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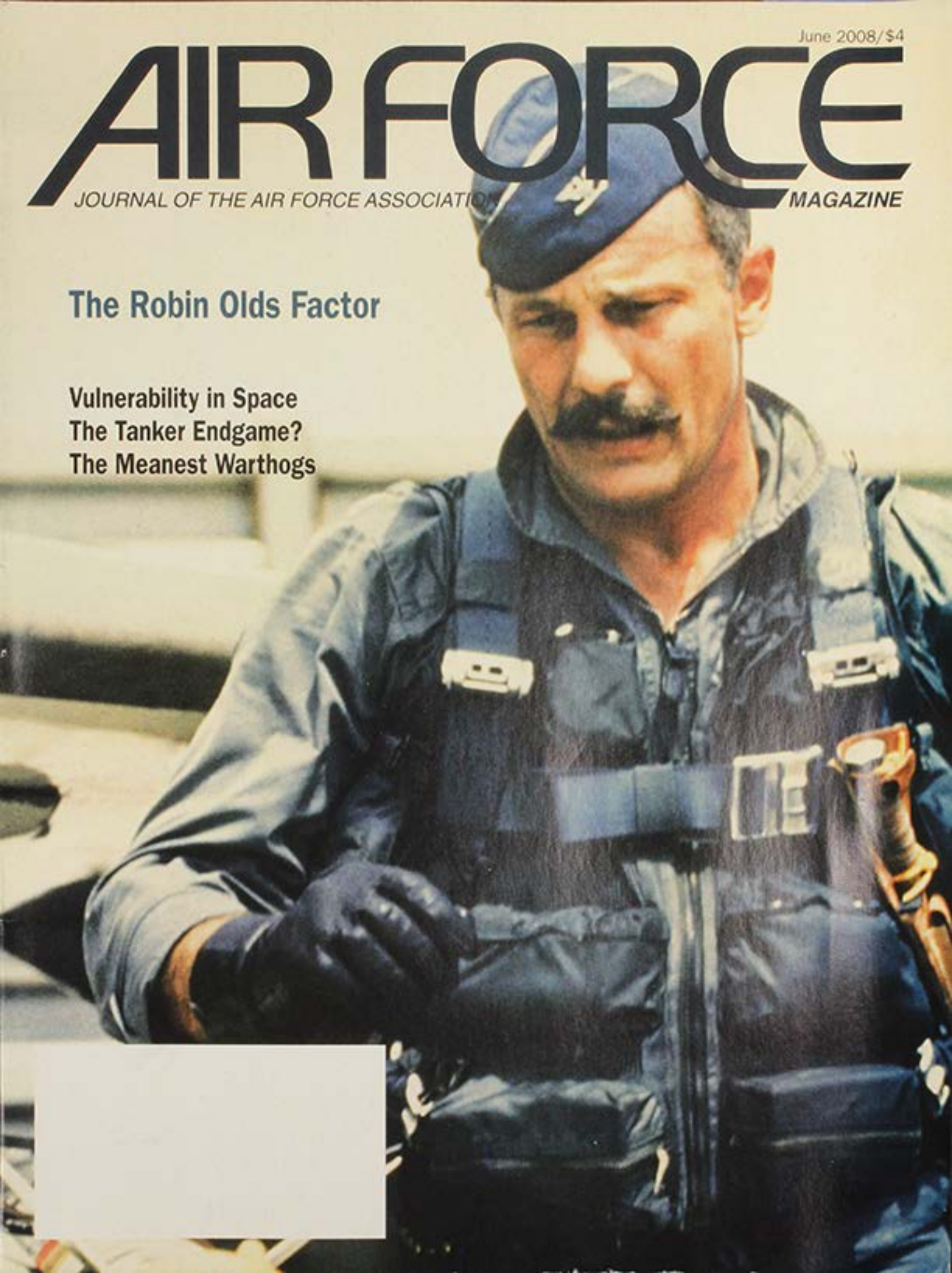
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JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE

The Robin Olds Factor

Vulnerability in Space
The Tanker Endgame?
The Meanest Warthogs





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MAGAZINE

June 2008, Vol. 91, No. 6



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Bad Medicine

FOR a person once described as a “gray man” of “rigorous blandness,” Robert M. Gates seems surprisingly eager to take a rather large gamble. The Secretary of Defense is transfixed by the War on Terror. He wants to win it. He would risk future US power to do so.

That, at least, is one way to interpret a well-publicized Gates address to a defense audience in Colorado Springs. In that May 13 speech, he attacked the armed services, slamming what he called “‘next-war-itis’—the propensity ... to be in favor of what might be needed in a future conflict.” US energies, argued Gates, should be focused on “current needs and current conflicts”—the War on Terror. “That is the war we are in,” he said, and “the war we must win.” Buying modern arms to fight potential future foes like, say, China can just wait.

Besides, Gates went on, “It is hard to conceive of any country confronting the United States directly in conventional terms—ship to ship, fighter to fighter, tank to tank—for some time to come.” Wars of the past 25 years, he opined, have seen “smaller, irregular forces” tying up big regular militaries, not force-on-force clashes. This won’t change, he assured his listeners, so “the kinds of capabilities we will most likely need in the years ahead will resemble the kinds of capabilities we need today.”

Gates acknowledged a need to “hedge against” potential threats from “rising and resurgent powers” (read, China and Russia). That was mostly boilerplate, though. His real message was that, given limited funds, “it makes sense to lean toward the most likely and lethal scenarios”—irregular, ground-centric wars.

As expounded in his Colorado Springs speech, the Gates way of force-building would weaken US full-spectrum power. The SECDEF warns that “any major weapons program, in order to remain viable, will have to show some utility and relevance to ... irregular campaigns.” He has already noted that USAF’s new F-22 fighter has not flown “a single mission” in the current wars. Presumably, his injunction would also apply to other high-end forces.

Are Pentagon leaders really serious about this? Is Gates himself serious about it? He has embraced a stylized

image of a future world landscape dominated by shadowy, lightly armed enemies sallying forth from remote redoubts and engaging in nonstop urban warfare. In case Mr. Gates has forgotten, it was not that long ago that the US had to use main conventional forces—principally air forces—to win the 1991 Gulf War. More recently, high-end forces were needed

Gates wants to cure the services of “next-war-itis,” but he would only weaken the patients.

to fight in Bosnia, Serbia, Afghanistan, and Iraq. None of these operations would have been possible without advanced, front-line weapons.

Gates wants to cure the services of “next-war-itis,” but he would only weaken the patients.

Neither Gates nor anyone else can safely predict the likelihood of major conventional war. Surely the Pentagon leader is aware of the huge buildup of fighters, warships, and other modern arms in China and Russia, as well as regional threats posed by the likes of North Korea and Iran. If it is true that the eruption of a major clash of conventional arms is not likely, it is because US air, sea, and land forces are strong enough to deter any aggressive moves. That is hardly a reason for turning away to deal with lesser problems.

Moreover, the US isn’t neglecting irregular warfare. The Bush Administration, in fact, made the demands of low-intensity combat the basis for adding 92,000 active troops to Army and Marine Corps end strength. DOD will spend upward of \$20 billion for thousands of Mine Resistant Ambush Protected (MRAP) trucks, used almost exclusively for counterinsurgency operations.

In fact, quite a few current and former military leaders worry that the Pentagon puts too much emphasis on irregular warfare and counterinsurgency. Last Fall, USAF Gen. Lance L. Smith, the outgoing chief of US Joint Forces Command, warned, “[W]e get so focused on counterinsurgency and irregular warfare that we are not prepared for a different kind

of war, whether that is major conventional war or ... a hybrid of large conventional war and irregular war.”

Gates is also misreading the value of airpower. He opines that, in years ahead, the Air Force (along with the Navy) will provide “America’s main strategic deterrent,” implying it offers little for irregular war. Yet today—right now—USAF is making a huge contribution to the war effort. Airborne ISR systems monitored 70,542 potential roadside bomb targets last year, according to Air Combat Command. Most insurgent deaths stem from fighter, bomber, and gunship attack from the air. Airlift has been vital.

This is not—or, at least, it doesn’t need to be—a zero-sum game. No one is forcing Washington to choose which danger it will address and which it will neglect. Few doubt the need to prepare to fight terrorists, insurgents, and the like. However, says USAF Maj. Gen. Charles J. Dunlap Jr., “the problem arises when people insist that war with peer and near-peer competitors is unlikely, and therefore, the overwhelming focus of the US military should be to prepare to conduct operations at the low end of the spectrum.”

Gates should know that the problem is not some villainous, grasping military, suffering from some bureaucratic disease. The problem is not even improper allocation of resources; the forces engaged in the Mideast wars are getting plentiful resources. The problem is that the budget is too small to cover all legitimate US defense requirements for both today and tomorrow.

Gates was on the right track in challenging some systems, particularly those geared to heavy land warfare. Still, we can’t solve our security problems by short-sheeting the future to pay for the present. The solution is to ask Congress for funds to do the job. No one knows how the lawmakers would respond; they’ve never really been asked.

Only the naive believe that we’ve seen the end of major, force-on-force warfare. Luckily, Gates does not have much time left to impose his preferences, given that President Bush is set to leave office in late January. The Secretary will leave his imprint on the next budget, and that will be the extent of it. That is the sole bright spot in this whole episode. ■



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Cliffward Bound

I agree with your assessment [*Editorial: Lurching Toward a Cliff*, April, p. 2] that the 2009 budget request does not adequately fund Air Force investment programs. The nation needs at least 381 F-22 fighters, many more C-17s than the currently programmed 190, and a replacement for aging Cold War bombers. This is shaping up to be the decade of lost opportunities for American airpower. I shudder to think what would have happened to the Air Force if General Moseley had not shown up in time to prevent the "controlled flight into terrain" that the Quadrennial Defense Review was becoming.

However, I would like to offer three caveats to your case for more funding. First, Congress is highly likely to fund production of additional F-22s and C-17s in the 2009 budget mark, which will provide the bridge to an Administration with more sensible investment priorities. It is up to the Air Force to convince President Bush's successor that 381 Raptors is the minimum viable number, and it needs to rethink its approach to airlift recapitalization to acknowledge the need for at least 250 C-17s.

Second, the nation is spending five percent of a \$14 trillion GDP—\$480 billion in baseline 2008 military spending, \$189 billion in war-related outlays, and about \$20 billion on other items like Energy Department nuclear weapons programs. With the nation facing a \$400 billion budget deficit this year and who-knows-what next year, it isn't realistic to expect a higher level of military outlays in the absence of an urgent threat. So increasing investment outlays requires cutting other aspects of military activity. Iraq would be a good place to start.

Finally, the Air Force is going to lose the modernization argument if it keeps using fighters as its point of reference for budgetary shortfalls. What about the sorry state of electronic warfare? What about the fact that it can't scrape together enough money to modernize 14 JSTARS planes with new radar that would be better at tracking insurgents? I'm all for getting to 381 Raptors, but how can the service expect sympathy for its funding difficulties when it plans to buy more stealthy fighters than every other country in the world combined,

but has no roadmap for upgrading its radar planes?

Loren Thompson
Arlington, Va.

Ramenskoye, Past and Present

I noted with great personal interest the photos on p. 52 of *Air Force Magazine*, April 2008 issue, showing an Mi-8 Hip helicopter and an An-12 Cub fixed wing aircraft apparently rigged for aerial recovery ("capture," in your caption).

This is the first instance I have ever seen in print that the Russians employed a midair recovery system ("MARS" as the USAF called it). After flying 72 combat missions in Korea with the 36th Fighter-Bomber Squadron, I left active duty and joined All American Engineering Co. (AAE). In 1960, I was a member of the design team for the JC-130 Aerial Recovery System used for photoreconnaissance satellite capsule recovery. I was then project engineer on USAF's first MARS and flew as test engineer on the first USAF catch in an H-43 helicopter in July 1961 at Holloman Air Force Base, and then project engineer on USAF's CH-3C MARS, used to recover the Ryan Model 147 reconnaissance drones. Later (in 1969), I became AAE's manager of Aerial Recovery Programs.

I am amazed that after all of those years "in the business," the Russians' activities never surfaced.

G. Robert Veazey
Wilmington, Del.

Thanks so much for the photo feature "Ramenskoye, Past and Present." It

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was a fascinating look at a world that we don't get to see often.

For my part, I would have been happy with a feature that was four times as long on the same subject. Hopefully, you'll publish other, similar features in the future.

Also, a small nit: The caption for the F-16 image that appears on p. 18 of the same issue states that one of the fighters "unloads some electronic countermeasure flares."

In fact, flares are infrared decoys, not electronic countermeasures.

Hank Caruso
California, Md.

If There Comes Another Draft ...

I was one of the thousands of recruits during the Vietnam War, as identified by the statement on p. 71, "...as many as half of the Air Force's enlistments were induced by the pressures of the draft" [*"When the Draft Calls Ended," April, p. 68*]. Unfortunately, I served about nine-and-a-half months due to what my father called "immaturity." However, I had wanted to serve in the Air Force for most of my life previous to actually entering when I did.

In my case, however, I had the abilities needed to fulfill an enlistment and/or career in the Air Force. What I needed was some help from our government as I suspect many did at that time. I am thinking that in the future, should the draft be reinstated, that it would behoove the government to make some adjustments to the system, such as allowing all college students the opportunity to complete the first two years of schooling before being subject to the draft. This would give an advantage to the draftees where they would be allowed to enter with some idea of what the world holds beyond the friendly confines of high school.

Also, it would be important to provide a way of doing alternative service to the nation instead of having to enter the military during a time of a national draft. I understand that the needs of the country are dire during a time of conflict such as the current War on Terror, but the individual has to be shown some latitude and respect for his or her own choices and future lives and jobs. I say this because of the morale factors encountered during Vietnam, etc.

William Reid
Essexville, Mich.

No article has ever struck a nerve with me like John Correll's article on the draft.

I was a student at a small university, drinking beer with my buddies in a dorm room and watching the draft number assignments. It's important to note that my year group was the first that

did NOT have a student deferment, so the process drew more than just casual interest from the eligibles.

I briefly left the room and when I returned, everyone was wearing very glum faces. While I was gone, my number had been assigned. I was two—not 20—not 200—but two! My dreams of getting a Ph.D. in literature and a professorship went up in smoke. I was toast.

I checked out the AFROTC unit but they couldn't sign me up until the following summer. For the next several months, I enjoyed celebrity status on campus. Few knew my name, but they'd point and say, "There goes No. 2!" There was a silver lining to what many considered the black cloud over my head. I met many coeds who voluntarily introduced themselves and expressed concern about my situation.

As it turned out, the Paris peace talks were progressing to President Nixon's satisfaction. Therefore, he decided there would be no draft in January. This went on for several months until springtime when he announced there would be no draft that year. Like a phoenix, my previous dreams came back from the ashes.

However, I was finally out of money—dead broke would be more accurate. AFROTC dangled a two-year navigator scholarship in front of me. I bit at the carrot thinking that after my commitment I'd go on to graduate school. Little did I know.

Because of a medical disqualification and my scholarship status, AFROTC told me I'd have to switch from navigator to missile training. That didn't faze me at all. Due to my complete ignorance of the military, Mather and Minot were just dots on a map.

My initial goal of a four-year tour turned into a very enjoyable and productive 26-year career. I never looked back.

Col. Scott W. Berry,
USAF (Ret.)
Niceville, Fla.

That Tanker Competition

The KC-45 tanker procurement is in protest now and we wish otherwise [*"Air Force World: Air Force Picks Northrop Grumman in KC-X Contest," April, p. 14*]. However, there is an aspect of the procurement we need to understand. The officers of both companies have a fiduciary responsibility to the thousands of shareholders and employees of their companies to do all legally in their power to obtain business for their companies.

This is especially true considering there may be \$50 billion dollars and jobs far into the future at stake

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for them and their suppliers. We see patriotic considerations involved, but those mostly are the responsibility of federal government procurement and support activities. This is the real Super Bowl and none of the players can give in to be nice guys! I certainly hope the Government Accountability Office makes a firm decision soon so USAF gets the best equipment it needs now to do their most important jobs for another century!

Maj. Ralph S. Miller,
AUS (Ret.)
Dallas

Both offerings will perform the Air Force tanker mission. Replacing commercial 767-200 with 767-300 and 767-400 components is not a higher technical risk. All the component substitutions have a service history on 767-300s and 767-400s. Most substitutions have the same form, fit, and function, and are only stronger than the corresponding -200 component. Getting an assembly plant for the KC-45 up and running in the United States is a higher risk. In addition, the KC-45 is based on the passenger A330-200 and not the A330-200F freighter.

Are we forgetting that the European Airbus A330 was brought in to provide competition? Since these tankers are



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based on off-the-shelf aircraft, all performance parameters should be rationalized on each aircraft's max fuel load and not based in absolute terms. If the KC-45 exceeded the KC-767 by less than 25 percent in the majority of fuel off-load scenarios, and exceeded the KC-767 costs by more than 25 percent, the KC-767 should have won. The KC-767 carries a 200,000-lb fuel load, while the KC-45 carries a 250,000-lb fuel load. The evaluation standard should have recognized that the KC-767 could not compete with the KC-45 in size, and the KC-45 could not compete with the KC-767 on ramp footprint. Since these two aircraft are dissimilar, the competition should have ignored all evaluation aspects that would have required Boeing and Northrop-Grumman to design a whole new base aircraft to win. If the Air Force wanted a larger aircraft, they should have asked Boeing to compete the KC-777.

What happens when the last 200 KC-135Rs have to be replaced? The Boeing 767 will have been out of production for 15 or more years. Tankers based on the Boeing 787, Boeing 777, and Airbus A350 will be too big. The only option then will be to design a new tanker from scratch to replace the last KC-135Rs.

Col. David A. Carlson,
USAF (Ret.)
Dundee, Fla.

Why Airmen Don't Command

Ms. Rebecca Grant's article in the March 2008 edition highlights a startling facet of the current defense establishment: the continued absence of Air Force general officers among the ranks of geographic combatant commanders [*"Why Airmen Don't Command,"* p. 46]. Unfortunately, her article is based on dated information, poor assumptions, and provides the reader with inaccurate and invalid conclusions. Ms. Grant concludes a conspiracy of tradition and emotion has kept the Air Force out of geographic commands. She further concludes that for the Air Force to effectively place its officers in these commands, it needs officers with a deep understanding of ground operations or regional expertise. In actuality, the only conspiracy is that senior defense leaders and the Joint Staff work together to glean the most qualified nominee from a field of exceptional candidates.

A definitive look into recent research reveals more accurate rationale as to why only two geographic combatant commanders have worn Air Force blue. A canvassing of over a dozen recent senior defense officials and general of-

ficers including two former Secretaries of Defense, a former Chairman of the Joint Chiefs, three current combatant commanders, and a host of civilian and other flag officers provides unique insights from those actually involved in the hiring of combatant commanders over the past 10 years. These senior officials, contrary to Ms. Grant's argument, conclude that while regional and ground experiences are important factors, they are not decisive or pivotal factors in the selection.

In fact, of five current regional combatant commanders, only two have deep regional experience in their geographic regions. Furthermore, of the three admirals currently leading geographic commands, none have had significant ground commands or experience. Senior civilian leaders exhibit no predisposition toward ground experience or ground commanders and it's wrong to assume they do. Instead, senior defense officials recognize the broad political-military importance of geographic commands and take great effort in conjunction with the service chiefs and the Joint Staff to select the most qualified individual regardless of service or background. Moreover, both former Secretaries of Defense [William S.] Cohen and [Donald H.] Rumsfeld did not feel bound by the historical affiliations of certain combatant commands with particular services and frequently nominated nontraditional candidates to lead these commands.

Instead of ground, regional experience, or historical legacies, the true critical determinant and the attributes that separate highly qualified candidates in the current selection of combatant commanders are a candidate's joint experience and his demonstration of broad, global perspectives. Deputy Secretary of Defense Gordon R. England summed up a consensus of senior leaders, relaying that combatant commanders must "have broad experience, a world and global view, and a broad perspective." Joint experience is most often cited by these officials as the critical factor because it is the vehicle to broadening experiences and exposes the officer to a wide range of interservice, interagency, and international issues. Joint experience also builds credibility with other services and allows senior officers to develop reputations and trust with fellow services. According to Larry Di Rita, the former special assistant to Rumsfeld, "Among two equally qualified in all other respects, the officer who had the greater joint expertise or experience would probably be the officer selected."

So why hasn't the Air Force grabbed its fair share of geographic commands? After all, isn't it the "nation's premier global, multidimensional maneuver force?" Aren't its general officers joint?

Somewhat surprisingly, several senior officials consider the Air Force the least joint and its leaders the most parochial, always inclined to seek an "Air Force solution" to defense or security issues. One senior official lamented, "It is striking how insular and parochial the Air Force is when compared to the other services."

A sampling of joint experience at the most senior levels of the Air Force gives significant credence to this perception. Current Air Force senior officers have a noticeable dearth of experience in joint general officer positions. For example, half of the current four-star major command commanders have not had a joint tour as a general officer, which incidentally makes them ineligible to be combatant commanders and causes other services to question the Air Force commitment to joint endeavors.

Additionally, certain joint billets and certain service commands are historically recognized as the "proving ground" for future geographic commanders. Included among these positions are the directorate heads of the Joint Staff and the senior military assistant to the Secretary of Defense. These positions are prominent because they offer opportunities to interact among the other services and among senior civilian leaders. Of the 14 geographic commanders serving since 2000, eight have served as Joint Staff director heads or as the senior military assistant to the Secretary of Defense. Unfortunately, in the past 10 years, only two Air Force officers have served in any of these positions. The lack of consistent representation of Air Force officers corresponds to its lack of representation among geographic commanders.

Clearly the Air Force is not equipping its senior officers with the right mix of joint experience that leads to the broad perspectives senior officials desire. Individual opportunities for geographic commands are few, and having the right person available at the right time is difficult. Because of timing issues, the slating of other service officers, contingencies, and other external dynamic factors, a service must develop a pool or "bench" of officers with the flexibility to adapt to the dynamic environment of senior officer affairs.

Ms. Grant and Dr. [Phillip S.] Meilinger propose the Air Force learn to "politic better" for service combatant commander nominees. In reality, politicking for service nominees only serves to engender service rivalries and doesn't produce long-term results beneficial to any service.

The Air Force would be much better served by focusing efforts on developing lower level general officers (two-star) to assume leadership roles in the joint di-

rectorates. The Air Force should broaden its general officers earlier and compete them more aggressively for key joint positions. Joint experience in general officer positions should be rewarded and its absence considered detrimental. The Air Force should also mandate joint tours for its O-7 and O-8 officers, thereby giving them the opportunity for multiple joint tours by the time they become three- or four-star officers.

Regardless of the method chosen, the Air Force should seize every op-

portunity to ensure its general officers have broad joint experience. Joint experience equips the officer with an immediate appreciation of other service capabilities and allows an introspective review of one's own service. In sum, Air Force general officers with wider joint perspectives will help change the negative perceptions held by senior defense officials—especially the ones that select geographic commanders.

Col. Stuart K. Archer
Maxwell AFB, Ala.

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Wynne drops the hammer; The IG takes a second look; What Gates really said

L'Affaire Thunderbird ...

Secretary of the Air Force Michael W. Wynne on April 18 disciplined a two-star general officer and four other less senior airmen based on evidence that they took part in improperly steering a nearly \$50 million contract to a favored vendor.

USAF canceled the deal two years ago. Now, having dealt out punishment, the service considered the matter closed, but some on Capitol Hill disagreed. Several Senators—including Sen. Carl Levin, the Michigan Democrat who chairs the Senate Armed Services Committee—want further investigation of the affair, especially as it pertains to actions of senior officers. (See next item.)

Wynne took “administrative action” against Maj. Gen. Stephen M. Goldfein and four others not publicly named. The five played roles in the award of the contract to a company called Strategic Message Solutions—a firm well-connected to both the Thunderbirds demonstration team and Air Force officers.

The contract was for Thunderbirds Air Show Production Services (TAPS), which entailed the creation of a jumbotron-type multimedia program to coincide with Thunderbirds performances at air shows.

Wynne based his actions on the findings of a two-year-long probe conducted by the Defense Department inspector general office. The IG, presenting a 251-page report, contended that the Air Force's December 2005 award to SMS “was tainted with improper influence, irregular procurement practices, and preferential treatment.”

SMS was headed by Ed Shipley, a member of the Air Force's “Heritage Flight,” a group whose owner-pilots fly vintage aircraft under the auspices of Air Combat Command, and who had been made an “honorary Thunderbird.” (The IG report redacted Shipley's name.)

Wynne had requested the probe after an SMS competitor complained about not being picked for the contract, even though the competitor had more direct experience and more applicable assets, and bid half of the \$49.9 million awarded to SMS.

The IG claimed Goldfein improperly inserted himself into the selection process and exerted command influence on some of his subordinates to steer the work to SMS. Goldfein, who at the time was commander of the USAF Warfare Center at Nellis AFB, Nev., was in the chain of command for most of those on the source selection committee, which included members of the Thunderbirds air-ground team. Goldfein talked his way into being appointed as an “advisor” to the committee, and had the requirements altered in such a way that they favored SMS on a key point.

Members of the source selection committee told the IG that Goldfein made a remark to the effect of, “If I had a vote, I'd select SMS.” The source selection chairman, whose name was also redacted, told other members he knew SMS was not the best value choice, but he “caved” to Goldfein's pressure.

... and Questions About Higher-Ups

Even as the Air Force was delivering its punishment to the five airmen, the IG's report aroused sharp Congressional interest in the actions of some other present and former of-



DOD photo

A Thunderbird contract is being looked at—again.

ficers. Among those was the Chief of Staff, Gen. T. Michael Moseley.

Levin and Sen. John McCain (R-Ariz.), the chairman and ranking member, respectively, of the Senate Armed Services Committee, wrote to Pentagon Inspector General Claude M. Kicklighter on April 21, saying that Kicklighter's report “raises serious questions about the role played by other more senior current and former Air Force officials.”

Levin and McCain asked the IG to take a second look. They wanted Kicklighter to report back to the committee and the Secretary of the Air Force, Michael W. Wynne.

Another, angrier letter to Wynne came from Sen. Claire C. McCaskill (D-Mo.), also on the committee. McCaskill said that she could not understand why Wynne had not reprimanded Moseley or relieved Goldfein of his duties. (The Air Force said that since Goldfein currently works on the Joint Staff, it is not up to USAF to determine whether he should be removed from his post.)

One obvious reason is that the IG report did not accuse Moseley of any wrongdoing.

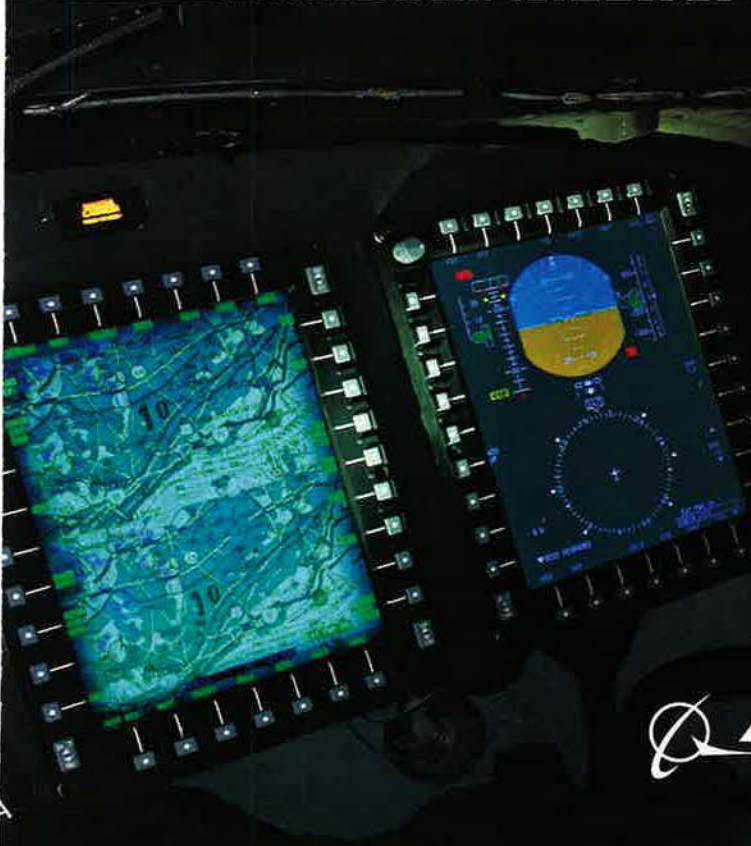
However, the report makes plain that he was in favor of the project and discussed it with subordinates, including Goldfein. Moseley obtained \$8.5 million from a special “contingency fund” to get SMS rolling on a sole-source contract. He accepted hospitality from the owner of SMS while the contract was in competition, though he insisted the matter was not discussed at the time.

The complex SMS case began in 2004 when the head of the company did some free work for the Thunderbirds. Shipley had a “silent partner”—retired Air Force Gen. Hal M. Hornburg, a former head of ACC. Hornburg, said the IG report, approached the Air Force about a video program that would fill dead time in the Thunderbirds show. It isn't clear who on the USAF side set the project in motion.

According to testimony and e-mails gathered by the IG,



FACT: COMBAT PROVEN, PRODUCTION READY.



The search and rescue mission of the U.S. Air Force has never been more urgent. It's not surprising then that the HH-47, with its combat-proven capabilities, was first selected to fulfill this critical requirement. Offering superior range, speed and payload, the HH-47 also takes advantage of existing production—so it can be fielded more rapidly. For the warfighter in harm's way, there's not a minute to lose.

 **BOEING**

Moseley believed "Thundervision" could play a role in a "strategic communications" effort to educate the American public about the value of the Air Force. He wanted the video shown on the History Channel or similar venues, or for free as public service announcements.

E-mails reproduced in the report showed that Hornburg's successor at ACC, now-retired Gen. Ronald E. Keys, told Moseley that ACC could not spare \$50 million for a video show at a time when, due to budget constraints, it could only fund 75 percent of its base operating support needs. Keys wrote, "I cannot support burning that kind of money to fix something that isn't broken when I am not buying fixes to things that are broken." Keys noted that the \$50 million could fund many important projects.

Moseley replied by telling Keys to "hold off killing or deciding anything."

Although Moseley initially produced money to jump-start the project, ACC contracting officials nixed it, saying that it had to be competed. Top USAF officials also determined that the ability to produce the videos to be shown on Thundervision may have existed in-house, but they were unsure if the unit would survive the base realignment and closure process, and Moseley opted not to use it.

Moseley provided to the IG an April 28, 2005 e-mail he termed "the opposite of a smoking gun." In it, Moseley said, he had handed off details and execution of the project to contracting experts of ACC and the Air Weapons Center at Nellis AFB, Nev.

Sen. Orrin G. Hatch (R-Utah) offered a speech on the Senate floor praising Wynne and Moseley as "leaders to have confidence in" and "tenacious in their support of the young men and women who serve under them." Hatch decried the "misrepresentations ... [and] inaccurate assertions" about the case, saying it had "already been dealt with by the proper military authorities."

Rep. Ike Skelton (D-Mo.), chairman of the House Armed Services Committee, answered "yes" April 29 during a breakfast meeting with defense reporters when asked if he still has confidence in Moseley's ability to lead the Air Force after the Thunderbird Air Show Production Services contract affair.

A Pentagon spokesman told *Air Force Magazine* that Defense Secretary Robert M. Gates "continues to have confidence" in the leadership of the Air Force, but is awaiting the results from "investigations" into various USAF missteps before forming any final judgments.

At Maxwell, a Strange Interlude

In an April meeting with military reporters, Defense Secretary Robert M. Gates did something unusual: He clarified some of his statements about the Air Force that weren't really ambiguous in the first place and shouldn't have needed clarification.

