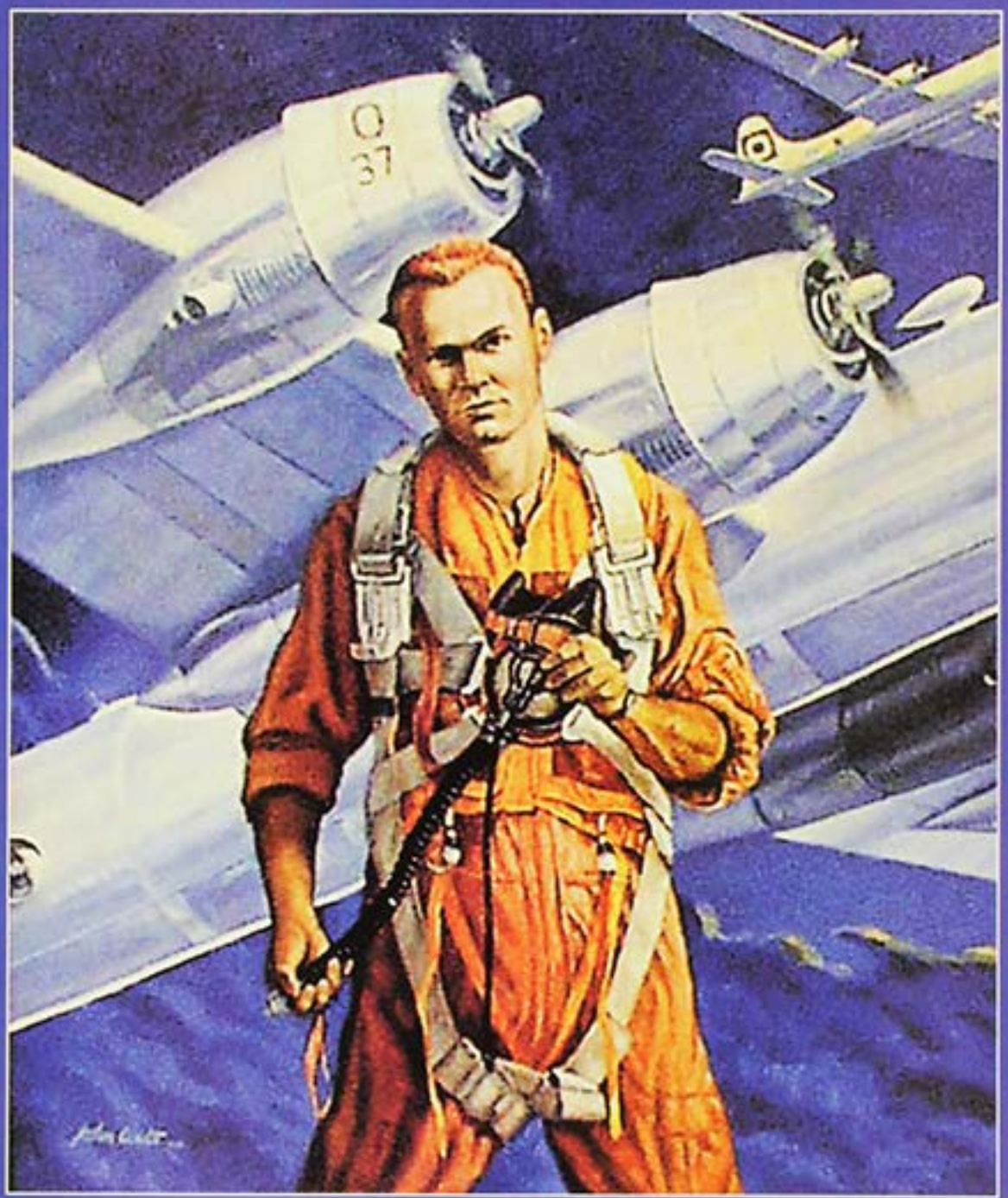
June 2007/$4

AIR FORCE

JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE



A Brave Man at the Right Time

SSgt. Henry E. "Red" Erwin, Medal of Honor

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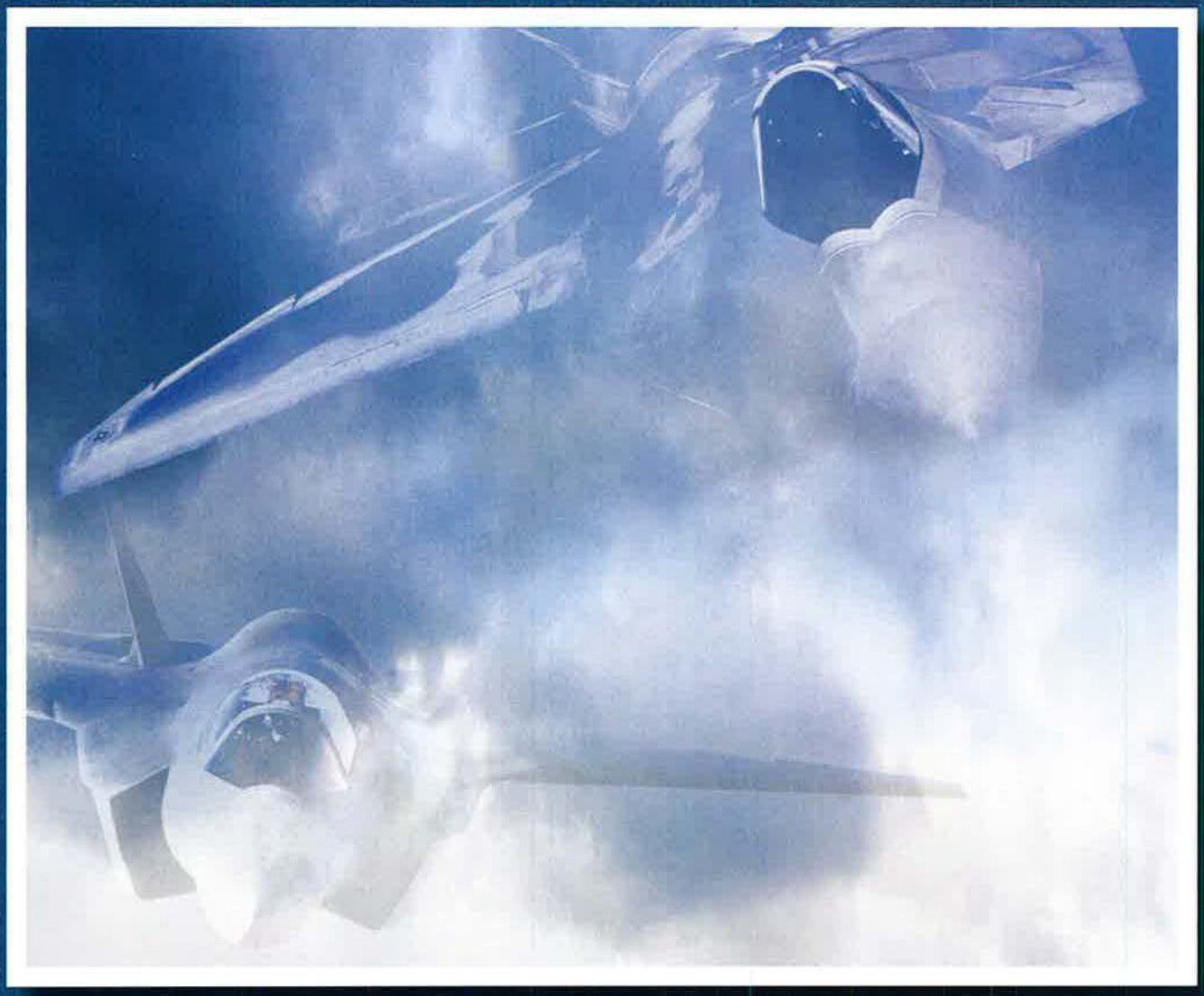

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June 2007, Vol. 90, No. 6

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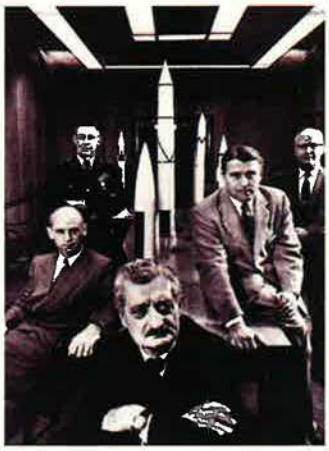
About the cover: SSgt. Henry E. "Red" Erwin and *City of Los Angeles.* See "A Brave Man at the Right Time," p. 62. Air Force Art Collection painting by John Witt.



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Editorial

By Robert S. Dudney, Editor in Chief

Moseley's Warning

IN THE days after China blasted an orbiting satellite to bits, Sen. Joseph R. Biden Jr. (D-Del.) said, in effect, it was no big deal. "I don't think we should be overly worried about this," opined the chairman of the Foreign Relations Committee. "We have ways to deal with that ability."

Biden's content-free statement, though soothing to some, was contrary to mainstream thinking. From serious analysts, the anti-satellite shot elicited only grim words. A sampling:

"Troubling" (Secretary of Defense Robert M. Gates). "Very worrisome" (Marine Corps Gen. Peter Pace, the Chairman of the Joint Chiefs of Staff). "A wake-up call" (Robert Joseph, then undersecretary of state for international security). A "threat," and a "provocation" (Sen. Jon L. Kyl, R-Ariz.).

For shock value, though, even Gates, Pace, Joseph, and Kyl did not come close to Gen. T. Michael Moseley, USAF Chief of Staff. The top airman called the Jan. 12 (China time) test against a defunct Chinese weather satellite "a strategically dislocating event." In fact, he added, "This is no different than when the Russians put Sputnik up."

Strong words. The Sputnik crisis, sparked by Russia's surprise Oct. 4, 1957 launch of the world's first man-made satellite, was a Cold War hinge point. It caused a near panic, riveting attention on not only the Soviet space effort but also the broader Soviet military challenge.

Why would Moseley roll out the "S" word? China's ASAT program would naturally alarm the Air Force, provider of 90 percent of US space power. Yet the concern goes further, encompassing Chinese airpower, too.

Nowhere was this more apparent than in the Chief's remarks on April 24 to the Defense Writers Group in Washington, D.C.

Moseley hinted at a dangerous new era in space. He said China's ASAT could hit spacecraft at an "altitude band ... [that is] a significant risk to both civilian commercial systems and military systems." That band is low Earth orbit, about 500 miles up.

Worse, China likely has the ability to threaten satellites much farther out, in geosynchronous orbit. It is, said Moseley, "just a physics problem" to extend existing ASAT range to "hit something out beyond 20,000 miles."

Thus, China would be in position to disrupt or degrade every US satellite providing reconnaissance, surveillance, communications, targeting, and precision for its weapons.

Moseley noted the attack featured "a direct-ascent shot from a mobile system"—a special problem. Against direct-ascent weapons, reaction time is short. Moreover, mobile weapons are "harder to find" and pre-empt.

China's ASAT shot was a "strategically dislocating event," but it was not the only cause for alarm.

Moseley has tasked Air Force Space Command to recommend options for space situation awareness, defensive counter-space measures, and the security of ground stations and uplinks. In addition, he seeks to back up space systems with aircraft systems.

Notably, the Chief took an equally dim view of China's airpower advances. "This is not ... a country that has just discovered the Wright brothers' airplane," he said. "This is a country that is very serious" about making the big league in airpower.

After decades of defense spending increases, China's overall program now is on a par with Japan, Britain, and Russia, he said, and its long-range aviation is "increasingly capable and lethal," as witness four advances:

New fighters. China is fielding a pair of "Generation 4.5" fighters—the Su-30MKK, co-produced with Russia's Sukhoi, and the indigenous J-10, which resembles the Eurofighter and is deployed in squadron strength.

Airborne early warning. "They have an AWACS system that's as good as any other," said Moseley. China has built its own system using an Il-76 airframe. It is currently in operation.

Aerial refuelers. Moseley said "they have tankers" and that China is using them to "extend the range of their fighters."

Stand off munitions. Chinese Su-30s are getting a new cruise missile similar to the USAF Joint Standoff Weapon. According to the Chief, China's Air Force is building a bigger air-to-surface missile, perhaps anti-ship in nature, for its bombers.

China is continually improving its sensors and weapons, he went on, and has modified old airplanes with new radars and jammers.

Moseley's bottom line: "They're becoming a very, very capable, long-range Air Force."

For decades, China's airpower has focused heavily on preparation for close-in fighting to reclaim Taiwan. Is that now changing? "That's right," Moseley said. "They are getting the ability to go beyond just a Taiwan scenario."

In time, this type of force could present a coercive threat in areas around China, posing major problems for US air and maritime forces in the Pacific.

Assessing Chinese power in 2003, former Secretary of Defense Harold Brown noted the relative importance of various forms of US military might. "On the mainland," Brown said, "the Chinese will continue to be a very, very strong force, but offshore, where aerospace and maritime ... capability matters a lot, they will continue to be significantly inferior."

Now, analysts aren't quite so confident. China's success in destroying one of its satellites with a ballistic missile signals it fully intends to contest US supremacy in space and probably in conventional airpower, too.

Some in the Pentagon and Congress suggest moving ahead on programs that would permit the US to pre-empt threats to satellites, shield US space assets from attack, and swiftly replace damaged systems. Others argue for a more robust buildup of conventional fighters, long-range bombers, and warships.

In his own way, Moseley is acting to alert Americans to the gathering Chinese challenge in air and space. He has been careful not to overplay his hand; today, the situation is neither desperate nor beyond repair. However, the time for action is now. ■

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Letters

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Is it Possible?

I read the [April] issue with a growing sense of amazement and frustration. The entire issue seems devoted to case after case of USAF (and USN and USMC) shortages that seem destined to get worse, maybe far worse. But I read that the leaders of our service will not even ask for more. In "Washington Watch," I read of Congressional leaders practically begging Air Force leaders to ask for more—but they will not. Some other members of Congress threaten to cancel tanker replacement unless two or more companies compete. Is this possibly how we equip our forces?

The Secretary of the Air Force seems to have a new mantra, that asking for more is a "nonstarter." I don't know if he said this more than once or was quoted twice in the same issue, but isn't it his responsibility to tell Congress what the Air Force needs and let them determine if it truly is a "nonstarter"? Of course, we all know he's doing this on orders from the budget officials above him, like a good soldier. One day these chickens may come home to roost. I pray our country will survive that day.

TSgt. Bill Brockman,
ANG
Atlanta

About That UAV Plan

It's hard to sympathize with your editorial about the problems with control of UAVs *["A Better UAV Flight Plan," April, p. 2]*. The Air Force is only reaping what it has sown. And it is coming to the party late.

For many years the term "UAV" was a dirty word in the Air Force lexicon. "Sure," it was said, "they are capable, but nothing replaces a man in the cockpit. End of story, now on to the [next generation fighter]!" Thus, they turned a blind eye toward ongoing development.

The sins of omission were further deepened when UAVs entered the inventory and rated pilots "volunteered" to fly them. Pilots I've talked to expressed great dislike for any UAV, due to the fact that it, and not the pilot, was doing the flying. Since pilots were held accountable for accidents, it is only reasonable for them not to like this indirect method of control.

As any experienced radio control model plane flier can tell you, when things go wrong in the air, it is difficult to diagnose, impossible to fix, and often you are just doomed. Scoff if you want, but the analogy is the same. Flying these things is different and not easy. Neither is [flying] a UAV.

The Air Force is not going to control all UAVs anymore than it controls all military air traffic. The history of giving promised support to other services and then those services being shortchanged is too fresh in many minds.

MSgt. John Wolf,
USAF (Ret.)
Bethel, Pa.

Suck it Up?

As a younger civilian employee of USAF (SCD 6/21/96), I read with great

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To educate the public about the critical role of aerospace power in the defense of our nation.

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interest your articles in "Washington Watch" in the April 2007 issue of *Air Force* Magazine. Without sounding like Chicken Little, how should one react to the gloom and doom discussed, including: 1) a facility replacement estimate sitting at 275 years (when we in civil engineering usually use 50 years as the baseline); 2) a buy rate of the F-35 that extends beyond 2050 and does not reach the planned inventory; 3) a tanker replacement strategy that replaces 530 legacy aircraft with 180 KC-X tankers (a net decrease of 350!) that would keep the youngest KC-135s flying for a total of 80 years; 4) a planned F-22 buy that meets no one's wants, needs, or expectations; and 5) an even further cut in flight hours which can do nothing but erode pilot skills (even with the advanced sims that they are pro-

vided)? We have already been given warnings that the civilian pay budget is not fully funded and are constantly told by our command/commanders to not only do "more with less" but now do "less with less." We have airmen and salary civilians cleaning toilets, emptying trash, picking weeds, and a myriad of other extra duties because we don't have enough money to pay our service contracts.

I love the Air Force and I want to make this a career, but I look all around me and see the walls falling in—and everyone in Washington doesn't give a rip. I can't even imagine what it's like for the poor folks in the other services. Why aren't our USAF leaders crying out to everyone who will listen that the service is broken and we are jeopardizing our combat stance for decades to come?

I don't know if I'll have every retiree from the WWII drawdown telling me to "suck it up". Anyway, just had to vent to someone who seems to be "in the know."

Chris Kruschke
Davis-Monthan AFB, Ariz.

Different Languages

[In regard to "Washington Watch: The Petraeus Doctrine," March, p. 14:] "Ground commanders are the ultimate authority for the use of all supporting fires in their respective areas of operation. ... Responsible ground force commanders decide the priority, effects, and timing of CAS within an area of operations and optimally make decisions with the advice and guidance of specially trained personnel."

Quaint musings from a dusty, pre-"joint" Army field manual? Nope. Fresh ink from JP 3-09.3, "Joint Tactics, Techniques, and Procedures for Close Air Support, Change 1," Sept. 2, 2005.

Your "Washington Watch" from March is discouraging. In eliciting our supposed "jointness" in the sentence I mock above, you dive right back into this magazine's comfort zone of parochial service infighting. That's discouraging and disappointing, particularly after General Schwartz's response to the Grant piece —it's about contribution not attribution *["Letters: Billy Mitchell," March, p. 4].*

I read the new Army manual on counterinsurgency ops—every word, not just the appendix on airpower. Students of warfare and practitioners of this "Long War" owe it to themselves and the nation to do the same—and so do editors who purport to criticize it. Its authors do not claim it to be the doctrinal end state on this matter; they recognize (perhaps better than most) that doctrine rarely survives contact with the enemy. As the first new official thought on the subject in 20 years, the document ought to have generated debate on a higher plane than mudslinging.

Let's face it, the Army and the Air Force speak slightly different languages, and much of this concocted controversy probably comes down to semantics. Joint doctrine already centralizes command of air assets under a joint force air component commander at the operational level. (Incidentally, no service can create doctrine that attempts to nullify joint doctrine—so apparently the sky is not really falling.) What FM 3-24 says is that at the tactical level air support requires a decentralized C2 system able to provide the supported commander with immediate access to air assets. That system also already exists; it's called the Theater Air Control System and it is intimately linked to warfighting elements of the Army structure. It also sounds a lot like the "decentralized execution" we're so fond of telling everyone we do. In the end CAS fires are controlled by members of the tactical air control party (blue-suiters applying that specialized knowledge mentioned above to meet the ground commander's intent) when they say "cleared hot." I find nothing in the new document that alters an established system for providing air support, flies in the face of Air Force doctrine, or minimizes the contribution of airpower.

It was perhaps the latter that ruffled your editorial staff's feathers more than anything else, but if you haven't noticed the Air Force struggling with that very question, you are out of touch with our service. We are inventing new sortie types almost daily in an effort to cope with what airpower can do during an insurgency—convoy protection (really CAS), SOF support (really CAS—JP 3-09.3, p. I-1), and nontraditional intelligence-surveillance-reconnaissance (NTISR) (really just ISR since in an effects-based construct, platforms are irrelevant) are all good examples. Generals Petraeus and Amos do a very diplomatic job in this regard, highlighting airpower successes "in Malaya (1948 through 1960) and El Salvador (1980 through 1992), as well as more recently in Colombia

and Afghanistan." Good thing they didn't bring up Rolling Thunder or Steel Tiger; neither was effective in interdicting the supplies of the low-consumption insurgency in South Vietnam, nor did they prevent the Tet Offensive. Additionally, being so quick to judge may silence what the generals are saying if semantics is not the real issue. If they are making a case for using indigenous air support during counterinsurgency operations, it would be a positive step away from the Army's appetite for the dedicated air support so easily afforded in this type of war. Future wars may not allow this luxury. Early signs that the Army recognizes this fact would be encouraging.

The question of what airpower can deliver to a counterinsurgency operation is the salient one of our recent combat experience—just as it was 40 years ago. Is it possible that service infighting quelled that debate and drove us to the point we are now? If so wouldn't it be a shame to let the same thing happen twice? It would, and it would be particularly egregious to be led there by editors who don't take the time to research the subject. Certainly let's have a debate. But let's be fully informed first and let's not do it by retreating to our service corners in an attempt to protect some perceived turf incursion. Let's have a debate using an effects-based methodology and only then determine which medium and capability best serves the overall objective and which service is better suited to exploit the medium and provide the capability. Like it or not, that makes us a more effective armed force as whole—and it's still about winning wars abroad, not on the Hill. Or at least it should be.

Lt. Col. M. Shane Riza,
USAF
Ramstein AB, Germany

Risk Management?

Several of the recent articles have stressed the lack of combat aircraft in the future years *["The Risk Goes Up," April, p. 34]*. At the same time there is a push to retain F-15Cs while retiring older F-16s, as the F-22s are brought into the fleet. These F-15Cs will require significant upgrades to reach the "Golden Eagle" status. Currently, F-15E variants are still in production for our allies.

As the F-15E can do everything the F-15Cs can, based upon all the marketing, would it not make more economic sense and enhance the combat capability to purchase 100, 150, or more F-15Es with the new radar? The purchase of a single F-15E for the retirement of one F-15C and one F-16 would bring increased capabilities in a proven aircraft that still has growth capability that is still in production. Perhaps the savings could then be used to buy A-10 engine upgrade sets. This would also provide a response when the F-35 is delayed.

Charlie McCormack
Huntington Beach, Calif.

Constant Peg

I read with much interest your April 2007 article on Constant Peg and the 4477th Sq. *[p. 86]*. As a former aggressor controller, I would be remiss in not calling *Air Force* Magazine to task for not mentioning the contributions of the aggressor controllers who controlled the Constant Peg missions. These dedicated men and women deserve credit for their outstanding role in the program as well. I don't think you would find many of the pilots from that program who did not appreciate the support they provided and the situational awareness provided while flying these demanding aircraft.

As a side note, being a lifetime member of AFA since joining the Air Force in 1985, I have rarely seen in the pages of *Air Force* Magazine much mention of the contributions of the dedicated men and women, officer and enlisted, who make up the command and control career fields. It is about time that this magazine recognizes that much of the success of the Air Force in the last 25 years has been due to our dominance and expertise in command and control. There are enough different topics and areas in command and control that deserve recognition for their role over the years, [such as] ABCCC, AWACS, GTACS, ADS, Range Control Squadrons, and Joint STARS. Let's see some more articles on these systems and what they have contributed over the years.

Lt. Col. Terry Simo,
FLANG
Tyndall AFB, Fla.

As a current civilian operator of MiG-21s and 23s, your article on Constant Peg was of great interest. We have only limited MiG-23 experience, and the pilots' comments on flight characteristics were not encouraging. Dave Cannavo, currently the only civilian pilot qualified in the MiG-23, confirms that his Russian and Czech instructors held at least a healthy respect

for, if not outright fear of, the edges of the published envelope. It would be of great help to us if we could get in touch with some of our pilots with experience in the type.

On the MiG-21, I would like to respectfully point out several inaccuracies. First: "fit and finish." With US paint, Soviet fighters are the equal of ours from the same period. As for the rivets, a closer examination will disclose that, from an aerodynamic standpoint, every rivet that should be flushed is, and every one that is not required to be is not. This design philosophy is carried out throughout the aircraft. If our manufacturers had followed this course, they would have saved US taxpayers billions over the years with no degradation of performance.

Second: Your comments on maintenance do our Soviet adversaries a great disservice. Whatever the reason for canceling the program, it wasn't maintenance. Built to operate in harsh conditions from unimproved (read "dirt") fields and serviced by 12-month semiliterate conscript farm boys, the 35,000 or so aircraft of the MiG-15, 17, and 21 series were by far the most robust combat aircraft ever built:

1. The most memorable bit of information I took away from a 1969 intelligence briefing on our first experience flying the MiG-21 was the 104 straight sorties without a major write-up. That comment was met with hoots of disbelief from my squadron mates.

2. Recently released footage of the Israelis' first experience with the MiG-21 shows a pilot's first comment as, "It's like a Volkswagen. ... You just put gas in it and go."

3. In our experience with over 300 sorties in our MiG-21s, we have never had a maintenance abort and only a handful of major (code 3) post flight write-ups. At least today, parts are plentiful and cheap when it does break.

The 500-hr engine limit was a translation error. This is just a hot section inspection, not an overhaul requirement.

Third: Actually, you do want to fight a MiG-21 at low speed. At full military power and 300 KIAS, the MiG-21 will start to bleed energy at two Gs, and it's downhill from there. It likes to turn from 400 KIAS to just below transonic, where its transonic flight control limiter really hampers maneuvering flight.

Fourth: Throttle spool up times for the MiG-21 are the same as the J57 in my F-102. This was, I'm sure, a little slow for the young guys with only F-15 or 16 experience.

Fifth: The Soviets copied the MiGs' ground taxi system from the Brits, who used it up at least until the Lightning. I believe it dates back as far as the Hurricane. It is simple and cheap and easy to maintain. All it takes is a little practice and it steers fine.

Joseph J. Gano
CEO
Warbirds of Delaware
Reno, Nev.

First In

I do not want to take anything away from Capt. Hilliard Wilbanks, but we were the first squadron of FACs in Vietnam in July 1963 *["Bird Dog's Last Battle," March, p. 50].* The airplanes were called O-1Ds (L-19) then. We were formed at Hurlburt (Eglin 9) [AFB, Fla.] in May1963. We were trained in the fixed-prop L-19. We then went home and waited for our port call.

We reported at Travis AFB [Calif.] and left immediately for Clark Field [the Philippines], with a fuel stop in Hawaii! We were on the ground at Clark for less than 12 hours. The next day we were at Bien Hoa, South Vietnam (about 12 miles northeast of Saigon). But we didn't have any airplanes, just a WWII Army cot and mosquito netting and a WWII steel locker. Four of our planes arrived two weeks later in the pit of C-124. Another senior captain and myself were sent to Saigon to flight-test them. They had been assembled by two US Army sergeants. They were not fixed props but constant speed. The other captain and I both had flown props as well as jets. We had no problem, except for 37 first lieutenants, most of whom had never flown a prop before or a tail dragger. We taught them at Hurlburt how to fly a tail dragger; now we had to teach them about a constant-speed prop, and we did not have a manual for the airplane. We also had to teach them to use carburetor heat when descending from an altitude above 2,000 feet (throttle plate icing).

Since I had just come from a test program at Edwards AFB [Calif.], I was elected to teach them. They were 22 to 26 years old and very sharp. Since we were advisors, we always had a Vietnamese in the backseat! It was a "no-no" to fire a weapon out the window. We designed the underwing rockets, a 2.75 rocket engine with a 3.5 willie peter warhead (white phosphorous). We had four, as it shows in your picture.

We were the 19th TASS (Tactical Air Support Squadron). We left six of our young lieutenants behind. A couple of bodies were never recovered.

Did not mean to be so windy, but I am curious as to why Wilbanks didn't use his rockets. He still had some left.

Donald R. Curtin,
Palos Verde Estates, Calif.

The story on Hilliard Wilbanks brought back memories of the O-1F. During the late '60s I was AID advisor in the Vietnamese province of An-Xuyen (radar control, Playboy). As I had flown with the Polish Air Force and the RAF [in noncombat sorties], the FACs and I spoke a similar language and I had flown several missions with them and we were good friends. At one point we shared a rather unusual sighting.

I was walking to the mess when I saw low over the far tree line a very large airplane which I couldn't identify. I thought nothing of it until our FAC, Captain Robinson, walked into the mess with a loud, "Did anybody see that Russian Bear over Tac Van?"

Identification came to me instantly: "I did. Was it really a Bear?"

[Captain Robinson responded,] "Great big red star on the fin. When I'd picked up my heart from the floor and stuffed it into my throat, I fired my last rocket at it, but missed. So you saw it, too? At least I'm not going crazy!"

We went up to the radar shack. Yes, they'd gotten a trace of it, but it didn't "bloom" on the screen like US aircraft were supposed to, so they paid no attention to it. So much for training.

We never did figure out what it was doing there. To this day it has remained a mystery.

Paul Wankowicz
Winchester, Mass.

Verbatim

Your piece "Busy, Busy Reporters" on p. 50 *["Verbatim," April]* contains an error beyond noting the *Washington Post's* failure to acknowledge Corporal Dunham's self-sacrifice and heroism.

The Medal of Honor was awarded to United States Marine Corps Cpl. Jason Dunham. Corporal Dunham's

father is a retired United States Air Force senior NCO.

Thank you in advance for noting the error and making the correction.

MSgt. John J. Ebert,
USAF (Ret.)
Montgomery, Ala.

War or Police Action?

It seems the use of airpower in the form of close air support (CAS) is a forgotten form of warfighting in Iraq since the invasion. We talk about the war in Iraq, but it seems more like a police action than a war, based on the way we have fought in the last three years or so. I refer you to the *["Aerospace World"]* article on p. 22 of the April issue titled "The War on Terrorism," where the CENTAF air strike numbers for 2006 were released. [A total of] 15,676 CAS sorties over Iraq were conducted for the whole year where 229 munitions were dropped. That is one bomb for every 68 sorties.

Not only that, look at the munitions load the two F-16s on p. 38 are carrying out for a CAS mission or the carrier launch on p. 52. They are not very heavy or impressive loads. Are we so intimidated by collateral damage that we don't provide air support for our troops in an urban setting? What is important is that we eliminate the ability and the will of the enemy to continue fighting and that cannot be done by holding back our single most important warfighting weapon. Additionally, our troops would have less casualties looking for the enemy among the rubble than in the streets.

Maj. Gen. Jay T. Edwards,
USAF (Ret.)
Oklahoma City

Old Shaky

Walter Boyne did it again—a really great, concise review of the C-124 *["Airpower Classics: C-124 Globemaster II," February, p. 96]*. You really stretched to find some Famous Fliers: So Burt rode the 124 for 1,800 hours—big deal. There were many episodes with that old bird that were more interesting than someone who rode in it and later did something noteworthy.

In 1955, a new graduate of Willy joined our squadron at Dover [AFB, Del.]. Lt. Joe DeJulia was less than enthralled at being assigned to an "aluminum cloud" after completing jet fighter training. His first ride as copilot, prior to C-124 training, was on an emergency make-up crew to carry a load of troops and dependents from Morocco back to Arkansas. The crew had run out of duty time and there was no place at Dover to house that many people. We met at transport control, briefed the mission and his duties. The mission was completed and, on return, we hit a severe storm over Memphis. The noise, lightning, and shaking had him ready to punch out, but he couldn't find a handle to pull.

A year or so later, with many hours under his belt, Captain DeJulia was the aircraft commander (maybe his first as A/C?) on a heavily loaded C-124 from Bermuda to Lajes. They lost an engine a couple hours out and turned around. They lost another engine, and the heavily loaded airplane was not going to keep flying on two engines. Joe ordered the loadmaster to jettison the cargo and notified the command post. Within minutes, Lt. Gen. Joe Smith, MATS commander at Andrews [AFB, Md.], was on our new HF radio (great to hear a voice instead of dit-dah) and told him to "use all available power." What else was he going to do—he had the throttles bent all the way forward as it was—but it was nice to know that the boss was concerned.

He recovered at Kindley [AFB, Bermuda] and was rewarded with the Distinguished Flying Cross. With 10 years in MATS, that was the first time I was aware of such recognition, and I was extremely proud of my old copilot. Medals for flight operations were reserved for combat—transport crews were just doing what they were trained for.

There was another incident worthy of mention. In 1954 or '55, a Dover 124 departing Thule had an emergency (severe icing, I think) and turned around. As they approached, they hit the top of the ridge beside the runway. The aircraft slid to the top of the ridge and hesitated—and then the cockpit broke off and tumbled down the hillside. One of the pilots had released his harness and was between the seats when the front section broke loose. He would have been severely injured in the crash, but the quick action of the other pilot (Tom—can't recall his last name) grabbed him and held him safe during the ride down the mountain. I don't know that Tom was ever recognized for this action, but he will always be a hero in my memory.

There was another run-of-the-mill incident that summer. A 124 loaded with PSP (pierced steel planking) for the runway at Thule got a double load—the loading crew thought it looked too small to be a full load. On takeoff, the computed speeds were barely met, but, with the senior engineer of the wing at the console, all agreed to continue. The crew was a first lieutenant aircraft commander, a second lieutenant copilot, a second lieutenant navigator, and a chief master sergeant engineer. The aircraft never reached climb speed. It was barely able to stay aloft with max power and had to carefully lift the right wing to avoid the steeple in the center of Dover. With very shallow turns and max power throughout, the aircraft made it back to land—and four engine changes. The crew was met by a complaint from the mayor who wanted to know why they buzzed the church in town—but no recognition for saving a grossly overloaded aircraft on a hot Sunday morning.

The C-124 wasn't my favorite aircraft, but it was really interesting. On another flight, with the same engineer, we lost an engine and another engine lost the generator—a potential fire hazard. We shut it down and he went out in the wing, removed the faulty generator, restarted the engine, and continued on schedule.

As exciting as all that was, my tours in SAC B-52s and as a FAC in SEA were even more fun.

Col. Bob Straughan,
USAF (Ret.)
Carrollton, Tex.

Tricare Experts

Your item in "Action In Congress" in the March *Air Force* Magazine *["Raising Tricare Fees"]* is highly interesting in that our "leaders'" cannot get past the notion that experts are found only in the halls of DOD or DAF or in academic circles. Input on problems with Tricare needs to be primarily from physicians in the field, both in DOD facilities and from our civilian partners trying to deal with Tricare. Knowing General Corley's background intimately, I know that he is not the best qualified to head up this task force; it needs to be a senior [medical corps] leader. Having worked with Tricare as chief, medical staff, and deputy CC of two of our largest medical facilities, having struggled alongside our junior officers trying to make referrals, working as a civilian physician trying to get paid, as a contract physician for Tinker AFB, Okla., FP clinic (yeah, it's a squadron now), and as a patient trying to find a good nearby physician to furnish my primary care, I can affirm that I know the problems better than senior officers, medical or line, who have not been on the ground in this front line. Let's get some fresh and knowledgeable blood in this task force!!

Col. (Dr.) Kenneth F. Wainner,
USAF (Ret.),
Edmond, Okla.

Washington Watch

By **John A. Tirpak**, Executive Editor

Let Airmen be Airmen; The Air Force and Navy Could Do It; More on the UAV Struggle ....

"Redlining" Scarce Airmen

As Air Force end strength shrinks, USAF will lose its current ability to lend airmen for ground force taskings "in lieu of" Army and Marine Corps troops. It will have no such capability at all in another three years.

That's the warning from the Air Force Chief of Staff, Gen. T. Michael Moseley.

At present, plans call for cutting Air Force end strength from 349,000 in 2006 to 316,000 in 2009.

Moseley told defense reporters in April that "as we get closer to 316,000 end strength in the Air Force, there will be less and less capability for [USAF] people to do something outside the competencies of the Air Force."

He added that "as you get to 316 [thousand], there will be zero opportunity."

The Air Force has about 5,000 people assigned to the US Central Command area of operations, backfilling Army and Marine Corps personnel who are either needed in infantry-type jobs or who have rotated back to the US for rest. The airmen so assigned have been performing a wide variety of duties ranging from driving gun trucks to guarding prisoners. Many have ended up in ground combat. Moseley said more than 20,000 airmen have at some point filled ground taskings.

Moseley said he is beginning to draw some "redlines" around personnel he will no longer make available for the "in lieu of" taskings. It's a phrase he dislikes because, he said, it implies Air Force people "have nothing to do, that they're sitting around waiting for somebody to give them something 'in lieu of' what they're doing, so I reject that term."

He noted that the Air Force sent a surgeon to help fill out the Army's needs. On arrival at her assigned Army unit, she was told that a surgeon was not needed, but was asked if she could type.

USAF photo by SSgt. David Miller

Moseley says we're taking some of our airmen back.

The off-limits personnel will be those being asked to do things "way outside of our [core] competencies," Moseley said, but he would continue to send airmen to "contribute with the things that are in our competencies," such as drivers, logisticians, and explosive ordnance disposal.

He also said the other services have put the arm on the Air Force so much because it alone among the services has the ability to identify every person in its ranks with certain specialties.

"I can tell you where every driver is in the Air Force," he said. "I can tell you her or his marital status, education status, deployment history, medical records. I can drag all of that out in minutes. ... The other services don't necessarily have that capability."

USMC photo

Pace knows who would fight a new war.

USAF, Navy Would Handle War 3

The US military, though heavily engaged in combat in Iraq and Afghanistan, could still take on another big war if it had to do so, says the nation's top military man, but the burden would fall squarely on the Air Force and Navy.

Marine Corps Gen. Peter Pace, the Chairman of the Joint Chiefs of Staff, said USAF and Navy forces would have to handle much of the initial fighting in a new conflict. Pace, speaking with reporters in April, put it this way in answer to a question:

"If another [war] popped up tomorrow, regardless of where, ... you would have the Navy and the Air Force being able to get there very quickly" and at "full strength."

He went on to say that it would take "longer" to get the Army and Marine Corps into the new fight, because those services are so deeply committed in Iraq and Afghani-

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stan. Pace acknowledged that the ground services are "stretched."

However, he warned US adversaries not to interpret US immersion in the Middle East and America's struggle to keep its forces properly equipped, trained, and funded as a sign that the nation could not prosecute another war.

