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December 2007, Vol. 90, No. 12

AIR FORCE MAGAZINE

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About the cover: C-17s on a mission at a forward location. See "Crunch Time for Air Mobility" p. 28. USAF photo by TSgt. Shane A. Cuomo.

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AIR FORCE Magazine (ISSN 0730-6784) December 2007 (Vol. 90, No. 12) is published monthly by the Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Phone (703) 247-5800. Second-class postage paid at Arlington, Va., and additional mailing offices. **Membership Rate:** $36 per year; $90 for three-year membership. **Life Membership (nonrefundable):** $500 single payment, $525 extended payments. **Subscription Rate:** $36 per year; $29 per year additional for postage to foreign addresses (except Canada and Mexico, which are $10 per year additional). Regular issues $4 each. USAF Almanac issue $6 each. **Change of address** requires four weeks' notice. Please include mailing label. **POSTMASTER:** Send changes of address to Air Force Association, 1501 Lee Highway, Arlington, VA 22209-1198. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association.

Editorial

By Robert S. Dudney, Editor in Chief

The Last Tactical Mile and Other Tales

In its negotiations over the 2008 defense authorization bill, Congress has moved toward ordering the Pentagon to examine anew the roles and missions of the armed services. It has been more than a decade since the last such Pentagon review, and most lawmakers thought a new one was overdue. They are right.

Roles and missions is a classic defense issue. What service branch does what? Who gets what resources? The most notable roles and missions change of all time was the creation of a separate Air Force in 1947. That step, which stripped the Army of its air units, was supposed to settle airpower issues for good.

Things have not quite worked out that way. For six decades, control of airpower has continued to be a flash point. The last big flare-up came in the mid-1990s, when Sen. Sam Nunn (D-Ga.) zeroed in on America's "four air forces." This time, though, an honest review actually could produce something useful.

Air Force Basic Doctrine defines a "role" as "the broad and enduring purposes" of a service—for USAF, to organize, train, and equip forces "for prompt and sustained offensive and defensive air operations." This role is based on specific functions. The word "mission"—often used instead of "function"—refers to a task assigned to a unified command.

USAF never has claimed sole ownership of aviation functions. It accepts that other services need airpower—as "organic" adjuncts of their traditional and distinctive roles on land or at sea. Comprehensive airpower has always been the Air Force's role.

An evenhanded roles, missions, and functions review could resolve a pair of questions that now are clouding that position.

The first concerns who ought to provide fixed-wing airlift in a combat theater. Fueling the controversy is the C-27J Joint Cargo Aircraft, a small airlifter sought by both the Army and the Air Force in a joint program. The Army wants some 75 C-27s to replace old and outmoded Army fixed-wing transports. The Air Force could buy up to 70 JCAs as part of its airlift force.

This raises an obvious question: Why does the Army need airlifters at all? Gen. T. Michael Moseley, USAF Chief of Staff, calls intratheater lift an Air Force "core competency."

In an Oct. 11 letter to Sen. Carl Levin (D-Mich.), Gen. Richard A. Cody, Army vice chief of staff, gave two basic rationales. One is that the Army has a doctrinal right to move vital supplies "the last tactical mile" to ground troops. A second was that ground commanders had to have their own aircraft because they can't rely on the USAF system to move supplies with urgency when asked.

It is unseemly to pretend the other services aren't pushing beyond their traditional roles.

The Senate Armed Services Committee some months ago observed that such claims "have a familiar ring: 'I can't count on it in wartime if I don't own it all the time.'" It is an un-joint view if ever there was one.

Indeed, the Senate correctly voted to shift the Army's $157 million JCA request to the Air Force and force DOD to put USAF in charge. The final authorization measure, whether it supports or rejects that position, will not settle the issue. It is bound to come up again.

The second big airpower question concerns the nation's fleet of unmanned aerial vehicles, flown by the Air Force, Army, Navy, and Marine Corps.

Last March, Moseley launched a campaign to make USAF the "executive agent" for all medium- and high-altitude UAVs (those flying above 3,500 feet), regardless of service. He argued that USAF is "organized, trained, and equipped" for this role. Having the Air Force shape and manage the fleet, he said, would improve the flow of intelligence data, prevent duplication of acquisition, speed up deliveries, and modulate use of scarce bandwidth.

Moseley's plan, however, generated strong pushback from other services—especially the Army, which suspected an Air Force power grab that would work against Army interests. This stance swayed Deputy Secretary of Defense Gordon England, who turned thumbs down on the Moseley proposal.

Here, the roles and missions issue is murkier. UAVs clearly fall within classic Air Force functions, but they also fit in, to some degree, with the organic functions of other services.

Still, the other services' desire for UAV autonomy needs tempering. Lest anyone forget, UAVs are air vehicles, and those that fly at medium and high altitudes are in the Air Force's traditional domain.

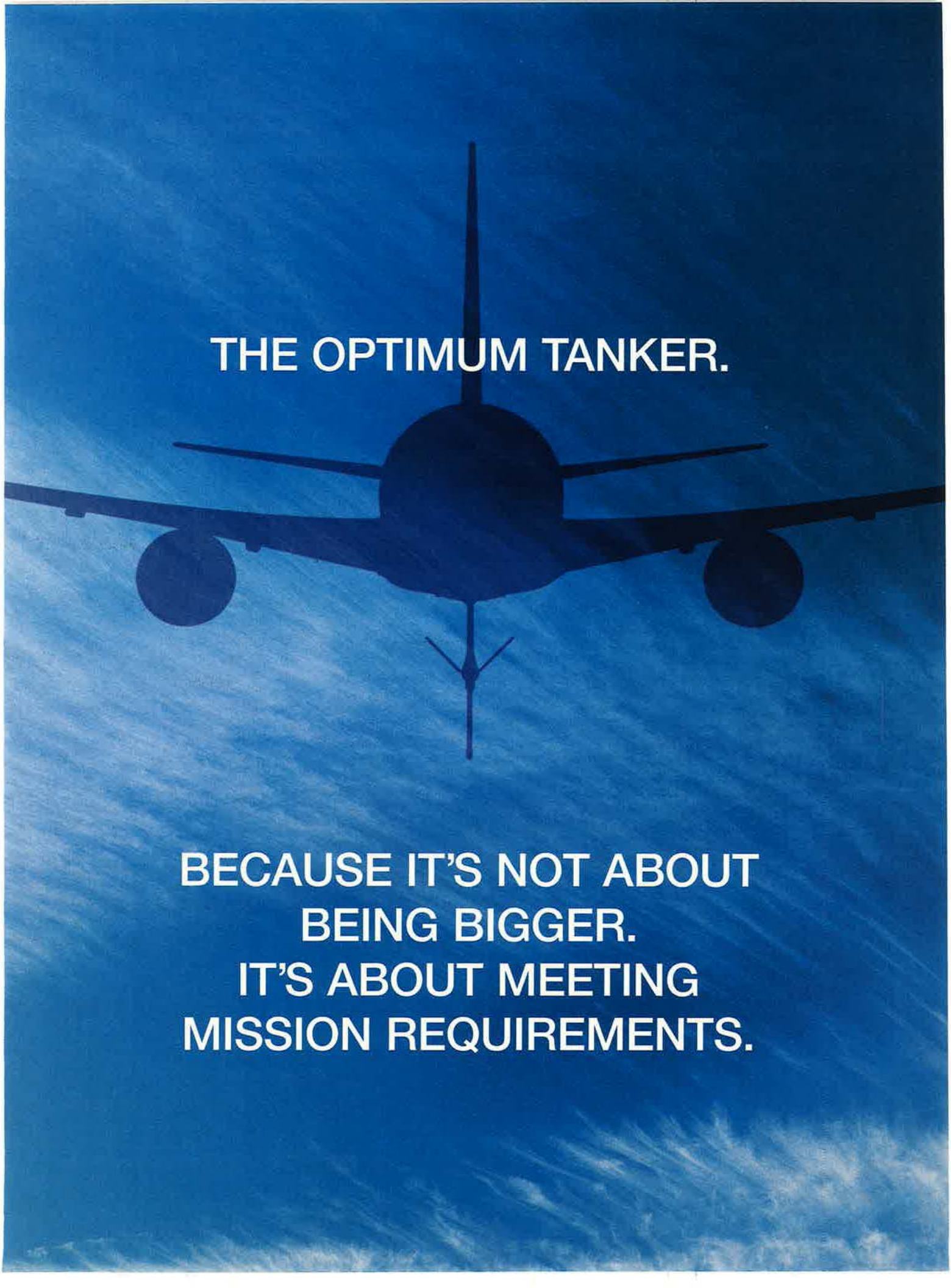
Though command relationships technically were not part of the executive agency proposal, a joint approach to actual employment of UAVs would greatly expand their availability in a combat theater and reduce potential airspace conflicts.

Regarding combat employment, however, prior experience does not inspire much optimism. Twice in Iraq—in Desert Storm in 1991 and Iraqi Freedom in 2003—deep attacks by Army Apache helicopters seriously hindered fixed-wing air operations. Apache operations, recall, are supposed to be "organic" to ground combat, too.

There is no persuasive argument for a land commander to have his own airlift force, or for an Army, Navy, or Marine Corps commander to have his own high-flying UAV force. Anyone who is really interested in supporting the needs of the warfighter would wish to see these systems overseen by USAF for the joint force.

The JCA and UAV issues, though important, are not overwhelmingly so. They do not compare to earlier clashes between the Air Force and Navy over how US power projection should be divided between long-range Air Force bombers and Navy carriers, or between the Air Force and Army over the development and employment of attack and utility helicopters in the 1960s.

Still, if Washington decision-makers are wise, they will move expeditiously to resolve these questions in the Air Force's favor. It is unseemly to pretend the other services aren't pushing beyond their traditional roles and missions. Agreement on this point surely is fundamental to any true advances in military jointness. ■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Letters

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Irregular War

During my military service, I was attached to or associated with Navy and Army units, as well as spending 21 years on Air Force active duty. In retirement the same has been true of my aerospace business associations. I have learned to highly respect all of the talented and dedicated warriors that served with me. I also witnessed a good deal of unbecoming competition for resources, political power, publicity, and respect, most often at flag rank positions.

It seems to me that mature and competent officers and men and women of the armed forces should now move past such provincial thinking and learn about each service's strengths and how to best integrate and apply them to our complex challenges around the world.

The subject editorial *["On Fighting Irregular War," October, p. 2]* certainly points out some real truths about Air Force capabilities and their special suitability for "small war" applications, but how are all the services going to convince each other's senior officers and Congress of these kinds of facts for each service?

I have read consistently outstanding informative editorials in Air Force Magazine over the years, some addressing this subject. I suggest that this fine publication solicit cooperation from similar media from each service, including the Coast Guard, and exchange informative editorials each month for publication in each other's magazine.

Lt. Col. Craig A. Hutzler,
USAF (Ret.)
Seattle

COIN Airlift Redux

I enjoyed the article about COIN airlift *["Washington Watch: COIN Operated Lift," October, p. 14]* in *Air Force* Magazine. I note, with a chuckle, that the Air Force brass is now wisely considering an "assault airlifter." The Spartan C-27J looks very similar to the often maligned C-123 of olden times (circa 1952 to around the early 1980s when the last of the C-123Gs were decommissioned). At the time I thought someone in high places had made a mistake in planning, but who would listen to the rantings of an old retired C-123 pilot from Vietnam days when everything was centered around a 100 percent all-jet Air Force? After all, it's just money!

I have heard the C-123 compared to the C-130 many times. Why, I don't know, since there is really no comparison at all. Both performed sometimes similar type missions, but never the same, all factors considered. Either aircraft could outperform the other in some ways and both were sorely needed in Vietnam.

Time after time in Vietnam during the '60s we operated casually but very carefully into and out of, let's say, "unusual airfields," fully grossed out, and these were in the A and B model 123s. Without jets. Some readers will still recall the history of the original Fairchild C-123 which started out as a glider—yes, a glider (all C-123s still had the original towing ring installed under the nose cap)—and then progressed on through to the last G model that was fitted with two jet engines mainly to assist taking off.

The C-123 was never very fast and was sometimes a maintenance headache (but what airplane never had a problem?). This ugly old bird was seldom mentioned in aerospace articles, and was never really appreciated by others (mainly due to looks) and always downplayed by the "all jet Air Force" crowd. (The exception was, of course, the air commandos.) Yet this ugly old bird pulled many a flight crew and Army Special Forces team out of harm's way in Vietnam and still could take punishment delivering supplies under fire that would be the demise of lesser aircraft.

Too bad the designation wasn't TOBC-123, i.e., Tough Old Bird Cargo-123.

Lt. Col. Rolland S. Freeman,
USAF (Ret.)
Longboat Key, Fla.

Misleading?

In "The Big Squeeze," Lt. Gen. [David A.] Deptula was quoted as heralding the F-22 at the Capitol Hill symposium as not just an air-to-air platform, but as a flying ISR sensor that can help carry a

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JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

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broader set of responsibilities *[October, p. 32].* Thirty-four pages later [USAF Chief of Staff Gen. T. Michael Moseley is] declaring that training F-22 pilots for any mission other than air superiority and destruction of enemy air defenses (DEAD) is "wrong." I expect that expanding the "sales envelope" of the F-22 may help justify the airplane, but the Chief will quickly revert to the narrow mission theme of air dominance when it comes to making the tough decisions and allocating that precious resource.

Touting the F-22 as the early eyes and ears of the fight has merit in a limited sense, but to think this system will provide any sort of reliable ISR is almost comical. It may provide a serendipitous capability, but I don't think it will ever be significantly available for expanded applications. Even if available, many other ISR platforms designed with specific size, weight, and power allocations provide capabilities that simply cannot be duplicated on a smaller platform. [Deptula's] use of the term "an F/A/B/E/EA/RC/AWACS-22" in the first article is unfortunate and entirely misleading.

Lt. Col. Kirk Streitmater,
USAF (Ret.)
Burke, Va.

Sputnik

Enjoyed your article on Sputnik *["When Sputnik Shocked the World," October, p. 42].* Great archive material and photos. Was it true that we could have been first with a satellite? I believe Dr. Wernher von Braun (US Army) had a Redstone missile mounted with our Explorer satellite months before Sputnik, but President Eisenhower nixed the idea since it was the IGY [International Geophysical Year] of peaceful scientific study, and he did not want a military rocket (Redstone) to place the satellite in orbit. Thus we were assigned to use the Vanguard, which was probably more advanced (definitely more complicated), but not developed enough by launch time.

Dan Rinaldo
Akron, Ohio

New C-130s: Another Must-Have

I just finished reading the article "Desert Airlift" *[October, p. 48].* I had previously read about the problems the Air Force is having with airlift. While the Air Force has its priorities set on buying new fighters, such as the F-22 and F-35, and the much needed new tankers, it's time [the service] spent some money replacing the C-130s. With today's technology, it should be relatively easy and inexpensive to work with Lockheed and produce new C-130s with upgraded engines for greater speed, avionics, and larger airframes for increased cargo carrying. This should all be able to be accomplished while still maintaining the C-130's ability to take off and land from short and unimproved runways. I understand budgets are tight, but why isn't the Air Force making this a priority?

MSgt. Javier Padilla,
USAFR
Santa Clarita, Calif.

Happy Hooligans

Thank you for the great October *Air Force* Magazine article on the North Dakota Air National Guard *["The Hooligan Trade," p. 52].*

The Hooligans, in fighter competition through the years, often waxed the tails of regular Air Force pilots. No doubt some of the past and present Air Force leadership are still smarting from such occasions.

Carl Hemstad
Stanley, N.D.

The Eve of World War II

I read with great interest John T. Correll's piece in the October issue *["The Air Force on the Eve of World War II," p. 60].* It is generally accurate and makes a complex subject understandable in a short article. However, when it comes to his assertion that "World War II would eventually prove the Tactical School right," I must quote ESPN college football analyst Lee Corso: "Not so fast, my friend!"

First, it would have been more accurate to say that the ACTS was a hotbed of Mitchellism-Douhetism-Trenchardism in its promotion of long-range bombing.

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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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Capt. Claire Chennault was, of course, the notable exception.

Second, it would have been more accurate to say that World War II proved those faculty members, who were responsible for AWPD-1, partially right. One of the tenets of the interwar ACTS doctrine was that bombers would always get through and wouldn't need fighter escort for protection. Brig. Gen. Kenneth Walker (then a captain) wrote, "A well-planned, well-flown bomber strike will always get through." He paid for that mistake with his life. Maj. Gen. "Possum" Hansell paid for his mistake with his career. That, coupled with the fact that the most dangerous job in World War II was to be an Eighth Air Force aircrew member, strikes me as falling far short of vindication. The problem wasn't solved until the P-51 came on the scene. And, unfortunately, those are the kinds of errors that are committed when doctrine is allowed to congeal into dogma. Intellectual flexibility is the father of strategic and tactical flexibility—and that didn't exist at Maxwell Field in the 1930s. Chennault knew it then; we all know it—or at least should know it—now.

Lt. Col. Frank Howe,
USAF (Ret.)
Denver

Honors Rendered

I enjoyed "The Eagle Squadrons" article in the October issue *[p. 72].*

It brought back a nostalgic evening at the Columbia Club in London in the early 1960s that I attended with other USAF and Allied officers. I bummed a ride to England on permissive travel orders, with what is now a lifelong friend, in a B-66 from Brookley AFB, Ala., where we both were then stationed.

Suddenly somebody yelled, "Ten Hut!" and everybody hit the deck, even the ladies. What was happening? Some dignitary? Head of state?

I looked over towards the door to the huge bar, and there was a self-conscious, gray-haired American USAF colonel, who, I quickly learned, had been through this many times before. I also noticed immediately the RAF brevet, as shown on Eagle pilot Dunn in the article photo, p. 72, in addition to the colonel's USAF wings and many ribbons. I was then told something that I will carry with me all my life: This American officer was one of only a few American fliers still on active duty who had flown with an Eagle Squadron for England. I was told that when Queen Elizabeth heard about them still being on active duty, she ordered that, to them, honors would be rendered.

I suspect they may have gone to their great fighter base in the sky. It was a memorable moment for me as a young lieutenant.

Lt. Col. Don M. Gulliford,
USAFR (Ret.)
Mercer Island, Wash.

Back to Squadrons: Two Views

The Chief of Staff, Gen. T. Michael Moseley, is right on target with his pushing forward to put the maintainers (crew chiefs, flight chiefs, maintenance inspection dock people, line chiefs) back in the operation squadrons *["Aerospace World: Maintainers Back to Squadrons?" October, p. 17].* The squadron commander would be responsible for all the operations and maintenance personnel. The gains from having the maintenance people and pilots, navigators, boom operators, load masters, etc., in one squadron are multifold. Closeness of crew chiefs to flight crews, individual pride in ownership by the ground crew, getting to know each other on a daily basis, and respect for each other's abilities and performances are just a few of the advantages. I retired from the Air Force after 30 years in the aircraft maintenance field. For something like 12 years, the maintainers and operations personnel were under the same commander. And in some cases the field maintenance people (specialists) were also under the same commander.

As technology advanced, and aircraft systems became more intricate, it became necessary to establish a specialist squadron. When that happened, the relationship between the flight crews and the specialist grew to the same magnitude as the flight crews and the crew chiefs. I know today's Air Force is different, but some things never change; they just get better. And putting the maintainers and flight crews back together will only be better for the Air Force.

CMSgt. Donald W. Grannan,
USAF (Ret.)
Benbrook, Tex.

One must wonder these days at all the changes we see in our great Air Force. Some changes are purposeful and have led to greater efficiencies and effectiveness, but lately, some seem to be simply the result of people who just want to leave their mark.

The most recent example concerns the idea that flight line maintainers should be back under ops, yet again. Did we not learn our lesson when Gen. [Merrill] McPeak did just that after we fought and won the most successful air campaign in the history of the world? There simply was no logic in his reorganizing our wings, especially after Gen. [W.L.] Creech led the way in building our service into the greatest Air Force the world had ever seen.

First, I'd like to ask the current leadership where the problem is that reorganizing yet again is supposed to fix. I served long enough to see this reorganizing thing come full circle and start again and I can tell you we had the best aircraft availability when maintainers worked for maintainers. There isn't a problem today that reorganizing will fix.

As far as needing to mirror the structure of deployed flying units, we never had a problem in our aircraft maintenance units relating to and responding to the requirements of our ops warriors, and I think they would be the first to tell you that. Putting maintainers in an ops squadron is not the right thing to do.

Leave our maintainers working for maintainers and let operations concentrate on their primary function of flying. As Gen. [John] Jumper once said, we need Ph.D.s in maintenance and we need Ph.D.s in flying. I promise not to try to tell you how to fly our airplanes if you promise not to try to tell me how to maintain them.

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

Classics

I really enjoy the "Airpower Classics" section of *Air Force* Magazine, and I would like to make a couple comments on the F4U Corsair featured in the October issue *[p. 88].* Walter Boyne states: "The powerful Corsair dominated the Pacific air war, racking up an 11-to-1 exchange ratio (2,140 kills v. 189 losses)." I respectfully disagree, because the Grumman F6F Hellcat, both aboard ship and land based, was responsible for the almost 75 percent of all the Navy's air-to-air victories. Hellcats claimed the destruction of 5,156 enemy aircraft, with the ratio of kills-to-losses exceeding 19-to-1.

Concerning the F4U, there are also a few other comments that might be worth noting. The Navy also originally used the Corsair from land bases and, in fact, the first operational Navy F4U-1 squadron was VF-17 flying from New Georgia in September 1943. The wings of all versions of the Corsair developed and produced during World War II, outboard of the wing-fold and aft of the main spar, were covered in fabric. The last Corsair produced, an F4U-7 for the French Navy, came off the Vought line in Dallas on Christmas Eve, 1952. At least one young Navy pilot flying Corsairs in Korea discovered (rather disconcertingly, I'd imagine) that he was actually flying the very same F4U (same Navy Bureau Number) that his father had flown in World War II.

Lt. Col. Henry R. Kramer,
USAF (Ret.)
London, Ky.

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Washington Watch

By John A. Tirpak, Executive Editor

Mullen's morose memo; Fly Army?; The tanker competition ....

The Morning After

It's time for the military services to think hard about what they will look like once the wars in Iraq and Afghanistan are over, but they shouldn't count on new money to help them attain their 21st century visions, the new Chairman of the Joint Chiefs of Staff directed in October.

Adm. Michael G. Mullen, in a broad, six-page memo outlining his planning guidance to the services for 2007-08, said the wars at hand must of course take priority. However, he suggested that longer-term thinking has been neglected, and that the armed forces must widen their view to ensure they can still fight all kinds of conflicts, not just insurgencies.

"We must be ready for who—and what—comes after," Mullen wrote.

Defense Secretary Robert M. Gates said Mullen got the job because, in part, when asked what worried him most about US military posture, Mullen's answer was, "The Army." Gates said the remark underscored Mullen's pragmatism, broad view of national defense, and ability to think across service lines.

Mullen told the services to present him with "reset" plans that honestly spell out the capabilities needed to cover the full spectrum of threats, but ask only for those capabilities they absolutely need. In making such judgments, they should be willing to take more risk, he said. He also warned that they will have to execute these plans "without substantial support from supplemental funding," especially since the reset will take place during a change of Presidential administrations, with attending "potential fiscal constraints."

Priorities will be "strategy-driven," Mullen said, and he called for new strategies to be drafted which dispense utterly with the notion that any service can function without the others, and recognize that in future conflicts, the US will usually act as part of a coalition.

"Nobody goes it alone today," Mullen declared. Future forces will be "complementary [and] jointly interdependent."

The first priority for "what comes after" Iraq and Afghanistan is to draw up a new Middle East strategy aimed at achieving regional stability, Mullen said. The new vision is to help the US cope with "state and nonstate actors" working to "foment instability." He noted an "increasingly hostile" Iran, the "rise of radical jihadists," a resurgent al Qaeda, and smoldering problems having to do with the Israeli-Palestinian conflict and Sunni-Shiite violence as all having a direct bearing on the security of the US.

The second priority will be to "reset, reconstitute, and revitalize our armed forces, particularly the ground forces," Mullen wrote. At the same time, the military must recognize that it faces "new asymmetrical threats [that] call for different kinds" of specialists, systems, and strategies.

"We need to be smarter, lighter, more agile, and more lethal," Mullen said. The force must be "correctly shaped," he said.

A top Pentagon official said the guidance means that if a service's requested system or unit "isn't tied to a war plan, you won't get it." The official also said that Mullen's directives mean funding will be extremely limited for equipment and forces that are called on only rarely or are unlikely to be used at all. There will be depth of forces "only where depth is needed, and that will be a difficult call for some," the official said.

DOD photo by Petty Officer 1st Class Chad J. McNeeley

Gates (l) and Mullen start looking ahead.

Mullen's third priority will be to "properly balance global strategic risk," which he explained meant a rethinking of America's military capabilities with an eye toward getting ahead of emerging threats.

It will be "hard to predict" the threats that will face the US going forward, but he specifically noted the rising threat of cyber warfare, and told his officers not to discount having to confront chemical, biological, or nuclear weapons.

The US military will depend on "increased precision, speed, and agility," he said. It will also both invest more in language and cultural training and use that knowledge to build better regional alliances and coalitions.

In the near term, Mullen will be working to make sure that US forces have a dwell time engaged in combat operations of no more than "one-to-one" for the active duty force, toward a goal of one-to-two, "while at war." The National Guard and Reserves need to fulfill their traditional role as a "strategic reserve" to the active fighting force, he also said.

Mullen forecast a new and "comprehensive" approach to deterrence that will work not only relative to large nuclear-armed powers, but with small nonstate actors as well. He plans to develop "a new concept of strategic deterrence for the 21st century in terms of training, equipping, theory, and practice."

Overall, Mullen said the Pentagon will, on his watch, take "a more global, strategic view."

Is JCA Headed for a Crack-Up?

The Senate has made a case that the Air Force and Army, which have been sharing the C-27J Joint Cargo Aircraft program, should begin to part company on the project.

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C-27J Team photo

Spartan: Small airplane, big argument.

The Army sought $157 million in Fiscal 2008 for JCA work. Senators, in their 2008 defense authorization bill, refused those funds to the Army and instead voted to hand them over to USAF, along with the Air Force's own requested amount.

The Senate argued it makes more sense for the Air Force—by itself—to take over and manage fixed-wing airlift of this type.

The House version of the authorization bill, however, contained no such provision. The two sides duked it out in a conference in search of a mutually acceptable compromise.

The C-27J Spartan is a small airlifter. The Air Force plans to use it for a variety of active and Air National Guard missions that do not require an aircraft the size of the C-130J. Its list of missions includes transport of small Army forces.

The Army, however, wants to acquire its own fleet of Spartans so as to possess an autonomous airlift capability. These aircraft would replace the Army's old C-12 and C-23 transports, which had very limited range and capability. The airlift provided by these systems has been justified as being "organic" to the Army mission—in effect, a direct adjunct of the land warfare, the Army's principal role.

Until now, the Army was planning to acquire its first C-27Js next year.

The Senate had its critics. In October, the Pentagon asked Senators to reconsider its decision, saying JCA will meet an important need for both services by delivering "time-sensitive, mission critical supplies and personnel ... regardless of which service owns the aircraft."

DOD noted that the two services worked out a memorandum of understanding defining how the C-27J will be used and that the program has been scrubbed through joint processes. Throwing the JCA to the Air Force, DOD claimed, would cause program delay.

Sen. Carl Levin (D-Mich.), chairman of the Senate Armed Services Committee, called on Gen. Richard A. Cody, the Army vice chief of staff, to provide some compelling reason for the Senate to change course.

Cody's response—presented in the form of an 11-page letter—raised some serious questions about the Army's acceptance of the current allocation of roles, missions, and functions among the US military services. (See "Editorial: The Last Tactical Mile and Other Tales," p. 2.)

Cody predicted serious delays were USAF to take over the Army's C-27J. Joint requirements work to date would come into question, he told Levin. The program office would have to move from Redstone Arsenal, Ala., to Wright-Patterson AFB, Ohio, and it would take the Air Force at least a year to identify and assign program personnel.

There could be contractor protests, said Cody, and the test schedule, based on Army requirements, would have to be thrown out, rewritten, and replanned.

Top Air Force officials disputed this assertion, claiming there would be no such delays.

Gen. Duncan J. McNabb, the Air Force vice chief of staff, informed Levin that the Air Force could take on the Army's JCA without missing a beat. He noted that the Air Force has been a "full partner" in requirements development and source selection, and should be able to "devise a transition schedule that minimizes or results in no delay."

If given the mission—and the funding—McNabb said the Air Force can meet the Army's lift needs, even the time-critical ones. McNabb noted that USAF has accelerated the evacuation of wounded troops "300 percent" since USAF eliminated dedicated aeromedical aircraft and drew the aircraft from a standby pool.

Moreover, said McNabb, USAF could increase the "velocity" of shipments if it doesn't have to move supplies from one service's cargo handling equipment to the other's.

The High Price of Competition

It isn't often that Capitol Hill sends out flurries of letters supporting Air Force acquisition strategy, but in October, 66 members of Congress did just that, insisting that the "winner-take-all" structure of the Air Force's new tanker procurement be preserved.