Gates on April 21 gave a major address at the Air War College, Maxwell AFB, Ala. (See "Gates' Maxwell Speech," p. 69.) In it, he lauded the Air Force for its contribution to US success in the wars of Southwest Asia, its efforts to apply lessons learned to its current forces, and to adjust to new battlefield realities.

At the same time, Gates urged each of the four military services to be more creative in getting new capabilities swiftly into the fight. Gates specifically wanted more intelligence-surveillance-reconnaissance (ISR) assets in the theater, and said the services needed to bypass their usual bureaucracies to make it happen faster.

The speech was piped into the Pentagon pressroom. Somehow, reporters discerned in Gates' remarks a pointed attack on the Air Force, with the charge being that USAF was all but sitting out the wars being fought in Afghanistan and Iraq.

According to Brian Williams of the NBC Nightly News, the Pentagon chief had criticized USAF "for not providing enough help for American troops fighting in Iraq and Afghanistan."

Brit Hume of Fox News said Gates had just "dropped some bombs on Air Force brass for being too slow" to adapt to various new forms of warfare.

Most news outlets took their cue from an Associated Press story, which said Gates criticized the Air Force for not doing more to contribute to "immediate wartime needs." Such stories circulated, mostly uncontested, for two days.

With one exception. Within hours of Gates speech, the Air Force Association issued a statement noting that USAF had already deployed 85 percent of its Predator UAVs to Central Command for combat operations, and noted that the service was two years ahead of schedule in pumping UAVs into the combat theater. It also pointed out that USAF had offered to go "all in" with even its training assets, but Gates had declined this offer.

"To say the Air Force is not giving enough forces to support operations is mistaken," noted AFA's statement.

AFA also maintained that Gates, if he actually agreed with the press' interpretation of his speech, must have had in mind the Army when he made his remarks or isn't getting enough "air advice." Of the top 11 positions in the Joint Staff, said AFA's statement, "none ... are filled by airmen."

At a Pentagon press conference later that week, Gates was asked if he felt the coverage of his speech was accurate. He expressed his puzzlement at the spin his remarks had been given.

Gates said that "if you read the text ... you'll see that it's not a dig at the Air Force at all. In fact, a significant part of the speech was full of praise at what the Air Force has done" in the theater. He reiterated his kudos to the service, and said that his remarks about increasing the nation's ISR had been aimed at "all the services."

He explained that "in too many instances, there is a tendency to look out a year or two ... or three" in terms of programs and standard processes, "and not enough willingness to think out of the box, and how ... we get more help to the theater now." He also said ISR was merely one example of what he was talking about.

The message, he said, was "about, frankly, the bureaucracy ... in the Department of Defense as a whole. It really had nothing to do with the people downrange. They're doing an incredible job."

Gates elaborated that he had created a task force to look at ways that ISR assets in-theater could be quickly multiplied to answer commanders' demands. The task force, led by Brad Berkson, director of program analysis and evaluation, is to provide a quick-turnaround plan to mobilize Pentagon resources to the problem. After interim reports at 30 and 60 days, a final plan is due to Gates this month.

The task force, Gates explained, will take inventory of all ISR assets in all the services, and see if training programs could be adjusted to "squeeze a little bit more" of the platforms into the fight. It will then visit the theater and determine if forward deployed forces are "making maximum possible use of the assets they have," and whether more capability can be squeezed out there, as well. Finally, the task force is to offer ideas on streamlining the process of acquiring and fielding ISR assets.

On one count, though, Gates did chide the Air Force. He told the Maxwell audience that adaptation will require "rethinking long-standing service assumptions and priorities about which missions require certified pilots and which do not." The Air Force maintains that its unmanned aerial vehicles require remote piloting by rated officers, but Gates disagrees. ■

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IEDs Kill Three Airmen

Three airmen deployed to Afghanistan and Iraq were killed by improvised explosive devices in March and April during operations supporting coalition forces.

TSgt. William H. Jefferson Jr., 34, of Norfolk, Va., died March 22 from wounds received when his vehicle struck an IED near Sperwan Ghar, Afghanistan. Jefferson was from Air Force Special Operations Command's 21st Special Tactics Squadron at Pope AFB, N.C.

SSgt. Travis L. Griffin, 28, of Dover, Del., was killed April 3 in Baghdad when his vehicle encountered an IED during a patrol. Griffin had deployed to the Multinational Force Division-Baghdad from the 377th Security Forces Squadron, Kirtland AFB, N.M.

TSgt. Anthony L. Capra, 31, of Hanford, Calif., succumbed to his wounds from an IED encountered April 9 near Golden Hills, Iraq. Capra was an explosive ordnance disposal craftsman deployed to the 332nd Air Expeditionary Wing at Balad AB, Iraq, from Det. 63, 688th Armament Systems Squadron, at Indian Head City, Md.

T-38C Crash Claims Two

Maj. Blair Faulkner and 2nd Lt. Matthew Emmons died in the crash of a T-38C Talon training aircraft April 23 at Columbus AFB, Miss. Faulkner was an instructor pilot in the base's 43rd Flying Training Squadron; Emmons was a student pilot in Specialized Undergraduate Pilot Training Class 08-14.

The aircraft went down on initial takeoff, the Air Force said. It was the first fatal crash at the Mississippi pilot training base since March 1984. An accident investigation board was convened to investigate the mishap.

Young Issues Tanker Warning

Pentagon acquisition czar John J. Young Jr. on April 18 during a meeting with reporters cautioned lawmakers looking to overturn the Air Force's KC-X tanker decision that "to set aside valid source selections on a political basis" would be a "slippery slope" that would set a dangerous precedent.

In fact, the end result of such actions, would be delivering weapons systems

with less capability for more cost, Young told the reporters. He was responding to statements made by members of the Kansas and Washington Congressional delegations—the states where Boeing would have built its KC-767 tanker had it won—threatening to block funding for the winning Northrop Grumman KC-30 tanker that USAF chose Feb. 29. Instead they want to mandate that the Boeing aircraft is built.

The program, with the winner to be designated KC-45A, is in limbo since Boeing filed a legal protest in March against the Air Force's decision, claiming serious flaws and inconsistencies in USAF's evaluation. The Government Accountability Office is expected to rule by mid-June.

Black Jet Gets a Farewell

The Air Force retired the F-117A Nighthawk, its first-ever stealth combat aircraft, April 21, ending a 27-year service life. On that day, the four remaining operational F-117As in the fleet departed Holloman AFB, N.M., and the base's 49th Fighter Wing for good during a ceremony.

The four aircraft flew to Palmdale, Calif., for a farewell event April 22 at the Lockheed Martin "Skunk Works" facility where the Nighthawk design was conceived. The four Nighthawks then traveled to Tonopah, Nev., their final resting place near Nellis Air Force Base, for placement in recallable storage along with the other 50 or so F-117As.

USAF has placed the F-117A with the most combat time on static display at Holloman's Heritage Park.

Millionth Flight Milestone Passed

Air Force officials said April 19 was a historic day as the service surpassed the astonishing mark of one million sorties in the Global War on Terror since Sept. 11, 2001. The service did not provide the details on the aircraft that carried out the milestone flight, saying it would be difficult to identify the particular platform due to the flurry of daily air activities worldwide.

Indeed USAF says it flies more than 450 sorties each day from sites in the United States and more than 100 locations abroad. This includes airlift, air refueling, aeromedical evacuation,

USAF photo by SSgt. Scotie McCon

★ screenshot



bomber, fighter, information-gathering, and tanker flights around the clock to support military operations in Afghanistan, Iraq, and elsewhere, and aerial surveillance, fighter, and tanker sorties that protect the homeland.

"Synchronized and integrated into larger coalition air efforts, these missions represent the most deliberate, disciplined, and precise air campaign in history," USAF said.

As of April 1, the Air Force's tally

was 991,172 total sorties. This included 352,586 in Operation Iraqi Freedom (about 200 per day on average); 193,908 in Operation Enduring Freedom (about 85 per day); 50,984 in Operation Noble Eagle (about 18 per day); and 393,424 additional supporting airlift missions (about 180 per day).

Air Force Cross Awarded, Belatedly

After 40 years of waiting, retired Air National Guard CMSgt. Dennis Richard-

son has received the Air Force Cross, USAF's second highest honor for valor, for his actions aboard an HH-53 rescue helicopter during a perilous mission over Vietnam in March 1968.

"In an extraordinary display of courage and valor, Richardson, despite his wounds, leaned far outside the door of his helicopter and neutralized charging enemy combatants who appeared intent on boarding," stated the citation read to him during the April 5 award ceremony



05.10.2008

A US Air Force C-130 airlifter, part of the 777th Expeditionary Airlift Squadron, delivers troops at Balad AB, Iraq. The 777th was formed in 2006. Since then, flights of 777th aircraft have greatly reduced the need for travel on dangerous Iraqi roads. C-130s have hauled 27,000 troops and the equivalent of more than 10,000 convoy-vehicle loads, saving lives that might otherwise have been snuffed out in ambushes or roadside-bomb attacks.

at the Francis S. Gabreski Airport in Westhampton Beach, N.Y., home of his former unit, the New York ANG's 106th Rescue Wing.

Richardson was in one of two HH-53s dispatched on March 14, 1968 to rescue the aircrew of a downed F-4 Phantom. Although the helicopters repeatedly moved in to make a pickup, they were driven away by gunfire and both sustained heavy damage.

He was one of four crew members that day to be recommended for awards; the three other men received Silver Stars, but Richardson's award for the Air Force Cross, though granted, "was lost in paperwork," according to a New York ANG news release. In December 2007, following the resurrection of the paper trail by an unnamed "military history buff," an Air Force review panel confirmed the award.

B-2s Get Airborne Again

The Air Force's fleet of B-2A stealth bomber aircraft returned to flight April 15 after a 53-day safety pause. The 509th Bomb Wing at Whiteman AFB, Mo., home to all B-2s, directed the stand-down after the crash of a B-2 Feb. 23 at Andersen AFB, Guam.

Officials didn't want to fly the bombers until they were sure there wasn't



USAF photo by S/A Julianne Showalter

Lt. Col. Brick Izzi climbs into an F-16 at Balad AB, Iraq, before a combat sortie April 24. Izzi commands the 421st Expeditionary Fighter Squadron. Many F-16 missions at Balad protect Army ground units by identifying improvised explosive devices and emplacements and either recording their actions using intelligence gathering equipment or attacking them with precision weapons.

an inherent safety defect with the remaining 20 B-2s in the fleet. A safety investigation board identified a problem with the flight-control system in the doomed aircraft, and the Air Force issued a time change technical order

requiring all B-2s to be modified, Air Combat Command officials said.

The findings of an accident investigation board were expected in May.

New Satellite Boosts Communication

The Air Force's first Wideband Global Satellite Communications system became operational April 15 and is now able to deliver more communications bandwidth capability than the entire nine-satellite legacy Defense Satellite Communications System constellation.

USAF launched the satellite into orbit on Oct. 10, 2007 from Cape Canaveral AFS, Fla. The first of six planned WGS birds, it is on station over the Western Pacific.

Airmen Receive Bronze Star

Air Force Office of Special Investigations Special Agent Brent M. Howell was awarded a Bronze Star medal April 7 for his actions while operating out of Bagram AB, Afghanistan, during a seven-month deployment.

During one mission, Howell, who serves with OSI Det. 422 at Altus AFB, Okla., was wounded when attackers struck his convoy, but he managed to identify their positions and return fire while others got his vehicle back in shape to travel with the convoy.

Howell returned to his unit after medical treatment and helped process the attack scene, leading to the capture of the attackers.

Receiving Bronze Stars in March for their service in Southwest Asia were: MSgt. Manuel Camacho (March 12), an instructor with the 96th Ground Combat

Schwalier Case Takes Another Downturn

Secretary of Defense Robert M. Gates, top Pentagon lawyer Daniel J. Dell'Orto, and unnamed Justice Department conferees in March struck yet another blow at retired Air Force general officer Terryl J. Schwalier, Washington's designated Khobar Towers scapegoat.

These officials forced the Air Force to halt and reverse its efforts to restore Schwalier's second star after a 10-year struggle. The new decision was elaborated in a March 28 letter from Secretary of the Air Force Michael W. Wynne to the Air Force Review Boards Agency. In it, Wynne orders the agency to halt implementation of its decision, announced in January, to correct "an injustice" and retroactively promote Schwalier to major general.

That corrective step had drawn strong praise from the Air Force Association and many other Air Force groups. They believed Schwalier had been made the fall guy by the Clinton Administration and some members of Congress for alleged command failures in the 1996 terrorist bombing of Khobar Towers in Saudi Arabia.

Nineteen airmen died in the attack. Though the Senate had confirmed Schwalier's promotion to major general before the attack, and though critics produced no credible evidence of fault on the part of Schwalier, then-Defense Secretary William S. Cohen blocked his second star.

In his March 28 letter, Wynne appeared to be acting under duress. He said Gates "has informed me" that Dell'Orto thinks the Air Force acted beyond its authority, that "the Department of Justice supports [Dell'Orto's] conclusion of law," and that "the Secretary of Defense agrees."

The service had already changed the general's official biography to reflect the two-star grade, promotion date, and retirement date. After Wynne's mis- sive, this was then rescinded. As of mid-April, Schwalier had not commented publicly on his options, which clearly could include further legal action in federal court.

ICBM Parts Mistakenly Sent to Taiwan

Air Force and Office of the Secretary of Defense officials disclosed March 25 that the Defense Logistics Agency mistakenly sent four nose cone fuse assemblies for Minuteman ICBMs to Taiwan in the fall of 2006 from Hill AFB, Utah, instead of the helicopter batteries that the Asian nation had requested.

Although these parts "could not be construed as being nuclear material," they are still classified, and the fact that they are components for a nuclear strike system makes the US government "very concerned about it," Air Force Secretary Michael W. Wynne said of the incident during a Pentagon press conference on that day. Equally disconcerting was that it took the United States until mid-March 2008 to realize the gravity of the error and retrieve the materials, which are now safely back in the US.

Taiwan, recognizing the erroneous shipment, had placed the shipping containers in storage and the Taiwanese government notified the US of having received the wrong items. However, a failure in "early communications," such that "we thought we were hearing one thing, [but] in reality they were saying something different," led to the latency in the Department of Defense's response, according to Ryan Henry, a top OSD policy official who appeared with Wynne.

Henry said the Pentagon had launched a "thorough investigation" to determine the sequence of events. On top of that, Secretary of Defense Robert M. Gates directed the Air Force and Navy to conduct policy and procedural reviews and a complete physical inventory of all nuclear equipment.

Although technically a DLA misstep, the incident is the second inadvertent transfer of nuclear-related materials involving the Air Force since the errant movement of six cruise missile nuclear warheads on a B-52 bomber flying from Minot AFB, N.D., to Barksdale AFB, La., in August 2007. That event brought about major changes in USAF's nuclear weapons handling, organization, and oversight.

Training Squadron at Eglin AFB, Fla.; OSI Special Agent Jac Christiansen, assigned to Columbus AFB, Miss.; TSgt. Kenneth Perry, an explosive ordnance disposal technician with the 96th Civil Engineer Squadron at Eglin; and TSgt. Douglas Rose of the 1st Security Forces Squadron at Langley AFB, Va.

DOD Axes Space Radar

The Defense Department and Intelligence Community formally canceled the Space Radar program of record, effective March 25. According to the National Reconnaissance Office, the

program was "not affordable." The SR program office began implementing the direction in March, with the intention to curtail program-of-record activities "as soon as practical," NRO said.

The US government will "continue to vigorously pursue alternatives" to meet the Pentagon's and IC's requirements for on-orbit radar capabilities, NRO said. DOD had been working with the IC to come up with a plan for Space Radar that was acceptable to Congress. Lawmakers had grown skeptical of the realism of the approach, having already seen similar projects (e.g., Discoverer II) falter.

Laser JDAMs Join Inventory

The Air Force has taken delivery of the first laser guidance kits for 500-pound GBU-38 Joint Direct Attack Munitions from Boeing, the company announced April 16. The new capability, which is expected to be operational sometime this year both with the Air Force and Navy, fills an urgent need request of combatant commanders in Afghanistan and Iraq for a precision weapon that can strike high-speed moving land targets.

Laser JDAM has proved effective in tests against targets traveling at up to 70 miles per hour.

F-35 Costs Drop

The overall projected total cost of the F-35 program has gone down by 0.3 percent, or nearly a billion dollars, the Pentagon reported April 7. The three variants of the F-35, including development, military construction, and support costs, will total \$298.84 billion, down from the previous estimate of \$299.82 billion, according to the DOD selected acquisition report for the period of October to December 2007.

The decrease is due to lower than anticipated support costs, labor rates, and learning curve improvements, as well as other factors, the document said.

"We're obviously happy," Air Force Maj. Gen. Charles R. Davis, F-35 program executive officer, told reporters April 8. Davis said the SAR shows that the Government Accountability Office's estimate that F-35 costs had actually increased by \$38 billion was not sound. The GAO did not develop its own numbers and, therefore, had "no basis" for its conclusions and "no numbers to support" its assertions, he said.

Wing Recertified for Nukes

The 5th Bomb Wing at Minot AFB, N.D., has regained its certification to handle nuclear weapons after being stripped of it in 2007 in the wake of a major breach of oversight that led to the errant transfer of nuclear warheads from the base.

Gen. John D. W. Corley, Air Combat Command commander, granted the recertification March 31, leaving the wing free and clear to perform its nuclear-related activities once again. The recertification came after a week-long inspection of the unit.

ACC decertified the wing after a B-52 bomber mistakenly carried six nuclear cruise missile warheads in August 2007 from Minot to Barksdale AFB, La., due to what investigators found to be unacceptably lax oversight by airmen responsible for the

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Nuclear Mission Emphasized in B-52 Fleet Revamp

The Air Force announced in April that it is going ahead with the plan to maintain 76 B-52s and rotate its Stratofortress units at Minot AFB, N.D., and Barksdale AFB, La., in and out of the nuclear mission.

Last year, the service championed maintaining a fleet of only 56 B-52s. But in the aftermath of the errant transfer of six nuclear weapons last August aboard a B-52, USAF has changed its position. It now says the extra B-52s will allow it to place more emphasis on the nuclear mission and help to prevent such gaffes from occurring again.

Air Combat Command spokesman Maj. Tom Crosson said April 9 the changes are being implemented under the Global Deterrence Air Expeditionary Force concept, under which USAF will "buy back" 12 B-52s it had not maintained in combat status and establish an additional operational squadron at Minot, giving the base two. USAF will then have four B-52 combat operations squadrons when factoring the two at Barksdale.

The alignment of four combat-coded squadrons will allow the nuclear mission to rotate on four-month intervals between the two B-52 bases, Crosson said. Each operational squadron will conduct focused nuclear training for six out of every 16 months. Additionally, each squadron will be eligible to deploy for four out of every 16 months.

"By putting ourselves into this rotation, I think it gets us properly postured," both for the B-52 fleet's conventional and nuclear roles, ACC Commander Gen. John D. W. Corley told reporters March 27 in Washington, D.C.

Crosson said ACC expects that the new squadron at Minot will require a manpower increase of approximately 1,000 airmen. The service also projects a manpower increase of 300 personnel for Barksdale to cover increased B-52 training requirements. But Barksdale could lose up to 10 of its B-52s to Minot under the changes, Louisiana press reports said in April.

weapons. The unit's then-commander was sacked and about 65 airmen were disciplined.

CSAR-X Decision Slips Again

The Air Force has pushed back the date of announcing the winner of its CSAR-X combat rescue helicopter recapitalization contest from the July time frame to later in the year or beyond.

USAF issued Amendment 6 to the CSAR-X request for proposals April 22. The service said it needed more time to review the updated bid information that the three industry offerors—Boeing, Lockheed Martin, and Sikorsky—provided in January under the previous amendment. The new addendum also asks the bidders to adjust their proposals to comply with new laws effective in 2008 that restrict the use of imported specialty metals.

Industry responses to Amendment 6 were due May 27. The Air Force gave no set time for choosing the winner, saying only it planned "to take as much time as necessary to evaluate the proposals."

The CSAR-X program has been embroiled in litigation since November 2006, when the Air Force crowned Boeing's HH-47 the winner over Lock-

USAF photo by S/A Gina Chiaverotti



Responding to a US Coast Guard request, the Air Force sent two 41st Rescue Squadron HH-60G Pave Hawk helicopters and an HC-130P from the 71st Rescue Squadron on a 10-hour mission to retrieve a boatload of stranded Cuban refugees 230 miles off the coast of New Orleans. Here, TSgt. Lem Torres hoists up one of the survivors.

Operation Iraqi Freedom—Iraq

Casualties

By May 14, a total of 4,079 Americans had died in Operation Iraqi Freedom. The total includes 4,068 troops and 11 Department of Defense civilians. Of these deaths, 3,325 were killed in action with the enemy while 754 died in noncombat incidents.

There have been 30,059 troops wounded in action during Operation Iraqi Freedom. This number includes 16,664 who were wounded and returned to duty within 72 hours and 13,395 who were unable to return to duty quickly.

Predator Strikes Militia Fighters in Basra

Skirmishes with Shiite militias in the Iraqi cities of Basra and the Sadr City district of Baghdad flared up on April 16, as Iraqi Army patrols attempted to roll back militias and fighters allied with the cleric Muqtada al-Sadr. An Air Force MQ-1 Predator unmanned aerial vehicle was called in to support operations in the Basra area, performing an air strike that killed four militants.

The strike came after militia members attacked an Iraqi Army patrol with rocket-propelled grenades in the Hayaniyah district of Basra, according to US officials. The MQ-1 fired a pair of Hellfire missiles to destroy a vehicle carrying additional weapons and ammunition as well as the RPG team.

Earlier in the month, another Predator supported Iraqi Army operations in the al-Halaf area of Basra, responding to reports of heavy machine gun fire from criminal elements in the area. An MQ-1 observed a vehicle equipped with a heavy machine gun in the area where friendly forces had reported attacks, and employed a Hellfire missile to destroy the vehicle. A joint terminal attack controller confirmed the successful hit and six armed fighters were reported killed in the strike.

Coalition forces provided air support for Iraqi forces in and around Basra on an as-requested basis as part of their efforts to disarm and contain militias, US officials said.

Operation Enduring Freedom—Afghanistan

Casualties

By May 10, a total of 496 Americans had died in Operation Enduring Freedom. The total includes 495 troops and one Department of Defense civilian. Of these deaths, 301 were killed in action with the enemy while 195 died in noncombat incidents.

There have been 1,958 troops wounded in action during OEF. This number includes 759 who were wounded and returned to duty within 72 hours and 1,199 who were unable to return to duty quickly.

Air Strikes Target Hekmatyar Guerrillas in Nuristan

A series of air strikes assisting ground troops April 6 in Nuristan Province, Afghanistan, targeted the network of a top fugitive Afghan warlord, coalition and Afghan government officials confirmed.

The strike, involving US and Afghan ground troops, was launched in the Dohabi district of the mountainous province after intelligence suggested veteran warlord Gulbuddin Hekmatyar, one of the most wanted insurgents in Afghanistan, was attempting to meet with his top military commander. Afghan Army commandos and US troops approached two small villages in the district when a major skirmish erupted, with the patrol receiving small-arms fire from insurgents hunkered in nearby compounds. After responding with its own small-arms fire, the patrol called in close air support to strike the compounds.

Air Force F-15E Strike Eagles responded to the request, dropping a GBU-31, GBU-12s and GBU-38s on the enemy buildings, according to Air Forces Central. Several insurgents were arrested after the strike and an arms dump was uncovered as well.

Hekmatyar was a key player in the Soviet-Afghan war who allied himself with the Taliban in 2002 until falling out with its leadership. His network has been tied to splinter radical groups responsible for training suicide bombers and smuggling improvised explosive devices.

heed Martin's US101 and Sikorsky's HH-92 to replace the HH-60G Pave Hawk fleet. Two rounds of successful legal protests by Lockheed Martin and Sikorsky with the Government Accountability Office over the Air Force's evaluation method caused the service to accept new bids.

Insufficient Lift, Says Lichte

The currently programmed mix of 190 C-17s, 52 re-engined C-5s, and 59 legacy C-5s "will not quite provide the organic strategic airlift capacity" of 33.95 million ton miles per day specified by the Joint Requirements Oversight Council, Gen. Arthur J. Lichte, commander of Air Mobility Command, told the House Armed Services Committee April 1.

We're "slightly short, but we're within shooting distance" of the current requirement, he told the panel during an oversight hearing. But when one considers that no airlift studies completed to date have captured the dynamics of the changing world (e.g., planned increase in ground forces, needs of US Africa Command), the shortfall might be even greater, Lichte said.

AMC and its partners in US Transportation Command are awaiting the results of a Department of Defense-led mobility capabilities and requirements study, due in May 2009, and a Congressionally mandated review of the airlift mix that is set for completion next January, before being able to articulate the new requirement.

F-22 Parts Dispute Flares

Boeing in late March filed suit against Alcoa over defective titanium structural supports that the latter provided from 2000 to 2005 for the aft section of the F-22, *The Seattle Times* reported April 11.

Boeing builds the F-22's wings and aft fuselage for Lockheed Martin, the prime contractor for the stealth fighter. The Chicago-based company seeks more than \$12 million from Alcoa, alleging that it "failed to follow required procedures" in heat-treating the forged supports, which are used to connect F-22 wings to the aircraft's fuselage, the newspaper reported, citing Boeing's court complaint.

Because of the alleged shoddy manufacturing, 71 of 459 supports inspected to date from the 695 in total that Alcoa provided up until April 2005 have been found to be defective, according to the newspaper.

While the Air Force does not consider the faulty supports a safety-of-flight issue, it will conduct more frequent inspections to monitor for cracks in them, the newspaper reported. The Alcoa pieces are resident in only the first 101 of the 183 F-22s that the Air Force has

Senior Staff Changes

RETIREMENTS: Lt. Gen. Daniel P. Leaf, Maj. Gen. John H. Folkerts, Brig. Gen. Albert F. Riggle, Maj. Gen. Bobby J. Wilkes.

PROMOTIONS: To Major General: Paul F. Capasso, Floyd L. Carpenter, David J. Eichhorn, Ralph J. Jodice II.

NOMINATIONS: To be General: William M. Fraser III, Donald J. Hoffman. To be Lieutenant General: Philip M. Breedlove, Paul J. Selva, Mark D. Shackelford, Charles E. Stenner Jr. To be Major General: C.D. Alston, Brooks L. Bash, Michael J. Basla, Gregory A. Feest, Burton M. Field, Randal D. Fullhart, Bradley A. Heithold, Duane A. Jones, Frank J. Kisner, Jay H. Lindell, Darren W. McDew, Christopher D. Miller, Harold W. Moulton II, Stephen P. Mueller, Ellen M. Pawlikowski, Paul G. Schafer, Stephen D. Schmidt, Kimberly A. Siniscalchi, Michael A. Snodgrass, Mark S. Solo. To be Brigadier General: William J. Bender, Bryan J. Benson, Christopher C. Bogdan, Darryl W. Burke, Joseph T. Callahan III, Michael J. Carey, John B. Cooper, Samuel D. Cox, Teresa A.H. Djuric, Carlton D. Everhart II, Terrence A. Feehan, Samuel A.R. Greaves, Russell J. Handy, Scott M. Hanson, Veralinn Jamieson, Jeffrey G. Lofgren, Earl D. Matthews, Kurt F. Neubauer, Martin Neubauer, Robert C. Nolan II, Craig S. Olson, John R. Ranck Jr., Darryl L. Roberson, Jeffrey F. Smith, John F. Thompson, Gregory J. Touhill, Thomas J. Trask, Joseph S. Ward Jr., Scott D. West, Timothy M. Zadalis.

CHANGES: Brig. Gen. (sel.) Darryl W. Burke, from Sr. Mil. Asst. to the SECAF, OSAF, Pentagon to Vice Cmdr., 12th AF, ACC, Davis-Monthan AFB, Ariz. ... Brig. Gen. (sel.) Joseph T. Callahan III, from Dep. Dir., Air & Space Ops., ACC, Langley AFB, Va., to Dep. Dir., Politico-Military Affairs, Jt. Staff, Pentagon ... Maj. Gen. Alfred K. Flowers, from Cmdr., AF Officer Accession & Training Schools, AU, AETC, Maxwell AFB, Ala., to Cmdr., 2nd AF, AETC, Keesler AFB, Miss. ... Brig. Gen. Walter D. Givhan, from Dir., SECAF/C/S of the AF Executive Action Group, USAF, Pentagon, to Dir., Dep. Commanding Gen., Combined Airpower Transition Force, Combined Security Transition Command-Afghanistan, Kabul, Afghanistan ... Maj. Gen. Michael C. Gould, from Cmdr., 2nd AF, AETC, Keesler AFB, Miss., to Dir., Ops. & Plans, TRANSCOM, Scott AFB, Ill. ... Maj. Gen. (sel.) Jay H. Lindell, from Dep. Commanding Gen., Combined Airpower Transition Force, Combined Security Transition Command-Afghanistan, Kabul, Afghanistan, to Dir., Global Power Prgms., Office of the Asst. SECAF for Acquisition, Pentagon ... Brig. Gen. Mark F. Ramsay, from Dep. Dir., Politico-Military Affairs (Europe), Jt. Staff, Pentagon, to Dir., AF Strat. Planning, DCS, Strat. Plans & Prgms., USAF, Pentagon ... Brig. Gen. (sel.) John R. Ranck Jr., from Chief, Prgm. Integration Div., DCS, Strat. Plans & Prgms., USAF, Pentagon, to Dep. Dir., Operational Planning, Policy, & Strategy, DCS, Ops., Plans & Rqmts., USAF, Pentagon ... Brig. Gen. (sel.) Jeffrey F. Smith, from Dep. Dir., Operational Planning, Policy, & Strategy, DCS, Ops., Plans & Rqmts., USAF, Pentagon, to Dir., Strat. Capabilities Policy, National Security Council, Washington, D.C.

SENIOR EXECUTIVE SERVICE CHANGES: Joan A. Causey, to Dir., Financial Svcs., AF Financial Svcs. Ctr., Ellsworth AFB, S.D. ... Roger S. Correll, to Dep. Asst. Secy. Contracting, Office of the Asst. SECAF for Acquisition, Washington, D.C. ... Lorna B. Estep, to Exec. Dir., AF Global Log. Spt. Center, AFMC, Wright-Patterson AFB, Ohio ... Michael A. Gill, to Dir., Contracting, AFMC, Wright-Patterson AFB, Ohio ... Heidi H. Grant, to Dir., Resources, AFRICOM, Stuttgart, Germany ... Ricky L. Peters, to Dep. Dir., Air, Space, & Info. Ops., AFMC, Wright-Patterson AFB, Ohio ... Barbara A. Sisson, to Dir., Resources, Rqmts., Budget, & Assessment, CENTCOM, MacDill AFB, Fla. ... Daniel R. Sitterly, to Dir. of Staff, OSAF, LL, Pentagon ... Charlie E. Williams Jr., to Dir., Defense Contract Management Agency, Springfield, Va. ... Ronald A. Winter, to Principal Dep. Asst. Secy., Manpower & Reserve Affairs, Office of Asst. SECAF, Manpower & Reserve Affairs, Pentagon.



USAF photo by SrA. Nicholas Plich

SrA. Levi Lux (left) and A1C D'Andre Boston test the air around a simulated crash on the flight line of Charleston AFB, S.C. More than 150 airmen participated in the drill, which was performed in April.

on order. As of April 9, USAF said it has taken delivery of 116 F-22s.