"There's about 220,000 US armed forces in the [Persian] Gulf region right now, out of 2.4 million," Pace said. He argued that the larger number—comprising active, Guard, and Reserve forces of all services—shows there's plenty of capacity to deal with a new opponent in Korea, Iran, or elsewhere.

"The nation has about two million individuals ... who are available, plus the full strength of your Navy and the full strength of your Air Force," Pace noted.

The Pentagon is trying to get its ground units back on a schedule in which they are deployed for one year and are home for two, Pace said, although right now the ratio is more like one year overseas for one year home.

"That is totally different from responding to another threat to our national interests," said Pace. If there was indeed such a threat, he added, "we would remobilize and we would use everything in our arsenal to defend ourselves."

An additional fight would be "more brute force" than the Pentagon prefers to use, because "some of our assets—precision strike—are already tied up." Still, he warned any opportunistic opponents not to "miscalculate the enormous residual capacity of the United States military."

All Jointness Is Situational

In the April session with Washington reporters, Pace was asked what he thought about the Air Force's recent push to become the Pentagon's executive agent for unmanned aerial vehicles. (See "Editorial: A Better UAV Flight Plan," April, p. 2.)

The Chairman didn't give a direct answer.

On one hand, Pace agreed "it makes absolute good sense" to include UAVs flying above 3,500 feet on the air tasking order, where flights of UAVs and manned aircraft could be "deconflicted" under the auspices of a joint force air component commander. This post, noted Pace, "normally" goes to an Air Force officer.

"If you're talking about airspace control, it makes sense to have somebody in charge," he said.

USA photo by Plc. Matthew Acosta

Everybody wants one.

On the other hand, Pace maintained that there was a danger, that a push to rationalize UAVs department-wide might lead to the creation and installation of a "generic package" of sensors on UAVs, one that might not fit the unique requirements of, for example, US special operations forces.

The Air Force's proposal has drawn heated and at times bitter complaints and opposition from the other armed services, the Army in particular. The other services worry that the Air Force would gain too much control over their systems.

The Air Force has noted the strange fact that the Army, which feels free to train and assign thousands of its soldiers to operate unmanned aircraft, has called on the Air Force to make available some 5,000 of its airmen to perform soldier tasks in Iraq and other war zones. The stated reason for this diversion of airmen to "ground force taskings" was that the Army was short of troops.

Pace agreed that, if USAF people can take over UAV operations and free up ground troops, then it is "not a bad idea to take a look at all UAV operations to see who ought to be on the control stick, so to speak, for those operations."

In April, the Air Force called a defense-wide meeting to discuss UAV operations in a roles-and-missions context. It drew in participants from various combatant organizations such as US Northern Command, US Southern Command, US Special Operations Command, and US Strategic Command.

However, only the Office of the Secretary of Defense and the commander of the UAV Joint Center of Excellence sent representatives. The Air Force was stiffed by the Army, Navy, and Marine Corps.

They "declined to attend," an Air Force spokesman said. The Air Force planned more such meetings.

F-22 Message for Washington Critics

The F-22's performance on its first foreign deployment should go a long way toward silencing critics who insist that the aircraft is too complicated to hold up to the rigors of real-world operations.

On a three-month deployment to Kadena AB, Japan, 12 F-22s turned in a mission capable rate of 71 percent, a readiness rate of 98 percent, and a utilization rate of 23.6, which is "pretty incredible for any fielded weapon system," 27th Fighter Squadron commander Lt. Col. Wade Tolliver said.

The fighters were based on the island of Okinawa. It was the acid test of the new system's deployment abilities.

The 12 aircraft flew more than 600 sorties during the visit, verifying the Raptor's ability to deploy over very long distances and perform well on the other end. The deployment from Langley AFB, Va., to Japan took nearly 12 hours of flying.

In Japan, the F-22s flew not only against the F-15s that are stationed at Kadena but also against Japan Air Self-Defense Force F-4s and F-15s and United States Navy and Marine Corps F/A-18s stationed in Japan.

The visit also allowed the F-22s to work with E-3 AWACS, Marine AV-8B Harriers, and KC-135 tankers, aircraft that usually are not available to the Langley-based squadron, Tolliver reported.

"One of our goals here was to educate the region on the F-22," Tolliver said. That was done through the flying training as well as "three open house tours" for US and Japanese military and dependents. More than 4,000 visitors to Kadena got to see the F-22 up close.

Tolliver said each deployment—groups of F-22s have

Staff photo by John A. Tirpak

The F-22 made its point at Kadena.

gone to Red Flag-Nellis, the Northern Edge exercise in Alaska, and weapon trials at Eglin AFB, Fla., and Tyndall AFB, Fla.—has led to more "lessons learned" about what it takes to deploy a Raptor unit.

"Every time we deploy, we learn quite a bit about what we need, or even what we don't need," Tolliver noted. "We learn which spare parts to carry, how many people do we really need to maintain operations, etc. This deployment is no different." So far, after each deployment, "we got better at it."

Tolliver said the F-22's ability to generate sorties routinely went "better than I personally expected," given that the unit was so far from its support base and regular maintenance facilities.

Two things he would have liked to see go better, though. One was that the unit didn't get to participate in any large force exercises. The other was a software glitch during the flight to Kadena that wound up grabbing headlines.

When crossing the international dateline, the F-22s suffered software problems that led Tolliver to turn the aircraft around and land in Hawaii.

"Our jet is very integrated, and everything in it talks to each other," he said. As it turned out, a time change in one system led to computer disagreements with other elements and manifested as program crashes in the airplane.

In Hawaii, Tolliver said, he was "amazed at the turnaround time for a fix." Contractors and blue-suits alike figured out the problem and solved it in a couple of days.

"That's why we fly airplanes," Tolliver asserted. "You can't make stuff like that up. You don't know, until you deploy ... what you don't know. You can simulate all you want, but until you get your butt in that airplane and you physically do it, that's the only [way] you're really going to know: Can you do it? ... Can you generate sorties? Does your supply chain work? And that's why we do this."

The War of Global Warming?

The US defense community should start planning now for security problems likely to result from global warming, a group of 11 former top generals and admirals warned in April.

The ex-military men don't think it's wise to wait for incontrovertible proof that climates are changing. They warn that climate change will be a "threat multiplier" for the US in this century, and preparations to deal with its attending security problems should begin at once.

The panel's findings were incorporated into a report, "National Security and the Threat of Climate Change," prepared by the Center for Naval Analyses in the Washington, D.C., area.

The report marks the first major statement on the effects of climate change offered by career military professionals from all the services.

The panel wrote that, while "debate continues" about how swiftly or dramatically the global climate will change as a result of increasing levels of carbon in the atmosphere, "the trends are clear." Such changes are on the way, the panel said. The military should prepare to deal with "sustained natural and humanitarian disasters on a scale far beyond those we see today" which will overwhelm some of the affected nations and drag the US into responses.

"Grave implications" for national security include "extreme weather events, drought, flooding, sea level rise, ... and the increased spread of life-threatening diseases," the group said in the 63-page report. Climate change will influence "the organization, training, equipping, and planning" of the armed forces, and their "ability to execute [their] missions in support of national security objectives."

The panel was chaired by retired Gen. Gordon R. Sullivan, former Chief of Staff of the Army. Other members include Adm. Frank Bowman, USN (Ret.); Lt. Gen. Lawrence P. Farrell Jr., USAF (Ret.); Vice Adm. Paul G. Gaffney II, USN (Ret.); Gen. Paul J. Kern, US Army (Ret.); Adm. T. Joseph Lopez, USN (Ret.); Adm. Donald L. Pilling, USN (Ret.); Adm. Joseph W. Prueher, USN (Ret.); Vice Adm. Richard H. Truly, USN (Ret.); Gen. Charles F. Wald, USAF (Ret.); and Gen. Anthony C. Zinni, USMC (Ret.).

"Sustained natural and humanitarian disasters ..."

Alone or in concert with allies, the US may find itself frequently drawn into helping afflicted countries deal with a situation, providing "stability and reconstruction efforts" before conditions worsen "and are exploited by extremists," the panel said.

The group suggested the US fully integrate climate change into national defense strategy; commit itself to a "stronger national and international role" in mitigating climate change; help poor countries prepare for climate change; force the defense establishment to reduce energy consumption; and study the armed forces' own vulnerability to climate change. ■

Aerospace World

By Marc V. Schanz, Associate Editor

F-16 Pilot Awarded DFC

Maj. Troy L. Gilbert, who died while strafing an enemy vehicle in Iraq last Nov. 27, posthumously received the Distinguished Flying Cross with valor device, the Air Force said in April.

The Air Force attributed the crash of Gilbert's F-16 to his "motivation to succeed" in pursuing a fleeing enemy weapons truck at very low altitude, adding that his actions saved the lives of ground troops and the crew of a downed Army helicopter.

The announcement was made in conjunction with release of a USAF investigation into the circumstances of Gilbert's death.

Brig. Gen. David L. Goldfein, who led the probe, said Gilbert and a wingman were on an intelligence-gathering mission when they got a call from coalition forces battling insurgents near the site of a downed helicopter. Ground forces, facing heavy machine guns, mortars, and rocket propelled grenades, were on the verge of being overrun when Gilbert and his wingman arrived.

Using the F-16's 20 mm gun, Gilbert made two strafing passes. On the second, while attempting to maintain visual contact with a fleeing truck, Gilbert cut short a turn, winding up too low. Onboard sensors indicated he made a sharp pull-up, but the F-16's tail struck the ground, causing the fighter to crash.

Goldfein said Gilbert had been well trained in strafing and flew many such missions in the two months the pilot had been deployed in Iraq. He had deployed from Luke AFB, Ariz.

USAF photo by TSgt. Rick Sforza

A C-130 Hercules drops water during Modular Airborne Firefighting System training over New Mexico in May. Aircrews from the Air National Guard and Air Force Reserve Command are being trained to fight fires.

For the Venerable U-2, a Long Goodbye

The U-2 is still a useful aircraft, but it will be replaced as soon as field commanders say they are comfortable with its replacement, the Global Hawk unmanned aerial vehicle, the Chief of Staff of the Air Force said.

Gen. T. Michael Moseley told reporters in April that the Air Force asked to retire the U-2 last year, and with good reason: It is old and it is suffering from electrical arcs inside the fuselage. "Not a good picture," Moseley said.

However, Moseley said the U-2 possesses a unique signals intelligence function that the Global Hawk is still not able to perform. The UAV will eventually be equipped with a form of this capability, and other sensors will fill in some, as well.

Moseley said he has asked Pacific Air Forces officials and commanders on the Korean Peninsula identify the signals intelligence functions the Global Hawk can't perform, "and at what point are they comfortable with the shift" from the U-2, "so we can get rid of it." He expects it could be 2010 or 2011, but didn't want to presuppose their answers.

"What I don't want to do is walk away from the capability until we have the opportunity to put it on Global Hawk," Moseley said. The Air Force will "hang onto the airplanes that have the Sigint capability last, and we will begin to work our way through the rest of the airplanes to get to that last pocket of capability."

Moseley noted that the U-2, limited by the endurance of the man in the cockpit, can only remain aloft about 10 or 11 hours, while the Global Hawk can remain up and focused on an area of interest for "up to 30 hours" at a time. Beale AFB, Calif., has both aircraft, and "the operations of the Global Hawk and the U-2 now have merged," he said.

—John A. Tirpak

Readiness Falling, Keys Reports

The Air Force's combat readiness has slid 17 percent since 2001, Air Combat Command chief Gen. Ronald E. Keys reported in March.

Speaking with reporters at Bolling AFB, D.C., Keys said that he's been obliged to find "major workarounds" to address readiness shortfalls in combat units.

The Air Force applies a rating of C1 (highest) to C4 (lowest) to assess unit war readiness, and Keys said the number of units reporting C1 or C2—considered prepared to "go and accomplish the mission"—has been "in a steady decline" over the last six years, while those counted as C3 or C4 have been rising.

Keys and nine other USAF generals spoke with reporters at a combat and mobility air forces conference.

The drop has various causes, from cutbacks in flying hours to shortages of personnel, equipment, and supplies, said Keys. The group of generals also agreed that "wear and tear" on equipment and people represents one of the biggest factors in the drop in readiness. Another, Keys added, was the need to keep fixing old aircraft that "find new ways to break."

He expressed concern that some personnel—those associated with low-density, high-demand missions—are experiencing "one-to-one dwell" deployments, meaning they are deployed to combat half a year and at home base half a year.

ICBM Cut Starts This Year

USAF's planned reduction of its Minuteman III ICBM force is to start late this year, a top officer reported in April.

Maj. Gen. Thomas F. Deppe, 20th Air Force commander, affirmed that the service will decommission 50 missiles—10 percent of the current 500-missile fleet. Deppe told a Capitol Hill seminar that the drawdown will result in the deactivation of 564th Missile Squadron at Malmstrom AFB, Mont.

The drawdown will be completed by the end of 2008, he said.

The three Minuteman wings—at F.E. Warren AFB, Wyo., Minot AFB, N.D., and Malmstrom—each will have 150 of the ICBMs. The Minuteman fleet is undergoing an upgrade encompassing most systems, from propulsion and guidance to re-entry vehicles and command and control links. The result will be, "basically ... a brand-new system," Deppe asserted.

The retired missiles also will get upgrades so that, when tested, they are representative of the operational systems.

Deppe reported that the Air Force has dropped plans to make all Minutemen into single-warhead missiles. He said that some will carry either two or three warheads.

The empty silos will be mothballed and not demolished, Deppe said, in case they are needed again.

Michael Dunn Named New AFA President

The Air Force Association's Board of Directors has approved Michael M. Dunn to become the next AFA President and Chief Executive Officer, effective July 1. Dunn succeeds Donald L. Peterson, who will step down after completing five years in the job.

"We are very fortunate to have someone of Mike Dunn's caliber as the next President of our association," said Chairman of the Board Robert E. Largent. "Mike comes to AFA with an extensive military and academic background. He is committed to helping AFA further its mission: to educate the public about the critical role of aerospace power in the defense of our nation; to advocate aerospace power and a strong national defense; and to support the United States Air Force and the Air Force Family."

As AFA's top executive, Dunn will direct the association's professional staff in all functional areas and be responsible for the management and operations of the association. He will also hold the position of publisher of *Air Force* Magazine, the official journal of the more than 125,000-member association.

A retired lieutenant general, Dunn previously served as president of the National Defense University, Ft. Lesley J. McNair, D.C. NDU's mission is to provide world-class professional military education in joint, multinational, and interagency operations.

Dunn commanded the 1st Operations Group at Langley AFB, Va., a group composed of nine squadrons and one flight, with C-21, F-15, HC-130, HH-3, and UH-1 aircraft. He was also a senior military fellow and a member of the Council on Foreign Relations. He has served in four joint tours including Headquarters, US European Command, Office of the Deputy Secretary of Defense, Headquarters, United Nations Command and US Forces Korea, and the Joint Staff. In Korea, he was the lead negotiator with the North Korean Army at Panmunjom.

He began his career as an F-106 pilot and later flew the F-15 in the Far East. He has also flown the HC-130, HH-3, T-33, T-37, T-38, T-41, and UH-1 aircraft. He is a command pilot with more than 2,500 flying hours. Among his military decorations are the Defense Distinguished Service Medal with oak leaf cluster, Defense Superior Service Medal, Legion of Merit, Meritorious Service Medal with three oak leaf clusters, and Air Force Commendation Medal with two oak leaf clusters.

Dunn graduated fourth in his class from the US Air Force Academy, class of 1972, with a bachelor of science degree in astrodynamics, and completed Squadron Officer School in 1976. He holds a master of science degree in systems management from the University of Southern California, which he received in 1981. He is also a graduate of Air Command and Staff College and the Industrial College of the Armed Forces.

Heritage Jacket Is Coming

The Air Force has selected a new service dress uniform—dubbed the "Heritage Jacket"—for field-testing this summer. It incorporates elements of uniforms worn in the days of Air Force legends Henry H. "Hap" Arnold and William "Billy" Mitchell.

The service has worked on the new uniform for nearly a year, developing several prototypes and finally narrowing it down to one style that "pulls the strongest mix of detail preferences into one jacket," said Brig. Gen. Robert R. Allardice, USAF's airman development and sustainment director.

Uniform developers "talked extensively to airmen" during the process, which included sampling variations on the Arnold and Mitchell uniforms using "different lapel styles and sizes, with and without buttons, belted and unbelted," and various pocket arrangements, explained Allardice.

In a late April visit to Goodfellow AFB, Tex., Air Force Chief of Staff Gen. T. Michael Moseley told airmen the deliberate process in this latest selection of a new service dress was to ensure "what gets out to all of you is what you really want."

Since its introduction as a separate service in 1947, the Air Force's service dress has gone through various changes, primarily affecting the wear of badges, ribbons, rank insignia. (See "Whatever Happened to the Plain Blue Suit," July 2006, p. 84.)

However, in the 1990s, then Chief of Staff Gen. Merrill A. McPeak introduced a new blue shade, nearly pocket-less version that sported Navy-style sleeve rank for officers. It proved a bomb.

His successor, Gen. Ronald R. Fogleman, changed it back to the one worn today.

A summer field test for the Heritage Jacket is dependent on whether USAF can afford it. Air Force spokesman Capt. Tom Wenz told *Air Force* Magazine May 15: "The uniform is still in the development process; the final decision has not been made. The plan is to have a wear test this summer (if the funding comes through), and then a final decision will be made."

USAF Accepts Tanker Bids

Northrop Grumman, leading a team that includes European Aeronautic Defense and Space (EADS), on April 10 submitted its KC-30 proposal for the Air Force's KC-X aerial tanker program. Boeing followed the next day with its offer of the KC-767.

Both contractors beat the Air Force's April 12 deadline.

At stake is a contract, valued at about $40 billion, for 179 aircraft, to replace the Air Force's 1950s-vintage KC-135E fleet. Later, the Air Force will also seek replacements for its more recently updated KC-135R.

The winner would also be well-placed to provide replacement platforms for

the E-3 AWACS, E-8 Joint STARS, and RC-135 Rivet Joint surveillance aircraft, all of them based on the 707 airframe, which is similar to the KC-135. (See "Washington Watch: KC-X Descendants," May, p. 15.)

A winner of the contract is expected to be announced in September. However, in April, a top Air Force official told reporters he expects that whatever company is selected, the loser will immediately protest the decision.

The official said the stakes in any major new acquisition program are incredibly high, due to the dwindling numbers of new projects, and the companies competing for them will likely exhaust any and all avenues toward getting a share of the work.

USAF photo by SSgt. Sarayuth Pinthong

At Kabul, US military personnel in Afghanistan unload a fire truck from a C-17. Baltimore city officials donated the fire truck to Mazar-I-Sharif Airport.

Ground Action Medal OK'd

The Air Force has announced it will award a new medal to airmen who risk their lives in ground combat where they are in direct contact with the enemy.

The Air Force Combat Action Medal was approved by Chief of Staff Gen. T. Michael Moseley on March 15. It will be awarded retroactively for any qualifying action subsequent to Sept. 11, 2001.

Service leaders wanted an Air Force award comparable to the Army's Combat Infantryman Badge, which recognizes soldiers who have served in direct combat situations. More and more airmen serving in ground force taskings are becoming eligible for such recognition.

To be eligible, airmen must have come under direct fire while performing duties in a combat zone, in the air or on the ground, away from a secured, established installation. The Air Force Personnel Center said those airmen augmenting a defensive fighting position could also be eligible.

There are restrictions on the medal. Only one award can be made during the qualifying period, and for now, Operation Iraqi Freedom and Operation Enduring Freedom count as one eligible time frame.

Chief Orders Growth Studies

How many more battlefield airmen and airlifters will USAF need to match up with a larger US ground force?

That, said Gen. T. Michael Moseley, is the subject of a major new Air Force analysis. The USAF Chief of Staff told reporters in April that USAF will need more airmen to embed with larger Army and Marine Corps forces and more airlifters to haul them around.

Moseley said he has directed Gen. Ronald E. Keys, head of Air Combat Command, to study the question. The Army and Marine Corps are expected to increase by a combined total of 90,000 troops over the next few years. The ground services have yet to figure out how many new troops will be in infantry formations.

Moseley asked Gen. Duncan J. McNabb, head of Air Mobility Command, to study how many additional airlifters it will take to carry around the greater numbers of ground forces and their gear. Moseley wants McNabb to update last year's Mobility Capabilities Study with the new numbers. (See "Rising Risk in Air Mobility," March 2006, p. 28.)

Both reports are due to Moseley this month. He needs the data to make informed decisions about troop and aircraft requests in the Fiscal 2009 budget, which will be deliberated this fall.

A service official said that the ground force expansion could create a need for at least 50 more strategic airlifters. The C-17 is the only strategic airlifter in production.

Predatory Loans Targeted

The Defense Department has proposed a new set of federal rules governing lenders that prey on military families and create "debt traps" that few can escape, according to a news report by Reuters, April 9.

Often called "payday loans," and including car title loans, tax refund anticipation loans, and other "services" that barely skirt loan-sharking laws, the practices have contributed to a huge upswing in the number of service members who can't get security clearances because of debt issues.

Under the 2006 defense authorization bill, the Pentagon is required to work with other federal agencies to put new rules regarding predatory lending practices in place by October. The new rules would cap interest rates and fees at 36 percent. However, lines of credit, car loans, credit cards, home loans, and other financial instruments would not be affected. A 60-day public comment period was expected to begin in late April.

F-35 Gets Green Light

The F-35 fighter program took a big step forward in April, when Pentagon

15 Academy Cadets Expelled, 13 Put on Probation

Thirty-one Air Force Academy freshman cadets were punished in April for their involvement in cheating on a January test. The academy expelled 15 of the cadets; three more resigned and the remaining 13 were placed on probation.

In answering a weekly multiple-choice test of Air Force knowledge, the cadets shared answers through Internet chat rooms. The knowledge tests don't count toward grade point average, but must be passed to advance to the sophomore year.

Cadets take an oath that they will not lie, cheat, or steal or tolerate such behavior from their peers. Cadets undertook the investigation.

In 2004, the academy interviewed 265 cadets in another episode of cheating. In that case, seven cadets resigned and seven were found guilty by an honor board, while a further 12 admitted cheating.

acquisition chief Kenneth J. Krieg gave approval for production of the first two lots of Lightning II aircraft. The move releases funds to begin low-rate initial production.

Krieg, the undersecretary of defense for acquisition, technology, and logistics, gave the green light to build the first two production-representative aircraft and start production of parts for the next 12. The move followed an April review of the program by the Defense Acquisition Board, which Krieg chairs.

There are already 14 F-35 airframes in production, and one flying, but those are test versions, funded previously, that will not have the full-up combat suites the production aircraft will have.

The first lot Krieg approved includes two Air Force models, which are conventional takeoff and landing variants. The second lot includes six each of the Air Force version and the Marine Corps' short takeoff and vertical landing model. The Navy's larger-winged carrier-based models will be funded later.

PACAF Wants Predators

South Korea and either Hawaii or Guam would be good places to deploy squadrons of MQ-1 Predator unmanned aerial vehicles, if any can be spared from the Iraq and Afghanistan fights, Pacific Air Forces chief Gen. Paul V. Hester told headquarters USAF recently.

Chief of Staff Gen. T. Michael Moseley sent a questionnaire out to his regional bosses, asking how they would use Predator if some could be freed up.

According to a senior USAF official, Hester's response was that the aircraft would prove "enormously useful" in the Pacific Theater, especially because PACAF has been the scene of a number of natural disasters in the last few years. Hester would like to have some Predators in order to have a persistent overwatch on humanitarian operations.

However, there won't be any Predator squadrons permanently based outside the US for a while. Air Combat Command has only a few with which to conduct training; all the others are very much in demand by regional commanders in Southwest Asia.

Ploesti Airmen Honored 63 Years After Raid

Sixty-three years after their heroic World War II action in attacking Nazi-controlled oil refineries around Ploesti, Romania, nine Army Air Forces airmen were awarded the Distinguished Flying Cross at a Capitol Hill ceremony April 24. The medals were presented by Gen. T. Michael Moseley, Air Force Chief of Staff.

The airmen were members of a B-24 crew during the July 15, 1944 raid. Six of the DFCs were awarded posthumously, although eight of the honorees had survived the war.

Present were 1st Lt. Edward L. McNally, TSgt. Jay T. Fish, and SSgt. Robert D. Speed. Represented by family members were 1st Lt. James E. Jatho, 2nd Lt. Theodore D. Bell, 2nd Lt. George N. Croft, TSgt. William A. Magill, SSgt. Frank G. Celuck, and SSgt. Daniel P. Toomey. A 10th crew member, SSgt. William F. Maxson, had already received a Distinguished Flying Cross for this mission.

Moseley noted that 605 AAF bombers and 334 fighters attacked the refineries that day, which at the time were supplying the Nazi war machine with 60 percent of its imported oil and aviation fuel. The target was heavily defended with smoke screens, anti-aircraft artillery, and enemy fighters. The B-24 had an engine shot out before successfully pressing its attack.

Separated from their squadron and flying at low altitude to avoid detection, the crew had to cross the bulk of enemy-held Romania and Yugoslavia to return to their Pantanella, Italy, base. McNally, the bombardier, noted in a 2004 letter that "lone bombers, deep in enemy territory, seldom make it back."

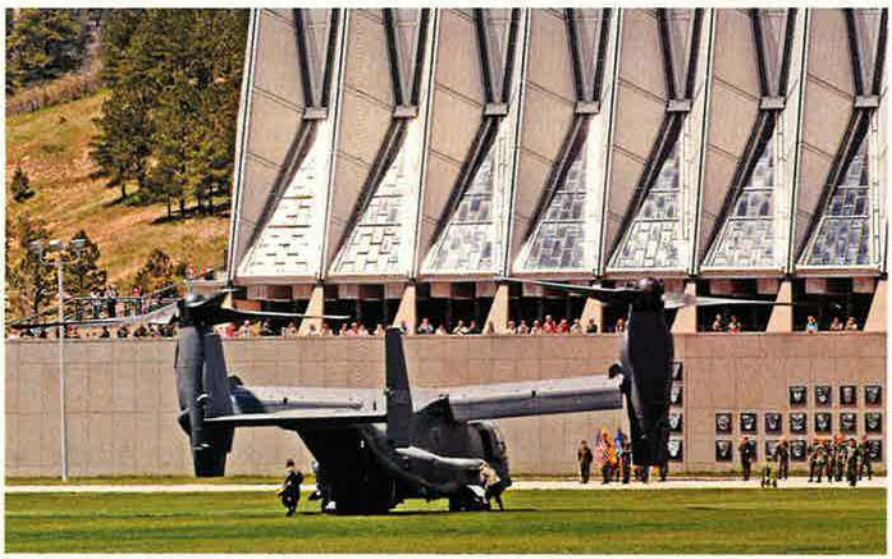
They made it, however, and nine flew again the very next day against a target in Austria—using another Liberator, because their own had been too badly damaged.

The crew formed a tight bond in their six weeks of flying together, McNally said, but were "severely tested" on those two last flights. The Austria raid was their last, as the B-24 crew was shot down near Vienna. Maxon had fallen ill and did not participate in this raid. Radio operator Magill was found dead on the ground. The rest of the crew was taken prisoner and remained in Nazi custody until the end of the war, when they were freed by Soviet troops.

The awards ceremony capped a 15-year effort by the surviving crew members and their families to receive the DFCs they had earned on the Ploesti mission. McNally praised the efforts of Rep. C.W. Bill Young (R-Fla.), who McNally said was a longtime champion of their cause.

—Adam J. Hebert

USAF photo by Dennis Rogers



A CV-22 Osprey tilt-rotor landed on the grounds in front of the US Air Force Academy's chapel on May 11. Cadets in the academy's Department of Aeronautical Engineering's High-Performance Computing Research Center contributed to the CV-22's design through their research in computational fluid dynamics.

Little Rock Gains Squadron

The 41st Airlift Squadron joined the 463rd Airlift Group at Little Rock AFB, Ark., on April 6.

The unit moved to Little Rock from Pope AFB, N.C., as a result of the Base Realignment and Closure process that unfolded in 2005.

The 41st is the first active duty squadron to fly the new C-130J Hercules.

The 41st AS brought 155 airmen to Little Rock, where the squadron eventually will operate 16 C-130Js. The base received the unit's first new Hercules in March.

Base Newspapers Disappearing

Base newspapers, a longtime staple of Air Force life, may be going extinct, to be replaced by Web sites and direct e-mails as a way to keep USAF people informed about the goings-on at their installations.

Pacific Air Forces, for example, will be out of the base newspaper business this month, when the last *Fuji*

Flyer, the Yokota AB, Japan, paper, is published. Misawa AB, Japan, and Eielson AFB, Alaska, stopped printing their newspapers last year; Osan and Kunsan Air Bases in South Korea stopped this spring.

An Air Force spokesman at Yokota told *Stars and Stripes* that the base papers—stacked for free distribution at various heavily trafficked locations around the base—often go unread and are costly to produce and dispose of. Moreover, cutbacks in public affairs shops mean there are often not enough people to write, edit, and publish the papers.

Instead, Internet versions of various base papers are being made available; their content can be maintained or changed rapidly, providing airmen with more timely information, the spokesman reported.

As part of Air Force Smart Operations 21—a servicewide effort to find efficiencies as the Air Force shrinks by 40,000 full-time equivalents over the next few years—more such shifts are expected, an Air Force spokeswoman at the Pentagon reported.

No Support Against Iran

Shortly after helping host a large US exercise, the United Arab Emirates and Qatar announced they would not allow the US to use their bases or facilities to launch attacks on Iran, the Associated Press reported.

US Navy exercises featuring 15 ships—including the carrier *John C. Stennis*—125 aircraft, and 13,000 sailors took place a few dozen miles off Iran's coast in late March, according to Navy officials, who said the maneuvers were meant to show the commitment of the US to stability and security in Gulf.

However, Pentagon officials said the show of force was meant to send a message to Iran, which at the time was holding more than a dozen British sailors who had been seized in international waters.

Qatar—which hosts the US Central Command Air Forces air operations center at Al Udeid Air Base—and the UAE, which hosts US military facilities, both said in March they would not allow the US to launch any attacks on Iran from their soil.

The Gulf Cooperation Council, an association between Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE—had earlier urged all its members not to support a US military action against Iran. The US uses military facilities in all the GCC countries.

Officials from the UAE elaborated

Senior Staff Changes

RETIREMENTS: Lt. Gen. Thomas L. **Baptiste,** Brig. Gen. Thomas L. **Hemingway,** Maj. Gen. Quentin L. **Peterson.**

NOMINATIONS: To be Brigadier General: Thomas J. **Masiello. To be ANG Major General:** Thaddeus J. **Martin. To be ANG Brigadier General:** Travis D. **Balch.**

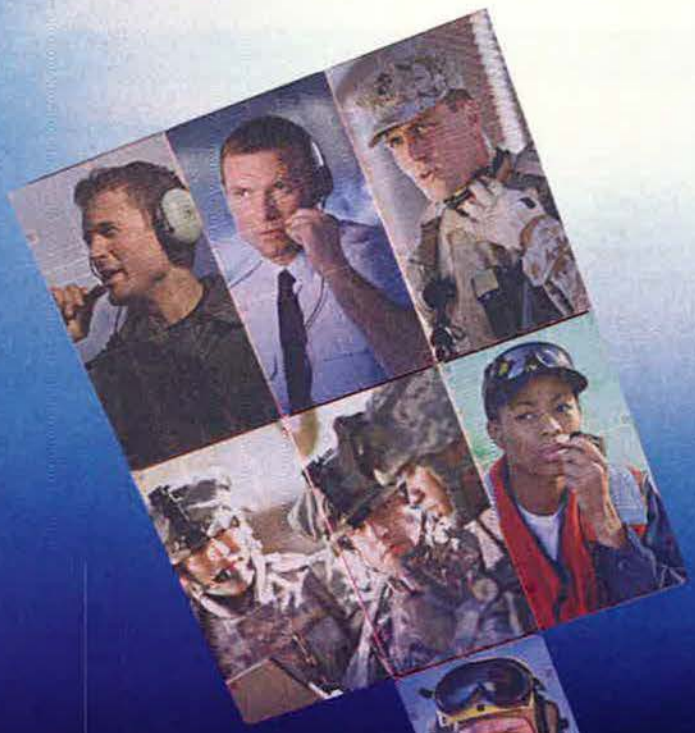
CHANGES: Brig Gen. Michael J. **Basla,** from Dir., C4 Systems, TRANSCOM, Scott AFB, Ill., to Vice Dir., C4 Systems, Jt. Staff, Pentagon ... Brig. Gen. Francis M. **Bruno,** from Dir., Log., PACAF, Hickam AFB, Hawaii, to Dir., Log. & Sustainment, AFMC, Wright-Patterson AFB, Ohio ... Brig. Gen. Andrew E. **Busch,** from Cmdr., 402nd Maintenance Wg., Warner Robins ALC, AFMC, Robins AFB, Ga., to Cmdr., Defense Supply Center-Richmond, DLA, Richmond, Va. ... Brig. Gen. Daniel R. **Dinkins Jr.,** from Dep. Dir., Policy, Planning, & Resources, Office of the Chief of Warfighting Integration & CIO, OSAF, Pentagon, to Dir., C4 Systems, TRANSCOM, Scott AFB, Ill. ... Brig. Gen. Silvanus T. **Gilbert III,** from Dir., AF Smart Ops. 21, OSAF, Pentagon, to Dir., Strat. Plans, Rqmts., & Prgms., AMC, Scott AFB, Ill. ... Brig. Gen. Frank **Gorenc,** from Dir., Operational Plans & Jt. Matters, DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon, to Cmdr., AF District of Washington, Bolling AFB, D.C. ... Maj. Gen. David S. **Gray,** from Cmdr., USAF Expeditionary Center, AMC, Ft. Dix, N.J., to Dir., Global Reach Prgms., Office of the Asst. SECAF for Acq., Pentagon ... Maj. Gen. Wendell L. **Griffin,** from Dir., Global Reach Prgms., Office of the Asst. SECAF for Acq., Pentagon, to AF Chief of Safety, USAF, Pentagon ... Brig. Gen. Stephen L. **Hoog,** from Cmdr., Coalition AF Transition Team, CENTCOM, Baghdad, Iraq, to Cmdr., 57th Wg., ACC, Nellis AFB, Nev. ... Brig. Gen. Ralph J. **Jodice II,** from US Defense Attache, PACOM, Beijing, to Spec. Asst. to the VCS, USAF, Pentagon ... Maj. Gen. Arthur B. **Morrill III,** from Dir., Log. & Sustainment, AFMC, Wright-Patterson AFB, Ohio, to Vice Dir., DLA, Ft. Belvoir, Va. ... Brig. Gen. Joseph **Reynes Jr.,** from Cmdr., 51st FW, PACAF, Osan AB, South Korea, to IG, ACC, Langley AFB, Va. ... Brig. Gen. Kip L. **Self,** from Cmdr., 314th AW, AETC, Little Rock AFB, Ark., to Cmdr. USAF Expeditionary Center, AMC, Ft. Dix, N.J. ... Brig. Gen. Charles K. **Shugg,** from Cmdr, 379th AEW, ACC, Al Udeid AB, Qatar, to Cmdr., Jt. UAV Center of Excellence, Jt. Staff, Creech AFB, Nev. ... Brig. Gen. Mark S. **Solo,** from Chief, US Office of Mil. Cooperation-Kuwait, CENTCOM, Kuwait City, to Dep. Dir., Air, Space, & Info. Ops., AMC, Scott AFB, Ill.

SENIOR EXECUTIVE STAFF RETIREMENTS: Robert J. **Conner,** Ernest A. **Parada.**

SES CHANGES: Kevin W. **Billings,** to Dep. Asst. Secy., Environment, Safety, & Occupational Health, OSAF, Pentagon ... Richard P. **Gustafson,** to Dep. Asst. Secy., Financial Ops., Office of the Asst. Secy. for Financial Mgmt. & Comptroller, Pentagon ... John J. **Over,** to Exec. Dir., Okla. City ALC, AFMC, Tinker AFB, Okla. ... Egon F. **Hawrylak,** to Dep. Cmdr., Jt. Forces Hq.-Natl. Capital Region, NORAD & NORTHCOM, Ft. Lesley J. McNair, D.C. ... M. Scott **Reynolds,** to Dir., 448th Combat Sustainment Wg., Okla. City ALC, AFMC, Tinker AFB, Okla. ... Garry B. **Richey,** to Dir., Log., Instl., & Mission Spt., AETC, Randolph AFB, Tex. ... William S. **Rone,** to Dir., Financial Mgmt. & Comptroller, AFSOC, Hurlburt Field, Fla. ... John E. **White,** to Dir., Engineering, F-35 Prgm. Office, ASC, AFMC, Arlington, Va. ■

Photo courtesy of Michael Kiernan

The Virginia Tech Corps of Cadets stands in formation at a cemetery in Blacksburg, Va. Cadet Matthew La Porte, a sophomore in AFROTC Det. 875, was one of the 32 students and faculty killed in the shooting at the university April 16.



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Operation Iraqi Freedom—Iraq

Casualties

By May 16, a total of 3,395 Americans had died in Operation Iraqi Freedom. The total includes 3,388 troops and seven Department of Defense civilians. Of these deaths, 2,773 were killed in action with the enemy, while 622 died in noncombat incidents.

There have been 25,378 troops wounded in action during OIF. This number includes 14,013 who returned to duty within 72 hours and 11,365 who were unable to return to duty quickly.

Closer to the Bone

A squadron of B-1B bombers that formerly operated out of the island of Diego Garcia in the Indian Ocean has relocated to a base in the Persian Gulf region. The move has sharply cut the number of aerial refuelings needed to get the bombers to the action, and puts the aircraft within easy reach of targets in both Iraq and Afghanistan.

Col. Jeff Fraser, vice commander of the 379th Air Expeditionary Wing, told *Air Force* Magazine the six B-1B bombers—operating from an undisclosed location—were in April averaging three sorties a day in support of coalition forces across the theater.