The letters were directed at Air Force Secretary Michael W. Wynne, exhorting him to choose only one winner in the tanker contest between the Boeing KC-767 and the Northrop Grumman-European Aeronautic Defense and Space KC-30. The victor in the contest is expected to be announced in January.

It was rumored that the Air Force was considering dropping the one-winner plan, partly as a way to avoid a lengthy and costly protest of the big-ticket program. The service urgently needs to get new tankers to replace its 50-year-old KC-135Es, and can't tolerate further delay. A split buy would probably inoculate the program from a protest. Air Mobility Command chief Gen. Arthur J. Lichte said in September that

Northrop Grumman photo

Northrop/EADS KC-30 is a player.

a protest in the KC-X could conceivably delay the program three years.

Possible justification for a split buy came from Jacques S. Gansler, a former undersecretary of defense for acquisition and technology in the Clinton Administration. Gansler, funded in part by the Northrop Grumman team, published a paper in August saying that a running competition for annual buys of tankers would drive down the cost of the aircraft, increase their quality, and eliminate the chance of a fleetwide grounding.

Gansler said such a contest would be modeled on the "Great Engine War" of the 1980s, and he has made the same argument for maintaining two engine suppliers for the F-35 program. He claimed that a running competition between Northrop Grumman and Boeing could save $16.6 billion on the KC-X buy of 179 aircraft. Two more buys of tankers—KC-Y and KC-Z—are planned through the 2040s, and more savings would accrue if the competition extended through those phases.

The Air Force did, indeed, consider a split buy and worked up numbers either way, senior service officials said. However, USAF decided it would cost about $2 billion up front to qualify both aircraft for duty, and thereafter exact an annual $1.5 billion to $1.7 billion in extra logistics costs to maintain two separate parts and maintenance systems. The Air Force didn't see much potential for product improvement or dramatic cost reductions, especially given that it will only be able to buy 15 or fewer airplanes a year.

The Congressmen and Senators who rang in to voice their opinion agreed. According to one letter, signed by 14 Senators (nine Republicans and five Democrats), the split buy approach would eliminate all the benefits of competition "by guaranteeing business" to the loser.

If the Air Force were to buy 15 tankers a year—the upper possible limit, based on out-year funding plans—the "winner" in an annual split buy would probably get to build no more than 10 airplanes. The loser would still get to build five, and because of the small quantities involved, lawmakers argue there would be little incentive to make those aircraft better by investing in process changes or other efficiencies that are meaningful over large production runs but not worth doing in small ones.

The 52 Congressmen who wrote to lecture Wynne said the two-tanker approach is a luxury the Air Force can't afford, given "many competing priorities" for those $2 billion to $4 billion a year in extra costs.

In October, Wynne confirmed that he would not consider a split buy.

Kick the Supplemental Habit

The Department of Defense's way of buying things during the wars in Afghanistan and Iraq has gotten seriously out of whack, and needs to be put in order if long-term needs are to be adequately funded, according to a new think tank study.

Anthony H. Cordesman and Ionut C. Popescu, writing for the Center for Strategic and International Studies, noted that fully a third of the money spent by DOD now comes through war supplementals, and that a quarter of all the money requested by the Pentagon for 2007 "has been classified as 'emergency' spending."

The authors said this "growing reliance on supplemental funding has had a negative impact on the development of long-term defense programs and budgets." It has made it increasingly hard to develop a future years defense program that properly funds "multiyear efforts such as force reset, long-term readiness, increases in manpower, or force transformation."

Over the last year, the evidence of this has been played out in Congress' reluctance to fund things such as F-35 fighters as part of supplemental budgets, even though they replace

Boeing illustration

Boeing's KC-757 is in play, too.

things that have been consumed by the war.

The study recommends that the Pentagon wean itself off supplementals as a standard way of doing business. That's going to get more important, not less, in the next few years, because the wars in Iraq and Afghanistan will cost at least $481 billion over the next 10 years, and that assumes a "more rapid withdrawal of US forces." If there is a more gradual disengagement, the wars could cost more than a trillion dollars. The numbers cited by CSIS came from the Congressional Budget Office.

The cost of running the Defense Department is going to go sharply higher if for no other reason than the fact that many war-related costs are deferred, such as veterans' health care and benefits and the cost of reset—replacing broken, destroyed, used-up, or obsolete gear.

Cordesman and Popescu also sounded a now-familiar note by pointing out that, even with large supplementals, defense spending is fairly small compared to spending spikes in the past, when adjusted for inflation and as measured as a part of Gross Domestic Product. In fact, "despite the relatively large increase in defense outlays since [Fiscal Year] 2001, the GDP burden is almost 20 percent lower than during the 'peace-dividend era' of the early 1990s." Again, measured as a function of GDP, the Fiscal 2007 defense budget comes in at about four percent, while it was 6.2 percent in 1986, "the highest post-Vietnam value."

In short, the nation can afford to spend more on defense, and should manage it under a single defense budget, not two or three per year, the authors asserted.

As a share of federal spending, Cordesman and Popescu said, the defense budget "is 40 percent lower than the peak Reagan-era value in FY 1987." They noted CBO estimates that peg entitlements spending such as Medicare, Medicaid, and Social Security as rising to 15 percent of GDP and 75 percent of federal spending by the year 2030—a situation that dwarfs the rising costs of defense and is a more urgent problem.

The authors chided the Defense Department for lowballing future defense spending estimates, pointing out that the Pentagon anticipates "markedly lower levels of total DOD spending in the coming years despite the recent trend in the opposite direction." They said the Pentagon would do well to get more realistic about what things are going to cost "in the FY 2009 budget request and beyond." They also worried that investment in research and development is starting to slide, and will only get lower as the DOD must spend proportionately higher amounts on procurement, to correct the long procurement holiday of the 1990s and 2000s. ■

Aerospace World

By Marc V. Schanz, Associate Editor

Crash Kills USAF Officer

An Air Force officer was killed in October when his civilian aircraft crashed shortly after taking off from Long Beach, Calif.

Lt. Col. Raymond Roessler, 43, of the 309th Maintenance Wing at Hill AFB, Utah, took off on the night of Oct. 4 for a flight to Henderson, Nev. Long Beach Airport tower personnel lost contact with the aircraft.

The next day, a motorist in San Bernardino County, Calif., reported an airplane crash not far from Interstate 15, and local police later recovered Roessler's body from the wreckage. The area had experienced fog, rain, and high wind.

Federal Aviation Administration officials are investigating the cause of the accident.

According to Hill officials, Roessler was on a business trip for the base, and had been meeting with contractors. He had 19 years of service.

Photo by Tony Osborne

This B-1B bomber, shown here landing at RAF Fairford, Britain, lost its No. 4 engine in the skies over Afghanistan. Maintainers were able to sufficiently repair it to allow a safe flight to this air base for complete repair.

Reaper Joins the Fight

The MQ-9, the larger and beefier stablemate of the MQ-1 Predator, is officially on the hunt in Afghanistan, the Air Force announced.

The Reaper flew its first official combat mission on Sept. 25, and was averaging about a sortie a day through mid-October. A Reaper performed its first combat strike on Oct. 27, then launched precision guided weapons for the first time Nov. 7. The aircraft has also conducted close air support and intelligence-surveillance-reconnaissance missions.

Designed to attack time-sensitive targets, the Reaper features eight times the range of the MQ-1 and can fly twice as high. It can also carry a combat load roughly comparable to that of the F-16 manned fighter.

The Air Force at present has nine Reapers in its inventory.

USAF photo by SSgt. Mike Meares

SrA. Eric Glass and Kim, his military working dog, keep an eye on a "suspect" during a training exercise at Eglin AFB, Fla., which had recently added a military dog handling track to the curriculum.

Riechers an Apparent Suicide

Charles D. Riechers, the Air Force's principal deputy assistant secretary for acquisition and management, was found dead in his Virginia home on Oct. 14, an apparent suicide.

The Air Force issued a brief statement after Riechers' death, praising his contributions to the service and saying the circumstances of his demise were under investigation.

Riechers' death came about two weeks after a report in the *Washington Post* revealed that while he was awaiting Senate confirmation for his position, he was on the payroll of the Commonwealth Research Institute, a nonprofit organization that works on engineering and technical consultations with the Pentagon.

The article said that during the period he was on the CRI payroll, he was

Brig. Gen. Paul W. Tibbets Jr., 1915-2007

Paul W. Tibbets Jr., the pilot of the B-29 *Enola Gay* that dropped an atomic bomb on Hiroshima, Japan, in 1945, died Nov. 1 at his home in Columbus, Ohio. He was 92.

Tibbets would have been noteworthy even if he had not commanded the mission that helped bring about Japan's surrender and the end of World War II. He led Eighth Air Force's first B-17 bombing mission over Nazi-held Europe in August 1942 and led the first bombing missions in support of the invasion of North Africa later that year. He acquired a reputation as being one of the best American military fliers.

Born in Illinois and raised in Florida, Tibbets became a medical student, at his father's urging, but enlisted in the Army Air Forces in 1937 to satisfy a long-held ambition to be a pilot. He earned his wings within a year. By the time America entered World War II in December 1941, he was an experienced hand.

Tibbets by 1943 had chalked up 25 combat missions in the B-17. It was in that year that Tibbets was ordered back to the US to test and shake out the new B-29 Super Fortress bomber. A year later, he had acquired more than 400 hours in that new long-range aircraft, making him the most seasoned B-29 pilot of USAAF.

In late 1944, Tibbets was read into the top-secret Manhattan Project created to research and produce an atomic weapon. The 29-year-old, promoted to cclonel in January 1945, was ordered to form and equip a new B-29 unit to deliver the first atomic bombs. He organized the 509th Composite Group at Wendover AAF, Utah, a site Tibbets chose because of its proximity to the A-bomb project in New Mexico and to nearby bombing ranges.

The secret unit quickly grew to more than 1,700 men. With no direction, Tibbets nvented the first nuclear bomb wing.

He had 15 factory-fresh B-29s specially configured for the nuclear role. Workmen had ripped out the gun turrets—except for the tail gun position—and armor plating. These steps lightened up each aircraft to the point that it could take off with the 10,000-pound atomic bomb. Tibbetts also had the bomb bay redesigned to accommodate the weapons.

The uranium device to be used at Hiroshima was given the nickname "Little Boy."

In March 1945, Tibbets he moved the 509th to the island of Tinian in the Marianas. On July 28, President Truman passed along an order to use the A-bomb against Japan as soon after Aug. 3 as weather permitted. Tibbets named the lead ship of the Hiroshima raid *Enola Gay* after his mother, who had supported his choice to pursue a flying career against his father's wishes.

On the morning of Aug. 6, 1945, with a handpicked crew, Tibbets flew the bomber to Japan and dropped "Little Boy" on Hiroshima within 15 seconds of 8:15 a.m., the planned release time. It is estimated that the bomb killed 80,000 Japanese.

Tibbets had exhaustively practiced the evasive maneuvers by which the B-29 would avoid the force of the bomb's blast, and none of the aircraft in the raid were lost.

On Aug. 14, Japan agreed to surrender.

In many subsequent public statements, Tibbets always declared a firm belief that the Hiroshima raid shortened the war and ended up saving lives. He regretted the loss of life in the Hiroshima attack, he said, but he never lost any sleep over his role in the first combat use of nuclear weapons.

Tibbets later advised the Air Force on nuclear tests at Bikini atoll and ran the acquisition program to develop and build the B-47 Stratojet, USAF's first all-jet swept-wing bomber. He also set up the first National Military Command Center at the Pentagon. He retired from the Air Force as a brigadier general in 1966, after nearly 30 years of service.

After retirement, he ran a jet aircraft taxi service in Europe and another in the United States, rising to be chairman of the board of Executive Jet Aviation, based in Columbus. He retired from business in 1985.

In 1994, Tibbets came out of retirement to comment on a controversial proposed exhibition of the restored *Enola Gay* by the Smithsonian's National Air & Space Museum. The museum, following the lead of academic critics of the mission, had laid plans to use the *Enola Gay* as a prop in a political horror show. It depicted the Japanese more as victims than as aggressors.

When the plans were revealed by an article in *Air Force* Magazine, a raging controversy ensued. Tibbets called the museum approach—which dwelled on the suffering of Japanese at Hiroshima and gave short shrift to the Rape of Nanking, Bataan Death March, or other Japanese atrocities—"a package of insults." The exhibition was canceled in response to public and Congressional outrage, and the museum director was fired.

Tibbets suggested that the aircraft needed no explanation and should be displayed alone, without comment. The Smithsonian eventually wound up exhibiting it from 1995 through 1998. The exhibit featured not only the airplane but also some factual information about the airplane and a videotape of Tibbets and his crew discussing the mission. The depoliticized exhibit drew four million visitors.

Tibbets was elected to the National Aviation Hall of Fame. He asked to have his ashes scattered so that no gravesite could be made into a place of protest for anti-nuclear activists.

A marriage to his first wife, the former Lucy Wingate, ended in divorce in 1955. He is survived by his second wife, Andrea, and three sons, Paul III, Gene, and James. A grandson, Paul W. Tibbets IV, at one time commanded the 393rd Bomb Squadron, one of two operational squadrons under the same unit his grandfather commanded, the 509th Bomb Wing.

Bent Spear Incident Reflects "Erosion" of Standards

Three commanders were relieved from duty and dozens of airmen faced disciplinary action in the wake of an incident in which nuclear-armed Air Force cruise missiles were flown aboard a B-52 bomber without anyone knowing it.

The actions were announced on Oct. 19, at a Pentagon press conference called by Air Force Secretary Michael W. Wynne. Wynne said that he was breaking with long-standing policy not to discuss the handling of nuclear weapons because of the seriousness of the episode, and his desire to assure the public the Air Force would take swift corrective action.

"This was an unacceptable mistake and a clear deviation from our exacting standards," Wynne said of the incident, which first came to light in September, adding that he hopes to ensure this "never happens again."

In the incident, AGM-129 Advanced Cruise Missiles were loaded onto a B-52 for a ferry flight to Barksdale AFB, La., to be prepared for retirement. The missiles were not supposed to have nuclear warheads on them. However, six missiles were loaded with their nuclear warheads, and no one from the ground or flight crew caught the mistake at Minot, and it was not discovered at Barksdale until long after the airplane landed there.

The 5th Bomb Wing at Minot AFB, N.D., was decertified from handling nuclear weapons until new commanders and safeguards could be put in place. The ferry flights were also suspended until further notice.

Maj. Gen. Richard Y. Newton III, assistant deputy chief of staff for operations, plans, and requirements, said the existing procedures for handling the weapons were appropriate and comprehensive, but that there had been an "erosion of adherence" to those procedures.

Newton said that four senior officers in total had been relieved as a result of the investigation ordered by then-Air Combat Command boss Gen. Ronald E. Keys. Moreover, four lower-level officers had been disciplined, and numerous enlisted personnel faced some sort of punishment. Relieved from duty in October were Col. Bruce C. Emig, commander of the 5th Bomb Wing; Col. Cynthia M. Lundell, the 5th Bomb Wing's maintenance group commander; and Col. Todd C. Westhauser, the 2nd Operations Group commander at Barksdale.

Newton said that numerous other actions have been taken, including the decertification of about 65 airmen from handling nuclear weapons, and that judicial proceedings have not been ruled out.

Newton added that the occurrence was an "isolated incident." A servicewide inventory of all USAF nuclear weapons was immediately performed and no discrepancies were found.

Wynne confirmed that he also ordered nuclear safety surety inspections, to be overseen by the Defense Threat Reduction Agency. A Defense Science Board evaluation of all the armed forces nuclear weapons handling operations, headed by retired USAF Chief of Staff and commander of Strategic Air Command Gen. Larry D. Welch, was also ordered by Defense Secretary Robert M. Gates.

The incident was classed as a "Bent Spear," in which there is a breakdown in control over nuclear weapons that poses no immediate safety danger.

actually working for the Air Force, not the company. The *Post* claimed that although Riechers was paid by the firm, he did not perform any work for it. The propriety of this situation was called into question.

Riechers had been in his Air Force job since January. He advised the senior leadership and worked on some of the service's high-priority efforts such as the KC-X tanker replacement and the CSAR-X rescue helicopter.

Riechers also worked on the next generation long-range strike aircraft, as well as the F-22 and F-35 programs.

GAO Turns Down JCA Protest

Raytheon's protest of the Air Force-Army choice of the L-3 Communications team to build the Joint Cargo Aircraft was denied by the Government Accountability Office in September.

The company had argued that it should have been the winner, since its C-295 proposal offered performance equivalent to the selected C-27J, but its price was 15 percent lower.

The GAO acknowledged that Raytheon's bid of $1.77 billion for the JCA program was lower than L-3's bid of $2.04 billion, but said performance was not equivalent. It found "high performance risk" in the C-295's ability to meet certain ceiling requirements and cargo load.

Raytheon had not decided by late October whether it would exercise its option to ask GAO to reconsider or take its objections to federal court.

The C-295 was offered in conjunction with its designer, European Aeronautic Defense and Space Co. The C-27J offered by Raytheon was designed by Alenia of Italy.

L-3 won the contract for 78 aircraft in June, and company officials said work had not stopped during the protest process. First deliveries to the Army are expected in 2008 and to the Air Force in 2010. Army and Air Force officials predict a need for at least 150 of the aircraft, which will replace C-12s, C-23s, and C-26s in the Army and meet a new requirement for the Air Force.

Pentagon Activates AFRICOM

The Pentagon's newest unified command—United States Africa Command—formally began operations Oct. 1.

The command began with an inaugural staff of 120 under Army Gen. William E. Ward, and will grow to around 800. Initial headquarters is in Stuttgart, Germany. According to US European Command officials, efforts are under way to find a permanent location in Africa.

AFRICOM is projected to be at full strength by October 2008.

Ward's staff is assembling the organizational structure and the mission focus as the command stands up. Unlike other unified commands, AFRICOM will integrate staff members from other parts of the US government, principally the US State Department and the US Agency for International Development. One of Ward's deputies is Mary Carlin Yates, a former ambassador to Ghana.

Super Hogs Enter the Fray

Fresh from being declared operational, upgraded A-10Cs of the Maryland Air National Guard's 104th Fighter Squadron flew their first combat missions in Iraq.

Operating in mid-September, the Warthogs dropped bombs in a strike on insurgent positions. The newly upgraded aircraft hit at enemy forces not far from Balad AB, Iraq, on Sept. 19, according to Lt. Col. Kevin Campbell, a pilot with the Maryland ANG's 175th Fighter Wing and the lead for the Air Guard's A-10C test effort.

Speaking with reporters at AFA's Air & Space Conference in September, Campbell said the precision engage-

ment Warthogs dropped two GBU-38 JDAMs on a target, destroying a building with no damage to nearby structures.

Campbell said the A-10Cs with the Maryland ANG are deployed with members of the Michigan ANG, whose 172nd FS, from Battle Creek, is the second unit that will be fully equipped with the upgraded Warthogs.

Chilton Takes Over STRATCOM ...

Air Force Gen. Kevin P. Chilton on Oct. 3 assumed command of US Strategic Command, Offutt AFB, Neb.

Chilton assumes the position last held officially by Gen. James E. Cartwright. The Marine Corps officer now serves as vice chairman of the Joint Chiefs of Staff.

The Senate confirmed Chilton for his new assignment on Sept. 28.

Rear Adm. Carl V. Mauney has been confirmed for a third star and becomes Chilton's deputy at STRATCOM.

... While Kehler Goes to AFSPC

Air Force Gen. C. Robert Kehler, who served as a STRATCOM deputy commander under Cartwright, has moved on to head up Air Force Space Command.

He was confirmed for a fourth star in August and has replaced Chilton at the Colorado Springs command.

As the STRATCOM deputy, Kehler was in charge of the space portion of its activities. He also served as acting commander of STRATCOM after the August departure of Cartwright.

Disorientation Tapped in Crash

The pilot of an F-15A that crashed off the coast of Oregon in June was spatially disoriented, according to Air Combat Command officials.

In a September report of the accident investigation's findings, ACC said Maj. Gregory D. Young suffered spatial disorientation during dissimilar air combat training with F/A-18s from NAS JRB Fort Worth, Tex.

Young, who was serving with the 142nd Fighter Wing of the Oregon Air National Guard, died when the aircraft went into the sea about 48 miles west of Arch Cape, Ore.

CSAR-X: Trying Again

The Air Force will throw open the CSAR-X combat search and rescue helicopter competition, long delayed by protests, to a new round of bids, the service's top acquisition executive said in September.

Sue C. Payton in a press briefing, said USAF had been in contact with the CSAR-X competitors—Boeing, Lockheed Martin and Sikorsky—and with Congress to make sure that all parties understand how the program is to proceed. A final version of "amendment five" of the original request for proposals was to be released by early November.

Unlike the previous attempt to restart the bidding process, the contractors can add whatever information they want to their proposal, including new test and cost data, Payton reported.

"It's a full and open input on anything they would like to propose," she said, adding that she would like to get the new proposals by the end of December. However, she said her office wouldn't rush to an award.

The Air Force is still seeking to have the first CSAR-X helicopters fielded by FY 2012, but the "day to day slip" in the program has pushed back the expected date to FY 2014, Payton noted. "We would be very impressed" with any contractor that could deliver close to the 2012 goal, she said.

Payton's acquisition staff is planning more feedback sessions than were held in the original CSAR-X competition, which was concluded in November 2006 when Boeing's HH-47 was declared the winner.

Since the award, a stop-work order has been in place on the HH-47, and Air Force officials have said there would be termination costs if Boeing is not selected in the revamped competition. The service hasn't revealed its estimate of cancellation costs.

Payton said she's bringing in experts from the Army and Navy to join the source selection process, likening the assist from other service acquisition personnel to the Army-Air Force work on the Joint Cargo Aircraft program. Both the Army and Navy have "excellent domain knowledge" on helicopters that can improve the selection process, she added.

USAF photo by SrA. Russell Scalf

Left to right, an F-22 Raptor, an F-117 Nighthawk, an F-4 Phantom, and an F-15 Eagle fly above the clouds over Holloman AFB, N.M., during the Holloman Air and Space Expo on Oct. 27. The expo showcased the 49th Fighter Wing.

The War on Terrorism

Operation Iraqi Freedom—Iraq

Casualties

By Nov. 9, a total of 3,857 Americans had died in Operation Iraqi Freedom. The total includes 3,849 troops and eight Department of Defense civilians. Of these deaths, 3,146 were killed in action with the enemy while 711 died in noncombat incidents.

There have been 28,451 troops wounded in action during OIF. This number includes 15,681 who returned to duty within 72 hours and 12,770 who were unable to return to duty quickly.

F-16 Strike Kills Top Al Qaeda Leader

An Air Force F-16 dropped two precision guided bombs on a target near Al Nussayyib, Iraq, on Sept. 25, killing Abu Nasr al-Tunisi and two other al Qaeda operatives.

Intelligence indicated that the three were meeting at a safe house when the F-16 struck with one GBU-12 and one GBU-38.

Al-Tunisi, a native of Tunisia, oversaw the movement of foreign fighters into Iraq as well as their operations, according to Multinational Force-Iraq officials. He personally led efforts responsible for more than 80 percent of suicide bombings in Iraq as well as the kidnapping of US soldiers in June 2006.

Operation Enduring Freedom—Afghanistan

Casualties

By Nov. 3 a total of 455 Americans had died in Operation Enduring Freedom. The total includes 454 troops and one Department of Defense civilian. Of these deaths, 265 were killed in action with the enemy, while 190 died in noncombat incidents.

There have been 1,754 troops wounded in action during OEF. This number includes 704 who were wounded and returned to duty within 72 hours and 1,050 who were unable to return to duty quickly.

C-5s Cleared for Bagram

A C-5 landed and took off from Bagram AB, Afghanistan, on Sept. 22, clearing the way for a tremendous increase in airlift capability to one of the main air hubs supporting Operation Enduring Freedom.

The Galaxy landed and took off without interrupting wing flying operations, a first for the airfield, according to Col. Jon Sutterfield, commander of the 455th Expeditionary Maintenance Group. Previously, landings of the Air Force's largest airlifter had required the movement of other aircraft on the flight line to accommodate the Galaxy. Runway upgrades helped make the September landing possible.

Sutterfield added that the landing was the culmination of months of effort between the Combined Air and Space Operations Center, the Tanker Airlift Control Center, and other organizations that worked to get the airfield ready. The ability to host the large airlifter enables more cargo, tools, and personnel to fly in directly to the theater and bypass main hubs when supplies are urgently needed, he added.

Spatial disorientation occurs when a pilot experiences false sensations or misinterprets cues about attitude, motion, velocity, acceleration, or position.

Next-Gen SATCOM Goes Up

A new military communications satellite with 10 times the capacity of the entire Defense Satellite Communications System constellation was successfully launched into orbit on Oct. 10 from Cape Canaveral AFS, Fla.

The first of the Wideband Global SATCOMs went into space aboard a United Launch Alliance Atlas V booster. It was 52nd consecutive successful launch by Air Force Space Command.

DSCS has served as the military's backbone for satellite communications for the last two decades. The new Wideband system will eventually replace DSCS and address an exponentially expanding demand for data transfer channels.

JCA Gunship On Tap?

The Air Force is seriously considering developing a gunship variant of the Joint Cargo Aircraft, declares Gen. T. Michael Moseley, the USAF Chief of Staff.

Speaking to reporters during September's Air & Space Conference, Moseley said JCA's size and cargo capability, coupled with the installation of a 30 mm cannon, might make it an ideal platform for Air Force Special Operations Command in forward combat zones that can't handle larger gunships.

The Air Force is forecasting a big role for JCA in the active force and Air National Guard as well as in coalitions with friendly countries.

Several meetings with foreign air chiefs have already been held regarding partnering on the JCA, Moseley said, and he envisions a coalition that will look a lot like the one that has built up around the C-130 and the F-16.

F-15s To Get New Radars

Since the Air Force isn't getting all the F-22 Raptors it needs, it is upgrading some of the radars on F-15C Eagles to augment its air-to-air portfolio.

Boeing will install Raytheon APG-63 (V)3 Active Electronically Scanned Array radars on a number of Air National Guard and active force F-15Cs. The exact number to be modified has not been determined, but Raytheon said it expects to deliver at least 48 of the systems through 2015. The aircraft to be modified will be among the 178 that the Air Force has decided to retain into the mid-2020s. Those aircraft also get data link upgrades, GPS systems, and Joint Helmet Mounted Cueing Systems.

The new AESA radars offer greater range and detail than the previous model, and allow an air and ground picture to be obtained simultaneously. The radar is based on a system developed for the Navy's F/A-18 Super Hornet.

The Air Force has already had 19 Eagles modified with the new radars. Those aircraft were recently transferred from Alaska to Kadena AB, Japan, as part of a region-wide increase in combat capability.

A contract was awarded to Boeing in October for $70 million, which will cover the installation for six ANG and one active F-15 in early 2009.

Pave Low Departs Lakenheath

The 21st Special Operations Squadron at RAF Mildenhall, Britain, was officially deactivated in October, as the unit sheds its MH-53 Pave Low helicopters in preparation for fielding the new CV-22 Osprey.

The unit was part of the 352nd Special Operations Group at Mildenhall. The Oct. 9 deactivation meant around 250 airmen left the 352nd, which previously fielded about 1,000 people. Prior to the deactivation, the 21st was the Air Force's only special operations helicopter unit in Europe.

The 21st is expected to reactivate at Cannon AFB, N.M., which became an Air Force Special Operations Command installation in October. There the unit will fly the CV-22.

Nolan Herndon, Doolittle Raider

Maj. Nolan A. Herndon, a member of the famed Doolittle Raiders, died Oct. 7 in Columbia, S.C., at the age of 88.

Herndon was navigator-bombardier on one of the B-25 bombers that took off from USS *Hornet* on April 18, 1942 to strike targets in Japan. Led by then-Lt. Col. Jimmy Doolittle, the raid was launched four months after the Japanese had struck Pearl Harbor.

Herndon, a native of Greenville, Tex., enlisted in the US Army Air Corps in 1940 after two years of college and was commissioned a second lieutenant about a year later.

Alone among the raiding bombers—the rest of which crash-landed or whose crews bailed out in China—Herndon's aircraft landed in Russia. He maintained in interviews that the aircraft was on a secret mission, the nature of it not disclosed to him. Doolittle biographer C.V. Glines said he could never get "a straight answer" on this.

Arrested in the Soviet Union, Herndon and the rest of crew No. 8 managed to escape a year later.

Herndon was awarded the Distinguished Flying Cross for his part in the mission. With his death, 12 Raiders survive.

C-17 Shutdown Looms—Again

Boeing has been making long-lead parts for C-17 airlifters despite not having any new orders, but will stop doing so next month if it doesn't see clear signs that the Air Force—or Congress—plans to buy more.

John B. Sams Jr., Boeing's vice president for Air Force systems, said that by January, Boeing will have to decide whether to keep funding long-lead suppliers with its own money or start turning off the production line again. It has done so once before, but Congress added 10 C-17s to the Air Force's budget.