Air Sovereignty Duty Backed

Lt. Gen. Craig R. McKinley, director of the Air National Guard, said April 1 it remains a top priority of his to get the Department of Defense's baseline budget to include all of the necessary annual funding to sustain the air sovereignty alert missions that protect the US homeland.

"It's a tremendous concern," he told the House Armed Services readiness subcommittee, "that we have to continually come back and through supplementals and through end-year funding sources try to compensate those who are serving."

The ANG faces a gap of nearly \$35 million in Fiscal 2009 to cover the alert mission. Such shortages impede the Guard's ability to create stability and predictable career paths for its airmen, the general said.

As a result, the Guard is working to identify funding so that the alert mission is fully included in the Air Force's Fiscal 2010 program objective memorandum, McKinley said.

C-130J Program Grows

The Air Force has increased the number of C-130J Super Hercules transport aircraft that it intends to buy from 82 to 134 airframes. The change was reflected in the Department of Defense's cost report for the final quarter of 2007 that was issued April 7.

The revised program of record includes 117 combat-delivery models, 10 WC-130Js for weather monitoring, and seven EC-130J Commando Solo psychological operations aircraft, the Air Force said.

The 134 number includes 32 C-130Js that USAF plans to purchase at rates of eight per year from Fiscal 2010 to Fiscal 2013 to replace older E-model C-130s, according to the Air Force. But this total does not include any of the 115 or so new modified C-130Js that USAF wants to replace aged MC-130s or HC-130s used with special operations forces and combat search and rescue units, respectively.

USAF Pushing Energy Coalition

The Air Force has begun to work with the French and British Air Forces to cooperate on incorporating alternative aviation fuels into their respective fleets and to learn from each other how to be more efficient and environmentally friendly consumers of energy, in general, William C. Anderson, USAF's assistant secretary for installations, environment, and logistics, said April 15.

"We are at the very preliminary stages of doing this," he said at a presentation

Air Force Surges to Meet Predator Demands

Despite escalating pressure, the Air Force continues to be responsive to the burgeoning warfighter demand for Predator unmanned aerial vehicles and the streaming overhead surveillance video that they provide, according to USAF spokesman Maj. David Small.

Small provided background information on USAF's Predator initiatives April 21 after remarks made by Secretary of Defense Robert M. Gates from earlier that day were erroneously characterized in initial press reports as a rebuke of the Air Force's efforts. (See "Washington Watch: A Strange Interlude," on p. 10 for more.)

According to the information, the rise in Predator requirements has been on a steady slope since early Fiscal 2007. That is when USAF readjusted its program of record for the MQ-1 force to reach the Joint Requirements Oversight Council-directed mandate to provide 21 simultaneous Predator combat air patrols by October 2009.

The Air Force programmed equipment and training to meet that mark; however, in July 2007, at Gates' request, USAF accelerated its plans by one year, setting October 2008 as the new goal post for 21 CAPs. To meet that requirement, the service delayed upgrades to older equipment and used backup equipment, and it ramped up to train 160 crews per year, holding over current crews to help in that training.

In September 2007, Gates then requested an increase to 18 CAPs by November 2007, which USAF accomplished by cutting ops testing and calling on reserve personnel and prior Predator crews. In January of this year, Gates directed yet another change—bumping up Predator CAPs to 24 by June 1.

This latest directive, which USAF said it was "on track to meet," takes the Predator push out of the "acceleration" bracket and into a "surge" because it exceeds the program of record and the JROC-validated requirement for 21 CAPs.

The Air Force believes it can sustain this level of effort only through early 2009, when the Air National Guard mobilization must end, because it doesn't have the end strength to continue. And, since the service knows that its increased training pipeline will not be sufficient, it plans to increase from 160 to 240 crews per year in Fiscal 2009.

on Capitol Hill. There is "great enthusiasm from all three Air Chiefs."

Officials from the three Air Forces first came together for this purpose in the fall of 2007 in Washington, D.C. The next meeting is planned this month in Paris to develop a position paper that the French and UK Air Chiefs will present during a meeting of the European Air Chiefs in August, Anderson said.

Fate of the Nine F-15Cs

The Air Force intends this year to repair five of its nine F-15Cs found to have cracked longerons, two senior generals told a Senate oversight panel April 9. It will retire the four remaining airplanes, "due to their proximity to planned retirement," stated Lt. Gen. Daniel J. Darnell, head of plans and requirements on the Air Staff, and Lt. Gen. Donald J. Hoffman, military deputy to USAF's acquisition executive, in written testimony.

The cost of fixing each of the five F-15Cs will run about \$235,000. USAF will use organic materials and labor at the Warner Robins Air Logistics Center in Georgia, they said.

These nine aircraft have been grounded since the midair breakup of a Missouri Air National Guard F-15C last November due to the catastrophic failure of a longeron near the cockpit. For a while, all of the Air Force's F-15 A-E model aircraft were grounded; but gradually after inspections, most were cleared again to fly.



USAF photo by MSgt. Andy Dunaway

A1C Kelliea Guthrie (left) and SrA. Greg Ellis provide security for a C-130 Hercules during a cargo mission at Feyzabab Airfield in Afghanistan. Both are members of the fly-away security forces team assigned to the 455th Expeditionary Security Forces.



A1C Darryl Worthey, 332nd Expeditionary Security Forces Squadron, shoots an M-4 at a silhouette target at Balad AB, Iraq. Airmen train with their weapons to sharpen reaction time when thrown into an emergency situation.

Illinois Still Fights for Wing

A federal appeals court gave Illinois Gov. Rod R. Blagojevich's efforts to keep F-16s at the Abraham Lincoln Capital Airport in Springfield a boost March 11 when it sent his legal complaint against the Department of Defense back to the federal district court in Springfield to be judged on its merits. Twice before, the Springfield court had dismissed the case on procedural grounds.

Blagojevich is challenging the Pentagon over the BRAC 2005 decision to strip the Illinois Air National Guard's 183rd Fighter Wing of its 15 F-16s by the end of this fiscal year. He argues

that only he, not DOD, has the authority to order such a move. Now he has another shot.

Housing Projects May Get Help

The Hunt/Pinnacle building and development group formally expressed interest in taking over the failed American Eagle housing projects at Air Force bases in Arkansas, Florida, Georgia, and Massachusetts, the Associated Press reported in mid-April.

Lawmakers have sharply criticized the Air Force for its handling of the situation that affect privatized housing developments at Hanscom AFB, Mass., Little Rock AFB, Ark., Moody

AFB, Ga., and Patrick AFB, Fla.—and for selecting a housing developer with a history of problems.

Missing WWII Airman Identified

The Department of Defense announced March 24 that it has identified the remains of US Army Air Forces pilot 2nd Lt. Arthur F. Eastman, of East Orange, N.J., whose aircraft went missing during a flight in August 1944 in New Guinea.

Eastman departed Finschhafen, New Guinea, Aug. 18, 1944, on a test flight of his F-5E-2 aircraft, but never returned. Based on documents found in Australian archives, Joint POW/MIA Accounting Command officials investigated a crash site in 2004 in the mountains of Morobe Province, Papua New Guinea. The site was subsequently excavated in 2007, leading to the recovery of remains and personal effects that led to Eastman's identification.

World War II Ace Dies

Retired Lt. Gen. Gordon M. Graham, 90, who flew 73 combat missions in the P-51 Mustang during World War II and amassed seven aerial victories, died March 22. *The Washington Post* reported that he died of a stroke at his home in Virginia.

Graham was born in Ouray, Colo., in 1918. He received his pilot wings upon completion of flying school in August 1941. After World War II, he served in a variety of staff and command positions. During the Vietnam War, he flew 146 combat missions in F-4 and RF-4 aircraft as vice commander of 7th Air Force. He retired in July 1973 as commander of the 6th Allied Tactical Air Force based at Izmir, Turkey. ■

News Notes

- Lt. Gen. William M. Fraser III, assistant to the Chairman of the Joint Chiefs of Staff, was nominated April 18 to receive a fourth star and assume command of US Transportation Command, replacing Air Force Gen. Norton A. Schwartz.

- Mobility airmen set records in March by moving nearly 120,000 passengers and 41,350,000 tons of cargo around the Middle East, Near East, and Horn of Africa, eclipsing the previous marks by three percent and seven percent, respectively. Yet they maintained a 91 percent on-time delivery rate, USAF said.

- Lt. Gen. Donald J. Hoffman, USAF's top uniformed acquisition official, was nominated April 18 to the grade of general to head Air Force Materiel Command, succeeding Gen. Bruce Carlson.

- Boeing announced April 11 that it increased to 30 the number of C-17s

it will build using its own funds in the absence of new contracts. It made the move in anticipation of securing new orders later this year.

- The Air Force Reserve celebrated its 60th anniversary April 14.

- Maj. Gen. Charles E. Stenner Jr., currently assistant deputy chief of staff for strategic plans and programs on the Air Staff, was nominated April 18 for a third star to take over Air Force Reserve Command, replacing Lt. Gen. John A. Bradley.

- The Air Force on March 28 retired the last MH-53 helicopter remaining in service that participated in the daring raid into North Vietnam in November 1970 to rescue US prisoners of war from the Son Tay prison camp. It will be put on display in the National Museum of the US Air Force.

- Air Force Gen. Michael V. Hayden, CIA director since 2006, announced April 23 his decision to retire from USAF after nearly 39 years of service, but continue running CIA as a civilian.

- The Air Force retired the T-37 Tweet April 3 as its specialized undergraduate pilot training aircraft after some 50 years of service. The T-6 Texan II is replacing the Tweet.

- An F-16C of the Vermont Air National Guard's 158th Fighter Wing in Burlington became the first-ever F-16C to surpass 7,000 flight hours during a sortie March 24.

- Maj. Stephen Stilwell, the Missouri Air National Guard pilot seriously injured when his F-15C fighter broke apart in midair in November 2007 due to a faulty structural piece, filed a lawsuit against Boeing March 21. ■



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How Many Nuclear Warheads?

Eighteen months from now, the Strategic Arms Reduction Treaty (START I) will expire, raising questions about what takes its place. Six months from now, a Congressional commission will report its ideas about the future shape of US strategic forces. Today, the Pentagon is gearing up for a far-reaching nuclear posture review.

For the first time in years, strategic nuclear arms issues are moving up on the governmental priority list. Among the more important questions to answer is this one: How many nuclear warheads does the US really need?

Today, Washington maintains a force of just under 3,000 operational warheads. They are deployed aboard intercontinental ballistic missiles, submarine-based ballistic missiles, and B-2 and B-52 heavy bombers.

Two decades ago, the story was very different.

In 1988, with the Cold War still in high gear, the US had an enormous inventory of some 13,000 strategic nuclear warheads. The Soviet Union, for its part, had even more.

Soon, however, the forces began to shrink. President Ronald Reagan and Soviet leader Mikhail Gorbachev agreed, in principle, to make deep reductions in their strategic arsenals, paving the way for START I, signed in 1991.

START I mandated that each superpower would draw down, by 2001, to 6,000 "accountable" warheads, on 1,600 delivery vehicles.

Next came START II (which was ratified but never went into force). It would have further cut inventories to 3,000 to 3,500 warheads and banned multiple warheads aboard ICBMs. The last of the START series, START III, was never completed; drafts called for limiting each nation to 2,000 to 2,500 warheads.

START II and START III fell by the wayside because Washington and Moscow lost interest in them. They were superseded in 2002 by the more ambitious Strategic Offensive Reductions Treaty (SORT), also known as "The Moscow Treaty." Under SORT, the two nations agreed to cut their operationally deployed strategic warheads to a level between 1,700 and 2,200 by the end of 2012.

The START/SORT drawdown has been gradual but steady. At the end of 2007, the US was down to 2,871 "operationally deployed" warheads.

(One sometimes hears that the US has 6,000 warheads. This is the "START-accountable" number, which is losing relevance because weapons are counted in a contrived and obsolete way.)

So, the US must still shed close to 700 warheads. Washington has made no public announcements about how it plans to do so, but the State Department said in 2005 it "anticipated," among other things, "lowering the number of ... warheads at heavy bomber bases."

Everyone assumes the US will meet SORT's goal. The real question is: Should reductions go even deeper? Gen. Kevin P. Chilton, the Air Force officer who serves as head of US Strategic Command, reports that he is "comfortable" with the numbers allowed under the Moscow Treaty, but not fewer.

Even though the US has dispensed with nearly 75 percent of its Cold War inventory, the answer for many is that the reductions should be continued. Prominent arms control advocates maintain that the US could get by just fine with as few as 1,000 or even 500 nuclear weapons—enough for a "minimum deterrent" force.

Some would go to zero. This is the case with four prominent strategic affairs experts—former Secretaries of State George P. Shultz and Henry A. Kissinger; former Secretary of Defense Wil-



Beginning with START I, the US agreed, in a succession of treaties and negotiations, to drastically lower its warhead inventory. START II and START III never entered into force. Bars indicate highest allowable numbers.

liam J. Perry; and former Chairman of the Senate Armed Services Committee Sam Nunn. They call for "further substantial reductions in US and Russian nuclear forces" beyond those dictated by SORT, with the final goal being "a nuclear-free world."

At the other end of the spectrum, some hawks in Congress, the Pentagon, and the services think today's inventory already is too small or, at a minimum, should not be further reduced.

Those who favor maintaining the SORT level argue that a large arsenal is needed to meet the requirements of deterrence under the current US Nuclear Weapons Employment Policy, signed out in 2004. To quote the document: "US nuclear forces must be capable of, and be seen to be capable of" destroying an enemy's military forces, ability to wage war, and the other things a potential enemy's leadership values most.

Quite a few experts say that would require more than a handful of nukes.

As for going to zero, that seems out of the question for now. Maj. Gen. Roger W. Burg, commander of 20th Air Force (overseer of the nation's ICBM fleet) said nuclear abolition is an "attractive and seducing" thought that, nonetheless, ignores reality.

Russia, China, North Korea, India, and Pakistan are all nuclear armed and embroiled in long-standing disagreements with either the United States or one or more of its friends and allies.

So what is the right number for the United States?

Plans call for the Pentagon to complete its next nuclear posture review in December 2009. It will seek to balance the benefit of a strong nuclear deterrent against the desire to limit the danger of nuclear war. Only then—in the political arena but with the Air Force's input—will we know the answer. ■

More information: <http://www.armscontrol.org/factsheets/factfilejune07.asp>

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Vulnerability in Space

The Air Force says goodbye to 50 years of tranquil, undisturbed operations "up there."

By Rebecca Grant



An artist's conception of a space based laser weapon.

“

Our space capabilities *will* be contested,” declared Gen. C. Robert Kehler, head of Air Force Space Command. “We have seen evidence [of the danger] from a number of places around the world.”

USAF’s senior space officer may have been matter-of-fact in his delivery, but his message was as serious as a stroke. He had just summarized a mortal challenge to the US—the growing threats to America’s traditional dominance of the military high ground.

Once, such dangers were theoretical. No longer.

Space isn’t a lonely place anymore. It is a crowded commons that attracts the attention of many national and commercial space actors. The list includes, but is not limited to, Russia, China, India, and a unified Europe, not to mention a host of medium-size nations.

Operating in this busy domain depends on a suite of capabilities, from launch facilities to communications links and robust spacecraft.

As the Air Force looks to the future, it is finding that the best assurance of continued space dominance is strong situational awareness in the vast reaches above the atmosphere.

This means knowing who is doing what to whom or has put itself in a position to take action of some sort. And as space becomes more and more contested, the act of sorting and tracking the activity “up there” is key to delivering space and missile capabilities to America and its military commands.

“We must increase our awareness of what is going on on orbit,” Kehler said.

Case in point: China’s Jan. 11, 2007 successful test of an anti-satellite weapon against one of its own spacecraft took this nation’s space-watchers by surprise. The Chinese launched a medium-range ballistic missile with a kinetic kill vehicle, which homed in on and destroyed a defunct Feng Yun 1C polar orbiting meteorological satellite. (China’s geographic location prevents it from launching satellites against low-inclination, equatorial orbits.) The solid-fuel, mobile ASAT missile came from or near the Xichang Space Center and hit the satellite at an altitude of more than 530 miles. On impact, the satellite disintegrated into more than 900 pieces of orbital debris. The Chinese did not announce the event at the time.

Australian strategic affairs analyst Desmond Ball said the Chinese ASAT launch “involved a fairly primitive system” but one that threatened to spark a space race. Ball added: “It is the sort of capability available to any country with a store of ... medium-

Illustration by Erik Simonson



A missile aboard USS Lake Erie blasts off to intercept and destroy a nonfunctioning NRO satellite on Feb. 20.

range/intercontinental ballistic missiles or satellite launch vehicles, and a long-range radar system.” These nations, said Ball, include Japan, India, Pakistan, Iran, and even North Korea.

China Is Getting Serious

In the view of a White House spokesman, China’s test was “inconsistent with the spirit of cooperation that both countries aspire to in the civil space area.”

“This is bad news,” said Peter Brookes of the Heritage Foundation, a US think tank. He warned, “China is on a trajectory to challenge Washington (and Moscow) for pre-eminence in space.”

There’s no question that China is serious about space. Chinese taikonauts traveled there in 2003 and 2005, and according to Brookes, Beijing plans to put a man on the Moon sometime after 2010. China will launch perhaps 100 satellites in the next five to eight years, Brookes wrote in “China’s Space-Attack Test,” a Heritage Foundation background paper.

How is the Air Force dealing with this new challenger? According to Kehler, the Chinese anti-satellite launch “was not a surprise ... [but] it added a sense of urgency.”

Key elements of US space policy date back to the space race of the 1960s and its immediate aftermath. It was an era when the Soviet Union was testing numerous anti-satellite systems. Nuclear weapons in space were a real possibility.

Ultimately, the superpowers cooled their competition. The Outer Space Treaty of 1967 outlawed nuclear or other weapons

of mass destruction in space, in orbit, or on the Moon. It also put the Moon and other celestial bodies off-limits for weapons testing, fortifications, or military maneuvers.

The 1972 Anti-Ballistic Missile Treaty placed further limits on exo-atmospheric interceptor deployments. The net effect was to put the brakes on development of space weapons and preserve a relatively tranquil domain.

Despite this, dangers remained. Numerous experiments involving ground-based

sites and on-orbit tracking and intercepts kept the theories and technologies percolating. The ABM Treaty was modified several times to clarify what was permitted and how to handle borderline cases.

In its first 50 years, however, the routine use of space was undisturbed and relatively unquestioned.

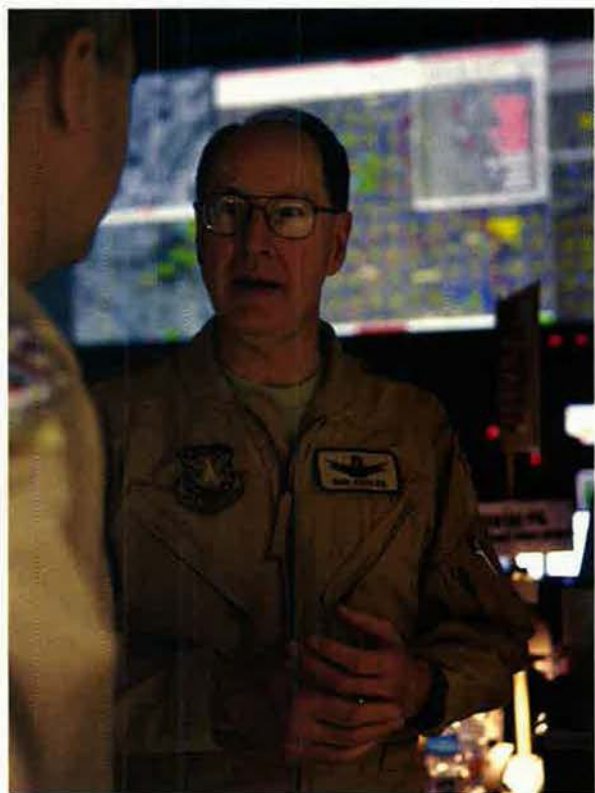
Ironically, it was a threat to ground stations and communications links that foreshadowed the new era of concern. The Sept. 11, 2001 terrorist attacks in America warned AFSPC to the fact that physical infrastructure on the ground was susceptible to asymmetric attack. Space Command quickly began improvements in the physical security and redundancy of ground sites. An office for integrated space situational awareness was set up in 2002.

Still, those were relatively “low-key” changes that did not set off alarms.

China’s 2007 action did. It raised multiple concerns about protecting satellites on orbit and about tracking and dealing with both operational satellites and with debris and unintended consequences.

By then, space had gone from being a playground of the two superpowers to being a global commons.

During the Cold War, the number of space-faring nations was “single digit,” said Lt. Gen. Michael A. Hamel, who is commander of USAF’s Space and Missile Systems Center at Los Angeles AFB, Calif. Currently, 30 or 40 countries operate in space—and all expect to see more.



The head of Air Force Space Command, Gen. Robert Kehler (right), takes a briefing at the 609th Air Operations Center in Southwest Asia. Kehler says America’s space capabilities will be contested.

That's created a major shift in priorities. No longer can Air Force Space Command simply watch out for what Moscow is doing. AFSPC now wrestles with keeping track of multiple users. Unfortunately, the elaborate architecture built to keep an eye on the Soviet Union's space and missile activities was not designed for the 21st century space environment.

"During the Cold War, we had a very, very significant investment in sensor systems, in command and control centers, to be able to keep track of what the Soviet Union was doing in space," noted Hamel.

"Our space surveillance network was largely built during the Cold War, for the Cold War," said Kehler. "Quite honestly, we have some coverage gaps," he acknowledged. Add to that the shortfalls in the fidelity of sensor coverage and "fixing, upgrading, [and] updating space situational awareness is important," he said.

A Massive Job

Job one is improving the combination of sensors, data links, and analytic fusion needed to build awareness. Think of this critical area as akin to building a common operational picture or air battlespace picture. No air operations center commander would attempt to run day-to-day operations without it. Yet the space picture is much less complete.

"Even though space is a big place, the fact is that you do need to exercise some measure of monitoring of what is actually going on," said Hamel.

Keeping track of what objects in orbit are doing is a massive job and the core of a critical mission area called space situational awareness.

Space situational awareness includes both space environment conditions and the actions of all nations in space. It "means having knowledge about all the objects in orbit, what are they doing, both friendly as well as hostile systems," said Hamel.

Space "weather" such as radiation from solar flares is one part of the environment. Another is monitoring man-made and other objects in rotational belts.

"We're tracking upwards of 15,000 detectable objects in space right now," said Hamel, "to ensure that we avoid collision and other kinds of hazards."

Those are just the "big" objects measuring 10 centimeters (four inches) or more. Many smaller objects exist in space.

Certain zones are crowded. The geostationary orbit at 90 degrees east is one case in point. "That's over the central part of Asia, and guess what? There are a lot of satellites that want to operate there," observed Hamel.

How To Attack a Satellite

The US, the Soviet Union-Russia, and China have all studied or demonstrated techniques for attacking satellites. Some are kinetic kills and others use nuclear bursts, radio frequencies, or lasers to disable satellites. Many of the techniques have been around since the 1960s and 1970s.

- **Surface-launched missiles:** As China did in 2007 and the US did in 2008, hitting a satellite with a missile is the best-known method of attack. Low Earth orbit (LEO) satellites are vulnerable, but geostationary satellites currently are not because their GEO orbits keep them out of range. Location matters: Weapons launched from China, for example, probably could not reach low-inclination equatorial orbits. Most vulnerable are polar-orbiting satellites with perigees that bring them well within range of surface-based tracking radars and missiles.

- **Nuclear missiles:** Among the many ASAT techniques developed by the Soviet Union was the Galosh deployed around Moscow in the late 1960s. The exo-atmospheric ballistic missile carried an estimated three-megaton nuclear warhead capable of obliterating LEO satellites passing over Moscow. The follow-on Gorgon system with a one-megaton warhead is still operational.

- **Air-launched missiles:** In September 1985, the US fired a three-stage Air Launched Miniature Vehicle from a specially modified F-15 and destroyed an old satellite. Congress banned ALMV testing three months later.

- **Co-orbital systems:** In this variation, a missile is launched to the target satellite's orbital plane, and its warhead is steered to impact within one or two orbits. Reports indicate that co-orbital systems can also deploy parasitic micro-satellites kept in position to destroy or disable the target satellite on command. The Soviet Union first tested co-orbital systems in the late 1960s.

- **Space-based interceptors:** Numerous experiments have demonstrated the feasibility of hitting a satellite with another satellite, and study work is ongoing.

- **Lasers:** "Painting" satellites with laser beams and the temporary blinding of their optical sensors has been going on since the mid-1970s. Reports claim the Soviet Union painted infrared detection sensors on a US Defense Support Program satellite in 1975 and may even have painted the space shuttle. US activities ranged from alleged temporary blinding of Soviet satellites to full tests against US satellites. DOD has warned since 1998 that China has a capability to conduct laser blinding.

- **Radio frequency:** Radio frequency weapons jam satellite signals.

Radio frequency interference is an issue. Individual operators maneuver their satellites to keep position. Air Force space professionals have to monitor those movements to make sure they don't threaten operations.

Only recently has the Air Force started to increase its capability to survey large volumes of space. Just as important is moving away from the tight focus on Russian space assets.

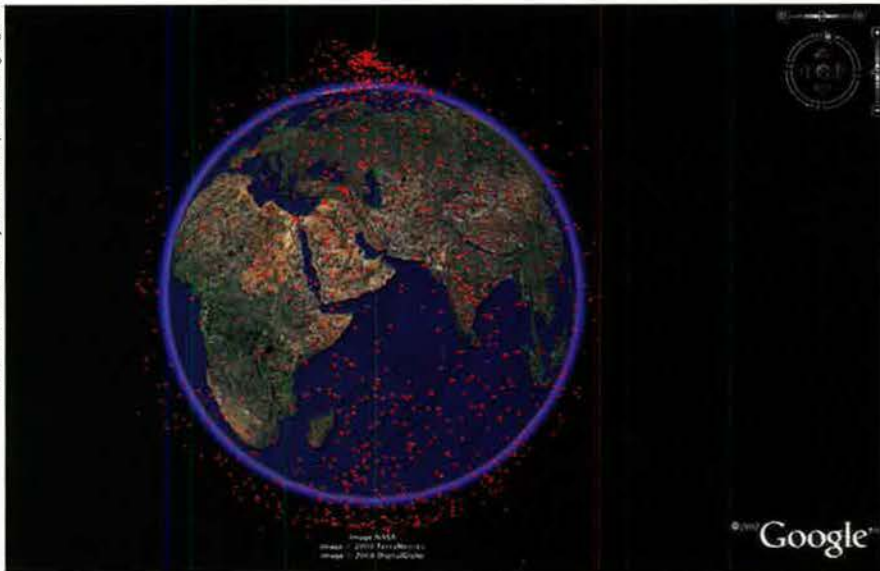
"A lot of what we're doing now is taking many of the systems that were built for one purpose, [such as] dealing with a missile warning against a potential Soviet attack, ... and trying to knit [them] together in a way in which we can really draw upon all kinds of sensing phenomena, whether that be radar systems [or] optical trackers," explained Hamel. The goal is to "put it into really a modern net-centric architecture so that we're able to provide much more rapid, current knowledge of all the objects in space."

Two approaches will help. One is a new program for space-based situational awareness. Packages of optical sensors will fly on satellites and enhance tracking abilities. First launch of this system is planned for 2009.

Second, space professionals plan to take advantage of heavy traffic in the geostationary orbits to fly payloads to assist with tracking. As Hamel described it, location is everything. Plans are under way to "ride-share or piggyback sensors on a variety of satellites, both military as well as possibly even commercial systems." These can provide a sort of "neighborhood watch program," tracking nearby objects and warning of close approaches before collision occurs.

It will take all that and more to assure the environmental conditions are conducive to on-orbit operations.

"I'm not a big fan of creating space debris," said USAF Gen. Kevin P. Chilton, commander of US Strategic Command. "I've



This screenshot, captured from a modified Google Earth program, depicts the debris field left when China destroyed a polar orbiting meteorological satellite with a medium-range ballistic missile.

been on the space shuttle. I've had orbital debris hit my vehicle," he said.

The ideal, in Chilton's view, is to monitor satellites heading to space even before they launch. "When it gets on orbit, we track it from the boost phase all the way to on-orbit," he said. Then "if it maneuvers, we know it maneuvers, and we find that out in a very timely fashion, rather than in a long period of time where you risk losing track of it."

It would be "a whole lot easier" if other nations and commercial entities would "share with us their knowledge of where their satellites are," Hamel said. The final dimension is intent. Knowing the intentions of the government or group launching the satellite would be equally important, said Chilton.

Until then, it will be up to radar and optical trackers to maintain the mosaic.

Sensors aren't the only part of the equation. Space situational awareness is seen by all top commanders as the absolute precondition for taking any action in space, be that defensive or offensive.

High-Quality Situational Awareness

A case in point was the destruction of a US satellite on Feb. 20, 2008. Although the classified reconnaissance satellite had only been on orbit since December 2006, it malfunctioned and was in danger of soon tumbling out of orbit. This was unacceptable, as the satellite—and its toxic hydrazine fuel supply—could have survived re-entry and crashed into a populated area. The LEO satellite was therefore destroyed by a Navy SM-3 launched from the cruiser USS *Lake Erie* on station in the Pacific Ocean.

"The prime lesson I took away from

the missile defense activity that was used against the US satellite was the value of high-quality, high-confidence space situational awareness," said Kehler.

Officials stress that space situation awareness requires better fusion of existing data. Integrated space situational awareness is about "how ... we net together ... many of the sensor systems that we already have, to make them much more efficient and responsive," said Hamel.

Fusing intelligence into an operational picture is what provides the real value. As Chilton put it, the overall tasks of "how you handle the data and fuse it and present it to commanders and refresh that data ... are really important."

Kehler said finding ways to use sensors "more effectively is at the top of our list and has gotten increased investment here over this last year or so." He has told Congress

that it's not a huge number of dollars in the budget, but it's a top priority because of the payoff.

For example, the February US missile defense shot had to link existing sensors in a different way. To Kehler, that showed that with the right fusion "there is an opportunity here for high-value, high-confidence space surveillance" with platforms already on duty.

He stressed that the satellite shutdown was not a precursor to developing new ASAT weapons.

"Our US policy says be prepared. It doesn't say go [and] do," Kehler cautioned. The US is "not pursuing an active anti-satellite weapon at this point in time. What you saw was a one-time use of missile defense assets in a very carefully controlled manner. ... We always have an option to go down that road in the future, but at this point in time, we are not actively pursuing that kind of an activity."

Detering Signal Jamming

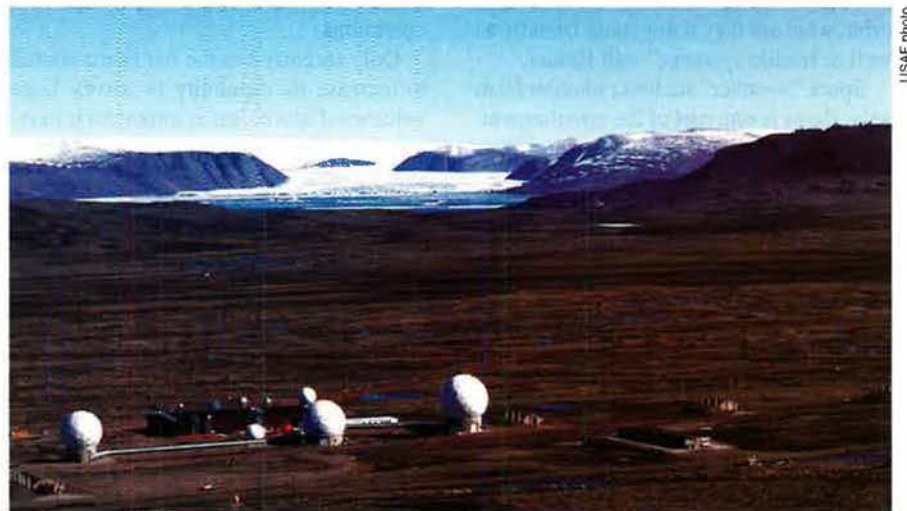
For now, improving awareness and securing communications links remain more fruitful investment areas.