Transit time to Afghanistan from Diego Garcia is six hours; from their Persian Gulf base, the B-1Bs can make the trip in less than four. The reduced transit time translates to greater loiter time over ground troops.

The B-1Bs, of the 28th Bomb Wing, are deployed from Ellsworth AFB, S.D.

Fraser said the B-1B operations are among 13 new missions the 379th has added since June 2006.

The relocation of the B-1Bs followed a successful test with two airplanes, he said.

The bomber missions are still long, however. CMSgt. Jim Sanders, the NCO in charge, 34th Expeditionary Bomb Squadron, noted that crews are now flying 10- to 12-hour missions. Lt. Col. Quinten Miklos, the squadron operations officer, said that since the move, the Bones have kept up a brisk sortie rate, having flown about 290 missions across the theater from February through April—flying missions ranging from preplanned strikes to close air support.

—Marc V. Schanz in the Persian Gulf region

Operation Enduring Freedom—Afghanistan

Casualties

By May 16, a total of 386 Americans had died in Operation Enduring Freedom. The total includes 385 troops and one Department of Defense civilian. Of these deaths, 205 were killed in action with the enemy, while 181 died in noncombat incidents.

There have been 1,227 troops wounded in action during OEF. This number includes 501 who returned to duty within 72 hours and 726 who were unable to return to duty quickly.

F-15Es on a CAS Show

The 391st Fighter Squadron, which arrived at Bagram Air Base in January, was the first F-15E unit sent to Afghanistan expressly for the purpose of performing the close air support mission. The unit demonstrated that, even though the Strike Eagle was not originally designed for such a role, it can do it well.

The unit, deployed from Mountain Home AFB, Idaho, played a critical role in supporting International Security Assistance Force troops in contact with Taliban elements along Afghanistan's rugged frontier with Pakistan. Flying a punishing schedule of 10 missions a day, the "Bold Tigers" took over from A-10s that had dominated the CAS mission in Afghanistan since 2001.

Capt. Chris Troyer of the 391st said the deployment showed off the F-15E's strengths—notably, its speed advantage. While A-10s could loiter over the target area for extended periods, the F-15Es can get off the ground and get to the target faster. Using external fuel tanks and air refueling support, the F-15Es greatly expanded the base's operating radius and were used for a host of tasks ranging from nontraditional intelligence—providing moving video surveillance through their targeting pods—to attacking the enemy.

Through late April, the unit expended 2,500 rounds of 20 mm cannon fire in strafing runs and dropped 142 air-to-ground munitions. Capt. Joe Ryther, a weapon system officer with the 391st, said that aircrews had to adjust the way they used the cannon; it is aimed differently for a strafing run than for air-to-air engagements.

The unit is also among the first to employ the Small Diameter Bomb in Afghanistan.

—Marc V. Schanz at Bagram AB, Afghanistan

that they would also not play host to any espionage activities against Iran. The UAE is home to al-Dhafra Air Base, where the Pentagon has deployed both U-2s and Global Hawks.

C-130 AMP Breaks Cost Caps

The C-130 Avionics Modernization Program, designed to provide modern navigation and display systems for C-130H models, has experienced a 21 percent cost increase, the Pentagon reported in April.

The announcement was included in the April 9 Selected Acquisition Reports. The SARs describe the status of programs at the end of the previous quarter—in this case, the last quarter of calendar 2006.

The C-130 AMP increases were due primarily to increased labor rates and installation hours, as well as mission support equipment expenses, simulators and trainers, depot costs, and data support and interim contractor support, the report said. The Air Force reported that it anticipated the increases.

The Air Force has decided to defray the cost of the upgrade by foregoing the upgrade for 166 of the Hercules tactical transports. Last year, the service decided not to pay to upgrade its oldest E models

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USAF photo by TSgt. Justin D. Pyle

Maj. Max Moga, USAF's F-22 demonstration pilot, leads the Thunderbirds over Langley AFB, Va., during a rehearsal for the Airpower Over Hampton Roads air show in late April.

since it has had to ground or restrict 53 of them due to massive structural problems, which were age-related.

B-1 Fleet Hits 500,000 Hours

The Air Force's fleet of B-1B Lancer bombers has surpassed 500,000 flight hours as of a March 1 flight, Boeing said.

The B-1B has been lauded for its performance in both Operation Iraqi Freedom and Operation Enduring Freedom, flying a high operations tempo and performing many critical air strikes in support of coalition forces in contact with the enemy. Since 2003, B-1s have flown over 2,600 sorties.

USAF by the Numbers

In its most recent demographics report, the Air Force Personnel Center at Randolph AFB, Tex., offered a snapshot view of the service's active duty and civilian force.

In the active duty force, there were 337,780 airmen as of March 31—consisting of 68,675 officers and 269,105 enlisted. The Air Force had 13,545 pilots, 4,371 navigators, 1,363 air battle managers, and 33,188 nonrated line officers in the grade of lieutenant colonel or below.

The average age of an officer was 35, while the average age of an enlisted member was 29. Some 45 percent of enlisted airmen and 13 percent of officers were under the age of 26.

Women comprised 20 percent of the force—18 percent of officers and 20 percent of the enlisted force.

Sixty-one percent of the force is married—73 percent of officers and 58 percent of enlisted airmen. The Air Force now has 19,597 couples in which both spouses are in the military. Of these, 1,358 couples featured spouses serving in different armed service branches.

The total number of civilians in the Air Force was 142,447, of which 76 percent are white-collar workers and 24 percent are blue collar.

Of the pilots, four percent are women. Women first began pilot training in 1976 and were approved to serve as fighter pilots in 1993. Women represent five percent of navigators and 12 percent of air battle managers.

Of the enlisted force, 99.95 percent have a high school education; 74 percent

News Notes

■ The Civil Air Patrol saved 58 lives in 2006, its 65th anniversary year, according to CAP's annual report to Congress, released in April. CAP conducted nearly 300 searches for lost and stranded pilots, motorists, children, hikers, and others—while also responding to tornadoes, floods, wildfires, and snowstorms, helping provide relief and emergency services to numerous communities, according to national commander Maj. Gen. Antonio J. Pineda. In addition, CAP modernized by installing hyperspectral reconnaissance and digital imaging systems on many aircraft. The CAP fleet now has 73 state-of-the-art general aviation aircraft equipped for use in high-tech search and rescue and homeland security missions.

■ The surviving members of the Doolittle Raiders held their annual reunion in San Antonio on April 20, the 65th anniversary of their raid on Japan. Seven members of the aircrews that flew the first World War II air attack on the Japanese home islands attended a graduation ceremony for new airmen at Lackland AFB, Tex. The anniversary was also commemorated by a flyover of B-25 Mitchell bombers like those used in the 1942 raid. Part of the annual reunion ceremony is a roll call of the 80 individuals—led by Lt. Col. Jimmy Doolittle—who participated in the bomber action. Of them, 73 survived the raid. Three died accidentally, three were executed by the Japanese, and one died as a POW.

■ Boeing will conduct flight tests in Spain later this year on a manned aircraft powered by a fuel cell and lightweight batteries. The work is intended to explore technologies applicable to small manned and unmanned aircraft. The Fuel Cell Demonstrator Airplane is a specially configured Dimona motor glider. It uses a fuel cell-lithium ion battery system to power an electric motor fitted with a conventional propeller. Boeing's Phantom Works advanced research unit is overseeing the project.

■ The Air Force announced in April that it's seeking companies interested in working on a follow-on system to the Predator and Reaper unmanned aerial vehicles. The new system will be a multirole aircraft, able to perform intelligence-surveillance-reconnaissance missions as well as strike. The program is expected to get under way in 2010. USAF wants an aircraft in the 20,000-pound class, operating above 3,500 feet, with the ability to loiter for long periods of time. The Air Force wants the new aircraft to have structurally integrated antennas and multispectral sensors with automatic target recognition capability.

■ In an effort to add a layer of protection to its networks, the Air Force has mandated new encryption and digital signatures for certain e-mails. The new Air Force Public Key Infrastructure Policy on Encrypting and Digitally Signing E-mails is intended to thwart enemy attempts to infiltrate USAF information systems and send barrages of malicious e-mails. Each USAF user now has a unique personal identity with a card that must be inserted to use an official USAF workstation. The digital signature is considered legally binding

Medical Airmen Are AFA Team of the Year

Seven airmen have been chosen to represent expeditionary medics as the 2007 Team of the Year by the Air Force and the Air Force Association.

AFA selects a different career field to honor every year. This year t chose medical airmen who have provided first aid under fire, emergency surgery, medical transport, medical training, expeditionary dental services, and public health services in host nation countries.

Team members for 2007 include individuals who: acted as an embedded public health trainer for the Afghanistan National Army; manually ventilated a critical burn victim during aeromedical evacuation; and saved victims of mortar and bomb attacks.

The team paid a five-day visit to Washington, D.C., where they visited with Lt. Gen. James G. Roudebush, Air Force surgeon general; Lt. Gen. Arthur J. Lichte, assistant vice chief of staff and director of the Air Staff; and CMSAF Rodney J. McKinley. They also toured the Pentagon, the White House, and the US Capitol.

Members of the 2007 Team of the Year are: Col. Jay Johannigman, Capt. Shaun S. Westphal, MSgt. Faith E. Elmore, MSgt. Kory O. Rivera, MSgt. Michelle L. Rootes, TSgt. Crystal A. Gomez, and SrA. Robert Zuniga II. (See "AFA in Action," p. 82.)

have at least some college; five percent have a bachelor's degree, and .08 percent have a master's degree.

The Air Force Academy provided 19 percent of serving officers. The ROTC program provided 43 percent, and 21 percent received their commissions through Officer Training School. The remaining 17 percent received direct appointments or commissions through other sources.

Jail Term for Deadly Prank

An Air Force airman was sentenced to 10 years in prison for accidentally killing a roommate in Iraq, USAF reported in April. At a court-martial, SrA. Kyle J. Dalton pleaded guilty to involuntary manslaughter and drawing his weapon without cause in the death of SrA. Carl J. Ware Jr. in July 2006.

Dalton was pointing what he thought was an unloaded sidearm at Ware and jokingly tapping the trigger when the weapon fired. Dalton got immediate medical help, but Ware died shortly after being shot.

Dalton and Ware were deployed from Hickam AFB, Hawaii, to Camp Bucca, Iraq, where they were assigned as guards for detainees.

Dalton received not only prison time but also a reduction in rank from senior airman to airman basic, forfeiture of pay and allowances, and a dishonorable discharge, the Air Force said.

The Air Force dropped murder charges against Dalton—which carried a life imprisonment maximum penalty—in exchange for the manslaughter plea.

10 Missing Airmen Identified

The Pentagon's prisoner of war/missing personnel office announced April 9 that it had identified the remains of 10 US Army Air Forces servicemen who have been missing in action since World War II. The remains have been returned to their families for burial with full honors.

The 10 airmen were members of a B-24 Liberator lost near New Guinea on April 16, 1944. In 2001, the US Embassy in Papua New Guinea informed the Pentagon about wreckage of a bomber that had been found in the Morobe Province area of the country. In 2002, a Joint POW/MIA Accounting Command team began surveying the site and uncovered wreckage and remains.

Recovered and returned were the remains of 2nd Lt. George E. Archer of Cushing, Okla.; 2nd Lt. Raymond A. Cooley of Leary, Tex.; 2nd Lt. Donald F. Grady of Harrisburg, Pa.; 2nd Lt. Dudley R. Ives of Ingleside, Tex.; TSgt. Richard R. Sargent of North Girard, Pa.; TSgt. Steve Zayac of Cleveland; SSgt. Joseph M. King of Detroit; SSgt. Thomas G. Knight of Brookfield, Ill.; SSgt. Norman L. Nell of Tarkio, Mo.; and SSgt. Blair W. Smith of Nu Mine, Pa. ■

and ensures the recipient that a sender of an e-mail is legitimate.

■ The new Global Hawk Block 20 high-altitude unmanned aerial vehicle flew for the first time in March at Northrop Grumman's facilities in Palmdale, Calif. The flight lasted 90 minutes, reached 32,000 feet, and verified basic flightworthiness of the design. The aircraft is 1,000 pounds heavier and has a 15-foot longer wingspan than the Block 10 version. It can also generate more than twice as much electrical power as its Block 10 predecessor. USAF is buying 54 Global Hawks; the Block 20 is the 17th RQ-4 built to date.

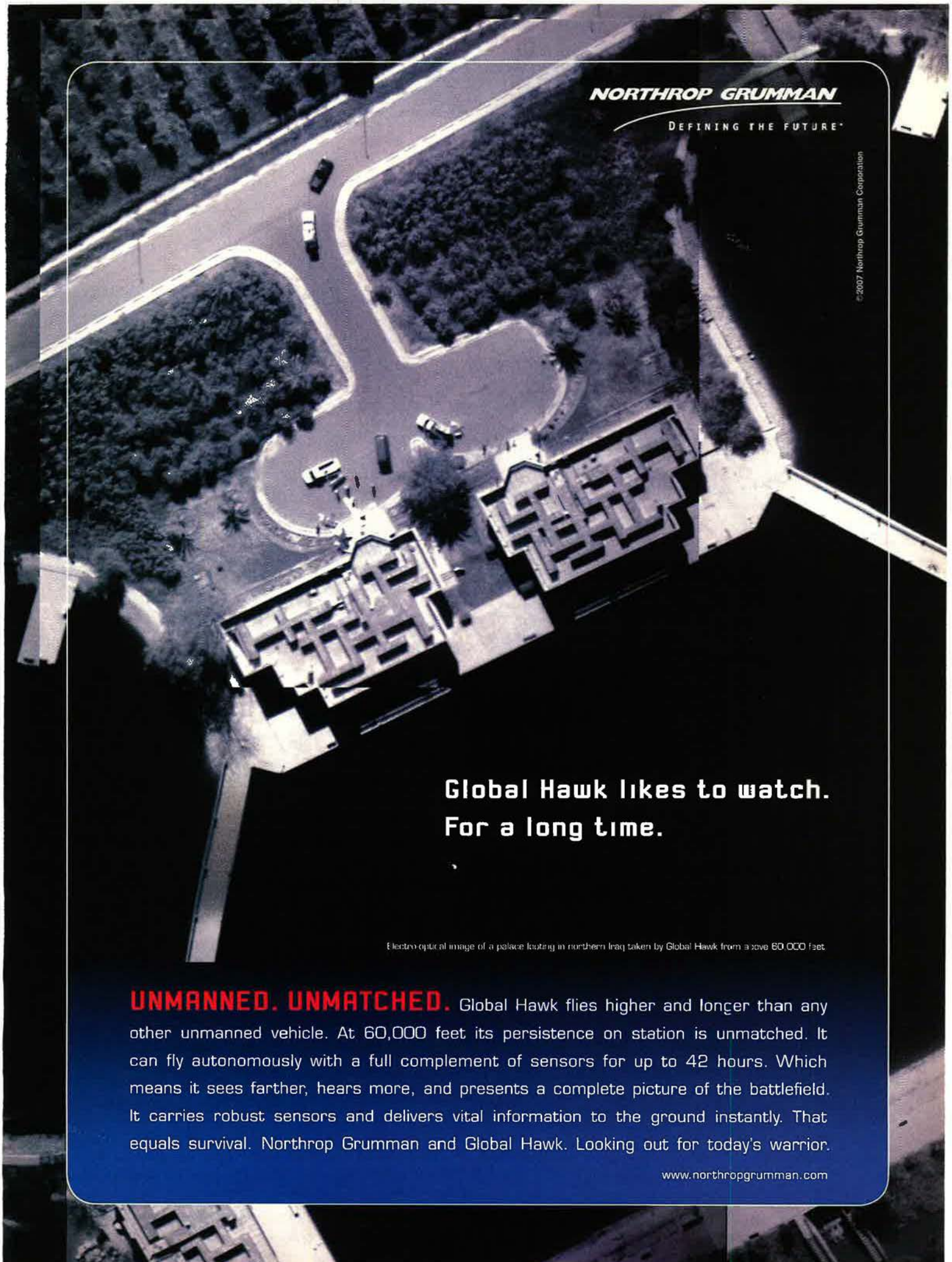
■ Aircrews and six B-52s from Andersen AFB, Guam, evacuated to Fairchild AFB, Wash., in early April to wait out Typhoon Kong-Rey. The bombers, deployed to Guam from the 2nd Bomb Wing at Barksdale AFB, La., were flown out so they wouldn't be damaged by the storm's 95 mph winds. The typhoon eventually veered away from Guam, sparing the island base from heavy damage. The six B-52s were part of Andersen's 36th Wing and were supporting Pacific Air Forces regional security operations.

■ To support an increasing number of Judge Advocate General Corps personnel being sent to Iraq and Afghanistan, the Air Force Expeditionary Center at Ft. Dix, N.J., has created a new training course. The Task Force 134 course covers treatment of detainees and how to assist local governments in building or rebuilding judicial systems. The first course was given in March. All the instructors have deployed within the last two years and use real-world expertise to help airmen prepare for new deployments.

■ Nearly $100 million worth of contracts to explore new technologies applicable to cutting the weight of aircraft were awarded by the Air Force during the last week in April. A $47 million award was given to Aurora Flight Sciences of Virginia, and a $49 million award went to Lockheed Martin Corp. The two will develop Advanced Composite Cargo Aircraft demonstrators, using extremely lightweight but durable materials. The technologies developed will be applied to a replacement for C-130 cargo and special mission variant aircraft.

■ The Hawaii Air National Guard and Pacific Air Forces have drafted an environmental impact statement on the replacement of F-15 Eagle fighters with F-22 Raptors at Hickam AFB, Hawaii. The report states that while the F-22s will be slightly noisier than the F-15s, the change should be barely noticeable to nearby communities. The statement will be available for comment at Hickam and various Hawaii libraries. The F-22s are set to arrive in 2010; the Hawaii ANG will be the first Guard unit to "own" F-22s.

■ B-52 bombers assigned for a rotational deployment in Guam participated in the Australian exercise Green Lightning in March. The aircraft flew from Guam to the Delamere Bombing Range in Australia's Northern Territory, flying 12-hour round-trip missions. On the range, the aircraft dropped six inert bombs. They also performed flyovers at the Australia International Air Show 2007 in Victoria. ■



Electro-optical image of a palace looting in northern Iraq taken by Global Hawk from above 60,000 feet.

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Action in Congress

By Tom Philpott, Contributing Editor

Inconsistent Disability Ratings; Was the Army Cutting Costs?; Away With the Efficiency Wedges ....

Disability Ratings Dustup

Senators grilled Pentagon officials about major disparities in the way the armed services award disability ratings. They also challenged disparities in the award practices of DOD and the Department of Veterans Affairs.

Retired Army Lt. Gen. James Terry Scott presented data gathered for the Veterans' Disability Benefits Commission, which Scott chairs. It showed that, from 2000 through 2006, the Army gave 30-percent-or-higher disability ratings to just 13 percent of soldiers found to have service-connected injuries or illnesses.

(Thirty percent is the threshold at which members are designated as disabled "retirees," qualifying them and their dependents for retiree privileges.)

The Marine Corps, by contrast, awarded disability retirement to 18 percent of its disabled members. The Air Force did so for 27 percent and the Navy for 36 percent of disabled troops.

Gordon England, the deputy secretary of defense, conceded that there was a problem during his April 12 testimony at a joint hearing of the Senate's Armed Services and Veterans Affairs committees.

England noted, "It certainly seems evident to me that we need to get down to some sort of consistent process, because it is confusing." Sen. Carl Levin (D-Mich.) shot back: "It's just unfair. It's unjust." Levin chairs the Armed Services panel.

USAF photo by SSgt. D. Myles Cullen

England admits: We've got a problem.

How to Fix Disparities

Pentagon officials explained that disparities in the award of disability ratings have sometimes resulted from the missions that led to the disabilities of service members.

England noted, "Each of the services evaluates fitness to serve based on their particular service, so it is perhaps not surprising that maybe Air Force is different from Marine Corps because of the nature of what [their] people do."

Harder to explain, Scott suggested, are data showing that the Army over the same six-year period awarded a zero percent rating to 13,646 soldiers that it found unfit for duty. By contrast, the Air Force, Navy, and Marine Corps had assigned a zero percent rating to only about 400 members per service.

The VA reviewed the cases of soldiers with zero percent disability ratings and 20 or more years of service. Afterward, it raised the disability ratings to an average of 56 percent. VA recognized many conditions that were ignored by the services.

Was the Army cutting costs? Acting Secretary of the Army Preston M. Geren said no, that the service's evaluation boards are not in any way directed or encouraged to hold down costs by limiting disability awards.

However, Geren said the system "needs a radical overhaul" because it "doesn't work for soldiers and their families today." He added that the Army is pursuing reforms.

Scott recommended that Congress and the Bush Administration quickly:

- Restructure the DOD disability award process to streamline medical and physical evaluation board responsibilities.
- Require the services to evaluate and rate all disabilities of separating or retiring service members.
- Direct VA and DOD to conduct a joint analysis of rating instructions to determine the basis for wide differences.
- Change a law keeping veterans from receiving disability compensation for a partial month in which they are discharged and delays in the second month's payment.

In April, VA Secretary R. James Nicholson accepted 25 recommendations of an internal task force. On receiving the study and recommendations, President Bush ordered VA to implement all of them, including one calling on VA and DOD to create a joint process to set disability ratings.

Help for Burn-Injured Vets

Members of the Senate Veterans' Affairs Committee are expressing strong support for new legislation that would provide severely burned veterans up to $50,000 to modify their homes and up to $11,000 to modify their vehicles.

"I am highly confident that we can pass this legislation quickly," said Sen. Larry E. Craig (R-Idaho), the panel's ranking Republican. "It's needed now."

Co-sponsors of the bill, S 1096, include Sen. Daniel K. Akaka (D-Hawaii), Veterans' Affairs Committee chairman, and Sen. John Cornyn (R-Tex.).

Craig said the payments would be made to family members while service members are still on active duty and recuperating at military hospitals. This will permit modification of their homes in time for their return.

"Efficiency Wedges" Slammed

The surgeons general of the three military departments, appearing before a House subcommittee in March, slammed Pentagon efforts to insert "efficiency wedges" on their wartime medical budgets. The wedges amounted to straight out cuts, they said.

The testimony immediately threw DOD on the defensive on yet another sensitive veterans issue.

Lt. Gen. James G. Roudebush, the Air Force surgeon general, said his $190 million efficiency wedge won't produce real savings but will merely reduce the number of patients who can be treated on base in the fiscal year that begins in October.

The same patients will seek their care from the Tricare network of civilian providers, driving overall costs even higher than would be the case if patients were seen in-house.

Before it cuts patient services, Roudebush said, the Air Force will slow spending on facility upkeep, medical equipment, and research and training.

In other words, said Rep. Vic Snyder (D-Ark.), chairman of the House Military Personnel subcommittee, the Air Force is being forced to reduce "seed corn." "Yes, sir," said Roudebush. "We push things downstream" creating "a bow wave of obsolescence, ... a bow wave of risk."

Service medical departments saw their proposed 2008 budgets cut by a total of $650 million for unnamed efficiencies.

AP photo by Chris Groenborg

Pollock, Arthur, and Roudebush: Keep wedges out of wartime medical budgets.

Vice Adm. Donald C. Arthur said the $343 million Navy cut is comparable to closing a large family practice hospital like the one at Camp Lejeune, N.C., or at the naval base in Pensacola, Fla.

Maj. Gen. Gale S. Pollock, acting Army surgeon general, called her cut "equivalent" to losing a community hospital. "It will be a cut in service," said Pollock.

The efficiency mandates imposed by defense officials are in addition to $1.86 billion withheld from the same defense health care budget on the assumption Congress will approve a plan to raise Tricare fees on retirees under age 65 and their families. (See "Action in Congress: Tricare Assumptions," April, p. 26.)

Reserve Retirement

Sen. Saxby Chambliss (R-Ga.) is touting a bill (S 648) to lower the retirement age of reserve component members by taking into account the length of time they are mobilized in support of contingency operations.

Chambliss, who appeared April 18 before the Senate Armed Services subcommittees on personnel, joined other witnesses speaking in support of improving the quality of life for service members and their families.

At the same hearing, representatives for military families warned that the high pace of operations and frequent deployments were taking a toll on family members.

Reservists clearly deserve an improved retirement package given their deepening role in Iraq, Afghanistan, and other fronts in the war on terrorism, Chambliss said. His bill, the National Guard and Reserve Retirement Modernization Act would lower the age 60 start of reserve retirement by three months for every 90 days reservists have served on active duty since Sept. 11, 2001, to support a contingency or respond to a national emergency.

The bill prohibits a drop in retirement age below 50 regardless of how long a reservist is mobilized. Also, Tricare health coverage still wouldn't begin until age 60, if the bill is enacted into law.

National Guard and Reserve personnel are the only federal retirees who have to wait until age 60 to draw their annuities, said Chambliss.

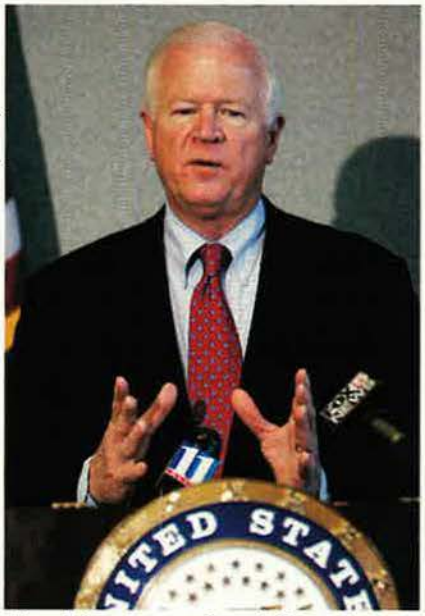
Through late May, the bill only had eight co-sponsors, but Sen. Lindsey O. Graham (S.C.), ranking Republican on the personnel subcommittee, said he favors the idea. Congress might delay any action on costly changes to Guard and Reserve benefits, however, until the Commission on the National Guard and Reserves delivers its final report to Capitol Hill next January.

Pretax Health Premiums

More than 150 House members have signed on as co-sponsors of a bill that would amend the tax code to allow federal civilian and military retirees to pay health insurance premiums on a pretax basis and to allow a tax deduction for Tricare supplemental premiums or enrollment fees.

The House bill was introduced by Rep. Tom Davis (R-Va.) and referred to the military personnel subcommittee whose chairman, Rep. Vic Snyder, recently signed on as a co-sponsor. An endorsement from the House Ways and Means Committee would be a bigger prize.

Sen. John Warner (R-Va.)has introduced an identical bill, S 773, in that chamber. It has attracted 25 co-sponsors. ■



AP photo by John Bazemore

Chamblis says quality of life matters.

Can the Total Forc

Photo by Ted Carlson

F-15s from the Louisiana Air National Guard fly over Louisiana wetlands.

Total Force Integration—a project that Air Force leaders deem to be one of USAF's highest priorities and key to the service's future health and effectiveness—is being twisted into one political knot after another.

On the one hand, USAF is moving out to further combine its active, Air National Guard, and Air Force Reserve

ce Hold Together?

The push for integration is strong, but so are the pressures that could produce disintegration.

By Adam J. Hebert, Executive Editor

components into even more powerful fighting forces. On the other hand, it is coming face-to-face with unprecedented external demands to "fix" a system that USAF plainly believes is not broken. Compounding the problem is standard political resistance to change.

The Total Air Force, as a result, is experiencing contentiousness and uncertainty on a scale rarely seen in its 60-year history, with an as yet undetermined effect.

Total Force Integration, which was launched in the late 1990s, refers to a blending of active, Guard, and Reserve personnel and equipment to gain efficiency and effectiveness in support of the overall Air Force mission.

This kind of integration is old hat for deployed forces. When Air Force units go overseas, airmen from all three Air Force components come together operationally under a single commander in the field. Active, Guard, and Reserve members work together so smoothly that it is virtually impossible to tell them apart.

However, recent efforts to extend the teaming efforts to forces located at Stateside bases have met considerable political resistance. Various governors, lawmakers, and state adjutants general accuse the Air Force of multiple sins. Among them: giving short shrift to state needs; failing to appreciate the "community first" philosophy of part-time airmen who make up the Guard and Reserve; and treating the reserve components as mere cogs in a giant federal force.

The charges and countercharges have sparked a number of official and unofficial studies of the situation. After months of review, the Congressionally chartered Commission on the National Guard and Reserves in March released an interim report evaluating specific legislative proposals affecting reserve components.

The commission, chaired by retired Marine Corps Maj. Gen. Arnold L. Punaro, rejected relatively extreme proposals aimed at greatly strengthening the power of the National Guard Bureau relative to the four services. Moreover, it focused mainly on the Army Guard, proposing little of note for the Air Force.

To Gen. T. Michael Moseley, USAF Chief of Staff, this was a good thing.

"The Punaro commission was tasked by the Congress to fix a certain set of

USAF photo by Maj. David Kurlo

Crew chief A1C Jeremy Cline (right) assists as Capt. David Kirkendall straps into an A-10 at Whiteman AFB, Mo. Cline is a Reservist with the 442nd Fighter Wing at Whiteman, an active duty base. Kirkendall is with the 81st FW, Spangdahlem AB, Germany, which sent several pilots to train with the 442nd. Complex Total Force arrangements such as this, always the norm in combat zones, are becoming increasingly common at Stateside bases.

problems," Moseley told *Air Force* Magazine. "My interpretation is the 'certain set of problems' to be fixed were not Air Guard, Air Reserve, or Air Force-related."

In the midst of the swirling political controversy, the service is plunging ahead with integration on a broad front. USAF on March 26 announced that it had finalized 138 "Phase IV" Total Force Integration initiatives—a total that includes new and all previously announced efforts. More than 90 of the initiatives are funded, "with more soon to follow," said the Air Force.

Phases I, II, and III of the project were announced over the past decade. They introduced active-Guard-Reserve teaming on a limited basis. (See "The Totally Integrated Force," June 2006, p. 36.)

The newest initiatives move Air Force personnel into new teaming arrangements nationwide and suggest even further Guard and Reserve involvement in important mission areas such as unmanned aerial vehicle operations and intelligence-surveillance-reconnaissance missions. A release noted that 45 percent of the initiatives would bring about new associations. Some 55 percent focus on "new, emerging, or stand-alone missions."

Some of the changes were driven by the recent Base Realignment and Closure process. The latest BRAC, for example, ordered Air Force Reserve Command to close a base and five flying wings in Louisiana. AFRC A-10 attack aircraft, previously based in New Orleans, already have been dispersed to other bases around the country.

This and similar moves are allowing the Reserve to increase the size of its squadrons to more efficient 24-aircraft units.

However, there is concern about how many part-time airmen—Guard or Reserve—will actually pick up and move to new locations receiving their aircraft. Lt. Gen. John A. Bradley, commander of AFRC, noted that some of the airmen from New Orleans have already moved to units at Barksdale AFB, La., Whiteman AFB, Mo., Eglin AFB, Fla., and Keesler AFB, Miss. Some, however, have not, choosing instead to leave the force.

Many of the Total Force Integration initiatives center on reliable new hardware that can benefit from higher crew ratios. Lt. Gen. Craig R. McKinley, director of the Air National Guard, said in an interview that these initiatives give units "stuck" with aging aircraft an opportunity to make a transition to missions that have bright futures.

The Air Force is pushing Total Force Integration at every operating location for the new F-22 fighter. One such unit is the "classic associate" setup in Virginia, where Air Guardsmen based in Richmond are giving up their F-16s and moving to Langley AFB, Va., home to two squadrons of Raptors.

Full-Spectrum Initiatives

At the end of 2006, seven Guard pilots were flying F-22s at Langley, located in the Virginia Tidewater area. Eventually, the wing will have 31 ANG pilots. Similarly, 62 ANG maintainers were working on the advanced fighter at year's end. The Air Force hopes to have more than 400 of them at Langley before too much longer.

The initiatives outlined in the Phase IV list encompass the full spectrum of Air Force missions and locations. They include the creation of:

- A new Guard security forces squadron in partnership with an active squadron at Minot AFB, N.D.
- A Reserve association with Global Hawk maintenance and operations at Beale AFB, Calif.
- An Air Mobility Command Joint

USAF photo by MSgt. Mike Annis

An Air National Guard C-130 takes off from Bagram Airfield, Afghanistan. Nearly 60 percent of USAF's mobility capability resides in the reserve components, which are kept at the same high readiness levels as the active duty force.

Cargo Aircraft unit within the Maryland ANG, based at Martin State Arpt., Md.

- A Reserve air operations center augmentation unit, based at Hurlburt Field, Fla., to support Air Force Special Operations Command at the same site.
- An MQ-9 Reaper unmanned aerial vehicle squadron within the New York State Air National Guard.
- An active duty associate unit affiliated with the Air Force Reserve A-10 unit to be based at Whiteman.
- An ANG foreign military sales flying training unit for F-16s, at Springfield-Beckley Arpt., Ohio.
- A Guard foreign military sales flying training unit for C-130s, "at a location/state to be determined."

There is more to come, as Moseley said in an explanatory letter to governors in several affected states. He noted that the "next set of Total Force beddowns" will entail basing of a new KC-X tanker, the new CSAR-X combat search and rescue helicopter, F-35A strike fighters, new Joint Cargo Aircraft, and more C-17 and C-130J airlifters.

"There is an ever-wider set of opportunities [for partnering] that will evolve over the coming years," concluded the Chief's letter.

Similarly sweeping change is taking place at the Pentagon. One of the Phase IV initiatives is to "fully integrate" the Air Staff's A8 plans and programs directorate with active, Guard, and Reserve airmen. The Total Force Integration office is part of A8 and is led by Brig. Gen. Allison A. Hickey, an officer who served 10 years on active duty, one in the Reserve and 12 in the Guard.

Still, it would be overly optimistic to believe that this Air Force plan will unfold smoothly in years ahead. Some members of Congress have proposed legislative measures that could complicate if not block various Air Force moves.

Most notable of these is a proposal to offer the chief of the National Guard Bureau a seat on the Joint Chiefs of Staff and elevate the position to four-star rank. Another was to give the Guard independent authority to develop its budget.

These proposals are being pushed by the powerful Senate National Guard Caucus, co-chaired by Sen. Patrick J. Leahy (D-Vt.) and Sen. Christopher S. Bond (R-Mo.).

However, the Punaro commission came out in opposition to these proposals, calling them unnecessary and possibly damaging to Total Force efforts, defensewide. The report did, however, recommend that Congress promote the NGB chief to four-star status.

The commission said that putting the Guard Bureau chief on the JCS "would be fundamentally inconsistent" with the Guard's status as reserve components of the Army and Air Force—part of a larger and hopefully integrated force. There is concern that elevating the NGB in that manner would remove it from the control of the parent services, creating in essence a fifth armed service.

"We have to avoid that," Moseley said. "To create a separate service, with separate funding and separate equipage, what would that do to the Total Air Force?" For starters, he warned, it would create temptations for the different components "to buy completely different equipment," which could lead to unique and noncompatible squadrons.

Moseley warned that putting the Guard chief on the Joint Chiefs "could lead to the ANG becoming a less-than-equal partner by separating the NGB and the ANG from the collaborative

Select Findings of the Commission on the National Guard and Reserves

The following were contained in the commission's second interim report, released on March 1 in Washington, D.C.

The chief of the National Guard Bureau should be elevated to the rank of four-star general, "based on the duties [he] is required to perform."

The NGB chief should not be made a member of the Joint Chiefs of Staff because JCS members have "greater" responsibilities.

Creating a new JCS position would run counter to service integration efforts and "would be fundamentally inconsistent with the status of the Army and Air National Guard as reserve components of the Army and Air Force."

National Guard forces are not a strategic reserve as they were in the Cold War—to be mobilized in the event of a massive war against the Warsaw Pact. They are an operational force.

The Defense Department does not explicitly or adequately budget for civil support missions because it "views them as derivative of its wartime missions. This is a flawed assumption."

US Northern Command, which leads DOD's homeland defense mission, has a staff primarily consisting of active duty personnel. NORTHCOM's billets should instead be filled primarily by "leaders and staff with reserve qualifications and credentials."

The NORTHCOM commander or deputy commander "should be a National Guard or Reserve officer at all times."

AP photo by Lauren Victoria Burke

Shown here, from left to right, are four prominent National Guard supporters: Sen. Kit Bond (R-Mo.); Sen. Patrick Leahy (D-Vt.); Sen. Max Baucus (D-Mont.); and ANG Maj. Gen. Roger Lempke.

Photo courtesy of CNGR

Arnold Punaro, above left, speaks to Gen. Peter Pace after Pace's testimony before the commission. Commissioners Dan McKinnon and Wade Rowley look on.

planning, fiscal, training, and oversight processes of the Air Force." His conclusion: "In short, it could lead to disintegration."

There is also a risk that in such an arrangement, the much-larger Army National Guard would overwhelm the priorities and culture of the smaller Air National Guard. The Air Guard, with 106,700 airmen, is less than a third the size of the 350,000-soldier Army Guard. "Look at the percentages of mass," said Moseley. "If you combined that into a separate service, what would that do to the Air Guard as a culture? What would it do to the Air Guard's ability to be part of the Air Force and not an air arm to something [else]?"

Full Partners

This is not an idle worry. All three components of the Total Air Force are trained, equipped, and evaluated according to the same standards. The Guard and Reserve are clearly operational, having long since stopped being a strategic reserve. "The country depends on a force [with] readiness, that you can deploy in hours," Moseley said.

Officials routinely note that there is no way to tell an Air Guardsman from a Reservist from an active duty airman in the war zone, because they all wear the same uniform and have comparable skills. "There are some ... [Total Force] fighter units that are doing Operation Noble Eagle and deploying right now that are as good, or better," than any other unit in the Air Force, Moseley added.