Briefing reporters at AFA's Air & Space Conference in September, Sams said Boeing has invested "hundreds of millions" of dollars keeping the C-17 line going, in hopes that there will be another order. The Air Force has shopped an idea to Congress that would delete 30 C-5 aircraft from a major re-engining and upgrade program and go for 30 new C-17s instead. However, the service has also maintained that it has no money to order more of the airplanes.

A Boeing official allowed that many of the parts built are not useless white elephants if no new orders come through, and will be usable as parts for the 190-strong C-17 fleet USAF will eventually field under the program of record.

Sams said that, as of mid-September, the Air Force had taken delivery of 169 C-17s.

The C-17 fleet achieved an 85 percent mission capable rate in 2006—the highest rate for manned USAF aircraft, Sams pointed out. Worldwide, the airlifter has a departure reliability average around 93 percent and maintenance hours per flight hour have decreased 66 percent since 1994.

Boeing has also pitched to the Air Force a C-17B variant that could operate off even shorter and more austere runways—such as beaches—with additional centerline landing gear and a new flap system to deliver more slow-speed lift. Such an aircraft could be ready for delivery in 2014, Sams said. Sensors developed in other programs would allow C-17B crews to select a suitable landing spot without an advance team checking out soil compaction and other conditions ahead of time.

However Air Mobility Command chief Gen. Arthur J. Lichte said at the conference that he sees no budgetary opportunities to buy C-17Bs. He won't allow any money to be taken away from buying new tankers, which is USAF's top acquisition priority, and said USAF wouldn't be able to afford the unique support equipment needed for just 10 or so C-17Bs.

If the C-5 upgrade program doesn't meet requirements though, Lichte said USAF might well buy more C-17s, and the B model might be more attractive.

F-22 Drops Small Bomb

The F-22 test force at Edwards AFB, Calif., successfully released a GBU-39 Small Diameter Bomb from the internal weapons bay of a Raptor for the first time in September.

The test was considered a major milestone in the fighter's development. The drop proved the SDB would separate from the fighter cleanly, and may be employed operationally. Testing of the SDB is part of the Increment 3.1 upgrade to the fighter.

Once the weapon is cleared for operational missions, it will enable the Raptor to attack quadruple the number of targets it can strike on a single mission. The fighter is currently limited to two 1,000-pound Joint Direct Attack Munitions but will be able to carry eight 250-pound SDBs. In that

Index to Advertisers

MIA Airmen of World War II, Vietnam Are Identified

A dozen long-missing airmen have recently been identified and their remains returned to their families for burial, the Defense POW/Missing Personnel Office announced in October.

First Lt. David P. McMurray, of Melrose, Mass.; 1st Lt. Raymond Pascual, of Houston; 2nd Lt. Millard C. Wells Jr. of Paris, Ky.; TSgt. Leonard J. Ray, of Upper Falls, Md.; TSgt. Hyman L. Stiglitz, of Boston; SSgt. Robert L. Cotey of Vergennes, Vt.; SSgt. Francis E. Larrivee, of Laconia, N.H.; SSgt. Robert J. Flood, of Neelyton, Pa.; and SSgt Walter O. Schlosser, of Lake City, Mich., all of the US Army Air Forces, were identified through DNA analysis of remains collected in 2003 from an excavation site in Westeregeln, Germany.

Ray and Flood were buried in Harford County, Md., and Dry Run, Pa., respectively, in early October. The burials of the other servicemen were to be performed at Arlington National Cemetery near Washington, D.C.

The men were part of a B-24 crew lost during a mission over Germany in 1944. Captured records revealed that the bomber had crashed near Westeregeln, in what would later become East Germany. The site was identified for investigators in 2001 by German citizens.

Remains recovered in 2006 from Viti Levu Island in Fiji have been identified as those of 1st Lt. James W. Blose. His remains were interred in Hermitage, Pa., on Sept. 29.

Blose, flying a P-39D Airacobra, was lost in April 1942. After taking off from Viti Levu on an alert mission, he flew at mountaintop level to avoid bad weather and never arrived at a divert airfield. Searches at the time were unsuccessful, but wreckage discovered in 2004 by a Fijian turned out to be Blose's aircraft.

In October, the POW/Missing Personnel Office announced the identification of the remains of A1C George W. Long, of Medicine, Kan., who was lost in 1968 near Da Nang, South Vietnam.

Long was part of a C-130 crew evacuating Vietnamese from the Kham Duc Special Forces Camp. The aircrew reported taking heavy ground fire on takeoff, and a forward air controller in the area reported seeing the aircraft explode in midair shortly thereafter. The crash site was excavated in 1994 after a DOD team interviewed local citizens about the incident.

Long was buried in September in Medicine, Kan.

The remains of Maj. Robert G. Lapham, of Marshall, Mich., were buried Oct. 19 at Arlington National Cemetery. They were recovered after teams from the Joint POW/MIA Accounting Command and Vietnam surveyed and excavated the crash site in Quang Tri Province, Vietnam, at least seven times between 1993 and 2006.

Lapham, flying an A-1G Skyraider, was lost in February 1968 on a mission to defend a Special Forces camp that had come under attack. Lapham crashed shortly after completing a strafing pass. Other aircrews reported seeing no parachute.

Andy Williams, the RESE program manager, said the team is focusing on conducting another experimental flight, operating at speeds between Mach 10 and 12, sometime next year.

The vehicle was designed and developed by the Air Force Research Laboratory's Space Vehicles Directorate at Kirtland AFB, N.M.

Tilt-rotor Testing Wraps Up

A test team at Edwards AFB, Calif., wrapped up developmental flight testing on the CV-22 Osprey tilt-rotor aircraft in late September.

Next up is operational testing at Hurlburt Field, Fla., where the CV-22 is already in use by Air Force Special Operations Command.

The CV-22 Integrated Test Team, which includes Bell Helicopter, Boeing, Naval Air Systems Command, the Marine Corps, Air Force Materiel Command, AFSOC, and the Air Force Operational Test and Evaluation Center, stood up in 2000 and began testing with two Ospreys in 2002. The team gained a third Osprey in 2005 and has flown a total of 2,000 hours on all three.

The CV-22 is expected to enter operational service with AFSOC in 2009.

Army Buildup Accelerates ...

The Army announced in October that it will speed up by a full two years the addition of 74,000 soldiers to its ranks.

It said it would do this to relieve strain on forces that have been repeatedly deployed to Iraq and Afghanistan.

Gen. George W. Casey, Army Chief of Staff, confirmed the plan in a speech to the Association of the United States Army, saying Defense Secretary Robert M. Gates has approved the quickened pace to bring end strength to 547,000 soldiers by 2010, not 2012 as originally intended.

The Air Force is grappling with

configuration, it will still be able to carry two AMRAAM radar guided air-to-air missiles and two AIM-9 Sidewinder heat-seeking missiles.

RESE's Pieces Fly

A hypersonic vehicle with five payloads affixed to a Navy rocket made a successful six-minute flight on Sept. 20 at White Sands Missile Range, N.M.

The Re-Entry Structures Experiment, or RESE, reached an altitude of 95,000 feet at Mach 5 before it descended to the desert in two pieces. Several experiments were flown during the mission, including a new acoustic protection system, a reconfigurable hardware architecture for responsive satellites, two thermal sensors, a high-temperature material test, and a flexible circuitry trial.

USAF photo by MSgt. Mike Kaplan

As a part of the exercise Silver Flag in October, a B-52 with a Litening pod demonstrated that it can gather and upload imagery for communications networks.

the composition of its strategic airlift component, and is analyzing how the planned increase in the Army and Marine Corps force structure will affect its lift requirements.

... While Soldier Costs Zoom

The Army confirmed in October that the cost of outfitting individual soldiers is going up, from about $17,500 today to as much as $60,000 by 2015.

Taking into account advanced armor, high-tech ballistic eye wear, earplugs, clothing, and other accessories, the average soldier shoulders more than 80 items before heading into battle.

Some new equipment—already in prototype mode—would turn a soldier into an "F-16 on legs" by adding advanced data links and other high technology, researchers said.

Pemco Protests Repair Contract

The Air Force's award of a $1.1 billion, 10-year KC-135 Stratotanker maintenance contract to Boeing in September has been protested by Pemco Aviation, loser in the contest.

Pemco filed a protest with the GAO, arguing that Boeing violated both the law and Air Force competition rules.

Based in Birmingham, Ala., Pemco previously split the work on the KC-135 maintenance and modifications account with Boeing since 2000. Boeing initially hired Pemco as a subcontractor, but decided to bid solo on this contract.

The GAO has until Dec. 28 to respond to the protest.

Senior Staff Changes

PROMOTION: To Lieutenant General: Glenn F. **Spears.**

CHANGES: Brig. Gen. Floyd L. **Carpenter,** from Dir., Airman Development & Sustainment, DCS, Manpower & Personnel, USAF, Pentagon, to Vice Cmdr., 8th AF, ACC, Barksdale AFB, La. ... Brig. Gen. (sel.) Sharon K.G. **Dunbar,** from Dir., Manpower & Personnel, AMC, Scott AFB, Ill., to Dir., Manpower, Orgn., & Resources, DCS, Manpower & Personnel, USAF, Pentagon ... Brig. Gen. David L. **Goldfein,** from Cmdr., 49th FW, ACC, Holloman AFB, N.M., to Dep. Dir., Prgms, DCS, Strat. P&P, USAF, Pentagon ... Brig. Gen. (sel.) Dave C. **Howe,** from Dep. Dir., Instl & Mission Spt., USAFE, Ramstein AB, Germany, to Dir., Log., Instl. & Mission Spt., USAFE, Ramstein AB, Germany ... Brig. Gen. Michelle D. **Johnson,** from Dir., Public Affairs, OSAF, Pentagon, to Dep. Dir., War on Terrorism, Jt. Staff, Pentagon ... Brig. Gen. Duane A. **Jones,** from Dir., Log., USAFE, Ramstein AB, Germany, to Dir., Global Combat Spt. DCS, Log., Instl. & Mission Spt., USAF, Pentagon ... Brig. Gen. Robert C. **Kane,** from Dep. Dir., Ops & Tng., DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon, to Vice Cmdr., 18th AF, AMC, Scott AFB, Ill. ... Maj. Gen. John W. **Maluda,** from Vice Cmdr., 8th AF, ACC, Barksdale AFB, La., to Dir., Cyberspace, Transformation, & Strategy, Office of Warfighting Integration, Chief Info. Officer, OSAF, Pentagon ... Brig. Gen. Darren W. **McDew,** from Vice Cmdr., 18th AF, AMC, Scott AFB, Ill., to Dir., Public Affairs, OSAF, Pentagon ... Lt. Gen. (sel.) Edward A. **Rice Jr,** from Vice Cmdr., PAF, Hickam AFB, Hawaii, to Cmdr., US Forces Japan ... Maj. Gen. Darryl A. **Scott,** from Cmdr., Jt. Contracting Cmd., Multinatl. Force-Iraq, CENTCOM, Baghdad, Iraq, to Dep. Dir., Defense Business Transformation Agency, Pentagon ... Brig. Gen. Mark O. **Schissler,** from Dep. Dir., War on Terrorism, Jt. Staff, Pentagon, to Dir., Cyber Ops., DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon ... Brig. Gen. Lyn D. **Sherlock,** from Dir., Office of Intl. Security Ops., Political-Mil. Affairs Bureau, OSAF, Pentagon, to Dep. Dir., Ops. & Tng., DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon ... Brig. Gen. Marvin T. **Smoot Jr.,** from Dir., Manpower, Orgn. & Resources, DCS, Manpower & Personnel, USAF, Pentagon, to Dir., Manpower, Personnel, & Svcs., AFMC, Wright-Patterson AFB, Ohio.

COMMAND CHIEF MASTER SERGEANT CHANGE: Stephen C. **Sullens,** to CCMS, ACC, Langley AFB, Va.

SENIOR EXECUTIVE SERVICE RETIREMENT: Leif E. **Peterson.**

SES CHANGES: Richard V. **Howie,** to Dep. Dir., Log., AMC, Scott AFB, Ill. ... Joseph M. **McDade,** to Dir., Airman Development & Sustainment, DCS, Manpower & Personnel, USAF, Pentagon ... William C. **Redmond,** to Executive Dir., Air Force Safety Center, Kirtland AFB, N.M. ■

The Cost of Restoring the C-5 Goes Upward

The cost of the program to re-engine and upgrade the C-5 Galaxy has breached the 15 percent overrun level, mandating a notice to Congress, and throwing the program's future into question, USAF reported in September.

The service pegged the cost of the Reliability Enhancement and Re-Engining Program, or RERP, at $146.7 million per aircraft, for a program cost of $17.5 billion—roughly $5 billion more than the service had planned to spend on it. Some worst-case estimates put the cost at more than $20 billion. The cost increase constituted a Nunn-McCurdy breach, which requires the Air Force to notify Congress and either certify that the program is still required or explain how it will meet the need some other way.

Shortly after the Air Force released its cost estimates, Lockheed Martin issued a statement guaranteeing it could perform the RERP for a firm fixed price of $83 million per airplane. However, Lockheed's estimates do not include the engines or other logistics costs that USAF would have to bear.

Gen. T. Michael Moseley, Chief of Staff, told reporters at AFA's Air & Space Conference in September that "terminating the program is not off the table." Aeronautical Systems Center at Wright-Patterson AFB, Ohio, is checking the math to find out why Lockheed Martin's estimates and those of USAF are so far apart, Moseley said.

Legislation enacted last year limits USAF's options with the C-5. Under the law, USAF must complete testing of RERP-modified aircraft before it can retire any of the Galaxys. That is scheduled to happen in 2010, but the only alternative—buying more C-17s—may disappear if the C-17 production line closes before then. Senior USAF officials said they would seek legislative relief from the legal conundrum in order to have meaningful alternatives.

The Air Force hasn't calculated the exact costs of terminating the RERP. If the program is terminated, specific costs would be determined once a date is established, service officials said.

Stay Strong, Stay Awake

As part of its never-ending quest to find a safe way to keep pilots and special operations crews alert on long missions, the Air Force has been experimenting with muscle-building proteins.

A study of airmen volunteers is under way to see how whey protein affects both muscle mass and serotonin levels. Too much serotonin increases the sense of fatigue and reduces alertness.

The protein powder contains the amino acid leucine, known to affect serotonin. USAF officials told the Associated Press in October that volunteers taking the supplement are examined after physical tests and after long periods without sleep.

The small research project tracks volunteers over eight weeks, testing participants weekly and monitoring diet and exercise patterns.

The service has also researched supplements such as rose root and citrulline malate, which also aid alertness and reduce fatigue. ■

News Notes

■ Lt. Gen. Michael W. Wooley, the commander of Air Force Special Operations Command, was inducted into the Order of the Sword during a September ceremony. The award is the highest honor presented by enlisted personnel and given to commanders who show consistent concern and advocacy for the well-being of the enlisted force. Wooley has led AFSOC since July 2004 and is retiring Jan. 1.

■ USAF will permit sergeants in the E-5 to E-7 range to re-enter their old career fields, if there's a demand for them. To qualify for the 2008 NCO Limited Reclassification program, they must have had a valid skill level in their secondary specialty within the last four years. The Air Force Personnel Center said about 70 specialties are open.

■ Lockheed Martin will build and fly an "X-plane" to test new structures and materials under a contract awarded by the Air Force Research Laboratory in October. The program will prove out advanced prototyping of composite materials, toward reducing parts count and preventing corrosion and structural fatigue. The contract is for the second phase of the Advanced Composite Cargo Aircraft Flight Demonstration program.

■ A new flight school for the Iraqi Air Force opened on Oct. 1 at Kirkuk AB, Iraq, and began training Iraqi pilots with the assistance of USAF personnel. The school is part of a broader effort to return Kirkuk to the IAF, according to members of the 52nd Expeditionary Flying Training Squadron. The initial class had 10 students and two Cessna 172 aircraft. The school hopes to graduate about 160 pilots a year.

■ Rolls Royce will build 370 AE 1107C-Liberty engines for Marine Corps and Air Force V-22 Osprey tilt-rotor aircraft, under a $700 million contract from the Naval Air Systems Command. The agreement covers engines for 148 aircraft plus 74 spares. Deliveries are scheduled to run through 2013.

■ Basic trainees arriving at Lackland AFB, Tex., in October found something new in their duffel bags. They were among the first to receive the new Airman Battle Uniform, replacing a uniform that had been similar to what Army members wear. More than 800 recruits each received four sets of ABUs in the first week of October.

■ Four B-2 bombers deployed from Whiteman AFB, Mo., to Andersen AFB, Guam, in October for a four-month stay. Bombers have been rotating in and out of Guam for about four years. The B-2s replaced B-52s from Barksdale AFB, La. Officials with the 36th Operations Group at Andersen said the stealth aircraft bring unique capabilities and training opportunities to the base.

■ The Raven B UAV now is operating in Southwest Asia. The small UAV, with a five-foot-five-inch wingspan, is used by the 380th Expeditionary Security Forces Squadron for reconnaissance, surveillance, and force protection activities. The four-pound aircraft can take still photos or live video from the time of launch to recovery.

■ Air Force Reserve Command's first F-22 group was activated at Elmendorf AFB, Alaska, in October, with the stand-up of the 477th Fighter Group. The initial cadre of the 477th FG was 35 people, expected to go up to 163 by next October. At full strength, the unit will field 160 air reserve technicians and 266 traditional Reservists.

■ Boeing has begun modernizing the B-52 fleet with the Combat Network Communications Technology upgrade at its Wichita, Kan., facility. The CONECT modification is a computing, communication, and display upgrade that allows crews to send and receive real-time digital information during missions. The first modification is expected to take 11 months.

■ A ground-based interceptor made a successful test intercept of a ballistic missile warhead in September, announced the Missile Defense Agency. The interceptor was launched from Vandenberg AFB, Calif., on Sept. 28 and targeted a threat-representative missile fired from Kodiak, Alaska.

■ The last class of the Basic Boom Operator course taught at Altus AFB, Okla., graduated Oct. 5. The course has now moved to the Career Enlisted Aviator Center of Excellence at Lackland AFB, Tex. The Altus boomer school graduated 105 classes and 1,288 students.

■ Members of the 36th Rescue Flight, a helicopter outfit at Fairchild AFB, Wash., helped rescue a 77-year-old man stranded in the Idaho wilderness in October. Two hunting guides issued a distress call that a co-worker was injured and stranded in the Selway-Bitterroot Wilderness. Rescuers flying a UH-1N Huey carried out the rescue from the 7,300-foot-high site despite a balky hoist and jagged terrain surrounding them.

■ The last Defense Support Program satellite was launched from Cape Canaveral AFS, Fla., Nov. 10 aboard a Delta IV heavy evolved expendable launch vehicle. The satellite, the 23rd DPS, was readied aboard the rocket in late September. The DSP, first orbited in 1970, was designed to detect ballistic missile launches.

■ A simulator that reproduces flight line sights and sounds was added in October to the Air Force Expeditionary Center at Ft. Dix, N.J. The Aircraft Maintenance Production Simulator prepares maintenance leaders for the flight line by using projection screens, aircraft sounds, and networked laptops that allow student input and interaction. The device is used in the center's Mobility Operations School.

■ Boeing delivered a refurbished E-4B National Airborne Operations Center aircraft to the Air Force after completing programmed depot maintenance at its Wichita, Kan., facility in September. USAF has only four such aircraft in the fleet. ■

UNSN photo by Petty Officer 2nd Class Michael B. Lavender

USAF RED HORSE airmen and Navy Seabees in a joint training exercise at Kadena AB, Japan, in September. More than 87 Seabees participated in the rapid runway repair exercise and trained with Kadena's RED HORSE engineers on a variety of tasks, from repairing craters to foreign object removal and ordnance detonation.

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Action in Congress

By Tom Philpott, Contributing Editor

Sifting the benefits cornucopia; More to the reserve components; Helping the "Wounded Warrior" ....

Conferees Debate 2008 Bill

House and Senate negotiators worked well into November to hammer out a final Fiscal 2008 defense authorization bill (HR 1585), the major annual legislation that sets or revises defense policy for the US military services and defense agencies.

Members of the conference committee, formed to work out compromises on the details of the bill, had a wide array of pay and benefit gains to choose from in shaping a final version.

The House approved its bill last summer. The Senate on Oct. 1 passed its authorization measure by a vote of 92-to-three. Both offered new benefits for military recipients.

The Senate matched the House in endorsing a 3.5 percent military pay raise, starting in January 2008, and in rejecting Bush Administration plans to raise Tricare fees and deductibles for retirees under age 65.

Both the House and Senate versions of the bill would require pharmaceutical manufacturers to provide federal pricing discounts to medicine dispensed through the Tricare retail pharmacy network. The discounts already are provided for medicines dispensed on base or by military mail order. The Senate language would require the discounts for Tricare retail outlets. The House bill merely would allow DOD to exclude drugs from the Tricare retail formulary if discounts aren't provided.

USAF photo by SSgt. Hector Garcia

Reservists such as these airmen are set to receive new benefits.

Senate Embraces New Benefits

The Senate debate in September engendered a wave of new amendments aimed at helping reserve component personnel, military retirees, disabled veterans, and surviving spouses.

The Senate amendments would:

- Lift the ban on concurrent receipt for IU (independent unemployability) veterans. Current law blocks most veterans from receiving both disability compensation and full retired pay, including disabled retirees deemed "unemployable" by the VA. These veterans were excluded when Congress lifted the ban on concurrent receipt for all other veterans receiving disability compensation at the 100 percent rate. The Senate would restore lost retired pay for unemployable vets back to Jan. 1, 2005.
- End SBP-DIC offset. The law requires a dollar-for-dollar reduction in military Survivor Benefit Plan payments when widows accept tax-free VA Dependency and Indemnity Compensation. DIC is paid to surviving spouses if their service members die while on active duty or if their retiree spouses die of service-related conditions. About 61,000 widows would see their incomes rise if the Senate provision is enacted. The House voted only to take a first step toward eliminating the offset by paying up to $40 a month survivor indemnity allowance starting in October 2008.
- Accelerate SBP paid-up rule. An amendment in the bill would accelerate the effective date of the SBP paid-up rule by a year to Oct. 1, 2007. Under current law, retirees who have paid SBP premiums for at least 30 years and are age 70 no longer will have to pay premiums after Oct. 1, 2008. About 172,000 participants would benefit from an earlier effective date.
- Enhance GI Bill for reservists. Members of the National Guard or Reserve could use GI Bill education benefits earned through mobilization for up to 10 years after separating from the Selected Reserve under an amendment approved by the Senate. Currently, reserve component members must stay in drill status to use their GI Bill benefits. The House bill merely would transfer oversight for the Reserve Montgomery GI Bill from DOD to the Department of Veterans Affairs as a first step toward raising Reserve GI bill benefits.
- Raise reserve drill points. Drilling Reserve and Guard personnel earn a maximum of 90 points a year toward retired pay calculations. Given demands on current members, the Senate adopted an initiative to raise the annual ceiling on points to 130. The House bill is silent on the issue.
- Early reserve retirement. Reserve

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component members retire at age 60. The start date for retirement would be set three months earlier than age 60 for every 90 days a Reservist or National Guard member has been recalled to active duty since 9/11. This improves on an earlier amendment that would have allowed a lowering of retirement age only for personnel mobilized after the defense bill is signed.

The Senate earlier voted other personnel changes not found in the House version of the bill. For example, eligibility for Combat-Related Special Compensation (CRSC) would be expanded to Chapter 61 retirees—those forced by disabilities to leave short of 20 years. The Senate would allow any Chapter 61 retiree with combat-related disabilities to receive both disability pay and a CRSC based on years served. The House voted only to expand CRSC eligibility to Chapter 61 retirees who served at least 15 years and have combat-related disabilities rated 60 percent or higher.

Wounded Warrior Initiatives

Complicating the task of House-Senate conferees this year is a swell of legislative initiatives for wounded warriors plus recommendations from two separate commissions focused on disability compensation reform. But by early November, Senate leaders were set to ignore most of the commission recommendations, even those endorsed in October by the White House, until 2008.

The Senate's defense bill includes the Dignified Treatment of Wounded Warriors Act, with provisions targeted at weaknesses in care management of injured members returning from Iraq and Afghanistan. The bill would:

- End inconsistent ratings by DOD and VA for the same disabilities.
- Direct that DOD establish a board to review and, where appropriate, correct disability determinations of 20 percent or less for members separated as medically unfit since 9/11.
- Eliminate a requirement that DOD disability severance pay be deducted from VA compensation for disabilities incurred in a combat zone or combat-related operations.
- Ensure a near seamless transition from military care to VA care by requiring the department Secretaries to develop jointly a comprehensive policy on the care and management of transitioning patients.
- Extend the period of eligibility for VA health care for combat vets of current and future wars from two years to five after discharge or release.
- Increase minimum disability severance pay to one year of basic pay for those separated for disabilities incurred in a combat zone or combat-related operations, and six months' basic pay for all others.

The House last March passed its Wounded Warrior Assistance Act (HR 1538) in response to the poor treatment of outpatients at Walter Reed Army Medical Center. Those initiatives are focused on giving wounded service members and their families a stronger team of advisors and advocates to guide them through care, recovery, and disability evaluation.

Bush Endorses Dole-Shalala Plan

In mid-October, President Bush endorsed a new four-part payment scheme for reforming veterans' disability compensation, the same plan unveiled last summer by the President's Commission on Care for America's Returning Wounded Warriors, also known as the Dole-Shalala Commission.

By November, however, Sen. Daniel K. Akaka (D-Hawaii), chairman of the Senate Veterans' Affairs Committee, signaled that the plan has major flaws, and it arrived too late for Congress to review and act on it before 2008. Akaka said he personally opposed Bush's call that the pay enhancements only apply to veterans injured since October 2001 when US forces invaded Afghanistan.

Former Sen. Robert Dole, one of the architects of the plan, conceded it was getting "push back" from veterans' service organizations. But that shouldn't deter Congress from giving the current force a better disability package.

"If they'd do a little better than we did, that's OK," Dole told the Akaka's committee Oct. 17. "These are grandsons and sons of Vietnam veterans and World War II veterans." Improving their benefits, he said, "shows we're making progress" and honoring their sacrifice.

The plan would totally restructure how disability compensation levels are set and reduce the military's role to conducting a thorough physical and determining if an ill or injured service member is unfit for duty.

Those found unfit would be retired with a lifetime annuity based on final rank and time in service. Annuities would be set at 2.5 percent of basic pay multiplied by years served. The VA then would award a disability rating based on any service-related injury or ailment found. In addition to the military

annuity, veterans would get from the VA transition money to help adjust to civilian life. This would be followed by a monthly payment for loss in earnings capacity, the same rationale for current disability pay, and a new quality-of-life payment to compensate for limits on day-to-day activities resulting from the disabilities.

Akaka suggested that whatever changes to VA compensation Congress decides to make should be based on the recommendations of the Veterans' Disability Benefits Commission (VDBC), which released its report Oct. 3 after more than two years of study. By contrast, the Dole-Shalala commission studied the issue only for three months.

"Many significant proposals from the Veterans' Disability Benefits Commission were not contemplated by the Dole-Shalala commission and warrant review" before Congress acts on how Dole-Shalala and the White House seek to reform disability benefits, Akaka wrote in a commentary for the *Washington Post* Nov 2. He said he is "greatly concerned" that the White House's plan "would exclude veterans from earlier generations."

AP photo by Marco Garcia

Akaka: Don't forget the older vets.

Veteran Commission Reports

Highlights of the VDBC report include a call to increase veterans' disability compensation immediately and to make all disabled veterans eligible for concurrent receipt.

VDBC made a total of 113 recommendations.

"In the main," said retired Army Lt. Gen. James T. Scott, "the recommendations are all favorable to veterans of the present and the future."

Republicans voted in 2004 to establish the VDBC as a trade-off for agreeing to lift the ban on concurrent receipt for seriously disabled military retirees. The hope was that Scott, a former infantry officer and Army ranger, and the other 12 commissioners, would find reasons to tighten VA disability benefits. Instead, the VDBC found many reasons to expand disability benefits to make them more effective in aiding injured and ailing veterans and to be more responsive to financial challenges that service disabilities create.

