permanent arrangement dragged out for more than a year.

The three princes—Souvanna Phouma, Souphanouvong, and Boun Oum—met

several times and agreed to form a tripartite government. They eventually settled on a coalition with Souvanna as Prime Minister and the other two as deputies. Souvanna began his fourth and longest tour in office June 1962.

The new Geneva Accord, promulgated in July, declared Laos neutral and ordered all foreign military forces to leave. The United States withdrew its military presence but North Vietnam did not. No more than 40 of the 7,000 North Vietnamese troops in Laos went home. The civil war went on. The Geneva agreement took the pressure off Kennedy and freed him to pursue other matters. He concluded that if a stand had to be made in Indochina, Vietnam was a better place to do it. After he was assassinated in November 1963, the war in Southeast Asia was left to the Johnson, then Nixon Administrations to resolve.

The Pathet Lao soon split away from the coalition and clashes with the neutralists became frequent. The rift widened until Souphanouvong declared in 1964 that the Pathet Lao no longer recognized Souvanna as Prime Minister.

Kong Le was appointed Chief of the Army in November 1962. His exploits were sufficient for him to appear on the cover of *Time Magazine* in June 1964, but he was as difficult as ever and was dismissed in November 1966. As for Phoumi, he led a failed coup attempt in February 1965 and fled the country.

The United States struck a strange bargain with Souvanna Phouma. The Ho Chi Minh Trail in the Laotian panhandle was the critical lifeline of the Viet Cong and North Vietnamese forces in South Vietnam. Souvanna gave permission for US aerial interdiction bombing on the trail. In return, US airpower conducted a major campaign in northern Thailand to stave off defeat for the weak Laotian government. "I am a good friend to communists abroad," Souvanna said, "but I do not like them here at home."

The war in Laos was kept secret from the American public until 1970, both because the conflict—like the continuing North Vietnamese participation—was a violation of the Geneva Accords and because the Laotians did not want to draw international attention. Between 1968 and 1973, the US flew 401,296 strike sorties in Laos, almost as many as it did in North and South Vietnam combined.

"Starting in the mid-1960s, the United States found itself extending increasing

support to Premier Souvanna Phouma, the neutralist leader whom we had originally opposed but who had been recognized as the leader by all sides in the 1962 Geneva Accords," said Henry Kissinger, national security advisor during the last years of US involvement in Vietnam. "Our purpose was to maintain a neutralist government and also to secure Souvanna's acquiescence in our efforts to interdict the Ho Chi Minh Trail."

### The Third Domino

The US settlement in Vietnam was already in effect when the United States flew its last combat mission in Laos, April 17, 1973. B-52 bombers, taking off from Guam, attacked targets south of the Plain of Jars because of communist cease-fire violations.

The governments the United States had supported in Southeast Asia did not last long after the Paris Peace Accords. The Khmer Rouge captured Phnom Penh and Cambodia April 17, 1975. The North Vietnamese took Saigon April 30, 1975—marking the end of the war in Vietnam.

Laos became what historian Timothy N. Castle called "the Third Domino" in Indochina when the Pathet Lao, supported by more than 50,000 North Vietnamese troops still in Laos, seized power. The Laotian monarchy was replaced Dec. 2, 1975, by the Laotian People's Democratic Republic. Souvanna Phouma resigned. Military personnel above the grade of lieutenant were treated as war criminals and the practice of Buddhism was curtailed.

King Sisavang Vatthana abdicated but he and his family were sent to a re-education camp. The king, queen, and crown prince were imprisoned in a cave in a remote area of Laos where they later died from lack of adequate food and medical care.

Souphanouvong was named President of Laotian People's Democratic Republic, a largely ceremonial post, which he held until stepping down in 1986 because of failing health.

When Souvanna Phouma left office for the final time in 1975, he had served a cumulative total of almost 20 years as Prime Minister. He continued to live in Laos and served for a while as advisor to the new government. He stood beside his brother, the Red Prince, to review a parade in 1977.

He died in 1984 at his villa on the banks of the Mekong and lay in state in a government building in Vientiane. ■

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

By Frances McKenney, Assistant Managing Editor

## The New Season Begins

In California, the Air Force Association's newly elected Chairman of the Board, George K. Muellner, helped kick off the CyberPatriot season for Los Angeles area high school students who are gearing up for the upcoming national cyber defense competition.

Muellner, CyberPatriot Commissioner Bernard K. Skoch, and **General Doolittle Los Angeles Area Chapter** President Harry A. Talbot attended CyberDayLA in October, held at California Polytechnic State University, Pomona.