The Guard and Reserve are full partners in the Air and Space Expeditionary Force. Lt. Gen. Michael W. Wooley, head of Air Force Special Operations Command, noted that 100 percent of his command's EC-130 electronic combat capability is in the Guard. Similarly, AFSOC's entire MC-130E Talon I mobility capability resides in the Reserve. Gen. Duncan J. McNabb, head of Air Mobility Command, observed that nearly 60 percent of his force resides in the Guard and Reserve, and every airman is a "full up round" when arriving in the war zone.

Shortly after the commission's interim report was filed, Moseley sent it a letter outlining further ideas for consideration before the commission issues a final report next year. In the letter, he suggested the commission consider the merit of promoting the heads of the Air National Guard and Air Force Reserve to four-star rank.

"Think how many bases Craig McKinley [the ANG chief] is responsible for. Think how many bases John Bradley [the AFRC commander] is responsible for," said Moseley in an interview.

Though most of their personnel are part-timers, the reserve components are significantly larger than several of USAF's four-star major commands in terms of manpower, equipment, and numbers of operating locations.

In his letter to Punaro, Moseley also suggested a major change in state leadership of the Army and Air Guard. He asked panel members to "investigate options to give our governors both an air and an Army adjutant general, who would partner to create a true joint headquarters for the governors." Among other things, this move would enlarge the pool of Total Force officers from which "higher-ranking positions could be filled."

Such efforts to modernize the Total Air Force and keep the Guard and Reserve relevant have frequently met with hostility, and this spring was no exception. The states are highly protective of their Guard and Reserve units, the jobs they provide, and the capabilities they offer for response to natural disasters and other emergencies.

Moseley's March letter to the commission was a case in point: It generated immediate hostility on Capitol Hill, where lawmakers accused Moseley of making suggestions that would destroy the National Guard as it now exists.

Leahy and Bond wrote that Moseley's suggestions were "ill advised" and signified "a gross misunderstanding of the significance and purpose of the National Guard." They and the state adjutants general took particular issue with the notion of creating a second adjutant general's post. This, they believe, would create a new layer of bureaucracy and destroy unity of command.

The Senators also wrote that "instead of pursuing an antiquated, and costly, model that moves Guard units to active bases, ... the nation would be better served by expanding community basing programs that bring active service members to stand [alone] Guard bases."

Some of the proposals do just that, such as programs to bring active duty airmen to serve with Guard units in Burlington, Vt., and Cheyenne, Wyo. These are often attempts to increase manpower levels at Guard units that have small local populations to recruit from. Studies have also found that USAF can expect significant personnel losses if it asks Guard or Reserve personnel to move more than 200 miles to a new assignment.

Opposition to proposed changes seems reflexive at times, but much stems from long-standing concern at the state level that the Air Force doesn't take local needs into account when planning for its Total Force.

Proposed location changes are part of the problem—many of the initiatives require moves to active duty Air Force bases. "Fully 50 percent of traditional CONUS active duty bases will become 'Total Force' with Guard and Reserve associations," Wynne and Moseley testified in December.

"We are concerned that the Air Force may not fully grasp that ANG members are citizen-airmen with intricate ties to their communities," wrote Stephen M.

Koper, president of the National Guard Association of the US, in a March letter. "They are not easily transferable manpower who [move] when basing or missions change."

The Air Force and ANG are aware of the state concerns. Moseley said both the Air Force and the states need to do a better job communicating their desires and needs to each other. This is especially important when missions are being changed.

"There are no easy answers here," noted Punaro. "There's no magic pixie dust that you can sprinkle and all these problems go away. These are issues that have been long-standing."

USAF photos by A1C Nathan Doza

At top, airmen with the 332nd Expeditionary Medical Group at Balad AB, Iraq, transport a patient from a staging facility to the waiting Globemaster III. The Air Force Reserve C-17 from March ARB, Calif., will transport injured troops to the Landstuhl Regional Medical Center in Germany for additional treatment. Here, airmen prepare for a medical evacuation flight.

The commission's report was notably downbeat about the health of the reserve components, especially the Army National Guard. Lt. Gen. H. Stephen Blum, the NGB chief, told the commission early this year that 88 percent of the Army Guard forces in the United States "are very poorly equipped today."

Broken, or Not?

The Air Guard did not get a clean bill of health. Punaro said that 45 percent of ANG units were similarly "not ready," meaning that 45 percent were at the lowest C3, C4, or C5 readiness ratings. He warned, "This is worse than the worst readiness days of the Hollow Force" in the late 1970s and early 1980s.

This assessment did not sit well with the Air Force Chief, who bluntly declared, "The Air National Guard and the Air Force Reserve are not broken."

He noted that the Guard and Reserve operation and maintenance accounts are actually funded at levels higher than that of the active duty force in areas such as depot purchased equipment for maintenance, base operating support, and sustainment. ANG officials further pointed out that the 45 percent figure includes units undergoing mission conversions because of BRAC, which affected more than 60 percent of all the Guard wings.

There are frequent concerns about recruiting and retention in the Total Force. The commission was most concerned with prior-service enlistments, which have been declining for all the reserve components.

For the Air Guard, prior-service recruits had dipped to less than 50 percent of new recruits from 2001 to 2004, but rebounded above 53 percent in 2005 and 2006. ANG retention rates have been near or above the 90 percent target since 9/11.

At AFRC, the prior-service numbers are traditionally higher. They were above 80 percent in the late 1990s and have fluctuated annually between 61 percent and 76 percent since 2001.

Bradley noted that much of the problem in getting prior-service airmen is simple math—four times as many airmen were separating from active service per year 15 years ago than is the case now. Bringing 10 percent of them into the Reserves does not have the same effect it once did.

AFRC has surpassed its overall recruiting goal for the past six years, however, and retention levels have consistently been near 89 percent—the same as before 9/11.

Bradley also noted that Reserve personnel are "much happier today than they were years ago," because they are "out there every day" performing real-world missions and directly supporting combatant commanders.

The Air Guard, meanwhile, needs to move into new equipment. More than half the Guard currently flies fighters, noted McKinley. As these older F-15s, F-16s, and A-10s age out over the next 20 years, the ANG needs to move into fifth generation fighters and new mission areas. This creates an opportunity for the Air Force and the states to collectively plan for equipment and missions that are mutually beneficial.

"I think we can all do a better job defining a state mission," said Moseley. "Ask: What would be the capability that a governor or a TAG would want, to be able to deal with [a natural disaster or terror attack]? ... What does a governor need, to be able to meet that state mission?"

Yet to be seen is whether such a spirit of cooperation will be enough to untangle the Total Force Integration effort. ■

"Air Force Alliance"

Tokyo and Washington have gotten serious—really serious—about joining forces and multiplying their power.

North Korea's ballistic missile and nuclear weapon tests had a decidedly unintended effect: They kicked the US-Japan security alliance into high gear. And, as this alliance grows, the US Air Force will play a unique and critical role.

Ties between Tokyo and Washington—which had been somewhat chilly during the 1990s—had already been improving. However, North Korea's hostile moves accelerated efforts to draw together US and Japanese forces with greater cooperation and collaboration on intelligence, operations, and technology.

Pyongyang could not be pleased at the outcome: The alliance, say officials on both sides, has never been stronger.

For its part, the US sees the alliance as a model for other Pacific nations wondering where to place their trust as China grows ever more powerful and North Korea remains dangerous and unpredictable.

"A lot's going on," said Lt. Gen. Bruce A. Wright, commander of both 5th Air Force and US Forces, Japan. "A lot's changed—and for a lot of reasons."

Wright described the partnership as "an air force alliance, in a lot of ways," because of the long distances between countries in the region and the speed and destructive power associated with air weapons. Some of the biggest changes in the US-Japan relationship are centered on the coordination of air activities.

Within Japan, a big shift is reshaping its military force. Early this year, the Japan Defense Agency, previously part of the nation's Ministry of State, was elevated to full Cabinet status, and is now the Ministry of Defense. The move reflects Japan's growing appreciation of its need to integrate military affairs with affairs of state.

Simultaneously, the Air Force has restructured the way it operates in Japan, establishing more logical connections between USAF units there and with Pacific Air Forces headquartered in Hawaii. The changes will streamline the coordination of air assets within the Pacific theater and put all USAF capabilities in Japan unambiguously under the control of a joint forces air component commander in wartime.

In peacetime, 5th Air Force will practice the main day-to-day contact between the Air Force and Japan.

The Air Force has upgraded the capabilities of aircraft based in Japan, raising them to the most powerful configurations available. Its F-15Cs at Kadena Air Base, on the Japanese island of Okinawa, are being swapped for the latest versions with upgraded engines, radars, and helmet-mounted displays. F-16s at Misawa Air Base, located at the northern tip of the Japanese island of Honshu, have the most up-to-date upgrade package. At Yokota Air Base near Tokyo, newer C-130H transports have replaced E models.

The Japan Air Self-Defense Force (JASDF) will soon build a new facility at Yokota, where its officers and USAF counterparts will sit side-by-side and manage air defense of the Japanese islands, using data and surveillance culled from both countries' assets and shared fully, in real time.

Other US services are likewise upgrading forces in Japan. For example, the aircraft carrier USS *Kitty Hawk*, long homeported in Japan, will be replaced

for the US and Japan

By John A. Tirpak, Executive Editor

Japan Air Self-Defense Force F-15Js line the ramp.

next year by the younger USS *George Washington.* Japan has accepted the presence of the new nuclear-powered carrier despite its long opposition to nuclear vessels. That, say officials, marks a kind of turning point all on its own.

Since the North Korean salvo of ballistic missiles on July 4, 2006, there has been "very intensive intelligence coordination" between the US and Japan, Wright reported. The two have shared intelligence-surveillance-reconnaissance data that was previously very closely held.

Japan also granted the US permission to set up the Patriot PAC-3 ballistic missile defense system on Kadena. The missile site overlooks the west end of the runway, on a recently cleared jungle hilltop.

"I would not have predicted, three years ago, that we would ever have been able to do that, based on my experience in Okinawa," Wright said, because Okinawans have traditionally balked at the US military presence there.

Also this year, Japan permitted the first operational deployment of the Air Force F-22 fighter—the service's newest combat system—at Kadena. Wright appraised the local community protest as "minimal," compared with protests in previous years against the base's resident F-15 unit. A new US early warning radar, called the FBX, was set up in Shariki, in northern Honshu, late last year, with almost no public opposition.

Brig. Gen. Harold W. Moulton II, commander of the 18th Wing at Kadena, said the base these days is having an easier time with community relations. He chalks that up, in part, to the dwindling population that holds ill feelings from the "pre-reversion" period before 1972, when the US returned control of Okinawa to Japan.

Moulton said, "I have greater hope for having less of an anti-base mentality" as the next generation comes to appreciate the benefits of the alliance.

Wright reported that the US does polling in Japan to gauge the mood of the people and said that the data show "60 percent or so" of Japanese view the alliance as a positive thing, and there is about a 50 percent "level of support ... for the stationing of US forces in Japan."

He added, "We are looked at more and more as a 'partner' in this alliance, vice some sort of occupying force."

The numbers represent a sharp comeback from the mid-1990s, when there was public debate in Japan about whether the end of the Cold War had robbed the alliance of any lingering usefulness. Those feelings mushroomed following the rape of a 12-year-old girl by US marines on Okinawa in 1995, which Wright termed a "horrific" episode in the alliance's 47-year history. The incident chilled the alliance for several years.

Still, things began to turn around in 1998. In that year, North Korea launched its Taepo Dong long-range ballistic missile right over Japan. The test was a surprise to the allies, Wright said, and they decided they would not be caught out again. The US and Japan redoubled discussions about how to defend against the North Korean danger, given that country's warning in 1999 that it would resume development of nuclear weapons if certain demands were not met. In 2003, it withdrew from the Nuclear Non-proliferation Treaty, and, in 2005, North Korea announced it had produced

The Next Japanese Fighter

The Japan Air Self-Defense Force will need a new fighter in a few years to replace its F-4 fleet. The defense ministry has let it be known that it will consider the F-15E, the F/A-18E/F, and the Eurofighter Typhoon as candidates.

Japan would most like to acquire the F-22, but the Raptor is for now off-limits due to the Obey Amendment (see "Washington Watch," December 2006, p. 11), while the F-35 likely won't be available in time for Japan's requirement.

Brig. Gen. Joseph M. Reheiser, vice commander of 5th Air Force, said he thinks Japan will go with an American aircraft.

"I think they would prefer to buy from the United States and do some kind of license where they could produce it here," he said, based on talks with his counterparts. Japan built the F-15J under license and collaborates heavily with the US on its F-2, a larger version of the F-16.

In March, six JASDF pilots visited Seymour Johnson AFB, N.C., to try out the F-15E, which is the attack version of the Eagle already in Japan's fleet. The team had previously visited an F-18 unit in California.

nuclear weapons. Last October, North Korea conducted what it called a test of a nuclear device, although the results were ambiguous to foreign intelligence services.

Tighter Coordination

In 2005, the US and Japan conducted what are now known as the "2+2 meetings" because they featured the American Secretaries of State and Defense and the Japanese foreign and defense ministers. The meetings yielded an agreement that the alliance would continue indefinitely, that US forces would remain in Japan for "the life of the alliance," and that steps would be taken to more closely coordinate military actions.

One of the steps taken was to set up the Bilateral Joint Operations Coordination Center, or BJOCC. At the center, American and Japanese service members, working together, monitored the 2006 North Korean missile tests. Intelligence warning of the impending tests was received in early May; by June, the joint center was standing by around the clock.

"We knew exactly what the North Koreans were going to do," Wright asserted, adding that the event was instructive in many ways.

"The Japanese saw that we were with them, and that the alliance was real in deed and not just word, that we were ready to respond across the range of military operations," he said.

The tests were eye-opening in other ways, too, according to Col. Stephen A. Town, the Army's director of missile defense in Japan. The missile that got the most attention last July was the long-range Taepo Dong 2, which failed. However, "the other six missile firings were actually very accurate, hit very close to their center points, and demonstrated that North Korea has a capability of putting missiles on target," Town said.

US and Japanese officials also were surprised at the professionalism of Pyongyang's effort. North Korea took some of its operational mobile missiles off the line, brought them to the shoreline, and launched them "overnight." The tests involved two Scud Cs, two Scud Ds, and two No Dong ballistic missiles, all of which worked perfectly, Town said. Only the Taepo Dong, which is thought to be capable of lifting a satellite or large warhead, went awry.

Japan's radar network—augmented by Air Force radar assets and US Navy and Japanese Aegis cruisers—immediately plotted the track and forecast the missiles' impact points in the Sea of Japan, where previous tests had been aimed. Because of this, Japan did not activate its Patriot missile systems.

The PAC-3 version of Patriot is the most advanced and optimized for use against ballistic missiles. Japan's Patriots are older models, but Town said 16 PAC-3 systems will be delivered to the Japan Air Self-Defense Force over five years, on an "accelerated" schedule. The JASDF is responsible for missile defense.

Japan's missile defense will also be bolstered by Aegis systems on its naval vessels and accompanying SM-3 missiles. It is collaborating with the US Navy on improvements to both.

Under the "2+2" agreement, the allies will make Yokota a joint US-Japanese base. The centerpiece will be the Bilateral Air Operations Coordination Center, which is to be built and operational by 2010, according to Brig. Gen. Joseph M. Reheiser, Wright's deputy.

The JASDF's air defense command will move onto Yokota, Reheiser said. Japanese officers have visited PACAF's air operations center at Hickam AFB, Hawaii, and have asked for help in designing their own "Falconer-like" AOC, he said. When completed, USAF and JASDF airmen will be "looking at [a] common operational picture," linked to Hickam's AOC, "working air defense and ballistic missile defense of Japan." The cost of the facility, as well as new housing and other infrastructure at Yokota, will be borne by Japan.

Another 2+2 directive was a plan to send US fighters to Japanese air defense bases, the better to learn other operating areas and to interact more frequently and directly with JASDF crews. Japan

USAF photo by Amn. Sheila deVera

F-22A Raptors arrive at Kadena AB, Japan, for their first foreign deployment. Kadena was picked for the visit both to highlight Japan's status as a trusted ally and to familiarize forces in the region with the F-22's unique capabilities.

Kadena Air Base is well-situated to support air operations in the Far East. All of Taiwan and eastern China are less than an hour's flying time away; all of Korea is within two hours; the rest of China, Indochina, and the Philippines are within three hours.

is bearing 75 percent of the cost of these "road shows," which will initially last a few days each, but will expand to two weeks or more in the coming years. The visits, involving Navy and Marine aircraft as well as USAF, is seen as reducing the local noise "burden" of the towns surrounding the existing American bases.

"It strengthens our strategic alliance," Reheiser said. "It enhances our bilateral interoperability; it gives us some flexibility. ... After you go to these bases, and you train there and you work with their people and you're more familiar with the base, it's more bases you can operate from," he explained.

There has been further cooperation beyond simple exchanges of aircraft visits and sharing of information. Air Force E-3 AWACS operate out of Kadena, and there are regular exchanges with JASDF crews who fly a similar system mounted on a Boeing 767 platform.

Col. Mark Henkel, 18th Wing operations group commander, said, "Our controllers have been flying with their controllers on their ... 767 [AWACS]," which are fairly new and equipped with the latest gear. The crews return with complaints "about the age of the E-3," he noted.

He also pointed out that USAF KC-135 crews at Kadena are helping to train JASDF tanker crews—also flying a variant of the 767—in "the art of aerial refueling." Kadena-based KC-135s also "drag" Japanese aircraft up to Alaska for exercises with US forces there. It is expected that Japanese tankers will in the near future perform aerial refueling for some USAF aircraft.

The 2005 agreements also call for a study of making Yokota a "dual use" base accommodating commercial flights. Moreover, 5th Air Force, which controls the airspace over central Japan, has been freeing up more airspace for civil flights.

JCS, Japanese Style

Fifth Air Force is also hosting or participating in symposia and exercises to work out linkages with Japan, whose military staff is also undergoing a restructuring. With the change to a Ministry of Defense, as of March, Japan has something akin to the US Joint Chiefs of Staff, although Japan's version retains operational control over military forces. One US officer likened the Japanese command structure to that of the US regional combatant commands.

Wright, asked what the Japanese tell him are their chief security concerns, said ballistic missile defense is near the top of the list, as is airspace control. The JASDF continues to routinely intercept incursions by Chinese and Russian reconnaissance aircraft; Japanese F-15Js scramble several times a week. If an inbound US AWACS isn't identifying itself properly, it gets intercepted, too.

However, Japan is also "concerned about resource competition in the region" as China and other neighbors grow "militarily and economically," Wright said.

USAF photo by MSgt. Jeffery Loftin

USAF personnel and their Japan Air Self-Defense Force counterparts practice together and share knowledge. Air Force SSgt. Christopher Hill (l) and JASDF MSgt. Masashi Mitake participate in joint firefighting training. Members of the two services trade knowledge on many levels.

Keeping up With a High Maintenance Alliance

In Japan, personal relationships are key to any cooperative enterprise. That was a big part of the reason that Pacific Air Forces' 13th Air Force set up Det. 1 at Yokota Air Base early this year.

For decades, the commander for USAF forces in Japan during a war would be the same one who commands them in peacetime: the head of 5th Air Force, who is also commander of US Forces, Japan.

However, since the Air Force created "Falconer" air operations centers for all its regional commands, it has also designated a joint forces air component commander, or JFACC, from those commands to run them. In the Pacific, that's the head of 13th Air Force, Lt. Gen. Loyd S. Utterback.

In a Pacific war, PACAF would supply "the operational punch," through 13th Air Force, Utterback said, and coordinate air- and space power from all over the Air Force. The AOC at Hickam AFB, Hawaii, would run the air war.

However, Utterback can't be in Japan all the time to do the continuous work necessary to keep vital personal relationships fresh.

Japan is a "high maintenance alliance," said Lt. Gen. Bruce A. Wright, 5th Air Force commander. Relationships with the Japanese leadership are critical and must be worked every day.

"You can't do what we do here with 'reachback,'" Wright said. "You've got to be here all the time."

Det. 1, then, is Utterback's "plug" into Japan, he said, and its commander, Col. Michael A. MacWilliam, is his personal representative to the Japanese.

"When you talk to Colonel MacWilliam, ... you're talking to me. And you're talking to the guy who's going to fight the war," Utterback said.

While 5th Air Force will now perform more of a support function for the alliance—providing "beans and bullets" Utterback said—it remains a numbered Air Force with three combat wings, at Kadena, Yokota, and Misawa Air Bases. Wright, and his successors, will continue to be the overall "face" of the US military to his Japanese hosts, but the detachment will gradually become the operational interface with the Air Force.

To streamline the transition, MacWilliam said, about 80 people who were doing coordination work with the Japanese at Yokota Air Base simply "switched patches" and began doing the same work for 13th Air Force. Utterback said he will visit Japan more frequently, since it's important that Japanese commanders know their counterparts in the alliance.

Neither the USAF F-15s at Kadena nor the USAF F-16s at Misawa perform air intercepts for Japan, as a rule. The air sovereignty mission is carried out by the JASDF, although the USAF units are "on call" if requested. So, how do US forces contribute to the security of Japan?

The two countries are "committed to credible deterrence" and their partnership, Wright said. The alliance itself is a message to the region, as is the fact that the two countries have prospered to be the top two individual economies in the world, Wright noted.

Moulton, the 18th Wing commander, said the "mere presence" of US forces in Japan "provides a statement about willingness to be engaged." He added, though, that it's not only about keeping Japan safe.

"Our constant physical presence here has a dampening effect on animosities throughout the region. I'm convinced that [while] China has the desire to be the regional power in this region, they're very comfortable, I think, having us here. We lend a cover over the region so that nothing swings too wildly out of control."

In terms of pure airpower, Kadena is the crown jewel of the US-Japan alliance.

"We could get 400 tactical aircraft in here," Moulton said. The base already plays host to F-15s, C-130s, KC-135s, E-3 AWACS, and RC-135 reconnaissance aircraft.

Located almost equidistant from mainland China and Taiwan, Kadena is less than three hours' flying time from most of the Asia-Pacific nations and within six hours of the rest.

"You can't find a more heart-of-the-envelope place for this region," Moulton asserted.

Under revisions to the original 1960 alliance treaty, an attack on Japan is an attack on the US, and vice versa. But would Japan allow the US to launch attacks from its soil if Japan itself had not been attacked? Could the US deploy bombers to Kadena?

Wright noted that Japan, which pays more than $4 billion annually for the stationing of US forces on its soil, routinely agrees that those forces be deployed elsewhere. An F-16 unit at Misawa, for example, recently went to combat operations in Iraq. The situation is in contrast to that of South Korea; US forces stationed there don't deploy off the peninsula.

The US discusses "the full range of options with the senior leadership of Japan," Wright said, noting that using bombers would help increase sortie rates and decrease reliance on tankers in a major conflict. The idea is "certainly something we ought to talk about, given the reality of the challenges we face."

He added that although the US has invested heavily in South Korea's defense, it has invested greatly in Japan, as well.

"I think we have to consider that defense of Japan is just as important, and possibly more important, in the allocation of resources," Wright asserted, noting that any major conflict in the region would be "absolutely dependent" on the alliance with Japan. "Logistically, we cannot engage any other country without this support."

JASDF photo by 1st Lt. Takeshi Okubo

Japanese F-15Js and USAF F-16s form up on a Japanese AWACS at Cooperative Cope Thunder. In many ways, the JASDF is mirroring USAF in developing its capabilities.

Wright also said that airpower could help substitute for the departure of 6,000 Marines from Okinawa, which was another 2+2 initiative. The US may wish to add a squadron, he said, noting that Gen. Paul V. Hester, PACAF commander, is thinking that Kadena might one day host three squadrons of F-35s.

Town, who has served with the US Army in Japan for more than 17 years, said Japanese military leaders express "blatant, open distrust, dislike" of China and consider that nation as their main threat.

At joint military seminars, "the Japanese generals say, 'When are you going to wake up and smell the reality of the enemy?'" Town related.

USAF photo by MSgt. Val Gempis

A Kadena F-15 prepares for a dawn sortie. After a decade of doubt, the US-Japan alliance now seems rock-solid.

Triad of Resentment

Japan's new political leadership has been tiptoeing around China. It hopes to sidestep the tensions attending their relationship since Japanese former Prime Minister Junichiro Koizumi visited a shrine to Japan's war dead, among them war criminals. His successor, Shinzo Abe, has not made such a visit. The payoff was an April summit meeting with Chinese Premier Wen Jiabao in Tokyo—the first such visit in seven years.

Nevertheless, Town said, "I think, in Asia, there are eternal enemies," adding that there isn't an Asian tradition of forgiveness. China and Japan, he said, have longstanding grievances. So does Korea with China, and Korea with Japan.

"That's a triad of resentment that will persist," Town asserted, adding that Tokyo likely will continue in its alliance with the US because "the Japanese are desperate for at least one key friend in the region. And the reality is that the US is that friend."

Wright said China is a concern because its military spending is leaping by double-digit increases, and "we're not sure what their military goals are."

However, the US wants the alliance with Japan to be "inclusive," he said, and the US is hoping to get regional nations involved through military-to-military contacts. He's hoping for "more visits at the general officer level, more one-on-one engagement with China."

Article 9 of Japan's constitution renounces Japan's right to make war or even to maintain a military. The air, ground, and maritime self-defense forces are technically an extension of Japan's constabulary, but the nation has been debating whether to alter its constitution for several years. Japan's contribution of forces to the Iraq war was an issue of major national controversy. (See "Dragon, Eagle, and Rising Sun," June 2005, p. 62.)

However, Tokyo is recognizing that there are benefits to being able to provide military forces in the world arena, Town argued.

In the 1991 Gulf War, he said, the Japanese solved the issue of how to support the war effort "by sending money," contributing about $9 billion "as their share." But paying the bill hurt the Japanese economy, Town suggested.

After Sept. 11, 2001, the Japanese realized they couldn't afford to "just be a money-giver," he said, so they have helped by dispatching a ground unit to Iraq, as well as C-130s to Kuwait to help with airlift, and other gestures.

Praise was heaped on Japan for its modest contribution, he noted, and the nation reaped "huge dividends" domestically and abroad for its military moves.

"There was a sense of patriotism and a sense of doing their duty," which was "unprecedented" in recent memory, he recalled.

"To see the people lining the streets and waving their flags at the troops on their way was something that hasn't been seen in Japan since World War II. And so, there is an awakening spirit in Japan, as I see it—a new invigoration of their military ethos."

He believes that this mood provided impetus for the 2005 agreements to transform the alliance with the US.

The talks, he noted, revolved around keeping the alliance healthy "for the next 50 years. ... Well, that's a huge statement just in itself." The recent talk of changing the constitution would have been unthinkable merely five years ago, Town said, "so there are definite winds of change in Japan."

In the last two years, Japan has sent fighters to Guam to practice dropping small unguided bombs—the only time they've performed such missions since World War II. In keeping with its broadening view of "defense," Japan is exploring what it would take to be able to prosecute precision air attacks.

"They are interested in JDAM," the Joint Direct Attack Munition, a senior PACAF official said. But acquiring a precision weapon and being able to employ it effectively are two different things.

"They don't have any targeteers," he explained. "They haven't done targeting. They don't know how to build a target list" and have done no weaponeering. Japan and the US have talked about a tutorial, but no formal program exists yet.

Town said that the 50 years after World War II saw a "snail's pace" of change in the alliance, but "in the last five years we've seen dramatic changes in attitudes. And that helps the US-Japan relationship to blossom, because all of a sudden there's a new openness and willingness to engage." ■

Gen. William T. Hobbins, head of USAFE, looks eastward to the Black Sea and southward into Africa.

Hobbins' World

Gen. William T. Hobbins *since December 2005 has served as commander of United States Air Forces in Europe, based at Ramstein AB, Germany. In a recent meeting with* Air Force *Magazine, the general discussed in some detail the major issues confronting his command. What follows are excerpts of his remarks.*

Into New Europe

"Mihail Kogalniceanu, MK Air Base in Romania, [is an] area we really have a lot of interest in. First of all it's on the Black Sea. If you looked at its range space to the north, and its army ground maneuver ranges to the south, and you tied all those together, and you overlaid the Nellis Air Force Base range space, ... it's even bigger than what we have at Nellis. The Romanians ask us to come there and fly with them all the time because they're a brand-new NATO nation. They have MiG-21s, and our A-10s, ... F-16s, ... [and] F-15Cs will go down there."

Eager Partners on Black Sea

"Both Bulgaria and Romania have over a dozen projects where runways are being enhanced, facilities [and] buildings are being built. So we're actually taking advantage of the fact that there's a lot of NATO money being spent. ... MK Air Base is a great place to go, and it's going to be a great place for us to train. [The Romanians] are very, very strong supporters in the Balkans, in Afghanistan, in Iraq. I go to Kabul [Afghanistan] a lot, and I see the Romanians there running the base. ... They're interested in US equipment and training, tactics, techniques, and procedures. They attend our schools. They attend our academic courses, and they just continuously ask us for more, and so we're going to capitalize on that."

Equipment Forges Ties

"A country like Poland buys [the] F-16. ... They bought 48 of them. That solidifies the relationship with the United States Air Force for at least 30 years. ... Their runways are being modernized because ... they're a brand-new NATO member, and their infrastructure is being modernized. They now have the most modern fighter in this part of the world with that Block 52. So we've started a relationship there ... and then we'll have over 44 military-to-military engagements with that country this year."

No F-22s in Europe

"Right now, the number's fixed [at 183 F-22s for the entire Air Force]. That's what we've been given, and that does not say that we won't eventually be given more. ... Obviously I'd like to see some in Europe, but ... look at the distances that our F-22s travel. [The distance from Elmendorf AFB, Alaska, to Northeast Asia, for instance, is essentially the same as the distance from Langley AFB, Va., to Western Europe.] The responsiveness of those aircraft is such that they could go either way."

Stealth Fighters Will Come

"In the F-35 world, we have six ... partners in Europe—six countries. And so we should have in the future some great F-35 capabilities, some advanced fighter capability over there that would be a huge offset for not having the F-22. But quite frankly you have to look at your priorities and I think our Air Force has done that—they've picked the right locations. I hope that we get more than seven [F-22] squadrons, and we see them over in Europe from time to time, but for right now, I think the distances work out."

USAFE and Africa

"[There are] tremendous resources there, and the other thing that we're worried about is the roots of terrorism. You have this region between the northern part of Africa and the southern part of Africa called the Trans-Sahel, sort of a dry arid line that separates the Arab Muslim north from the Black Christian south. And along that line you've had the terrorists and actually kingdoms and leaders who have done human trafficking for decades, and they move clearly along this line from Sudan all the way across through Mali

and Mauritania. ... They have these big, open porous areas which are very susceptible to terrorist activity."

Medical Missions

"We have sent numerous medical missions, which I wish got more notoriety, but our doctors and our nurses and our technicians and our optometrists [are] going to places like Ghana and they see well over 3,000 patients in a very short period of time, hand out over 1,500 [pairs of eyeglasses.]"

Battle for Influence

"You'll find a lot of Chinese influence [in Africa], and I tell everybody that there's a lot of stadium diplomacy going on down there. I mean that they're building stadiums, soccer stadiums—China's built 22 of them down there. In exchange for that, they're developing Chinese cell phone systems and infrastructure and roads and car plants, etc. If you look around the continent, you see that the Chinese president and the foreign minister have been visiting a lot of places. We have been engaged there, too, quite frankly. I'm scheduled to go to South Africa and Botswana and several other African nations later this year, and I expect to go down there and find ways to help out with their air forces. Many of them have United States Air Force equipment, and sometimes just the military-to-military engagements are enough to help ... those relationships flourish even more."

Little Infrastructure

"The infrastructure there is pretty tough. I mean, I've been studying a little bit about how you get around in Africa, and I know that there's not ... a central airport that [can] get everywhere. There's no 'Atlanta Airport' in Africa. ... In many places in Africa, you have to fly back to the European continent before you can turn around and come back to the country you want."

16th AF Becomes 3rd AF

"We just had a change of a name of the numbered air force [at Ramstein] from 16th to 3rd. Basically, 3rd Air Force stood up, and 16th Air Force became an air expeditionary task force [at Izmir, Turkey]. ... When you look at the rank, honor, and lineage, which we always do, ... you find that 3rd Air Force has 16th Air Force by a whisker. I mean, it goes back to campaign streamers; it goes down to actual victories in combat, it goes down to ... citations, and all of those things. [Third Air Force also] had a long history with the British, so they would have preferred a 3rd Air Force."

What the NAF Does Now

"Third Air Force is now going to be responsible for the [organization, training, and equipping] of the wings. ...We want to qualify 3rd Air Force as a [joint task force] commander. ... [Lt. Gen. Robert D. Bishop Jr.] has the ability to pick up and move forward and become a joint task force commander directly under EUCOM or wherever else he's assigned. ... Third Air Force [is] doing this already—we have a de-mining operation where we're in Guinea-Bissau, and we're training the Guinea-Bissauans how to do de-mining operations. ... We have a space shuttle launch ... that's going to happen here in the next couple of months. Third Air Force pre-positions the medical crews and the aircraft that do the emergency recovery if the shuttle has to land someplace short, within our theater."

Expeditionary Task Force

"[If NATO] would prefer a commander that was south of the Alps, [Lt. Gen. Maurice L. McFann Jr. is] already running all the combined air and space centers down there for NATO, so he would be available should we need it. But [the 16th Air Expeditionary Task Force is] there in title only, without any forces assigned, and without a great big staff. ... Once the President and the [Defense Secretary] decide how we're going to go forth in Africa, we may decide to eventually have a numbered air force approved, so I have the makings there."

Half-Sizing the Headquarters

"USAFE's force [cut is] about the 3,500 level, ... but clearly we have a plan to absorb the loss of those people. ... With all the locations we have you would think, well, that kind of a cut might be very significant, but quite frankly a lot of the cuts come right out of my headquarters. ... I'll be down to about 51 percent of what my headquarters was, so you will see a lot of the centralization of functions."

Where the Surpluses Are

"One of the largest [Air Force specialty codes facing cuts] is ammo systems. Another one was comm electronics, and another one after that is personnel. [More than 1,000 USAFE airmen will be cut from these three AFSCs.] I've asked the wing commanders to really work with me [to] look at process improvement as a means of finding efficiencies where our airmen won't feel the pain."

Kill the Wasted Effort

"I believe if we reorganized or if we looked at it from a different process standpoint, we'd find waste in what we do, waste in time. You've got numerous examples that show ... if we did it right, we would actually be able to do our job with less people. ... I wanted to know what the average workweek was. So we went around and we measured all the squadrons and found out that ... they were working about 51 hours a week on the average. ... My goal here is to try and reduce the workweek—so I've reduced the stress of the force and, at the same time, [used] that as a motivator."

Critical Crew Chiefs

"Look at maintenance, the crew chiefs. I'm worried about crew chiefs leaving, because crew chiefs are the lifeblood of an aviation unit. Our young airmen are trained and they're expert at what they do. Losing that talent is very hard for me because I want to plan for it before they leave, ... so when we find a Smart Ops 21 [process improvement program] initiative that we can grab onto that helps us save maintainers, it's really high value."

Where You Can Centralize

"Public affairs, legal, logistics, ... and personnel, they're all looking at ways to perhaps pull some of the manpower that exists in the four [theater] Majcoms back to the States and be able to do the jobs back there. ... For instance, the people who do assignments, they can operate and live out of San Antonio, and you just have to run a 24-hour clock. And we could actually call back home to get that work done. Do you need to have those kinds of people also at the major command at USAFE [and] at the wings? I think the answer to that is 'no.'"■

Actionable Intelligence

It's the Holy Grail, and the Air Force is taking big steps toward getting it.

By Rebecca Grant

USAF photo by Maj. David Kurle

Operations. Intelligence. These two military activities interact in ways that constitute a critical dynamic for all forms of airpower. Still, it is a relationship marred by a long record of cultural and organizational conflict, occasionally interrupted by temporary and uneasy truces.

Now, the march of advanced technology and demands of countering terrorist and other asymmetric threats have once again upset the balance between these factors. USAF has embarked on a major restructuring of intelligence-surveillance-reconnaissance capabilities. The goal: Recast ISR to better support 21st century operations.

Under pressure of recent war experience, the ISR mission since the 1991 Gulf War has changed beyond recognition. Then, the air commander, Lt. Gen. Charles A. Horner, lambasted the intelligence community, charging, "They don't predict; they just give you the rundown, like TV news anchors."

Bomb damage assessment (BDA) brought constant frustration. Assessments trickled in slowly. Worse, they pegged conclusions to canonical standards of destruction that were out of step with precision air war.

In 1991, space systems and airborne sensors showed the potential of information dominance, but, in practice, there were "painful limitations," said then-Chief of Staff Gen. Merrill A. McPeak. "For all our advances, ... it still takes hours—even days—for target data to reach the crews that fight the air-to-mud battle," McPeak said in a 1993 speech.

Horner and McPeak both blamed ISR deficiencies for airpower's difficulties in destroying Iraq's mobile Scud missiles and for the last-minute escape of many Iraqi Republican Guard forces at the end of the war. (See "The Great Escape," March 2003, p. 38.)

"During Desert Storm, we developed some work-arounds" McPeak concluded. "We need to find permanent solutions."

In the field, USAF needed to break down many of the "green door" barriers that kept operators away from intelligence officers, and vice versa.

"Back during Desert Storm, there were the operators and there were the intel pukes," recalled Lt. Gen. David A. Deptula, a key Gulf War planner who is now the Air Force's deputy chief of staff for intelligence, surveillance, and reconnaissance (A2). "One wouldn't share information with the other."

As a result, the Air Force moved after the war to integrate intelligence and operations.

Air Force reorganizations in the 1990s sought to speed the flow of intelligence data by giving operators the upper hand. No more would analysts have an unquestioned right to hold back on sharing information. On the Air Staff and at the major commands, intelligence became a support function, driven by operators' requirements.

It was a cultural change with many benefits—but also with some unforeseen consequences. The intelligence field lost many of its general officer

Left, a Predator is preparing to land in Afghanistan. Below, A1C Shawn Weigman, a sensor operator, and Capt. Mike Edmonston, MQ-1 pilot, run through a Predator checklist at Balad AB, Iraq.