Panel's Priorities

The commission said most of its recommendations should be implemented over five years. Included among a list of 14 "priority" recommendations were these:

- Concurrent receipt. Congress should eliminate the ban on concurrent receipt for all disabled military retirees and for all service members who have been separated due to service-connected disabilities. If lifting the ban can't occur immediately, the first groups targeted should be veterans with fewer than 20 years of service and disability ratings of 50 percent or higher and veterans disabled as a result of combat.
- End SBP-DIC offset. Congress should end the dollar-for-dollar offset in military Survivor Benefit Plan payments that occurs when widows also become eligible for VA Dependency and Indemnity Compensation. DIC is payable if a member dies on active duty or if a retiree dies as a result of service-related conditions. If Congress adopts this recommendation—and the Senate has—61,000 widows would see SBP fully restored effective back to Oct. 1, 2007.
- Raise VA compensation. Congress should increase VA disability compensation by as much as 25 percent for the most seriously disabled veterans as an interim step to recognize the impact of their disabilities on quality of life. Current compensation levels are set only to make up for lost earnings. VA payments should take into account reduced quality of life from severe disabilities not only on veterans but their families. VA Special Monthly Compensation (SMC) does take some account of diminished quality of life in these higher payments for veterans with lost limbs and bodily functions. Congress should consider increasing SMC so it better addresses the more profound impact on quality of life for veterans being wounded today.
- Update rating schedule. The VA should begin immediately to update its 60-year-old disability rating schedule, starting with ratings for post-traumatic stress disorder, other mental disorders, and traumatic brain injury. The commission believes compensation levels for veterans with these types of conditions are set too low because of the antiquated rating schedule. Once these ratings are changed, the VA should continue its rating schedule review so that within five years, the entire schedule is revised.
- Holistic approach. VA should establish a "holistic approach" to awarding ratings for post-traumatic stress disorder, combining compensation with treatment and vocational assessment. Re-evaluation should occur every two to three years to gauge treatment effectiveness and encourage wellness. VA statistics show that once veterans begin receiving compensation for PTSD, relatively few ever see their conditions improve in a way that would eliminate or reduce that compensation.
- Monitor Unemployability. Veterans who can't work due to service-related conditions that are only 60 to 90 percent disabling still can be deemed unemployable and qualify for VA compensation at the 100 percent level. The VDBC said the IU or program should be better managed, made more consistent, and be based on the effect of disabilities on a person's education and employment history. The VA should conduct periodic and comprehensive evaluations of IU recipients. If any of them are found able to work, their IU compensation should be reduced only gradually.
- Replace IU rating. Recognizing that IU status is a way to accommodate individuals with multiple lesser ratings who are unable to work, the commission said the VA, in revising its rating schedule, should find a way to properly compensate these individuals without a special IU rating. ■

The wartime demand for airlift has been huge, and now the bill must be paid.

Crunch Time Air Mobility

In weeks just ahead, the Air Force will come face to face with the need to map a new course in air mobility, from strategic airlifters all the way down to individual para-dropped pallets. It must settle debates that have raged for years. Many of the decisions will bring pain and will please no one.

The result will show up in the new service budget, set for unveiling next month, and it could be dramatic.

Air Force leaders may well close production of the C-17 transport, with no successor on the boards. They could abandon an important plan for upgrading the C-5 fleet. They are certain to fund a new aerial tanker, but they may reshape it under threat of litigation. They likely will have to truncate their plans to modernize the C-130 tactical airlifter.

Meanwhile, officials may have decided what, if anything, they can do about old aircraft that consume more and more maintenance dollars but return less and less capability.

Airlift programs will clearly be a dominant fact in development of the 2009 Air Force budget, if only because of the sheer number of programs that are involved. Assuming that all air mobility projects now under way come to fruition, within three years, the Air Force will have seven main types of airlifters in service—two types of strategic transports, two types of tactical transports,

for

C-17s, C-5s, and KC-135Rs jam the ramp at McChord AFB, Wash., during Airlift Rodeo 2007, held in July.

By John A. Tirpak, Executive Editor

Photo by Jim Dunn

and three types of aerial tankers—plus a half-dozen other specialty aircraft types ranging from C-21 Learjets to Air Force One.

By comparison, in three years USAF may have just four operational types of fighters and three models of bombers of varying vintage.

Unlike fighters and bombers, though, mobility aircraft have a round-the-clock mission in war or peace. In peacetime, air mobility forces represent the most frequently employed "nonlethal" asset, as they respond to humanitarian crises and natural disasters worldwide.

Burning Up the Airlift Fleet

The wartime demand for airlift has been huge, however. Gen. Norton A. Schwartz, head of US Transportation Command, told the House Armed Services Committee last spring that in 2006 alone, Air Mobility Command moved nearly 1.4 million passengers and more than a half-million short tons of cargo to, from, and within the combat theaters of Southwest Asia. The C-17 alone air-dropped 360 short tons of cargo to coalition forces in Afghanistan, Schwartz reported. In the same year, AMC tankers offloaded more than 128 million gallons of fuel to coalition aircraft in the two war zones. Meanwhile, at home, the tankers passed nearly three million gallons of fuel to fighters on patrol over the US in Operation Noble Eagle.

Gen. T. Michael Moseley, USAF Chief of Staff, reported in June that since September 2006, Air Force C-130s and C-17s had flown "100 percent of everything" the Marine Corps and Army could fit inside the aircraft in an effort to keep people and materiel off the roads and out of the reach of ambushes and roadside bombs.

He called it a "specific, visible application of airpower" to get cargo and people "off the surface and ... out of harm's way."

The heavy operational pace has prompted Moseley to warn Congress that the Air Force is burning up its airlift fleet, at usage rates up to three times those expected. The service has sought to replace some of these prematurely consumed years of service life with additional C-17s requested in supplemental war budgets.

However, figuring a way forward in airlift has never been easy, because any one program decision or development affects all the others, and it has been nearly impossible to evaluate options on an "apples to apples" basis.

The 2006 Mobility Capability Study, undertaken as part of the Quadrennial Defense Review, assessed only capabilities, not future requirements. The last full Mobility Requirements Study—dating back to pre-Sept. 11, 2001—didn't assess intratheater lift or special operations needs—two mission areas that have assumed a pre-eminent role in the Iraqi and Afghan counterinsurgencies.

Consequently, for the past few years, the Air Force has put off many major mobility decisions, deferring choices about which aircraft to buy or fix up until the picture clears. Part of the stalling tactic was to see if the hectic pace of operations in Southwest Asia would wind down, freeing up cash and reducing requirements enough to build a coherent plan.

Schwartz himself, in a December 2005 meeting with reporters, said the "surge level" of activity associated with Iraq and Afghanistan "is likely to subside

USAF photo by TSgt. Cohen A. Young

Left, airmen of the 374th Aircraft Maintenance Squadron at Yokota AB, Japan, change a prop on a damaged C-130 Hercules in 2005, during Indonesia tsunami relief operations. Below, a C-130 of the 910th Airlift Wing at Rodeo 2007.

Photo by Jim Dunn

over time," and that the Air Force need not equip for sustained airlift operations based on this aberrant episode. Schwartz added that it was unlikely the US would "have 20 brigades in the [theater] indefinitely." Although there was a reduction in 2006, the number has climbed again with the new surge of 2007.

At the time, Schwartz said he was unwilling to buy more C-17s if the money would be siphoned away from replacing AMC's Eisenhower-era tankers. He also said that the capability resident in a larger C-17 force would reduce the amount of business he could offer to Civil Reserve Air Fleet participants, and that he couldn't bear to lose any of that reserve passenger and cargo capacity. CRAF participants agree to allow their commercial aircraft to be drafted during national crises, in exchange for receiving preferential contracts to carry US military passengers and cargo at other times.

Myriad Issues

Another reason for the Air Force to stall on airlift decisions: There's always another mobility study down the road, and the service can honestly claim it doesn't want to prejudge the conclusions. However, the next Pentagon mobility study doesn't even start until February 2008.

The myriad, interleaved mobility issues confronting the Air Force include:

- How many C-17s the Air Force needs, and whether it should keep the production line going after existing orders are delivered. This choice depends on how many C-5s the service will keep, and how much of the C-130's intratheater airlift role the C-17 has acquired in practice. It will also be affected by the need to make work available to CRAF, so that participants stick with the program.
- Whether the C-5 Galaxy upgrade and re-engining should go ahead depends on testing of the initial examples, which is not yet complete, and the cost of the program, which is rising.
- The planned increase in US Army and Marine Corps troops could require as many as 35 more strategic airlifters than USAF now plans to field.
- How many C-130s the Air Force should either replace or upgrade depends on how many new small Joint Cargo Aircraft it will buy, and the true condition of the oldest Hercules. Moreover, the cost to upgrade the C-130 has increased.
- The Air Force has had success with the Joint Precision Air-Drop System, a kit that allows 5,000- to10,000-pound pallets to be dropped from high altitude to within only a few feet of a target area by use of steerable parachutes and GPS satellite navigation. According to Gen. Duncan J. McNabb, vice chief of staff and former head of AMC, the effectiveness of the system may allow the Air Force to dispense with some tactical airlifters, which won't have to touch down on an airstrip to ensure that a pallet gets to troops in the field. The same number of airplanes could fly more missions.
- All of the above will be affected to some degree by how much cargo the new tanker will be able to carry—which won't be known until one is chosen—and how fast it can be brought into service.

The Air Force's servicewide top procurement priority is the replacement of its oldest KC-135 aerial refueling aircraft, the average age of which is 46 years, and which have seen diminished utility and skyrocketing maintenance costs in recent years. Top USAF leaders warn that not replacing the bulk of the tanker fleet as fast as possible could create a "single point failure" capable of crippling the mobility-dependent US military.

The two main competitors in the KC-X competition are Boeing—with the KC-767 tanker derivative of the 767 airliner—and European Aeronautic Defense and Space Co., offering the KC-30, a tanker derived from the Airbus A330 airliner.

Of the two, Boeing's airplane is the

smaller, although company officials say it is no larger than the Air Force's requirements dictate. Had the Air Force needed a larger airplane, company officials said, they would have offered a tanker variant of the larger 777.

Boeing claims the 767 will allow the Air Force to put more tankers on cramped forward-area ramps and airfields, while EADS says its larger KC-30 can stay on station longer and offload fuel faster. Both companies have other customers for their tankers.

The Air Force wants its new tanker to be able to perform multipoint refueling—a main boom complemented by wingtip drogues—have self-protection systems against both infrared and radar missiles, be "network ready," and be able to carry cargo.

"A tailored cargo and passenger carrying capability" on the KC-X, Schwartz told the HASC, "will revolutionize our transportation options and mitigate wear on the C-17, C-5, and C-130s by decreasing force closure times and lessening the burden on our strategic lift fleet."

The Air Force's plan is to award a winner-take-all contract to one company, which will build 179 KC-X aircraft. The Air Force considered but rejected the notion of splitting the buy between competitors, arguing that the additional support, training and logistics costs of the second airframe would range between $2 billion and $4 billion. Service officials also said that AMC already has too many types of aircraft, and needs to "neck down" to save money on logistics costs.

Photos by Jim Dunn

A C-130 taxis past KC-10s at Rodeo 2007. USAF's 59 KC-10s would have to carry its entire tanker mission if a fleet-grounding fault was found in the KC-135.

A Complex Equation

The new airplane is to be delivered at a rate of between 12 and 18 aircraft a year, depending on how many USAF can afford. The service will replace the oldest KC-135E tankers first, then begin to replace the KC-135R tankers, which were upgraded in the 1990s.

Around 2020, the Air Force plans to award a second tanker contract, dubbed KC-Y, which will replace yet another 200 tankers, and in 2033, it expects to award a third and final order for a batch of 200 under the KC-Z rubric.

USAF has not said that it expects the Y and Z aircraft to be the same as that chosen in the X competition, and officials said they will likely consider all-new aircraft in both of those contests.

According to USAF plans, the last KC-135E will retire in about 2018 and the last KC-135R in 2043, when the aircraft will be 86 years old. To endure that long, the R models will need three capability upgrades before 2015 and a major service life extension program, or SLEP, in 2025.

Schwartz told the HASC that the KC-10—of which the Air Force has 59—will last until the 2040s, but needs near-term modifications to comply with modern international airspace rules. Air Force documents show the KC-10 getting a SLEP in 2031.

The Air Force expects to cap its tanker replacement program at about $3 billion per year in constant dollars, for literally decades to come.

In strategic lift, the equation is complex and increasingly political. The Air Force has determined that it requires about 300 strategic airlifters to carry out its day-to-day missions.

However, that figure was determined based on troop levels of two years ago. Moseley asked McNabb to perform a "quick look" analysis earlier this year to determine what USAF will need as the Army and Marine Corps increase their ranks by 92,000 troops, as ordered by President Bush.

McNabb's answer was that the requirement will either stay the same or increase up to 335 strategic airlifters, determined ultimately by whether the new ground troops fulfill only support roles—which would require almost no new mobility aircraft—or whether they would all be combat troops equipped for heavy fighting. The Army's requirement relative to rapidly deploying its

A C-17 taxis in after an airdrop. The aircraft has earned its battle stars, but aircraft planners have yet to decide whether to continue production.

USAF photo by A1C Jonathan Steffen

Left, pallets are unloaded from a C-5 at Balad AB, Iraq. The C-5's unique oversize cargo capability is a great asset, but its upgrade program's cost is climbing out of reach. Bottom, technicians of the 8th Expeditionary Maintenance Squadron work through the night changing one of the C-5's engines. The Galaxy's on-time departure reliability is poor.

new Future Combat Systems vehicles is another unknown.

The Army and Marine Corps, Moseley said in June, had not made final decisions about how they will apportion their new troops, so the Air Force is not yet able to provide a definitive answer on its supporting their specific mobility needs.

The C-5 Galaxy, USAF's flying behemoth, has long suffered from reliability problems that have pushed its on-time departure rates to around 50 percent. Much of the problem stems from its engines and avionics.

The Air Force is embarked on two major upgrades for the C-5: the Avionics Modernization Program, or AMP, and the Reliability Enhancement and Re-engining Program, or RERP. Two aircraft have received the modifications and are in flight test. If the RERP can raise the C-5's reliability rate to 75 percent, service leaders say they will pursue the program as a relatively inexpensive way to extend the C-5's life for 30 more years and avoid having to buy many more C-17s.

However, Moseley reported earlier this year that the RERP was not meeting expectations in performance. Moreover, Air Force Secretary Michael W. Wynne notified Congress in the fall that the C-5 RERP had gone into a "Nunn-McCurdy breach," referring to a law requiring the service to notify Congress if a program's cost goes up more than 25 percent. Under the law, the Air Force will have to certify whether the program is critical, and if there are other alternatives.

In March, Wynne said, "What I believe in my heart is that we're probably going to re-engine a significant percentage of the C-5 fleet," but not all of them. He expected that between 15 and 30 of the 111 Galaxys will be retired, and that the older A models that stay in service would be used on noncritical domestic missions. The A fleet lacks the self-protection gear the Air Force deems essential to operating in war zones.

If the Air Force decides not to RERP those C-5s, however, it would need to replace the capability, and the C-17 is the only strategic airlifter in production.

Not indefinitely, however. Last year, Boeing began to shut down long-lead production of parts for the C-17, in the absence of any more firm orders either from USAF or overseas. The line resumed when Congress added 10 C-17s to the Air Force budget and several other countries, plus the NATO alliance, either placed orders or expressed strong interest.

Boeing shut down long-lead production again this year, but later reversed position, saying it saw strong interest both from USAF and Congress in keeping the line going.

USAF's Working Plan

That, in turn, rattled three Senators, who wrote a heated letter to Defense Secretary Robert M. Gates in July demanding to know why Boeing was taking this action in the absence of a stated USAF requirement for more C-17s.

The lawmakers—Sen. Edward M. Kennedy (D-Mass.), Sen. John McCain (R-Ariz.), and Sen. Thomas Carper (D-Del.)—wondered if there had been some back-door deal between the Air Force and Boeing that would obligate the service to buy aircraft in the future. They insisted that Gates state for the record whether the Pentagon plans to buy more C-17s or not.

Responding on Gates' behalf in August, Wynne wrote back that the Air Force's working plan is to stick with 190 C-17s and 111 C-5s.

However, "Air Mobility Command has been reviewing the practicality of replacing a portion of the C-5 fleet with

DOD photo

C-27J Team photo

The C-27J overcame contract protests and will be the Joint Cargo Aircraft. It will fill a role carrying smaller loads into austere fields.

C-17s. This review is preliminary only," Wynne said, and no decisions had yet been made.

He also said he was aware of "no commitments" by the Air Force or Pentagon promising more C-17 work to Boeing. "In fact, the contractor has publicly stated that the decision to extend certain long-lead suppliers was entirely their own."

However, in mid-November, Schwartz told Senate Armed Services Committee Chairman Sen. Carl Levin (D-Mich.) that he couldn't recommend terminating the C-17 program until there's resolution of many other airlift issues, particularly the status of a C-5 upgrade. Schwartz obliged Levin's request for a "personal and professional opinion" about the proper size of the airlift fleet, saying he believes the "sweet spot" would be a force of 205 C-17s and an upgrade of all 111 C-5s.

Replacing the C-130 has long been a vexing proposition for the Air Force, which has crafted and discarded at least three fleetwide modernization plans in the last decade. They have been done in by technology, aged hardware, or, mostly, money problems.

To replace its tactical airlift fleet, USAF has settled on a three-track plan. It will buy some number of brand-new C-130Js, update a portion of its existing C-130H fleet with new avionics and structural repairs, and buy a new, small airlifter in concert with the Army, called the Joint Cargo Aircraft.

The Air Force had also planned to modify its oldest C-130Es, but an alarming number of them developed fatal cracks in their center wing boxes. They could not be economically repaired. At one time, as many as 115 of these aircraft languished in the inventory, too dangerous to fly, but Congress insisted they be retained. The Air Force repaired 17 of them.

Congress has begun to allow USAF to retire the oldest C-130Es, and in early September, only six with cracked center wing boxes remained in inventory. However, Air Mobility Command said in response to a query that "we anticipate more aircraft will be grounded" for the problem. Of the six grounded in September with the cracks, "it's not cost effective to repair three of them," AMC said. Two were to be fixed, and one was awaiting further evaluation.

"Starting in FY09, and once center wing boxes become available, AMC will begin replacing [the structure] ... on the C-130H model fleet," the command reported.

The other big modernization plan for the Hercules fleet is the Avionics Modernization Program, or AMP, which was to outfit the 1960s- and later-vintage aircraft with modern glass cockpits and digital avionics. With the upgrades, they could continue to serve in airspace where they are increasingly restricted by global air traffic management rules.

However, in April, the Pentagon announced a huge increase in the cost of the C-130 AMP. The price of the program vaulted more than a billion dollars, or more than 21 percent, due to unexpectedly high install rates and labor costs.

An official said that Boeing, the contractor for the C-130 AMP, expected there would be six "baseline" configurations of the fleet, but in practice found that practically each aircraft was unique. Holes were in different places, ad hoc modifications had been done over the decades, and planned avionics changes that were supposed to have been done in depot had been skipped to save money. The AMP could not proceed without them.

To get the cost of the AMP under control, USAF has decided to cut more than a third of the C-130s from the list of those planned to get the upgrade, reducing it to 268 aircraft.

Air Mobility Command chief Gen. Arthur J. Lichte told reporters in September that the AMP, "when it first started, looked like a smart idea ... like it was a reasonable amount of dollars." However, Lichte said that the Air Force must scrutinize programs from time to time and drop them if "it doesn't make sense anymore."

The AMP does not affect new-built C-130Js, which have been bought in small handfuls of fewer than a dozen a year—for both the Air Force and Marine Corps.

In June, the Air Force and Army jointly announced they would buy the C-27J, a design of the Alenia company of Italy being offered through L-3 Communications, for the Joint Cargo Aircraft program. The initial requirement for the Air Force is 24 aircraft, and an initial batch of 54 is headed for the Army.

Congress has weighed in on the program, suggesting that the Air Force be the sole provider of fixed-wing transport among the military services, but for now, the program will proceed as a joint effort. The C-27J is viewed in USAF as a modern-day successor to the C-7 Caribou used in Vietnam, able to fly in and out of tiny, austere runways and support special operations ground forces widely dispersed in a combat theater. It is also seen as an ideal platform for Air National Guard units providing relief and humanitarian assistance in natural disasters where large runways may not be available, or in cargo missions where the C-130 has been flown half-empty.

Moseley has also touted the JCA as being the ideal aircraft with which to build coalitions and partnerships with small countries that lack the means to field C-130s or modern fighters.

Moseley said last summer that the Air Force will, before the 2009 budget is released, explain the Air Force's new, grand airlift plan in a mobility roadmap. ■

The New Line in the Pacific

The American emphasis will be on air and sea power, with fewer boots on the ground.

By Richard Halloran

USAF photo by SSgt. Bennie J. Davis III

In a talk he gave in September, the commander of US forces in the Pacific offered a pointed rationale for changes which have begun sweeping through his command and will continue to do so for the next 10 years.

"We must maintain the effective overmatch, the powerful overmatch, we currently enjoy," said Adm. Timothy J. Keating, the commander of US Pacific Command, "whether it's based on numbers, capabilities, or ... a combination of both." Keating added that PACOM's forces "must retain the ability to dominate in any scenario, in all environments, without exception."

He told his audience that Washington must be committed to peaceful solutions to problems, but "must always be prepared to act decisively and, if necessary, alone."

The changes now in train will add up to the most extensive realignment of US military power in Asia since the end of the Vietnam War more than three decades ago.

Washington now is drawing a line in the water, so to speak, from the Sea of Japan southward through the Taiwan Strait and into the South China Sea. The US is withdrawing some forces from South Korea—west of that line—and concentrating on islands to the east of it—in Japan, Guam, and Southeast Asia.

The emphasis will be on air and sea power, rather than ground forces. As Keating said in an interview: "We will have fewer boots on the ground" by 2017.

Some changes will take place over the next five years but, given long planning times, more significant shifts likely will take place in the final five years. USAF Lt. Gen. Daniel P. Leaf, deputy PACOM commander, said, "Over the next decade, this will be an urgent, unprecedented military program."

In this region, it is a long way from almost anywhere to almost anywhere else. To help ease that problem, the US is moving to turn Guam into a forward air and naval hub.

Leaf, who oversees the Guam buildup, said: "It would be easy to get daunted by the challenges we face." The US is confronted with several potential adversaries in Asia.

■ China looms largest in US calculations. The uppermost question is whether the communist giant will use its armed power to attempt a conquest of Taiwan, the island over which Beijing claims sovereignty. Such a move would risk war with the US and the loss to China of a US market that will top $300 billion in 2007.

Opposite, a B-2 bomber flies over the Pacific Ocean on its way to Andersen AFB, Guam. Below, an E-3 Airborne Warning and Control System aircraft taxis past a KC-135 (background) and a B-52H (foreground) at Andersen.

■ North Korea will remain worrisome. Whiffs of intelligence suggest that a succession struggle may be under way. The hermit state's economy, long near dead, is crumbling further. Military forces lack training. Food is in such short supply that rations to the troops have been cut. Still, North Korea's leaders are dangerous because they are ignorant of the outside world and prone to miscalculation.

■ Russia, US officers say, is on the rebound. The Russian Navy's Pacific fleet, once rusting at anchor, has begun to pull itself back together and show some life, helped along by an expanding national economy.

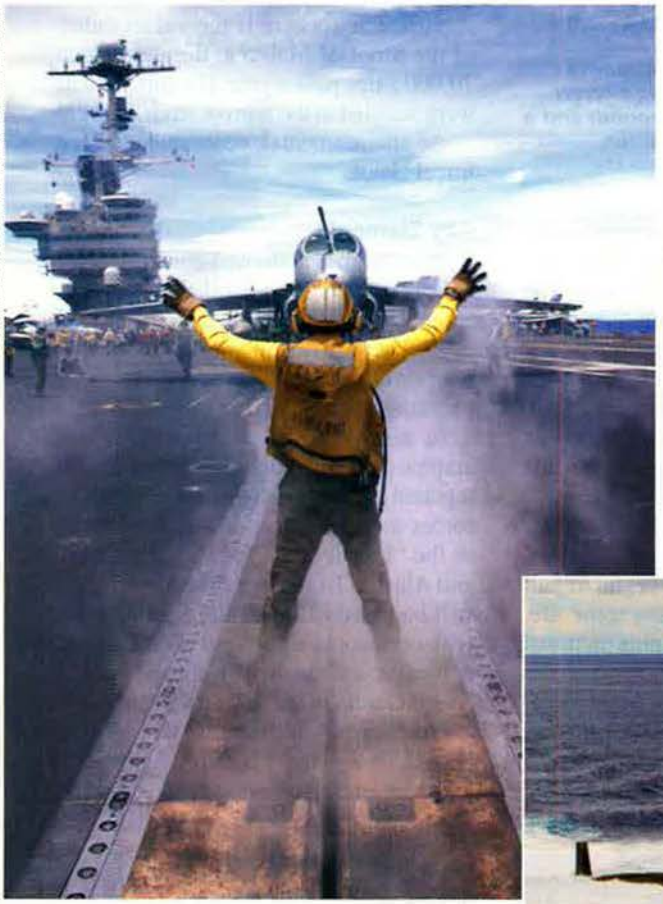
■ Southeast Asia poses a triple threat of terror, piracy, and criminal smuggling. Most US officials seem resigned to the spread of terror networks and possible attacks through Southeast and South Asia. A particular concern is the vulnerability of the Strait of Malacca, through which 70,000 ships pass a year. If a supertanker were scuttled in the narrow strait, it could cause environmental, economic, and political chaos.

Key Elements

Plans for the Pacific realignment call for development of six critical elements that, taken together, might be called PACOM 2017. They are airpower, missile defense, sea power, reformed land forces, special operations forces, and engagement.

In airpower, US commanders will emphasize command and control for integrated aerial campaigns. Some airpower forces are to be stationed on land bases in the "Pacific triad" of Hawaii, Guam, and Alaska. To a lesser extent, air forces will be based in Japan and South Korea, with occasional sorties out of Singapore, Australia, and the British-owned atoll of Diego Garcia in the Indian Ocean.

Other airpower elements will be sea-based. Today, the US Navy keeps five big-deck aircraft carriers in the US Pacific Command region (between the US West



USN photo by Mass Comm. Spc. 2nd Class Mark Logico

Left, a flight deck director guides an EA-6B Prowler onto the catapult of USS* John C. Stennis. *Below, USS* Hampton *moves through Pacific waters as part of the exercise Valiant Shield 2007.

USN photo by Mass Comm. Spc. 1st Class Hana'iei Shimana

Coast and the east coast of Africa). Plans call for adding a sixth big deck, USS *Carl Vinson,* to the US Pacific Fleet in 2010.

Moreover, the Navy will decommission the aged, conventionally powered carrier *Kitty Hawk,* currently forward deployed in Japan, and replace her with the nuclear-powered USS *George Washington,* adding a new net increment of capability.

Airpower plays a key role in overcoming vast Pacific distances because of its ability to swiftly concentrate forces and coordinate quick responses to crises. For that to happen, however, the Air Force needs to build, deploy, and protect networks linking together the disparate forces.

Lt. Gen. Loyd S. Utterback, who commands 13th Air Force at Hickam AFB, Hawaii, said the main Pacific Air Forces effort of the next five to 10 years will be to increase USAF's ability for command and control of airpower. "We will be able to pull it all together in near real time," said Utterback.

The heart of air operations is the Kenney Headquarters, particularly the Maj. Richard Bong Air Operations Center set up in June 2005 at a cost of $32.6 million.

Standing in the center's dim interior, lit by the glow of several hundred computer screens, Col. Timothy L. Saffold, the center's commander, said that Pacific Air Forces can run integrated air campaigns throughout PACOM's area of responsibility from this air operations center. Saffold said the center could, in a contingency, report directly to the PACOM commander.

Big Changes in Guam

"We develop the strategy, do the planning, issue the operational orders, watch the execution, and assess the outcome of operations," he said.

For the Air Force, the biggest physical changes are coming in Guam, where Andersen Air Force Base is being refurbished. B-52, B-1, and B-2 bombers will be in Guam on "permanent rotation," meaning they will be there on four-month deployments from the continental US.

Fighters, including the F-22 Raptor, will deploy to Guam frequently and three Raptor squadrons will be assigned to the Pacific—two in Alaska, one in Hawaii. Three Global Hawk unmanned surveillance aircraft will be posted on Guam in 2009; a fourth may be added later.

When it comes to assuring future air operations, Utterback said, the main concern will be to obtain tankers in sufficient numbers and quality. Air Force aerial refuelers are wearing out, he said, and replacing them is a top priority.

"We are tanker dependent," he declared. "We need them to get there and stay there."

Plans call for *George Washington* to leave its homeport of Norfolk, Va., and relieve *Kitty Hawk,* at Yokosuka, down the bay from Tokyo. Another tacair boost will come in 2010, when *Carl Vinson,* with her 85 aircraft, comes out of a deep overhaul and joins the Pacific Fleet. The F-35C Joint Strike Fighter is scheduled in 2013 to begin replacing earlier versions of the F/A-18.

Except for *George Washington,* America's mammoth Pacific Ocean carriers will remain based on the US West Coast, but they will have access to berths in the western Pacific that will permit them to operate for many months away from homeport. One of these is planned for Guam. The base at Changi in Singapore has serviced carriers for almost 10 years; and Yokosuka is available for carriers other than *George Washington.*

A second key component in the strategy is missile defense. China, North Korea, and other nations in the region are deploying ballistic and cruise missiles. For a year, USAF Lt. Gen. Bruce A. Wright, commander of US Forces Japan, has spoken out about what he calls the urgent need for the US and its allies to build missile defenses to counter potential threats.

"Missiles," said Wright, "are everywhere these days."