Space Command is taking steps to deter and resist jamming, for example. Jamming the Global Positioning System is "not a hard thing to do," said Kehler. "That technology is out there."

Russia is a known purveyor of GPS jamming technology, for example.

So far, GPS jamming has been a spectacular failure. Saddam Hussein tried to jam GPS signals at the beginning of Operation Iraqi Freedom in 2003. The Russian-made jammers were obliterated by air attack within two days.

Future measures include boosting the power of the GPS signal and engineering new satellites for greater protection.



Radar domes, contributors to space situational awareness, dot the tundra at Thule AB, Greenland, home to USAF's 3rd Detachment, 3rd Space Support Wing.



Above, an F-15 releases an anti-satellite missile during a test. At right, an artist's conception of a Soviet-era orbital satellite attacking a space target.

Laser obfuscation of satellite sensors has long been a concern and remains so today. "We've seen others developing laser dazzlers against some of our surveillance and reconnaissance sensors," Kehler said.

Beyond this, Space Command is acutely aware that its dominance goes hand-in-hand with freedom of action in cyberspace.

"There is clearly a very real cyberspace threat," pointed out Kehler. The synergy of space and cyberspace goes back decades because space platforms have long operated both in space and cyberspace. Input controls and data output all depend on communications links between satellites, ground stations, and command centers.

Operators literally fly satellites based on those links. In contrast with the world of manned aircraft, space operations have been dependent on cyberspace. A pilot can maneuver an aircraft mechanically or electronically; maneuvering a satellite relies on remotely transmitted commands.

In fact, the close links between space and cyberspace put a lot of punch in the Air Force's cross-domain mission statement. "You can see physical boundaries in the air and... in space," explained Kehler. "We don't see a separation of space and cyberspace" because of the way the platforms have to be integrated, he added.

While space links are some of the most secure and protected communications on the planet, the potential vulnerability is serious. As Kehler said, "It's important for us to understand that cyberspace can be used against us also. The Army has a wonderful saying, ... 'If the enemy's in range, so are you.'"

Kehler stressed, "It may be that the biggest cyberspace threat that we face in our



space business is on the ground and in the ground sites."

One area where AFSPC seems sure of dominance is in keeping the lead in space capabilities for the nation.

Space—and improving space situational awareness—is on the table in Congress' latest effort to review service roles and missions.

Top leaders say space roles and missions issues amongst the services are more perception than reality. Hamel was unambiguous on this point. In "every interaction I have had ... there is absolute, unequivocal, steadfast support from both

the Army, the Marine Corps or Navy, in terms of their dependence upon future space capabilities, whether that be communications, data systems, GPS, surveillance reconnaissance systems."

The simple fact is that Air Force space capabilities far outdistance those of any other service. USAF performs the bulk of the mission for the Defense Department. "Upwards of almost 90 percent of the resources and activities that are done by the department are done by the US Air Force," Kehler said.

"It's a mission that the United States Air Force has had for almost 50 years," he added. "I personally don't see a major change."

To no one's surprise, the bigger questions

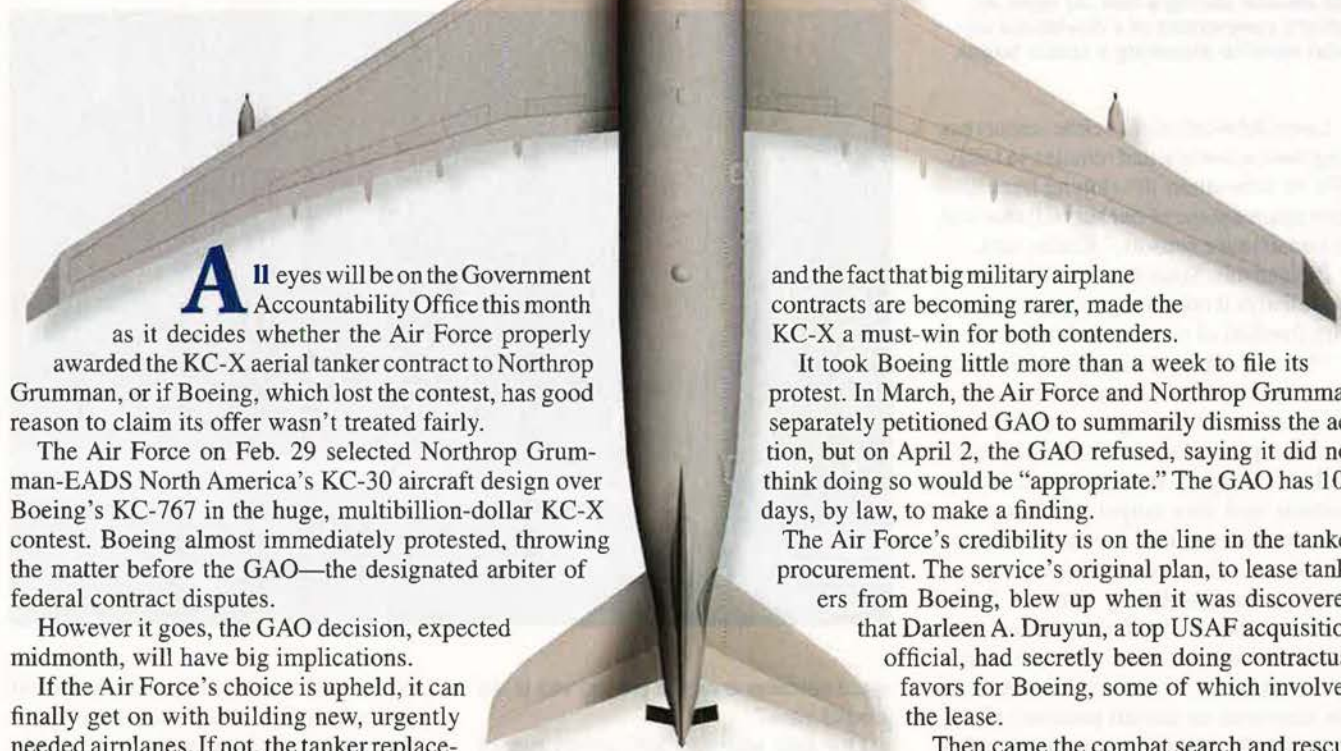
may lie in the interagency arena. As Kehler acknowledged, "There does remain a question here about the relationship between the space activities that are conducted by the Intelligence Community and the space activities that are conducted by the Department of Defense."

On the bright side, Kehler believes "we have better cooperation today in many areas than we have had ... in the past."

That's good news. Just as achieving air dominance was the central mission of 20th century airpower, securing space dominance is just as vital to operations in the 21st century. ■

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The Tanker



All eyes will be on the Government Accountability Office this month as it decides whether the Air Force properly awarded the KC-X aerial tanker contract to Northrop Grumman, or if Boeing, which lost the contest, has good reason to claim its offer wasn't treated fairly.

The Air Force on Feb. 29 selected Northrop Grumman-EADS North America's KC-30 aircraft design over Boeing's KC-767 in the huge, multibillion-dollar KC-X contest. Boeing almost immediately protested, throwing the matter before the GAO—the designated arbiter of federal contract disputes.

However it goes, the GAO decision, expected midmonth, will have big implications.

If the Air Force's choice is upheld, it can finally get on with building new, urgently needed airplanes. If not, the tanker replacement process—already a controversial, seven-year odyssey—could stretch out another three years or more, forcing flight and ground crews to wait that much longer to trade in their 1950s-era KC-135Es for fresh aircraft.

The financial, political, and military stakes in the tanker contest could hardly be higher, and certainly go well beyond the gargantuan \$35 billion to \$40 billion value of the contract. Thousands of jobs are at stake, raising the political heat in Congress, and even affecting this year's Presidential campaign. Because half of the money that would go to Northrop Grumman will pass to European Aeronautic Defense and Space Co., whose Airbus A330 is the basis for the team's winning KC-30 entrant, the tanker has become a cause célèbre for protectionist interests. It has made strange bedfellows of conservatives and labor unions that charge that the Air Force is paying to send good jobs and taxpayer dollars overseas.

Whoever had won, a protest by the loser was seen as virtually inevitable. The contract is so large—up to 179 airplanes—that it could have a significant impact on airliner market share. That,

and the fact that big military airplane contracts are becoming rarer, made the KC-X a must-win for both contenders.

It took Boeing little more than a week to file its protest. In March, the Air Force and Northrop Grumman separately petitioned GAO to summarily dismiss the action, but on April 2, the GAO refused, saying it did not think doing so would be "appropriate." The GAO has 100 days, by law, to make a finding.

The Air Force's credibility is on the line in the tanker procurement. The service's original plan, to lease tankers from Boeing, blew up when it was discovered that Darleen A. Druyun, a top USAF acquisition official, had secretly been doing contractual favors for Boeing, some of which involved the lease.

Then came the combat search and rescue helicopter contract. The Air Force picked Boeing to build the CSAR-X in late 2006, but losing competitors successfully argued to the GAO that the service had failed to follow its own rules in making the choice. The contract was set aside, and the CSAR-X went back into competition.

With two strikes against it, the Air Force has bent over backward to ensure that the tanker contest would be as problem-free as possible, according to Sue C. Payton, the service's acquisition executive. If that turns out not to be the case, though, the Air Force's ability to run a big acquisition properly will be in question.

The KC-X program, the third-largest contract in USAF history (after the F-22 and C-17) is also likely to be worth more than face value. The service has long said that, just as the KC-135 platform was adapted for other large special mission aircraft such as the AWACS, Joint STARS, and Rivet Joint,

Above: A Northrop Grumman artist's conception of the KC-30. Right: A Boeing illustration of the KC-767. The two images are drawn to the same scale.

Endgame?

Federal auditors will decide whether we are at the beginning of the end or only the end of the beginning.

By John A. Tirpak, Executive Editor



so too does it expect that the KC-X will be the basis for replacing those KC-135-derived airplanes. Indeed, the E-10 Multisensor Command and Control Aircraft, the planned successor to both the AWACS and Joint STARS, was to be a Boeing 767, largely because that platform was also expected to be the tanker. The E-10 program has since been canceled due to tight money, but the requirement persists.

All told, industry analysts peg the cost to replace the large special mission aircraft at a minimum of \$10 billion, and probably much more.

In addition, the KC-X is merely the first installment of replacing the tanker fleet. The first batch of tankers to be replaced are the oldest, the KC-135Es, which have flight restrictions and serious problems with landing gear struts. A KC-Y competition, circa 2020, will replace the KC-135Rs, which were converted from KC-135Es by adding newer engines and some structural improvements to extend their lives. About 10 years after that, USAF envisions a KC-Z contest, meant to provide a successor to the KC-10.

Even if this schedule plays out just as the Air Force intends, some KC-135s will be serving beyond their 80th year, something skeptics think just won't be possible.

Although the Air Force has said it will look afresh at its tanker needs in each of those competitions, it has also said it wants to minimize the number of different airplanes in its fleet, to keep commonality up and training and logistics costs down. That means the winner of KC-X has a leg up on any comers for the second two matches.

The tanker outcome will also influence several ongoing studies of mobility capabilities and requirements, all due within the next year. Since the KC-30 is so large, its capacity could well affect

how many additional C-17s and C-130s the Air Force will be allowed to buy. Some senior service officials have expressed a concern that, because of its size, the aircraft could be counted twice—once as a tanker and once as a cargo airplane—and wind up short-changing both elements of the mobility portfolio.

In announcing Northrop Grumman as the winner, Secretary of the Air Force Michael W. Wynne said the new airplane will “have the flexibility to perform additional taskings, including carrying cargo, passengers, and air medical patients.” Speaking at a Pentagon press conference, Wynne said Air Force evaluators “took the time to gain a thorough understanding of each proposal. They provided continuous feedback on the strengths and weaknesses of each proposal, and they gave the offerors insight into the Air Force’s evaluation.”

However, the Air Force offered little explanation as to why it chose the KC-30. (The ultimate winning aircraft will be designated KC-45A.)

Payton, asked to explain the choice, said at the press conference that “we had two very competitive offers in this competition. Northrop Grumman clearly provided the best value to the government” in light of the top five considerations. In order of importance, they were: mission capability, proposal risk, past performance, cost/price, and “something we call an integrated fleet aerial refueling rating.”

She said Northrop Grumman’s team “did have strong areas in aerial refueling and in airlift,” adding that “their past performance was excellent, and they offered great advantage to the government in cost/price, and they had an excellent integrated fleet aerial refueling rating.”

The KC-30 is slightly larger than the KC-10, and twice the size of the KC-135E it would replace. It would offer sub-



Photo by Boeing

for a larger airplane, and didn't want the Air Force to carry around weight it doesn't need.

In its protest, Boeing argued that, in any competition, the source selectors assess two levels of capability. The first is the "threshold," which is the minimum performance required and which the contractor must meet in order to bid. The second is the "objective," which is performance that the service deems nice to have, but not essential. Performance up to the objective is encouraged, but usually not beyond, because providing unneeded capability risks "gold plating" the system, Boeing Vice President Mark McGraw told reporters.

Speaking in a teleconference in April, McGraw said that, in his last meeting with KC-X evaluators, he sought clarification on the size issue.

stantially more fuel and cargo capacity than Boeing's KC-767. It can also pump gas into a receiving aircraft somewhat faster than can the KC-767, and has been ordered by Britain, Australia, and Saudi Arabia. Northrop Grumman said that, if it won the contest, it would perform final assembly of the aircraft in Mobile, Ala. Airbus also said that a win in the tanker contest might persuade it to build its commercial A330s in Alabama as well. No such facility exists yet; Airbus said it would only build if it won the KC-X.

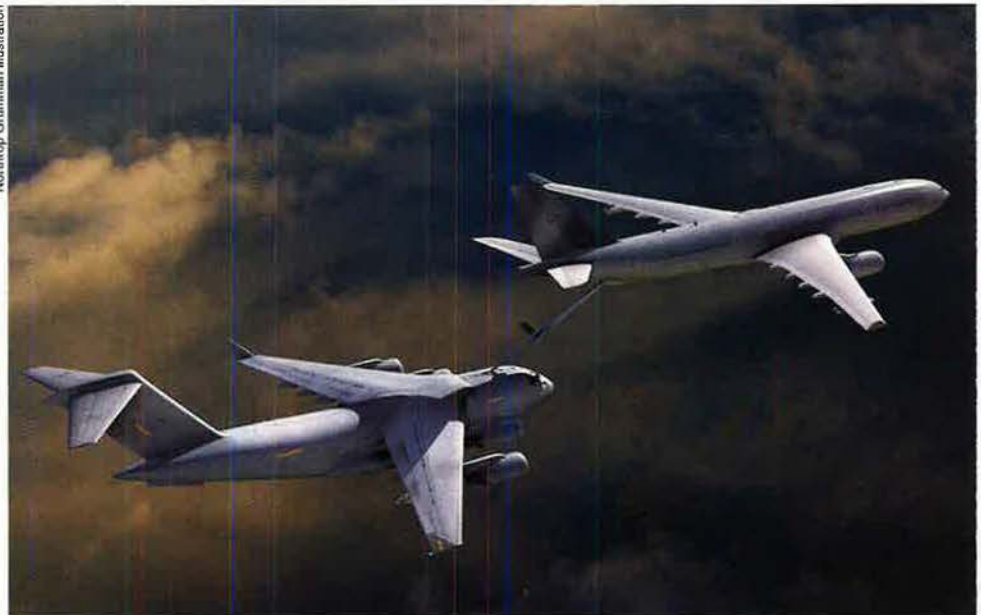
Tremendous Peer Review

Payton declined to offer any further details about why the KC-30 bested the KC-767, saying that USAF owed that information to Boeing first. Once Boeing protested the award, however, the Air Force said it couldn't discuss its reasons until the GAO made its findings known.

Payton insisted that the two offerors knew "exactly where they have stood all along in all of the various factors, as we were evaluating them." She said the Air Force has had the Pentagon inspector general, as well as the GAO, review its processes "and take a look at all of our audit trail" from setting requirements through the request for proposals. There has been "tremendous peer review" by the Office of the Secretary of Defense, and the selection team included acquisition experts from the Army and Navy, she said.

"We've had a very thorough review of what we're doing," Payton asserted. "The Darleen Druyun situation was a half a decade ago," and the Air Force this

Northrop Grumman illustration



Top: A KC-767 refuels a B-52. Above: A Northrop Grumman illustration of a KC-30 refueling a C-17.

time had scrupulously followed federal regulations. She added, "We've got it nailed. ... There was absolutely no bias in this award."

Boeing, however, saw it differently.

In its protest documents, Boeing charged that the choice of Northrop Grumman's entry was a surprise because it seemed obvious that the Air Force didn't want such a large airplane. The service was, after all, replacing the KC-135E tanker and not the much larger KC-10 refueler.

So clear did this seem that Boeing had held a press conference early in the competition to announce that it had discarded its KC-30-sized KC-777 proposal because it saw no competitive advantages

McGraw reported having asked, "We've gotten the maximum we can? You can't get any more credit for going above the objective, right?"

The answer, McGraw said, came back, "Right. There is no credit for exceeding an objective."

After being debriefed by the Air Force, McGraw said, Boeing believed the service, in fact, "gave credit to the competitor [Northrop Grumman] for going above the objective in several areas. And that is one of the key points of our protest."

If Boeing was listening to senior serving generals, its notions about size were probably reinforced. Privately, top USAF officers frequently said they were looking for an ability to put many tank-

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ers on forward runways at once, since strike packages involve many airplanes, and each tanker can only refuel one other boom-receptacle airplane at a time. (Both the KC-30 and KC-767 can simultaneously refuel two other aircraft if the receiving airplanes are equipped with probe-and-drogue type refueling gear). However, those generals were quick to point out that they had no say in the acquisition process, and the outcome of the competition bore that out.

The integrated fleet aerial refueling (IFAR) evaluation was a computer model which gamed each tanker against a set of real-world conditions involving a variety of scenarios, assumptions about basing availability, fuel offload, cargo-carrying capacity, ground turn time, etc. Boeing contended that, near the end of the competition, the Air Force relaxed some of its standards, which gave an unfair edge to Northrop Grumman.

For example, the minimum spacing between aircraft on a forward ramp was reduced from 50 feet to 25 feet. That allowed more KC-30s to fit in some places, Boeing said. Boeing also charged that the Air Force allowed some nonexistent forward runways to count in the model. Moreover, the company maintained that its airplane would be cheaper to operate, since it was smaller than the KC-30 and would burn less fuel.

Unequal Scrutiny

Boeing further observed that its own cost numbers were not accepted by the Air Force, which substituted higher numbers because the service did not



Rep. Norman Dicks (D-Wash.), a staunch Boeing supporter, addresses a Capitol Hill rally against the contract award.

find Boeing's figures credible. At the same time, Boeing claimed, Northrop Grumman's numbers were not subjected to the same scrutiny.

In April testimony before a House Armed Services subcommittee, Payton explained that the changes were made to make the computer model "more realistic." The head of Air Mobility Command, Gen. Arthur J. Lichte, told the panel that wingtip-to-wingtip clearance was reduced because, although it is 50 feet in peacetime, "in wartime—and what we're using today—it's 25-foot wingtip clearance. So we decided that's what we should [use]."

Boeing also said that the IFAR model was developed by Northrop Grumman and that the firm had special insight into how the model worked. Northrop Grumman acknowledged that, but noted that the model has been used for years, and insisted there were strict firewalls in place between the division that developed the model and its tanker team.

The original list of Boeing's complaints required 138 printed pages, and four supplements were submitted to the GAO as the company discovered more problems, McGraw told reporters in early April. He speculated that when Northrop Grumman threatened to quit the competition if certain metrics weren't adjusted to make it more competitive, the Air Force probably went too far in trying to accommodate it. The company said that the final scorecard between the two entrants was extremely close, and that if its price and other factors had been rated fairly, Boeing should have won.

Northrop Grumman, in subsequent weeks, issued scores of press releases portraying Boeing's case as little more than sour grapes and "disinformation." It noted that Boeing was late delivering KC-767s to Italy and Japan, and that Boeing had regularly touted the KC-X competition as apparently fair and problem-free.

Paul K. Meyer, Northrop Grumman's vice president for air mobility systems, said his team never threatened to walk out on the competition, but said in a teleconference with reporters that "we utilized our right to articulate our concerns about selected criteria." Meyer also acknowledged that, although "100 percent" of the



Sen. Richard Shelby (R-Ala.), at right, backs Northrop Grumman in the dispute. Seated next to Shelby is Sen. Chris Dodd (D-Conn.).



revenues from the tanker will go to Los Angeles-based Northrop Grumman, “50 percent” of that money will go to EADS as a subcontractor. The company has said the tanker program will bring 24,000 jobs to the US, but since winning the deal has revised that figure to 48,000 jobs.

When the tanker competition first got under way, the Air Force’s solicitation to interested companies asked them to explain any subsidies they receive from their governments. The proviso reflected a long-simmering US-Europe trade dispute in which the US charges that European governments are unfairly subsidizing Airbus products in order to underbid Boeing in the airline arena and gain market share. Airbus said the subsidies have been repaid. European governments, moreover, have charged back that Boeing’s military work for the US constitutes a subsidy of its own. The argument is still pending before the World Trade Organization.

Sweetheart Deal Accusations

Sen. John McCain (R-Ariz.) criticized the language about subsidies as a way for the Air Force to essentially exclude any competitors other than Boeing. This was unacceptable, in his eyes, much as was the earlier lease arrangement, which he branded as being a sweetheart deal for Boeing. He wrote to Deputy Defense Secretary Gordon England, then Defense Secretary Robert M. Gates, saying a new tanker program would only fly if it resulted from “a full and open competition” free from the “capriciousness” of assessing the role of subsidies in a proposal. The subsidy language was dropped.

Photo by Ted Carlsson



Top: Airmen unload a KC-10 at McChord AFB, Wash. **Above:** A KC-135 refuels an F-16 over California. The KC-X competition is expected to be followed by competition to replace the remaining legacy tankers.

With Northrop Grumman’s win, McCain—now running for President—has been criticized for setting the stage for the export of the work that could have been had by Americans.

The chairman of the House Democratic Caucus, Rep. Rahm Emanuel of Illinois, said the person chiefly responsible for preventing the tanker contract from going to a US company was McCain, “and now we are going to send major high-paying jobs overseas.” Boeing’s headquarters is in Illinois.

House Speaker Nancy Pelosi (D-Calif.) asserted that Boeing would have gotten the work but that “Senator McCain intervened, and now we have a situation where the contract may be

... outsourced.” She added that “if we continue to outsource these contracts, we are exporting jobs out of our country. ... We will not have the industrial and the technological base necessary to ensure our national security. ... It will fade; it will diminish.”

Payton, in testimony before the House Appropriations defense subcommittee, said the Air Force is required by law to consider a bid from certain allied countries—much of Europe is on that list—as if it were a bid from a domestic US supplier. She also said that the KC-X contestants agreed that if the WTO makes a ruling against their country, “if there are penalties assessed on them ... that they would not convey any of those losses onto the Air Force.”

Norman D. Dicks (D-Wash.), a member of the House Appropriations defense

subcommittee, said on the March 6 PBS “NewsHour” that “the only reason” the Northrop Grumman team could bid low on the tanker “is because they received [a] subsidy. And you know, ... Senator McCain jumped into this ... and said that they could not look at the subsidy issue, which I think is a big mistake, especially when the US trade representative is bringing a case in the WTO on this very issue.”

Dicks, who represents the state where Boeing assembles the 767, said in the March 5 House Appropriations defense subcommittee hearing that “the Air Force has failed us here.” He charged that the service “changed the deal in midstream to accommodate Airbus, because ... they

said they would pull out of the competition if [the Air Force] didn't do it."

He also said the tanker is "a crown jewel of American technology. We are now giving away to the Europeans one of the most significant things we as a country can do, and that is build these aerial tankers." Northrop Grumman said that the refueling system on its KC-30 was developed by an EADS-Sargent Fletcher team, and that no military technology transfer to Europe will occur.

At the same hearing, Rep. Todd Tiahrt (R-Kan.) said, "The American public is rightfully outraged by this decision. I am outraged by this decision. It's outsourcing our national security. ... Choosing a French tanker over an American tanker doesn't make sense to the American people, and it doesn't make any sense to me." Boeing planned to modify some of the KC-767s in Tiahrt's state.

He noted that the KC-X marked three times in a row that the latest big defense contracts have gone to European designs: the Marine One Presidential helicopter went to Lockheed Martin fronting the European EH-101; the Army light utility helicopter will be a Eurocopter design; and now the EADS KC-30 for the KC-X. He didn't mention it, but Boeing is on the team to build the C-27J Joint Cargo Aircraft, designed in Italy.

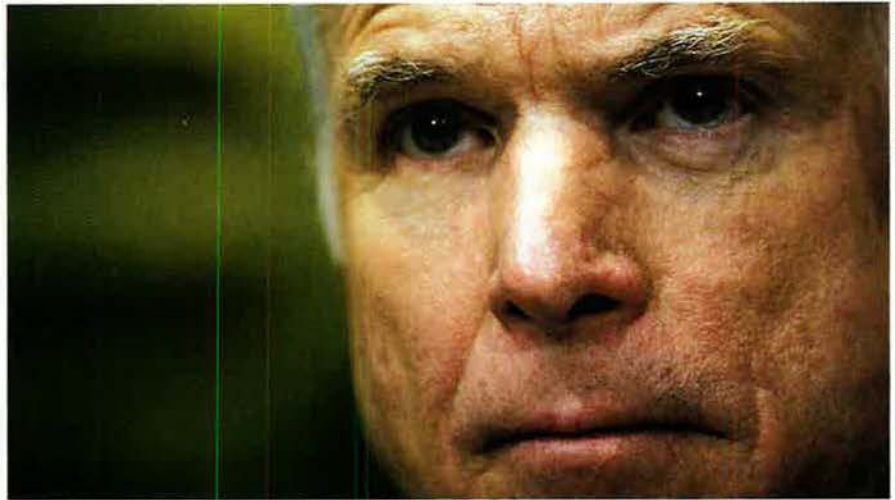
Why Not Buy American?

"We are stacking the deck against American manufacturers at the expense of our own national and economic security," Tiahrt asserted. He said he understood that the Air Force didn't take industrial base considerations into account when choosing the tanker, but "Congress has made it clear over the years its intent that taxpayer dollars should be spent for American work, whenever possible."

He went on to claim that the loss of tanker know-how in the US will result in a more vulnerable nation, and "we cannot allow this to come true. We must have an American tanker built by an American company with American workers. Congress must act to save the Air Force from itself."

Statements from various unions, including the International Association of Machinists and Aerospace Workers, struck similar themes.

McCain's response has been to maintain that he always wanted the Air Force to pursue the tanker as fairly as possible. His rivals for the Presidency have both questioned the choice of Northrop Grumman. Sen. Barack Obama (D-Ill.) asked how Boeing, which has been "a traditional



AP photo by Mary Al taller

Sen. John McCain (R-Ariz.) offered harsh criticism of the Air Force's original guidance to companies interested in the tanker competition.

source of aeronautic excellence, would not have done this job." Sen. Hillary Clinton (D-N.Y.) said she was "deeply concerned" about the award, given that "our government is simultaneously suing [the European Union] at the WTO for [giving] illegal subsidies" to Airbus.

Rep. John P. Murtha (D-Pa.), head of the House Appropriations defense subcommittee, told senior USAF acquisition leaders in a March hearing that "none of us dispute the integrity" of the acquisition team, and "we have no question you did the best you could do."

However, he added, "we're going to do the best we can do, in evaluating this thing politically. ... When I say politically, I'm talking about industrial base. ... This is part of it and we have that responsibility under the Constitution." He earlier said that "all this committee has to do is stop the money" and the tanker program is "not going to go forward."

In a March 9 editorial for the *Financial Times*, Sen. Richard C. Shelby (R-Ala.) urged Congress to "remain as objective as possible and insist on due process. Invalidating the award, starting the process again, or inserting prohibitive language into legislation to block the tanker acquisition would be irresponsible and based on raw emotion." He said that in a global economy, it's "almost impossible" to obtain a military product that is "100 percent US-made," and said that comparing the two tankers shows they have "a similar amount of foreign content."

So, what happens now? The GAO sets a very high bar in adjudicating protests of contracts. Even if it's discovered that the Air Force did make some errors, the GAO won't set aside the award to Northrop Grumman if it considers those errors immaterial to the outcome of the

competition. In order for Boeing to get the award set aside, it must prove not only that the Air Force made mistakes or showed unfair preferences, but that those mistakes or preferences were key to the outcome of the contract.

If the GAO finds for Boeing, there are numerous remedies at its disposal, depending on the severity of the problem. It can order that some portions of the contract be re-evaluated by the Air Force, or rescored to reflect more accurate information. It can direct both offerors to resubmit certain data, or direct a change in some of the evaluation methodology or modeling. It can also throw the whole award out and tell the Air Force to start over.

If GAO allows the award to stand, Congress could still intervene, potentially directing the Air Force to split the buy between the two companies, or run competitions for each lot. During the KC-X contest, the Air Force ruled out such an approach, saying it would cost \$2 billion extra up front and another \$4 billion to set up a separate logistics capability for an additional tanker. Since the lots are expected to be for 15 to 18 aircraft, the Air Force said, there isn't an economy of scale to justify two sources for the tanker.

However, if Congress does intervene and take some or all of the tanker work away from Northrop Grumman, it could have a chilling effect on prospects for sales of American-made military products or airliners on the other side of the Atlantic, worsening the aerospace trade dispute with Europe. That, in turn, could sink the chances for a NATO buy of, for example, C-17s, making that aircraft more costly for USAF to purchase. ■

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As the Maryland Guard showed in Iraq, the A-10C is an oldie but goodie.



Not Fade Away

By Marc V. Schanz, Associate Editor

Photo by Rick Linares

Last fall, a new breed of A-10 went into combat for the first time. The Warthog in question was the newly upgraded A-10C, a variant of the venerable attack aircraft that has proved itself many times over in Iraq and Afghanistan.

The new A-10s first delivered weapons on Sept. 19, a day that was otherwise like any other in the fight on the streets of Iraq. US ground troops called for air support after discovering a house rigged with explosives in an urban area not far from Balad Air Base. The insurgent safe house was wired to explode when ground troops came knocking.

Troops were tense. The countrywide “surge” had begun earlier in the year, and soldiers were working “outside the wire” much more frequently, mixing with the population, ferreting out insurgents and weapons caches the hard way—door to door. The previous day, a patrol had kicked in a door in the neighborhood and set off an explosion—killing three US soldiers.

On Sept. 19, the joint terminal attack controller with the ground troops that day was in a similar situation. The booby-trapped house was ahead, and intelligence from locals indicated insurgents were lying in wait. The JTAC wasn’t about to let the bad guys get the upper hand, but needed to be careful—he didn’t want collateral damage to turn an easy win into a setback. A mosque was nearby as well.

A call for close air support was placed. Soon, a pair of jet aircraft from the 104th Expeditionary Fighter Squadron out of Al Asad Air Base was approaching. They were moving slowly, and they were quiet—not the loud rumble of F-16s that often showed up. Moments later, the insurgent house was reduced to rubble—courtesy of two satellite-guided Joint Direct Attack Munitions. The mosque next door received only a light dusting. The first combat strike for the A-10C was complete, and it was a success.