USAF photo by SSgt. Michael R. Holzworth

billets. Air Intelligence Agency (AIA) was reconfigured and ultimately placed directly under the control of Air Combat Command. Many of the side effects were slow to emerge and were obscured by tactical-level improvements.

It's an Art

Intel and ops integration couldn't come fast enough. Precision weapons and network links led to a huge and increasing appetite for real-time intelligence, vital to the execution of time-critical strikes.

Operation Allied Force, the 1999 NATO air war over Serbia, showed how voraciously a precision-munition-equipped force linked to strong communications could consume intelligence. It also forced intelligence experts and operators at air operations centers to work together in new ways.

One mission was hunting for mobile SA-6 and SA-3 surface-to-air missiles operated by Serb forces.

Tracking SAMs was an intelligence art. Gen. John P. Jumper, then commander of US Air Forces in Europe, recounted the drill in the combined air operations center (CAOC) at Vicenza, Italy: "We looked at U-2s that we would dynamically retask to take a picture of a reported SA-6, beam that picture back to Beale Air Force Base [in California] for a coordinate assessment within minutes, and have the results back to the F-15E as it turned in to shoot an AGM-130."

The campaign also gave airmen a taste of hunting for high-value individuals, processing Predator unmanned aerial vehicle intelligence data, dealing with dispersed, irregular forces, and providing highly refined "actionable" intelligence of a quality that could satisfy NATO leaders. The inadvertent bombing of China's embassy in Belgrade demonstrated the cost of failure in the intelligence game.

Then came Afghanistan. The campaign to unseat the Taliban and al Qaeda took intelligence requirements for air operations to an entirely new level. It was also, in many ways, a major improvement in coordination of the intelligence and operational functions. The culture change at the working level achieved a tight link between the two.

During Operation Enduring Freedom, which began on Oct. 7, 2001, military men and women inside the air operations center worked "as a true integrated team," according to Deptula. He was one of the early AOC shift directors when the war began.

"There was 'need to know' in Desert Storm," said Deptula. "Today it's 'you need to share.'"

Much of US Central Command's success in rounding up al Qaeda terrorists in Afghanistan and Iraq, or searching for insurgent leaders, has hinged on Air Force ISR products. However, the experiences of the Afghanistan and Iraq wars also revealed the need for major organizational changes in the Air Force ISR process.

Images from high-flying Global Hawk unmanned air vehicles flooded the Air Force's processing systems. Tactical ground units found themselves inundated with e-mail. Bombers could receive target updates and communications while airborne. Transmission of data to most fighter aircraft was much less effective.

Above all, the demand for ISR systems soared. Full-motion video from the medium-altitude Predator became a gold standard for tactical situation awareness for forces ranging from clandestine special operations forces to Army and Marine Corps platoons.

Early lessons learned from the war in Iraq prompted all the services to look again at their intelligence requirements.

Gen. Peter J. Schoomaker, then Army Chief of Staff, selected the need for "actionable intelligence" as a major focus area for the ground service.

The Air Force saw need for improvement in other areas. For example, USAF was intent on speeding up target approvals.

"When we all talk about closing the sensor-shooter [cycle] to real time, there's a physics issue here, but there's [also] a command issue," said Gen. T. Michael Moseley, USAF's current Chief of Staff. "To close the sensor-shooter loop, you have to close the process that allows you to go do all that analysis, the collateral damage mitigation, ... and the answers have to be satisfactory."

Even if you "have a bomb on a Predator," Moseley went on, "and you can strike [the target] immediately, you're still going to have to go through the decision process, the validation process to make it legitimate."

Major changes hit the intelligence community, too. Most notably, Congress adopted the 9/11 Commission's

More than 300 hours of Predator surveillance culminated in the June 2006 F-16 attack that killed Abu Musab al-Zarqawi, the leader of al Qaeda in Iraq. The immediate aftermath of the strike is shown here, from the F-16's targeting pod.

recommendation to appoint an overall intelligence czar. In October 2005, the Director of National Intelligence released a new strategy calling for "a far-reaching reform of previous intelligence practices and arrangements."

Moseley had something similar in mind for the Air Force, and he set the major change in motion shortly after taking over as Chief in 2005. First, he upgraded the Air Staff's ISR director to a three-star, stand-alone position and appointed Deptula, a well-known fighter pilot and operations planner. "There was no single [person] responsible for ISR capabilities," said Deptula, by way of explaining the move. As a result, there had been a tendency to manage by individual program elements.

Air Force systems and people remained prime assets for the national intelligence community, but organization was awkward. For example, the National Air and Space Intelligence Center, DOD's prime producer of foreign aerospace intelligence, was working for an agency, which was in turn working for one of the Air Force major commands.

The structure was clearly in need of an update. When USAF formed its intelligence structure in the 1990s, said Deptula, "we didn't have an A2. We didn't have [a] Director of National Intelligence. We didn't have an undersecretary of defense for intelligence." The Air Force needed to give the wider intelligence community a single point of contact. Now, the A2 represents the Air Force in the national intelligence arena.

"Externally, we want to optimize the Air Force ISR structure so we can be responsive to national and joint users," explained Deptula.

Moseley's other thrust was to streamline the internal Air Force management process.

Seamless Integration

A new plan, unveiled in February, centered on a new corporate structure with more leadership vested in the A2. "I want to manage ISR from a capabilities-based perspective," Deptula said, in order to "make intelligence an Air Force-wide enterprise, not just a sub-element of one of the operating commands."

In the old system, "seams" between the various missions abounded. The new process gives the A2 greater control of systems and programs serving the whole ISR spectrum—collection, processing, analysis, and dissemination.

"There are some people out there who would tell you intel is just analysis, that's all you should do," said Deptula. "No. The role of organizations inside the Beltway is different from our combatant commands out there who are the executors. We need to think, 'If I want to do effects-based assessment, what do I need to do that?'"

According to Deptula, the A2 must be "intimately involved in driving the requirements for the panoply of systems in each one of these ISR capability elements."

To streamline the system, the Air Force has removed the 12,000-man AIA from Air Combat Command, making it a field operating agency. It will report directly to the A2. This month it also gets a new name that reflects its role as the Air Force's ISR center. Plans also call for broadening AIA's focus beyond signals intelligence to all forms of ISR.

Driving the whole reform enterprise is the task of providing ISR that is a better fit with effects-based operations. (See "Firing for Effects," April 2001, p. 46.)

A case in point is ISR's most coveted product: actionable intelligence, which comes in myriad forms because the nature of actionable intelligence changes with the effect desired. Effects are no longer just about destruction—or even degrees of destruction. An airman can order an attack on a computer network or a low-collateral damage strike on the west corner of an insurgent's house. The actionable intelligence needed would differ.

For example, one of the best-known examples of actionable intelligence is positive identification of a high-value

USAF photo by SSgt. Christopher J. Matthews

The Global Hawk (shown here) produces "mind-boggling" amounts of daily information. USAF needs to be careful not to overwhelm its intelligence processing capability with raw data, said Lt. Gen. David Deptula, Air Force A2, the position that represents the Air Force in the national intelligence arena.

person. The successful June 7, 2006 strike that killed al Qaeda terrorist leader Abu Musab al-Zarqawi came only after some piece of intelligence confirmed his identity and location to the satisfaction of those in charge. (See "Aerospace World: Persistence Paid Off in Killing Zarqawi," August 2006, p. 18.)

When rules of engagement are clear, actionable intelligence often comes quickly—for example, in the form of an intercepted phone call. At other times, there is a great gulf between the gathering of data and production of actionable intelligence. Part of the A2's job is to keep improving the ways to deliver actionable intelligence.

The daily take from Air Force intelligence collection systems is "mind-boggling," Deptula said. "We suck it up in terms of Sigint. We take multiple pictures with a variety of systems. We collect lots and lots of full-motion video. We've got so much stuff, we've got to be careful that we don't exceed" the intelligence processing capability.

"Data that's been processed and analyzed still doesn't necessarily provide us with intelligence," said Deptula. "More often than not, when you separate the wheat from the chaff, what you wind up with is information."

Truly actionable intelligence is difficult to come by. Knowing that Muqtada al-Sadr, the Iraqi Shiite insurgent leader, goes to the market every day at six o'clock is not actionable, said Deptula, "if we do not know which market he goes to."

Never Too Good or Too Fast

The toughest intelligence cases are those requiring "discernment of intent." For time-sensitive targets, "the bar is a little lower" than for other targets, Deptula said. Identification of a missile system on the move, or an enemy ground convoy, can pass the test even if it is only spotted by a single type of sensor.

"Intelligence is operations," Deptula said, again citing the Zarqawi strike. The hit on Zarqawi did not come out of the blue: Setting it up took "300-plus Predator hours."

Deptula went on, "I'm not taking anything away from the operators of the platform that delivered the weapon; the guy's got to find it, designate, release the weapon. But all the information that went into it took much, much more time and effort than taking off, flying, dropping the weapon, and coming home."

The Air Force still sees a need for many improvements to refine ISR for effects-based operations.

Battle damage assessment remains a tough challenge. Historically, to attack a command and control center, "you were looking at a civil engineering function," Moseley said last year. "You drop a bomb on the facility and the bomb blows up and the facility goes away. That's easy."

In contrast, an effects-based attack on an enemy command and control center could have very different objectives. The goal might be to "either stop the ability to command and control, or you're attempting to divert the signals information to another place so you can capitalize on it," Moseley said.

Gauging the effect on some types of targets is easy, but on other types it's not. Determining the status of fielded enemy military forces in bad weather remains tough.

"We spent the last hundred years in aviation endeavors trying to figure out how to target any location on the face of the Earth, rapidly, day and night, all weather, and we can do that today," said Deptula. But then comes assessment, still a sticking point.

The 24- or 48-hour cycles of the 1990s aren't good enough. "We have gotten so good with precision weapons," said Deptula, that the Air Force can destroy targets "at a rate much greater than we can assess those effects using the traditional BDA techniques." The service therefore needs to develop a better way to perform effects-based assessment.

For the Air Force, intelligence collection, processing, and distribution can never be too good or too fast. ■

Building Intelligence Leadership

A decade after the Air Force moved its intelligence community under the control of operational commands, USAF recognized that it was not developing future leaders in the ISR field.

"We need to reconstruct our bench of Air Force senior intelligence officers so we can viably compete for joint and interagency positions," said Lt. Gen. David A. Deptula, Air Force ISR director.

The shortage of intelligence leadership was an unforeseen consequence of fusing operations and intelligence. Under a 1990s reorganization, the number of general officer billets in the intelligence field declined. The old position of assistant chief of staff for intelligence was subordinated to the Air Staff's operations director.

By 2006, the Air Force had just three general officer intelligence billets remaining.

These moves may have streamlined intelligence processing and improved the emphasis on the warfighter, but it also left the Air Force short in the joint arena. This eventually diluted USAF's influence in joint operations. "Our combatant commanders need to be served by an air perspective," Deptula noted.

By 2007, it had been more than five years since any Air Force officer filled one of the 11 "J-2" intelligence director positions at DOD's unified and combatant commands. Army, Navy, and Marine Corps intelligence officers always got the plum assignments.

During that time one airman, Gen. Michael V. Hayden, did become a dominant player on the national intelligence scene, however. Hayden led the National Security Agency, then was promoted to deputy director of national intelligence. In 2006, he was appointed CIA director.

Career paths for younger Air Force ISR officers are now being reshaped so that more colonels are promoted and groomed to compete for top joint and interagency assignments. Officials say they would like the number of general officers in the intelligence field to at least double over the next few years.

"I would like at the end of the day to be able to build a dozen Mike Haydens," USAF Chief of Staff Gen. T. Michael Moseley has said.

All of these changes will be needed to keep up with the battle zone's demand for ISR, which is routinely described as "insatiable."

Deptula suggested that one final step might be smoothing away the old semantics. "The term 'intelligence' still carries baggage," he said. "It would be nice to come up with a term where you could integrate ops and intel to get rid of some of these old barriers that existed between the disciplines," because they are no longer separate disciplines.

"Intelligence does not support operations. Operations does not support intelligence. They are both required to achieve our national security objectives," Deptula concluded.

Rebecca Grant is a contributing editor of Air Force Magazine. *She is president of IRIS Independent Research in Washington, D.C., and has worked for RAND, the Secretary of the Air Force, and the Chief of Staff of the Air Force. Grant is a fellow of the Eaker Institute for Aerospace Concepts, the public policy and research arm of the Air Force Association. Her most recent article, "Twenty Missions in Hell," appeared in the April issue.*

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BOEING

The Fuel War

Air Force leaders say the service had better get a grip on its huge energy costs.

USAF photo by A1C Christopher Boltz

A B-52 (such as these) arrived at Minot AFB, N.D., on Jan. 17 to begin cold weather testing on hybrid fuel-powered engines.

By Marc V. Schanz, Associate Editor

The Air Force is the largest single consumer of energy in the Department of Defense. That would still be the case even if the United States were not engaged in a Global War on Terrorism, but it is, and the demands of that worldwide conflict have pushed fuel use to new heights.

Last year, the Air Force's total energy bill came to $6.7 billion, the bulk of it related to air operations. When USAF's budgets began to sag under the weight of rising oil prices, worried Air Force leaders began closely examining the service's energy costs and planning for reforms.

The fuel problem became undeniable nearly two years ago. USAF already was burning lots and lots of fuel as a result of the war. Then, in September 2005, USAF deployed many aircraft to the Gulf Coast to assist in evacuation, search and rescue, recovery, and other operations in the wake of Hurricane Katrina.

The effort was enormous and costly. It also highlighted the vulnerability of the nation's domestic energy supply, according to Michael A. Aimone, Air Force assistant deputy chief of staff for logistics, installations, and mission support.

The Department of Defense, as the government's largest fuel user, accounts for 93 percent of overall federal energy costs. Yet even with such a huge fuel bill, the Pentagon accounts for about two percent of the nation's entire energy use.

In the fight to control costs, the Air Force has moved heavily into renewable energy usage. The Air Force led the federal government in the amount of renewable energy purchased last year and the year before. In fact, USAF is the fourth largest purchaser of renewable energy in the nation.

Aimone noted that one of the largest photovoltaic farms in the world is being built at Nellis AFB, Nev. This sun-powered system will generate up to 18 megawatts of power. Luke AFB, Ariz., March ARB, Calif., and several smaller installations also have buildings with photovoltaic systems.

All recognize, however, that the Air Force has to do something to cut back on its use of petroleum. "Reducing DOD Fossil-Fuel Dependence," a September 2006 report prepared for the Office of the Secretary of Defense, says that energy costs comprise about three percent of the military's annual spending.

That, however, is the average for all DOD activities: The share for mobility and combat aircraft is significantly higher.

Even in peacetime, the Air Force's mobility fleet is flying every day, moving people and supplies across the globe, racking up 42 percent of the service's energy costs. Officials at Air Mobility Command, Scott AFB, Ill., report that the mobility fleet used about $1.3 billion worth of jet fuel in Fiscal 2005 and $1.8 billion for 2006. Expenditures in the first quarter of Fiscal 2007—$530 million—put AMC on pace to surpass the $2 billion mark.

Just behind AMC's use is that of Air Combat Command, the service's main operator of combat aircraft. ACC's fighter fleet each year accounts for about 22 percent of the Air Force's energy bill. ACC's long-range bomber operations account for another six percent of the total.

Indeed, a whopping 80 percent of the Air Force's fuel costs are attributable to aviation operations—training, exercises, and deployments. Traditionally, this area has been off-limits to budget cutters.

Aimone said, "For most of my 37-year career in the Air Force, when

we approached the subject of energy conservation, it was around facilities operations and vehicle operations." In short, no one wanted to touch flying.

First Lt. Katherine R. Kebisek, a public affairs officer at AMC, noted that fluctuations in fuel prices make it difficult to reliably predict costs. Each day, she said, AMC missions consume about 2.5 million gallons of JP-8. Planning for surge contingencies such as a Katrina-like situation must be done above the command level.

With oil prices lingering at high levels, though, the Air Force has slowly begun moving to manage operational consumption, too. Usage of JP-8 fuel, particularly in training operations, is under scrutiny.

Running the Numbers

In September 2005, the Air Force was paying around $1.74 per gallon for JP-8, said Sheila Flemings, an ACC flying hour cost program analyst. The total amount of fuel consumed by ACC in Fiscal 2005 was some 501 million gallons, Flemings said, coming out at over $747 million in JP-8 aviation fuel costs.

Since then, fuel costs have risen by roughly one-third, even as the overall budgets have grown tighter.

The result is reduced funding for flying hours to train aircrews. Flying commands have set minimum requirements for aircrew training, according to John Cilento, an ACC flying hour program analyst.

"It is an issue," said Gen. Ronald E. Keys, ACC commander. "It's always an issue."

Col. Eric Best, chief of ACC flight operations, told Norfolk's *Virginian-Pilot* that pilots are encouraged to land when a training mission is completed, even if it ends early, rather than continue flying until allotted time expires.

In addition, said Best, operators are being encouraged to make more frequent use of simulators, though everyone realizes the systems can replicate only part of the flight experience.

Indeed, the Air Force Flying Hour Program budget is slated to be reduced by around 10 percent each year from Fiscal 2008 until 2013. One big reason is high fuel cost. The result, ACC officials say, is less training and lower combat readiness.

The Air Force is engaged in an ambitious project aimed at using natural gas as a jet fuel, hoping that, over the long term, dependence on JP-8 could be reduced.

The project today is in the test phase, and the central element is a B-52 bomber used as a test article. It was sent from Edwards AFB, Calif., to Minot AFB, N.D., on Jan. 17, its goal being to perform cold-weather testing while using a mix of synthetic fuel derived from coal shale. (See "Aerospace World: B-52 Flies on Synthetic Fuel Blend," February, p. 27.)

USAF procured 100,000 gallons of US-manufactured blended synthetic jet fuel, which it successfully tested on the ground and in the air. The 5th Bomb Wing bomber earlier had flown with a mix of synthetic fuel and regular aviation fuel, eventually flying tests with synthetic fuel in all eight engines. USAF researchers are analyzing test data now.

Gen. Bruce Carlson, head of Air Force Materiel Command, explained that the Air Force chose a B-52 because "it has eight engines, so, if this is a catastrophic failure, we'll shut down two and land and won't even declare an emergency." The bomber experienced no unusual problems.

The Air Force is working toward full certification of a 50-50 blend in the B-52 by early 2008.

Carlson indicated that with good results, the program may expand to other aircraft. "We'll probably go on and fly maybe a [KC-135], maybe a T-38, and move on from there."

The Air Force leadership is already pushing fuel experimentation on the mobility fleet, given that it is a source of high fuel costs. "If we want to get the biggest bang for the buck, I suggest we go into the transports," Aimone said.

Carlson said he first caught wind that change was coming during a meeting with Air Force Secretary Michael W. Wynne. Not long after he took office, Wynne informed Carlson that he wanted "to look at a program to wean us off oil" and it had to start "right now," recalled Carlson.

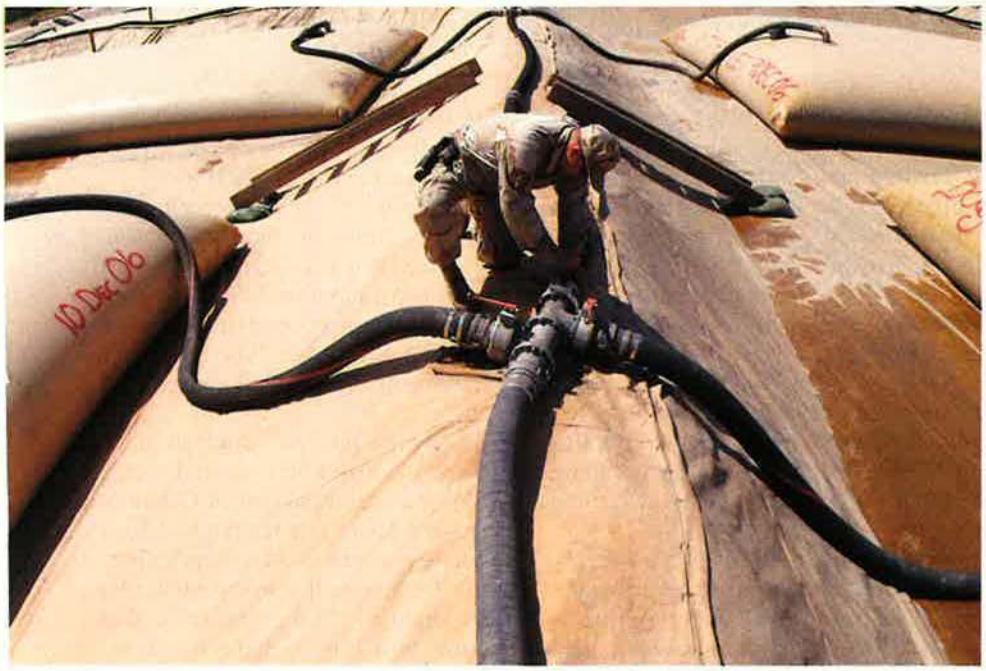
Wynne made it clear that he meant business. In a September 2006 letter to airmen, he said moving toward energy independence is a critical element to ensuring US economic and national security in the long run.

"Just a $10 increase in a barrel of oil costs the Air Force almost $600 million a year—money better spent fighting the GWOT or recapitalizing our aging fleet," Wynne wrote.

Undersecretary of the Air Force Ronald M. Sega was tapped as the force's "energy executive" and went to work articulating an official service strategy.

Sega's approach was simple: Make energy use a major consideration in every service action, Aimone recalled. It should factor into how airmen "preplan the next aircraft flight, what we load in the airplane as cargo or fuel," Aimone said of Sega's strategy. "It may not be *the* consideration, but it will be *a* consideration."

Sega, who came to the job after heading up DOD's research and engineering efforts, plunged into the project—even



USAF photo by SrA. Bradley A. Lail

TSgt. Adam Giles closes a block valve on a 50,000-gallon JP-8 fuel bladder at Kirkuk AB, Iraq. The "bladder farm" provides fuel for five forward operating bases in addition to Army and Air Force operations at Kirkuk.

USAF photo by SrA. Bradley A. Lail

serving as a crew member onboard the experimental B-52 during its maiden flight test in September.

The synthetic fuel used in the test is derived from natural gas, Sega explained in a meeting with reporters. It relies on the so-called "Fischer-Tropsch" process, which can produce usable fuel from coal or shale oil.

New Fuels, New Strategy

William E. Harrison, an engineer with the Air Force Research Laboratory's propulsions directorate, said his organization has been working on the science behind F-T fuels, looking at basic properties and exploring the suitability and feasibility of using them on Air Force platforms. The fuels, he explained, are clean and feature significantly fewer particulates than is the case with traditional oil-based aviation fuel.

The F-T process, in essence, removes the compounds and sulfur from fuel. During lab testing with a T63 turbine engine, AFRL discovered a significant reduction in exhaust and excellent low temperature properties—a major factor in flying at higher altitudes and keeping fuel stable. The associated dirt, grime, and soot of hydrocarbons disappear and result in lower maintenance costs.

"Imagine an engine that can run 40,000 hours without soot cleanout," Aimone said.

Carlson said USAF has established within its lab an enhanced program to closely examine synthetic fuels—specifically fuels made from coal, natural gas, corn, and other bio-products. Early work on such projects was "basic science," he said. Now, the challenge is to get the science to work in the real world.

Trading off JP-8 for synthetic fuels can be tricky. Air Force researchers have been contacting countries experienced in the use of synthetic fuels. Some of these have extensive knowledge about its effects on engines, seals, and pumps.

Sega noted that Air Force Research Laboratory scientists are working to get greater efficiency out of aircraft engines, as well as conducting research to increase efficiencies on the airframe itself.

Simply put, the Air Force wants to insulate itself against the growing instability of global energy prices, noted senior leaders who spoke at a fuel symposium in January.

"Just as the Department of Defense played a critical role in forging the information revolution in past decades, we must play a similar vital role in fueling the energy revolution in coming decades," said Maj. Gen. Charles E. Stenner Jr., assistant deputy chief of staff for plans and programs, on the Air Staff.

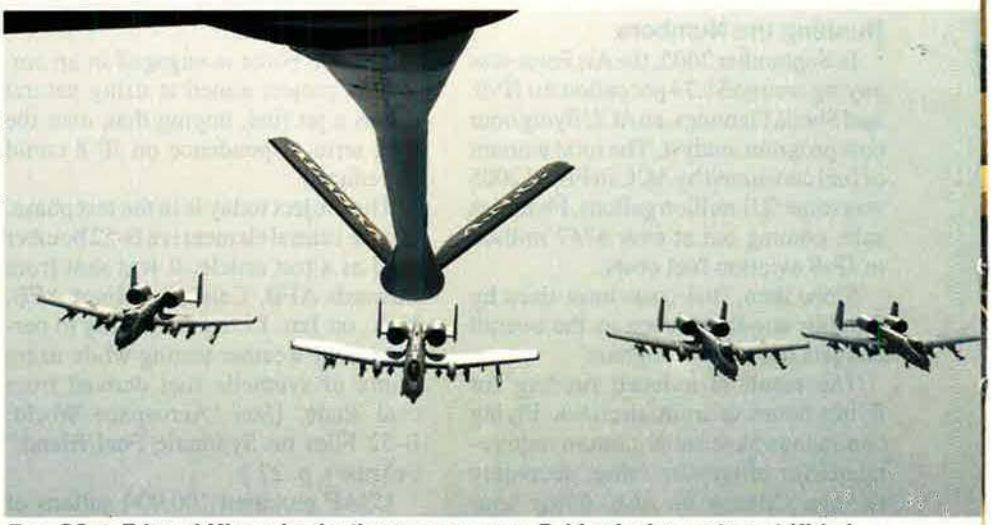
Air Force leaders are cautious about making predictions about their ability to spark broad-scale change.

"If we were to get all of our airplanes flying on synthetic fuel," Carlson observed, "we still wouldn't generate a market that anybody would want to buy into. Nobody would want to [take on] the multibillion-dollar investment just to sell gas to the US Air Force."

Carlson said Wynne wants to effectively demonstrate new technology and work to partner with private industry, potentially an airline, and begin to generate interest at the national level.

On March 8-9, the Air Force hosted an energy forum in the Washington, D.C., area. Officials sought to provide a better understanding of USAF's energy initiatives, programs, and strategies and to build on its efforts to link up military research with the forces of demand and supply.

As Wynne this year told an audience at the Air Force Association's Air Warfare Symposium in Orlando, Fla.: "We desire to engage the debate on energy to see if there's an opportunity to change the world view that we operate in. ... We recognize that defense will always have a call on the nation's resources, but we should minimize our impact and maybe even spark a different future." ■



USAF photo by MSgt. Robert Wieland

Top, SSgt. Edward Mims checks the gauges on an R-14 refueler system at Kirkuk AB, Iraq. Above, four A-10s fly in formation behind an Alaska ANG KC-135 over the Pacific Alaska Range Complex.

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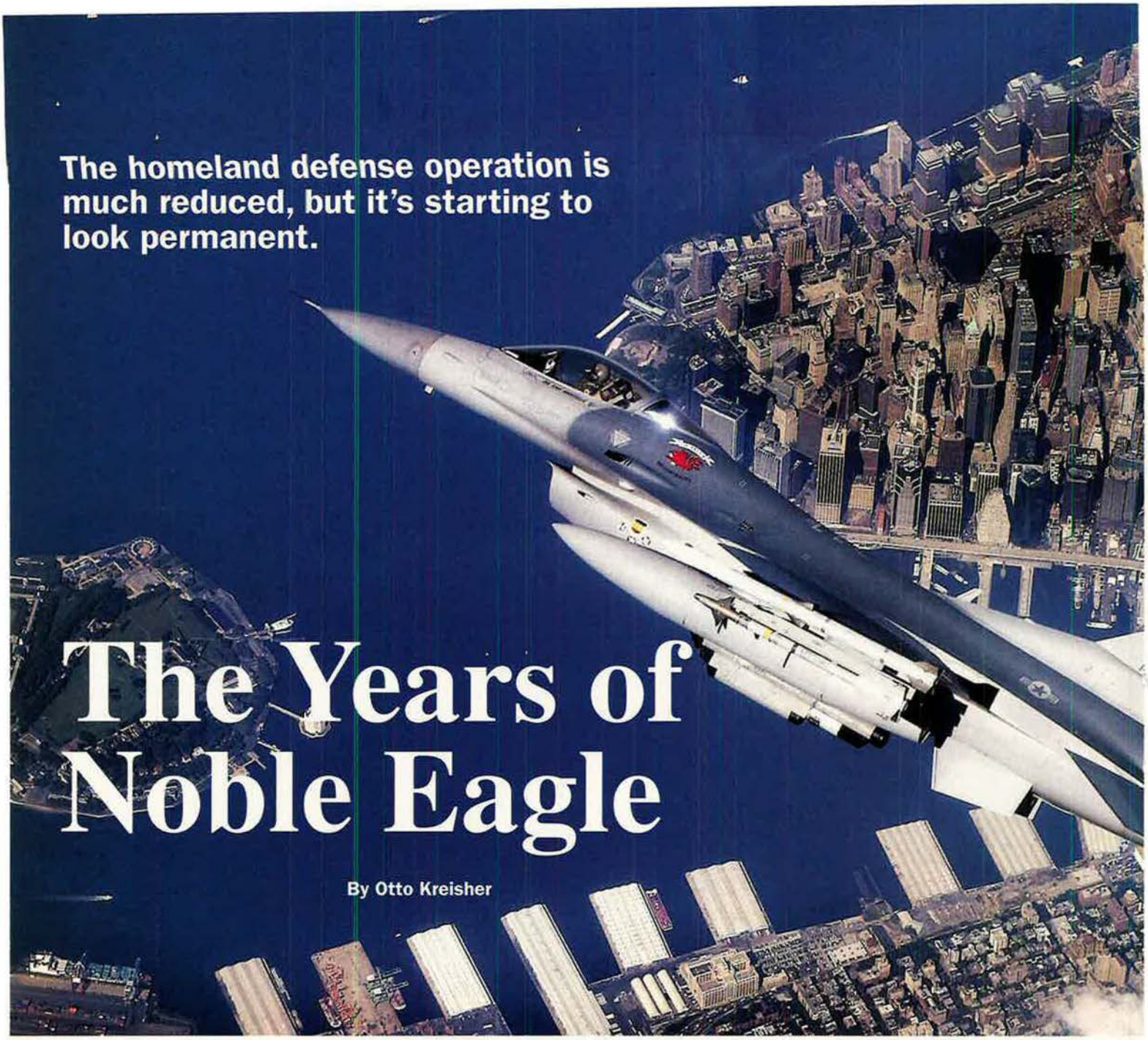


The homeland defense operation is much reduced, but it's starting to look permanent.

The Years of Noble Eagle

By Otto Kreisher

Operation Noble Eagle, the extensive air defense effort designed to prevent a recurrence of Sept. 11, 2001-style air attacks in America, is about to cross a major threshold.

The nation's civilian and military leaders are starting to regard the costly air defense operation above the nation's cities as a permanent defense requirement demanding significant attention from the US Air Force.

They say that, despite substantial improvements in US aviation security, the Air Force must plan to keep this six-year program of combat air patrols going full-bore indefinitely.

As of March, Noble Eagle aircraft had flown some 44,000 sorties and had been diverted from patrols or scrambled from strip alert more than 2,200 times in response to threatening activities.

The operation has cost more than $27 billion, according to a recent report prepared by the Congressional Research Service, but it has helped prevent any additional horrific attacks on the US.

No one in authority is needed to declare an end. Gone are the days when Noble Eagle was viewed as a temporary expedient. Now, the focus is on improving command and control of the homeland air defense mission.

Officials want to tighten the command structure and enable the Noble Eagle network to detect threats sooner and communicate better with the pilots who fly the air sovereignty missions.

Also under way is a search for technology that might provide an alternative to the nightmare scenario: Fighter pilots being forced by circumstances to shoot down a hijacked airliner filled with innocent passengers.

At the command level, military of-

An F-16 from the 20th Fighter Wing, Shaw AFB, S.C., soars over New York.

ficials are interested in finding ways to reduce ONE's burden on Air National Guard fighter squadrons, which have borne the brunt of Noble Eagle missions throughout the post-Sept. 11 period without any additions of machines or manpower. So far, however, the effort has enjoyed no obvious successes.

One of Noble Eagle's keenest observers, Canadian Air Force Lt. Gen. Eric A. Findley, has watched the development of ONE from his position as deputy commander of North American Aerospace Defense Command, the US-Canadian organization based at Peterson AFB, Colo. In his view, the story of Noble Eagle has been one of "continuous improvement" since the attacks.

"I was here [at NORAD] on 9/11, so I know what NORAD's mission was just prior to 9/11 [and] how we transformed," said Findley. "We had to put some Band-Aids, if you like, in place. ... The Band-Aids are gone now, with some more permanent solutions."

Coming a decade after the end of the Cold War, the attacks of 9/11 found NORAD's once potent air defense capabilities sharply reduced and oriented in the wrong direction—looking outward, beyond US borders, for threats, rather than inwardly to actions over US territory. It was unable to respond fast enough to intercept any of the hijacked airliners, which took off from airports in the Boston, Newark, and Washington, D.C., areas and slammed into targets in New York and Washington and into an empty field in the Pennsylvania countryside.

Embracing the Mission

By nightfall, however, NORAD had established continuous air patrols over most of the major US cities, using scores of Air Force, Navy, and Marine Corps fighters.

Over time, that burdensome and expensive air shield was scaled back, with the military settling in to a pattern of strip alerts at about two dozen air bases around the country, all of which were supplemented with irregular air patrols over key cities and more extensive air cover for short periods over high-profile events. (See "Noble Eagle Without End," February 2005, p. 42.)

"For the first five years, we were in a crisis management mode," said Lt. Col. David Miles, air sovereignty alert commander for ANG's 113th Wing at Andrews AFB, Md. "Finally, last year they got serious and decided they have to embrace this mission and get it right."

Those changes reflect NORAD's determination that Noble Eagle is here for the long haul, an attitude shift that the District of Columbia ANG officer said he noticed at a recent Noble Eagle conference in Colorado.

Findley agreed that NORAD now believes that Noble Eagle "is going to be an enduring mission," continuing until someone can say the threat has been reduced, "and we can go back to something a little less rigorous."

That view remains despite the improvements in air traffic security, such as enhanced screening of airline passengers and luggage, reinforced cockpit doors, air marshals, armed pilots, and better intelligence sharing on terrorist threats.

As each new security procedure was put in place, "it made us feel better and we were able, with the approval of the national command authorities, to ratchet down the number of air patrols, [and NORAD] reduced the number of alert sites overall," Findley said.

"We don't have anywhere near the alert sites and air patrols that we had before," but "what we don't have yet is that warm fuzzy feeling" that the threat is gone, he said. "So we're not going to ratchet down much more. ... The reality remains that we're still concerned with aviation in general."

The threat is not limited to big commercial airliners, the general said. It could also come from general aviation, corporate jets, and cargo haulers.

That view is shared by pilots who are flying the missions.

"This is not something we can give up," said Lt. Col. George Degnon, commander of the Air Guard's 121st Fighter Squadron at Andrews. He expressed concerns about foreign airliners approaching the US from countries lacking rigorous airport security measures of the type seen in the United States.

Findley agreed, noting that US and Canadian officials "have worked really hard with other nations trying to get the same security standards in place. That has happened in a lot of nations. But there is that worry."

The Air Guard pilots at Andrews said they face an exceptional challenge because of the large number of potentially high-value targets within the relatively tight confines of the National Capital Region. The nation's seat of government in Washington, D.C., falls within a restricted air zone with an approximately 34-mile radius.

The pilots said they are confident the air defense system will work when needed.

The process "gets exercised a lot, to make sure it's viable and can get done," said Lt. Col. Lance Etne of the 113th Operations Group. The pilots who stand on alert missions at Andrews said they are prepared psychologically to engage a civilian aircraft, if required, despite the emotional impact it would bring.

"Nobody wants to do it," Degnon said. Whoever has to fire that shot "is never going to be the same," he said, but "everyone is—I know for certain—ready to make that sacrifice."

USAF photo by TSgt. Ben Bloker

Two crew chiefs from the 71st Fighter Squadron conduct final preflight checks before a sortie for Operation Noble Eagle.

NORAD's commanders are aggressively seeking nonlethal means to stop a threatening aircraft.

"We have identified that requirement," Findley said. "There are a number of technologies and processes being explored for nonlethal means of dealing with aircraft," he said. "They're highly classified. It's just going to take a while to develop those technologies and to get the cooperation of those who sell aircraft to allow us to use those means."

The beginning of the Noble Eagle mission also required fighter pilots to revise their combat tactics.

"We've spent a hundred years in the Air Force learning how to shoot down bad guys in a fighter jet, [in] bombers, and things like that," said Maj. Jeffrey Bozard, a pilot in the 121st. "But this has brought out a whole new set" of potential targets, from airliners to small, light, civilian aircraft.

"We had to develop our own training plan," Degnon recalled. "We already had all the basics; ... we just had to modify the tactics to the threat we were facing. You're talking low, slow, at night. There wasn't much written [in] tactical manuals on how to do this. Everyone developed game plans, what we thought would work best, then began ... trying to formalize the tactics."

Training for the new mission was a problem, however, because the 113th simultaneously had to stay prepared for its routine Air and Space Expeditionary Force rotations. The unit has deployed to Iraq twice since 9/11.

"We're supposed to sit alert. And we're supposed to prepare for an AEF deployment. We're not supposed to do both at the same time," said Degnon, the squadron commander, describing the problem he faces. "Guess what? We have to do them both at the same time."

The preparation for deployment begins months in advance and requires spin-up training. The original orders were for air defense units such as the 113th to "take the number of pilots ... and the number of jets that you currently have, [and] put some on alert so they're not available for your day-to-day training," said Bozard. This "took a big bite out of our local training."

One way the Guard has been able to handle this problem is to rely on the experience of its pilots, who average twice the flight hours of pilots in most active duty Air Force fighter squadrons, he said.