Within the last two years, USAF set up a missile defense command center, the Army created a missile defense command, and the Navy integrated

USAF photo by TSgt. Keith Brown

An F-15E (bottom) and an F-22 Raptor, both from the 90th Fighter Squadron, Elmendorf AFB, Alaska, follow the coast of Prince William Sound, Alaska.

Aegis cruisers and destroyers into the defensive system.

The Air Force operations center at Hickam is responsible for coordinating missile defense in the region. It is tasked with bringing together the capabilities of all services and with integrating them into a missile defense.

The 94th Army Air and Missile Defense Command, at nearby Ft. Shafter, Hawaii, has just reached full operational capability. It has radar in northern Japan to track missiles headed toward the US or US forces in Asia and has posted a battalion of advanced PAC-3 air defense missiles to Okinawa in southern Japan.

In Asian nations, said a study by the Center for Strategic and International Studies in Washington, policies toward missile defense range "from official antipathy to enthusiastic embrace."

Japanese actions are being driven by a growing missile threat from North Korea. For Taiwan, missile defense offers the key to the island's defense against China's extensive missile systems. Japan has urged the US to speed deployment of missile defenses. Taiwan is close to desperate for assistance in this regard, because that island faces about 1,000 Chinese ballistic missiles deployed just across the Taiwan Strait.

In contrast, the study found, South Korea's government "sees overt participation in missile defenses as antithetical to its national interests," notably its hope of reconciliation with North Korea and good relations with China.

The United States is expanding its sea power in the Pacific. Plans call for the Navy, within the next few years, to station 60 percent of its nuclear-powered attack submarines to the Pacific, the better to counter China's growing submarine threat and to meet other contingencies, such as the naval operations of a resurgent Russia.

Moving Parts

The Pacific Fleet in future years will deploy 34 attack submarines, up from 26 in 2007. These submarines, though based on the West Coast and in Hawaii, will have access to facilities in Japan, Guam, Singapore, Australia, and Diego Garcia. Three have already been forward deployed to Guam.

To the attack submarine fleet in the Pacific will be added two guided missile submarines, USS *Ohio* and USS *Michigan*. Both are former "boomers"—ballistic-missile-firing boats—that have been converted to carry conventional cruise missiles and sophisticated intelligence equipment.

These warships each can fire 154 cruise missiles, either singly or in salvo. They also can carry up to 66 special operations troops for many weeks to insert them into a hostile shore and retrieve them later. Each submarine will have two crews, Blue and Gold, which will permit them to mount 400-day patrols. The submarines, based in Bangor, Wash., will pull into Guam to change crews and undergo maintenance and resupply.

Land forces are undergoing a significant realignment. The Army expects to withdraw most of its troops from South Korea and to reduce, dismantle, or move the United Nations Command, 8th Army headquarters, Combined Forces Command, and headquarters of the 2nd Infantry Division.

The changes in US ground deployments will generate much attention, because the shifts being considered are politically sensitive. South Korea will see the largest change, for three reasons:

- South Korea can defend itself against North Korea.
- The US must have the flexibility to send troops where they are most needed.
- Many South Koreans have become anti-American.

By year end, the number of US troops posted in South Korea will drop to 25,000, down from the 37,000 that were deployed there not long ago. By 2017, the US could have little more than a small residual force on the peninsula.

As part of this realignment, ground forces remaining in Korea will be moved well south of Seoul to a new base that is to be built near Osan Air Base. Air Force officers say that the service will


USAF photo by TSgt. Jeffrey Allen

A pair of A-10 Thunderbolt II aircraft releases flares over the test range at Osan AB, South Korea, during practice for a live fire exercise.

USAF photo by TSgt. Shane A. Cuomo

SSgt. Gabriel Coronado and SSgt. Arthur Hamabata install the wings and fins on an AIM-7 missile at Hickam AFB, Hawaii.

continue to maintain a force of fighters at that air base.

Combined Forces Command—the command element that is led by an American with a South Korean deputy and in which Americans and Koreans serve side by side—will disappear in 2012 when South Korea assumes control of its forces in both peace and war.

The proposals would also have the four-star general who commands US forces in Korea, currently Army Gen. Burwell B. Bell, moved to Ft. Shafter to command US Army Pacific. That would put the Army's Pacific commander on a par with Air Force and Navy four-star commanding officers.

The Army also plans to assign two or three new Stryker brigades to Alaska and Hawaii. Almost half of the Marine Corps' forces in Japan will move to Guam, but Marine Forces Pacific will still command two-thirds of the combat troops of the USMC.

Marine Forces Pacific will keep about the same number of troops in Okinawa, Hawaii, and California but 8,000 of the 18,000 marines in Okinawa will move to Guam in 2014 to 2015. Tokyo, which wants to reduce friction between US troops and local citizens in Okinawa, has agreed to pay between $20 billion and $30 billion for the move and associated costs. Another 9,000 Marine Corps dependents and civilian employees will also move.

A critical but so far unanswered question: Will the Air Force and Navy be able to provide airlift and sealift sufficient to move the ground forces as needed? New C-17 transports are being stationed in Hawaii and Alaska. The Navy today keeps about a dozen amphibious transport ships in the region, and plans to build more to meet the need.

Special Operators Needed

Still, some officials question whether the planned lift will be adequate, given the huge requirement.

The fifth Pacific growth area is in special operations forces. Air Force combat controllers and SOF pilots, Army Green Berets and Rangers, Navy SEALs, and similar units have been active in small, largely secret operations in the Philippines, Indonesia, and Malaysia and in fighting Islamic terrorists around the Sulu Sea.

Special operations forces have been targeting the remote islands running from the Philippines, where Muslim terrorists train, to Malaysia and Indonesia. Terrorists hop from one island to another, then fade into the population. PACOM officers contend that SOF troops are gradually breaking up the terrorist cells there.

Radical Muslim movements in Southeast Asia are homegrown but have become affiliated with the al Qaeda terrorists led by Osama bin Laden. In operations against them, said a senior officer, "we work through, by, and with local forces and citizens."

SOF leaders expect someday to be training anti-insurgent forces in Thailand, Bangladesh, India, Nepal, and Sri Lanka, all nations struggling with expanding terrorist threats. SOF units are also prepared to contribute to counterdrug and countersmuggling operations.

The special operators will be affected by the reduction of US ground forces in Asia. "The more the conventional force goes home," said a SOF officer in Hawaii, "the more a SOF unit will be out front." In South Korea, a handful of SOF troops are expected to stay behind after the regulars have left.

Finally, there is engagement, which sends a strategic message to allies and partners that US military forces will help defend them if needed. Engagement includes visits by the Pacific commander, military exchanges, combined training, port calls by warships, seminars to which officers from all over the Pacific are invited, disaster relief, and humanitarian operations.

PACOM is constructing a $20 million warfighting center at Pearl Harbor that will use simulations and wargames to train American officers and those of allies. The facility, scheduled to be completed in 2009, is "expected to bring thousands of visitors to Oahu from

USAF photo by TSgt. Jeffrey Allen

An A-10 returns to its hardened shelter after a training mission at Osan Air Base.

USAF photo by A1C Kelly Timney

Airmen prep an F-15C fighter for departure from Kadena AB, Japan, before it heads to Andersen Air Force Base.

around the world to attend planning conferences and military exercises," said a PACOM statement.

Engagement has spread to the intelligence world, where operatives are reticent about sharing anything. The United States and Malaysia in early September arranged a gathering in Kuala Lumpur of 19 national intelligence chiefs. China and Russia were invited but declined to attend.

The Malaysian chief of armed forces, Gen. Abdul Aziz Zainal, told the gathering that, given the prevalence of alienated individuals, militant organizations, and other nearly invisible enemies, "it becomes crucial for us to cooperate and share intelligence to counter them."

Warships also undertake humanitarian missions critical to engagement. This summer, the amphibious assault ship USS *Peleliu,* which usually transports 1,900 combat marines, sailed on a four-month medical mission to the Philippines, Vietnam, Papua New Guinea, Solomon Islands, and Marshall Islands.

No Dividing the Pacific

Engagement is also intended to deter potential adversaries. A former Pacific commander, Adm. Dennis C. Blair, once told Congress that military exchanges were intended to send China a message that, while Washington did not seek war, "don't mess with us."

On another occasion, a Chinese admiral was threatening military action against Taiwan that might involve the US. Blair listened for a minute, then said: "Look, you should understand that I own the water out there and I own the sky over that water. Don't you think we should talk about something more constructive?"

During a May visit to China, Keating encountered a Chinese admiral who suggested that the US and China divide control of the Pacific Ocean between them, with China maintaining order in the western half while the US confined itself to the eastern half. A PACOM officer said Keating told his Chinese interlocutor: "We're not going to give it up, and we want you to know that."

The US military presence in the theater has been shrinking for nearly 40 years. Retrenchment was presaged by President Nixon in Guam in 1969. Nixon said nations in Asia should look to their own defenses. At that time, the US had in Asia 746,000 uniformed troops, of which 510,000 were in Vietnam. By the late 1970s, the number was down to about 105,000.

A turning point came in the early 1990s. The volcanic eruption of Mount Pinatubo in the Philippines in 1991 made Clark Air Base unusable. Soon after, Manila withdrew permission for the US to use Subic Bay naval base. Adm. Charles R. Larson, the Pacific commander then, proclaimed a policy of "places, not bases" and negotiated access to a naval base in Singapore.

In 1998, Singapore constructed a berth that can accommodate an aircraft carrier. The Navy found that the repairs performed there were better than those at Subic Bay. As added bonuses, the US did not pay rent and stationed only 150 people at the Singapore facility.

President George W. Bush's first Secretary of Defense, Donald H. Rumsfeld, began a process that would lead to greater US reliance on air and sea power in the region, simplified chains of command, and a reduction of forces.

By the end of 2006, US military personnel in Asia were down to 77,000.

Defense Secretary Robert M. Gates has essentially continued the planned changes. The current overhaul of the US presence in the Pacific has been a long time coming, and the new direction is clearly needed. ■

USAF photo by TSgt. Keith Brown

A C-17 from Elmendorf Air Force Base banks over Alaska's Chugach Mountain Range after performing an airdrop mission.

Richard Halloran, formerly with the New York Times *as a foreign correspondent in Asia and as a military correspondent in Washington, D.C., is a freelance writer based in Honolulu. His last article for* Air Force *Magazine, "China Stands Up," appeared in the August issue.*

USAF photo by SSgt. Greg L. Davis

Left, a tail gunner on the lowered ramp of an MH-53 Pave Low helicopter. Below, basic trainees in line for uniform items.

Confounding the doomsayers, the services are attracting and holding sufficient numbers of high-quality troops.

Volunteers in a Time of War

By Megan Scully

Despite 17 straight years on a wartime footing, the Air Force continues to post impressive recruiting and retention numbers. The same holds true for the other services, which have been constantly deployed for about six years. Each armed service either meets or comes very close to meeting its targets on a month-to-month basis.

The nation has heard years of doom-and-gloom predictions about the imminent demise of the all-volunteer military force. It is unsustainable, many have claimed, and can't stand up to the pressure of a long war.

Those in charge of actually building the professional military, however, say the volunteer force is a success and there is no need to drastically lower troop standards or reinstate the draft in order to attract adequate numbers of high-quality men and women.

Preserving that success has not been easy, and won't become any easier in years ahead.

Senior officials within the Air Force and the Office of the Secretary of Defense concede they face a wide range of challenges as they try to build tomorrow's force while also maintaining the high standards that have become common across the military services.

The hurdles include the high operational demand on US forces, but the personnel picture is far more complex than that. The services are contending with a shrinking pool of eligible recruits and low unemployment rates in the civilian sector, to name just two factors causing problems.

USAF photo by SSgt. Jeremy Larlee

The recruiting and retention picture is "one of those subjects that if you start sitting back and putting your feet up on your desk, thinking you got it all set, it'll bite you," said Maj. Gen. Anthony F. Przybyslawski, the commander of the Air Force Personnel Center at Randolph AFB, Tex. "It's a living issue we're always working on."

And the Air Force is, indeed, working

USAF photo by Capt. Denise Boyd

TSgt. Jim Jochum loads a 40 mm gun aboard an AC-130U Spooky Gunship. Jochum is deployed with an Air Force Special Operations Detachment.

on the issue—for the first time in recent history, USAF is building a professional recruiting force. This is one of several efforts to ensure that the service attracts and retains large numbers of high-quality airmen.

Other personnel efforts include bonuses and the growing popularity of so-called Development Teams. These teams review career plans for officers, and are aimed at getting the right people in the right job.

As the military tries to build, shape, and mold its future force, the Air Force has its own unique challenge: It is decreasing its size by 40,000 troops in an effort to become a leaner, more efficient force.

That reduction in size does not belie any easing on the part of the mission. Air Force officials are working overtime to make sure that the skills in the smaller force are balanced to meet all operational needs.

"There is a bit of a misconception that the Air Force is on a bit of a recruiting holiday," said Lt. Gen. Roger A. Brady, the Air Force's deputy chief of staff for personnel. "When you're getting smaller, your recruiting challenges don't necessarily become less."

At the macro level, the Air Force's personnel efforts are keeping pace with their goals. Between 2001 and 2006, for instance, the recruiting force accessed 160,603 airmen, a 101 percent mission accomplishment rate.

The active duty Air Force and Air National Guard met their overall officer and enlisted retention goals in Fiscal 2006. Only the Air Force Reserve came up slightly short—but the Reserve still came within 0.8 percent of its goal.

A Service-Oriented Generation

However, a closer look at the situation shows some potential cracks in the dam both now and in the future.

Brady said that throughout the service, retention is starting to go "soft," especially for Zone B and Zone C airmen—those who have served between six and 14 years. The Air Force, Brady said, is taking "a hard look at that."

Officials are closely examining the highest demand specialties. Those include pararescuemen, combat controllers, and explosive ordnance disposal technicians.

Within the Air Force, slightly more than 50 percent of the force has deployed overseas over the last six-plus years, with 35,000 airmen in the US Central Command area of operations on any given day, Brady said.

While those numbers pale in comparison to the Army and Marine Corps, it is an unusually extended period of high operational tempo and a large number of deployments for an Air Force that prides itself on its ability to "deploy in place" for many missions.

Air Force and Pentagon officials acknowledge that the likelihood of deploying—particularly for members of some in-demand specialties—leaves many parents, teachers, and other "adult influencers" reluctant to recommend military service to potential recruits.

"For the military, the challenge is getting the accurate word out to not only the youngster, but also to parents, teachers, coaches, so they have the straight information," said Bill Carr, acting deputy undersecretary of defense for military personnel policy.

Military surveys have indicated that those who know the most about military service are the most likely to enlist—a fact that makes spreading the word a top priority among recruiters, Carr said.

Web sites such as myfuture.com, an interactive site on military service, as well as word of mouth among soldiers, lawmakers, and other influencers, have helped get information out and keep recruiting numbers generally at their goal rates. Word of mouth will continue to be important as operations continue overseas and jobs in the civilian sector are plentiful.

Still, recruiting "has been tough work all the way through," Carr said, because parents are now less likely to recommend military service to their children, and the competition with the private sector is fierce.

Aside from get-out-the-word efforts, there is another factor that has kept recruiting rates high: a propensity to serve.

"Demographers say this generation, the millennial generation, is more interested in service, whether it is to community or to nation," Carr said. "They 'get it' with respect to civil opportunities, and we're fortunate [this generation] came along" when it did.

For those already in the military, two of the biggest decision-making factors are loyalty to the institution and loyalty to each other. In wartime, a desire to remain during the crisis carries much weight.

"We knew that was a feature of those who entered the military," Carr said. "I didn't realize how strong of a feature it would turn out to be."

Adds Przybyslawski, "They want to be part of the war. They feel that being in the Air Force is important and they can contribute."

There are concerns that ongoing demands are forcing the military to lower its standards for new recruits. The heavily deployed Army, in particular, has had to lower recruiting standards to attract enough new soldiers to fill its growing ranks.

The Pentagon contends that the mil-

itary's latest crop of new recruits is among the highest quality in the country's history.

Roughly four percent of the Army's recruits rank in the bottom third in aptitude—compared to two percent just a few years ago. (While the ratio has doubled, those numbers were roughly 50 percent for the Army in the post-Vietnam era.)

"The military is like Lake Woebegon, where everybody is above average," Carr said. This factors large in the Pentagon's universal rejection of a draft, a move that is not even on the table for consideration.

When asked whether there were any discussions to move away from the all-volunteer force, both Carr and Brady responded with a quick and resounding, "No." Even if recruiting and retention becomes a heavy problem down the road, personnel officials do not see a draft as a viable or attractive alternative.

No Draft, No Way

"We have spent approximately zero time discussing that," Brady said. "Not even in [the] deepest, darkest [part] of our soul have we discussed" reinstating the draft. "The professional force, the all-volunteer force, as far we're concerned, is a huge success for us."

For starters, a draft would result in a force that is top-heavy in new troops—with a projected 75 percent of the military serving just a two-year term, estimated Carr. That contrasts sharply with today's volunteer force, where half of the military has been serving for more than two years.

Meanwhile, it is difficult in today's environment, where complex weapons systems dominate the battlefield, to train soldiers to run the high-tech equipment.

With a draftee force, the military would be forced to create "instant sergeants," promoted after just 18 months instead of the customary four years. These junior NCOs would be charged with running systems that need a far more experienced hand, Carr said. Maintenance, system, and unit performance would undoubtedly "fall off," he added.

But perhaps the biggest selling point of the all-volunteer force is just that—it's made up of volunteers who have chosen to report for service. That fact alone contributes to what military officials say is sustained high morale among troops, despite the ongoing pressures of deployments.

"If you want to go to see high morale in people who are proud of what they're doing, you need to visit a deployed Air Force unit," Brady said.

Overall retention rates may have more to do with collective family experiences than the individual soldier, sailor, airman, or marine. Officials acknowledge that in wartime the relationship between the family and the service clearly can become strained.

"Separations are tough on families," said Przybyslawski. "Retention decisions are made by families, more so than by individuals."

Przybyslawski said the service has no way to solidly measure the influence of families on re-enlistment decisions. But he always talks to separating airmen in his organization to learn the root cause of their decision. And when the family decides it wants a more stable lifestyle, the airman typically does not waver from that.

Somewhat surprisingly, however, informal surveys indicate that support from spouses for military service has remained almost flat. The level of support coming from families whose spouses have deployed is only slightly lower than in those who have not, Carr said.

To keep support intact, it is incumbent on the military to "honor, request, and value their sacrifices," Carr said. "Then they'll identify with the military and remain in the military."

Many—both within the military and on Capitol Hill—believe the best way to keep the faith with families is to ensure as predictable a deployment schedule as possible. Senate Democrats tried, and failed, in September to pass language

Filling Out the Air National Guard

Despite recent successes, the Air National Guard is beginning to see its recruiting slip a bit, and it remains an area of concern. In August, both the Air Force and Air Force Reserve met their accessions goals—but the Air Guard fell four percent short.

Complicating Air Guard recruiting is the 2005 round of Base Realignment and Closure actions, which stripped airframes from a number of states and ordered a large number of mission changes. In many cases, ANG units are now or will soon be controlling unmanned aerial vehicles—not manned fighters.

However, this realignment may only produce a brief blip in Guard recruiting and retention, and may be something that will soon correct itself.

"You're talking about taking pilots out of a cockpit and going into a pilotless, nonflying UAV mission, so there may be some short-term hiccups there," said Army Lt. Gen. H. Steven Blum, chief of the National Guard Bureau. "But long term, I don't see any adverse effect. In fact, I see positive long-term" effects.

Indeed, interest is so high in the emerging UAV mission that classes are quickly filling up at the Air Force's UAV "schoolhouse" at Creech Air Force Base in Indian Springs, Nev.

"As requirements increase for UAVs, we've been filling the schoolhouse," said Maj. Gen. Anthony F. Przybyslawski. "We've got that place going. On occasion, the schoolhouse isn't big enough."

USAF photo by MSgt. Terry L. Blevins

Left to right: A1C Bradley Smith, SSgt. Jessica German, and A1C Gerardo Gonzalez lift an AIM-9 Sidewinder missile before loading it onto an F-16.

mandating that active duty troops receive as much time home as deployed, while reservists would spend three years at home for every year deployed.

The measure, introduced by Sen. James Webb, D-Va., as an amendment to the FY08 defense authorization bill, fell four votes short of the 60 needed for passage amid White House concerns that the language would tie the military's hands and greatly impede future deployments to Iraq and Afghanistan.

Bonus Boosts

But earlier this year, Defense Secretary Robert M. Gates announced that it would be his goal to have active duty troops at home twice as long as they are deployed overseas. Reservists, meanwhile, would spend five times as much time at home as deployed.

While that goal remains far less than a reality, given current operational demands, military officials see it as a move toward a more stable deployment schedule.

Bonuses are a key tool to incentivize new recruits and troops who re-enlist. House Appropriations Defense Subcommittee Chairman John P. Murtha, D-Pa., estimates that budgets for bonuses have grown from $180 million to $2 billion this year.

The Air Force is currently reviewing its bonus structure and weighing it against the service's other financial demands. Brady noted that it is "not unrealistic" that the service will increase bonuses over time.

"We may have a smaller force, but it becomes even more critical than ever that we have the right skill sets," he added. "We'll take a hard business look at that and see what needs to be done."

USAF photo by TSgt. Shane A. Cuomo

MSgt. Cliff Devoe performs an engine start-up check on an LC-130 Hercules belonging to the New York Air National Guard.

But bonuses aren't the only option the Air Force is pursuing.

Perhaps most notably, it is making recruiting a specialty—enabling part of the force to remain in recruiting far longer than the short duty that has been customary for recruiters.

The Career Recruiting Force program, which began in 2006, will allow some more senior recruiters to remain on the job. This will create far more experienced officials to reach out to potential recruits—and train the new corps of Air Force recruiters.

Officials say the goal is to provide consistency and leadership in USAF's recruiting force.

To be eligible, recruiters must be a technical sergeant or an E-6 select with five years of recruiting experience, or a highly qualified master sergeant with two years' experience. The so-called professional recruiters now number 432 airmen out of the Air Force's 2,571-person recruiting force.

The program is still in its infancy, but Brady said he believes it will "work to our advantage."

Meanwhile, the Air Force is also focusing heavily on Development Teams to match airmen to specialties. Przybyslawski recalled that, just a few years ago, Development Teams were somewhat ignored. "Now every person I know knows when the [Development Team] meets," he said.

In September, the Air Force Personnel Center announced the Airmen Development Plan, a Web-based program that integrates electronic records, duty histories, and assignment preferences into one platform. The goal is to better manage and nominate personnel for command, leadership, and developmental education opportunities. ■

Megan Scully is the defense reporter for National Journal's CongressDaily *in Washington, D.C., and a contributor to* National Journal *and* Goverment Executive. *Her most recent article for* Air Force *Magazine, "Worse Than the Hollow Force," appeared in the July issue.*

Intensive Care for the Medical Service

The Air Force Medical Service has chronic recruiting and retention problems, despite efforts for years to turn around the lagging rates.

Indeed, the Air Force personnel and recruiting communities recently recreated the Recruiting and Retention Investment Strategy Council, which is aimed at better meeting the service's future medical requirements by ensuring proper investment in both recruiting and retention.

Across the board, recruiting statistics for fully qualified health care professionals average 56.5 percent of the goal, according to Air Force testimony before the House Armed Services personnel subcommittee this year. Recruiting rates for physicians are just 9.4 percent of the goal, while dentists are at 24.1 percent.

The nurse recruiting average was far better, at 90.2 percent, while biomedical sciences and medical administrators met recruiting targets.

On the retention side, retention at the 10-year point is around 27 percent for physicians, down from 32 percent historically, and 37 percent for nurses, down from the 44 percent historical average.

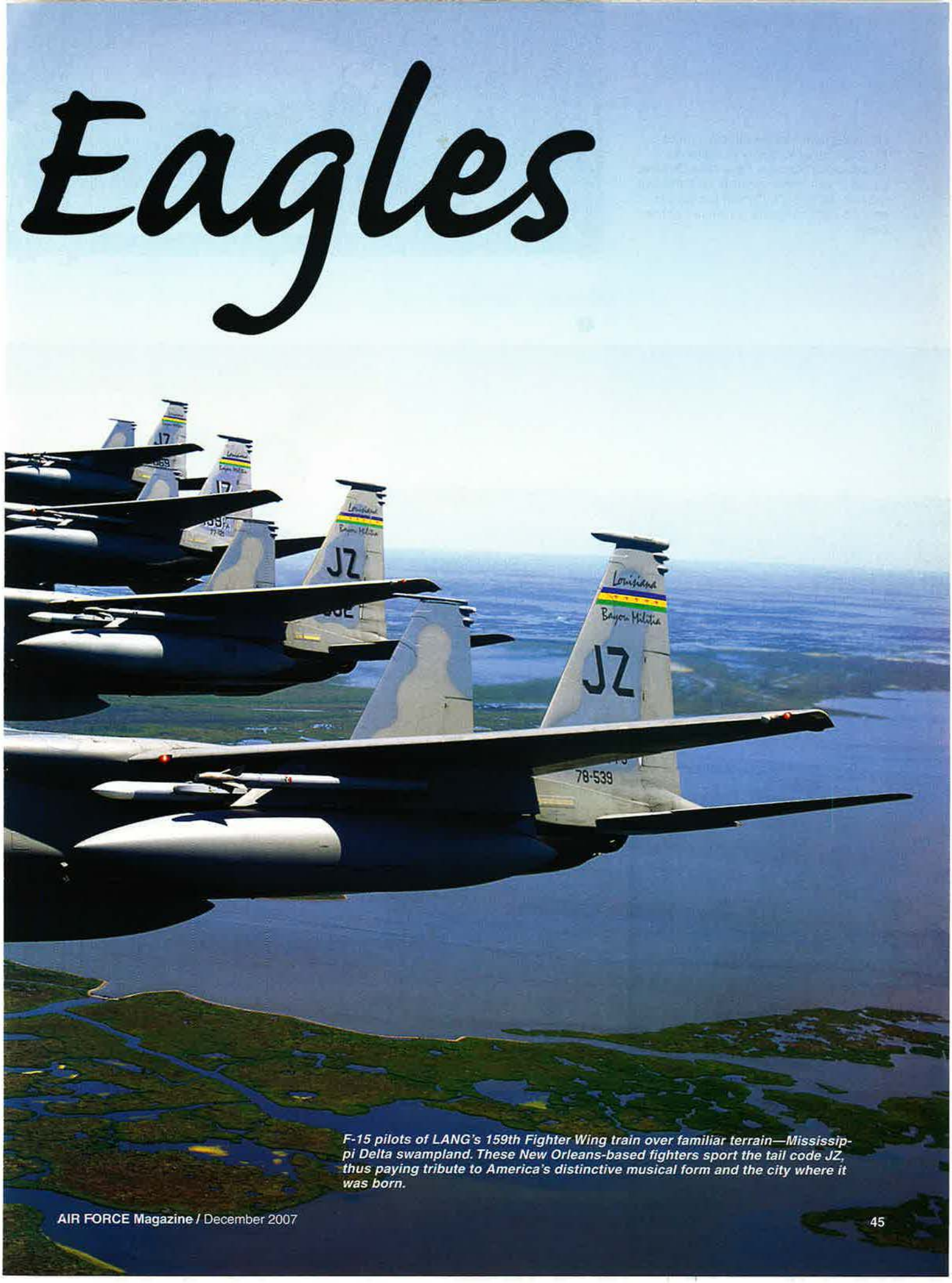
Other specialties have seen some small retention increases, with dentists at 26 percent compared to a 21 percent historical average and biomedical services officers now at 45 percent, five percentage points higher than the historical average.

The Jazz

The Louisiana Air National Guard keeps on trucking in the land of gators, jambalaya, and all that jazz.

Photography by Ted Carlson

Eagles



F-15 pilots of LANG's 159th Fighter Wing train over familiar terrain—Mississippi Delta swampland. These New Orleans-based fighters sport the tail code JZ, thus paying tribute to America's distinctive musical form and the city where it was born.

|1| LANG personnel scramble to their F-15s at the alert facility at Naval Air Station-Joint Reserve Base New Orleans, La. *|2|* F-15A fighter departs on a training mission. *|3|* First Lt. Quintin Lebkowski, an F-15 pilot, mans his jet aircraft at the base.

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|4| F-15 soars over Louisiana, with another Eagle and two F-16s in trail. *|5|* TSgt. Anton Blouin (l) and SSgt Wayne Bush work on one of the 159th's F-15 fighters. *|6|* F-15C (rear) and F-15A taxi to position on the New Orleans runway.

I1I The city of New Orleans rolls out below these four Eagles of the 122nd Fighter Squadron. I2I LANG fighter displays the wing's favored nickname—"Bayou Militia"—along with the famous JZ marking. I3I Maj. John Manix checks six.

I4I F-15C goes vertical over the Gulf of Mexico, accompanied by an F-16 of the 56th Fighter Wing, Luke AFB, Ariz. I5I F-15C and F-16 meet at the merge in overwater training.