First created to loiter over European plains and chew up Soviet-armored columns with its fearsome 30 mm rotary cannon, the

Warthog has been spared from retirement numerous times to become a sort of CAS rock star.

From the 1991 Gulf War, when Warthogs were the bane of Iraqi tank columns, to Afghanistan where A-10 pilots could loiter around the high mountain passes and valleys to wreak havoc on Taliban elements, the aircraft has shown remarkable effectiveness and toughness.

Lt. Col. Dan Marino, 175th Operations Group commander, recalled an earlier deployment to Afghanistan, “riding on the back of a tailgate ... out to our jets at night [and] taking off from an old Russian air base to escort helicopters along the Pakistani border. We thought to ourselves, ‘If somebody had told us 17 years ago we would be doing this, we’d have thought they were out of their mind.’”

Top: Two A-10Cs of the Maryland ANG train in preparation for deployment to Southwest Asia. Right: A Warthog in flight.

The precision engagement upgrade to A-10C configuration only adds to the aircraft's lethality. "This is the first major modification in 20 years," said CMSgt. Terry M. Allen, the squadron superintendent for the 175th Aircraft Maintenance Squadron at Martin State Airport, near Baltimore. The 104th FS—attached to the Air National Guard's 175th Wing—now has 17 A-10Cs, with more to come as a result of base realignment actions.

A veteran of the Iraq deployment, Allen accompanied the Maryland ANG's transition to the A-10C from the beginning, volunteering to be the NCO in charge for the upgrade program as the unit sent a detachment out to Nellis AFB, Nev., to begin modifications in November 2005. The Air Guard was first to get upgraded aircraft, and work on the airplanes continued until the summer of 2007, shortly before the A-10s headed out on an unexpectedly complex deployment. "We were modding airplanes ... in April that deployed in September," Allen recalled.

By the summer of 2007, with the deployment to the sandbox looming, the PE line had cranked out enough aircraft to equip two squadrons with 17 airframes each—one in Michigan and one in Maryland.

Marino said the 104th had "one foot on the boat and one foot on the dock." The As were leaving, the Cs were coming in, and even though the iron was back on the ramp, software upgrades and electrical issues were being worked out as the aircraft arrived.

The 104th was cleared to train with the JDAM in late summer; the data link was programmed in by the end of June, and the laser Maverick was integrated into the system architecture. "The main driver was getting the unit over to OIF in September," Marino added.

A Rainbow Unit

The Maryland ANG then deployed several of its newly modified Warthogs, as did the Michigan ANG's 172nd FS from Battle Creek. They formed what is known as a "rainbowed unit"—a mix of airplanes from different units operating under the same expeditionary squadron.

When the aircraft and personnel arrived last September at Al Asad Air Base, they became the 104th Expeditionary Fighter Squadron. Despite the A-10's near-constant presence in Afghanistan, this was the first time the fighters had deployed into Iraq since 2003.

The Thunderbolt IIs, in official parlance, were immediately put to work against one of the most persistent problems in theater—the proliferation of improvised explosive devices. We spent a lot of time searching for IEDs, said Lt. Col. Timothy Smith, commander of the 104th FS. Using the aircraft's targeting pod to detect the bombs' heat signatures, pilots would beam intelligence on IEDs down to ground troops. Many times, A-10s were called on to strike IED emplacements and caches of explosives uncovered during these sorties.

A-10s were also called upon to combat "trigger houses," such as the one on their first sortie, Smith said. Often rigged with explosives, and with insurgents waiting close by in ambush, these buildings were some of the most dangerous places for ground troops to encounter.

The A-10C's new precision capabilities were invaluable against these tactics. With its ability to loiter low to the ground and pack the punch of precision weapons, the A-10 now could operate better in the dense and dangerous urbanized areas of Iraq.

"With this munition, we're able to pinpoint a building," said Capt. Brian Curland, one of the 104th FS pilots who deployed to Iraq, referring to the JDAM. Collateral damage was minimized because the JDAM can be fused to bury itself into the building then detonate. "You're looking at basically just taking the building out from the inside out instead of the outside in like before."

Curland was one of the two pilots on the sortie who dropped the squadron's first JDAMs in Iraq.

The new, flexible weapons load brought what squadron members called the "candy store effect" to close air support. This stood in stark contrast to the "Russian candy store" of weapons the A-10 used to offer—"I got a bomb or a bomb, what do you want?" quipped Marino.

Smith said the ability to switch back and forth between JDAMs and laser guided bombs was invaluable in Iraq, as the nature of threats and targets shifted constantly during the deployment.

"We tended to use the LGB when we didn't need exact coordinates," he recalled. During one sortie, coalition forces had been tailing insurgents who were cornered in a greenhouse-like building—long and rectangular. A Warthog lased the target and let loose a GBU-12.

More often than not, the Warthog's weapon of choice—the seven-barrel GAU-8/A 30 mm gun—was called on for its high rate of fire and precise high-explosive incendiary rounds.

With friendly forces not far away, such as in convoy or patrol situations, the gun was a lifesaver, Marino said.

One of the last weapons equipped on the A-10Cs just prior to their deployment was the laser Maverick air-to-ground missile—the AGM-65E—which until last year was used primarily by the Navy and Marine Corps.

Today, the missile is being produced again for use on Air Force aircraft, but in late 2007 A-10s needed a quick fix for a problem in theater. Commanders needed a reliable weapon that could track and hit



USAF photo by Andrea Erdeljan



A close-up, high-angle shot of a soldier in a desert environment, looking down intently at a device in his hands. The scene is bathed in a warm, golden light, suggesting a sunset or sunrise. In the background, other soldiers and military vehicles are visible in a dusty, open area.

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At Al Asad Air Base, weapons loaders move an AGM-65D Maverick missile onto the wing of an A-10C of the 104th Expeditionary Fighter Squadron.

moving targets such as insurgent vehicles. While not employed many times during the OIF rotation—only two were fired—Lt. Col. Kevin Campbell, head of the 175th Maintenance Squadron, said the weapon proved successful and adaptable. The A-10 program office has decided to hold off on equipping the C model with the Hellfire missile because the laser Maverick showed so much promise.

Even the radios in the aircraft—there are three of them—work in a more consolidated manner now. Previously, a pilot had to do a lot of switching on his side panel between the three, which kept secure links with ground troops, other aircraft, and the air operations center. Similar to other aspects of the airplane, now a switch on the throttle toggles each one of them.

The ROVER in Demand

As important as the weapons on the wings, the Warthog's guts—the new avionics and electronics—presented a leap ahead in the pilot's ability to interact with other aircraft and troops on the ground. Some last-minute electronic patching work aided the A-10's ability to interface with an in-demand tool—the remotely operated video enhanced receiver, or ROVER. This allowed ground forces to see what aircraft and UAVs were observing with sensors, greatly aiding in close air support.

Because of the original specifications of the A-10C upgrade, a quick patch was necessary to get the receiver to interface with the aircraft. There was no means to access the menu to turn on the broadcast capability of the targeting pod or change the frequency, Campbell said, so the final versions of the aircraft's software included

a "caveman fix" that turned the system on and off.

The result was an increase in the capability to target, track, and ferret out the enemy in Iraq, and an invaluable ISR tool for ground troops.

"There were times when there was no way to have done the mission without a ROVER," Campbell said.

With all the work put into bringing the newly revamped A-10 into the fight, maintainers weren't completely sure what would happen the first time out.

TSgt. Kenneth Rogers, a maintainer with the 175th Aircraft Maintenance Squadron who helped certify crews on the new weapons loads, noted that when all was said and done, the Air Guardsmen came out of Iraq with a 100 percent weapons release rate.

"It's pretty gratifying" to see some of the part-time Guardsmen whom "you only see some 20 days a year ... pull that off without a hitch," he said. It wasn't until the final weeks prior to the deployment that the 104th FS was cleared to train with JDAMs, and many of the weapons wiring problems were caught before heading off to Iraq.

Instead of an analog aircraft with rocket pods and dumb bombs, now maintainers were dealing with a networked jet airplane. "Weapons [airmen] probably had the biggest change in mind-set," Allen recalled. "Avionics folks are used to working with integrated electronics and a lot of subsystems on the airplane, whereas the weapons folks are not."

MSgt. Michael Doyle, a shop supervisor with the 175th AMX, agreed that most of the problems he came across had to do with the aircraft's new guts. "We believe [most problems] were software derived," he said. Last-minute software patches were still being worked, and maintainers found that certain tics hadn't been tested with the mission cartridges that are loaded for each sortie—creating occasional system crashes.

"There was some bad wiring, splices, old splices, new splices," recalled SSgt. Justin Kaltz, a 175th Wing avionics specialist. "Stuff you don't see until you get in and start using this new technology."

Despite the growing pains, the Air Guardsmen managed to keep their A-10s healthy in the desert—never dropping a single US Air Forces Central tasking order during their deployment.

Allen said the newer Cs actually held up better in the desert than many As. "That's because these guys were chasing down gremlins before we even left," he added.

At the tail end of the deployment for



An A-10C from the Maryland ANG, 104th Expeditionary Fighter Squadron, at Al Asad AB.

Making an A-10 "C"

Set to run through 2011, the Warthog's upgrade to A-10C configuration will transform the full inventory of 356 Air Force, Air National Guard, and Reserve fighters. It will, in the words of the pilots, be making an analog jet aircraft digital.

Collectively referred to as "Precision Engagement," the program revamps the aircraft's cockpit with multifunction color displays, integrates a laser designator, new throttles, and stick grips, and incorporates targeting pods (the A-10 can now host both the Sniper and Litening targeting pods).

The aircraft also boasts a Situational Awareness Data Link which connects the pilot with troops on the ground. Similar to the more prolific Link 16 system, SADL shares mission information via gateways—computer portals that transfer information between different formats, helping to increase the efficiency of passing data from air to ground.

In short, a lot less fiddling and more flying. "It got us into the 21st century, where we really should have been a decade ago," said Lt. Col. Kevin Campbell, the head of the 175th Maintenance Squadron and a veteran A-10 pilot who aided testing efforts for the C.

"Before it became a C, the integration was a lot more manual," said Lt. Col. Dan Marino, the 175th Operations Group commander and a 22-year veteran A-10 driver. "You'd click through menus, and if you missed, you had to cycle back through."

Many of the old weapon systems, such as dumb bombs and rocket pods, were analog weapons systems. Tracking targets sometimes required a lot of fast switch changes. Now, most of those tasks have been integrated onto the stick and throttle—so a pilot can select a weapon and fire it and never have to take his hands off the stick.

The power and wiring system were also revamped, allowing more information to be stored in the aircraft's computers and creating the open architecture necessary to mount newer and more precise weapons on the aircraft—including the GBU-38, the GBU-12, and Wind-Corrected Munitions Dispensers. This married the precision weapon capability often associated with "fast movers" with the low ceiling and persistence of the A-10's close air support capabilities.

many of the 104th airmen came a major surprise. When the Air Force's F-15Es were temporarily grounded after an Eagle crash in Missouri, AFCENT was faced with a shortage of firepower in Afghanistan. The A-10Cs were ordered from Iraq to Afghanistan. Many of the Maryland crewmen then left Afghanistan within 24 hours, replaced with airmen from Michigan who took over manning the rainbowed unit.

What Works, What Doesn't

The pilots of the 104th FS, their aircraft, and crews are now back at Warfield ANGB, Md., the Guard base attached to Martin State Airport, and are heading into a bit of a break with an inspection and depot cycle just on the horizon, squadron leaders said.

Lt. Col. Timothy F. Schuster, director of maintenance for the 175th Wing, said a structural inspection will tell the unit more about what's working and what isn't. The depot will be looking at the empennage, searching for wear cracks or fatigue in parts. Production A-10s have been flying since 1975, and even with the fleet's upgrades and revamped capabilities the aircraft is still flying at a high operations tempo in demanding environments.

Even the legendary 30 mm gun is getting to the end of its service life, Doyle said. The cannon had initially been designed for a 250,000-round service life, but "I'm sure they had no idea when they built them that they were going to rack up a quarter-million rounds on the gun," he added.

The Air Force is doing all it can to keep the Hogs viable. In addition to the A-10C upgrade, last summer, a \$2 billion contract was awarded to Boeing to build 242 new wing sets for "thin skinned" A-10s. The A-10 requirements office at Air Combat Command has signed off on studies for a more powerful engine for the aircraft. Campbell pointed out that while the A-10 was never designed for speed, a thrust improvement will allow it to take off from shorter distances and get better climb rates.

Work has also begun on a helmet mounted cueing system for A-10 pilots—a device that projects information seen on a head-up display onto their visors, allowing them to cue weapons to targets in their line of vision. "It's the last thing you need in this jet to complement all the integration," Campbell said. Assuming testing goes well in Arizona later this year, Campbell said A-10 pilots could be seeing an HMCS as soon as next year.

Warthog pilots are convinced the capabilities of the A-10 will be called upon for



An A-10C pulling away from a tanker heads out on a new mission.

Wear is beginning to show on the fleet, wing officials said. "In the last year, we've seen a marked increase in the number of compressor stalls and ... engine anomalies," Campbell said. Soon, the landing gear will be replaced with a beefed up outer cylinder and—eventually—new assemblies.

years to come, as its designated replacement is slated to come at the end of the F-35 production run. "Look at the Air Force in 2020," Marino said. "What's your best counterinsurgency airplane?"

Thanks to the upgrades, the answer almost certainly will be: the A-10C. ■

The Robin Olds Factor

By Walter J. Boyne

*Col. Robin Olds in Southeast
Asia, circa 1967.*

The famous ace influenced generations of pilots, and he always led from the front.

Few American airmen have had the kind of dazzling talent and charisma possessed by Robin Olds. His persona loomed equally large whether from the cockpit, the lectern, or in face-to-face encounters.

Olds was big, tough, smart, and swaggering, not to mention brave and highly skilled. Even Hollywood would have had a hard time portraying the genuine article on the big screen. He was a truly dynamic force, one who had a positive impact on the Air Force for more than 60 years.

"His influence upon who we are as an Air Force today can hardly be overstated," Gen. T. Michael Moseley, Chief of Staff, remarked on the death of the retired brigadier general last June. Olds was "a staunch advocate for better fighters, better pilot training," and the innovative tactics that the Air Force still uses today, Moseley said.

Olds' effect on USAF varied both in content and in timing. His career can easily be divided into two eras. In general terms, the first era, which ran from West Point to his retirement,

was a period in which his effect was chiefly localized. He was achieving notable combat successes, influencing his peers and subordinates, and often antagonizing his superiors.

In the second, postretirement era his effect spread, and Olds became almost universally embraced, even by those who previously had taken exception to his views.

Olds had great stories to tell, and he polished them over the years, weaving them into his presentations with the wit and the timing of a professional actor. He didn't mind exaggerating the humorous aspects in some of his stories, but he never exaggerated what he accomplished.

On the Field

His many devoted fans have further embroidered Olds' stories, with the result that some have become inconsistent over time. One thing is constant: This man was a warrior who led from the front, who cared for his troops, and who never hesitated to say exactly what he thought.

Born on July 14, 1922 in Honolulu,

Olds was the son of Robert Olds, a fighter pilot in World War I and later an aide to Billy Mitchell. Eloise, Olds' mother, died when he was four, and he was brought up by his father, who gave him his first flight at the age of eight, in an open-cockpit biplane. In his later years, Robin Olds would speak with admiration of the great leaders—Ira C. Eaker, Carl A. Spaatz, and others—who met often at his home, as his father eventually rose to the rank of major general.

Robin began to gain prominence while a cadet at West Point, where he played tackle on both offense and defense and was named an All American. (Olds was so proficient on the football field that he was inducted into the College Football Hall of Fame in 1985.)

In later years, Olds told of being deliberately struck by an opponent's forearm in a game against archrival Navy. The blow knocked out two upper front teeth and sidelined him for a few plays as his bleeding mouth was packed with cotton. Back in the game, he smashed into the man who had hit him, knocking his opponent flat on his back. Olds stood over him, grinning, pointing to his bleeding mouth and then down to the fallen foe.

He graduated from West Point in 1943—the year of his father's early death—and months later graduated from pilot training, with his wings being pinned on by Gen. Henry H. "Hap" Arnold himself.

Young Lieutenant Olds was well-trained, with more than 650 hours in aircraft, including the Lockheed P-38 Lightning, when he entered World War II combat. He flew with the abandon of a man who knows he is invulnerable and for whom the enemy is only a target.

Olds began his sensational rise as a fighter pilot in Europe, where he flew 107 missions, scored 12 aerial victories, and destroyed another 11-and-one-half enemy aircraft on the ground. His knowledge of air combat grew with his victories and so did his willingness to speak out about his



Photo by David Born via Warren Thompson

Olds (pictured here in 1944) flew with the 479th Fighter Group in Europe during World War II. He was given command of a squadron at the age of 22.



Olds runs a munitions check on his F-4 before a mission during the Vietnam War. He was stationed at Ubon AB, Thailand.

beliefs—no matter how contrary they were to current doctrine. It was a trait that would work more often against him than for him.

From P-51s to P-80s

At the peak of the air war against Germany, Olds saw how heavy bombers' precision attacks were being converted into area bombing by wind, weather, and enemy opposition.

He put forth the idea that 70 P-51s armed with 500-pound bombs could do more damage to a target requiring precise accuracy than a formation of 1,000 B-17s.

As an idea, it was 20 years ahead of its time—and it ran directly contrary to USAAF philosophy. It was the first of many of Olds' ideas whose time had not yet come, a condition that would frustrate him over the years, and helped induce in him flamboyant behavior that worked against both his acceptance and his advancement.

The refusal to accept his idea about precision bombing was puzzling to him because he was awarded many decorations. Most satisfying of all, he was given command of his squadron

as a 22-year-old major. In later life, he sometimes remarked on the strange "disconnect" between the increase of his responsibility on one hand, and the rejection of his ideas on the other.

After the war, Olds was placed in the

very first Lockheed P-80 jet aircraft squadron. This was a desirable assignment, as well as a dangerous one, for the loss rate in the early jet aircraft was high. He also flew with the Aerial Aerobatic Demonstration Team, the



Col. Daniel James Jr. (right) served as Olds' deputy commander for operations at the 81st Tactical Fighter Wing at RAF Bentwaters, England, and teamed up with him again during the Vietnam War.

forerunner of the Thunderbirds, the first American jet aircraft aerobatic team. For good measure, he also placed second in the jet aircraft division of the 1946 Thompson Trophy Race.

He added to his high visibility level by marrying movie star Ella Raines. He and Raines separated in 1975, but remained married until her death in 1988.

Also of note was his assignment to an exchange program with the Royal Air Force where he flew the Gloster Meteor jet fighter and then served in the prestigious position of commander of No. 1 Squadron, RAF.

However, when the Korean War came, Olds was unable, despite considerable effort, to get back into combat. In private conversations, he would attribute this directly to one of his superiors who told him in essence, "If I cannot get there to fight, you are certainly not going to get there."

After Korea, Olds became deeply discontented with the direction he saw being taken by tactical airpower: Tactical Air Command became increasingly focused on the nuclear mission.

Olds continued to distinguish himself by brilliant flying and the ability to ruffle his superior's feathers. At a time when TAC was oriented to the delivery of nuclear weapons, Olds, through a series of papers, continually called for intensive training in air-to-air combat, close air support, and development of new tactics. He also sought better pilot training, better fighters, and surgical precision in bombing, just as he had done during World War II.

Something Missing

Olds became dissatisfied with his career, despite assignments that most fighter pilots would have coveted. These included the command of a wing in Europe, the 81st Tactical Fighter Wing at RAF Bentwaters, England, where Col. Daniel "Chappie" James Jr. was his deputy commander for operations.

The two men would team up again later, becoming famous as "Blackman and Robin" in the Vietnam War. In between these assignments, Olds worked at the Pentagon and graduated from the National War College. His promotions came in good order, yet despite his satisfaction in leading first-class flying units—and despite the admiration in which he was held by his officers and enlisted men—there was something missing. Olds wanted



Olds is congratulated by members of his wing, including Maj. William Kirk (second from left), after his last flight at Ubon. He flew 105 missions over North Vietnam, and shot down four MiGs.

the acknowledgement that he was a thinker as well as a doer.

Unfortunately, his ideas on a return to training geared to fighting a conventional air war were rebuffed.

His desire to remain in an active flying job was more important to him than his imminent promotion to brigadier general. As commander of the 81st, flying McDonnellF-101 Voodoo fighter-bombers, Olds formed an aerial demonstration team: and performed an unauthorized low-level aerobatic display.

His boss reprimanded him, and as punishment, ripped up Olds' promotion papers. His next assignment was to Shaw AFB, S.C., where it seemed his career had reached a dead end.

In fact the opposite was true: He had crafted a situation where he could return to combat and achieve his greatest fame.

For the first time since his combat in Europe, time and events were on Olds' side. The United States was becoming increasingly involved in the Vietnam War and in 1966, Olds was assigned to the 4453rd Combat Crew Training Wing at Davis-Monthan Air Force Base in Arizona. His old friend Chappie James was there, as was then-Maj. William L. Kirk.

There followed the decisive event that would foster Olds' ascent from simply being a hero to a few and a troublemaker to many. On Sept. 30, 1966, he became commander of the 8th Tactical Fighter Wing, based at Ubon AB, Thailand.

The wing needed Olds as badly as

he needed the wing. He introduced himself to his largely dispirited and tired pilots in his usual fashion, with a challenge: Olds was going to fly as a new guy until he learned his job—and then he was going to lead the wing into combat from the front.

There was suspicion that this World War II retreat was just talking a good game, but Olds soon proved himself to be a master of the F-4 and an inspiring leader.

The stories of his methods are legion. He shook up the base's support staff, putting it on the same 24-hour clock as his combat crews. He continually visited the support groups, finding out what their problems were in an effort to get them solved. And he was not above tipping a bottle of beer with his airmen as they discussed how to improve operations.

He led his wing as he had promised, from the front, with flair and aggressiveness. Olds ultimately flew 152 missions in Southeast Asia, 105 of them over North Vietnam. He encouraged camaraderie at the bar, grew an unauthorized mustache, and demonstrated at the age of 44 that he was the physical, mental, and flying equal—or superior—of any man in his unit.

Olds had always had good effect on the morale of the units he led. He was gregarious, was always concerned about the welfare of his people, and like many of his contemporaries he drank too much for his own good.

His prescient view of the types of training required for air combat was



Olds recorded the first of his Vietnam War kills during Operation Bolo in January 1967. His victory made him the first and only USAF ace with victories in both World War II and Vietnam. He finished with a grand total of 16 kills.

far in advance of most of his superiors. It was ignored for many years because it was contrary to contemporary doctrine—and, in truth, partly because of his flamboyant nature.

Unfortunately, prior to the Vietnam War, he was never able to impose his ideas with the same elegance that he used in leading the 8th TFW.

First and foremost, Olds wanted to kill MiGs, but the North Vietnamese were canny. Few in number, they husbanded their resources, striking against Republic F-105 formations when they could do so safely. The North Vietnamese were content, if necessary, with a preservationist strategy of just making the Thunderchiefs drop their bombs before they reached the target area.

It was deeply satisfying for Olds to see over Vietnam that all the ideas that he had advocated—better airplanes, more training in air-to-air combat, bombing, and close air support—had been correct all along. For Robin Olds, it was vindication.

Impatient with the reluctant enemy, Olds conceived a plan that became the single most important air-to-air engagement of the war, and which started him into the second era of his career—the period in which he had immense effect on virtually everyone in the Air Force.

Calling on the skill and guile of the

leading members of his wing, Olds created Operation Bolo. The plan was elegantly simple: Modern F-4s would imitate the call signs, routes, and flight profiles of more-vulnerable F-105s in a bid to coax North Vietnamese fighters into a trap. The tactics worked and induced the North Vietnamese Air Force to believe that a Phantom formation was indeed a formation of Thunderchiefs.

In the ensuing battle, seven MiG-21s were shot down, the biggest score of the war.

Olds shot down the first of his four MiGs in this battle, raising his total number of victories to 13 on the way to a career total of 16.

A Promotion Long Overdue

After his stint in the war, his Air Force career was distinguished by the popularity he enjoyed as a strict but caring commandant of cadets at the Air Force Academy. He finally became a brigadier general in 1968 (a promotion long overdue in the minds of many), but subsequently was assigned to positions that did not lend themselves to more promotions.

Yet promotions were the furthest thing from Olds' mind. Asked by Air Force Chief of Staff Gen. John D. Ryan in 1972 to investigate why the Air Force kill ratio had plummeted late in the Vietnam War, Olds came back with a blistering

report that impugned USAF's contemporary training. He offered to accept a reduction in rank to colonel so that he could go back and personally inculcate the necessary fighting techniques, but this proposal was refused. Olds elected to retire in 1973.

By this time, Olds' influence was already growing. He continued to put forth his ideas, addressing countless groups around the country, often beginning his talks with four words that truly characterized him.

Olds would stand before the group—sometimes military people, sometimes a Rotary Club, it didn't matter. He would square his shoulders, wait for a few tension-filled seconds, then shout, "I AM A WARRIOR." No one ever doubted him.

Though he never seemed to seek it out, his popularity continually increased.

Olds continued to write influential papers on his ideas about aerial warfare. It is the mark of the man that when technology at last reached a point where his ideas on training and tactics no longer applied, he welcomed the change.

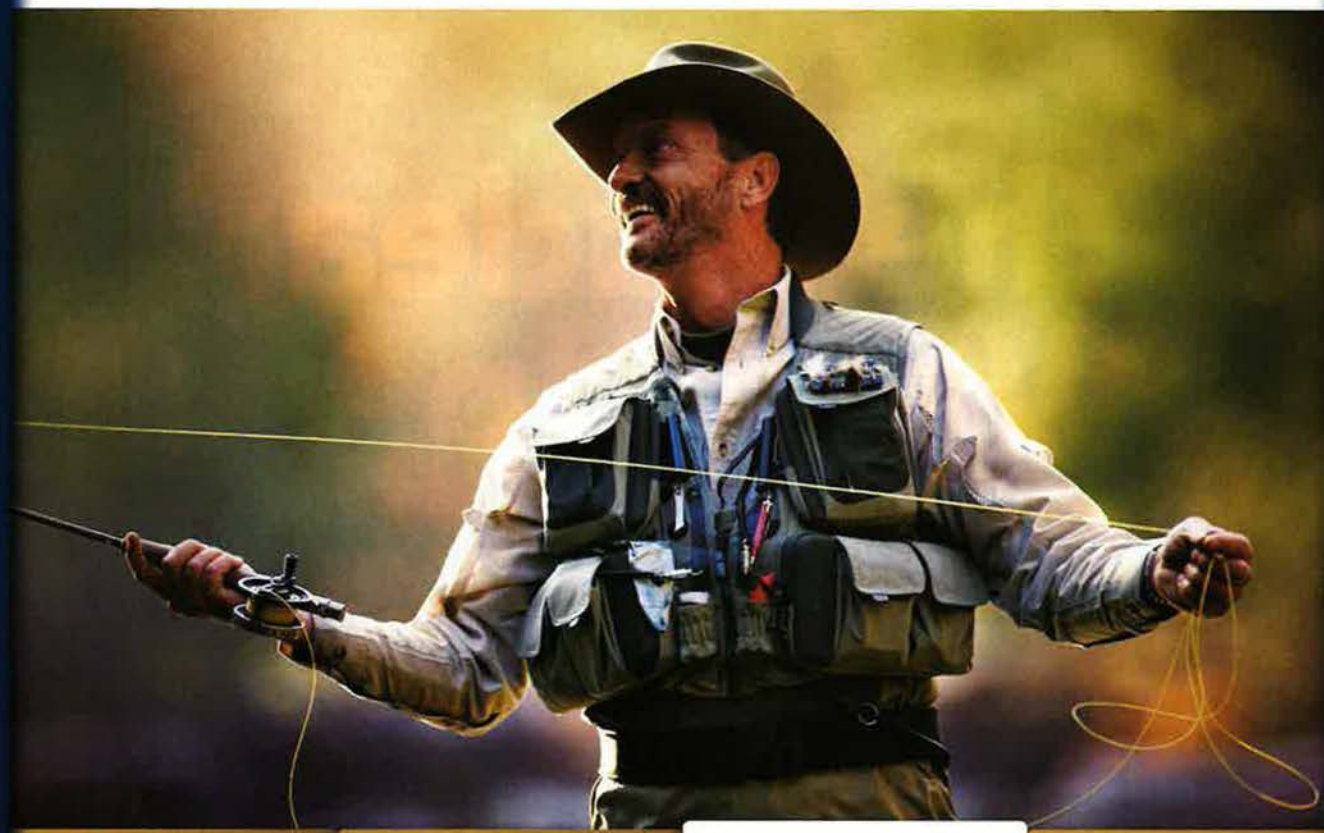
Olds realized that the advent of stealth, precision guided weapons, and sophisticated command and control forever changed the dynamics of air combat, and he said so.

He also labored over an autobiography that was not completed by the time of his death, but that would be massively welcomed by his legion of fans.

After a long fight, Robin Olds succumbed to congestive heart failure on June 14, 2007, surrounded by his family and friends. He was interred at the United States Air Force Academy Cemetery with full honors and a unique missing man formation. Four Phantoms roared over, and instead of the customary pull up by the lead's wingman, in this instance, the lead himself pulled up. It was an appropriate salute to the one, the only, Robin Olds, a leader all his life. ■

Walter J. Boyne, former director of the National Air and Space Museum in Washington, D.C., is a retired Air Force colonel, author, and member of the National Aviation Hall of Fame. He has written more than 600 articles about aviation topics and 50 books, the most recent of which is Soaring to Glory. His most recent article for Air Force Magazine, "A Study in Stripes," appeared in the March issue.

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The Nuclear Wake-Up Call

In handling nuclear weapons, the Air Force had gotten lax. It's tightening up with a vengeance.

By Peter Grier

In the wake of last year's accidental, undetected, and sensational cross-country transport of six nuclear weapons aboard a USAF B-52 bomber, the Air Force has begun to reinvigorate its nuclear surety practices.

That incident was a wake-up call, revealing a significant erosion of intensity in the Air Force's focus on nuclear matters. According to current and former Air Force officials, the service needs to raise the profile of the nuclear mission, bolster the expertise of nuclear personnel—particularly in flying units—and standardize nuclear inspection programs.

For its part, the Air Force has begun implementing changes suggested by recent tough nuclear security reviews. At least one-third of the changes proposed have already been made.

"We have moved out smartly on all of these recommendations," said Maj. Gen. Richard E. Webber, assistant deputy chief of staff for operations, plans, and requirements, at a March 12 Senate Armed Services subcommittee hearing.

A Nuclear General Officer Steering Group now is tracking progress in this area, said Webber. Formerly headed by a one-star, the steering group is now commanded by a three-star general, reflecting the seriousness with which the Air Force takes the situation.

Nuclear training has been restored at the B-52 Weapons School, and a simulator profile that involves a nuclear mission is once again part of B-52 flight training, as well.

As a result of the incident last summer, 90 people temporarily were decertified from duties associated with nuclear weapons. The 5th Bomb Wing at Minot AFB, N.D., was decertified from performing nuclear missions, and three colonels—the 5th BW commander and two group commanders—were reassigned.

After months of intense preparation, Minot's bomb wing passed a nuclear surety inspection in March and regained its nuclear operations certification. Another NSI was scheduled for mid-May, about which Col. Joel S. Westa, the new



scheduled for mid-May, about which Col. Joel S. Westa, the new 5th Bomb Wing commander, said, "The eyes of the world will be on this base. We have zero margin for error."

The shocking impetus for all this action took place last Aug. 30, when a B-52 mistakenly carried six advanced cruise missiles with nuclear warheads from Minot to Barksdale Air Force Base in Louisiana.