Another way the Air Guard has coped is by virtually reversing the ratio of traditional, or drilling Guardsmen, and full-time members.

"Before 9/11, we had 32 pilots, six full-time, 26 traditional," Degnon said. "Now, it's the reverse, maybe seven traditional, 25 full-time."

That shift had not been a problem for the pilots, who are "highly motivated and get paid enough to live in a place like D.C.," Miles said. "But the enlisted folks, particularly on the maintenance side—it's tough to live in D.C. on E-5 pay. Trying to keep those guys ... has been a challenge."

Underpaid, Overworked

Degnon said his squadron was fully manned for pilots—but had only 65 percent of its required line maintenance personnel. "The guys on the line, who are fixing the jets, they're underpaid and really are overworked."

Findley acknowledged the burden on the Air Guard and said NORAD has tried to find ways to reduce the load.

"I think we've done a reasonably good job over the last few years of necking down a lot of the requirements on the Operation Noble Eagle side," Findley said, to let air defense units conduct the other training missions they need

USAF photo by Amn. Shane Dunaway

A KC-135R refuels an F-22 from Langley AFB, Va., as part of the Raptor's first operational mission, which was in support of Noble Eagle.

USAF photo by MSgt. Scott Wagers

Maj. Tom O'Berg sprints to his F-15 at Elmendorf AFB, Alaska. Noble Eagle pilots respond in minutes to unidentified aircraft approaching US airspace.

to perform. "The reality is, however, that they still have to stand the alerts and train for that mission."

The constant training breeds confidence. "It's pretty clear to me, in the cockpit, how that authority is going to come and how I'm going to get the authority to push the pickle button," said Etne. "Now, how many wickets it has to go through to get me that information, I'm not sure."

With the small restricted zone around Washington, the decision to shoot down a threatening aircraft must be made in "minutes, if not seconds," Miles said, "so this fight starts well before the [alert] button gets pushed. It's the intel, the FBI, the CIA, those agencies that are doing the good work to make sure that situation never happens."

"We recognize that the [34.5-mile] aircraft identification zone in the National Capital Region is really kind of a last resort," Findley said. NORAD is, therefore, working closely with the Federal Aviation Administration to correlate information "as early as possible to give us more time, if we need it, to go out and do a visual identification or an intercept."

Meanwhile, the Noble Eagle command structure has changed dramatically, with the creation of US Northern Command to incorporate NORAD into a comprehensive defense of the nation on the ground and in the coastal waters, as well as in the air.

A major improvement came from integration of NORAD's radar and communications networks with the FAA systems, which allows almost instant alert to NORAD and NORTHCOM if an air traffic controller notices unexpected activity by an airplane.

Even more changes are under way at Cheyenne Mountain AFS, Colo., which now holds the command post for both NORAD and NORTHCOM.

A new battle control system has been installed, and the two commands' staffs are being combined in a move former commander Adm. Timothy J. Keating said "will provide increased combat effectiveness" for both organizations.

Air Force Gen. Victor E. Renuart Jr. relieved Keating as head of the two commands on March 23.

The staff merger will tie the air defense system into NORTHCOM's surveillance and security networks on the land borders and the coastlines.

"I think that situational awareness in all domains will enhance the overall air situational awareness," Findley said. NORAD releases show that the Capital Region is protected by "a multilayered air defense" that includes short-range missile systems such as the man-portable Stinger and the vehicle-mounted Avenger.

There also is a ground-based visual warning system. It uses alternating eye-safe red and green laser lights to alert pilots that they are flying without approval into restricted airspace.

Because of the importance of early identification, NORAD's "No. 1 operational requirement," Findley said, is "persistent wide-area surveillance."

One possible way to achieve that would be with a high-altitude airship. (See "Are Airships for Real?" November 2006, p. 67.) A large, unmanned blimp "would get some radar and communications airborne for us. It's one of many ... solutions to the lingering difficulties with the mission.

"We recognize there is no one particular technology that's going to be able to do everything we need," Findley said. So NORAD is studying "something like 20 different types of things that could contribute to [situational awareness]. None of them are really perfect in their own right. But if you put them together, you get a much, much better picture."

That information is not much good "unless you have some place that can take it, fuse it, and pull it together," he said. NORAD is "upgrading a lot of [its] communications. I think our first priority really is getting [reliable communications capability] to the warfighters and the support aircraft, so we can operate anywhere in North America and talk to anybody at any particular time. That's coming along rather nicely."

Part of the problem, the Air Guard officers said, stems from the fact that the Air National Guard has no formal representation at NORAD.

"The expertise as to who's been doing this mission, doesn't exist at NORAD," Etne said. "A lot of the issues we have aren't being addressed."

"What we do need to work on next is trying to get a little bit more of that expertise into the headquarters at NORAD," Findley admitted.

But, he added, the chief of staff for NORAD and NORTHCOM is Maj. Gen. Paul J. Sullivan, of the Ohio Air National Guard, and ANG Maj. Gen. Steven E. Foster is "the go-to guy" for many issues on NORAD's planning staff.

"We're going to be working hard over next few months, [through] a manpower review, to see where else we can incorporate the value added of the Air National Guard," Findley said. "We've run into some roadblocks here and there. What we need to do is remove those roadblocks."

Findley had nothing but praise for the Guard and its airmen, which he said are carrying the load of "as high as 82 percent of our air defense mission." ■

Otto Kreisher is a Washington, D.C.–based military affairs reporter and a regular contributor to Air Force *Magazine. His most recent article, "Tacair Integration Hits the Wall," appeared in the April issue.*

Making It W a Minutema

The Air Force's ICBM plan keeps shifting, and the service keeps tinkering with the Minuteman fleet.

By Adam J. Hebert, Executive Editor

USAF photo

A Minuteman III ICBM takes flight during a test launch from Vandenberg AFB, Calif.

The US wants to preserve a powerful, reliable, land-based strategic nuclear deterrent force beyond the year 2020. In a shift, Air Force Space Command has decided that this task won't require development of an all new "Minuteman IV" missile, as was once thought.

Rather, officials explain, the Air Force can make do by modernizing today's Minuteman III ICBMs—again—and keeping them in service until 2040.

Space Command leaders recently came to the conclusion that this plan would constitute the most efficient way to maintain an effective, silo-based ICBM force for the long term, but it is not without controversy.

In the nuclear missile business, much has changed over the past 15 years. (See "Twilight of the Missileers," August 1994, p. 22.) Space Command now oversees a missile fleet that is much smaller than it was in Cold War days and which likely will shrink further in the near future. The ICBM fleet has declined from more than 1,000 launchers in the Reagan years to 500 today.

ithout n IV

The Air Force now seeks to cut 50 more Minuteman IIIs from the inventory, as directed by last year's Quadrennial Defense Review, carried out by the Pentagon and the services. (See "Aerospace World: ICBM Cut Starts This Year," p. 15.)

Now that USAF has deactivated its 50 Peacekeepers, the day of the mega-warhead ICBMs is over. All of the three-warhead Minuteman IIIs at F.E. Warren AFB, Wyo., have been downloaded to single re-entry vehicles. Others remain in two- and three-warhead configurations. (See "The Future Missile Force," March 2003, p. 64.)

The drawdown has affected more than missiles. Missile alerts recently have been significantly revamped, too. Gone are the famed 24-hour alerts pulled for decades by two-man teams of missileers. They have been replaced by three-person teams serving 72-hour shifts.

The Air Force had planned to keep its current force of Minuteman III ICBMs in service until about 2020, after which time they were to be replaced by a mostly new design, which some dubbed "Minuteman IV."

However, a recent Air Force Space Command analysis of alternatives suggests it would be wiser to keep the older systems around into the 2040s through a series of incremental upgrades. This plan has been approved by the Air Force requirements council, but is not yet final.

Col. Paul Gydesen, chief of Space Command's strike and deterrence division, said in an interview that there are still some interested parties who desire an all-new missile design. However, Gen. Kevin P. Chilton, head of Space Command, has made it clear that the incremental modernization approach is Space Command's preferred course, Gydesen said.

He said there is still less than 100 percent agreement on the best way to move forward but the parties are moving closer to a consensus on the issue.

Money was a huge factor. Over the years, Space Command officials noted, Minuteman III upgrades have succeeded in attracting political support and funding. Obtaining support for a costly new-start program would have been difficult, Gydesen said, and Space Command believes modernized Minuteman IIIs will meet all mission requirements.

In addition to the propulsion, guidance, and warhead programs currently in progress, several other improvements will be needed to keep the Minuteman III viable beyond 2020, when capabilities will begin to "efface," in the words of missile officials.

The long-term incremental upgrades will begin around 2020 with introduction of new guidance components, said Gydesen. The ongoing Minuteman III Guidance Replacement Program is improving maintainability and reliability, but does not offer accuracy improvements. Therefore, "Increment I" of the modernization process would provide that accuracy boost and is expected to dramatically improve the guidance system's mean time between failure.

Guidance enhancements would be followed by security and command-control-communications-computer (C4) improvements.

Finally, USAF would undertake booster and re-entry vehicle upgrades, "ultimately leading to [full operational capability] of the completed follow-on capability in the late 2020s," Gydesen said. This, he said, would ensure an effective land-based nuclear deterrent "well into the 2040s and likely beyond."

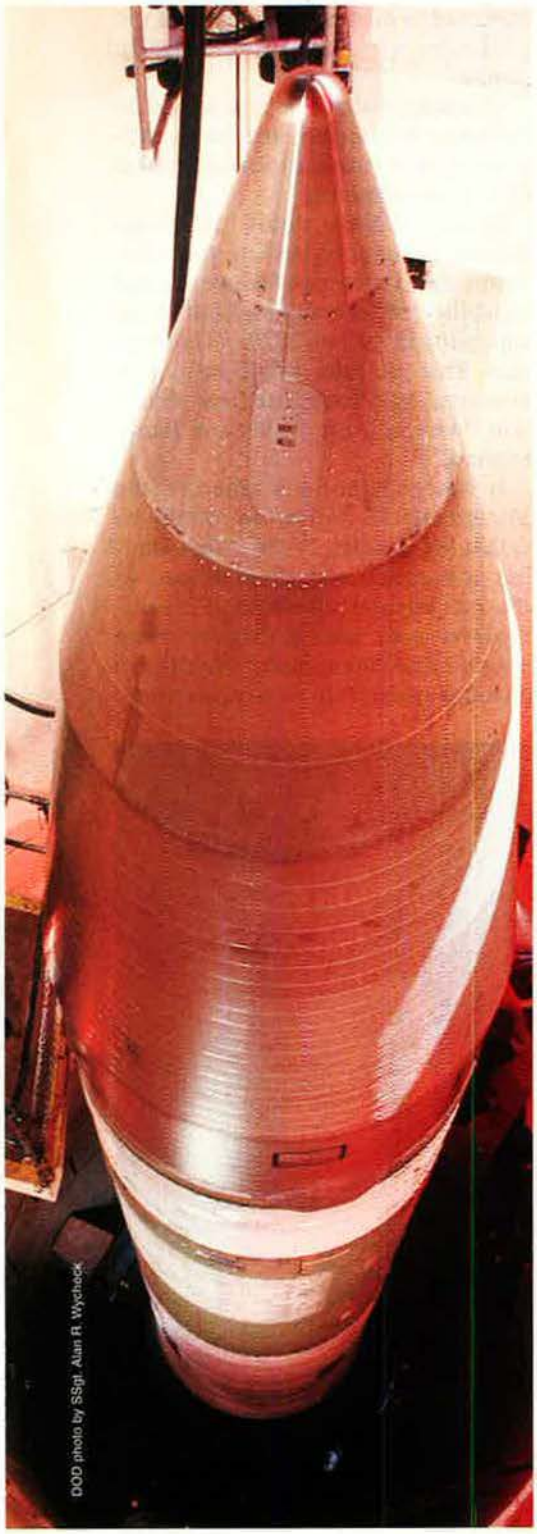
It was thought for a time that the Minuteman III follow-on would be called Minuteman IV, but "this naming convention was discontinued as the incremental approach evolved," Gydesen said, adding that "we were not sure when the system [would] have changed enough" to justify renaming.

DOD photo by SSgt. Richard W. Freeland

The Air Force regularly conducts Minuteman test launches, such as the one pictured here, to ensure the reliability and accuracy of the ICBM fleet. After determining that 450 missiles would still meet strategic needs, DOD recommended in the 2006 QDR that 50 ICBMs be decommissioned. The components would be used to offset a looming shortage of ICBM test assets.

"We have not spent any time at this point thinking about when, or if, Minuteman III deserves a new name."

The incremental upgrades constitute "an affordable approach to provide the needed follow on capabilities," he said.



DOD photo by SSgt. Alan R. Wycheck

Air Force Space Command officials feel that a new, incremental upgrade program can extend the Minuteman III's useful service life well into the 2040s. Previous modernization plans would only keep the missile viable until about 2020.

The decommissioning of Peacekeeper has yielded some 500 high-performance warheads, many of which are being recycled into the upgraded Minutemen. Some are being added to the Minuteman III fleet through the Safety Enhanced Re-entry Vehicle program. The first SERV Minuteman was fielded last October at Warren, and work on the modifications will continue until achievement, in 2012, of full operational capability for the new warhead setup.

End of the "Odd Squad"

In the Air Force's effort to cut another 50 Minuteman missiles, as ordered by the QDR, attention fell immediately on the 564th Missile Squadron at Malmstrom AFB, Mont. The Air Force quickly fingered it for the cut because its systems are different from all other Minuteman ICBMs. Federal lawmakers have put a hold on the planned retirements.

Lt. Gen. Frank G. Klotz, vice commander of Space Command, told *Air Force* Magazine in March that USAF sent a required classified report to Congress in mid-March. As soon as Congress grants approval, an environmental assessment is conducted, and a required 30-day waiting period has elapsed, USAF will begin the decommissioning process, he said.

The 564th Missile Squadron, sometimes referred to as the "odd squad," is the only ICBM squadron with unique General Electric communications and launch control systems.

The proposed Minuteman III reduction will free parts for three annual ICBM test launches. At current rates of three test launches per year, test assets will run out in 2018. With the drawdown, officials estimate there will be enough ICBM components to support testing into the late 2020s.

The new Minuteman reduction would also bring the United States closer to its Moscow Treaty target of fielding no more than 2,200 deployed warheads in 2012.

The biggest cultural change was the rearrangement of the alert system. During the new three-day shifts, one officer remains topside in the missile alert facility while the other two run the secure launch control capsule below the MAF.

Maj. Gen. Thomas F. Deppe, commander of 20th Air Force, approved the alert change in January following a three-month trial period featuring the participation of one squadron from each USAF missile wing.

Col. Michael G. Vaughn, the operations director for 20th Air Force, said that, because of the change, fewer teams of missileers will have to make the trek across the High Plains, frequently in poor weather, to get to a launch facility.

The change will shave total crew driving distances by some two million miles per year. That's a reduction of two-thirds, and it will generate considerable savings; fuel and maintenance costs will decline by about $400,000 per year. Safety also will be improved, as the crews will spend less time on the road.

There may also be manpower savings down the road, but these did not factor in the decision to move forward with the change, said officials.

Vaughn acknowledged that, if you asked the missileers last October what they thought of the 72-hour shifts, they "wouldn't have been very happy." Now, however, most are pleased with the greater predictability in scheduling that will result from the alert change.

In this new plan, predictability is a key selling point. It is made possible by providing a missileer "protected time off" in the wake of a three-day shift. Plans called for converting all nuclear missile squadrons to the new schedule during the spring.

Moreover, Vaughn said, the change will give young missile officers early leadership opportunities that are currently lacking in the field.

Today, two-person teams remain sequestered in their capsule below the missile alert facility. With the advent of three-person teams, one officer will always be topside, sometimes sleeping but also interacting with the enlisted security forces, facility managers, and cooks at the MAF.

In making the changeover to the new schedule, 20th Air Force abandoned an initial notion to have the alert crews made up of two missile crew commanders and one deputy. The crews are "only going to have one commander," Vaughn said, along with an "L2" (midlevel position) and a deputy.

Officials are taking steps to ensure the middle position missileers meet all requirements for running the capsule when the crew commander is topside. "I would equate it to an aircraft that has a co-pilot, pilot, and a mission commander," said Vaughn. ■

Verbatim

By John T. Correll, Contributing Editor

Pork and Peanuts

"I like peanuts as much as the next guy, but I believe the security of our troops should come before the security of the peanut crop."***—President Bush on $74 million proposal for secure peanut storage, one of numerous unrelated riders attached by members of Congress to emergency war funding bills, weekly radio address, March 31.***

Overdue

"There is no way this nation can properly atone for the shabby and disrespectful way that we treated those World War II heroes known as the Tuskegee Airmen, but at long last we have begun to try."**—Contra Costa (Calif.) Times,** ***April 3, on Congressional Gold Medal awarded March 29 to the Tuskegee Airmen.***

In It Together

"The overwhelming military advantage of the US lies not in our ground forces, although they are without peer; not in our naval forces, although they are the best in the world; and not even in our Air Force, although we are the most dominant air force in history. Instead, America's true military advantage lies in our ability to fight as an interdependent team, capitalizing on the independent strengths each brings to the fight."***—Gen. Bruce Carlson, commander of Air Force Materiel Command,*** **AFMC Online Commentary, March 9.**

Imaginary Creatures

"We should have no illusions about the nature of this regime or about their designs for their nuclear program, their intentions for Iraq, or their ambitions in the Gulf region. ... In dealing with a regime like Iran, one has to be realistic. The American search for elusive Iranian moderates is a recurring and mostly fruitless theme since the revolution in 1979."***—Secretary of Defense Robert M. Gates, American-Turkish Council, Washington, D.C., March 27.***

Getting There

"The wars are not fought in Missouri or Michigan. They're fought abroad. And if that's the case, somebody or some craft, air or naval, will have to ship them over."***—Sen. Daniel K. Inouye (D-Hawaii), chairman of the Defense Appropriations subcommittee, on further procurement of C-17 airlifters,*** **National Journal's CongressDaily AM,** ***March 28.***

Top Five

"The budget hearings are an annual opportunity for us to highlight the long-term programs we've put in place to fund our priorities over the next five to six years, including our top five acquisition priorities—the KC-X; CSAR-X; space communications, situational awareness, and early warning; F-35A; and next generation long-range strike—a new bomber by 2018."***—Air Force Chief of Staff Gen. T. Michael Moseley, Chief's Scope, Air Force Link, March 9.***

Battle for Spectrum

"Just like we conquer airspace, as we go into some place, we also conquer spectrum."***—Lt. Gen. Donald J. Hoffman, USAF acquisition deputy, on operations in areas where the US doesn't "own" the radar frequency it needs, House Armed Services Committee air-land panel, March 22.***

Britain Stays Nuclear

"There is absolutely no evidence whatever that if Britain now renounced its independent nuclear deterrent that would improve the prospects of getting multilateral disarmament. I think the reverse is the case."***—Prime Minister Tony Blair after winning a vote in Parliament to renew Britain's nuclear deterrent,*** **New York Times,** ***March 15.***

Consuming the Army

"We have increased the capacity of the Army but it is being consumed as we build it."***—Gen. Peter J. Schoomaker at end of his tour as Army Chief of Staff,*** **US News & World Report,** ***March 26.***

Terrorized by Mantra

"The 'war on terror' has created a culture of fear in America. The Bush Administration's elevation of these three words into a national mantra since the horrific events of 9/11 has had a pernicious impact on American democracy, on America's psyche, and on US standing in the world. Using this phrase has actually undermined our ability to effectively confront the real challenges we face from fanatics who may use terrorism against us."***—Zbigniew Brzezinski, national security advisor in the Carter Administration,*** **Washington Post,** ***March 25.***

A Ban on GWOT

"There was no political intent in doing this. We were just trying to avoid catch phrases."***—Democratic staffer, House Armed Services Committee, responding to criticism of a memo directing that "Global War on Terror" and "Long War" not be used in the 2008 defense budget,*** **Military Times,** ***April 4.***

Apology at Walter Reed

"I apologize for what they went through, and we're going to fix the problem."***—President Bush, touring Walter Reed Army Medical Center, where neglect and bureaucratic ordeals of battle casualties had become a national scandal,*** **Washington Post,** ***March 31.***

Rumsfeld's Legacy

"He had meant his legacy to be transformation of the military and preparation for future combat. His assumption was that Iraq was going to be a brief excursion and not the defining struggle of our time. It's not at all what he wanted or intended to be judged by. But it is what he will be judged by in the end."***—Neoconservative author Frederick W. Kagan on departed Secretary of Defense Donald H. Rumsfeld,*** **US News & World Report,** ***April 16.***

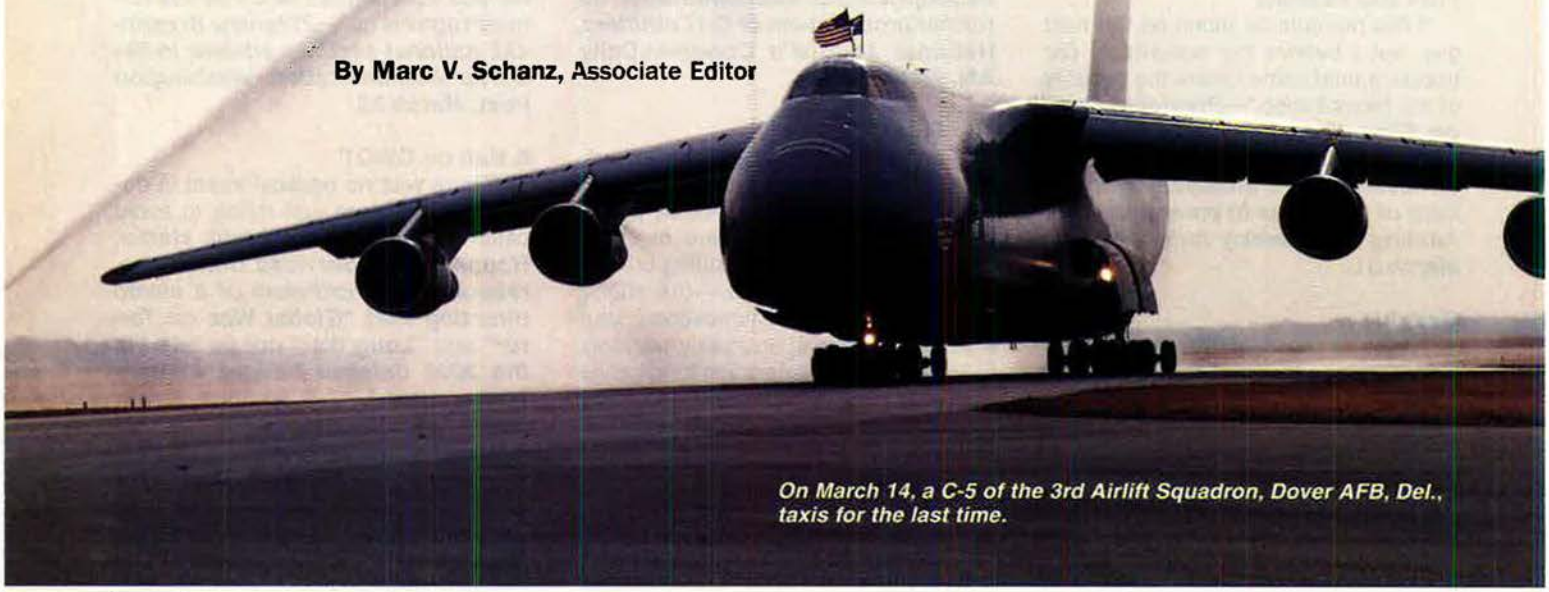
Fifth Generation Replacements

"We in fact have lost 50 fighters since 2001. We have not replaced those 50 fighters because we don't have an F-16 line or an F-15 line that we want fighters from. Currently, F-15s are being produced for Korea. We don't want that. Currently, F-16s are being produced for the United Arab Emirates. We don't want that. ... We do want to replace the combat capability that we lost. And so we ask for fifth generation fighters. ... We are finished with the fourth generation and do not want to go back in technology and pick those up."***—Air Force Secretary Michael W. Wynne, explaining requirement for F-22s and F-35s, USAF Defense Strategy Seminar, March 19.***

The Air Force's largest strategic airlifter is working overtime at Dover AFB, Del.

Life With the C-5

By Marc V. Schanz, Associate Editor



On March 14, a C-5 of the 3rd Airlift Squadron, Dover AFB, Del., taxis for the last time.

It has been 36 years since the first C-5 Galaxy arrived on the Dover AFB, Del., flight line. Though the huge transport now is considerably grayer than it was in 1971, its pace of operations hasn't slowed all that much, if at all. Indeed, the old warhorse, despite mechanical flaws, just continues to rack up the miles.

On a recent visit to Dover, one of the Air Force's busiest aerial ports, a visitor could see clearly the wartime mission was keeping Dover's C-5 fleet and crews on the run.

C-5 loaders were shuttling back and forth inside a large warehouse at the base, moving everything from armor kits to portable toilets out the door toward the flight line. There, the cargo was loaded aboard waiting Galaxys bound for the war zone of Southwest Asia.

Dover is home to the 436th Airlift Wing, the Air Force's first fully modernized C-5B outfit. The last of Dover's "old" C-5 airlifters—airframes that have not received extensive avionics modernization—were sent off to other bases. The Dover aircraft have taken up a central position in USAF's global aerial transport network.

The Galaxy, USAF's first widebody "jumbo" aircraft, was designed in the 1960s and optimized for one critical task—moving huge amounts of cargo, fast, over long distances. Today, the C-5 remains the large muscle of Air Force strategic lift. The wars in Iraq and Afghanistan have given it a new lease on life.

"We get [cargo] into the big airfield, into a central hub, and use smaller aircraft to distribute it out to the various airfields," said Col. Samuel D. Cox, then commander of Dover's 436th Airlift Wing. This is in addition to the basic war materiel deliveries that the Galaxys continue to make on a routine basis.

The sheer size of this enormous aircraft has long inspired gawking. The Galaxy—the largest aircraft in the US inventory—is nearly as long as a football field and as tall as a six-story building. The cargo compartment alone could accommodate an eight-lane bowling alley, or, more usefully, three CH-47 helicopters. Several pilots and maintainers observed that the Wright brothers could have staged their epochal Dec. 17, 1903 first flight within the cargo hold of the C-5.

TSgt. Brian Neiman, a transit alert maintainer who has worked on Dover's flight line for eight years, points out that no other US aircraft can handle the loads that fit into a Galaxy. "What's amazing to me is to watch the size of the cargo it takes," Neiman said. "I've seen it take everything from deep sea submarines to 14-by-80 house trailers, and it just swallows the whole thing and just takes off."

With operations in both Afghanistan and Iraq ongoing, the airlifter is a key link in keeping forces supplied and readiness high.

MSgt. Roland Devries, a loadmaster superintendent with the 436th AW, said that, since September 2001, the Galaxy fleet has seen a drop in passenger lift out of Dover and an uptick in equipment loads, often flying from Delaware to Army and Navy airfields to load up before heading to an overseas theater. "That's a big significant change I've seen since 9/11," Devries said. From "helicopters, armored Humvees, trailers—each pickup is different."

Airmen follow a careful loading procedure to make sure every flight is used as effectively as possible.

SSgt. Lane Byrum, a flight engineer at Dover, explains the process as a cooperative venture between loadmasters, pilots, and ground crew members. Engineers "have to tell the guys on the ground, 'This is what we can take,'

USAF photo by Jason Minto

then we have to tell the loadmasters, 'This is what we can make it off the ground with,' and the pilots have to say, 'This is what we have fuel for,'" Byrum explained.

Engineers often have to temper the others' enthusiasm about the aircraft with a dose of real-world facts. Galaxy crews are often sent to Army or Navy air fields that have takeoff weight restrictions, so the C-5 can't be loaded to full capacity.

"We have to say, 'You can put everything in there, but we won't get off the runway,'" Byrum said with a smile.

Breakdowns

Dover aircrews average two missions a month, often pulling five to six legs on a trip from Dover to bases such as Manas AB, Kyrgyzstan.

Although C-5 reliability has long been a problem, most of the breakdowns are not dramatic and large. Despite the massive size and complexity of the airlifter, only four C-5 crashes have occurred since its first delivery to the training unit at Altus AFB, Okla., in December 1969. The most recent crash was just outside Dover's fence, last year. (See "Aerospace World," May 2006, p. 18.)

While often flying into sweltering desert environments, the aircraft performs well on deployments, maintainers say. "Sometimes we find an aircraft with ... damage, [but] it's not very often," said MSgt. Bill Tarrant, a Reservist with Dover's 512th Aircraft Maintenance Squadron.

Maintaining the Galaxy is no easy task, however. The aircraft are routinely inspected and get a detailed examination every 420 days at Dover's isochronal inspection shop—a massive hangar where Galaxys get a two-week checkup on everything from screws to fuel lines.

CMSgt. James Schilling, a crew chief in the ISO shop, was working on a C-5 in March. The health of its sheet metal is one of the big concerns. Schilling explained that, given the C-5's age and size, cracks and anomalies in the wings or the body need to be identified and patched over before they cause larger problems.

"If you look at the airplane in general, it's kind of amazing it gets off the ground," said Tarrant. "When I first started here, I was a little afraid because it was so big, but now I look at it like I look at my truck."

Through the years, Tarrant explained, he's seen the C-5 evolve: The landing gear has been modified, the A models were rewinged, and improvements were made to systems such as the gearboxes. (The 10 gearboxes on the first Galaxys have been cut to two.) The airframe changes have significantly increased service life, he said.

He recalled that the fleet went through a depot inspection down at Warner Robins Air Logistics Center in Georgia several years ago. "Everybody thought there would be huge structure cracks," he said. "They didn't find anything on that aircraft."

The projected service life of the fleet exceeds 50,000 hours.

By the time the B models were rolling off the assembly line in the 1980s, the Air Force and Lockheed Martin had incorporated many of the lessons learned from the first generation of the aircraft. The first C-5B arrived at Altus in January 1986. B models featured strengthened wings and updated avionics.

AMC began a program to bring the strategic airlifter into the 21st century in 1998 with the Avionics Modernization Program. (See "Saving the Galaxy," January 2004, p. 30.) This was the genesis of Dover's now fully "AMPed" fleet of 18 C-5s. Operators say the upgrade is paying off.

Capt. Zane Holscher, a pilot with the 3rd Airlift Squadron, noted that the new flat-screen displays, state-of-the-art navigation computers, and night-vision-goggle-compatible cockpits are all tools that are helping him perform his missions more capably. Capt. Josh Soule, a C-5 instructor pilot with the 436th AW, said the aircraft is now pushing the technological edge.

"We've got top-of-the-line communications," said Soule, who flew C-5s for three years before finally getting into an AMPed bird. "We've

USAF photo by TSgt. Lee Harshman

A C-5 disgorges a Marine helicopter in Djibouti in Africa. Nearly as long as a football field, the C-5 Galaxy is the largest aircraft in USAF's inventory.

USAF photo by MSgt. Lance Cheung

got the room to grow with it. It's been a big change."

The future of the C-5 modernization programs—in particular, a re-engining program—is still undecided. The Reliability Enhancement and Re-engining Program (RERP) promises more power, reliability, and lower operating costs, but the program is massively expensive.

Air Force officials are still attempting to determine whether the cost of the program is worthwhile for the older C-5As, which will likely still struggle with reliability issues. In February, Air Force Secretary Michael W. Wynne and Gen. T. Michael Moseley, the Chief of Staff, said modernization efforts for the C-5 fleet were running over budget and would be given a second look.

"Endgame"

Moseley said it may not be worth the investment to modernize the older C-5s, since they may see limited reliability improvements and would only be in service another 25 years.

With resources for modernization scarce, Moseley said the $5 billion budgeted for the A-model modernization effort may be better used on the KC-X or Joint Cargo Aircraft acquisition programs. Fully modernized C-5s that have been through both the AMP and RERP programs are being redesignated C-5M. The C-5Bs should see more substantial reliability improvements through conversion to C-5M configuration.

At a March 7 hearing, USAF's acquisition deputy, Lt. Gen. Donald J. Hoffman, and AMC's requirements director, Maj. Gen. Thomas P. Kane, argued that C-5As would likely see mission capable rate improvements of just 10 to 15 percent after going through the modernization program—at a cost of more than $100 million per airframe.

Dover's flying mission began changing in March as well. A lone C-5 slowly taxied up to the flight line at Dover on March 14, 2007 under an arch of water from two 436th Civil Engineer Squadron fire trucks. A small crowd of well-wishers, base officials, and local media greeted the crew as they exited the aircraft to cheers—and a blast of water from another fire hose.

The flight was the end of an era for Dover's 3rd AS, the last time the unit would fly the Galaxy.

The endgame for Dover is that it will have 18 C-5s and 12 C-17s, said Cox, the wing commander.

The 12 C-17s are expected to arrive by the end of 2008, turning Dover into a multi-aircraft base for the first time since it became the Air Force's only all-Galaxy base in 1973.

Last year, Dover processed 90,000 tons of cargo. The existing aerial port facility is scheduled to be replaced by June with a modernized aerial port featuring fully automated pallet processing and a computerized traffic system, in a 12,000-square-foot main bay, which means Dover will get even busier.

The 3rd AS is now transitioning to C-17 operations.

SSgt. Marc Hobson, the 3rd AS assistant NCO in charge of aviation resource management, said that he is looking forward to the new aircraft's arrival. "It's going to be a learning experience for everyone involved," he said. The 3rd AS, along with its Reserve partner, the 326th Airlift Squadron, will transition to the C-17 over the next year-and-a-half.

With the C-17s coming in, the 436th AW and its associate units are in the process of moving to a "common mobility culture," said Col. Merril J. Alligood Jr., deputy commander of the 436th Operations Group.

SrA. James Rutherford, a crew chief and aircrew debriefer with the 436th AW, said he remembered his aircraft mechanic father taking him to an Oklahoma City air show to see the C-5 "super plane" when he was growing up. When Rutherford finished tech school, he went to work on the very same aircraft.

His first "huge shock" came when he was working on top of the aircraft's massive T-tail—sitting six stories high with a view of the entire flight line. "I just wanted to sit there and take it all in," Rutherford said.

While the Air Force leadership and Congress continue to debate the future size and configuration of the C-5 fleet, Galaxy operators and maintainers take pride in the aircraft's unique capabilities. ■

Lockheed Martin photo

At top, SSgt. Erik Lucas (r) trains airmen of the 727th Air Mobility Squadron at RAF Mildenhall, Britain, to inspect a Galaxy engine. Above, the modernized C-5M made its maiden flight at Dobbins ARB, Ga., last June.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The phosphorous bomb was loose inside the airplane, burning at 1,300 degrees. SSgt. Red Erwin seized it in his bare hands and fought his way to the copilot's window.

A Brave Man the Right Time

By John T. Correll

at

Air Force Art Collection painting by John Witt

Henry Eugene Erwin learned responsibility at an early age. He was born in Docena, Ala., in 1921, the oldest child in a large family. He was 10 years old when his father, a coal miner, died. Gene, as the family called him, took a part-time job stocking shelves in the coal company commissary. "It helped us get along," he said.

The country was in the grip of the Depression, and times were hard. Erwin dropped out of high school after two years and joined the Civilian Conservation Corps, where he was put in charge of 220 other young men planting kudzu in north Alabama to stop soil erosion. He was 17 years old. After the CCC, Erwin went to work at a steel mill in Birmingham. For the next several years, he was the chief breadwinner for the family.

He joined the Army in January 1943. Despite his limited formal education, he scored very high on the entrance examination and qualified for the Air Corps and technical training. During an advanced radio course at Truax Field, Wis., he was approached about going to Yale University for further study and the possibility of becoming a communications officer.

Erwin turned down the offer. "Being a kid then," he explained later, he thought the war might end before he got into it. He wanted to go on to aircrew duty when he finished radio training. After a short time on B-17s, he became a B-29 radio operator.

He came home to Alabama on furlough to get married in December 1944. In January 1945, he was sent to Guam, assigned to the 52nd Bomb Squadron, 29th Bombardment Group, of Twentieth Air Force's XXI Bomber Command. His fellow crew members on the B-29 *City of Los Angeles* called him "Red" because of his auburn red hair. The new nickname would stay with him for the rest of his life.

The B-29 Superfortress was the biggest and newest US bomber. It had been first used in combat from bases in India and China in late 1944. When operating from bases in the Marianas—Saipan, Tinian, and Guam—B-29s could reach almost any target in the Japanese home islands.

Daylight bombing of Japan from high altitudes was not effective. Cloud cover frequently obscured the targets. More important, the B-29s flying above 25,000 feet encountered the jet stream. Its fierce tailwinds added as much as 250 mph to the aircraft's speed relative to the ground, pushing it over the target too fast for the Norden bombsight to compensate. (Flying against the jet stream, the speed relative to the ground was so slow that the airplane was a sitting duck for fighters and anti-aircraft guns.) Crosswinds also carried the bombs off course. XXI Bomber Command switched to low-level area bombardment with incendiary and high-explosive munitions from altitudes of 5,000 to 9,000 feet.

The B-29 standard crew had 11 members. Of these, five crewmen—four gunners and a radar observer—were in the back, aft of the bomb bays. The other six were in the forward section of the Superfort. The pilot, copilot, and bombardier (who also served as nose gunner) were up front on the flight deck. The flight engineer's position was just back of the copilot, beside the nose wheel door.

Mission to Koriyama

At that point, the two forward gun turrets extended into the aircraft and made it a tight squeeze. The navigator sat, facing forward, in the space between the upper turret and the left side of the aircraft, his work table latched to the turret. The radio operator's position was at the very back of the front section, behind the turret and separated from the bomb bay by a bulkhead. To get in or out, he had to go through the navigator's station.

On April 12, 1945, *City of Los Angeles* was the lead bomber of a B-29 group sent on a mission against the Japanese chemical plant at Koriyama, 125 miles north of Tokyo. The airplane commander was Capt. George A. "Tony" Simeral. (See "Valor: Missions Accomplished," January 1994, p. 73.)