In the CyberPatriot competition round that ended in March, some 50 teams within the Los Angeles Unified School District registered to participate. CyberDayLA served to motivate them again, and two of the returning teams received special recognition at the event: a Reseda High School group and the Benjamin Franklin High School team from Highland Park.

The teams received laptop computers through a community foundation grant for a local sponsor, the LAUSD's enrichment program called Beyond the Bell.

In addition, the Franklin High School team—who competed under the nickname ThunderCats—received a large banner proclaiming them as national finalists who won a trip to Washington, D.C., to compete in the championship round.

Talbot gives credit to the **Gen. B. A. Schriever Los Angeles Chapter** for direct involvement with high schools, JROTC, and CAP units taking part in the CyberPatriot program. Glenn A. Dildy, in particular, has met with LAUSD officials to discuss ways to encourage cyber security education, Talbot said.

## Dirty Thirty

The **Whiteman Chapter** in Missouri recently presented "Dirty Thirty" memorabilia to a Vietnam War veteran.

Rob Moise lives in the Missouri Veterans Home in Warrensburg today, but in 1953 he entered the Air Force and flew a C-47 as a captain in Vietnam. He went on to serve in Thailand and Laos and at the Air Force Academy before retiring to become an aviation instructor at the University of Central Missouri in Warrensburg.



AFA Board Chairman George Muellner congratulates William Wong from the Franklin High School (Calif.) CyberPatriot team. Others in this group of 2012 national finalists stand just behind them (l-r): Patricia Hernandez, Jasmine Cao, and Jenny Huang.

More photos at <http://www.airforce-magazine.com>, in "AFA National Report"

Twice a year, the chapter brings in a collection of vintage uniforms, gathered by Chapter President Mel Johnson, to the vets facility in Warrensburg.

"The residents of the home and their families gather around the display," wrote Johnson in an e-mail. "And they tell their stories."

Last Memorial Day, Moise stopped by Johnson's display and mentioned that he'd been in Vietnam in 1962. That's how Johnson learned about the "Dirty Thirty," USAF pilots who flew as advisors for the South Vietnamese Air Force (VNAF) that was short of airmen but with a great need for logistic support. The 30 USAF pilots worked around the clock, practically living in their flight suits—thus their nickname.

Moise told Johnson that the Vietnamese had impressive piloting skills—the Dirty Thirty usually served as copilots—and navigators with a "near intuitive sense."

The VNAF awarded Moise pilot wings, but he lost them somewhere during his career. "So there was my mission," Johnson explained.

He rounded up USAF and VNAF pilot wings, a VNAF patch, and a reproduction Dirty Thirty patch and had them framed, together with a small brass plaque.

Johnson then called on chapter member Lt. Col. David A. Williamson to join him for presentation of the memento. Williamson commands the 72nd Test and Evaluation Squadron at Whiteman and reminisced with Moise about his own academy assignment and traded stories about flying.

Johnson said he was inspired to collect the memorabilia for Moise out of respect for those "who go into the unglamorous unknown."

## Two in Five

It's a fledgling, but it's not afraid of big jobs. In September, Florida's 10-month-old **Sarasota-Manatee Chapter** carried out two major events within five days.

On Sept. 18, some 40 chapter members and guests celebrated the Air Force's 65th anniversary. The audience spanned a range of ages: Civil Air Patrol

*Continued on p. 68*

## Field Leaders Hold Annual Meeting

Some 30 AFA region and state presidents attended their annual orientation meeting in mid-October in Arlington, Va., to learn about AFA's operations and procedures.

Newly elected Vice Chairman of the Board for Field Operations Scott P. Van Cleef opened the two days of presentations and breakout sessions by telling the audience to reinvigorate chapters and "accept no excuses for inaction."

"Our job is not just to herd cats and turn reports in," he said.

The AFA orientation weekend would be "the most important meeting that field leaders have, across the year," he continued. "It sets the tone for how we attack our challenges."

New Board Chairman George K. Muellner described some of them.

He said AFA aims to be "the premier professional military and aerospace education association in the nation."

Partnering with other organizations can help to reach this goal, he said. "We need to worry less about who's the lead" and co-sponsor events with the "unlimited number of organizations" available to work with AFA.

"Leverage our 501(c)(3) status," he said, explaining that many people don't know that AFA is a charitable organization.

He asked attendees to groom new leaders, rather than rotate the same members through the same positions.