The B-52's 1,400-mile flight was part of a routine cruise missile repositioning program supporting the ongoing decommissioning of the ACMs.

In such ferry flights, the bomber normally carries two six-missile pylons, one under each wing. Before transport, crews at Minot are supposed to remove the nuclear warheads from the missiles and replace them with dummy warheads.

But on Aug. 29, when the missiles were loaded, the six cruise missiles on one of the pylons were still live. The end result was that no one knew where six US nuclear weapons were, or even missed them, for 36 hours. They were not discovered until workers in Louisiana prepared to move them to a storage area.

"While historically there have been

nuclear weapons accidents with varying degrees of severity, no breach of nuclear procedures of this magnitude had ever occurred previously," said Sen. Carl Levin (D-Mich.), SASC chairman, at a Feb. 12 hearing on the incident.

The accidental movement of the nuclear warheads stemmed from an unusual confluence of mistakes and inattention.

Shortly after the incident, Secretary of the Air Force Michael W. Wynne said it was "an unacceptable mistake and a clear deviation from our exacting standards."

Paperwork Snafu

The original movement plan for the day identified two particular pylons of AGM-129s for transport. At the last minute, Minot munitions maintenance squadron personnel changed the plan and made a substitution. One of the scheduled pylons would be replaced by another that was full of missiles closer to the "expiration dates" of their limited-life components.

A paperwork snafu did not record the change in plans, and, crucially, one of the original pylons had not had its nuclear warheads removed. (This was understandable, as its movement was supposed to have been postponed.) When the breakout

crew arrived to load the B-52, it took this original pylon, loaded with six nuclear-armed ACMs anyway.

The crew did not properly verify the status of the warheads on the missiles, as established procedure required them to do.

In the past, Minot personnel had used orange cones and multiple placards to distinguish nuclear and non-nuclear-tipped cruise missiles. By the time of the Aug. 29-30 incident, however, standards had slipped to the point where only an 8-by-10 piece of paper placed on the pylons showed which carried live weapons.

There were several other checks in place that should have caught the mistake before the missiles left the base. Per procedure, four different groups were supposed to check the nature of the payload installed in the cruise missiles before the B-52 ferry flight took off.

"Those procedures were not followed," noted a Defense Science Board study led by retired Gen. Larry D. Welch, a former Air Force Chief of Staff and commander of Strategic Air Command.

After several oversights by Minot personnel, the last chance to spot the error rested with the B-52 crew. An officer was supposed to visually verify that the correct missiles were loaded aboard the aircraft, but on this day, only one of the two pylons was inspected. It was the pylon carrying the correct, inert, missiles.

The weapons were then flown to Barksdale, where they sat unnoticed on the ramp for nine hours before crews came as scheduled to remove them from the aircraft. The Barksdale convoy crew, correctly following procedures, noticed that one of the pylons still contained its nuclear warheads.

Lt. Gen. Richard Y. Newton III, Air Force personnel chief, described the incident as an "unacceptable error" stemming from an "unprecedented stream of procedural failures." The root cause, said Newton, was an overall erosion in "adherence to weapons-handling standards."

The incident can, however, serve as a just-in-time warning to the Air Force if corrective actions are implemented now, according to Welch's DSB task force on nuclear weapons surety.

The systemic problems that led to the incident developed over many years, and could have led to a problem that did not end harmlessly.

The incident "has dramatized the need for uncompromising processes and procedures, clear focus on the unique demands

Facing page: SSgt. Christopher Oliva waits to marshal a B-52H at Minot AFB, N.D. Left: USAF crew members train with a mock B61 munition.



Staff photo by Guy Acaelo



Airmen at Minot secure a mock missile to the pylon of a B-52H during an alert generation exercise.

of the [nuclear] enterprise at multiple levels of the national security structure, and an environment that attracts, nurtures, and guides the right numbers of the best and brightest as stewards of this uniquely powerful national security force," said the DSB report.

Declining attention to the nuclear mission began with the end of the Cold War and the demise of the Soviet Union. This victory for the West led to a natural reduction in the size of nuclear forces, but also resulted in dispersal of responsibility for nuclear matters throughout the Defense Department hierarchy.

For instance, after the breakup of Strategic Air Command, USAF's nuclear weapons and strategic assets were reassigned.

An Ongoing Debate

SAC's old tanker force was reassigned to Air Mobility Command. The nuclear-capable bomber force was sent to Air Combat Command, an organization previously devoted to tactical missions. ICBMs were assigned to Air Force Space Command. (In the judgment of the Defense Science Board, ICBM forces remain tightly focused on their mission.)

Gen. John D. W. Corley, commander of ACC, said in March that the Air Force is in the midst of "an ongoing debate" about whether the ACC/AFSPC split is the correct organization for nuclear weapons.

Because of concern about maintaining focus on the strategic mission, nuclear-capable bombers within ACC were assigned to 8th Air Force, which has a proud heritage as a strategic bomber command since the early days of World War II. But 8th Air Force itself was subsequently given multiple non-nuclear missions,

most recently as the lead for Air Force cyber issues.

Many bomber-related functions were kept at the wing level or moved to ACC headquarters, due to a "skip-echelon" concept. "Hence, 8th Air Force had no day-to-day responsibility for B-52 operations, training, or maintenance," according to the DSB report.

In another example of waning priority, the 2002 Nuclear Posture Review dramatically lowered the profile of nuclear weapons. The US once had a nuclear "triad" consisting of land-based ICBMs, nuclear-capable bombers, and submarine-launched ballistic missiles. The NPR replaced this with a "new triad" of offensive systems, missile defenses, and revitalized weapons facilities.

The strike portion of the new triad was also explicitly split, into nuclear and non-nuclear attack capabilities. In a sense, USAF's nuclear bomber capability was demoted from being a third of the old triad to one-third of one-half of one-third of the new triad.

Perhaps it is no surprise that Welch found the "perception at all levels in the nuclear enterprise that the nation and its leadership do not value the nuclear mission."

Meanwhile, tight budgets drove recurring waves of headquarters staff reductions. The DSB found that 13 of 31 positions the Air Force had assigned at US Strategic Command were unfilled.

During the Cold War, there were numerous general and flag officers and senior DOD civilians whose daily focus was nuclear operations. Today, they've largely been replaced by colonels, Navy captains, and midlevel civil servants.

Although each of these changes may

have made sense individually, "the aggregate change is dramatic," the DSB averred. The cumulative result was that "the decline in focus has been more pronounced than realized and too extreme to be acceptable."

"Sustainment" has also become the operational word in the Air Force's nuclear inventory. The lack of any significant nuclear force modernization program made the mission seem even less important, and after 9/11, the shift in priorities accelerated as personnel, attention, and money flowed to support the conventional forces fighting the wars in Afghanistan and Iraq.

Prior to last August's incident, the formal transition training course at Barksdale for all new B-52 crews did not even include nuclear mission flight training. Ditto for the B-52 Weapons Instructor Course. Instead, these courses provided a single simulator mission dedicated to nuclear training.

The net result of all this is that the bomber force overwhelmingly has become focused on conventional missions, and this focus was evident in day-to-day B-52 operations.

B-52 aircrews and weapons handlers interviewed as part of the DSB's fact-finding process estimated that they spent five to 20 percent of their time on the nuclear mission. (Lt. Gen. Robert J. Elder, commander of 8th Air Force, previously told *Air Force Magazine* that his estimate was 25 percent.)

Even as B-52 and B-2 bomber crews regularly prepared for extended Air and Space Expeditionary Force deployments to Guam, there was no comparable focus on possible nuclear missions.

That may soon change, as the Air Force is leaning toward adding a squadron of B-52s at Minot so that the service has enough BUFFs and crews to keep a squadron assigned to a "nuclear AEF" at all times. The designated squadron would spend six months focusing single-mindedly on the nuclear mission, just as other bomber units dedicate themselves to the Pacific mission.

"The issue today is not the use of strategic nuclear forces in non-nuclear contingencies. The issue is the balance and the attitude," concluded the DSB report.

The Air Force's own review of the Minot-Barksdale incident, made public in February, concurred with the DSB that over the past 17 years, service focus on the nuclear mission has diminished, particularly in flying units.

The review's other four general conclusions were:

- Nuclear surety in the Air Force is sound, but needs strengthening.



Retired USAF Gen. Larry Welch testifies before Congress in February at a hearing on the Air Force and nuclear security. Welch is a former head of Strategic Air Command as well as USAF Chief of Staff.

- The Air Force nuclear enterprise works, despite being fragmented.

- Declining Air Force nuclear experience has led to waning expertise.

- Air Force nuclear surety inspection programs need standardization.

“There are opportunities for improvement in the Air Force’s nuclear enterprise,” said Lt. Gen. Daniel J. Darnell, Air Force deputy chief of staff for operations, at a February Senate hearing.

Recommendations

The Blue Ribbon Review was headed by Maj. Gen. Polly A. Peyer, head of resource integration on the Air Staff. A team of 30 airmen with a mix of skills visited 29 locations and interviewed 822 people to help develop its list of recommendations.

The Air Force’s internal review recommended a host of changes to the way the service manages its nuclear enterprise. For starters, it urges the Air Force to bolster the experience level of nuclear personnel by developing a formal career development path for everyone—officers to civilians—involved in the nuclear enterprise.

It recommends focused, nuclear-related leadership training, such as the new Nuclear Weapons Center course, for airmen who are going to assume nuclear command or supervisory roles.

The review also proposes restructuring the Headquarters Air Force operations staff at the Pentagon to create a directorate-level office focused only on nuclear matters.

To reinvigorate the field, the Air Force

should develop and field advanced technology to bolster nuclear surety and security, says the report. It should roll responsibilities for conducting nuclear surety inspections into a single NSI team—and conduct the inspections on a limited- or no-notice basis. In February, Sen. Bill Nelson (D-Fla.) noted that Minot had passed all its previous inspections, and so “inspections don’t provide an accurate picture of the situation.”

At that hearing, Welch concurred, adding that “over time, the scope [of inspections] has been more and more limited, to the point where they really don’t demonstrate operational readiness.”

The Air Force should conduct a risk assessment of the trade-offs involved in balancing conventional and nuclear missions—and adjust priorities as appropriate.

USAF should review the various nuclear-related training courses now offered by various commands, and decide whether they should stay where they are, or be offered to everyone involved in the nuclear enterprise.

The Blue Ribbon Review also recommends that the Air Force draw up a comprehensive list of all nuclear-related service billets, and ensure they are given the highest priority when assigning experienced airmen.

The BRR said Air Force instructions on

nuclear-related operations, maintenance, and security should be reviewed for clarity, to reduce chances of an inadvertent mistake. USAF took action on this point when it thoroughly updated Air Force Instruction 21-204, “Nuclear Weapons Maintenance Procedures,” to prohibit, among other things, the commingling of nuclear and conventional weapons in the same storage structure.

All told, the various official reviews conducted in the wake of last year’s unauthorized nuclear movement have produced roughly 128 specific recommendations for change. Of those, all but a handful are Air Force-specific, noted Webber, the assistant operations director, in March.

Officials say that 41 of the changes have already been implemented and most of the remainder are in progress.

For example, responsibility for B-52 operations, training, and maintenance has been handed back to 8th Air Force.

The Air Force is raising the grade of nuclear supervisory personnel, as urged. While it will take time to rebuild rank-and-file nuclear expertise in the now-depleted nuclear career fields, changes in oversight at the top are easier to implement. A two-star general will oversee nuclear plans, operations, and requirements—with the nuclear mission his sole duty.

To that end, USAF has nominated Brig. Gen. C. Donald Alston for promotion to major general and in February assigned him as director of nuclear operations, plans, and requirements on the Air Staff. Alston’s former portfolio included broader space issues.

On the technical side, a one-star general, instead of a colonel, now runs the Nuclear Weapons Center and oversees nuclear weapon-related work. Brig. Gen. Everett H. Thomas became commander of the Nuclear Weapons Center at Kirtland AFB, N.M., in April. The NWC should give the Air Force “cradle-to-grave responsibilities for Air Force nuclear weapons in one single activity,” said Webber.

While the Minot-Barksdale incident was extremely serious, the nuclear weapons never left Air Force custody and the entire incident may serve to strengthen a segment of the Air Force that had slowly but surely fallen in relative priority. That was clearly an unacceptable situation, given the enormous strategic importance and destructive power of nuclear weapons. ■

Peter Grier, a Washington editor for the Christian Science Monitor, is a longtime defense correspondent and a contributing editor to Air Force Magazine. His most recent article, “The Military Meets Madison Avenue,” appeared in the November 2007 issue.

Hail and F



arewell

At Columbus AFB, Miss., the Tweet called it a career, leaving the mission to other trainers.

Photography by Greg L. Davis



Airmen of the 14th Flying Training Wing, Columbus AFB, Miss., fly their four types of training aircraft in a farewell formation. The venerable T-37 Tweet (second from bottom) was retired from Columbus in April after a 39-year career of training USAF and allied pilots there. The base retains the ability to train pilots in either the tanker/transport or fighter/bomber tracks, aboard (from top) the T-1A Jayhawk, T-38C Talon and T-6A Texan II (bottom).

AIR FORCE flying training once involved just two airplanes: the snub-nosed T-37 for initial, subsonic instruction, followed by the sleek T-38 for advanced and supersonic work. Today, pilot training is specialized, both to reduce costs and deliver pilots with more specific skills to waiting squadrons.

Student pilot instruction at Columbus is conducted by the 37th and 41st Flying Training Squadrons, now converted from the T-37 to the T-6A Texan II; the 48th FTS, flying the T-1A Jayhawk; and the 49th and 50th FTS, flying the T-38C.

1|1 Capt. Matt Griffin, a 41st FTS instructor, offers critiques as a student performs a hard turn while maintaining formation.



12| The T-6A Texan II is the Air Force's newest trainer. The tandem-seat turbo-prop, based on the Swiss Pilatus PC-9, presents student pilots with a modern cockpit and a bubble top offering excellent visibility. The instructor keeps an eye on the student from the back seat.

13| A T-6A gleams in its patriotic red, white, and blue markings. Built by Raytheon, the Texan is maintained by contractors.

14| One of two T-6s at Columbus wearing an experimental black and gray paint scheme. This particular bird bears markings for the commander of the 14th Operations Group.





111 and 121 The 14th FW's types fly together. The last T-37 training hop at Columbus was flown March 31.

131 Two Texans reveal the white-on-blue paint scheme, meant to enhance visibility while reducing maintenance.



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141 An AT-38C of the 49th awaits a sortie. Columbus absorbed Air Education and Training Command assets from Moody AFB, Ga., under base realignment, and picked up AT-38s like this one in the bargain.

151 A four-ship of T-37s flies a last formation out of Columbus. The type will continue to serve at the Sheppard AFB, Tex., Euro-NATO program for a few more months. Thereafter, the Tweets will all go to the Davis-Monthan Air Force Base "boneyard" in Arizona. T-37s and variants are still flying with allied countries, and parts are still in demand.



111 The T-37 tail #68-8068 flew the last T-37 sortie at Columbus. It was carefully chosen: One of the first T-37s delivered to the base, it arrived fresh from Cessna's Wichita, Kan., factory in 1969. Upon retirement, it had logged 10,531 sorties and 16,637.6 total flight hours.

121 A T-37 and its successor, the T-6. Despite having one less engine than the Tweet, the Texan can fly faster and perform more aggressive aerobatics.

131 A three-ship of T-37s holds a solid formation—one of the key skills military pilots must master. "Tweet" is a contraction of "Tweety Bird," an unofficial moniker bestowed early in the type's service life because of the T-37's distinctive engine whine.



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141 and 151 A Texan prepares to taxi, and at left, turns onto final approach.



111 A T-6 in a banking dive.



121 A Tweet and Texan fly formation. Although outclassed by the T-6 in most regards, the T-37 allowed engine-out training and side-by-side seating, giving instructors a close-up view of what their students were doing.

131 41st FTS members call themselves the "Flying Buzzsaws." Columbus aircraft wear the CB tailcode.



141 An instructor and student in a T-37 clear for personnel before releasing brakes and taxiing.

151 A sparkling T-6 in a sparkling sky. Once at altitude, pilots trade Columbus' haze and humidity for usually good flying weather.

The Texan was selected as the joint Air Force-Navy trainer in part because it offers jet aircraft-like performance at the cost of a turboprop. The joint acquisition allowed the use of common aircraft, parts, simulators, and training materials, saving significantly versus the cost to buy two different aircraft.

11 Two Tweets practice formation flight. The view is from the instructor's seat. Although still serviceable, the T-37 traded out because it lacks modern navigational aids and displays, and because parts are getting harder to come by.

12 The lineup of trainers. The T-1 gives pilots bound for "heavies" experience in a side-by-side arrangement with modern "glass cockpit" displays, similar to what they'll encounter in the operational fleet.



13 A T-6 and a T-37 break away for the camera. The trial gray camouflage looks more "operational" and will save on paint, but doesn't offer the visibility so often useful when training novice aviators.

14 A T-6 in a 90-degree turn. The Texan II is named after the North American T-6 Texan trainer of the World War II era. Like the modern trainer, it also served with the Navy, as the "SNJ." Many are still flying.





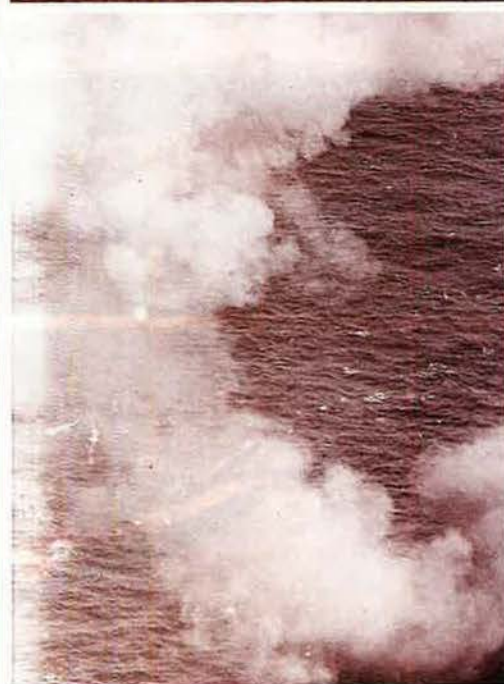
111 First Lt. Dan Flaherty walks toward a waiting crew bus after a T-6 sortie. He is an instructor with the 41st FTS.

121 A T-6 retracts its gear after a touch-and-go at Columbus. The flying syllabus centers on basic skills such as takeoffs and landings, emergency procedures, traffic pattern procedures, and use of navigational aids. As students progress, they add aerobatics, cross-country trips, night flying, formation, and advanced navigation.



131 Two Tweets break away for a beauty shot. Some of the retired T-37s doubtless will become "gate guards" at flying bases throughout the South.

141 Capt. Joseph Robert Howard of the 41st FTS scans for traffic while flying a T-6 sortie. The T-6s are expected to serve another 25 to 35 years. ■



Billy Mitchell and the Battleships

Twenty-two minutes after the first bomb fell, *Ostfriesland* rolled over and sank to the bottom.

Battleships—large, heavily armored warships with large-caliber guns—emerged in their modern form in the 1890s and became symbols of national power in the opening decades of the 20th century.

They were known generically as “dreadnoughts,” after HMS *Dreadnought*, which entered service with the British Navy in 1906. *Dreadnought* had 10 12-inch guns in its main battery and 27 lesser guns. It was the first major warship powered by turbines, making

it the fastest battleship in the world. *Dreadnought* was far ahead of anything else afloat and it set off an arms race among the world’s navies.

However, HMS *Dreadnought* was soon surpassed in capability by newer battleships such as USS *Arizona*, com-

By John T. Correll



Clockwise from top left: Mitchell in front of a Vought VE-7 Bluebird, 1920; Ostfriesland just before the bombing; and Ostfriesland under "attack."

missioned in 1916. *Arizona* was almost twice as large as *Dreadnought* and had more and bigger guns.

The only major clash of battleship fleets in history came at the Battle of Jutland in 1916, when the Royal Navy and the German Imperial Navy battered each other off the coast of Denmark. Among the German battleships engaged at Jutland was SMS *Ostfriesland*.

When World War I ended in 1918, the United States had 39 battleships. Some of

them were obsolete, having been brought out of mothballs for the war and soon to be retired again, but most were still battleworthy. Reductions to US forces began within hours of the Armistice, but Congress approved a naval expansion of 10 additional battleships.

In the interwar period, US strategy put great faith in sea power. The Navy was the nation's first line of defense, and the battleship was the backbone of the Navy. This arrangement was about to be challenged severely by Army Air Service Brig. Gen. Billy Mitchell, who was on his way home from the war.

Billy Mitchell had gained fame as US air combat commander in France. He led nearly 1,500 American and allied aircraft in the St. Mihiel offensive in 1918, which made him history's first joint force air component commander.

He was already a celebrity. Newspapers followed what he said and did. He was awarded the Croix de Guerre by the French. In England, Mitchell had an audience with King George V, and he took the Prince of Wales up for an airplane ride.

Mitchell believed that the world stood on the threshold of an "aeronau-

tical era" and that military airpower should be independent of ground and sea forces. He was inspired by the example of the Royal Air Force, established in 1918 as a separate service, combining the air arms of the army and navy.

The irrepressible Mitchell constantly cast aspersions at his superiors, whose enthusiasm for airpower (and for Mitchell) was strictly limited. En route home, Mitchell told his fellow passengers on the Cunard liner *Aquitania* that "the General Staff knows as much about the air as a hog does about skating." His comment was reported in the newspapers, of course.

Speaking Out

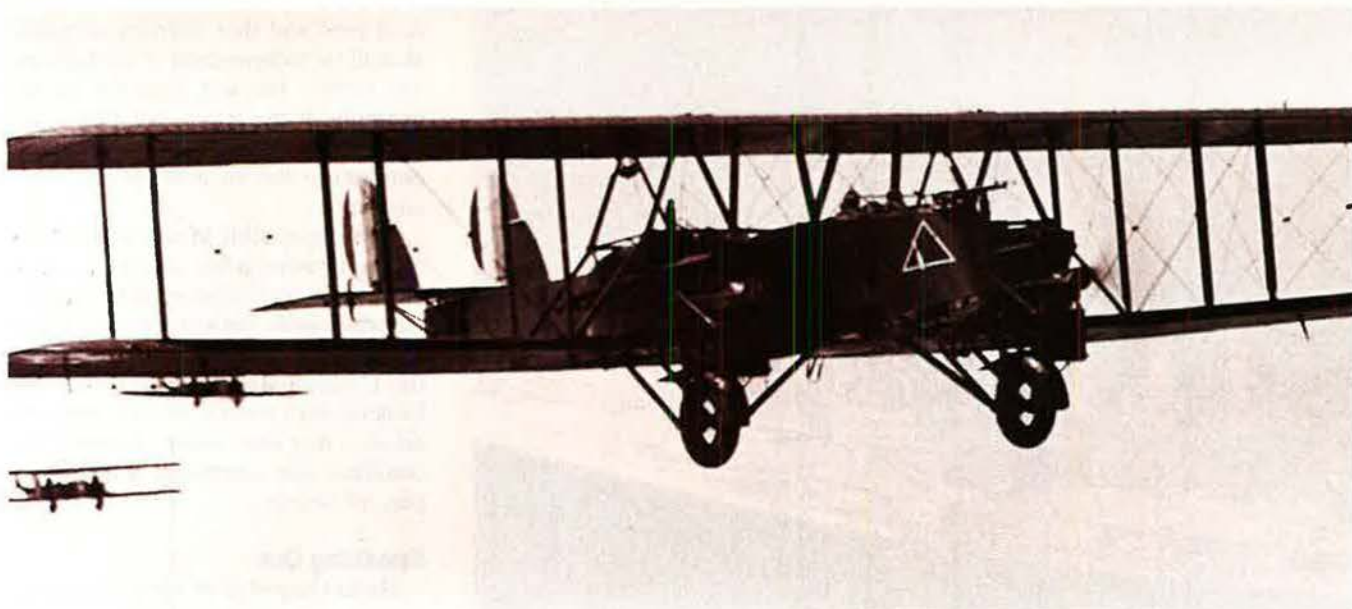
He had hoped to be Army director of military aeronautics, but that position was eliminated in a postwar reorganization and Maj. Gen. Charles T. Menoher had been chosen as Director of the Air Service in January 1919. Menoher was an artillery officer who commanded the Rainbow Division in France during World War I. His West Point classmate, Gen. John J. Pershing, made sure Menoher would keep his wartime rank and arranged for him to head the Air Service, even though Menoher had never been up in an airplane. Mitchell fell back to the grade of colonel as chief of training and operations but regained his star when he became assistant to Menoher, whose position was upgraded to Chief of Air Service.

Menoher was a good Army officer, but he knew nothing about airpower and he could not control Billy Mitchell. He supported Pershing's view that airpower must be subordinate to infantry.

It was not in Mitchell's makeup or temperament to be deferential or to support policies he disagreed with. He worked around Menoher from the start, spoke out publicly as he saw fit, and behaved as if he were the Chief of Air Service. Menoher, who could not match Mitchell in popularity or support in Congress, gritted his teeth.

In Mitchell's opinion, "changes in military systems come about only through the pressure of public opinion or disaster in war." Public opinion, responding to the wartime bombing of London by German zeppelins and airplanes, had been responsible for the creation of the Air Ministry in Britain, and Mitchell believed that public opinion would carry the day in the United States.

Mitchell's belief in airpower was broad-based, and strategic bombard-



Mitchell chose the new twin-engine Martin MB-2 biplane, shown here in formation, for his historic demonstration.

ment was particularly important. However, the target for his most famous challenge would be the battleship, and the issue nominally at question would be coastal defense.

It had always been the Navy's job to meet threats approaching the United States from the sea. Army responsibility for defense of the nation ended at the water's edge. In the 1920s, coastal defense was a much-desired mission because a large share of the shrinking defense budget went with it.

Mitchell argued that the Air Service should take over. Airplanes could intercept and stop the invaders far from shore and do it faster and at lower cost than the Navy could. To prove his point, he needed to sink a battleship and as early as the summer of 1919, he began thinking about how to do it.

He also believed that airplanes launched by catapults from capital ships would be useful in coastal defense and proposed that the Air Service acquire two aircraft carriers. This was something of an embarrassment to the Navy, which in 1918, had postponed the construction of its first carrier.

Some Navy officers believed in airpower, but Adm. William S. Benson, the Chief of Naval Operations, was not among them. He said that "I cannot conceive of any use that the fleet will ever have for aircraft," and that "the Navy doesn't need airplanes. Aviation is just a lot of noise."

In August 1919, Benson disbanded the Navy Aviation Division and redistributed "aviation activities." He did

not inform Assistant Secretary of the Navy Franklin D. Roosevelt, who denied before Congress that the division had been disbanded. He was forced to recant when Billy Mitchell produced a copy of Benson's directive.

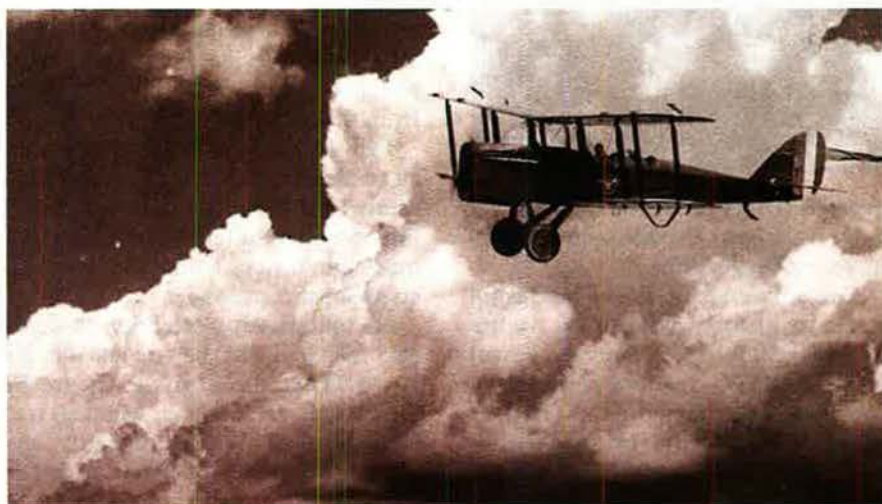
The Air Will Prevail

Mitchell turned up the heat with a statement to the *New York Herald* in December 1919. "The Air Service should be organized as of co-ordinate importance to the Army itself, and not only of equal but of greater importance than the naval organization," he said. "The air will prevail over the water in a very short space of time." In 1920, Mitchell told Congress that the Air Service could sink any battleship in existence or any that could be built.

He called for a demonstration in which airplanes would bomb ships.

The Navy, hoping to pre-empt Billy Mitchell, conducted its own tests in late 1920. The target was USS *Indiana*, a surplus battleship that had seen service in the Spanish-American War but downgraded to "coast battleship" status so the name could be assigned to a new ship. The old ship sank after "repeated hits," but nothing was announced and nothing appeared in the US newspapers.

On Dec. 11, two dramatic pictures showing massive bomb damage from the tests were published by *London Illustrated News*. Then seven more photos appeared in *The New York Tribune*. The press and Congress clamored for more information. Secretary of the Navy Josephus Daniels



Mitchell, flying his DH-4 toward its rendezvous with Ostfriesland, personally directed the bombing run.



Left: Maj. Gen. Charles T. Menoher, Chief of Air Service. Bottom: Josephus Daniels, Secretary of the Navy, an arch-foe of Mitchell's.

made public a report from Capt. W. D. Leahy, director of naval gunnery for the tests, which said, "The entire experiment pointed to the improbability of a modern battleship being either destroyed or completely put out of action by aerial bombs."

Shortly thereafter, more details emerged to the detriment of the Navy's claims. No live bombs had been dropped, only dummy bombs loaded with sand to determine location of hits. Explosives were then set off at the points where sand bombs hit. The Navy assigned an accuracy score of 11 percent to the bombs, which limited the explosions set off. Further evidence pointed to accuracy of about 40 percent.

"We can either destroy or sink any ship in existence today," Mitchell told the House Appropriations Committee in January. "All we want to do is to have you gentlemen watch us attack a battleship. ... Give us the warships to attack, and come watch it."

Daniels, ending his tour as Secretary of the Navy, blustered that "I would be glad to stand bareheaded on the deck or at the wheel of any battleship while Mitchell tried to take a crack at me from the air. If he ever tries to aim bombs on the decks of naval vessels, he will be blown to atoms long before he gets close enough to drop salt on the tail of the Navy."

Within days, two resolutions were introduced in Congress urging the Navy to provide target ships for the Army. Before the proposals came to a vote, the



Navy agreed to bombing experiments on naval vessels, "carried on jointly with the Army."

Questions and Answers

In Mitchell's view, the purpose of the tests was to determine whether a battleship could be sunk by bombing. That was also the question that Congress wanted answered. However, the Navy took the position that the purpose was to determine how much bomb damage ships could withstand.

The rules and conditions for the tests were set by the Navy, which made it as difficult as possible for Mitchell to

succeed. The ships had to be sunk in deep water, 100 fathoms or more. The Navy rejected two locations with sufficient depth close to shore and chose a target area some 50 miles out to sea from the mouth of the Chesapeake Bay. Langley Field, the base for Mitchell's bombers, was 25 miles farther west. That made it a two-hour round-trip for the bombers, limiting the time they could remain in the target area.

The airplanes were not allowed to use aerial torpedoes. The Air Service would be allowed only two hits with its heaviest bombs. An inspection party would go aboard the target ships after each hit to carefully survey the damage.