I1I Lt. Col. Jim Bong sits at the controls of his F-15A. (Yes, he's related—being the great nephew of Maj. Richard Bong, Medal of Honor awardee and all-time top Air Force ace.) I2I Swampland stretches out for miles below an Eagle. I3I With the Crescent City in the background, this Jazz Eagle gets airborne.

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I4I A crew chief prepares this LANG F-15C for a mission at the alert facility. I5I This F-15 gets out of Dodge in a hurry. I6I SrA. Eric Hall guards an F-15 inside an alert facility shelter.

|1| *Four Jazz Eagles form up for a pass over their New Orleans base.* *|2|* *Lt. Col. Jim Bong prepares for another training mission.*

|3| *F-15C and F-16 break away from each other in recent combat training.* *|4|* *Patch of the 159th Fighter Wing bears a fleur-de-lis, befitting Lousiana's French heritage.* *|5|* *The wing's 122nd Fighter Squadron, part of the "Bayou Militia," also sports the stylized iris flower, long associated with the French monarchy.*

|1| *F-15C pilots on training missions become only too familiar with the unique, nearly submerged terrain of south Louisiana, as seen in this photo.* *|2|* *First Lt. Lance Bowlin of the 122nd FS shows off his night vision goggles before a night-training sortie.* *|3|* *Bayou Militia airmen (l-r) SSgt. Brandon Koenig, TSgt. Antonio Gongora, and TSgt. Eric Lemoine—all of the 159th FW—load a live AIM-9X Sidewinder missile in the alert barn.*

Louisiana ANG photo

|4| *The ramp at the 159th FW filled up with tents, awnings, and buses in the wake of Hurricane Katrina, which hit New Orleans in late August 2005.* *|5|* *Four Jazz Eagles form up.*

|1| *New Orleans, submerged and reeling from Katrina's blow.* *|2|* *F-15C screams upward over the Gulf of Mexico.* *|3|* *F-15C makes a striking silhouette when that evening sun goes down.*

Louisiana ANG photo

|4| *F-15C, piloted by Maj. Kris Murphy, pulls out of the alert facility as a crew member sends it on its way.* *|5|* *For F-15C driver 1st Lt. Lance Bowlin, the flight comes to an end.* ■

A Czar in the Making

The Cold War is dead, but Vladimir Putin is very much with us.

By James Kitfield

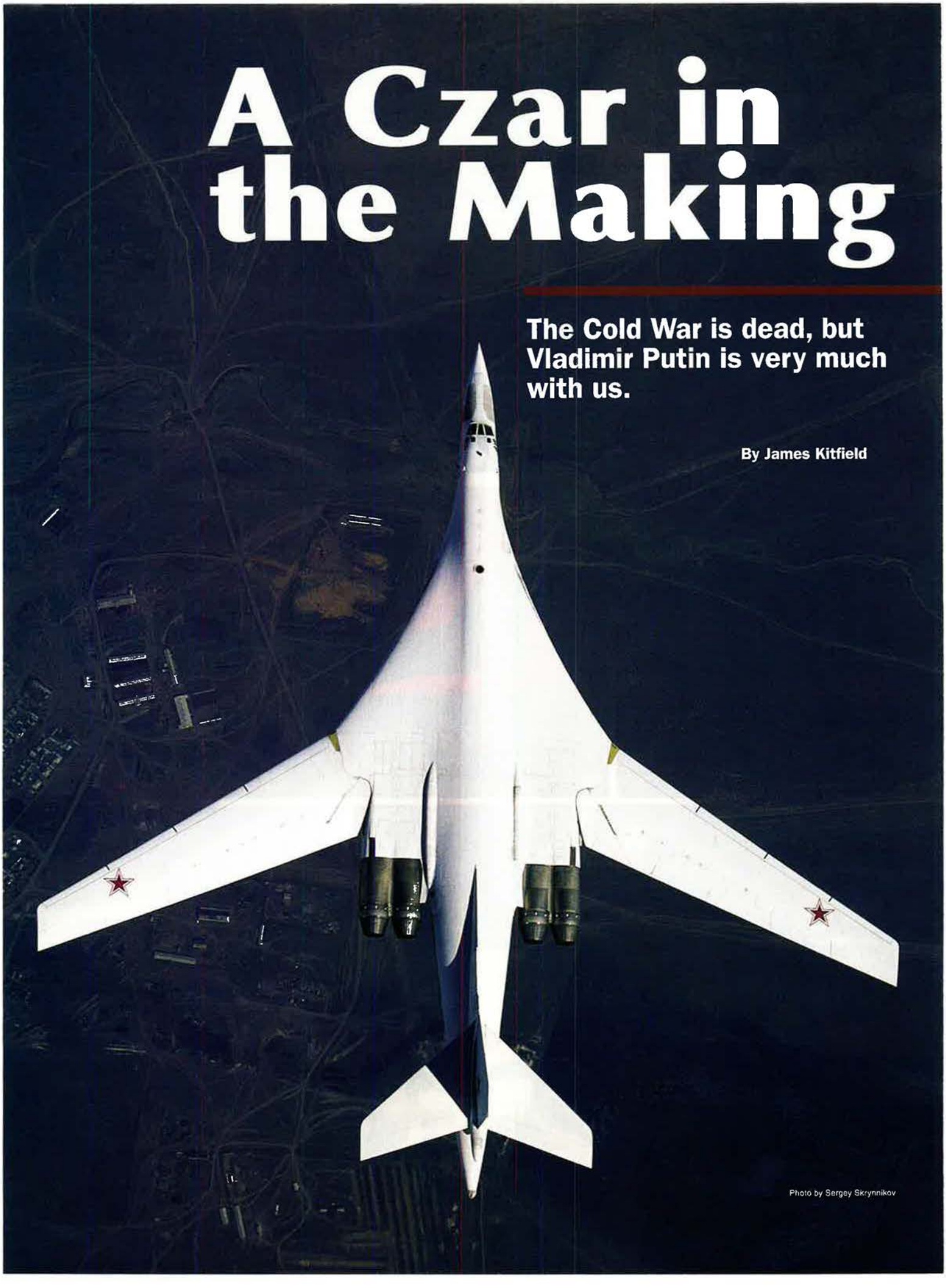

Photo by Sergey Skrynnikov

AP photo by Anja Niedringhaus

Corbis photo

Opposite page: A Russian Tu-160 Blackjack, advertised as the world's largest and fastest strategic bomber. At left, Vladimir Putin waves as he arrives in Frankfurt, Germany.

Flush with oil money and fuming at perceived slights of recent years, a revanchist Russia is emerging on the world scene—and it is not happy. Many are startled at the angry, combative tone Moscow displays toward the West in general and the United States in particular. They wonder where it all will lead.

Russian President Vladimir V. Putin has tightened the vise on political opposition and press freedom at home. At the same time, the ex-KGB colonel has lashed out at Washington and its allies around the world. He displays an authoritarian streak worthy of a Romanov.

"The United States has overstepped its borders in all spheres—economic, political, humanitarian—and has imposed itself on other states," Putin said in an incendiary speech last February at the Munich Conference on Security Policy.

Russia's president has made invidious comparisons between the Bush Administration and Nazi Germany's Third Reich. He characterized the demise of the communist Soviet Union as "the greatest geopolitical catastrophe of the century."

Putin is hostile to US plans to station elements of a missile defense system in Eastern Europe. Indeed, he has hinted that any such move would force Moscow to resume targeting Western Europe with its nuclear weapons.

He has suspended Russian participation in the Conventional Forces in Europe treaty, in theory freeing Moscow to once again deploy massive tank formations west of the Ural Mountains, and threatened to leave "peacekeeping" troops in Georgia and Moldova indefinitely.

Western foreign affairs experts are most alarmed by Putin's bent for following up his inflammatory rhetoric with provocative action. Last year Moscow cut off deliveries of Russian oil to Europe in a dispute with one of its neighbors. Many regarded it as energy blackmail.

Putin has pointedly refused to extradite a former KGB officer accused by British authorities of using Polonium 210—a rare radioactive substance—to fatally poison a Russian expatriate, former KGB officer Alexander Litvinenko, in London. Litvinenko had earlier broken with the Kremlin.

New Missiles, New Tests

In all of this, analysts discern a disturbing pattern. Many of Putin's critics, within Russia and around the world, have been winding up in jail or dead.

Putin last summer announced that, for the first time since the end of the Cold War, Russian strategic bombers were resuming regular long-range combat patrols that bring them into close proximity to Western forces and borders.

In July, two Russian bombers skirted the coast of Norway and briefly entered British airspace before departing under RAF fighter escort. In August, Russian bombers flew near Guam during US military exercises in the Pacific.

In that same month, a Russian-led submarine team planted a titanium flag on the North Pole, claiming it as sovereign territory, and Russian bombers practiced launching cruise missiles during Arctic exercises.

Recent press reports suggest that Moscow may be negotiating with Syria for the use by the Russian Navy of two Mediterranean ports at Tartus and Latakia.

Russia and China, along with other members of the six-nation Shanghai Cooperation Organization (SCO), held the group's most ambitious wargame ever, which included 6,500 troops and more than 100 aircraft.

SCO is a regional alliance sometimes called a "club for dictators," in recognition of a deeply autocratic membership that includes Russia, China, Uzbekistan, Kyrgyzstan, Kazakhstan, and Tajikistan. During wargames in 2005, the SCO demanded that the US vacate Central Asian military bases used to support operations in Afghanistan—leaving little doubt about who would fill the security vacuum.

This summer, amid Russia-Georgia tensions over Moscow's continued stationing of "peacekeeping" troops in Georgian regions of Abkhazia and South Ossetia, Georgia claimed a Russian warplane had invaded its airspace and fired an anti-radar missile at a new Georgian mobile radar site. Russia denied this, but an outside probe concluded, in effect, that Moscow was lying.

In recent months Russia has tested new land- and sea-based intercontinental missiles and what it called "the father of all [conventional] bombs."

To cap off all of this, Russia's First Deputy Prime Minister Sergei B. Ivanov has announced a $200 billion military modernization program designed to replace half of Russia's current military equipment with new systems by 2015.

Where is all of this headed? Can a Russia that was considered the sick man

Photo by Sergey Skrynnikov

Russia has 32 Tu-95MS Bear-H bombers such as the one shown here being refueled by an Il-78 Midas tanker.

of Eurasia as recently as the late 1990s truly be spoiling for a Cold War-style showdown with the West?

At least part of Putin's confrontational approach can be chalked up to a desire to erase the painful memories of the "lost decade" of the 1990s—which included the breakup of the Soviet empire, devaluation of the ruble, and a spectacular debt default—and reclaim what Russians feel is their rightful role as a major player on the world scene.

Now, with economic growth fueled by heavy sales of record-price oil, Russia's gross domestic product has expanded sixfold—from $200 billion to $1.2 trillion—over the past eight years. Russian GDP is still climbing, said Andrew C. Kuchins, the director of the Russia and Eurasia Program at the Center for Strategic and International Studies in Washington, and the roughly 2.7 percent of GDP that Russia devotes to its military thus has seen its absolute value rise accordingly. Russia now spends some $30 billion on its military annually, making the Russian defense budget sixth in the world in terms of overall size.

Angered by Washington's post-Cold War insistence on expanding the NATO alliance to Russia's borders and its support for democratic revolutions in Russia's "near abroad," Russian leaders evidently believe the US, with its military tied down in Iraq and Afghanistan, is due for a little no-cost payback.

Kuchins noted, "There are certainly a lot of worrisome signs emanating from Russia that are reminiscent of the Cold War, but I'm fairly confident that they don't really want to get into another bipolar, global contest with the United States."

Others see Moscow plunging toward a more confrontational and assertive approach, with uncertain meaning.

Now in his eighth year in office, Putin has cowed his political opposition and solidified his power by elevating former KGB cronies—almost all of whom have deeply hostile views of the West—to an estimated two-thirds of the top positions in the Kremlin hierarchy.

Hot Rhetoric

Putin has also learned that rhetorical jabs at the United States and NATO countries play well at home and feed his image as a tough leader. He enjoys a sky-high 80 percent public approval rating.

With Russia flush with cash and eager to diversify its economy, it also makes sense to many observers that Moscow would decide to invest much more heavily in a military-industrial complex that honed its skills as a major exporter of weaponry during the Cold War arms race.

"A lot of Putin's hot rhetoric and the military buildup in Russia are driven by internal politics," said Pavel L. Podvig, a researcher at the Stanford University's Center for International Security and Cooperation and a former researcher at the Moscow Institute for Physics and Technology. It is, said Podvig, "a way for him and his people to assert themselves as tough guys."

Russia's new $200 billion modernization program, covering the years 2007 through 2015, focuses on strategic forces. It may have only a moderate impact in transforming Russian ground and tactical aviation forces that suffered a decade of neglect in the 1990s, and which fought two wars in Chechnya.

Especially since the breakup of the former Soviet Union and the dismantlement of a significant portion of its conventional military force structure, Russian military doctrine has focused on strategic nuclear forces as the chief deterrent against attack or intimidation by any major power. As such, Russia's nuclear forces received relatively favorable treatment and funding even throughout the 1990s, and they maintain the largest stockpile of nuclear warheads in the world.

Russia's Strategic Rocket Forces constitute a separate branch of the armed forces. As of January 2007, it operated 489 missile systems capable of carrying 1,788 warheads, according to Russian officials.

This missile force includes 76 SS-18

Photo by Mikhail Kuznetsov

A Mil Mi-8MTV Hip helicopter offloads Russian troops during an exercise. Despite heavy investment in new equipment, the Russian military is not what it once was.

Photos by Mikhail Kuznetsov

Left, Russian special operations paratroopers gear up for an exercise. Above, soldiers with the Russian Army "guard" an armored personnel carrier during a drill.

ICBMs, each capable of carrying 10 warheads; 123 SS-19s, each capable of carrying six warheads; 243 road-mobile, single-warhead SS-25s; and 47 advanced SS-27s, also single-warhead missiles.

The SS-27 is advertised as being able to penetrate any known missile defense system.

Russia's 37th Air Army is Russian strategic aviation, and, as of January 2007, it operated 79 strategic bombers capable of carrying up to 884 long-range cruise missiles. These include 32 Tu-95MS Bear and 15 Tu-160 Blackjack bombers.

The Blackjacks are advertised as the world's largest and fastest strategic bombers. The Russian air forces and navy also operate 162 other versions of Tu-22M bombers.

"Russian security policy is all about prestige and economic benefits, and as such their current modernization is focused on strategic nuclear forces," said Lowell H. Schwartz, an international policy analyst with the RAND Corp. who is working on an upcoming report on the Russian military. "That's where the Russians see themselves as our equals, and they are constantly trying to maintain the prestige of that position."

As part of its tactical aviation modernization program, Russia is currently developing a fifth generation fighter aircraft to replace MiG-29 and Su-27 fighters in the Russian Air Force, with initial flight anticipated later this decade.

The Air Force is reportedly planning to field advanced MiG-29SM or SMT Fulcrum fighters and Su-34 fighter-bombers to replace older models in its tactical fighter inventory, and it has an estimated 386 advanced MiG-31 interceptors. In all, the Russian Air Force has a reported total of 3,365 aircraft, 2,400 of which are combat aircraft.

Advanced Russian fighters are well-respected around the world and are aggressively marketed to potential adversaries (such as Venezuela, another dictatorship drunk on petrodollars) and in operations around Russian airspace.

Tactical air forces lack expeditionary capability and sustainability, however, and few experts view Russia's tactical aviation modernization as the threat that once shadowed Europe during the Cold War.

The Russian Army is still in dire straits, despite undergoing a modernization and reform program designed to transform it into a more professional force.

It suffers from overcentralization, old equipment, a lack of experienced noncommissioned officers, and poor morale.

On paper, Russian Ground Forces still appear formidable. This land force comprises an estimated 395,000 troops (down from 670,000 in the mid-1990s), organized around 19 motorized rifle divisions, three tank divisions, five or six artillery and rocket force divisions, and a field artillery division. A separate airborne service boasts four divisions of paratroopers.

According to the International Institute for Strategic Studies' *The Military Balance,* Russian ground forces retain a very large inventory of vehicles. These include the largest tank arsenal in the world at 22,800 main battle tanks.

Much of the equipment is old. A current modernization plan calls for fielding a next generation T-95 main battle tank and S-400 Triumf anti-aircraft and anti-missile air defense system to more than two dozen battalions by 2015, according to the Russian News and Information Agency.

Given current funding levels and production rates, however, it could take as long as 30 years for Russia to modernize the equipment in all of its ground formations.

Toward a Professional Force

Under Russia's current Ground Forces reform plans, 70 percent of servicemen and all sergeants would be professionals by 2010, with the rest conscripts. The length of conscription is also being reduced from two years to 18 months, with an ultimate goal of limiting conscription terms to one year, in part to limit the backlash from an extremely unpopular draft.

According to the CIA's World Fact Book, only about 30 percent of Russian Ground Forces were professional at the end of 2005, raising serious doubts about Russia's ability to meet its goals in professionalizing the Army.

"To be honest with you, I don't think the Russian Army is an offensive, expeditionary threat anywhere," said a senior US Army officer in US European Com-

Photo by Piotr Butlowski

Photo via Mikhail Kuznetsov

Left: A MiG-29SMT soars over a Russian highway. Above: A nuclear submarine launches an R-30 Bulava, Russia's newest ballistic missile, in a test.

mand who has recently participated in joint exercises with the Russians.

"Their equipment is getting better, and the T-90 is a pretty capable tank, but their leadership and training systems just haven't progressed very much," the officer said. The Russians "don't invest in junior officers, they don't have a professional NCO corps, they still use analog systems and sticky acetate maps, they still focus on massed artillery instead of precision strike, ... and their command structures are still very stovepiped in the old Soviet style. After working with them, I personally don't go to sleep worrying about the threat of Russia's conventional tactical forces."

"The idea of reconstituting a Soviet-style conventional juggernaut is pretty much out of the question," said Podvig, who contributed to the book *Russian Strategic Nuclear Forces.*

"There is really no political constituency in Russia for reconstituting threatening conventional forces and armies that can be massed on the border," he said. "Even military leaders would like to focus on a smaller force and a modernization process that they can more easily manage. No one is really interested in a massive, conventional force expansion."

Under its current rearmament program, Russia has for the first time put modernization of the Russian Navy on an equal footing with strategic nuclear forces, devoting roughly 25 percent of an estimated $200 billion modernization budget to ship construction. Ivanov, first deputy prime minister and former defense minister, told the Russian News and Information Agency that the Russian Navy was a prime beneficiary of the present military modernization campaign.

"We are already building practically as many ships as we did in Soviet times," he said. "The problem now is not lack of money, but how to optimize production so that the Navy can get new ships three, not five, years after laying them down."

A Navy in Slow Turnaround

Once again the Russians face a formidable challenge, however, in turning around a precipitous deterioration of the once vaunted Russian Navy that began in the early 1990s with the collapse of the Soviet Union. After defense spending was slashed and production of new ships ground virtually to a halt for much of the decade, the Russians had to manage a process of scrapping much of the former Soviet fleet and shuttering huge amounts of naval infrastructure.

By the time of its demise, for instance, the Soviet Union had nearly 250 different types of warships. The subsequent lax storage of decommissioned nuclear submarines in ports such as Murmansk became a national scandal and many naval bases outside of Russia were closed.

Cuts in naval training and readiness also led to mishaps, including the August 2000 loss of the *Kursk* submarine during Northern Fleet exercises, and an accident in 2005 involving a Priz-class Russian minisubmarine that had to be rescued by a British Royal Navy unmanned robotic vehicle in the Far East.

The Russian Navy maintains four fleets (Northern, Pacific, Baltic, and Black Sea), but under decommissioning plans, soon only the Northern Fleet will deploy strategic submarines capable of carrying nuclear-tipped missiles. As of 2006, the Navy had a total of 50 nuclear submarines (compared to 170 in 1991), but only 26 are operational. Of those, just 12 submarines are capable of carrying nuclear weapons, according to *Russian Strategic Nuclear Forces.* They are armed with 173 sea-launched ballistic missiles capable of delivering 609 nuclear warheads.

RAND's Schwartz said the Russians are "very consciously and methodically modernizing nuclear forces with the goal of maintaining parity with the United States to the extent that is possible, and ensuring that they could overcome any planned US missile defenses."

In terms of transforming conventional and tactical forces into a more modern and professional force, Schwartz confirmed the Russians are experiencing much slower progress and decidedly mixed results. Force transformation is a lower priority for them, however.

"That corresponds with another interesting phenomenon, which is that despite the provocative rhetoric, Putin is actually very cautious about using Russian military forces outside of Russian borders," Schwartz added. The Russian military understands that its "conventional forces are inherently weak, and they've gotten smarter about using soft power such as oil resources to influence world events." ■

James Kitfield is the defense correspondent for National Journal *in Washington, D.C. His most recent article for* Air Force *Magazine "Espionage, the Sequel," appeared in the March issue.*

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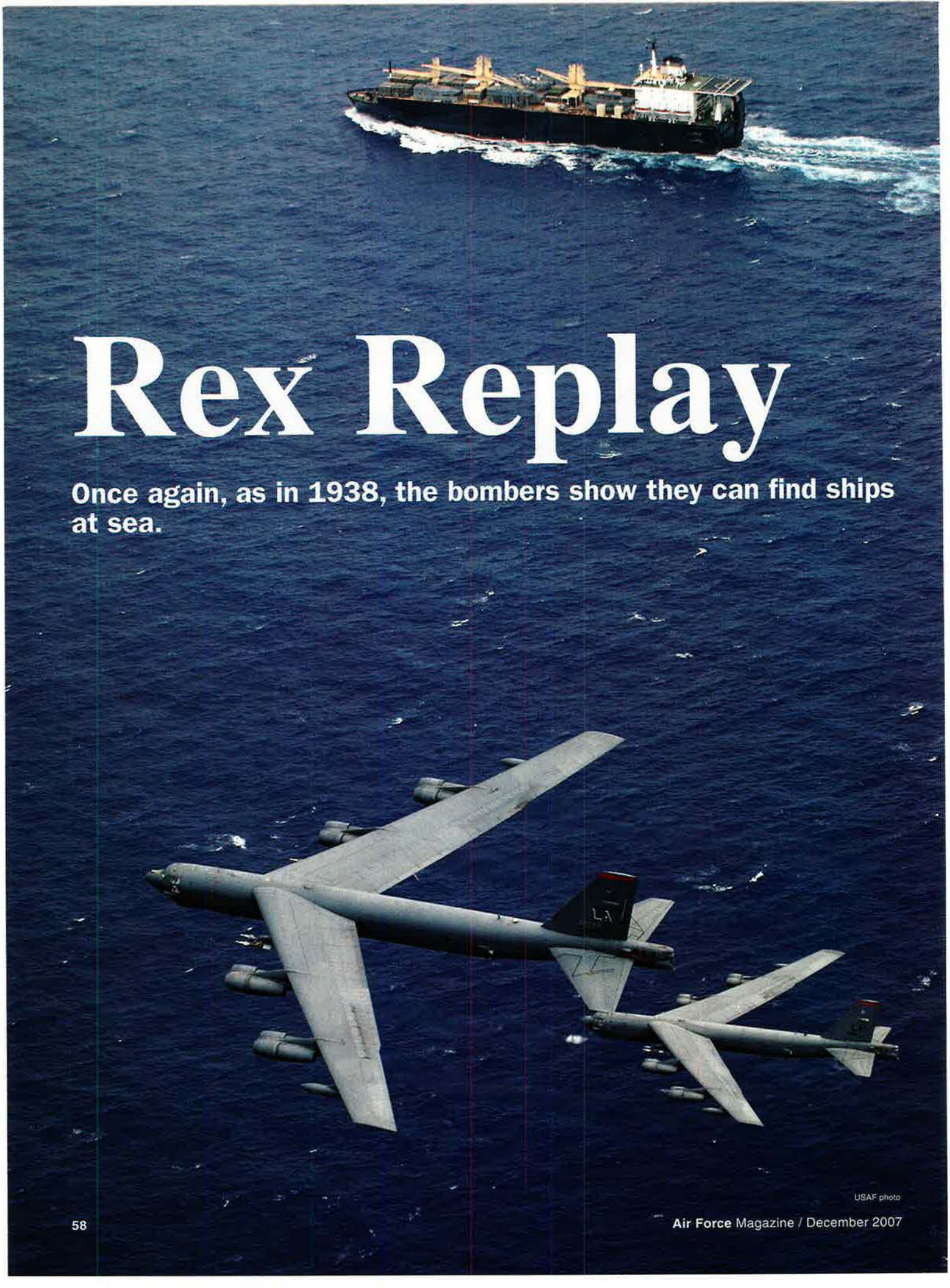
Rex Replay

Once again, as in 1938, the bombers show they can find ships at sea.



USAF photo

Left, in a scene reminiscent of the famous 1938* Rex *interception, two 2nd Bomb Wing B-52s fly past Military Sealift Command's* 2nd Lt. John P. Bobo, *a maritime pre-positioning ship, over the Atlantic Ocean east of Bermuda. The primary mission was to find and identify* Bobo *as it traversed a large area.

By Adam J. Hebert, Executive Editor

In August, three massive B-52 bombers took off from Barksdale AFB, La., with a straightforward mission: Quickly find and identify a moving surface ship somewhere out on the high seas. The mission was an opportunity for the Air Force to validate its expanding ability to perform long-range homeland defense operations.

The bombers quickly found the ship. The B-52 crews did not fire any weapons at the US Navy ship in this exercise, but confirmed that they could have used their targeting pods and laser guided weapons to attack if they had been ordered to do so, such as if the ship had been taken over by terrorists transporting weapons of mass destruction.

The flight was a tribute to the legendary 1938 mission in which three new B-17 bombers intercepted the Italian ocean liner *Rex* roughly 700 miles east of New York City. That intercept proved the Army Air Corps could perform a long-range intercept mission previously reserved for the Navy.

This time, however, the bombers were equipped with the latest targeting pods and data link systems and were flown by a mix of active and Reserve crew members.

Taking off at dawn from Barksdale, the three-ship flight proceeded across the southeastern United States and over the Atlantic Ocean. There, the three B-52s each took on fuel from a lone KC-10 tanker, and headed for a search zone east of the British island of Bermuda, roughly 900 miles east of Charleston, S.C.

Upon takeoff, the bombers only had a ballpark idea of where the target would be, and the ship was in motion throughout the mission.

The crews expected the first challenge to be finding the target vessel, which in this case was the Navy maritime pre-positioning ship *2nd Lt. John P. Bobo.* The B-52s found *Bobo* without difficulty, and the Litening targeting pods borrowed from a Reserve unit for use on the active duty bombers allowed the flight to quickly confirm that this was, indeed, the correct ship.

The threat of terrorism, concern about the vulnerability of the nation's ports, and the massive number of ships on the world's seas make the ability to intercept a suspicious vessel far from the US coast important.

The B-52s then flew past *Bobo* numerous times for identification and photographic purposes. This showed two things: It is hard to spot a ship from a distance with your eyes, but it is easy when you have the proper radars and targeting pods.

Vanishing Target

Mission commander and pilot of the lead aircraft, Rex 51, was Lt. Col. Robert Nordberg, commander of Air Force Reserve Command's 917th Operations Support Flight, based at Barksdale.

Nordberg explained that the flight was able to find *Bobo* so quickly because the B-52s' radars searched nearly the entire target area to quickly zero in on the vessel.

The repeated passes showed how difficult it is to visually identify a ship on the high seas, however, even a ship as large as the 40,000 ton *Bobo,* which can carry enough materiel to support a Marine air-ground task force for 30 days. From 15,000 feet, the ship and its wake seemed to vanish into the ocean.

"The threat's out there," said Col. Robert E. Wheeler, 2nd Bomb Wing commander. The US is facing an enemy that is different, adaptive, and determined, he said, and the Air Force is "morphing" to address the threats. The Litening targeting pods used on this mission can be moved from one B-52 to another in three hours. Wheeler repeatedly praised the additional capability that the targeting pods, which are still in short supply, bring to the bombers.

USAF photo

At the controls of the lead B-52 before takeoff at Barksdale AFB, La., is Lt. Col. Robert Nordberg, commander of AFRC's 917th Operations Support Flight.

A pair of BUFFs head for the runway at Barksdale at the beginning of the day's mission. The bombers would gather intel for US Northern Command on their way back to base.

The Air Force's bombers must be able to perform global strike missions from their home stations, a capability Wheeler said was ably demonstrated during the 10-hour, 3,500 mile flight Aug. 24.

This mission, he noted, was performed at the same time that the wing had six B-52s and 279 airmen deployed to Andersen AFB, Guam, on an Air and Space Expeditionary Force deployment to beef up long-range firepower in US Pacific Command's area of responsibility.

New Connectivity

Also playing a major role in the mission was the Evolutionary Data Link (EDL), a laptop-based system that allowed the B-52 crews to stay in contact with the air operations center at Barksdale without using radios. The EDL system was high-maintenance, and kept the crew of Rex 51 constantly busy, but it securely delivered messages, mission updates, and intelligence from "national assets" to the crews.

The airmen also used the system to feed information back to the AOC—including the first images of *Bobo* shortly after it was intercepted.