Muellner said he became a Life Member after attending a local chapter meeting at George AFB, Calif. It featured guest speakers Robin Olds and Gail S. Halvorsen. Olds had gained fame for his Vietnam War Operation Bolo feat with F-4s, and Muellner was fascinated because he was about to go to Vietnam, also as a Phantom pilot. As for the Berlin Airlift "Candy Bomber" Halvorsen: Muellner pointed out that the German Fighter Weapons School was located at George Air Force Base, and several Berliners came to the chapter meeting to thank Halvorsen. "I thought this was really neat," Muellner commented.

He reminded field leaders that chapters can similarly capture attention by inviting today's USAF legends to their meetings. "The AFA chapters I grew up with were a lot of fun," he said. "We need to get back to that."

## Suggestions From the Field

Muellner said AFA across the field must work on communication and share best practices.

Several field leaders did just that.

Central East Region President Joseph L. Hardy said the **Thomas W. Anthony Chapter** sends a representative to every Airman Leadership School graduation, appointed an active duty person as

*AFA national officers go over some ideas before the Region and State Presidents meeting. L-r: Vice Chairman for Field Operations Scott Van Cleef, Secretary Edward Garland, and Board Chairman George Muellner.*



*AFA joined the USA Vietnam War Commemoration Program—marking the 50th anniversary of the war—as a Commemorative Partner. AFA Executive VP Dick Newton accepted a commemoration flag from the program's Yvonne Schilz during the Friday session of the Region and State Presidents meeting.*



*Lt. Gen. Christopher Miller, USAF deputy chief of staff for strategic plans and programs, briefs the Saturday session. Listening in the front row are (l-r): Mike Hartsfield, Arthur Rooney, John Allen, Mary Moss, Mary Mayer, and Bill Day.*



chapter military VP, attends change of command ceremonies at JB Andrews, visits new wing commanders, and reaches out to CAP and AFJROTC units.

Southeast Region President Thomas W. Gwaltney of the **Montgomery Chapter** (Ala.) recommended that field leaders include tenant-unit commanders in their office calls. Have a one-page point paper ready for all base visits, he said, and at the bottom of it ask: "What can we do for you?" He said this simple question has always gotten a response.

South Carolina State President Arthur J. Rooney, from the **Charleston Chapter**,

puzzled over why some wing commanders weren't AFA members. The answer? Mentor them—and start early.

New York State President Maxine Rauch, an **Iron Gate Chapter** member, counseled starting early, too: Think ahead on how to involve people in AFA when there are no USAF bases nearby. She also challenged the audience to increase the number of women in leadership positions.

Van Cleef provided the most pragmatic advice: Always be ready to deliver an "elevator speech," a 30-second explanation of what AFA offers.



A donation from Virginia's Langley Chapter, matched by Virginia State AFA, helped keep the cost of an AFJROTC summer camp under \$100 for each cadet. Here, the cadets tackle an obstacle course at JB Langley-Eustis, Va.



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cadets in middle school, on one hand, and a pair of World War II pilots on the other. Those fliers included chapter member George Hardy, a Tuskegee Airman who had flown the Red Tail P-51s in Europe.

A few days later, the chapter hosted its second annual Defense Issues Forum, designed to inform the general public on Air Force and Defense Department issues.

CAP cadets presented the colors to start this event. Then a cadet team conducted the POW-MIA Ceremony—"A Table Set for One"—an appropriate beginning for this year's program. It featured MIA Hunters.

A nonprofit group based in Sarasota, MIA Hunters focuses on recovering the remains of US service personnel unaccounted for from World War II.

Co-founders Bryan and Christopher Moon described for the audience some of their 33 expeditions over the past 23 years.

According to the Chapter President Michael E. Richardson, the father-and-son team has lived with headhunters in Papua New Guinea, among many adventures, while locating more than 100 crash sites and documenting the remains of some 500 missing servicemen from the US, Australia, and Japan.

This event was the chapter's most successful program to date, reported Richardson. The chapter sold all 104 seats. "The several walk-ins who showed up at the last minute had us scrambling," he said.

The University of South Florida Sarasota-Manatee provided the auditorium and audio-visual support. The Herald Tribune Media Group provided coverage and advertising. From this event, the chapter received more than \$300 in donations to the AFA's Wounded Airman Program.

**Thank You for Your Help**

In South Carolina, the **Charleston Chapter** recently thanked a couple of key supporters.

Chapter President Linda J. Sturgeon pinned a CyberPatriot lapel pin on the collar of retired Maj. Shawn Gordon, in appreciation for promoting the national high school cyber security competition in the area. Chapter member Gordon rounded up IT professionals and local businesses to serve as CyberPatriot mentors and sponsors, explained Arthur J. Rooney, South Carolina's new state president.