Mitchell formed the First Provisional Air Brigade at Langley and assembled his aircraft and crews there for the mission. The biggest available bomb weighed 1,100 pounds, which was not sufficient to sink a battleship. Capt. C. H. M. Roberts of the aircraft

armament division produced a special batch of 2,000-pound bombs in time for the tests.

The big bombs would be delivered by two kinds of airplanes. A number of Handley Page O/400s, variants of a British World War I bomber, were in the fleet and capable of carrying large loads. The best airplane, however, would be the new twin-engine Martin MB-2 biplane, then coming off the production lines. It had a cruise range of 558 miles and could carry a 3,000-pound load.

Mitchell had decided that his pilots would not try for direct hits on the



**Mitchell and Pershing
in France during World
War I.**

ships. The most effective technique would be a near miss, with the bombs exploding underwater and creating a water hammer to inflict maximum damage on the hull of the ships.

The Harding Administration had taken office and the new Secretary of War was John W. Weeks. The Navy complained to him about Mitchell's public statements and criticism. Menoher was increasingly exasperated. A week before the tests were to begin, he asked that Mitchell be dismissed.

Opening Shots

Weeks was initially inclined to agree. The *New York World* quoted him as saying Mitchell "had greatly annoyed the Navy," and the *New York Sun* reported that Mitchell would probably be removed. There was strong pro-Mitchell reaction in the press, and Weeks, taking note of Mitchell's popularity with the public and Congress, backed down and gave Mitchell a reprimand in private instead. Menoher went back to gritting his teeth.

The tests opened the morning of June 21, with press and observers present on the naval transport USS *Henderson*. The air operations would be directed by Navy Capt. Alfred W. Johnson, commander of the air force of the Atlantic Fleet, who was not a pilot.

The targets were to be an aged and surplus US battleship and four former German Navy vessels, including the

battleship *Ostfriesland*, obtained in the peace settlement after World War I and scheduled for demolition. The attacks on the first four ships were strictly preliminary events.

- June 21. Navy airmen sank the ex-German submarine U-117 with 12 bombs.

- June 29. Navy airplanes attacked the old US battleship *Iowa* with dummy bombs. Of 80 bombs dropped, only two were scored as direct hits. Battleship advocates took comfort from this round of the testing.

- July 13. The Army airmen made their first appearance. The Martin bombers (limited to 300-pound bombs by the rules) sank the former German destroyer G-102 in 19 minutes.

- July 18. Navy and Army airplanes took turns attacking the former German light cruiser *Frankfurt*. No bomb heavier than 600 pounds was allowed. There were frequent intermissions as inspectors dragged out their on-board inspections. The Air Service was finally allowed to strike and sank the vessel with 600-pound bombs. The Navy, which had figured on using gunfire from ships to finish off *Frankfurt*, was surprised.

The main event was *Ostfriesland*, which had taken 18 hits from the big guns of British battleships at Jutland, struck a mine on the way home, and was ready again for action two months later. *Ostfriesland* had been built to be

as near unsinkable as possible. It had four skins for protection against mines and torpedoes. The ship was divided into separate watertight compartments so it could not be sunk by any single hole in the hull.

The New York Times, reporting from the assembly area at Old Point Comfort the night before the first attack on *Ostfriesland* said, "Naval officers are insisting that the fliers will never sink the *Ostfriesland* at all."

Bombardment of *Ostfriesland* was planned in several phases, spread out over two days, July 20 and 21. A large number of Navy ships had gathered in the target area to watch, and about 300 VIP observers were present aboard the transport ship *Henderson*. Among them were Pershing (who had become Chief of Staff on July 1), Secretary of War Weeks, Secretary of the Navy Edwin Denby, 18 members of Congress, 50 news reporters, and various admirals and generals.

Flying overhead was Billy Mitchell, who accompanied all of the bombing missions in his personal airplane, *Osprey*, a two-seat de Havilland DH-4B. A long blue pennant streamed from the tail for identification. Mitchell was accompanied by Capt. St. Clair Streett, flying in the back seat as navigator.

Navy and Marine Corps airplanes went at *Ostfriesland* first, spending an hour and 17 minutes dropping small

bombs and doing minimal damage. As the Air Service airplanes approached, they were ordered not to attack since observers were going on board. When Mitchell complained about the delay, Johnson said it was the airmen's fault for taking off early. Indeed they had taken off early—by nine minutes. Johnson and the inspectors kept them circling for 47 minutes, then ended the tests for the day after the Air Service had dropped only half of its bombs.

The battleship was still afloat and the Navy gloated. Clinton Gilbert of *The Washington Post* reported, "On the good ship *Henderson*, Secretary Denby told us how little impression the bombs had made. High naval officers sniggered cheerfully." Sen. Wesley L. Jones of Washington state said that a Navy officer told him "it was a thousand to one that the ship would not be sunk by the bombing."

On the morning of the second day, Lt. Clayton L. Bissell led a flight of Martins that attacked with 1,000-pound bombs. One of the bombs was a direct hit, and the Navy stopped the test for inspection. The Martins returned to base with nine bombs remaining. On the control ship, Johnson, supposedly an objective director of the testing, let his emotions show. "By Jove," he said, "we're not going to sink this ship!"

The last shot at *Ostfriesland* was set for midday July 21. Capt. W. R. Lawson would lead it, a flight of six Martins and two Handley Pages, each carrying a 2,000-pound bomb. As the pilots stood by waiting to take off, Johnson called with a change in rules. The bombers could bring no more than three of their biggest bombs to the target area. The written agreement had been that the Air Service would be allowed two direct hits with their biggest bombs.

Mitchell, disgusted, ordered all eight aircraft to proceed. He fired off a message to the Navy, saying that his bombers were carrying 2,000-pounders and would continue attacking "until we have secured [the] two direct hits [the] Army is authorized to make." He got no reply.

One of the Handley Pages had to drop out of the formation, but the other seven airplanes went on to the target. They had no intention of making two direct hits and stopping the test. Their orders were to aim for near misses to create water hammer shock waves against the hull.

Twenty-Two Minutes and Gone

The first bomb fell at 12:18 p.m. It was a near miss, as planned. The other airplanes swept in at spaced intervals and delivered their ordnance. "We could see her rise eight or 10 feet between the terrific blows from under water," Mitchell said. The sixth bomb, at 12:31, sealed *Ostfriesland's* doom. Twenty-two minutes after the first bomb fell, the old battleship sank at 12:40. The seventh airplane, a Handley Page, dropped its unneeded bomb as a final salute at the point where the battleship had gone down.

Mitchell followed the bombers back to Langley, jubilantly wagging the wings of *Osprey* as he flew by *Henderson*.

The Navy officers were shocked, but soon recovered their voices. The Navy claimed for years afterward that Mitchell had violated the rules and destroyed the value of the tests for determining the effects of various kinds of bombs on ships.

Johnson, in his reminiscences for the Naval Historical Center in 1959 when he was a retired vice admiral, said that Mitchell and his fliers "looked upon

bombing largely as one would a sporting event." (During the course of his career, Johnson had gone on to command the battleship *Colorado*.)

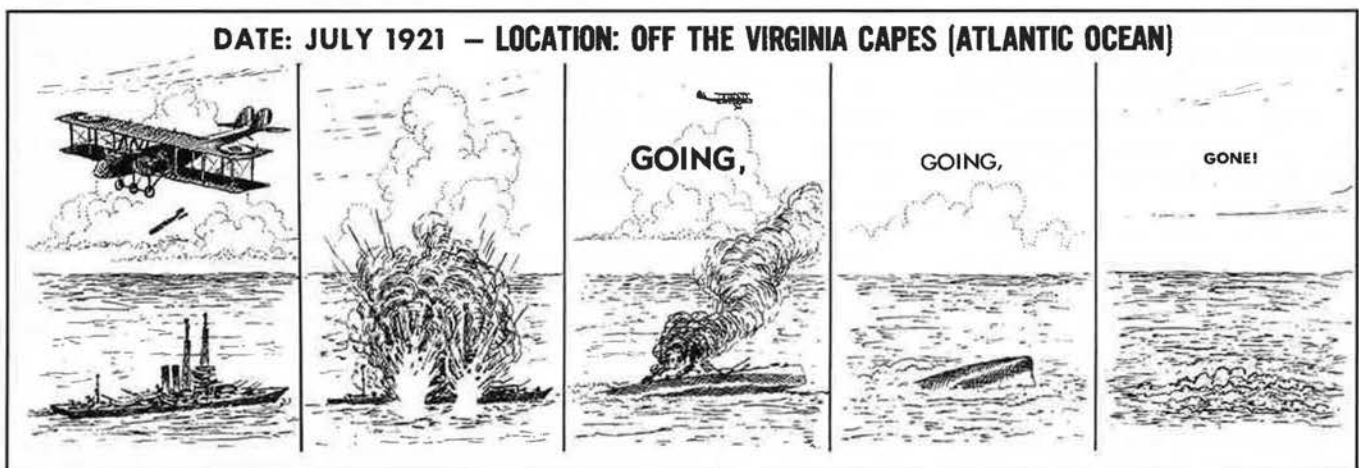
Mitchell, testifying to Congress, said, "In my opinion, the Navy actually tried to prevent our sinking the *Ostfriesland*." Writing years later, Mitchell said, "I believe to this day that the officer controlling the air attacks had orders from the admiral not to let us sink the *Ostfriesland*."

To the press and the public, the outcome was easy enough to understand. Billy Mitchell had sunk a battleship, just as he said he could. However, both the Army and the Navy sought to minimize Mitchell's success.

"The battleship is still the backbone of the fleet and the bulwark of the nation's sea defense, and will so remain so long as the safe navigation of the sea for purposes of trade or transportation is vital to success in war," said the Joint Army and Navy Board report on bombing tests, made public Aug. 19 and reported in *The New York Times*. "The airplane, like the submarine, destroyer, and mine has added to the dangers to which battleships are exposed, but has not made the battleship obsolete."

General Pershing was the senior member of the board and his signature was the only one on the report. It was a deliberate expression of solidarity with the Navy and intended to diminish the significance of the tests.

Mitchell made his own report to Menoher, and it contradicted the board report signed by Pershing. Menoher filed it away, but it was soon in the hands of the press. "Had the Army Air Service been permitted to attack as it desired, none of the seacraft attacked would have lasted 10 minutes in a serviceable condition," Mitchell said



A cartoon depicting the sinking of *Ostfriesland*.



A group of Mitchell's airmen after the sinking of Ostfriesland. They had earned the right to call themselves "battleship bombers."

in a part of the report quoted by *The New York Times* on Sept. 14.

It was too much for good soldier Menoher. He said that either Mitchell went or he did. Secretary Weeks, again consulting the political omens, decided that Menoher would be the one to go. Pershing sent for Mason M. Patrick, a strong officer who had gotten Mitchell under control in France. He promoted Patrick to major general and made him Chief of the Air Service.

Patrick was made of sterner stuff than Menoher. When Mitchell threatened to resign if he didn't get his way, Patrick invited him to put in his papers and escorted him to office where he could do it. Mitchell backed down and did not challenge Patrick again. Patrick, who learned to fly and won his wings as a junior pilot at age 60, gained both the respect and the affection of the force he led.

The Navy had allocated another vessel, the pre-Dreadnought battleship *Alabama*, to the Army for bombing tests. Mitchell's bombers sank it in the Chesapeake Bay Sept. 27, 1921. After that demonstration, the First Provisional Air Brigade was disbanded.

In another series of tests in 1923, Mitchell and the Air Service sank the surplus battleship *Virginia* and severely damaged the battleship *New Jersey* in operations off Cape Hatteras.

Pershing again supported the Navy against Mitchell. His statement, which he allowed the Navy to edit, was published by *The New York Times*. "These tests against obsolete battleships will not, I hope, be

considered as conclusive evidence that similar bombs would sink modern types of battleships," he said.

On to the Carriers

Navy aviators joined their battleship comrades in heaping invective on Billy Mitchell, but they were ready enough to take advantage of what he had achieved. The Bureau of Aeronautics was created Aug. 10, 1921, the first new bureau in the Navy since the Civil War.

In the Washington Treaty for the Limitation of Naval Armaments in 1921, the United States and other nations agreed to ceilings on capital ships. Construction of battleships was curtailed, and the US Navy began its transition from battleships to carriers.

In 1922, the Navy commissioned its first carrier, USS *Langley*, converted from a collier, USS *Jupiter*. Two partially completed battle cruisers, *Lexington* and *Saratoga*, were converted to aircraft carriers, commissioned in 1927.

In 1924, Mitchell predicted that the next war would begin with an early morning air attack on Pearl Harbor by the Japanese. The Army War Plans Division dismissed Mitchell's forecast as "exaggerated" and "unsound."

Domination of the Navy by "battleship admirals" continued, and they decreed that the primary task for carriers was protection of battleships. In 1925, the

General Board of the Navy declared, "The battleship is the element of ultimate force in the fleet, and all other elements are contributory to the fulfillment of its function as the final arbiter in sea warfare."

Mitchell's detractors took great satisfaction when Mitchell was court-martialed in 1925 for conduct prejudicial to good order and discipline as a result of his virulent public criticism of Army and Navy leaders. Mitchell was found guilty and subsequently resigned from the Army.

The coastal defense mission remained with the Army ground forces and the Navy through the 1920s, but in the 1930s, the Air Corps took on responsibility for coastal defense and used it to help justify long-range bombers such as the B-17.

The battleship fraternity was not quite finished with its chest thumping. The program for the Army-Navy football game on Nov. 29, 1941 included a picture of the battleship *Arizona*. "It is significant that despite the claims of air enthusiasts no battleship has yet been sunk by bombs," the caption said. The program did not say what the Navy thought had happened off the Virginia Capes in 1921.

Eight days later, Japanese aircraft bombed and sank *Arizona* at its moorings at Pearl Harbor. ■

John T. Correll was editor in chief of Air Force Magazine for 18 years and is now a contributing editor. His most recent article, "When the Draft Calls Ended," appeared in the April issue.

Major Strategic Victory

"The surge has done more than turn the situation in Iraq around—it has opened the door to a major strategic victory in the broader war on terror."—**President Bush, speech at Pentagon, March 19.**

Rockefeller's Spitball

"McCain was a fighter pilot, who dropped laser guided missiles from 35,000 feet. He was long gone when they hit. What happened when they [the missiles] get to the ground? He doesn't know. You have to care about the lives of people. McCain never gets into those issues."—**Sen. Jay Rockefeller (D-W. Va.) on Sen. John McCain (R-Ariz.), Vietnam War pilot, POW, and Presidential candidate, Charleston (W. Va.) Gazette, April 8.**

Good Question

"What do we consider to be an act of war in cyberspace?"—**Lt. Gen. Robert J. Elder Jr., commander, 8th Air Force, Association for Intelligence Officers, April 4.**

Epic Threat

"Terrorism in the 21st century is the kind of threat our country hasn't faced in a very long time. The individual safety of Americans is at risk like at no time since probably our own Civil War, and we're trying to deal with the challenge in a way that doesn't change our nation's DNA."—**Air Force Gen. Michael V. Hayden, director of the CIA, Washington Times, April 6.**

Ranked With the Worst

"As a Republican, I would never have believed that President Bush, Vice President Dick Cheney, and Secretary of Defense Donald Rumsfeld would waste so many opportunities and so much of America's reputation that they would rival Lyndon Johnson, Robert McNamara, and McGeorge Bundy for the worst wartime national security team in United States history."—**Anthony D. Cordesman, Center for Strategic and International Studies, New York Times op-ed column, March 16.**

What Divides the Atlantic

"It will become apparent soon after the change of Administrations that the

principal difference between the two sides of the Atlantic is that America is still a traditional nation-state whose people respond to calls for sacrifices on behalf of a much wider definition of the national interest than Europe's definition."—**Former Secretary of State Henry A. Kissinger, op-ed column, Washington Post, April 7.**

Casus Belli

"People will fight over oil and water, and not necessarily in that order."—**Marine Lt. Gen. James F. Amos, Baltimore Sun, March 17.**

Taking Risks at DARPA

"DARPA will take a chance on an idea with no data. We'll put up the money to go get the data and see if the idea holds."—**Anthony J. Tether, director, Defense Advanced Research Projects Agency, celebrating its 50th anniversary, Washington Post, April 7.**

Shovel on a Little More Coal

"We're going to be burning fossil fuels for a long time, and there's three times as much coal in the ground as there are oil reserves. Guess what? We're going to burn coal."—**William C. Anderson, assistant secretary of the Air Force for installations, environment, and logistics, on plans to convert domestic coal to a cleaner burning synthetic fuel, Associated Press, March 22.**

Old But Good

"Despite its age, the B-52 has the highest mission capable rate of the three heavy bombers currently in the Air Force. It is still effective in many roles and it's capable of performing missions that otherwise would go unfilled."—**Lt. Col. Grey L. Morgan, Air Combat Command B-52 program element monitor, Air Force Print News, March 31.**

The New Insurgents

"There are sanctuaries just out of reach of the security forces and those sanctuaries breed radicalized people, so you would expect that no matter what happens on the battlefield there will be a repopulation of the enemy. Can they replace leaders who learnt their trade fighting against the Soviets, and who were very good at it? The younger leaders are a lot more radicalized, but

maybe not as effective on the battlefield. These types will try asymmetrical tactics—we are likely to see more IEDs [improvised explosive devices] and more suicide bombers."—**US Army Gen. Dan K. McNeill, commander of NATO force in Afghanistan, London Times, April 8.**

Adversary Is "Family"

"We are dealing with our own people. We will deal with them very sensibly. And when you have a problem in your own family, you don't kill your own family. You sit and talk. After all, Britain also got the solution of the problem of Ireland. So what's the harm in conducting negotiations?"—**Nawaz Sharif, former Prime Minister of Pakistan and one of the leaders of the new government coalition, New York Times, March 22.**

Demand for Space Services

"We are entering an age when warfighters want more of what space has to offer. And I think demand will continuously outstrip supply for the foreseeable future."—**Secretary of the Air Force Michael W. Wynne, Reuters, April 9.**

Inevitable Reduction

"Whichever one of them becomes President on Jan. 1, 2009, they will face a military force that cannot continue to sustain 140,000 people deployed in Iraq and the 20 [thousand] odd or 25,000 people we have deployed in Afghanistan and our other deployments."—**Colin L. Powell, former Secretary of State and former Chairman of the Joint Chiefs of Staff, Associated Press, April 11.**

Asked About Don't Ask

"I would never make this a litmus test for the Joint Chiefs of Staff. ... My paramount obligation is to get the best possible people to keep America safe. But I think there's increasing recognition within the armed forces that this is a counterproductive strategy—you know, we're spending large sums of money to kick highly qualified gays or lesbians out of our military, some of whom possess specialties like Arab language capabilities that we desperately need."—**Sen. Barack Obama (D-Ill.), Democratic Presidential contender, on military's "Don't Ask-Don't Tell" policy, The Advocate, April 10.**

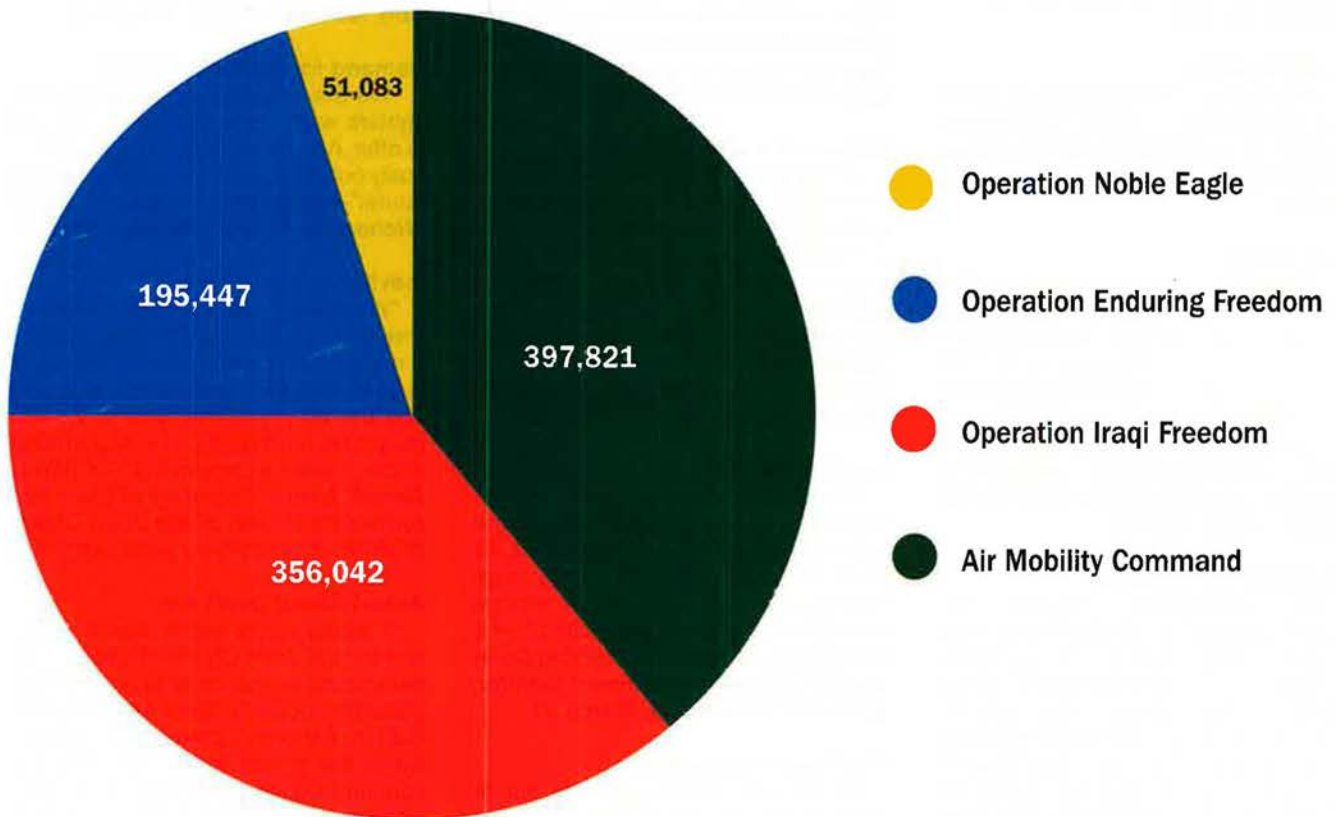
The Mega Force

The Air Force has now flown one million combat sorties in the Global War on Terror. The total comprises flights USAF has made since Sept. 11, 2001 in or around Afghanistan, Iraq, and the US, as well as mobility flights supporting operations in those nations. It passed the mega milestone on April 19 after 2,413 days of continuous air operations around the world. Mission types included bomber, fighter,

airlift, air refueling, aeromedical evacuation, reconnaissance, surveillance, and special operations. Since operations commenced, the Air Force has averaged more than 400 sorties per day (not including regular operations not directly related to the war). USAF said, "These missions represent the most deliberate, disciplined, and precise air campaign in history."

One Million Sorties

USAF OPERATIONAL MISSIONS FLOWN SINCE 9/11



Source: USAF.

Gates' "Maxwell Speech"

The Pentagon chief gives the services an earful.

Robert M. Gates on Dec. 18, 2006 was sworn in as the 22nd Secretary of Defense, having served earlier (1991-93) as CIA director under President George H. W. Bush. Gates on April 21 addressed students of the Air War College, Maxwell AFB, Ala. His controversial remarks, excerpted here, touched on a broad range of topics.

War, Change, and USAF

"The Air Force has been in the process of constant change for decades, with a steady drumbeat of expeditionary air operations. Perhaps uniquely among the services, the Air Force has been at war, more or less constantly, for 17 years, since the launch of Desert Storm. Since Sept. 11th, the Air Force has flown nearly a million missions in the War on Terror, with an average of 300 sorties per day ranging from lift to medevac to close air support. The contributions of airmen have made a real difference for those fighting on the ground. Survival rates for those injured are up to 90 percent, in part due to aeromedical evacuation. During Desert Storm, it took about 10 days to medevac wounded to the US. Now it takes about three days. As Secretary Rice mentioned a week ago from this stage, the Air Force is doing some missions it would never have imagined in 2001—such as Air Force officers leading Provincial Reconstruction Teams. In addition, there are about 14,200 airmen performing 'in-lieu-of tasks' on the ground, where an Air Force civil engineer might replace an Army heavy construction engineer. Then there is the example of Air Force TSgt. Jeremy Sudlow of Pandora, Ohio, who logged more than 430,000 miles on Iraq's roads as the convoy commander of a medium truck detachment. And in one month alone, C-17s helped take nearly 5,000 trucks off dangerous roads in Iraq. Some of you have seen continuous operations in a combat theater since the day you donned a blue uniform."

"Appropriate" and "Responsible"

"As you well know, these activities have taken a toll on the Air Force's Cold

War-era equipment. For example, the average age of a tanker is 47—15 years older than the average age of pilots flying them. I believe the Air Force procurement program that the President has requested, and I have supported, is an appropriate and responsible one that will allow the service to reset from current operations and prepare for future challenges."

Requiem for a Maverick

"The challenge I pose to you today is to become a forward-thinking officer who helps the Air Force adapt to a constantly changing strategic environment characterized by persistent conflict. Let me illustrate using a historical exemplar: the late Air Force Col. John Boyd. As a 30-year-old captain, he rewrote the manual for air-to-air combat. Boyd and the reformers he inspired would later go on to design and advocate for the F-16 and the A-10. After retiring, he would develop the principles of maneuver warfare that were credited by a former Marine Corps Commandant and a Secretary of Defense for the lightning victory of the first Gulf War. Boyd's contributions still resonate today. Many of you have studied the concept he developed called the 'OODA' Loop—and I understand there is an 'OODA Loop' street here at Maxwell, near the B-52. In accomplishing all these things, Boyd—a brilliant, eccentric, and stubborn character—had to overcome a large measure of bureaucratic resistance and institutional hostility. He had some advice that he used to pass on to his colleagues and subordinates that is worth sharing with you. Boyd would say, and I quote: 'One day you will take a fork in the road, and you're going to have to make a decision about which direction you want to go. If you go [one] way, you can be somebody. You will have to make compromises and you will have to turn your back on your friends, but you will be a member of the club and you will get promoted and get good assignments. Or you can go [the other] way and you can do something—something for your country and for your Air Force and for yourself. ... If you decide to do something, you may

not get promoted, and you may not get good assignments, and you certainly will not be a favorite of your superiors, but you won't have to compromise yourself. ... To be somebody or to do something. In life there is often a roll call. That's when you have to make a decision. To be or to do?' For the kinds of challenges America will face, the armed forces will need principled, creative, reform-minded leaders—men and women who, as Boyd put it, want to do something, not be somebody."

Unconventional Warfare

"An unconventional era of warfare requires unconventional thinkers. This range of security challenges—from global terrorism to ethnic conflicts, from rogue nations to rising powers—cannot be overcome by traditional military means alone. Conflict will be fundamentally political in nature and will require the integration of all elements of national power. Success to a large extent will depend less on imposing one's will on the enemy or putting bombs on target, though we must never lose our will or ability to unsheathe the sword when necessary. Instead, ultimate success or failure will increasingly depend more on shaping the behavior of others: friends and adversaries, and most importantly, the people in between. This new set of realities and requirements has meant a wrenching set of changes for our military establishment that, until recently, was almost completely oriented toward winning the big battles in the big wars."

Culture Shock

"The culture of any large organization takes a long time to change. The really tough part is preserving those elements of the culture that strengthen the institution and motivate the people in it, while shedding those elements of the culture that are barriers to progress and achieving the mission. All of the services must examine their cultures critically, if we are to have the capabilities relevant and necessary to overcome the most likely threats America will face in years to come. For example, the Army that went over the berm about five

years ago was, in its basic organization and assumptions, essentially a smaller version of the [Cold War-era] force that expelled Saddam Hussein from Kuwait a decade prior. As I've told Army gatherings, the lessons learned and capabilities built from the Iraq and Afghanistan campaigns need to be institutionalized into the service's core doctrine, funding priorities, and personnel policies. And that is taking place, though we must always guard against falling into past historical patterns where, if bureaucratic nature takes its course, these kinds of irregular capabilities tend to slide to the margins."

Airpower for "Most Likely" Wars

"The Air Force has adopted some of the lessons of its recent history. We see how deeply the expeditionary culture and mind-set have taken root. The service has adapted capabilities to today's realities and come up with some ingenious responses on the battlefield, such as small-diameter munitions that can strike the irreconcilable enemies with less chance of harming—or alienating—civilians. In an era when we are most likely to be challenged in asymmetric ways, I would ask you to think through how we can build the kinds of air capabilities most likely to be needed while continuing to offer a strategic hedge against rising powers. Protecting the 21st century's 'global commons'—in particular, space and cyberspace—has been identified and adopted as a key task. Building the capacity of partners is another. ... What the last 25 years have shown is that the threats can emerge almost anywhere in the world, but our own forces and resources will remain finite. To fill this gap, we must help our allies and partners to confront extremists and other potential sources of global instability within their borders. I ask you to think through what more we might do—through training and equipping programs, or other initiatives—to enhance the air capabilities of other nations and whether, for example, we should pursue a conceptual '100-wing air force' of allies and partners to complement the '1,000-ship navy' now being leveraged across the maritime commons."

Training and Doctrine Changes

"These new realities and missions should be reflected in our training and doctrine. The Air Force will be increasingly called on to conduct civil-military or humanitarian operations with interagency and nongovernmental partners, and deal directly with local populations. This will put a premium on foreign language and cultural expertise. As you know, Red Flag

at Nellis Air Force Base is a premier training exercise that began after the Vietnam War to improve air-to-air combat skills. Over the years, the exercise scenario has expanded to include allied nations, close air support, and other elements of modern warfare, but it has not yet addressed that gray zone between war and peace. Specifically, the exercise could include civilians from NGOs and government organizations, and be more closely integrated with land-component training such as the Army's NTC in California. Furthermore, the counterinsurgency manual issued by the Army and Marines is over 200 pages long—and yet only four pages are dedicated to air, space, and cyberspace. Not long ago, the Air Force published a doctrine document on irregular warfare, but, as future leaders of airpower, you should consider whether there is more the service might do to articulate and codify the unique role of airpower in stability operations."

The UAV Issue

"Other questions I would ask you to consider go to the heart of how the service is organized, manned, and equipped. What new priorities should drive procurement and what new criteria should drive promotions? ... In addition, we need to be thinking about how we accomplish the missions of the future—from strike to surveillance—in the most affordable and sensible way. We must heed John Boyd's advice by asking if the ways we do business make sense. UAVs offer a case in point. In the early 1990s, I was director of CIA. After 27 years of experience as an intelligence professional, I had seen many agents place themselves in harm's way to collect information in some of the world's most dangerous and inaccessible environments. I had stood by flag-draped caskets at Andrews Air Force Base [in Maryland], receiving those from CIA who had given their all serving the nation. The introduction of UAVs around this time meant far less risky and far more versatile means of gathering data, and other nations like Israel set about using them. In 1992, however, the Air Force would not co-fund, with CIA, a vehicle without a pilot."

"Like Pulling Teeth"

"Unmanned systems cost much less and offer greater loiter times than their manned counterparts, making them ideal for many of today's tasks. Today, we now have more than 5,000 UAVs, a 25-fold increase since 2001, but, in my view, we can do—and we should do—more to meet the needs of men and women fighting in

the current conflicts while their outcome may still be in doubt. My concern is that our services are still not moving aggressively in wartime to provide resources needed now on the battlefield. I've been wrestling for months to get more intelligence, surveillance, and reconnaissance assets into the theater. Because people were stuck in old ways of doing business, it's been like pulling teeth. While we've doubled this capability in recent months, it is still not good enough, and so last week, I established a Department of Defense-wide task force ... to work this problem in the weeks to come, to find more innovative and bold ways to help those whose lives are on the line. The deadlines for the task force's work are very short. All this may require rethinking long-standing service assumptions and priorities about which missions require certified pilots and which do not. For those missions that still require manned missions, we need to think hard about whether we have the right platforms—whether, for example, low-cost, low-tech alternatives exist to do basic reconnaissance and close air support in an environment where we have total command of the skies, aircraft that our partners can also afford and use."