Nordberg said the connection to the AOC is "critical," because it allows a team of intelligence experts to evaluate a situation, relieving the two officers in the front of a B-52 from determining whether a target is legitimate or not.

The mission also recalled 2004's Resultant Fury exercise, which ended with a spectacular finale, when fighters and bombers destroyed USS *Schenectady* and other floating targets near Hawaii.

Various bombers and strike aircraft launched Global Positioning System satellite guided Joint Direct Attack Munitions linked to the Affordable Moving Surface Target Engagement system at the decommissioned warship.

This summer's mission was different, however, in that the target vessel was actively steaming and not merely adrift.

At the height of World War II, six years after the original 1938 *Rex* mission, the Italian luxury liner actually did fall victim to airpower. On Sept. 8, 1944, a combined force of RAF Bristol Beaufighters and USAAF P-51 Mustangs attacked and capsized the liner at the north end of the Adriatic Sea.

Sixty-three years after *Rex* went down, no such fate awaited *Bobo* and its American crew, but the return from Bermuda was also significant. The three B-52s found themselves on US Northern Command's air tasking order.

USAF photos

Lt. Col. Kelly Lawson (far left) greets Capt. John Cornett on the crew's return to Barksdale, as Maj. Melvin Green (far right) and other airmen prepare equipment.

The crews were tasked to find and gather intelligence on "targets of opportunity" specified by NORTHCOM. The B-52s gathered imagery of three locations in the southeast United States—a dam, a bridge, and an airport parking ramp. This portion of the mission simulated the need to gather intelligence for homeland defense and disaster relief missions.

The three bomber crews briefly considered overflying the three NORTHCOM targets sequentially, but ultimately chose to split up the bombers. Each B-52 filed new flight plans and headed to its own separate target on the trip back to Barksdale. ■

Verbatim

By John T. Correll, Contributing Editor

The Best Ever

"The most successful aircraft in the history of military aviation isn't a supersonic fighter or a stealthy bomber. It is a propeller-driven cargo plane called the C-130 Hercules that has evolved into more variants than any other fixed-wing plane ever built. The Hercules is so successful that in 2006 it became only the second aircraft of American origin to reach the half-century milestone of continuous operation by its home service, the Air Force. The only other plane that has achieved such longevity is the B-52 bomber. But whereas the B-52 ceased production 40 years ago, the Hercules looks likely to continue rolling off production lines for decades to come."***—Loren B. Thompson, Lexington Institute, September.***

Expert Opinion

"These days, the Navy is a better air force than the Air Force. The only thing it doesn't do that the AF does is heavy airlift and heavy aerial tanking. So when the Air Force disbands out of despair, hopefully sometime next year, I would propose transferring those missions to the Navy—and giving the Air Force's Predator drones to the Army, which would probably make better use of them anyway."***—David Axe, military editor,*** **Defense Technology International,** ***Wired.com, Sept. 24.***

But No ROTC

"If Hitler were in the United States [prior to 1939] and wanted a platform from which to speak, he would have plenty of platforms to speak in the United States. If he were willing to engage in a debate and discussion, and be challenged by Columbia students and faculty, we would certainly invite him."***—John Coatsworth, dean of Columbia University School of International and Public Affairs, on speech by President Mahmoud Ahmadinejad of Iran at Columbia (which continues to ban ROTC from its campus), Fox News, Sept. 22.***

Home for Christmas

"The war is over. The Chinese are not coming into this war. In less than two weeks, the Eighth Army will close on the Yalu across the entire front. The Third Division will be back in Fort Benning for Christmas dinner."***—Gen. Douglas MacArthur, UN commander in Korea, September 1950, after US landing at Inchon and before 30 Chinese divisions entered the war, in David Halberstam,*** **The Coldest Winter: America and the Korean War,** ***September.***

Where the RMA Began

"The term most often used to describe recent military developments is 'transformation' or the 'Revolution in Military Affairs.' These expressions entered the lexicon of the US military a number of years ago as ways to describe the potential for new technologies to fundamentally alter the nature of war. What is less well-known, especially in America, is that much of the original thinking on these matters was done by the Soviet military as far back as the 1970s, when officers wrote about what was then called a 'Military Technical Revolution.'"***—Secretary of Defense Robert M. Gates, speech to Military Academy of the General Staff, Moscow, Oct. 13.***

Complainers Are the Problem

"Everything I've heard up to this point doesn't imply that there were any issues in the way it was handled, except apparently someone has complained."***—Steve Forsyth, North American Airlines spokesman, on the barring of US marines—on their way home from Iraq on a North American Airlines charter flight—from the passenger terminal at Oakland Airport,*** **San Francisco Chronicle,** ***Oct. 3.***

Back to the Mach

"Just flew an F-16 on Sept. 21, 2007, and broke the sound barrier again to commemorate the 60th anniversary of breaking the sound barrier."***—Retired Brig. Gen. Chuck Yeager, who still flies two or three times a week,*** **Agence France-Presse,** ***Oct. 11.***

Background Noise

"The war is little more than a headline or sound bite to most Americans. It poses no inconvenience and is regarded as little more than a newsworthy nuisance to a public more interested in following the major league baseball pennant races or the recent arrest of O.J. Simpson. The war is background noise."***—Donald H. Horner, Jr., professor of leadership education at the US Naval Academy,*** **Baltimore Sun,** ***Sept. 28.***

Gone But Not a Goner

"Pete has assured me he doesn't intend to end it all here today."***—President Bush at retirement ceremony for Marine Corps Gen. Peter Pace, Chairman of the Joint Chiefs of Staff, Oct. 1, referring to the expectation that Pace will continue to make a contribution in public service.***

Sanchez Lashes Out

"The Administration, Congress, and the entire interagency, especially the State Department, must shoulder the responsibility for this catastrophic failure, and the American people must hold them accountable. There has been a glaring unfortunate display of incompetent strategic leadership within our national leaders."***—Retired Army Lt. Gen. Ricardo S. Sanchez, former commander of US forces in Iraq,*** **Washington Post,** ***Oct. 13.***

Could Happen Here

"We remain particularly concerned about the employment of improvised explosive devices (IEDs) in an attack against the homeland, given the ready availability of IED components and the relative technological ease with which they can be fashioned."***—Revised National Strategy for Homeland Security, October.***

Prepared to Shoot

"If there were no other way, I would give the order to shoot it down to protect our people."***—German Defense Minister Franz Josef Jung on shooting down a hijacked airplane. He triggered a storm of criticism in Germany,*** **Deutsche Welle,** ***Sept. 20.***

Seeking Closure

"Before us lies the task of establishing a peace regime on the Korean peninsula, which our people yearn for. In this regard, special government envoys were dispatched to the United States, Japan, China, and Russia."***—South Korean unification minister Lee Jae-joung, Associated Press, Oct. 6.***

The Air Force was taken by surprise in the attack on Pearl Harbor. Nine hours later, it happened again in the Philippines.

Caught on the Ground

By John T. Correll

Pearl Harbor is remembered as the greatest naval disaster in American history, and rightly so. The main target of the Japanese surprise attack on Dec. 7, 1941 was the US Pacific Fleet.

At 7:55 that Sunday morning, sailors on ships moored in the harbor looked up to see Japanese airplanes sweeping in low from the sea. They met virtually no resistance as they dropped their bombs and torpedoes into the midst of the vulnerable fleet. When it was over, eight battleships, three light cruisers, three destroyers, and four auxiliary ships had been sunk, capsized, or severely damaged. Navy casualties were more than 2,000 killed and hundreds wounded.

"Remember Pearl Harbor" became an instant and lasting motto. The USS Arizona Memorial, where the remains of one of the battleships can still be seen, draws 1.5 million visitors a year. The story of the Navy debacle at Pearl Harbor has been told many times and will not be recounted here.

The Navy was not the only service caught by surprise, though. Nor did it take all the casualties. Army Air Forces bases in Hawaii were struck at the same time. US Army forces on the island belonged to the Hawaiian Army Department. On its orders, the only alert in effect was for potential sabotage. The pursuit wing at Wheeler Field had the weekend off. The fighters were parked wingtip to wingtip in precise rows on the ramp. At Hickam Field, the bombers were similarly clustered and wide open to attack. The Japanese attackers caught them on the ground.

The Hawaiian Air Force, the Army's Hawaiian air arm, took 690 casualties that day, including 244 killed. Seventy-six of its aircraft were destroyed outright and many others were damaged. In contrast to the fumbling reaction at command levels, 14 fighter pilots, acting on their own, got their P-40s and P-36s into the air and shot down 10 of the Japanese aircraft.

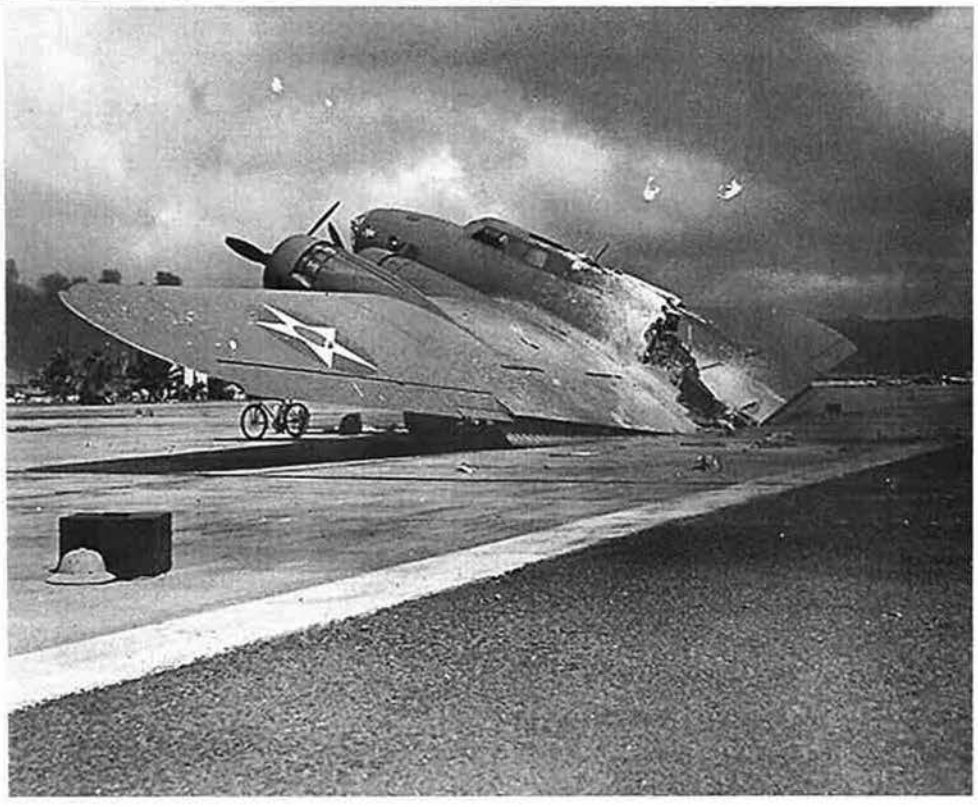
What happened in the Philippines nine hours after Pearl Harbor defies belief. Japanese attackers once again caught the US Army Air Forces flat-footed on the ground. Despite clear and timely warning, about 100 aircraft were destroyed at Clark Field and other bases on Luzon. Casualties were 77 killed and 148 wounded. The first day of the war for the United States reflected no credit on those in command in Hawaii or in the Philippines.

Washington had expected an aggressive move by Tokyo somewhere in the Pacific. The Japanese empire was in its 10th year of conquest and the only obstacle to its further expansion was the presence of the United States.

Up to 1940, the US Fleet was based at San Pedro, Calif. In May 1940, after exercises at sea, the fleet remained at Pearl Harbor—on orders of President Roosevelt and over the objections of the fleet commander—rather than returning to California. This was intended to have a deterrent effect on Japan.

In 1941, the United States reinforced the Philippines, still a US possession, with airpower. By December 1941, the Far East Air Force in the Philippines had the largest concentration of Army aircraft outside the continental United States. Hawaii was reinforced as well. The best US airplanes available, including B-17 bombers and P-40 fighters, were sent to the Pacific.

Japanese forces were preparing to strike southward to seize Malaya, the Philippines, and the oil-rich Netherlands East Indies. In October 1941, after studying the issue for most of the year, the Japanese Navy committed to an attack on Pearl Harbor. US air bases in the Philippines were also targeted. The objective was to keep US forces off the Japanese flank in the Pacific for six months or so, until the first critical phase of the "Southern Operation" was completed.



No Great Secret

The United States had broken the Japanese diplomatic code and had been intercepting and reading the message traffic since the summer of 1940. The diplomatic correspondence did not have much detail on military or naval matters, but anticipation of war did not depend on secret information. Everybody knew that war was coming. The question was not if, only when and where. The Philippines was regarded as the most likely point of attack, but Hawaii was seen as a possible target as well. "Japanese May Strike Over Weekend," said the *Honolulu Advertiser* headline, Nov. 30, 1941. "Pacific Zero Hour Near," the Dec. 5 headline said.

Official messages and warnings flowed from Washington to the Pacific. There was ambiguity in them because Washington did not know exactly what was going to happen. There was also allowance for local discretion. On Nov. 27, "war warning" messages were sent to Army and Navy commanders in Hawaii, the Philippines, the Canal Zone, and on the West Coast.

In one such message, Gen. George C. Marshall, the Chief of Staff of the Army, warned Lt. Gen. Walter C. Short, commander of the Army Hawaiian Department, "Hostile action possible at any moment. If hostilities cannot—repeat, cannot—be avoided, the United States desires that Japan commit the first overt act." Marshall said that "prior to hostile Japanese action, you are directed to undertake such recon-

Facing page: USS* Shaw *explodes under Japanese fire. Top: USS* California *sinks into Pearl Harbor. Bottom: the burned carcass of a B-17C.

Survivors view the remains of destroyers USS* Cassin *and USS* Downes *after the attack on Pearl Harbor. USS* Pennsylvania *is behind them. All three were in dry dock at the time of the attack.

naissance and other measures as you deem necessary."

The Navy Department message to Adm. Husband E. Kimmel, commander of the US Pacific Fleet, informed its recipient "this dispatch is to be considered a war warning" and told Kimmel to "execute an appropriate defensive deployment."

Both Kimmel and Short were fairly new to their commands, having arrived within a few days of each other in February 1941. From his headquarters at Ft. Shafter, Short commanded all Army ground and air forces in Hawaii. He was an infantry officer to the depths of his soul and he could not or would not adjust his perspective beyond that.

Short's air component was the Hawaiian Air Force, commanded by Maj. Gen. Frederick L. Martin. Its operational units were the 18th Bombardment Wing at Hickam Field, adjacent to Pearl Harbor, the 14th Pursuit Wing at Wheeler Field, next to Schofield Barracks, and the 86th Observation Squadron at Bellows Field, on the southeast coast of the island. There was also a small training field at Haleiwa on the northern shore.

The Army commanders were handpicked—Short by Marshall, Martin by Lt. Gen. H.H. "Hap" Arnold, Chief of the Army Air Forces. That Marshall, who understood and appreciated airpower, chose Short for this assignment is inexplicable. Arnold's selection of Martin is also difficult to understand. Pacific Air Forces historians Leatrice R. Arakaki and John R. Kuborn have said, with careful understatement, that the Short-Martin team was "not the best combination of commanders."

Confused Priorities

Martin was under orders from Arnold to establish better relations with the Navy and with Army ground forces. "Unfortunately, in his role as peacemaker, General Martin had a tendency to place cooperation between the Army and the Navy and cooperation within the Army over Hawaiian Air Force needs," said Arakaki and Kuborn. Martin's effectiveness was further complicated by chronic health problems.

Though Kimmel was the senior US officer on Oahu, defense of Hawaii was not his job; it was Short's. However, the shore-based 14th Naval District, subordinate to Kimmel, was responsible for long-range reconnaissance patrol. For the Navy, Pearl Harbor was essentially a forward base from which to operate. The Pacific Fleet was geared to the offensive—that is, meeting and defeating the Imperial Japanese fleet at sea.

Short had been reminded repeatedly by Marshall and others that protecting the Pacific Fleet was his primary and overriding mission, but it didn't sink in. "In his heart, Short regarded the presence of the Pacific Fleet as a protection for his Hawaiian Department rather than vice versa," said Gordon W. Prange in *At Dawn We Slept.* He was focused on the threat of sabotage and on protecting the airplanes rather than using them to defend the fleet.

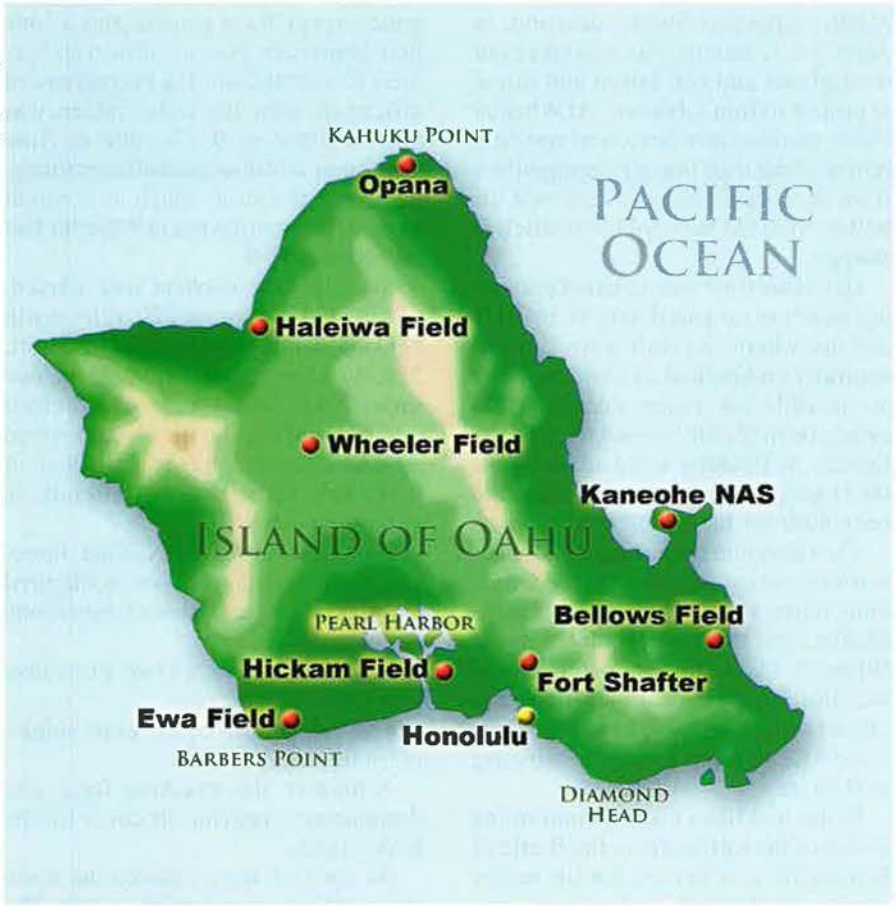
Even though Short had on hand two infantry divisions to fulfill ground force requirements, he ordered Hawaiian Air Force enlisted men to undergo basic infantry training and pull guard duty. At the time, the Air Force had an acute shortage of trained technicians. Martin sent a single letter of protest but then fell into line with Short's program. In December 1941, on the eve of the Japanese attack, Short and Martin were pulling crew members off bombers at Hickam Field to guard warehouses in Honolulu.

The assignment of modern aircraft to the Hawaiian Air Force did not begin

President Roosevelt signs the declaration of war against Japan on Dec. 8, 1941.

Casualties at Pearl Harbor

	Killed, missing, died of wounds	Wounded
Navy	2,008	710
Marine Corps	109	69
Army	218	364
Civilians	68	35
Total	2,403	1,178



Staff map by Zaur Eylanbekov

until early 1941, but by late 1941 it was proceeding apace. Curtiss P-40s were rapidly replacing older fighters, although the pursuit wing still had a few open-cockpit P-26 Peashooters.

On Dec. 7, 1941, the Hawaiian Air Force strength was 754 officers and 6,706 enlisted men, with a total of 234 aircraft on hand. For various reasons, including a shortage of spare parts, only 146 of these aircraft were in commission.

Twelve B-17s were assigned. In July, Martin had requested 180 of them, but that was more than the total number of B-17s the Army Air Forces had worldwide at the time and obviously was impossible. Martin regarded 180 as the number he needed to maintain a patrol out to 600 miles around Oahu, keeping a reserve for the strike mission. He had 33 two-engine B-18 bombers but considered them obsolete and unsuited for any operational use, including reconnaissance.

The Navy patrol wings had 81 PBY Catalina flying boats in the Hawaiian area, but 12 of them were on detached duty at Midway. The rest of them were based on Ford Island in the middle of Pearl Harbor and at Kaneohe Naval Air Station on the eastern coast of Oahu. The number available was not deemed sufficient to maintain a long-range patrol. Between 170 and 200 PBYs were needed to conduct a daily search around Oahu.

In March 1941, Martin and Rear Adm. Patrick N.L. Bellinger, who commanded the Navy patrol wings, submitted a prescient report. "It appears that the most likely and dangerous form of attack on Oahu would be an air attack," they said. "It is believed that at present such an attack would most likely be launched from one or more carriers which would probably approach inside of 300 miles."

No Surprise

The threat of an air attack on Pearl Harbor was not a new or unfamiliar idea. Billy Mitchell had predicted it in 1924, and from 1928 on, surprise air attacks on Pearl Harbor and the Panama Canal were standard scenarios in the annual fleet exercises.

Among the mistakes made by senior commanders in Hawaii, two stand out. They did not maintain long-range reconnaissance, which could have discovered the approach of Japanese aircraft carriers, and they did not provide for the defense of Hawaii against air attack.

Kimmel later testified that the number of available PBYs could have covered, at best, a third of the 360-degree circumference of Oahu. Anyway, he regarded the primary mission of patrol squadrons as scouting ahead of the fleet for submarines. Furthermore, the PBYs would deteriorate from the wear and tear of constant patrols and the Navy wanted to preserve them to support sea operations when the war began.

Staff map by Zaur Eylanbekov

Kimmel's attention was on the south and west. The nearest Japanese-controlled territory was a chain of islands in Micronesia that lay between Hawaii and the Philippines. Both US fleet carriers, *Enterprise* and *Lexington,* were supporting the reinforcement of US outposts on Wake Island and Midway. Each carrier conducted reconnaissance out to 600 miles. Aircraft from Wake and Midway flew patrols as well. Thus, the area to the southwest of Hawaii was well covered.

If there were not enough airplanes to patrol all approaches to Oahu, it was also true that air attack was not equally probable from every direction. Japan was not likely to strike from the east, the California side of the island.

The Martin-Bellinger report and other analyses said the greatest vulnerability for air attack was from the north and northwest. Reconnaissance in that direction was weak, and Japan knew it. A Japanese naval intelligence briefing in November said, "United States air patrols are very good in the area south and southwest of Oahu, but generally inadequate to the north of the island."

Even though long-range aerial reconnaissance was a Navy responsibility, the Hawaiian Air Force provided short-range coverage, 20 miles out, and was charged with assisting the Navy at greater distances, upon request. The Navy didn't ask and the Air Force didn't offer.

A No. 1 Alert

The Nov. 27 war warning message to Short directed him to undertake reconnaissance and other measures as required. The best airplane for the job, the B-17, was in short supply. Martin had more than 30 B-18s but he did not want to use them. In subsequent inquiries, he insisted that the B-18's operating radius was only 300 miles—which it was, with a full bomb load. According to John Lambert and Norman Polmar in *Defenseless: Command Failure at Pearl Harbor,* the B-18 without bombs was capable of flying for six and a half hours with an operating radius of more than 500 miles.

Short instituted three kinds of alerts for the Hawaiian Department. No. 1 was defense against sabotage. No. 2 included all measures contained in No. 1 plus defense against air, surface, and submarine attack. No. 3 was defense against an "all-out attack."

When Short got the war warning message, he put Alert No. 1 into effect. Martin supported Short's decision. In Alert No. 1, ammunition was taken out of airplanes and was boxed and stored to protect it from saboteurs. At Wheeler Field, maintenance personnel not only removed the machine gun ammunition from the fighters but also removed the bullets from the belts for more efficient storage.

Hawaiian Air Force enlisted personnel were put on guard duty at airfields and elsewhere. Aircraft were situated centrally and parked as close together as possible for easier guarding. On orders from Martin's headquarters, the fighters at Wheeler were taken out of the U-shaped earthen bunkers that had been built for their protection.

The Hawaiian Department had an air warning system consisting of six mobile radar units, an air warning center at Ft. Shafter, and the 14th Pursuit Wing at Wheeler Field. Unfortunately, there was little interest in it and there was almost no cooperation from the Navy, Short's headquarters, or the bomb wing at Hickam.

Radar had been instrumental in the defeat of the Luftwaffe in the Battle of Britain the year before, but the senior officers in Hawaii understood little about it. The Army Signal Corps, which installed the radars and the warning center, was slow to turn these assets over to the eventual operator, the Hawaiian Air Force.

On Short's orders, the radar sites and the information center were active only from 4 a.m. to 7 a.m. On the morning of Dec. 7, five radar sites were in operation. Four of the radar sites and the Ft. Shafter control center shut down at 7 a.m. on the dot. The radar operator at Opana on the northern tip of the island wanted to get in a little more practice, and at 7:02 spotted the first wave of Japanese aircraft, 136 miles out.

Opana called the information to the air warning center, but everyone had gone except for a private and a lone first lieutenant pursuit pilot who was there for orientation. The inexperienced officer thought the radar return was from a flight of B-17s, due in from California, and disregarded the warning. It did not matter as much as it might have. The pursuit wing at Wheeler had the weekend off.

Six Japanese carriers had arrived, undetected, at a point 220 miles north of Oahu. There were too many aircraft, 350, to launch and assemble at one time, so the strike force was divided into two waves. The first wave formed up and headed south at 6:20 a.m. It comprised three kinds of aircraft, in varying numbers:

- 143 Nakajima B5N Kate three-place bombers. Some were configured as torpedo bombers, others as horizontal bombers.
- 129 Aichi D3A Val two-place dive bombers.
- 88 Mitsubishi A6M Zero single-place fighters.

A third of the attacking force was designated to provide air cover for the strike flights.

As the first wave crossed the north shore of Oahu, the formation split. The Kate bombers swung wide to their right to strike Pearl Harbor from the west and south. The dive bombers and the fighters headed straight down the island. Some of them peeled off toward Wheeler and some of them continued south. The airplanes that hit Pearl Harbor and Ford Island at 7:55 a.m. did not directly attack the air bases. Other elements of the first wave were assigned to do that.

Wheeler was first airfield to be hit, at about 8 a.m., with Hickam struck shortly thereafter.

Japan had expected resistance, but, encountering none, released the Zeros from their air cover role. They dropped down and added their guns to the strafing attack.

Far East Air Force Aircraft on Luzon

Dec. 8, 1941

B-17	19	12 destroyed, 4 damaged
P-40	91	55 lost in combat and on the ground
P-35	26	3 destroyed (some counts are higher)
Other (B-18, A-27, O-52, O-46)	45	25-30 destroyed

Of the 181 AAF airplanes based on Luzon when the Japanese attacked, about 100 were destroyed and others were significantly damaged. Another 16 B-17s had been previously moved to Mindanao.

Sources: December 8, 1941, *by William H. Bartsch;* The Army Air Forces in World War II, *by Wesley Craven and James Cate; and* US Army in World War II, *by Louis Morton.*

At 8:10 a.m. Short changed the alert from No. 1 (sabotage) to No. 3 (all-out attack). That sent troops to their battle stations to repel any enemy force that attempted to land on the beaches.

In the middle of the first wave attack, 12 B-17s arrived from California on the first leg of their deployment to Clark Field in the Philippines. They carried no ammunition for their guns, having lightened the load as much as possible for the long trip. They ran a gauntlet of fighters on their way in, but all of them made it to the ground. One of them landed on a golf course, one was destroyed by Zeros on the runway at Hickam, and another one was heavily damaged and later junked for spare parts.

The second wave of Japanese attackers took off from the carriers at 7:15 a.m. On Oahu, there was a 20-minute lull between the end of attacks by the first wave (8:35 a.m.) and the beginning of attacks by the second wave (8:55 a.m.). There were no torpedo bombers in the second wave. They were too slow and defenseless to risk, now that the Americans were alert and shooting back.

This time, Japanese attackers came around the eastern side of the island. Part of the force hit Kaneohe Naval Air Station and Bellows Field, then attacked Wheeler again. The other aircraft swept around Diamond Head and struck Hickam and Pearl Harbor from the southeast.

When the second wave of attacks ended about 9:55, the airfields had been hit hard. At Wheeler, about half of the P-40s were destroyed on the ground, but smoke drifting from a burning hangar obscured the P-36s, and only a few of them were destroyed. Ironically, the bombers scored a direct hit on Hangar 3, where the machine gun ammunition downloaded from the fighters was stored.

The bombing at Hickam was particularly accurate. Twenty-seven bombs hit the main barracks, the largest one anywhere in the Army Air Forces. Several thousand airmen were quartered there. Many of them were still inside and were killed.