At the same meeting, AFJROTC cadets Garrett Smith and John Cordes presented MSgt. Louis Gosseck, commandant of the Airman Leadership

School at JB Charleston, with a plaque to thank him for his role in developing the JROTC Summer Mentor Program. The cadets belong to the AFJROTC unit at Ashley Ridge High School in Summerville. The Charleston Chapter arranged for them to shadow ALS instructors for three days this past summer.

The youngsters learned about skills such as time management, stress management, and effective communication, Rooney said. The program proved so successful that it will include more people next year.

### Purple Heart Surprise

Brother Robert Francis Matthews, New York State and **Albany-Hudson Chapter** VP, received a Purple Heart this summer for action during the Korean War, reported Chapter President Michael A. Szymczak.

The presentation took place in Latham, N.Y., as part of a Disabled American Veterans event that the two chapter officers attended. They had been invited to the gathering to honor a veteran from Albany, Anthony Schmitz, who had this spring received a long-delayed award, as well: the French Legion of Honor Medal for action in World War II.

Event organizers asked Matthews to serve as chaplain for the DAV tribute



SrA. Robert Sotler, Tom Riker, and Ted Tanner (l-r) cut the cake at the Air Force anniversary celebration hosted by the Orange County/Gen. Curtis E. LeMay Chapter and the American Legion in Newport Beach, Calif. The event raised more than \$9,000 for the Airmen and Family Readiness Centers at Edwards and Los Angeles Air Force Bases, reported Chapter President Bryan Roland.

to Schmitz, and Szymczak attended it to build contacts for AFA among the local politicians.

Both Matthews and Szymczak were completely surprised when the DAV

officials at the event produced a Purple Heart for Matthews.

The award came about because he had been seeking medical benefits due to him as a Navy veteran. He served in the Korean War as part of G Co., 5th Marines, 1st Marine Division. Szymczak explained that the Department of Veterans Affairs looked into the case and decided Matthews was entitled to a Purple Heart.

Neither he nor Szymczak had expected the DAV to round up the award, though.

### Meet the New Bosses

With a luncheon in October in New York City, the **Iron Gate Chapter** introduced its members to the two new leaders of AFA's headquarters staff, President Craig R. McKinley and Executive VP Richard Y. Newton III.

"They stood together at the podium to demonstrate their leadership style," wrote Chapter President Frank T. Hayes, "and their bond with the Iron Gate audience was instant."

The guest list included Air Force supporters from many sectors: Brig. Gen. Kevin W. Bradley, state assistant adjutant general; Col. Timothy J. LaBarge, 105th Airlift Wing, Stewart Air National Guard Base; Col. Thomas Owens, 106th Rescue Wing commander, from Gabreski Airport; Lt. Col. Timothy McCaffery, AFROTC detachment commander at Manhattan College; Lt. Col. Elizabeth Ortiz, from the USAF Media Outreach Office in New York City; and Terrance C. Holliday, the mayor's Veterans Affairs commissioner.

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The luncheon featured several singers and took place at the 21 Club, a restaurant that opened as a speakeasy in 1929. Hayes said the guests toured its famous secret cellar, now housing a \$1.5 million collection of wine instead of illegal liquor, as in Prohibition days. ■

E-mail chapter news to [natrep@afa.org](mailto:natrep@afa.org) or send it to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Digital images should be a minimum of 900 by 1,500 pixels.

## Reunions

[reunions@afa.org](mailto:reunions@afa.org)

**91st Strategic Reconnaissance Wing**, McGuire, Yokota, Barksdale, Lockbourne, including associated squadrons and support units. Also **91st Bomb Group** and **Lockbourne AFB Reunion Group**. Aug. 21-27, 2013, at the Sheraton Hotel in Omaha, NE. **Contact:** Jim Bard, 3424 Nottingham Rd., Westminster, MD 21157 (410-549-1094) ([jimbardjr@comcast.net](mailto:jimbardjr@comcast.net)).

**100th Bomb Wg**, Pease AFB, NH, B-47/KC-97 era. April 28-May 2, 2013, in San Diego. **Contact:** Dave and Terry Lambert, 6 Portside, Irvine, CA 92614 (949-786-1914) ([3lambert@cox.net](mailto:3lambert@cox.net)).

**AFOCS** (1943-1963). May 24-27, 2013, in San Antonio. **Contact:** Dave Mason (757-820-3740) ([blokemason@verizon.net](mailto:blokemason@verizon.net)).

**VW-1 All Hands Alumni Assoc.** April 15-19, 2013, in Tucson, AZ. **Contacts:**

Sally Metzger (352-726-4943) ([saled@tampabay.rr.com](mailto:saled@tampabay.rr.com)) or Pete Wasmund ([vw-1@comcast.net](mailto:vw-1@comcast.net)).