No to "Careerism"

"This morning I have raised difficult questions with, perhaps, difficult answers. I am asking you to be part of the solution and part of the future. As up-and-coming Air Force leaders, I urge you to explore creative new ways airmen writ large can apply their skill, talent, and weaponry as the forms and patterns of this new era still settle into place. No doubt such changes will be difficult for an organization that has been so successful for six decades. The last time a US ground force was attacked from the sky was more than half a century ago, and the last Air Force jet lost to aerial combat was in Vietnam. Such success is attributable, in part, to the ways airmen have pushed technology to its outer limits. But it is also attributable to maverick thinkers like John Boyd. As you graduate from your respective courses and leave Maxwell, you too will eventually face Boyd's proverbial 'fork in the road.' You will have to choose: to be someone or to do something. For the good of the Air Force, for the good of the armed services, and for the good of our country, I urge you to reject convention and careerism and to make decisions that will carry you closer toward—rather than further from—the officer you want to be and the thinker who advances airpower strategy in meeting the complex challenges to our national security." ■

Action in Congress

By Tom Philpott, Contributing Editor

Webb's new GI Bill; Will it weaken retention?; Cuts for Tricare physicians

Webb GI Bill Gains Support ...

Active duty members, reserve component personnel, and veterans who have served on active duty since the Sept. 11, 2001 terrorist attacks would gain a far more valuable GI Bill education benefit under a bill (S 22) modified and reintroduced by Sen. James Webb (D-Va.).

The changes Webb made were enough to win the influential endorsement of his colleague from Virginia, Republican Sen. John W. Warner. The former chairman of the Senate Armed Services Committee promised "to go full bore" to win enactment before he retires next January.

Webb's Post-9/11 Veterans Educational Assistance Act still faces huge obstacles. One will be finding the money to cover the bill's estimated cost of some \$2 billion a year. Another is stiffening opposition from Defense Department officials who have dubbed Webb's plan a "retention killer."

Webb originally wanted a World War II-style GI Bill that would pay the full cost of four years of college anywhere in the country. That idea was rolled back before the bill was introduced last year. He lowered his sights again this year to attract more support.

Webb's GI Bill still would be available to any member, active or reserve, who served at least three months on active duty since the terrorist attacks. The value of the benefit would be tied to length of post-9/11 service.

The bill would require no contribution from beneficiaries; thus, the \$1,200 buy-in payment required under current Montgomery GI Bill rules would be returned to eligible veterans who paid it.

Monthly education payments would be set high enough to cover tuition at the most expensive state-run college. So the average monthly payment likely would be about \$1,900 a month versus \$1,100 under MGIB. To qualify for a full 36 months of benefits, a member would have had to serve 36 months on active duty after 9/11.

The Webb plan also includes a



Sen. James Webb (D-Va.) reintroduced a valuable GI Bill education benefit and won the support of Sen. John Warner (R-Va.).

monthly stipend to cover living expenses tied to local rents. In fact, the stipend would be set to equal the amount of Basic Allowance for Housing paid locally to a married E-5.

... But Pushback Is Strong

To win Warner's support, the revised bill has a feature to encourage expensive private colleges to make their schools more affordable to veterans. Those institutions that agree to forgo half of their tuition costs above the most expensive state school would see the government pay the remaining half. This would allow academically qualified veterans to attend some of the best schools in the country, Warner said.

Both the House and the Senate have passed budget resolutions containing provisions that give committee chairmen unspecified "reserve funds" to finance improvements in the GI Bill. But that reserve fund authority only can be exercised if the veterans' committee chairmen find ways to reduce spending on other

entitlement programs by the cost of the new GI Bill.

Sen. Daniel K. Akaka (D-Hawaii), chairman of the Senate Veterans' Affairs Committee, had earlier suggested that he shared Defense Department concerns that Webb's GI Bill could harm retention among career military members. Akaka was among the bill's 57 co-sponsors as of the end of April.

Defense officials began sounding an alarm over the Webb bill when Warner got behind it. One Pentagon official said enhancing post-service education benefits, especially with troops facing multiple deployments to Iraq and Afghanistan, could put the viability of a volunteer force at risk.

"Why would anybody stay for another deployment when they can go out on a four-year free ride, with guaranteed rent and utilities at the E-5 standard, which by long-standing DOD policy is a two-bedroom townhouse?" this official asked.

The Pentagon favors instead making MGIB benefits transferable to

spouses and children and promised Congress a proposal later in the year.

Rep. Robert C. Scott (D-Va.), who introduced in the House his own HR 2702, a companion to Webb's GI Bill, said he doesn't like the concept of encouraging service members to trade away earned education benefits to family members. It would even be "unfair," Scott said, to put members in that situation where they could be seen as selfish if they didn't transfer benefits to family members. Webb too said he opposes Montgomery GI Bill transferability.

Medicare-Tricare Doctor Fees

Service associations—including the Air Force Association—have joined with the American Medical Association to oppose scheduled cuts in Medicare payments to doctors—a move that could also have an impact on reimbursements to civilian physicians participating in Tricare.

Unless Congress intervenes, Medicare payments to doctors are to fall an average of 10.6 percent in July, with an additional 5.4 percent cut to occur in January 2009.

Tricare reimbursements to physicians are tied to Medicare. In fact, Tricare support contractors often force participating physician networks to accept discounted fees from Medicare reimbursements. If those reimbursements were to fall, advocates for military beneficiaries fear many more physicians will refuse to see Tricare patients.

The Bush Administration's Fiscal 2009 budget assumes that the cuts will occur. But Tricare advocates have



AP photo

Sen. Debbie Stabenow's (D-Mich.) bill would block scheduled cuts to Medicare fees and authorize modest increases over the next two years.

joined with the AMA in urging lawmakers to support Sen. Debbie A. Stabenow's (D-Mich.) bill, S 2785, the Save Medicare Act of 2008, which would block scheduled cuts to Medicare fees and authorize modest increases over the next two years.

"No" to Higher Tricare Fees

Despite a new task force report calling for higher Tricare fees for working-age military retirees (See "Action in Congress: Task Force Sees New Fees," February, p. 80). Congressional leaders say that won't happen.

Democratic chairmen and ranking Republicans on the Armed Services Committee are unanimous against this

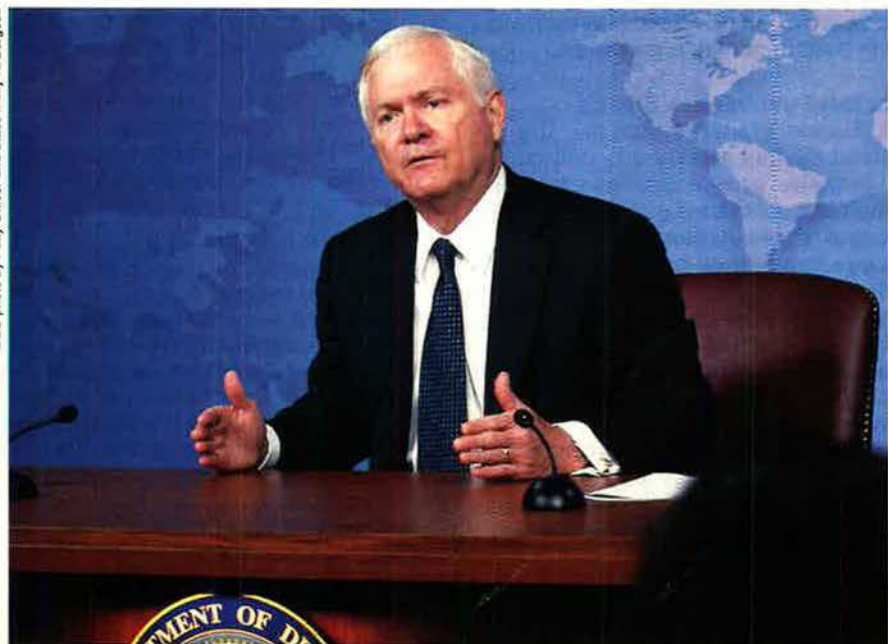
year in rejecting the Bush Administration's call for higher Tricare fees, deductibles, and co-payments for retirees under age 65 and their families.

Administration officials had hoped that endorsement of higher fees by the Defense Department's Task Force on the Future of Military Health Care, which Congress established, would sway minds on Capitol Hill. But there was no sign of it, not with wars continuing in Iraq and Afghanistan and budget deficits rising sharply as a consequence.

Even Defense Secretary Robert M. Gates and Adm. Michael G. Mullen, Chairman of the Joint Chiefs, appeared to soft-pedal arguments for Tricare fee increases this year during Fiscal 2009 hearings before the Armed Services Committees in February.

Rep. Carol Shea-Porter (D-N.H.), a freshman on the House Armed Services Committee and former military spouse, suggested to Gates that the projected Tricare savings are "a shell game" because they assume many retirees, facing higher Tricare costs, will go elsewhere for their health insurance, presumably using civilian employer plans.

Tira W. Jonas, the DOD comptroller, responded for Gates that the fee increases, based on recommendations of a task force Congress commissioned, would help to sustain a prized benefit. Jonas noted that Tricare fees have been frozen since they were set in the mid-1990s. But, she added, "Obviously it's something that we cannot do without the help and engagement of the Congress." ■



DOD photo by Petty Officer 2nd Class Molly A. Burgess

Secretary of Defense Robert Gates is not pushing hard for Tricare fee increases.

What senior leaders say about Air Force Magazine. . .

"I've been reading Air Force Magazine for more than 35 years, and I've always found it to be informed and insightful. Even more important is the fact that it covers the United States Air Force as an integrated whole and not in little bits and pieces—a weapon system here, a personnel matter there—as is the case in most defense publications. In Air Force Magazine, you see the Air Force as a whole, as it should be seen."

*Lt. Gen. David Deptula,
Deputy Chief of Staff for ISR*



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AFA National Report

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By Frances McKenney, Assistant Managing Editor

In Honor of Air Attachés

Foreign air attachés from more than 30 countries gathered for *Air Force Magazine's* 28th annual reception held in their honor in March in Arlington, Va.

Air Force Association Chairman of the Board Robert L. "Bob" Largent thanked the attachés for helping organize the Global Air Chiefs Conference, held last September in conjunction with AFA's Air and Space Conference. More than 80 top leaders of air forces worldwide had attended that event.

At the magazine's attaché reception, Rear Adm. Willy Temmerman spoke on behalf of the honored guests, as the dean of the foreign air attaché corps. Temmerman is the defense, military, naval, and air attaché with the Embassy of Belgium. He thanked the association for inviting the military representatives to AFA's national symposia and, through the magazine, keeping them up to date on defense issues.

Lt. Gen. Frank G. Klotz, the Air Force assistant vice chief of staff, also spoke at the reception.

Scowcroft Awards

The Northern Utah Chapter hosted its 19th annual Brent Scowcroft Awards banquet in Layton, Utah, in April.

More than 300 guests attended the event, giving formal recognition to top performers in the ICBM, space, and C3I communities of Air Force Space Command and Air Force Materiel Command. The award winners came from the fields of acquisition, sustainment, logistics, and maintenance.

Northern Utah Chapter President James D. Aadland explained to the audience that the awards are named after retired Lt. Gen. Brent Scowcroft, a native of Ogden, Utah, who was a national security advisor to Presidents Gerald Ford and George H. W. Bush. He headed the President's 1983 Commission on Strategic Forces, referred to as the Scowcroft Commission.

Guest speaker at the awards banquet was Maj. Gen. Roger W. Burg, 20th Air Force commander, at F.E. Warren AFB, Wyo. He joined Donald L. Cazel II, then Ogden Air Logistics Center executive director, in presenting awards to Maj. Craig Dumas from Los Angeles AFB,



Staff photo by Darcy Harris

AFA Board Chairman Bob Largent (right) welcomed Belgian Rear Adm. Willy Temmerman to Air Force Magazine's annual reception for foreign air attachés based in Washington, D.C.

Calif.; MSgt. Les Moore, Malmstrom AFB, Mont.; and from Hill AFB, Utah, Capt. Annette Boender, Shelley Polson, the Joint Emitter Team, and the Moly Ring Technical Review Team. SMSgt. Jonathan Rossetti from Buckley AFB, Colo., was also named as an award recipient.

Air Force Ball in Colorado

At the annual Air Force Ball, co-hosted in February by the **Lance P. Sijan Chapter** in Colorado Springs, Colo., the most junior airman in the audience joined the most senior airman present for the cutting of the birthday cake.

Ann Basic Sarah Bostwick of the 21st Mission Support Squadron, Peterson AFB, Colo., had been in the Air Force for five months when she was called on to cut the birthday cake at the ball with Gen. C. Robert Kehler, commander of Air Force Space Command.

Sijan Chapter's Daniel J. Beatty Jr., the veterans' affairs VP, organized the ball, where the more than 800 guests included AFA's Vice Chairman of the Board for Field Operations Joseph E. Sutter; National Directors Jay W. Kelley, Jerry E. White, and Charles P. Zimkas Jr.; National Director Emeritus George

M. Douglas; and Rocky Mountain Region President Joan Sell. George T. Cavalli is the chapter president.

Aging Fleet: Firsthand Knowledge

Inspired by age-of-the-fleet information posted on the AFA Web site, Lt. Col. Brian P. McLaughlin delivered a presentation on the topic to fellow **Red River Valley Chapter** members at a quarterly meeting at Grand Forks AFB, N.D.

SMSgt. Daniel J. Becker, the chapter president, helped prepare McLaughlin's briefing by creating PowerPoint graphics from the information that had caught his attention. McLaughlin backed this with personal stories about each airframe.

Currently the operations officer for the 905th Air Refueling Squadron at Grand Forks—and about to head out for Southwest Asia—McLaughlin has been a T-34 instructor pilot at NAS Pensacola, Fla.; a U-2 pilot at Beale AFB, Calif.; and a KC-135 pilot at Robins AFB, Ga. The average age of the U-2 high-altitude reconnaissance airplane is 24.2 years, while the KC-135s are, on average, 46 years old.

Commenting on the presentation to his chapter, Becker wrote that McLaugh-

lin was "truly wonderful at entertaining the audience while at the same time discussing the importance of modernizing the fleet."

Award for Wings

The **San Diego Chapter** received a national-level award in recognition of its support for Silver Wings, the service organization affiliated with the Arnold Air Society, which, in turn, is affiliated with AFA.

AFA Chairman of the Board Bob Largent helped present the James A. McDonnell Award to Silver Wings member Leanne Babcock during the March joint convention of AAS-Silver Wings.

The award is named for the late AFA headquarters staff member James A. McDonnell, who fostered the association's relationship with JROTC and ROTC units, Arnold Air Society, and Silver Wings. The award goes to the AFA chapter that has done the most to assist a Silver Wings unit in developing young leaders who are knowledgeable on national defense issues.

Babcock's Silver Wings unit at San Diego State University nominated the AFA San Diego Chapter for the honor because it participates in the group's activities and involves the students in its own events. Babcock later presented the McDonnell Award to San Diego Chapter President John F. Keenan.

The Air Force Future

Indiana chapters held a state quarterly meeting at Purdue University in West Lafayette, Ind., hosted by the AFROTC Det. 220.

Gathering at the university were: Michael Malast, president of the **Central Indiana Chapter**, from Indianapolis; **Grissom Memorial Chapter's** president, David L. Shearer, based in Kokomo; Lyle W. Marschand, leadership development VP, representing the **Lawrence D. Bell Museum Chapter** from South Bend; and **Southern Indiana Chapter** President Marcus R. Oliphant, based in Bloomington.

Led by State President William R. Grider, the chapter representatives conducted a business meeting then listened to presentations by cadets from each AFROTC class. James E. Fultz, state secretary, reported that they described a typical day on campus, from the student as well as cadet viewpoint. Fultz said the students were well-prepared, and the professional level of their presentations assured the visitors that "the Air Force will be in good hands."

The AFA guests received an orientation to the university's aeronautical facilities and equipment, such as flight simulators and training aircraft, with Charles F. Holleman as a guide. A



Photo by Darren Martinez, Sports Network International

AFA Vice Chairman of the Board for Field Operations Joe Sutter (far right) attended the Air Force National JROTC Eastern Drill Championship in Macon, Ga., in March. Award recipients in armed regulation drill were (l-r) Breanna Beckford, Nelson Weston, Brent Scott, Jenelle Piche, and Carlos Gonzales. AFA helped sponsor the event.

Grissom Memorial Chapter member, Holleman is an aviation technology professor at the university.

According to its Web site, Purdue boasts 22 alumni who have been selected for space flight, including Neil A. Armstrong, the first man on the moon, Eugene A. Cernan, Roger B. Chaffee, Virgil I. Grissom, and Gary E. Payton, the Air Force's deputy undersecretary for space programs.

Fultz said that Holleman kept the interest of his AFA visitors by relating many anecdotes about Purdue's astronauts. Fultz said, "He had more stories than we had time to listen."

More Chapter News

■ The **Spirit of St. Louis Chapter** hosted its 33rd annual Outstanding Airman of the Year awards dinner in March in St. Louis. Nine leadership awards went to USAF personnel from local Total Force and AFROTC units. Named as award recipients were SMSgt. Laura Clark, SMSgt. Robert Fritschle, SMSgt. Mark Hoppman, MSgt. Ronnie Dunker, TSgt. Glen Dickhaus, TSgt. Antonio Gonzales, SrA. Daniel Routier, SrA. Abby Zertain, and cadet Ashley Hayes. Gary Young, chapter president, presented the awards. Keynote speaker was CMSgt. Jeffrey Williams, command paralegal manager, Air Mobility Command, at Scott AFB, Ill.

■ The **San Gabriel Valley Chapter** in Pasadena, Calif., learned about remote-controlled aircraft at its January meeting—remote-controlled model airplanes, that is. Jerry Neuberger, a district associate VP for the Academy of Model Aeronautics, was guest

speaker, covering the activities of the recreational-sport model-aviation organization. Among its roles, the academy is the chartering agency for the more than 2,500 model airplane clubs in the US. Chapter President George Williams wrote that Neuberger is a retired Navy pilot.

■ The **Thomas W. Anthony Chapter** in Maryland recently received a Certificate of Appreciation from the 79th Medical Wing at Andrews Air Force Base, as a thank you for its support as a community partner in 2007. Chapter President Charles X. Suraci Jr. said, "Our chapter is on the go all the time, supporting programs for our Air Force on Andrews."

Robert T. Shaughness, 1942-2008

Robert T. Shaughness, who was *Air Force Magazine's* production director for more than 33 years, died April 22 in Westminster, Md. He was 65 years old and had retired from the magazine staff in 2004. ■

Have AFA News?

Contributions to "AFA National Report" should be sent to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: natrep@afa.org. Digital images submitted for consideration should have a minimum pixel count of 900 by 1,500 pixels.

11th BG. Sept. 17-21 in Branson, MO. **Contact:** Phil Guden-schwager (480-945-9119) (philgu@cox.net).

12th BG/TFW/FTW. Sept. 18-22 at the Renaissance Denver Hotel in Denver. **Contacts:** 12th BG—Mary Bushnell (651-739-0051) (mhbushnell@aol.com). 12th TFW/FTW—Everett Sherwood (480-396-4681) (el.sherwood.biz@cox.net).

20th/81st TFW. England. Sept. 25-28, Galveston, TX. **Contact:** Hank Eilers (409-789-5810) (cy@sandnsea.com).

57th BW (WWII), including the 310th, 319th, 321st, 340th BGS. Sept. 4-9 in Colorado Springs, CO. **Contact:** Nick Loveless (609-882-9108) (nicolasloveless@aol.com).

58th BW. Sept. 17-20 in Colorado Springs, CO. **Contact:** Deborah Reed (860-623-3305) (debbier@neam.org).

64th Troop Carrier Gp. October in Wichita, KS. **Contact:** Vern Montgomery, 6744 Carlsen Ave., Indianapolis, IN 46214 (317-241-5264 or 317-439-3420).

98th BG/BW. Oct. 14-19 in Cincinnati. **Contact:** Billy Seals, 2526 Plumfield Ln., Katy, TX (281-395-3005) (cbseals@consolidated.net).

99th BG (WWII). Oct. 9-12 at the Holiday Inn in Fairborn, OH. **Contact:** David Hill, 5385 Gwynne Rd., Memphis, TN 38120 (dohill@att.net).

303rd BW. Oct. 23-26 at Viscount Suites in Tucson, AZ. **Contact:** Don Bott (520-825-2056) (dmb@wbhsi.net).

390th SMW, Davis-Monthan AFB, AZ. Sept. 25-28 at the Sheraton Tucson Hotel & Suites, Tucson, AZ. **Contact:** Elaine Lasher, PO Box 17916, Tucson, AZ 85731 (520-886-7157) (redsnooty@comcast.net).

409th BG Assn. Sept. 21-23 at the Holiday Inn West Bay, Traverse City, MI. **Contact:** Elwin Hall, PO Box 118, South Boardman, MI 49680 (231-369-2324) (ehall@acegroup.cc).

450th BG (WWII). Sept. 24-28 in Milwaukee. **Contact:** Al Goodman, 2 Portside Ct., Grayslake, IL 60030 (847-543-8381) (gobaral@aol.com).

509th BW Assn. Sept. 22-25 at the Holiday Inn Riverwalk in San Antonio. **Contact:** Tom Benagh, 223 Bluff Hollow, San Antonio, TX 78216 (210-402-3837) (tbenagh@sbcglobal.net).

523rd TFS, Clark AB, Philippines (1968-74). Sept. 24-28 at the Ramada Plaza Hotel, Fort Walton Beach, FL. **Contact:** Bill Thaler (850-240-1318) (thaler4@cox.net).

525th FIS, Bitburg, Germany. Oct. 24-26, in Biloxi, MS. **Contact:** Frank Litt (phone: 817-294-1136 or fax: 817-346-0101) (525bulldogs@sbcglobal.net).

551st AEW&CWg, Otis AFB, MA. Aug. 26-28 at the Radisson Hotel in Plymouth, MA. **Contact:** Floyd Shank (508-746-5713) (easy12@comcast.net).

556th Strategic Missile Sq, Plattsburgh AFB, NY. Oct. 9-13 at the Hyatt Dulles Hotel in Washington, DC. **Contact:** Melvin Driskill (dgser@earthlink.net).

610th, 618th, and 850th AC&WSs, 527th AC&W Gp, 43rd Air Div (Southern Japan Radar Gp). Sept. 22-24, in Williamsburg, VA. **Contact:** John Rosso (661-832-6036) (godfather1501@hotmail.com).

7330th Flying Tng Wg, Furstenfeldbruck AB, Kaufburen AB, and Landsberg AB, Germany (1953-60). Sept. 22-25 at Rohnert Park, CA. **Contact:** Jack Krout, 3234 Skillman Ln., Petaluma, CA 94952-8020 (707-762-8613) (jackkrout@comcast.net).

AF Photo Mapping. Sept. 25-27 at the Marriott in Dulles, VA. **Contact:** Bob Cross, 4407 NE 51st St., Vancouver, WA 98661-2709 (360-695-8732) (bcross@dsinorthwest.net).

AFROTC Det. 650, alumni and friends. Oct. 10-12 in Athens, OH. **Contact:** Det. 650 (740-593-1343) (afrotc650@chio.edu).

Air Weather Assn. Aug. 6-10 in Tacoma, WA. **Contact:** Kevin Lavin (434-296-2832) (airweaassn@aol.com).

B-52 Assn. Aug. 7-10 in Norfolk, VA. **Contact:** W. Pittman, PO Box 340501, Beavercreek, OH 45434 (937-426-1289).

B-66 Assn. (1952-76). Sept. 4-7 at the Crowne Plaza Hotel in Colorado Springs, CO. **Contact:** Heather Smalley (800-981-4012) (719-576-5900, ext. 1600).

Berlin Airlift Veterans Assn (1948-49). Sept. 29-Oct. 3, in Rapid City, SD. **Contact:** Joseph Studak, 3204 Benbrook Dr., Austin, TX 78757-6804 (1-800-452-0903).

Brady AB and Camp Hakata, Japan, including all services. Oct. 13-17 in Branson, MO. **Contact:** Ray Mitchell (360-466-1842) (rjmitch@serv.net).

Burtonwood Assn. Oct. 7-11 in Shreveport, LA. **Contact:** George Loomis (856-435-0472) (loomisg@comcast.net).

C-7A Caribou Assn. Sept. 29-Oct. 3, in Dayton, OH. **Contact:** Bill Buesking (210-403-2635) (wbuesking@satx.rr.com) (www.c-7acaribou.com/reunion/2008/advance_plans.htm).

Distinguished Flying Cross Society, current and prospective members. Oct. 26-30 at NAS Pensacola, FL. **Contact:** John Appel (727-586-0538) (johnneappel@yahoo.com).

HQ TAC Engineering & Services, all military and civilians. Sept. 26-28 at the Marriott City Center in Newport News, VA. **Contact:** Dick Aldinger (407-859-7436) (famdinger@aol.com).

OCS 59-C. Sept. 17-21 in Buford, GA. **Contact:** Ed Martin (478-335-3958) (stampsource@idminc.com).

Pilot Tng Class 43-K, including flying training commands and flying schools. Oct. 22-26 at the Holiday Inn Plaza in Nashville, TN. **Contact:** Hal Jacobs, 5404 Victory Ct., Fairfield, CA 94533 (707-426-4959) (jakes43k@aol.com).

Pilot Tng Class 52-D. Oct. 2-5, at the Menger Hotel in San Antonio. **Contact:** Robert Stewart (210-677-0340).

Pilot Class 53-A. Oct. 23-26, at the Doubletree Hotel in San Antonio. **Contact:** Wayne Whitlatch (210-677-8003) (jwwhitl@satx.rr.com).

Pilot Tng Class 53-F. Oct. 16-19 at the Hope Hotel at Wright-Patterson AFB, OH. **Contact:** Jim Mayton (804-732-2225) (jimayton@yahoo.com).

Pilot Tng Class 59-D. Oct. 8-12 in Dayton, OH. **Contact:** Larry Faison, 1004 Chesterfield Cir., Winter Springs, FL 32708 (407-695-8002) (lfaison@ctl.rr.com).

Pilot Tng Class 68-E, Williams AFB, AZ. students and instructors. July 29-Aug. 3 in WI. **Contacts:** Harry Dennis (414-507-6220) (hiduke@aol.com) or Michele Bernstein, (800-336-9632) (micheleb@tecmidwest.com).

Pleiku AB Assn. Sept. 17-21 in Fredericksburg, VA. **Contact:** Harry Beam (724-745-9129).

AFA Conventions

July 11-12	Florida State Convention, Cape Canaveral, Fla.
July 11-12	Texas-Oklahoma State Convention, Oklahoma City
July 19	North Carolina State Convention, Fayetteville, N.C.
July 25-26	California State Convention, Edwards AFB, Calif.
July 25-26	Colorado State Convention, Colorado Springs, Colo.
Aug. 2	Massachusetts State Convention, Boston
Aug. 9	Georgia State Convention, Robins AFB, Ga.
Aug. 9	Pennsylvania State Convention, State College, Pa.
Aug. 12	Michigan State Convention, Mount Pleasant, Mich.
Sept. 13-14	AFA National Convention, Washington, D.C.
Sept. 14-17	AFA Air & Space Conference, Washington, D.C.

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MARYLAND: Robert Roit, P.O. Box 263, Poolesville, MD 20837-0263 (301) 349-2262.

VIRGINIA: Scott Van Cleef, 3287 Springwood Rd., Fincastle, VA 24090-3028 (540) 473-8681.

WEST VIRGINIA: John R. Pfalzgraf, 1906 Foley Ave., Parkersburg, WV 26104-2110 (304) 485-4105.

Far West Region

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Airpower Classics

Artwork by Zaur Eylanbekov

Lancaster



The Lancaster, unquestionably the best British bomber to see action in World War II, wreaked havoc upon the Third Reich. While US bombers flew into Germany on their day missions in massive, mutually supportive formations, the Lancasters streamed out of England at night in single file, its crews flying lonely bomber-stream missions deep into enemy territory. Air Chief Marshal Sir Arthur Harris, wartime leader of RAF Bomber Command, contended that the Lancaster was "the greatest single factor in winning the war."

Yet the Lancaster was a fortuitous design, the outgrowth of efforts to salvage something from the Avro Manchester, an aircraft ruined by unreliable engines. With a redesign to allow use of four powerplants, the Lancaster was born. It was all metal except for fabric-covered ailerons, and it had

a massive, 33-foot-long bomb bay. The bomber was easy to fly and was extremely maneuverable, capable of high-speed dives and turns. Its stout build allowed pilots to pull demanding "corkscrew" maneuvers to evade German night fighters.

The Lancaster could carry enormous 22,000-lb bomb loads. The fleet dropped 608,912 tons of ordnance—more than all other RAF heavy bombers combined. The Lancaster began operations in March 1942 and dropped everything from mines and spinning "Dam-Busters" to 12,000-lb "Tall Boys" used against warships and 22,000-lb "Grand Slam" bombs dropped on submarine pens. The RAF lost 3,249 to fighters or flak and 822 to accidents in the course of just 156,000 sorties. The Lancaster flew into the toughest spots, and was the definitive British bomber of the war.

—Walter J. Boyne

This aircraft: A Lancaster B —#KM-O R5540—as it looked in Fall 1942 when assigned to RAF Waddington in England. It was lost in a January 1943 crash.



In Brief

Designed by Avro ★ built by Avro, Armstrong Whitworth, Austin Motors, Metropolitan-Vickers, Vickers Armstrong, Victory Aircraft ★ first flight Jan. 9, 1941 ★ crew of seven ★ four Rolls Royce Merlin engines ★ number built 7,347 ★ **Specific to Lancaster B I:** max speed 287 mph ★ cruise speed 227 mph ★ max range 3,000 miles (loaded) ★ armament, eight .303-cal machine guns ★ weight (normal loaded) 65,000 lb ★ span 102 ft ★ length 69 ft 6 in ★ height 20 ft.

Famous Fliers

Victoria Cross: Ian W. Bazalgette, RAF; Leonard Cheshire, RAF; Guy Gibson, RAF; Norman C. Jackson, RAF; Andrew C. Mynarski, RCAF; John D. Nettleton, SAAF; Anthony M. Palmer, RAF; William Reid, RAF; Edwin Swales, SAAF; George Thompson, RAF. **Test pilot:** Alex Henshaw (performed a barrel roll in the bomber).

Interesting Facts

Featured in 1955 film "The Dam Busters" ★ suffered 138 losses in March 1944 raid on Nuremberg ★ nicknamed "The Lanc," and "Lankie" ★ first named "Manchester III" ★ flown by nine nations ★ dropped food to starving Dutch in 1945 *Operation Manna* ★ had unheated gunner positions, requiring gunners to wear electrically heated suits ★ rarely completed 100 missions (35 aircraft) ★ sank German battleship *Tirpitz* ★ used in several *coups d'état* in Argentina ★ appears in computer-animated form in "New Captain Scarlet."



A Lancaster en route to Germany.

The background of the advertisement features a night-time satellite view of the Earth, showing the continents of North America and Europe. The Earth is overlaid with a complex network of glowing white and yellow lines representing communication or data paths. A bright, multi-colored sun or star is visible on the right side, casting a glow over the scene. The overall color palette is dominated by dark blues, blacks, and vibrant yellows and oranges from the light sources.

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