B-29s flew in formation against specific targets such as the plant

A painting from the Air Force Art Collection depicts SSgt. Red Erwin,* City of Los Angeles, *and Erwin in the midst of his act of heroism.

Erwin is in the first row, second from the right, in this crew photo.

at Koriyama. That concentrated the bombardment and provided better defense against fighter attack. However, formation flying took additional fuel, and so, because there was no fighter threat en route to the target, the bombers flew individually to a predetermined point near Japan, where they then formed up.

The B-29s took off from Guam's North Field about 2 a.m. and reached the rendezvous point at Aoga Shima, a small volcanic island 175 miles off the coast of Japan, about 9:30 that morning. The other aircraft in the squadron would form up on Simeral's aircraft before proceeding to the target.

Eighteenth Mission

That day, Lt. Col. Eugene Strouse, the 52nd Bomb Squadron commander, was flying in the copilot's seat of *City of Los Angeles.* The radio operator was Erwin, then a 23-year-old staff sergeant flying his 18th combat mission. One of Erwin's duties was to launch signal flares and smoke bombs so the other B-29s could assemble and form on the lead aircraft.

At Aoga Shima, Simeral told Erwin to launch white phosphorous smoke bombs. Erwin was bareheaded and had his shirt sleeves rolled up. He was wearing his Mae West life jacket, as he always did on a mission over water, because he couldn't swim.

Erwin pulled a pin to arm a smoke bomb and dropped it through a chute in the floor of the aircraft near the radio operator's station. He was on his knees.

National Archives

Maj. Gen. Willis Hale (right) presented the Medal of Honor to Erwin. The aircraft commander, Capt. George Simeral (left, with hat) and other crew members look on.

Another Challenge for a Fighting Aircrew

A new radio operator had taken Red Erwin's place, but the rest of the *City of Los Angeles* crew was the same for a June 5, 1945 mission against the city of Kobe, Japan. It was again the lead aircraft in the bombing formation, and Tony Simeral, recently promoted to major, was still the aircraft commander.

The B-29s had just begun their 12-minute bomb run when the ground defenses opened up on them. The Superfort designated as the alternate formation leader was shot down, and flak ripped a three-foot hole in the wing of *City of Los Angeles.* Two minutes from target, the wing and one engine were burning briskly.

The other aircraft in the formation were keying on *City of Los Angeles* and lead bombardier, 1st Lt. William Loesch. It was too late for another bombardier to take the lead.

"On this type of mission, only the bombardier in the lead plane used his bomb sight on the bomb run," said Gordon Bennett Robertson Jr., in *Bringing the Thunder* (Stackpole, 2006). Robertson flew a B-29 on both the April 12 mission to Koriyama and the June 5 mission to Kobe. "All the other bombardiers kept their eyes glued to the lead plane and when they saw the bomb come out of its bomb bay, they released theirs. Thus, if the lead bombardier was properly on the mark, the whole formation's bomb load hit at the same time and place, obliterating the target."

If Simeral dropped out of the formation to attend to the fire, the mission would fail. He kept power on the burning engine and held course to the drop point. Loesch released his bombs on target, and the Superforts coming behind timed their release on his. Simeral was then free to leave the formation, but when he did, two waves of Japanese fighters attacked. The crew, aided by one other B-29, fought them off and shot down several of them.

Simeral landed at Iwo Jima with one engine dead, two gun turrets empty of ammunition, a damaged wing and flaps, and fuel gauges near zero. Another B-29 had crashed on the main runway, so *City of Los Angeles* had to use a short fighter strip to set down. Simeral was awarded the Distinguished Service Cross for his actions.

After the pin was pulled, there was an eight-second delay before the bomb ignited. Normally, that was plenty of time for the bomb to fall through the chute and out of the aircraft.

It is uncertain what went wrong. The flap valve at the bottom of the ejection chute may have jammed. Perhaps, Erwin said later, the aircraft hit some turbulence or there was a malfunction in the bomb. In any case, he said, "I knew that sucker was coming back."

The bomb exploded in the chute and shot back into the interior of the aircraft, hitting Erwin in the face. The phosphorous was burning at 1,300 degrees. (As a point of comparison, the heating element of an electric range is at 1,100 degrees when it is glowing red.) Thick white smoke filled the forward section of the airplane.

Erwin had phosphorous all over him, blinding him and burning off his hair, most of his right ear, part of his nose, and large patches of his skin. His clothing was on fire. "I was completely aflame," he said.

The entire crew was in mortal danger. The phosphorous was burning with intensity and eating its way through the metal of the bulkhead. With smoke filling the airplane, the pilots could not see. Except for the incredible courage of Red Erwin, the only question would have been whether the B-29 would crash into the ocean before the fire reached the munitions in the bomb bay.

Erwin was alone. The navigator, whose station was closest to his, had gone aft to the celestial navigation dome to take a star shot. Even worse, he had left his folding table down and latched. The smoking bomb lay at Erwin's feet.

"I reached down, I grabbed it with my right hand, I began to crawl," Erwin said. "I remember opening the navigator's table, crawled by the engineer—the flight engineer was on the right—went up between the pilot and the copilot."

His path forward was blocked by the navigator's table. "Erwin couldn't release the table's latch with one hand, so he grabbed the white-hot bomb between his bare right arm and his rib cage," an Air Force report said. "In the few seconds it took to raise the table, the phosphorous burned through his flesh to the bone."

Erwin "stumbled into the cockpit, threw the bomb out the window, and

Photo courtesy of the Air Force Enlisted Heritage Research Institute

Erwin—here with his wife, Betty (standing), and mother, Pearl Erwin—had grabbed the burning smoke bomb and held it between his bare right arm and rib cage.

Erwin "embodied all the ideals of the Medal of Honor."

collapsed between the pilots' seats," the report said. He had to move 13 feet through the aircraft to toss the bomb out the window, but "it seemed like miles when you are burning," he said. "When you are on fire, you cannot see, and you are crawling by instinct."

"My flight suit was gone," Erwin said, but he had the Mae West. "That's the only thing that saved my chest. Otherwise, I was burned all over." (See "Valor: Red Erwin's Personal Purgatory," October 1989, p. 91.)

"I'm Fine"

"You could see nothing, absolutely nothing," Simeral said. "Not even your hand before your face. So it obscured all the instruments. Fortunately, we were on autopilot except for the elevators and that saved us. But what I was fearful of was stalling out if I put any back pressure on the elevators."

To be sure of staying above stall speed, Simeral said he "probably put more pressure on the downside," easing the flight controls forward. That lowered the nose of the airplane but it also reduced the altitude. "But after Red threw that bomb out the copilot's window, ... the smoke cleared out, and I could see the instruments and at that point we were at 300 feet," Simeral recalled. "If he hadn't gotten it out of there, well then, why, we probably would have gone on in."

Until the smoke thinned out, the rest of the crew did not know what Erwin had done. When they saw him, they were aghast. Erwin recalled it later as a strange moment when somebody asked, "Red, are you all right?" and he replied, "I'm fine."

Sgt. Vern Schiller, the flight engineer, had turned a fire extinguisher on Erwin. That put out the fire in his clothing, but the phosphorous embedded in his body continued to burn.

Simeral aborted the mission and headed for Iwo Jima, halfway between Japan and Guam, and the closest US medical facility. He climbed to cruising altitude, jettisoned his bombs, and broke radio silence to tell the alternate leader to take over the formation.

Erwin's colleagues did what they could for him, but that was complicated by the fact that Erwin himself was the crew's first aid man. The bombardier, 1st Lt. William Loesch, injected morphine and tried to inject plasma, but Erwin's arms were so badly burned he couldn't find a blood vessel. "We didn't discover until after, much later, that, after we landed and talked to people, you could do it through any vein, ... ankle, or some place else," Simeral said.

Erwin never lost consciousness. He was in terrible agony but remained alert and warned the others not to give him too much morphine. As they gathered around him, he asked, "Is everybody else all right?"

"Fortunately, Iwo Jima was wide open, and we made a straight in approach and parked on the runway until the medics got Red out of the aircraft," Simeral said. The hospital at Iwo Jima was underground. Erwin said, "I remember going to this cave, and this doctor was working on my eyes [and saying], 'We've got to get this phosphorous out of his eyes. Otherwise, he's going to be blind.'"

The crew visited him briefly in the hospital and then flew *City of Los Angeles* back to their base on Guam. Lt. Col. Corey Ford and Maj. Alastair MacBain were there when Simeral landed. They talked to the crew that night and went aboard the airplane the next day. They helped write the recommendation for the Medal of Honor. They also described the damaged forward compartment in an article for the Aug. 4, 1945 issue of *Collier's*.

Blocked by the navigator's table, Ford and MacBain said, Erwin had "fumbled with the spring latch until it opened. The loose skin came off his hand onto the table as he lifted it. We looked over the plane [the] next day. You could see the imprint of his whole hand seared on the table."

The assumption was that Erwin would die. When he was still alive three days later, he was airlifted to the Navy hospital on Guam.

Maj. Gen. Curtis E. LeMay, commander of XXI Bomber Command, used the full force of his personality to get the Medal of Honor recommendation rushed through channels. Approval was obtained from Washington in record time so the medal could be presented while Erwin was still alive.

A Medal of Honor was taken from a display case at Army headquarters in Hawaii and flown to Guam, where it was awarded to Erwin on April 19, 1945—a week after the mission—by Maj. Gen. Willis H. Hale, commander of Army Air Forces Pacific Area. Simeral's crew and Strouse were there to see it.

On May 7, LeMay asked Erwin if there was anything more he could do for him. Erwin asked for his brother, Howard, who was on Saipan with the 7th Marine division. He had not seen him for three years. Howard Erwin was flown to Guam by movie star Tyrone Power, who was a Marine Corps pilot. Power's usual duty was flying supplies into Iwo Jima and wounded troops out.

"And so my brother was there the next morning," Erwin said. "He stayed with me for 24 hours. I couldn't see

him but I knew he was there and that was a great comfort."

His condition was grave. "I was losing weight all the time," he said. "In fact, I got down to 87 pounds, skin and bones, because I couldn't open my mouth to eat. I didn't give up. ... They kept me soaked in saline solution so what little flesh I had wouldn't come off."

Erwin was airlifted back to the United States. "They were scraping phosphorous out of my eyes," he said. "I was still smoldering 30 days later when I got to Sacramento. ... When the oxygen hits it [the phosphorous], it begins to smolder again. They would scrape and scrape."

After 30 months and 41 surgeries, most of his eyesight was restored and he regained the use of one arm. "Both eyes were sewn up over a year," Erwin said. "Then postage skin grafts were put under them to keep down the tension. ... When I got out in October 1947, they still wanted to do more surgery, but at that time I had had it. I was married. I wanted to go home and go to work."

Erwin in October 1947 was separated from the Army as a master sergeant, receiving a disability discharge. "I love the military," he said. "Even though I was severely burned, if they had retained me, I would have stayed in."

In an Air Force oral history interview in 1986, Erwin reflected on World War II. "We had the leaders, we had the logistics, and we had the brave men at the right place at the right time," he said.

"Outstanding" Rating

"I went to work for the Veterans Administration in January 1948 when I got out," Erwin said in the 1986 interview. "Harry Truman had issued an executive order that any Medal of Honor recipient, otherwise qualified, was eligible for a veterans' benefits job. I knew that the TCI Company would never give me my job back at the plant due to the loss of my arm. I went to work for the Veterans Administration as a veterans' benefits counselor. I did that for 37 years, so I retired two years ago with 43-and-a-half years of federal service." He got an "outstanding" performance rating from VA every year.

Hollywood took notice, but just barely, of the events of the Medal of Honor mission. David Sharpe played Red Erwin in "Wild Blue Yonder" (Republic Pictures, 1951), but the scene lasted only a few moments. The rest of the movie was a fictionalized account of B-29s against Japan and the pursuit by Forrest Tucker and Wendell Corey of Army nurse Vera Ralston.

Erwin stayed in touch with the members of the *City of Los Angeles* crew, all of whom survived the war. In 1989, he and Simeral—who retired as a colonel—were interviewed together for a videotape, "Prepared to Die," produced by the Air Force Sergeants Association's Airmen Memorial Museum.

He is well remembered at the Air Force Enlisted Heritage Research Institute at Maxwell AFB, Ala. In 1997, the Air Force introduced the Henry E. Erwin Outstanding Enlisted Aircrew Member of the Year award.

Back in Alabama, Red and Betty Erwin raised one son and three daughters, and in time, there were seven grandchildren. "Dad had limitations after the war," said Henry E. Erwin Jr., who is in his second term as an Alabama state senator. He could not use his right arm. It was locked in a 90-degree angle. He could move his fingers but could not touch his head. "Dad's hair came back a darker red than before. It was also much straighter than the wavy appearance of World War II."

The younger Erwin went on, "He loved sports, especially baseball. He directed a local Little League for several years. [He] used his good arm to hit flies and skinners to the outfield and would even umpire a game when necessary. He loved Alabama Crimson Tide football and listened to the games on radio for years." Despite his limited eyesight, Erwin was a "news junkie" who devoured the daily newspaper from the first page to the last.

"Dad was a man of manners," Senator Erwin said. "He was always polite and courteous. He rarely got angry, but when he did, he meant business. He never yelled and screamed, but he had a firmness to his voice when he was angry. ... He embodied all the ideals of the Medal of Honor. He wore them like a well pressed suit. He was honest, thrifty, and patriotic. ... He never owed a debt, never got a ticket, never was sued. He obeyed the law, attended church, and treated everyone with courtesy and respect."

Henry E. "Red" Erwin died Jan. 16, 2002, at age 80, more than half a century after the expectation in the underground hospital on Iwo Jima that he would not live out the week. ■

John T. Correll was editor in chief of Air Force *Magazine for 18 years and is now a contributing editor. His most recent article, "The In-Country War," appeared in the April issue.*

The Keeper File

Bush and Preventive War

All US Presidents have reserved a right to pre-empt an urgent, imminent threat to the nation. Five years ago, after the Sept. 11 attacks, George W. Bush openly declared this view, but went one step further, claiming a right to disarm a foe whose weapons of mass destruction could threaten America some time in the future.

Bush laid out a full version of this "preventive war" concept in a June 1, 2002 speech at West Point. Deterrence and containment, he said, wouldn't work when "unbalanced dictators with [WMD] can deliver those weapons on missiles or secretly provide them to terrorist allies." He summed up, "If we wait for threats to fully materialize, we will have waited too long." The US had to eliminate those threats "before they emerge." This went well beyond "anticipatory self-defense." Some saw preventive war as the equivalent of Japan's December 1941 attack on Pearl Harbor, but Bush believed he needed to strike Iraq to prevent Saddam Hussein from obtaining WMD that could threaten the US. Political support for this was blown apart by America's failure to find such weapons in Iraq.

The "Pre-emption" Speech

President George W. Bush
Graduation Address
US Military Academy
West Point, N.Y.
June 1, 2002

Find the full text on the Air Force Association Web site
www.afa.org
***Air Force* Magazine**
"The Keeper File"

In defending the peace, we face a threat with no precedent. Enemies in the past needed great armies and great industrial capabilities to endanger the American people and our nation. The attacks of September the 11th required a few hundred thousand dollars in the hands of a few dozen evil and deluded men. All of the chaos and suffering they caused came at much less than the cost of a single tank. The dangers have not passed. This government and the American people are on watch, we are ready, because we know the terrorists have more money and more men and more plans.

The gravest danger to freedom lies at the perilous crossroads of radicalism and technology. When the spread of chemical and biological and nuclear weapons, along with ballistic missile technology—when that occurs, even weak states and small groups could attain a catastrophic power to strike great nations. Our enemies have declared this very intention, and have been caught seeking these terrible weapons. They want the capability to blackmail us, or to harm us, or to harm our friends—and we will oppose them with all our power.

For much of the last century, America's defense relied on the Cold War doctrines of deterrence and containment. In some cases, those strategies still apply. But new threats also require new thinking. Deterrence—the promise of massive retaliation against nations—means nothing against shadowy terrorist networks with no nation or citizens to defend. Containment is not possible when unbalanced dictators with weapons of mass destruction can deliver those weapons on missiles or secretly provide them to terrorist allies.

We cannot defend America and our friends by hoping for the best. We cannot put our faith in the word of tyrants, who solemnly sign nonproliferation treaties, and then systemically break them. If we wait for threats to fully materialize, we will have waited too long.

Homeland defense and missile defense are part of stronger security, and they're essential priorities for America. Yet the war on terror will not be won on the defensive. We must take the battle to the enemy, disrupt his plans, and confront the worst threats before they emerge. In the world we have entered, the only path to safety is the path of action. And this nation will act.

Our security will require the best intelligence, to reveal threats hidden in caves and growing in laboratories. Our security will require modernizing domestic agencies such as the FBI, so they're prepared to act, and act quickly, against danger. Our security will require transforming the military you will lead—a military that must be ready to strike at a moment's notice in any dark corner of the world. And our security will require all Americans to be forward-looking and resolute, to be ready for pre-emptive action when necessary to defend our liberty and to defend our lives.

The work ahead is difficult. The choices we will face are complex. We must uncover terror cells in 60 or more countries, using every tool of finance, intelligence, and law enforcement. Along with our friends and allies, we must oppose proliferation and confront regimes that sponsor terror, as each case requires. Some nations need military training to fight terror, and we'll provide it. Other nations oppose terror, but tolerate the hatred that leads to terror—and that must change. We will send diplomats where they are needed, and we will send you, our soldiers, where you're needed.

All nations that decide for aggression and terror will pay a price. We will not leave the safety of America and the peace of the planet at the mercy of a few mad terrorists and tyrants. We will lift this dark threat from our country and from the world. ...

Some worry that it is somehow undiplomatic or impolite to speak the language of right and wrong. I disagree. Different circumstances require different methods, but not different moralities. Moral truth is the same in every culture, in every time, and in every place. Targeting innocent civilians for murder is always and everywhere wrong. Brutality against women is always and everywhere wrong. There can be no neutrality between justice and cruelty, between the innocent and the guilty. We are in a conflict between good and evil, and America will call evil by its name. By confronting evil and lawless regimes, we do not create a problem, we reveal a problem. And we will lead the world in opposing it. ■

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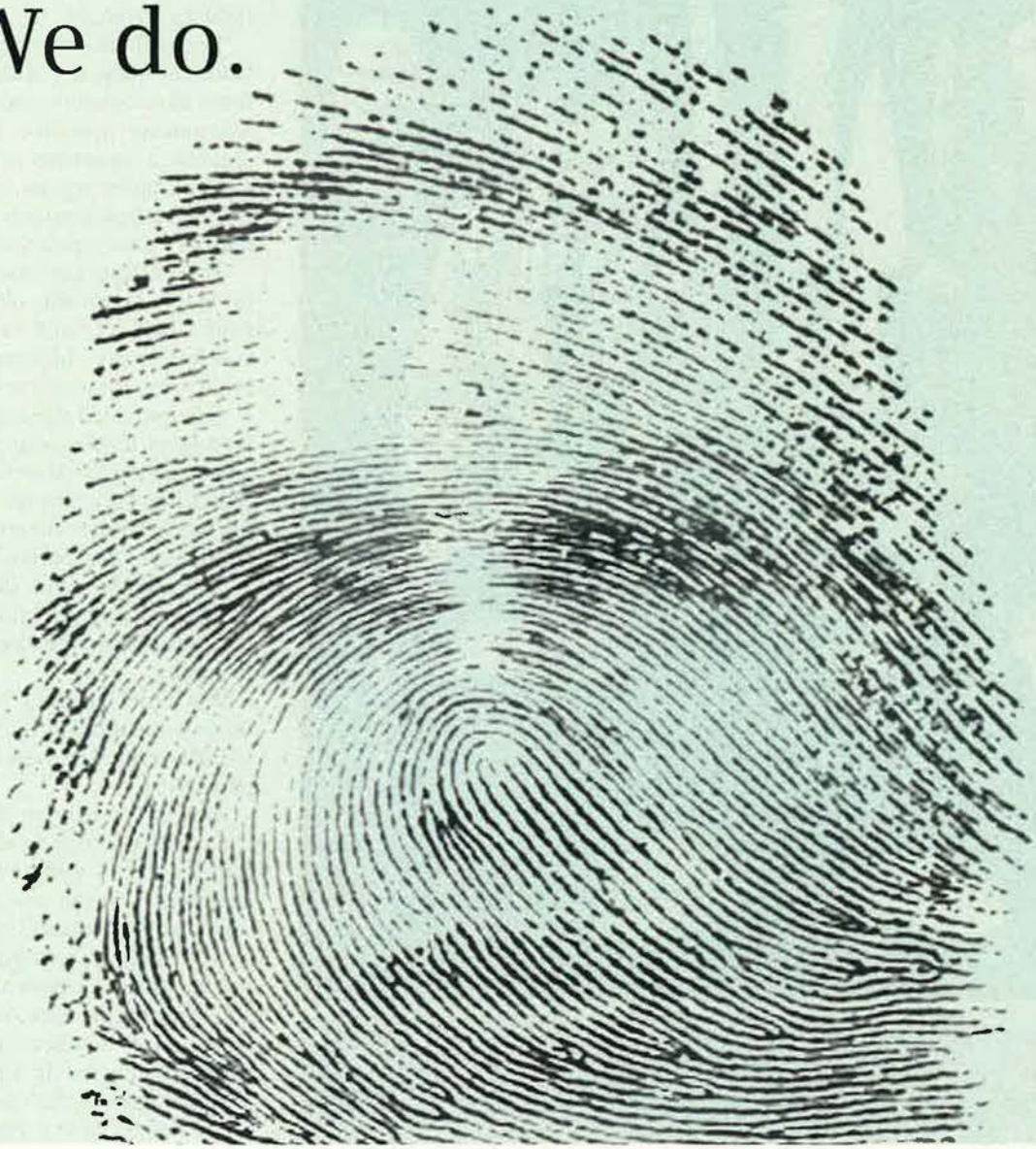

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Project Paperclip

It was an all-out race to seize the best German scientists and technologies. America won.

By Walter J. Boyne

Even as World War II ground toward its bloody climax, Germany continued to astound the world with amazing new technological marvels. Hitler's reich, in the war's last days, introduced rockets, jet fighters, V-1 unpiloted aircraft, lethal V-2 missiles, and a host of other military advances.

The nations on the verge of defeating Germany naturally wanted to exploit these developments and make the new war-making capabilities their own. Thus erupted a spontaneous international race to acquire equipment, documents, engineers, and scientists who produced the German weaponry advances.

The pressing need to secure the cream of enemy assets was obvious, and the Joint Chiefs of Staff on July 20, 1945 codified many different intelligence efforts into Project Overcast.

This provided the initial guidelines for seizing, holding, using, and returning enemy nationals. After the surrender of Japan, however, protests broke out over the use of former enemy personnel for national military purposes. This forced a name change, and, in March 1946, the effort to gather top-secret Nazi technology became known as Project Paperclip.

The term "Paperclip" stemmed from the fact that dossiers of the most highly valued scientists were flagged with paperclips.

The initial driving factors behind Overcast-Paperclip were complex. The armed services wanted to use German capabilities in the war against Japan. The State Department's primary concern was preventing a resurgence of German might, as had occurred after World War I. Underlying this was a pervasive desire to exploit the intellectual capital of the former enemy for the future.

The program was controversial; nearly all the sought-after scientists and engineers had connections to the Nazi party, the German war effort, or even, in some instances, to war crimes. Despite a universal reluctance to deal with anyone connected to the Nazi regime, necessity forced the military authorities to skirt the rules prohibiting their use.

The German intellectual capital

Army Maj. Gen. H.N. Toftoy (back left) with some key scientists brought from Germany. Left to right, they are: Ernst Stuhlinger, Hermann Oberth, Wernher von Braun, and Eberhard Rees.

was formidable and priceless. German achievements extended beyond mere advances in weapons. They included developments in wind tunnels, materials, and other disciplines necessary to build an advanced scientific infrastructure.

Other countries were less successful than was the United States, which clearly won this race despite the admonitions of Gen. Dwight D. Eisenhower that there were to be no dealings with any Nazi. Initially, the United States planned to permit only about 100 individuals to enter the country. Ultimately, however, Washington approved the entry of about 700, with family members.

There were many reasons for the United States' greater success in exploiting the accumulated information and potential contributions of its former foes.

The primary cause of success was the vision of Gen. H.H. "Hap" Arnold, Commanding General of the US Army Air Forces, whose strong penchant for research and development led to his work with Theodore von Karman, the Hungarian emigre who established the Scientific Advisory Group (later the Scientific Advisory Board) in 1944. (See "Von Karman's Way," January 2004, p. 74.) Arnold's backing and von Karman's connections in academia created the climate and top cover for Air Technical Intelligence personnel to scour the German countryside and gather the necessary data, equipment, and personnel.

Col. Donald L. Putt, backed by Gen. Carl A. "Tooey" Spaatz, led an aggregation of specialist teams in Operation Lusty. This was the most immediately successful of the competing operations racing across Germany, and it was the one that had the most direct effect on aeronautical research. (See "Operation Lusty," January 2005, p. 62.)

Exploiting enemy technology was commonplace in World War II. Examples ranged from the purely serendipitous (as when an FW-190 fighter inadvertently landed in Wales) to the carefully planned (as in the daring British commando raid on the German Freya radar site at Saint-Bruneval on the French coast).

Dirty Dozen

The Allied countries devised multiple schemes to gather up hardware, data, scientists, and engineers. Some had a reckless "Dirty Dozen" flavor—and most failed.

Large-scale efforts did not get under way until after the June 6, 1944 D-Day invasion of France. Then, teams were able to advance across the European countryside just behind the front lines. The AAF formally combined technical and post-hostilities intelligence objectives on April 22, 1945, using the code name Operation Lusty.

They were searching for technology for use against Japan and to accelerate American development of advanced systems.

For example, weapons such as the Henschel Hs 293 guided missile promised to be useful if the war against Japan continued.

Air Technical Intelligence units were competing with more than 30 allied technical intelligence groups to gain information from captured equipment.

Under Putt's leadership, ATI teams swarmed over Germany as it collapsed. A special group led by Col. Harold E. Watson made the most immediate impression on AAF leaders by snapping up copies of the latest German aircraft, which were transported to Ohio for test and evaluation.

However, the most productive long-term discoveries were made by teams led by Putt and other members of the Scientific Advisory Group. These teams swept through the well-known German research centers in Stuttgart (the Graf Zeppelin Research Establishment), Goettingen (the Aerodynamics Research Institute), and von Karman's old stomping ground at Aachen. There they met their peers, leading academics, many of whom they knew personally and had worked with before the war.

Putt was astounded when, on April 13, 1945, he was led to a previously unknown German research site, the Hermann Goering Aeronautical Research Center at Voelkenrode.

Never detected by American intelligence, it was a well-camouflaged facility of Goeringesque proportions on the outskirts of Braunschweig. Almost 80 buildings, including seven wind tunnels, were hidden under a carpet of earth from which trees grew, blending the facility into the surrounding forest. (Some wind tunnel parts captured in Germany are still in use in the United States today.)

Putt immediately saw that a full exploitation of the information available required the presence of his old friend, von Karman, and his colleagues.

Unfortunately for Putt, Voelkenrode was in the area designated for occupation by Britain, so he was forced to maximize his yield by doing some rapid "midnight requisitioning" of key documents and

NASA photo

Scientists who worked on the V-2 with Von Braun are shown at Ft. Bliss, Tex. Practically under house arrest at first, they jump-started American ICBM efforts.

German Aerodynamics and the B-47

Project Paperclip is most famous for bringing top German rocket scientists and technologies to the US, but the seizure of war technology led to other important advances. Among them was validation of swept-wing aircraft designs.

Recovered in Germany were computations establishing the benefits of sweeping a wing. George Schairer was able to convince Boeing to modify its B-47 design to incorporate wings with a sweep back of 35 degrees. Schairer's information was distributed to the aircraft industry and similarly induced North American to accept a six-month delay to rework its P-86 from straight wings to a 35-degree sweep.

The following is a transcription of Schairer's handwritten May 10, 1945 letter from Germany. At the time, Schairer was Boeing's chief aerodynamicist. (Letter courtesy of John H. McMasters.)

G.S. Schairer
Voelkenrode
Germany
5/10/45

B. Cohn
Boeing Aircraft Co.
Seattle, Wash., USA

Dear Ben,

It is hard to believe that I am in Germany within a few miles of the front line. Everything is very quiet, and I am living very normally in the middle of a forest. We have excellent quarters, including lights, hot water, heat, electric razors, etc.

We are seeing much of German aerodynamics. They are ahead of us on a few items which I will mention.

The Germans have been doing extensive work on high speed aerodynamics. This has led to one very important discovery. Sweepback or sweepforward has a very large effect on critical Mach No. This is quite reasonable on second thought. The flow parallel to the wing cannot [affect] the critical Mach No., and the component normal to the airfoil is the one of importance. Thus the critical M is determined by the airfoil section normal to the wing and by the sweepback. ...

This is not complicated by adding a body at the center but is badly [affected] by most nacelles.

This effect can also be used in propellers by sweeping the tips backwards.

A certain amount of experimental proof exists for this sweepback effect. Only the Me-163 has used it so far as I can find out. Naturally many control and stability problems are to be encountered in using large amounts of sweep.

I do not know how soon this info will get around to other manufacturers, so will you write letters to Ozzie [W.B. Oswald, Douglas], C.L. Johnson ["Kelly" Johnson, Lockheed], R. Bayless [Ralph L. Bayless, Consolidated (Convair) Aircraft], E. Horky [Ed Horky, North American], E. Sheafer [E.V. Schaefer, Martin], & Darby [Bob Darby, Curtiss], quoting pages 2-5 for their information.

I am having a fine time. I even use my electric razor wherever I go. I have seen Kinnaman & Martin often. There is plenty to eat. Hope things are going well for you. My best to all the gang. They are sure tops in all comparisons.

Sincerely,
George

equipment and flying it out in war-weary B-17s and B-24s.

Putt's work annoyed the British but pleased his taskmaster boss, Maj. Gen. Hugh J. Knerr, who ordered him to Wright Field.

The ATI teams continued to gather up German experts wherever they could be found. When the European war ended on May 8, 1945, the United States had in custody almost every leading German aircraft engineer, including the young inventor of the German jet engine, Hans-Joachim Pabst von Ohain. (See "The Converging Paths of Whittle and von Ohain," January 2006, p. 70.) It was a stupendous haul and was infinitely more valuable for the work the scientists might do in the future than for the work they had done in the past.

Army intelligence teams were operating with the same diligence as their ATI counterparts, searching everywhere for equipment, data, and personnel that would be helpful in the future. Enormous publicity had been generated by the debut of the notorious V-1 and V-2, nicknamed "vengeance" weapons by Nazi propaganda minister Joseph Goebbels. This tended to cause the intelligence teams to focus more intently on German missile development.

The V-1 (officially the Fiesler Fi 103) flying bomb was essentially an updated version of the 1917 Kettering "Bug" concept—a cruise missile. It was powered by a pulse-jet engine and equipped with a primitive guidance system. The characteristic noise of the pulse-jet lent the nickname "buzz bomb" to the weapon, also called "Doodlebug" by battle-hardened Londoners.

The V-1 entered combat on June 13, 1944 when 10 were fired against London. Two days later, almost 300 were launched, and the "Flying Bomb Blitz" began. Ultimately some 29,000 V-1s were built. Of these, 8,000 were fired against London, with 2,419 hitting their target, killing almost 6,000 Britons.

A much larger number of V-1s struck liberated Antwerp. The majority were launched from ground stations, with about 1,200 being air launched in the manner of a modern ALCM.

The V-1 was copied in the United States as the JB-2 Loon. About 1,000 were built, but were not used in combat.

In the meantime, other Army teams were after the German engineers who had created the V-2 ballistic missile, considered by many to be the most advanced weapon of the war other than the atom bomb.

Enter von Braun

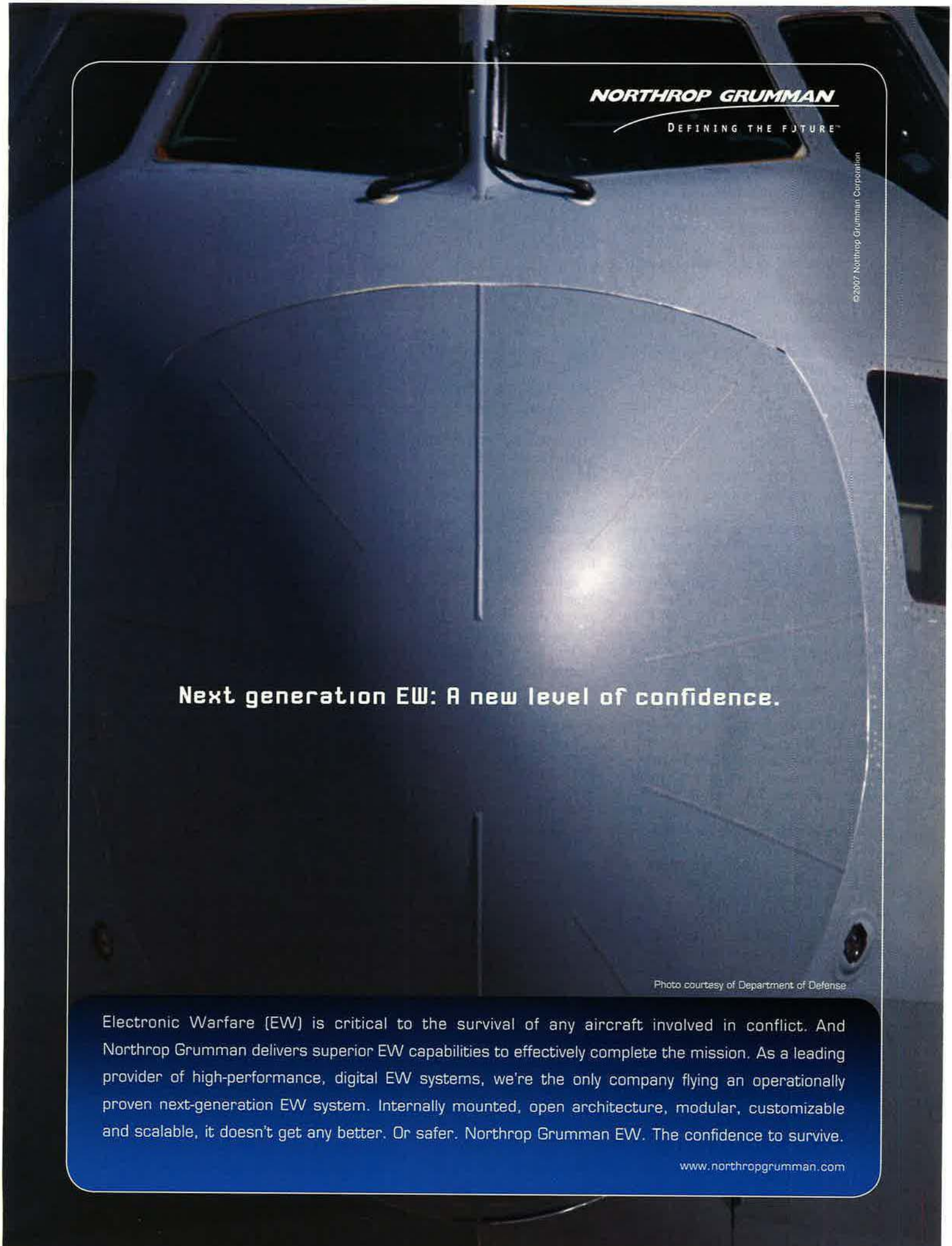
The Army teams were impressed by the advanced technology of the V-2, especially compared to previous American efforts which lacked the size or payload of the V-2. More importantly, unlike the V-1, the V-2 was essentially impossible to intercept.

Led by the charismatic young Wernher von Braun, the members of the Society for Spaceflight traded their technical expertise for German Army funds beginning in 1934. While their scientist eyes may have remained fixed on the stars, their lethal products were designed to hit London and, ultimately, New York.

Weighing almost 30,000 pounds, the V-2 was perhaps Hitler's last remaining hope to force Britain from the war. More than 10,000 were manufactured, largely by slave labor working under hideous conditions. Some 1,400 were launched against Britain, with about 500 hitting London, killing about 2,600 people. As the Allies gained ground after the invasion, Antwerp became the principal target.

In retrospect, the V-2 was a wasteful project for Germany. It consumed scarce resources that might have been better used elsewhere, and its total delivered tonnage was less than that being delivered by the RAF or AAF in a single raid.

Nonetheless, more than any other German weapon, the V-2 pointed the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way to the future, and the Army was determined to learn its secrets and moved swiftly to round up German scientists and equipment.

Von Braun had earlier forged documents that permitted him, 500 personnel, and extensive documentation to leave their experimental station to escape the oncoming Soviet forces. Despite this tremendous drain on V-2 brainpower, production continued at the notorious Mittelwerk facility at Nordhausen until April 10, 1945.

Knowing that Nordhausen was slated to come under Soviet occupation, the US forces worked swiftly to take as much from the Mittlewerk plant as possible. The first trainload of V-2s, parts, machinery, and equipment departed on May 22, 1945. Within nine days, more than three trainloads were sent to Antwerp, carrying enough material to manufacture 100 V-2s. Von Braun, his Nazi supervisor, and 126 principal engineers were captured on May 2, 1945.

Von Braun and the top seven members of his team arrived at New Castle AAF, Del., on Sept. 20, 1945. They were soon sent to a long-term assignment at Ft. Bliss, Tex.

Their first task was to prepare V-2s for launch at the White Sands Proving Ground in New Mexico. The repatriated German scientists were generally well-treated, but were unable to leave the station without military escort.

When Japan surrendered, ending the war, US use of former Nazi scientists provoked strong domestic political protests. The view was that, with hostilities over, there was no continuing need. The knowledge already flowing from the captured scientists ruled out any major change in course, however.

On April 16, 1946, the first V-2 was launched in the United States. This would be followed by 63 more rockets, all carrying a wide variety of instruments and all intended as scientific experiments.