Seeking members of the **21st Tactical Airlift Sq**, E Flight, from Naha, CCK, and Clark Air Bases (1960s to 1970s) for a reunion in April or May 2013 in Robins AFB, GA, area. **Contacts:** Tommy Norton (828-279-4803) ([ntomdeb1@bellsouth.net](mailto:ntomdeb1@bellsouth.net)) or Gary Robinson (512-292-1629) ([grobinson12@austin.rr.com](mailto:grobinson12@austin.rr.com)). ■

E-mail unit reunion notices four months ahead of the event to [reunions@afa.org](mailto:reunions@afa.org), or mail notices to "Unit Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.

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# Airpower Classics

Artwork by Zaur Eylanbekov

## F-5



The F-5 rose from humble beginnings to become the world's most widely used light fighter. In 1955, Northrop launched the program as a private venture aimed at the Navy. The Navy passed, but the company created a superb export fighter—supersonic and capable yet inexpensive and easy to fly. The US chose it for distribution to allies via the Military Assistance Program. The rest is history. Some 2,600 were built, and they served in three dozen or so of the world's air arms.

The original F-5A, dubbed Freedom Fighter, appeared in the early 1960s. It was a clean, all-metal, twin-engine type. Wings had a 24-degree sweep-back on the leading edge and nearly straight trailing edge. Soon, Northrop produced an improved variant, the F-5E Tiger II. It had more powerful engines, greater fuel capacity, and—notably—an air-to-air radar. (F-5As had none.) The first and second generation F-5s proved a good fit with

the ground-support and aerial combat missions of allies and for US training purposes.

In 1964, the first F-5s arrived at USAF's Tactical Air Command, which used them to train foreign pilots slated to fly F-5s. In 1965, USAF "borrowed" 12 and modified them for a combat trial—"Skoshi Tiger"—in Vietnam. These later formed the short-lived 10th Fighter Commando Squadron. It was USAF's only use of the F-5 in combat.

The Tiger II gained fame as an "aggressor" aircraft at the USAF Fighter Weapons School, and the Navy and Marine Corps used them as adversary aircraft, too. Hundreds of them remain in service in air arms around the world.

—Walter J. Boyne

**This aircraft:** USAF F-5E—#74-01551—as it looked in 1978 when assigned to the 527th Aggressor Squadron, RAF Alconbury, Britain.



A four-flight of F-5s banks into a turn.

### In Brief

Designed by Northrop ★ built by Northrop, Canadair, CASA, Korea Air, Swiss Federal Aircraft ★ first flight July 30, 1959 ★ crew of one or two (trainer) ★ number built 2,647 ★ **Specific to F-5A:** two GE J85-13 turbojet engines ★ max speed 925 mph ★ cruise speed 575 mph ★ max range 1,100 mi ★ armament two 20 mm cannons, two AIM-9 missiles ★ max load 5,500 lb of ordnance ★ weight (max) 20,576 lb ★ span 25 ft 10 in ★ length 47 ft 2 in ★ height 13 ft 6 in. **Specific to F-5E:** two GE J85-21 turbojets ★ max speed 1,082 mph ★ cruise speed 646 mph ★ max range 1,300 mi ★ armament two 20 mm cannons, two AIM-9 missiles ★ max load 7,000 lb ★ weight (max) 24,722 lb ★ span 26 ft 8 in ★ length 47 ft 4 in ★ height 13 ft 4 in.

### Famous Fliers

**US Notables:** Joseph Baggett, Frank Emory, John Corley, Wilbur Creech, Gary Dana, David Dreifuss, Aubrey Edinburgh, Roy Holbrook, Alfred Hopkins, Arthur Powell, Robert Terbert, Jim Thar, Robert Titus, Chuck Yeager. **Foreign:** Yadollah Javadvpour (Iranian ace—Iran-Iraq War), Nguyen Cao Ky (Air Chief of Staff and Prime Minister, South Vietnam). **Test Pilots:** Roy Martin, Paul Metz, Jim Sandberg.

### Interesting Facts

Compiled perfect production record: Every F-5 met cost, schedule, and performance requirement ★ exceeded speed of sound on first flight ★ nicknamed "Tinkertoy" ★ captured by North Vietnam and flown against communist Cambodia (1975) and China (1979) ★ shown in films "Apocalypse Now" (dropping napalm), "Top Gun" (as fictional "MiG-28"), "Hot Shots" (as Iraqi fighter) ★ flew 2.75 million accident-free miles in first year ★ led to YF-17, basis of F/A-18 Hornet ★ used engine built for B-52-borne Quail decoy.



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