This mass transfer of personnel and equipment accelerated the US development of ballistic missiles. The V-2 itself became the baseline from which many later rockets were derived. The first of these was a complex, sophisticated family of rockets under the project umbrella name Hermes. With a contract awarded to General Electric in 1944, Hermes came to include the V-2 test program itself as well as other derivatives from the V-2.

The success of the American V-2 experiments also provided confidence to other firms developing rocket designs that did not use V-2 technology per se, as in the case of the Convair Atlas or the Douglas Thor. This influence extended for decades. In 1955, the Air Force launched the Titan program as a backup to the Atlas.

NASA photo

An improved V-2, called "Bumper," blasts off from Cape Canaveral, Fla.

Author William Harwood quotes Martin executive William G. Purdy as saying that the connections made with German engineers at Ft. Bliss continued on into the Titan era. Titan missiles carried the highest-megaton warhead of all USAF missiles and served as Gemini and later Air Force and NASA satellite launch vehicles.

Von Braun and his team were transferred to the Redstone Arsenal at Huntsville, Ala., in April 1950. Still nurturing his long-held dream of spaceflight, von Braun led the efforts resulting in the Redstone, which was longer and heavier than the V-2 and equipped with an inertial guidance system. The Redstone had a range of 250 miles and led directly to the larger Jupiter, an intermediate range ballistic missile with a 2,000-mile range.

In 1955, Defense Secretary Charles E. Wilson gave USAF responsibility for developing the ICBM. For intermediate range missiles, the Air Force was to develop the Thor, while the Navy adopted the solid fuel Polaris. These sudden shifts meant that the Air Force had inherited the legacy of the von Braun team and was destined to assert its dominance in space.

Von Braun and his team moved closer to their original dreams as the Redstone and Jupiter became important factors in the space race. America's long series of embarrassing, televised space-launch failures ended with the use of a Jupiter C on Jan. 31, 1958. It was used to launch America's first satellite, Explorer 1.

The influence of the Paperclip scientists did not end yet. NASA came into existence on Oct. 1, 1958. In 1960, NASA opened the Marshall Space Flight Center in Huntsville, with von Braun as the center's first director. In 1961, Mercury Redstones safely launched Alan B. Shepard Jr. and Virgil I. "Gus" Grissom on suborbital spaceflights.

Von Braun led the Marshall center until February 1970, where he and his team accelerated work on the Saturn series of launch vehicles that they had begun developing under Army auspices in the late 1950s. The original Saturn I was little more than a group of Jupiter rockets strapped together, but the later Saturn V was a massive and supremely reliable system.

The Saturn represented the peak of von Braun's contributions to NASA, but he and many of his colleagues went on to serve the United States and the free world in many capacities. Their influence on the world of aeronautics and astronautics is felt to this day. ■

Walter J. Boyne, former director of the National Air and Space Museum in Washington, D.C., is a retired Air Force colonel and author. He has written more than 600 articles about aviation topics and 40 books, the most recent of which is Supersonic Thunder. *His most recent article for* Air Force *Magazine, "The Pilgrim Airlift," appeared in the March issue.*

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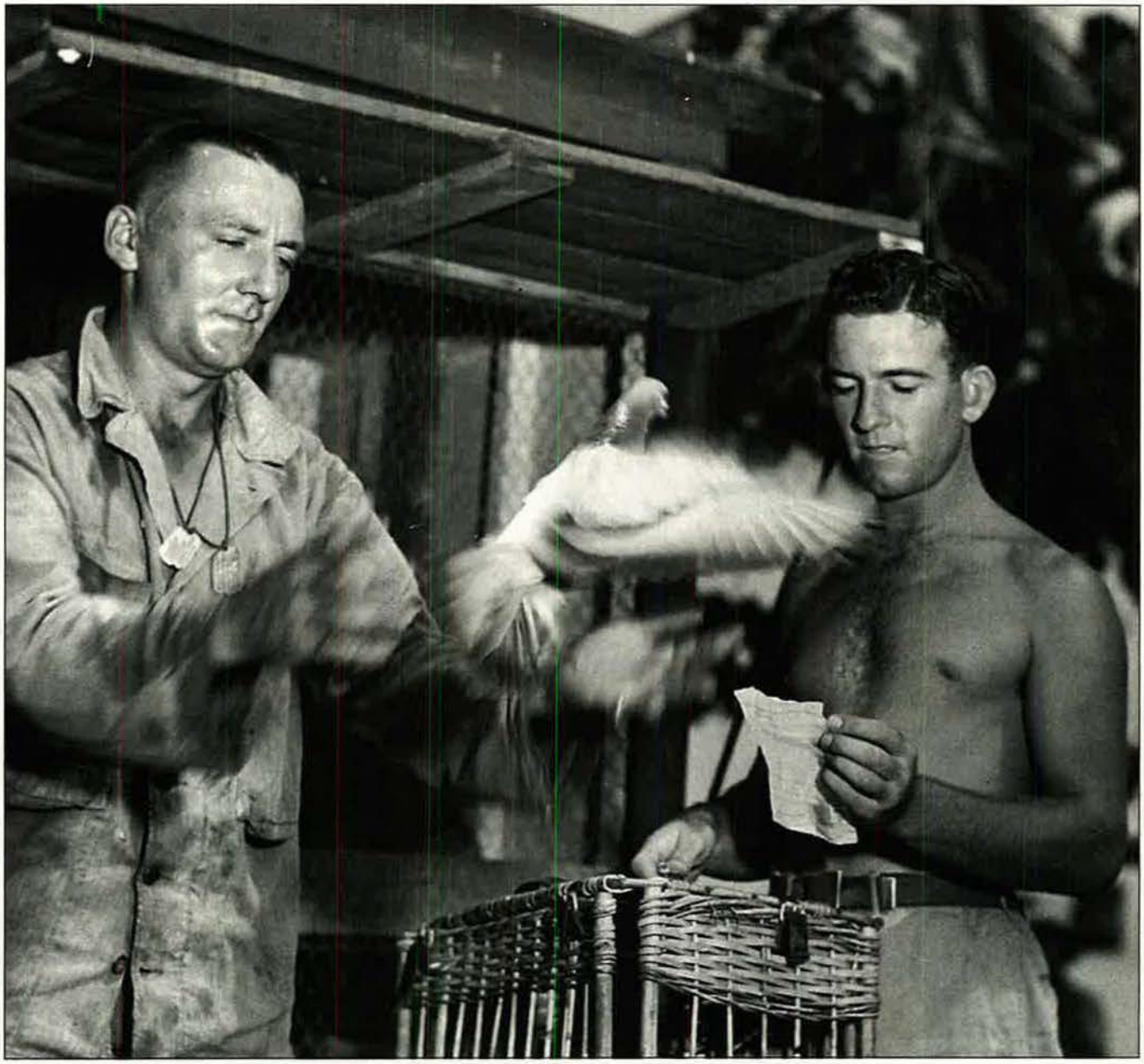
The Pigeon Post



In World War I, the US Army made wide use of homing pigeons for communications. Soon, the radio and telephone had supplanted bird-mail, but World War II called the pigeons back to duty. Pigeons provided simple and reliable communications in remote areas, with little risk of interception. Pigeon power was brought to bear in the 1944 campaign for the Admiralty Islands in the Southwest Pacific. In this photo, Pvt. George Treskow (l) releases a pigeon with a message tube tied to its leg. Meanwhile, Signalman Allan Duffield of Australia reads a message retrieved from an incoming bird. The US and Australia combined their bird forces for the Admiralties campaign.

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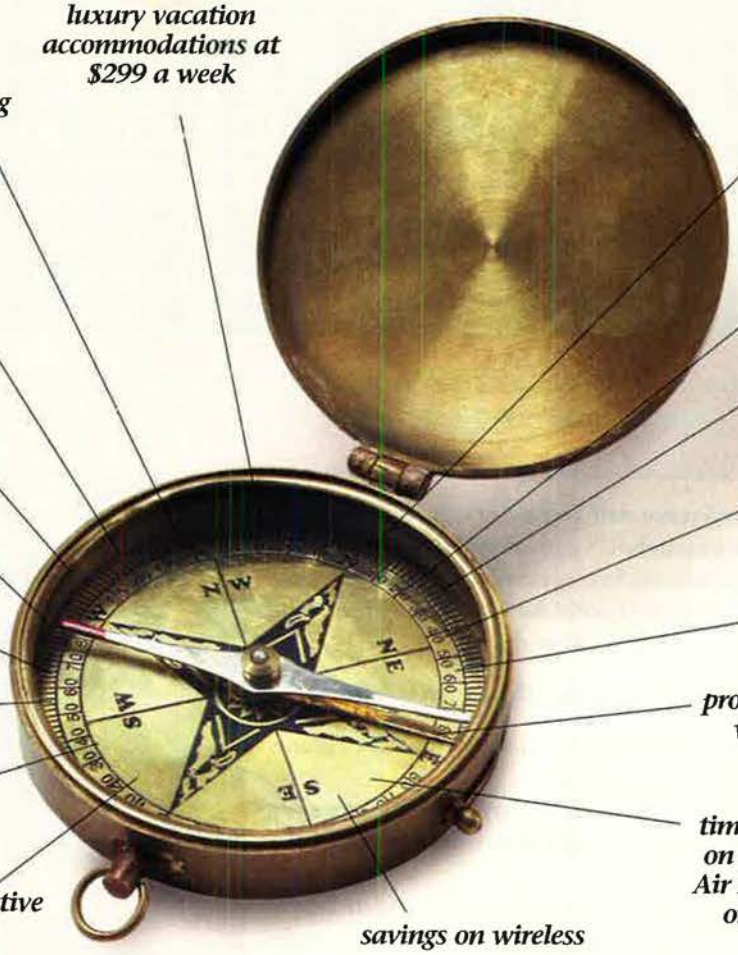

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Books

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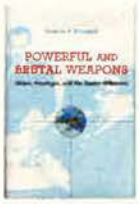
After Sputnik: 50 Years of the Space Age. Martin Collins, ed. Smithsonian Books, Washington, DC (800-242-7737). 256 pages. $35.00.

Cold War at 30,000 Feet: The Anglo-American Fight for Aviation Supremacy. Jeffrey A. Engel. Harvard University Press, Cambridge, MA (800-405-1619.). 351 pages. $35.00.

Misfortunes of War: Press and Public Reactions to Civilian Deaths In Wartime. Eric V. Larson and Bogdan Savych. RAND, Santa Monica, CA (877-584-8642). 263 pages. $30.00 (download at http://www.rand.org/pubs/monographs/2006/RAND_MG441.pdf).

Aircraft Markings of the Strategic Air Command, 1946-1953. Rick Rodrigues. McFarland & Co., Jefferson, NC (800-253-2187). 269 pages. $75.00.

Etched In Stone: Enduring Words from Our Nation's Monuments. Ryan Coonerty. National Geographic Books, Washington, DC (888-225-5647). 191 pages. $30.00.



Powerful and Brutal Weapons: Nixon, Kissinger, and the Easter Offensive. Stephen P. Randolph. Harvard University Press, Cambridge, MA (800-405-1619). 401 pages. $29.95.

Along the Tigris: The 101st Airborne Division in Operation Iraqi Freedom, February 2003 to March 2004. Thomas L. Day. Schiffer Publishing, Atglen, PA (610-593-1777). 320 pages. $35.00.

Hiroshima in History: The Myths of Revisionism. Robert James Maddox, ed. University of Missouri Press, Columbia, MO (800-828-1894). 215 pages. $34.95.

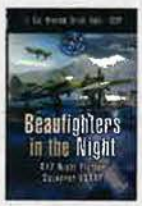
Shadow & Stinger: Developing the AC-119G/K Gunships in the Vietnam War. William P. Head. Texas A&M University Press, College Station, TX (800-826-8911). 340 pages. $49.95.

American National Security Policy: Essays in Honor of William R. Van Cleave. Bradley A. Thayer, ed. National Institute for Public Policy, Fairfax, VA (703-293-9181). 263 pages. $35.00.

Into That Silent Sea: Trailblazers of the Space Era, 1961-1965. Francis French and Colin Burgess. University of Nebraska Press, Lincoln, NE (800-755-1105). 397 pages. $29.95.

The Sikorsky Legacy. Sergei I. Sikorsky. Arcadia Publishing, Mount Pleasant, SC (888-313-2665). 127 pages. $19.99.

Beaufighters in the Night: 417 Night Fighter Squadron USAAF. Lt. Col. Braxton Eisel, USAF. Casemate, Drexel Hill, PA (610-853-9131). 189 pages. $39.95.



Jackie Cochran: Pilot in the Fastest Lane. Doris L. Rich. University Press of Florida, Gainesville, FL (800-226-3822). 279 pages. $24.95.

Space Power Integration: Perspectives from Space Weapons Officers. Lt. Col. Kendall K. Brown, USAFR, ed. Air University Press, Maxwell AFB, AL (334-953-2773). 216 pages. $19.00.

Bringing the Thunder: The Missions of a WWII B-29 Pilot in the Pacific. Gordon Bennett Robertson Jr. Stackpole Books, Mechanicsburg, PA (800-732-3669). 279 pages. $19.95.

Lobbying for Defense: An Insider's View. Matthew R. Kambrod. Naval Institute Press, Annapolis, MD (800-233-8764). 180 pages. $29.95.

Takedown: The 3rd Infantry Division's Twenty-One Day Assault on Baghdad. Jim Lacey. Naval Institute Press, Annapolis, MD (800-233-8764). 267 pages. $29.95.

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AFA National Report

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By Frances McKenney, Assistant Managing Editor

CCAF Thanks AFA

At Maxwell AFB, Ala., in March, the Community College of the Air Force presented Air Force Association Chairman of the Board Robert E. "Bob" Largent and AFA's Vice Chairman of Aerospace Education L. Boyd Anderson with the bronze bust of a USAF hero.

The sculpture depicts A1C William H. Pitsenbarger, wearing the Medal of Honor that he received posthumously for his actions as a pararescue jumper during the Vietnam War. (See "Pitsenbarger, Medal of Honor," February 2001, p. 26.)

The artwork's presentation ceremony included former AFA National Director Roy A. Boudreaux. It took place during a banquet that was part of the CCAF's 35th anniversary celebration at its Maxwell headquarters. Boudreaux, of the **Jerry Waterman Chapter** (Fla.), had been Pitsenbarger's cubicle-mate at Bien Hoa AB, Vietnam, just before the PJ embarked on his last mission in 1966.

A bronze plaque on the bust's pedestal explains that the CCAF gave the gift to AFA as thanks for "35 years of scholastic and financial support"—advocacy that "goes back before there was even a Community College of the Air Force," Anderson pointed out.

In 1967, AFA—through what was then the Aerospace Education Foundation—and Utah state AFA led the way in putting Air Force training courses into civilian classrooms. Utah was the test ground for this project because of its need to develop an educated workforce for its Air Force facilities. The first courses covered aircraft mechanics, electronic principles, and nurse's aides. The project proved that students learned more and—along with their teachers—preferred USAF-developed books, manuals, movies, slides, and teaching aids.

This successful conversion of educational material from the military to the civilian classroom led to the idea of granting credits for Air Force courses. This in turn prompted Air Education and Training Command's predecessor organization to establish the CCAF. By this spring, CCAF had issued nearly 300,000 degrees.

AFA has granted more than $1.5 million in scholarships—called Pitsenbarger Awards—to top CCAF graduates. The awards help enlisted personnel go on to earn bachelor's degrees.

The bronze bust of Pitsenbarger will be unveiled for the association membership at the September AFA National Convention and will be displayed at AFA's headquarters building in Arlington, Va.

The **Montgomery Chapter (Ala.),** headed by Thomas W. Gwaltney, and Joe Panza, Air University Foundation executive director, helped raise funds for the CCAF anniversary celebration. Panza said an "overwhelming response from the rescue community and others" also allowed them to purchase a copy of the bust for display at the CCAF.

Photo by Paul Fetters

The Air Force and AFA agreed in April that the association will provide a daily presence at the Air Force Memorial and support its operations. AFA's national officers and board of directors will become the Air Force Memorial Foundation's governing body.

Here, AFA Board Chairman Bob Largent signs the agreement during an Air Force Memorial Foundation board of trustees meeting at AFA's national headquarters in Arlington, Va. Ross Perot Jr. (center), memorial foundation chairman, and William Davidson (right), administrative assistant to the Secretary of the Air Force, observe the signing.

The Air Force Memorial is located in Arlington, overlooking the Pentagon and Arlington National Cemetery.

Aerospace & Arizona

AFA Board Chairman Largent's visit made front-page news in *Desert Airman,* the newspaper for Davis-Monthan AFB, Ariz. He shared billing with coverage of the annual air show that brings thousands of visitors to the base and which is supported by the **Tucson Chapter.**

Largent spent two days learning about the operations of Davis-Monthan's units. "From the youngest airman to senior leadership in Tucson, the degree of dedication, professionalism, and knowledge of why they serve is outstanding," he told the newspaper.

At Davis-Monthan, he met with Lt. Gen. Norman R. Seip, 12th Air Force commander, and received orientations to several units at the base, home

of the Aerospace Maintenance and Regeneration Center. Largent came away from his visit to the base awed by the "very high ops tempo for A-10s, rescue guys, and the electronic combat group." As one example, he noted that the 55th Electronic Combat Group, equipped with the EC-130H for airborne communications jamming and information warfare, is a unique asset and has been constantly deployed for more than four years.

Largent's speaking engagements included an evening banquet for community leaders and a talk at the Airman Leadership School. He also attended the Aerospace & Arizona Days air show, where the Tucson Chapter helped with planning, execution, and support. Among the chapter's responsibilities: Hosting the welcome party for the air show's many performers and providing them with breakfast every day. The chapter, headed by President Karen Halstead and VP John M. Manna, carried out these tasks with the help of volunteer airmen.

Best in The Nation's Capital

In April, the **Donald W. Steele Sr. Memorial Chapter (Va.)** selected three enlisted personnel as "Best of the Best" in the National Capital Region.

SMSgt. Donald Senger from Hq. Air Force, Media Services Division; MSgt. Terry Durbin from the 79th Medical Wing, Andrews AFB, Md.; and SrA. Stepheny Fanning, from 11th Wing, Bolling AFB, D.C., received the top three awards in a ceremony at the chapter's annual Outstanding Enlisted Breakfast.

TSgt. Daniel Claffey, from the 1st Helicopter Squadron at Andrews, received the Moorman Scholarship at the breakfast, also. The $2,000 award is named for retired Gen. Thomas S. Moorman Jr., USAF vice chief of staff, 1994-97.

Maj. Gen. Robert L. Smolen, commander of Air Force District Washington, CMSgt. Lewis E. Monroe III, the AFDW command chief, Chapter President Peter M. Gavares, and Lt. Col. Michelle Ryan made the awards presentations.

Smolen delivered the keynote address at the gathering, speaking about the quality and motivation of enlisted personnel and how they exemplify the Air Force's core values. Smolen noted that more than 72 percent of the bachelor's degrees awarded to enlisted military personnel go to Air Force airmen.

More than 150 guests attended this 19th annual breakfast, held in Arlington, Va. George deFilippi, chapter aero-

AFA In Action

The Air Force Association works closely with lawmakers on Capitol Hill, bringing to their attention issues of importance to the Air Force and its people.

AFA Hosts Team of the Year Visits on Capitol Hill

The Air Force Association and the Air Force honored seven expeditionary medics as the 2007 Team of the Year in ceremonies in Washington, D.C. this spring. (See "Aerospace World: Medical Airmen Are AFA Team of the Year," p. 21.)

The team members are **Col. Jay A. Johannigman,** 332nd Expeditionary Medical Group, Balad AB, Iraq; **Capt. Shaun S. Westphal,** 759th Surgical Operations Squadron, Lackland AFB, Tex.; **MSgt. Faith E. Elmore,** 184th Medical Group, McConnell AFB, Kan.; **MSgt. Kory O. Rivera,** 3rd Medical Operations Squadron, Elmendorf AFB, Alaska; **MSgt. Michelle L. Rootes,** 5th Medical Operations Squadron, Minot AFB, N.D.; **TSgt. Crystal A. Gomez,** 78th Medical Operations Squadron, Robins AFB, Ga.; and **SrA. Robert Zuniga II,** 82nd Medical Operations Squadron, Sheppard AFB, Tex.

Among many events during their five days in Washington, several Team of the Year members visited the offices of Congressional Representatives from their home states.

Westphal met with **Katie Kaufman,** the legislative assistant for **Rep. Ron J. Kind** (D-Wis.). California native Elmore met with **Darrin Thacker,** the military legislative assistant for **Rep. Wally Herger** (R-Calif.).

Richard Short, MLA for **Rep. Marcy Kaptur** (D-Ohio), welcomed a visit from Rivera, who comes from the "Buckeye State." Rootes, originally from Michigan, met **Lisa Subrize,** MLA for **Rep. Thaddeus G. McCotter** (R-Mich.).

Gomez, whose home of record is North Carolina, met **Ashley Orr,** MLA for **Rep. Brad Miller (D-N.C.).** At the office of **Rep. William "Mac" Thornberry** (R-Tex.), Zuniga was introduced to MLA **Ryan Crumpler.**

Hill Staffers Meet Acquisition Official

AFA, the Air Force Office of Legislative Liaison, and USAF's Office of Budget and Appropriations Liaison recently gave Capitol Hill staffers a chance to meet with **Sue C. Payton,** the assistant secretary of the Air Force for acquisition. Payton is responsible for all Air Force research, development, and non-space acquisition activities. She provides direction, guidance, and supervision on all matters covering the formulation, review, approval, and execution of acquisition plans, policies, and programs.

Payton explained the overall acquisition process to the staffers, as well as the challenges that she and her team face as they work to balance USAF's acquisition portfolio in a time of tight budgets and constricted resources.

USAF photo by John Meade

AFA's Vice Chairman of Field Operations Joe Sutter (far right) and CMSAF Rodney McKinley (at left) hosted a banquet for the AFA Team of the Year in Arlington, Va., in April. Team of the Year members are (l-r) SrA. Robert Zuniga II, TSgt. Crystal Gomez, MSgt. Michelle Rootes, MSgt. Kory Rivera, MSgt. Faith Elmore, Capt. Shaun Westphal, and Col. Jay Johannigman.

space education VP, said 11 organizations sponsored tables at the breakfast. Chapter VP Nick Abate, Cristina Rodriguez, and Gail Wojtowicz headed the planning team for the event.

Longer "Boot Camp"

At its annual midwinter program, an Air Force recruiter gave the **Richard D. Kisling Chapter (Iowa)** an update on recruiting in his area, which touches eight Midwestern states.

CMSgt. Dana Wyman, 343rd Recruiting Squadron superintendent, told the audience that his squadron, headquartered at Offutt AFB, Neb., ranked No. 2—among 28 units nationwide—in recruiting for enlisted programs last year.

Wyman also presented information about developments in Air Force basic military training—or "boot camp," as Donald E. Persinger, the chapter's membership VP, calls it. Wyman told the chapter that BMT will be extended from six to eight-and-a-half weeks. He also said basic training is "becoming more geared toward training for supporting combat needs."

Wyman's squadron covers a 260,000 square mile area. This includes all of Iowa and South Dakota and parts of Illinois, Kansas, Nebraska, Minnesota, Missouri, and Wisconsin.

"A" Is for AFA

Col. H.M. "Bud" West Chapter leaders were at the head of the line for opening day—the March 6 first-day-of-business for the 2007 Florida state legislature.

There were flowers on the desks of lawmakers, all of whom wore either red or black attire. There was a color guard for the opening ceremonies and TV cameras. Two dozen representatives from veterans organizations marched into the chamber, with an announcer stating their names and affiliations.

Representing AFA were Bud West Chapter President John E. Schmidt Jr. and Government Relations VP Lisa M. Raleigh. Schmidt has been a part of this opening day pageantry for more than a decade, often standing in for the Florida state president, since the Bud West Chapter is based in Tallahassee, the state capital.

Schmidt modestly noted that he owes his first-in-line status to the fact that the military groups march into the chamber in alphabetical order.

More AFA News

■ AFJROTC cadets from five high schools in the Chesapeake, Va., area took a field trip to Washington, D.C., an activity that is fast becoming a tradition because of support from the **Tidewater Chapter.** The 175 cadets started their day with a visit to the Air Force Memorial, overlooking the Pentagon. Chapter President Gordon R. Strong said the students, chaperones, and instructors "were impressed with the history and design involved in this unique memorial." The cadets spent most of their time at the National Air and Space Museum, seeing firsthand the artifacts from the aerospace subjects and events that they've been studying. They wrapped up their visit with a tour of the World War II Memorial.

■ In Rochester, N.Y., in March, the **Genesee Valley Chapter** sponsored "aerospace training" at the Greater Rochester Airport, for students from Henry Wadsworth Longfellow School. Chapter Aerospace Education VP Kent W. Hemphill conducted a teaching session for the third- and fourth-graders, covering spaceflight and space travel. The schoolchildren went on a tour of the airport, including stops at the fire and rescue department, maintenance center, and a helicopter. ■

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.

Unit Reunions

reunions@afa.org

47th BW. Sept. 26-29 at the Holiday Inn Dayton/Fairborn in Fairborn, OH. **Contact:** Ray Witt, 201 Whitehall Dr., O'Fallon, IL 66269-2641 (618-632-6786) (raywitt1@charter.net).

98th BG/Wg Veterans Assn. Sept. 19-23 in El Paso, TX. **Contacts:** Dennis Posey (770-509-7734) (dposey@comcast.net) or Ken Laninga (269-751-8231) (bombgrp98secy@charter.net).

340th BW, Whiteman AFB, MO. Sept. 13-16 at the Doubletree Hotel in Little Rock, AR. **Contact:** Robert Barnhill, 277 Sandhill Rd., Lonoke, AR 72086 (501-676-2305) (rjbarhill@aol.com).

456th BG (H), 15th AF. July 18-22 in Boise, ID. **Contact:** Martin Luther, 596 NW 14th St., Ontario, OR 97914 (541-889-3765) (rackcrew22@fmtc.com).

610th, 618th, and **850th AC&W Sqs, 527th AC&W Gp,** and the **43rd Air Div,** Japan. Sept. 23-26 in Las Vegas. **Contact:** John Rosso (661-832-6036) (godfather1501@hotmail.com).

6147th TCG. Aug. 14-19 in Kansas City. **Contacts:** Dick Souza, 79 Bradstreet Ave., Lowell, MA (978-453-3887) (skeeterloc@aol.com) or Jack Fisher, 274 Bellman's Church Rd., Dauberville, PA 19533 (610-926-3588) (deeandjack@comcast.net).

7499th Sq, 7499th Gp, 7405th Sq, 7406th Sq, 7407th Sq, 7575th Gp, and **7580th Sq.** Oct. 4-8 at the Doubletree Hotel in Crystal City, VA. **Contacts:** Alan Brown (703-455-3828) or John Bessette (703-568-1875) (www.7499thgroupreunions.com).

Aviation Cadet Class 57-21C, Harlingen AFB, TX. Oct. 5-7 in Albuquerque, NM. **Contact:** Jon Davis (505-821-6838) (jdavis502@comcast.net).

B-57 Canberra Assn. Sept. 6-10 in Portland, OR. **Contact:** Dave Baird, P.O. Box 256, Spray, OR 97874 (503-781-9426)(dclarnob@comcast.net).

Class 67-G, 3553rd Pilot Tng Sq, Moody AFB, GA. June 11-14 in Martha's Vineyard, MA. **Contact:** Warren Vose (508-627-7077).

Fixed-Wing Gunship Reunion, AC-47, AC-119, and AC-130. Oct. 5-7 in Destin, FL. **Contacts:** AC-47—Norm Evans (850-864-0923) (normevans873@cox.net); AC-119—Gus Sininger (850-865-2634) (stinger7172@cox.net); AC-130—Clyde Gowdy (850-244-0634) (clydegowdy@cox.net).

PBY Catalina Intl. Assn. Sept. 26-30 at the Clarion Hotel in Omaha, NE. **Contacts:** Don Mortimer, 2245 Marlene Ln., Matituck, NY 11952 (631-298-2685) (pbydon@optonline.net) or Jim Thompson (504-392-1227) (glotomcat@msn.com).

Pilot Class 49-B. Sept. 21-24 at the Sheraton Hotel in Colorado Springs, CO. **Contacts:** Jack Stolly (972-681-8290) (flyingjack@juno.com) or Bill Sinclair (719-635-8691) (wdsinclair@comcast.net).

Pilot Training Class 68-A, Laughlin AFB, TX. Sept. 9-10 in San Antonio. **Contact:** Joe Chan, 160 Purcell Dr., Alameda, CA 94502 (510-435-2429) (pengyou@alamedanet.net).

Pilot Training Class 73-01, Williams AFB, AZ. Sept. 24-30 at the Best Western Dry Creek Inn in Healdsburg, CA. **Contact:** Grant Adams, 516 St. Vincent Ln., Foster City, CA 94404 (650-570-2292) (adamsgo@comcast.net).

Vietnam Security Police Assn. Nov. 7-12 in Washington, DC. **Contact:** Steve Gattis (254-898-2647) (sgattis_lrn49@vspa.com).

Looking for members of the **612th TFS,** Vietnam (1970-71) for a reunion. **Contact:** Larry McCabe, 17461 Shed Church Rd., Marion, IL 62959 (618-982-2099) (landmappraisal@starband.net). ■

E-mail unit reunion notices four months ahead of the event to reunions@afa.org, or mail notices to "Unit Reunions," *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.

AFA Conventions

June 8-9	**Virginia State Convention,** Charlottesville, Va.
June 8-10	**New York State Convention,** Albany, N.Y.
June 23	**Pennsylvania State Convention,** State College, Pa.
June 29-30	**California State Convention,** Sacramento, Calif.
July 14	**Florida State Convention,** Daytona Beach, Fla.
July 27-28	**Colorado State Convention,** Denver
July 27-29	**Texas-Oklahoma State Convention,** Wichita Falls, Tex.
Aug. 8	**Michigan State Convention,** Mount Pleasant, Mich.
Aug. 11	**Georgia State Convention,** Warner Robins, Ga.
Aug. 25	**North Carolina State Convention,** Raleigh, N.C.
Sept. 22-23	**AFA National Convention,** Washington, D.C.
Sept. 24-26	**Air and Space Conference,** Washington, D.C.

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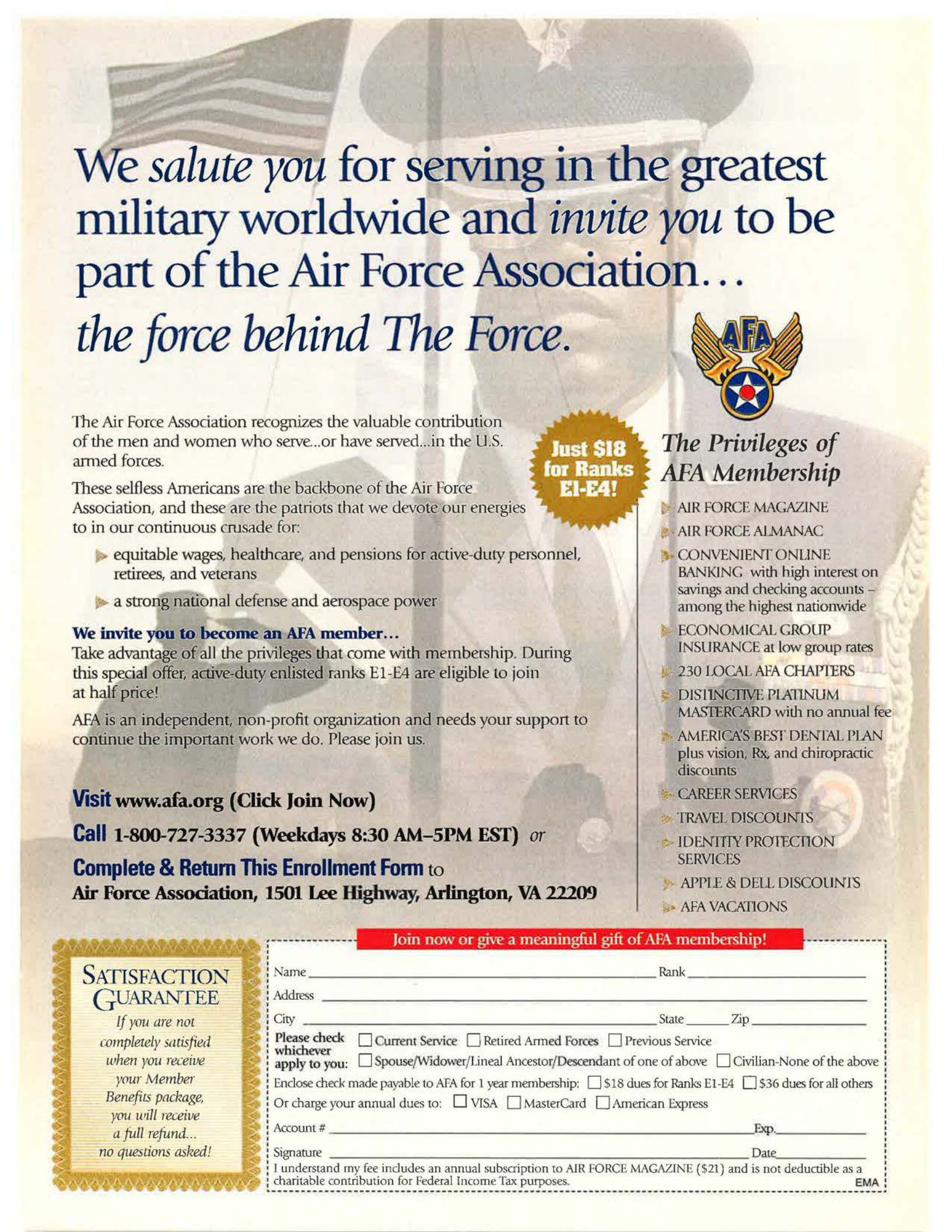

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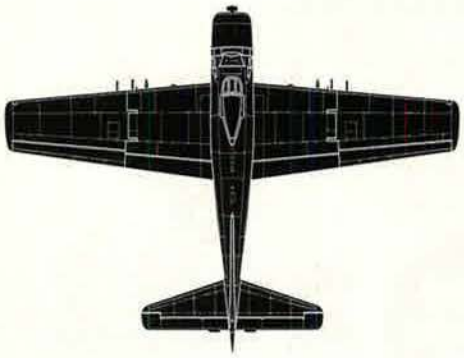
A-1 Skyraider



The Air Force's A-1 Skyraider was the final incarnation of an attack airplane that flew for three US services, under two names, in two wars. Some consider it the best prop-driven ground support aircraft ever built. To human eyes, it was not a feast, but the A-1 was the heart and soul of USAF's legendary air commando operations.

This aircraft, designed in 1944, began life as the Navy's AD-1 Skyraider, with subsequent models designated through AD-7. The "AD" was employed brilliantly by both the Navy and Marine Corps throughout the Korean War. Redesignated in 1962 as the A-1, it was the Navy's top attack airplane until 1967. In 1963, USAF modified 150 into A-1Es for use by the 1st Air Commando Wing. In the 1960s jet-age Air Force, the prop-driven Skyraider was a throwback, but it was essential.

In the beginning, the A-1E had dual controls, because pilots were deemed advisors and Vietnamese pilots ostensibly were performing the combat duties. When USAF took an active role, the Skyraider was flown as a single-seater.

A rugged, flying dump truck, the A-1 attacked the Viet Cong in Vietnam, Cambodia, and Laos. The A-1's ability to haul large bomb loads, absorb heavy ground fire, and stay up for many hours suited this task perfectly. When it covered rescue operations, it flew under the call sign "Sandy." By 1973, the US Air Force had turned over all of its remaining A-1s to the South Vietnamese Air Force, but Hanoi's military takeover two years later put an end to the Skyraider's long combat career.

—Walter J. Boyne

This aircraft: A-1E Skyraider—*#52-132673*—as it looked in the late 1960s when it was assigned to the 1st Special Operations Wing's 4407th Combat Crew Training Squadron at Hurlburt Field, Fla.

In Brief

Designed, built by Douglas ★ first flight March 18, 1945 ★ crew of two ★ number built 3,180 (USAF, USN, USMC) ★ **Specific to A-1E:** one Wright R-3350 18-cylinder engine ★ armament four 20 mm cannons, 8,000 lb of bombs, rockets, napalm ★ max speed 325 mph ★ cruise speed 240 mph ★ max range 1,500 mi ★ weight (loaded) 24,872 lb ★ span 50 ft ★ length 40 ft ★ height 15 ft 10 in.

Famous Fliers

Medal of Honor: Maj. Bernard F. Fisher and Lt. Col. William A. Jones III (Vietnam War) **Air Force Cross:** Maj. Thomas A. Campbell, Maj. Thomas E. Dayton, Maj. Dean E. DeTar, Col. John S. Hamilton, Maj. James C. Harding, Lt. Col. Ralph S. Hoggatt, Capt. Jackson L. Hudson, Col. Roy A. Knight Jr., Capt. John E. Lackey, Maj. Richard L. Mehr, Capt. Ronald E. Smith, Maj. Robert E. Turner, Col. Robert F. Wilke (Vietnam) **Future Chief of Staff:** Gen. Michael J. Dugan **Other notables:** Gen. Lance L. Smith, Gen. Henry Viccellio Jr., Col. Eugene P. Deatrick Jr., Air Vice Marshal Nguyen Cao Ky.

Interesting Facts

Designed in single night at Statler Hotel, Washington, D.C. ★ nicknames included Able Dog, Sandy, Spad, Hobo, Firefly, Big Gun, Zorro, Old Miscellaneous, Fat Face, Flying Dump Truck ★ 191 USAF models lost in Vietnam ★ featured in 1997 documentary "Little Dieter Needs to Fly" ★ missions included attack, close support, reconnaissance, electronic warfare, early warning, and search and rescue ★ ejection used extraction rockets connected to parachute harness.

In Vietnam, A1Es head to the fight.

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