The first American pursuit pilots to get into the air were 2nd Lt. George S. Welch and 2nd Lt. Kenneth M. Taylor. They were leaving the Wheeler Officers Club after an all-night poker game when the attack began. Their P-40 fighters were at Haleiwa Field, where their squadron had deployed for gunnery practice. They jumped into Taylor's car and raced to Haleiwa, weaving through strafing fire along the way.

AAF Aircraft on Oahu
Before and After Pearl Harbor Attack

	On Hand Before Attack	In Commission	Destroyed During Attack	In Commission After Attack
B-17D	12	6	5	4
B-18	33	21	12	11
A-20A	12	5	2	9
P-40C	12	9	5	2
P-40B	87	55	37	25
P-36A	39	20	4	16
P-26A	8	7	5	2
P-26B	6	3	1	2
B-12A	3	1	0	1
A-12A	2	2	0	1
AT-6	4	3	1	2
OA-9	3	3	2	1
OA-8	1	1	0	1
O-47B	7	5	0	5
O-49	2	2	1	1
C-33	2	2	0	0
B-24	1	1	1	0
Totals	234	146	76	83

These totals do not include the 12 B-17s that arrived from California during the attack. Of those, one was destroyed, two were repairable, and nine were in commission on Dec. 8.

Source: Pacific Air Forces.

Fourteen Airborne

Their P-40s were armed and ready, and they took off about 8:30 a.m. Over the southern part of the island, they encountered Japanese aircraft flying in a line. Taylor and Welch each shot down two. They landed at Wheeler to refuel and rearm, but enemy aircraft approached about 9:15 a.m., before servicing was complete. They took off again and Welch shot down a Zero that was on Taylor's tail. Shortly thereafter, he shot down yet another one, his fourth for the day.

In all, 14 pursuit pilots from Wheeler, Bellows, and Haleiwa got into the air. They shot down 10 Japanese aircraft, confirmed, with another four probable. Five of the shootdowns were by the older P-36 fighters, two of them by 2nd Lt. Harry W. Brown, flying a P-36 from Haleiwa.

Fifteen Navy men were awarded Medals of Honor for their actions Dec. 7, but there were none for the Army. Welch and Taylor were nominated, but the recommendations were downgraded to Distinguished Service Crosses. According to a story that has persisted for years, the proposals were knocked down by the intermediate chain of command because Welch and Taylor took off without orders. Welch went on to notch 16 aerial victories, becoming one of the leading aces of World War II.

Later in the day, Hawaiian Air Force aircraft flew 48 sorties searching for enemy carriers. The search included several B-18s, the aircraft previously scorned as unsuited for such reconnaissance. Air Force and Navy searchers wasted much of their effort because they did not know about the Opana radar sighting, which could have told them the direction from whence the attack had come.

On the morning of Dec. 8, troops from Bellows Field seized the only POW of the raid. Around 7 a.m., observation aircraft spotted a Japanese Navy midget submarine, stranded on a coral reef off the end of the runway. One crew member had been drowned, but the other one washed ashore and was captured.

There had been a sustained buildup of US forces in the Philippine islands over the previous 18 months. Gen. Douglas

MacArthur had been recalled to active duty and made commander of US Army Forces in the Far East. His air arm, the Far East Air Force, or FEAF, was commanded by Maj. Gen. Lewis H. Brereton. In December 1941, FEAF had 8,000 men and more than 300 aircraft, most of them concentrated on the main island of Luzon. Among the aircraft were 35 B-17 bombers. As war loomed closer, MacArthur and Brereton sent half of the B-17s to a safer location on the southern island of Mindanao.

With the US fleet at Pearl Harbor neutralized, Japan was ready for the southern strategy's next step: attacking the FEAF bases on Luzon in preparation for the invasion of the Philippines. Japanese Army and Navy aircraft from Formosa were to conduct the attack, but they were delayed by bad weather.

The Philippines are on the other side of the international date line. When Japan attacked Pearl Harbor at 7:55 a.m. Dec. 7, it was 2:25 a.m. Dec. 8 in the Philippines. The news reached Manila 35 minutes after the attack began at Pearl Harbor. FEAF fighters were already on alert, having scrambled to chase radar blips—which were Japanese scout aircraft checking the weather—over the South China Sea around midnight. The FEAF bombers went on alert as well and were standing by for orders.

At 5 a.m., Brereton tried to see MacArthur to get approval to attack Formosa as soon as possible after daylight, but he was denied access by Brig. Gen. Richard K. Sutherland, MacArthur's heavy-handed chief of staff.

At 5:30 a.m., MacArthur was handed a cablegram from Marshall, ordering him to carry out the Rainbow Five war plan, one tasking of which was to conduct "air raids against Japanese forces and installations."

Around 6 a.m., a Japanese carrier launched a premature but minor attack on the US Asiatic Fleet airfield at Davao on Mindanao.

At 7:30 a.m., Brereton tried again to reach MacArthur and was again blocked by Sutherland, who said, incredibly, that MacArthur did not want to strike the first blow.

At 8 a.m., Hap Arnold called to tell Brereton not to get caught on the ground. Brereton ordered the B-17s and B-18s at Clark airborne as a precautionary measure as well as to patrol for enemy aircraft.

At 10 a.m., Brereton called Sutherland and was told again to take no offensive action.

Minutes later, that instruction was superseded by MacArthur himself, who called Brereton at 10:14 with approval to bomb Formosa. It was too late. The weather had cleared and Japanese aircraft were on the way. The FEAF bombers were recalled to prepare for the bombing mission, and the fighters also landed to refuel. (MacArthur later sought to lay off blame to Brereton. In a 1946 statement to the press, MacArthur said, "General Brereton never recommended an attack on Formosa to me, and I know nothing of such a recommendation having been made.")

Strange Interlude

At 11:20 a.m., the radar at Iba Field on the west coast of Luzon picked up approaching aircraft 129 miles out. The alert was flashed to FEAF headquarters and on to the pursuit group commander at Clark, who got the message but took no effective action. At noon, virtually every US airplane on Luzon was on the ground.

At 12:35 p.m., Japanese bombers and fighters struck at Clark and Iba, where the bombers and fighters were parked in the open, unprotected. In less than an hour, about 100 of the 181 US aircraft on Luzon were destroyed, including 12 of the B-17s. Some of the FEAF fighters managed to take off and shot down eight Japanese aircraft, but US airpower was devastated.

The strange interlude with MacArthur and Sutherland has never been adequately explained. The same is true of the failure of the commanders at Clark to react to the radar warning. "I have never been able to get the real story of what happened in the Philippines," Arnold said in his memoirs in 1949.

On Dec. 17, the Army and the Navy relieved Short, Martin, and Kimmel of their commands. For his part, Kimmel was placed on inactive duty and reduced to a grade of rear admiral. He retired in 1942 and died in 1968. Short was likewise reduced to his previous grade of major general. He retired in 1942 and died in 1949. Martin was reassigned to a training command in St. Louis. He retired in 1944 and died in 1954.

Marshall, perhaps recognizing his earlier mistake in his choice of personnel, replaced Short with an Air Corps officer, Lt. Gen. Delos C. Emmons.

The events of Dec. 8, 1941 in the Philippines are little remembered today, but Pearl Harbor remains a contentious issue. An extensive body of work by so-called revisionist historians contributes to the turmoil. The most extreme of the revisionists argue that President Roosevelt induced the Japanese attack in order to justify US entry into the war and saw to it that critical warning information was withheld from Kimmel and Short. The revisionist theories are built on speculation and surmise, but they have gathered a considerable following.

Between 1941 and 1946, there were eight official investigations of the Pearl Harbor disaster, including inquiries by the Army, the Navy, and a joint Congressional committee. There has never been an official investigation of what happened in the Philippines.

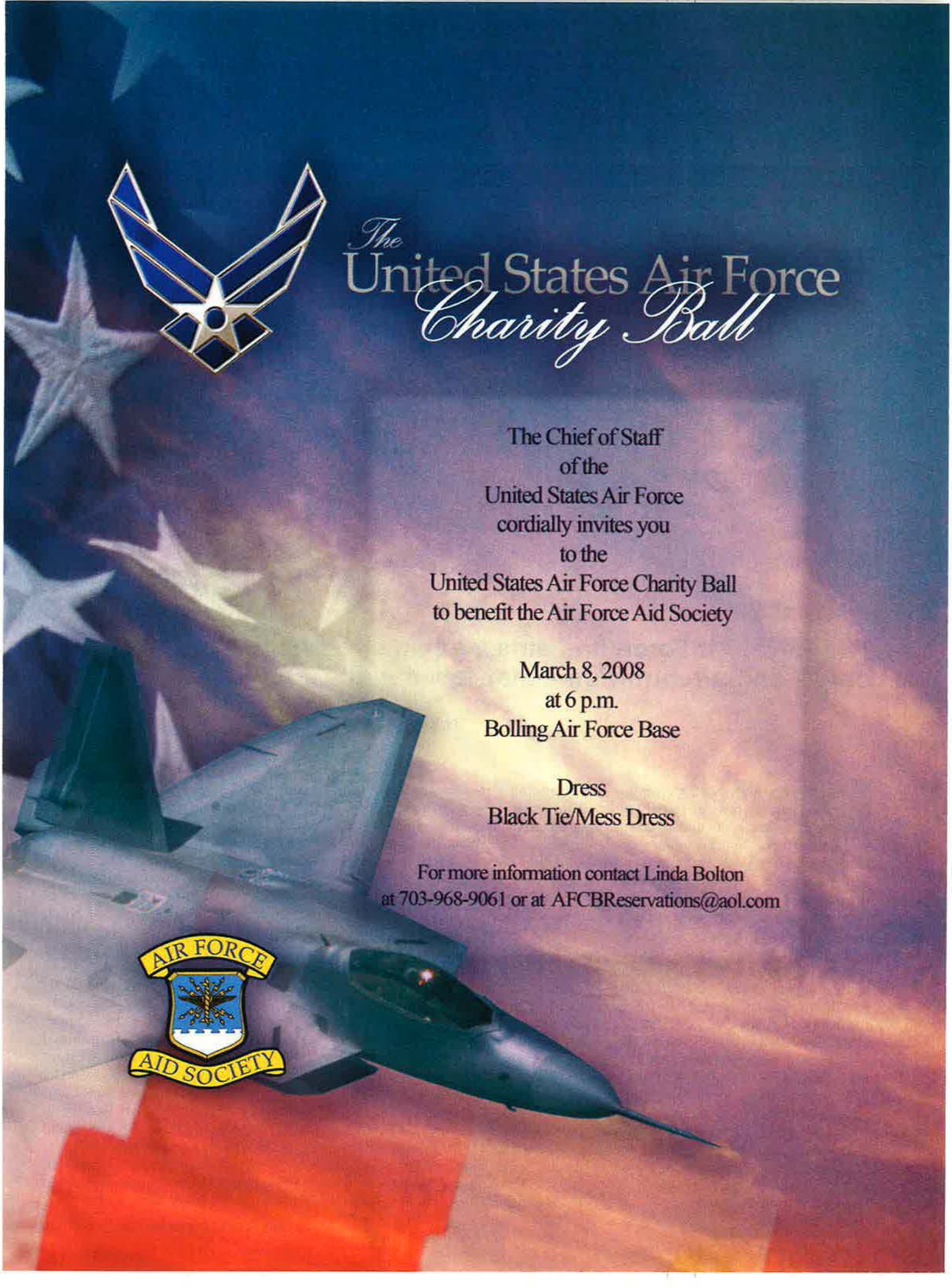
"It was very strange that Kimmel and Short were investigated and then kicked out, but General MacArthur, with his pre-attack information, also got clobbered by the Japanese and yet remained free from investigation and ultimate dismissal," said Capt. James H. Shoemaker, who had been commander of the Ford Island Naval Air Station.

In 1995, the Department of Defense conducted yet another major review of Pearl Harbor and again concluded that Kimmel and Short should be held accountable. A "Sense of the Congress" resolution in 1999 absolved Kimmel and Short, but it was nonbinding. Afterward, the Department of Defense, holding that no further action was required, took none and stuck to its previous decision.

The USS Arizona Memorial is not the only remembrance of the attack to be found in Hawaii today. The former "Big Barracks" at Hickam Field, now Hickam Air Force Base, is the headquarters of Pacific Air Forces. The bullet holes and scars from 1941 have been left as they were. The flag that flew over Hickam during the attack, now tattered, is encased and on display.

Wheeler Air Force Base and the flight line area at Hickam have been declared national historic landmarks, and carefully tended memorials honor those who died during the attacks. ■

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 Air Force on the Eve of World War II," appeared in the October issue.*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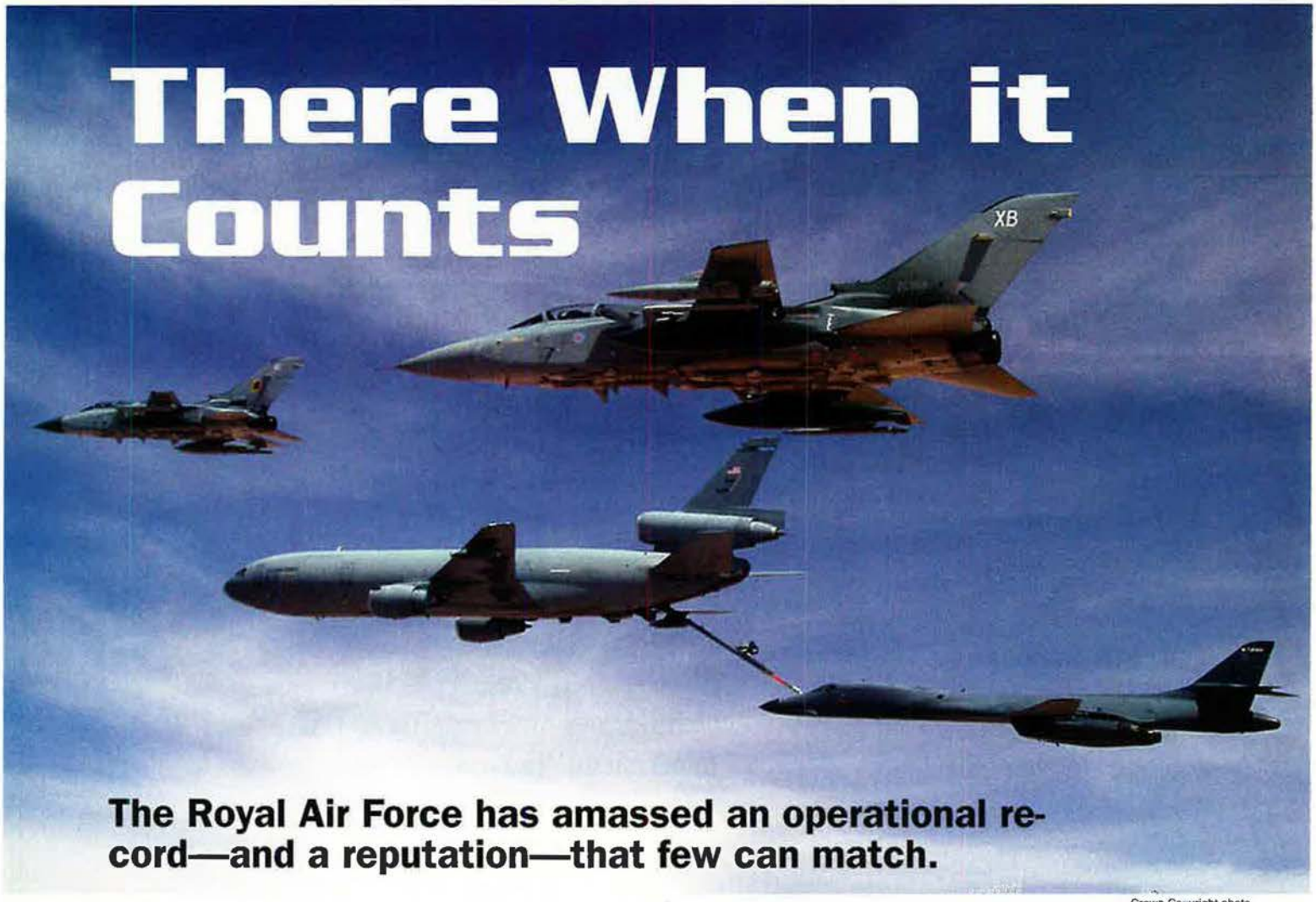


The Royal Air Force has amassed an operational record—and a reputation—that few can match.

Crown Copyright photo

By Rebecca Grant

In early September, NATO forces operating near the town of Tarin Kowt in Afghanistan came under sudden insurgent attack. On-scene controllers called in USAF A-10 Warthogs—and Royal Air Force GR-9 Harriers. The Harriers dropped general-purpose and precision guided bombs on a building used as a mortar firing position. Another Harrier bombed enemy fighters in a nearby town, then launched rockets against enemy forces hiding in a tree line. In the wake of these RAF strikes, the insurgent attacks ceased.

Read any daily operational summary of airpower in Afghanistan or Iraq and chances are Britain's RAF rates at least a mention. American airmen have no closer allies than those in the Royal Air Force. "Fast jets," as their RAF pilots call them, conduct the full range of operations from shows of force to weapons employment to support of ground forces.

Looking for airborne refueling? The tanker may well bear markings of the RAF. The same goes for intelligence-surveillance-reconnaissance work, intratheater airlift, or defense of allied airfields. In all of these areas, the RAF can be found in the thick of the action.

Since its establishment in 1918 as an independent British military service, the RAF has amassed an operational record few can match. RAF deployments span the globe. Operations now are under way from the Falklands in the South Atlantic and Cyprus in the Mediterranean to Afghanistan in Central Asia and the Republic of Georgia in the trans-Caucasus region.

With 45,000 airmen in the force, today's RAF is roughly on a par in size and equipment with France's Armee de l'Air, Germany's Luftwaffe, and Italy's Aeronautica Militare. Still, among close allies, the RAF stands out for its tenacious commitment to a balanced, deployed force—and to a risk-taking level of excellence that has made RAF officers trusted partners in operations of all types.

Twice in RAF history, top leaders have given essential advice to US airmen. The first RAF leader was Hugh M. Trenchard, the World War I commander who later became the first head of the RAF. Trenchard took US Army Signal Corps Lt. Col. Billy Mitchell under his wing for a three-day course in how to train, organize, and employ airpower forces when American airmen first began to show up on the Western Front in 1917. Trenchard remained a close advisor as Mitchell took command of First Army's Air Service to lead major air battles of St. Mihiel and the Meuse-Argonne in fall 1918.

World War II formed a bond of mutual survival, leading to the second instance of RAF advice. In 1942,

then-Brig. Gen. Ira C. Eaker of the US Army Air Forces was welcomed by RAF Air Marshal Arthur T. Harris. Eaker arrived in England with a mere handful of staff and no long-range bombers. He moved into Harris' home and understudied the British bomber baron for several months, until all-US raids began later that year.

There's a legacy of respect from past conflicts, but the bonds don't rest on history alone. The special relationship that exists between the RAF and USAF also draws strength from their sharing the burden of day-to-day operations.

According to Air Chief Marshal Glenn Torpy, today's RAF Chief of the Air Staff, the RAF has always had a tradition of expeditionary operations, although few were apparent during the Cold War. Now, RAF officers have held senior positions in coalition air operations centers, serving as directors of combined air operations centers and in other posts normally reserved for US officers.

The modern-day RAF solidified its reputation in Operation Desert Storm by doing whatever was asked of it, regardless of the risks. Indeed, two British fast jet squadrons were deployed to the Gulf by the end of August 1990, within weeks of dictator Saddam Hussein's invasion of Kuwait.

During Operation Desert Storm—known as Operation Granby in Britain—the RAF took on some of the toughest targets handed to the coalition. RAF Tornado pilots dropped cluster munitions to crater runways in low-altitude attacks on Iraqi airfields. These airfields outside Baghdad "bristled with defenses," in the words of then-Lt. Gen. Charles A. Horner of the US Air Force, who was the coalition's air component commander.

The RAF lost a total of seven Tornados, mainly because of the extreme danger inherent in conducting very low level attacks.

Ready and Willing to Roll

The RAF also employed precision guided bombs. The total of 1,126 guided munitions expended was double that dropped by the US Navy in that conflict.

The RAF stayed on as a partner with USAF between the two Iraq Wars. In Operation Southern Watch and Operation Northern Watch, the RAF was a key player in enforcing the no-fly zones that hobbled Iraq's military ambitions from 1991 to 2003. RAF Tornados also took part in the Operation Desert Fox strikes on Iraqi targets in December 1998.

The RAF was deeply involved, too, in the various 1990s Balkans operations. These began with enforcing no-fly zones but escalated to active defense of safe areas in Bosnia-Herzegovina. British E-3 AWACS aircraft assisted, as did RAF controllers and fast jets. The RAF participated in Operation Deliberate Force in 1995, which brought warring parties to the negotiating table and produced the 1995 Dayton peace accord.

In 1999, the RAF again supplied fast jets, tankers, airlift, and airborne command and control for Operation Allied Force's 78-day air war. RAF bases hosted US bombers. Tornados and Harriers fanned out to bases from Italy and Germany to Corsica as the air campaign to subdue Slobodan Milosevic's forces intensified. Additional RAF tankers moved forward to Italy.

As the end drew near, an RAF activation and protection team helped secure the Pristina airfield in the face of Russian maneuvering in June 1999.

The attacks of Sept. 11, 2001 found the RAF ready to respond to the new threat of global terrorism. In Afghanistan, the RAF was an early coalition member, signing on to fly air refueling and reconnaissance missions.

Soon the RAF contribution expanded as NATO took command of international operations. Under Operation Herrick, the RAF has maintained a contingent of about 850 personnel providing close air support and interdiction attacks with Harriers based in Afghanistan.

The RAF also contributes intratheater lift, ISR sorties, and air refueling. RAF C-47 Chinooks assist with joint mobility, and specialized airfield security and air controllers have seen much action in southern Afghanistan in particular.

In 2003, the RAF was back in Iraq, having committed 112 fixed-wing aircraft—including 66 fast jets—to the second Gulf War. Twelve tankers and 14 special forces and rescue aircraft, plus ISR and refueling assets, rounded out the force.

The British fighters logged 1,726 sorties in the major combat operations phase, while tankers added 359 sorties. All told the early RAF total was 2,481 sorties, according to the count by US Central Command's air component.

Then there is the achievement of the RAF Regiment, one of the more distinctive features of Britain's air arm. It's a force of airmen who fight on the ground. The RAF Regiment found itself responsible for Basra airfield.

In this area, the RAF is well ahead of USAF in embracing the fight for air bases. Gen. John P. Jumper, former

Photo by Clive Bennett

Opposite, two RAF Tornado fighters escort a B-1B taking on fuel from a KC-10 during a mission for Operation Iraqi Freedom. Above, three RAF Typhoons await their turn to refuel from an RAF tanker.

USAF photo by A1C Michael S. Dorus

USAF SSgt. Vincent Metcalf, 31st Maintenance Squadron, salutes the pilot of an RAF AV-8 Harrier departing Aviano AB, Italy, where it had stopped to refuel.

Chief of Staff, and current Chief Gen. T. Michael Moseley have both spoken about the need to create more of this capability.

The Regiment's force of officers and gunners—known as "the Rock Apes"—traces its organizational history back to 1942. After losing key bases on Crete to a 1941 German airborne invasion, the RAF formed highly trained forces with the specific mission of defending all RAF operations.

Members of the RAF Regiment train as mobile, heavy infantry units optimized for active defense of air units. One of the six squadrons is trained for airborne insertion to secure airfields. They also instruct other RAF members in elements of base defense and force protection.

Tactical air control parties reside in the RAF Regiment. In Iraq, they've seen plenty of action.

"We called in close air support from fast air and attack helicopter, managed the airspace and integrating indirect fires whilst jumping over walls and diving in ditches fighting alongside fellow paratroopers and royal horse artillery gunners," recounted Flight Lt. Matt Carter, an RAF TACP officer who last year deployed to Helmand Province in Afghanistan.

In recent deployments, the RAF Regiment has taken responsibility for protecting coalition operations at airfields near Basra in Iraq and Kandahar in Afghanistan. Bases are "no longer safe areas," said Torpy. The RAF philosophy, he added, is airmen "need to look after themselves and after their mates."

For decades, the RAF Regiment has taken on "outside the wire" missions. It sees a need to patrol well outside the air base perimeter as part of its mission. The practice of air base ground defense has changed, too. According to Torpy, the emphasis now is on very sophisticated, layered approaches. It all takes "air-mindedness" to deconflict the target environment and determine priorities.

Air Force Business

The threat to air bases is such that the RAF Regiment plans to re-evaluate a 2004 Ministry of Defense policy decision to transfer short-range air defense capability to the British Army. Changing threats and experiences from Iraq and Afghanistan are the cause.

"The whole protection of rear bases needs to be re-addressed," said Torpy. "Defense of air bases is air force business."

For all that, the RAF faces severe fiscal challenges. In July 2004, a British white paper outlined a course for future capabilities. The paper committed British forces to preparing for effects-based operations and a spectrum of contingencies. However, it also ordered new cuts in force structure and an RAF manpower reduction to 41,000 by April 2008.

Deep fiscal cuts already have caused a reduction and reconfiguration of the RAF. Several major bases have been closed. All of the GR3 Jaguars were eliminated. Headquarters staffs were merged, bringing about a one-third cut in manning.

Torpy also cited efforts to trim maintenance costs. Through innovative partnerships with industrial firms working at RAF locations, the RAF cut flying hour costs for the Tornado by 50 percent and for the Harrier by 40 percent.

That said, the RAF is adamantly committed to maintaining a fully balanced force. It has an ambitious schedule for bringing in modern weapon systems.

First on Torpy's list is the integration of the Eurofighter Typhoon. This four-nation project has been long in the making and had been beset by contract and program issues. However, the RAF is poised to make Typhoon the centerpiece of its tactical aviation fleet. Torpy said he has "every confidence" that Typhoon will emerge as a capable ground attack and close air support platform in addition to its air superiority role.

USAF photo

An RAF Tornado refuels from a USAF KC-10 during a mission in Southwest Asia.

RAF photo by Cpl. Jez Doak

RAF Senior Aircraftsman Andy Marr guards a Tornado at an air base in the Middle East. The specialized forces of the RAF Regiment provide airfield security.

Next up will be acquisition of the short takeoff and vertical landing variant of the F-35 Lightning II. The STOVL F-35 is known to the RAF as the Joint Combat Aircraft, as it will also see service on Royal Navy aircraft carriers.

Mobility is another high priority. Britain hopes to operate a few more C-17s in addition to those it bought after a six-year lease. A400 transports will gradually enter the RAF's fleet. Torpy expects the air transport force will top out at 25 C-130Js, 25 A400Ms, and ideally, eight C-17s.

The RAF, like the US Air Force, gives high priority to acquisition of a new aerial refueling aircraft. British tankers scored big points in missions supporting combat operations in Iraq and Afghanistan. US Navy pilots were especially big fans of the "mega-tankers," as they described the RAF VC-10s and Tristars. "They were awesome, because they were very accommodating. They always had their lights on full bright and we could see them real easy," said one US Navy F/A-18C pilot who flew missions over Afghanistan early in the 2001 campaign.

Unmanned aircraft are part of the RAF roster, too. For the past few years, the RAF has been operating the Predator UAV alongside USAF. Ultimately the RAF plans to buy and field the Reaper variant of Predator, optimized for strike missions.

Equipment is only part of the answer. The RAF is increasingly attuned to cyberspace as a warfighting capability. "We recognize that cyber underpins all that we do," Torpy said, although it isn't exclusively the domain of the RAF. In Torpy's view, "We've got to approach this in a joint manner."

Britain remains in "the first division" of world powers because it keeps up its military forces "and the will to use them," as Torpy said. "We don't want to give up that capability."

Explaining Airpower

Remaining a robust force over the long term will depend in part on the RAF's ability to explain its mission. It's a problem well known to US airmen, too: explaining airpower. British airmen are sensitive to the challenges of explaining the leap-ahead increases in airpower's technological might and its central role in operations all across the spectrum.

Torpy acknowledged the problems in getting the airpower message across. Iraq and Afghanistan have "demonstrated the utility of airpower across every strand of activity," as Torpy put it. "That's given us complete freedom of maneuver."

Like USAF, the RAF makes a point of the fact that British surface warriors haven't been under air attack in a long while—in their case, since the 1982 Falklands war where the Argentine air forces had advantages in both proximity and numbers, with deadly consequences for British troops.

RAF leaders see a disturbing trend in the demand for what Torpy termed "organic" capabilities, particularly by the land forces. He said that an ill-informed focus on collateral damage was leading to pressures for these organic capabilities. Most with experience in Afghanistan and Iraq are seeing new demands for unit ownership of ISR and fire support resources.

Torpy drew an analogy with the Apache helicopter. "It's a great platform, but it's got a range of 150 km," he pointed out. Overinvestment in so-called organic fires runs a risk of shorting capabilities needed across the joint force. "If you skew resources to those capabilities to the detriment of CAS," said Torpy, "you haven't got the capability for rapid effect."

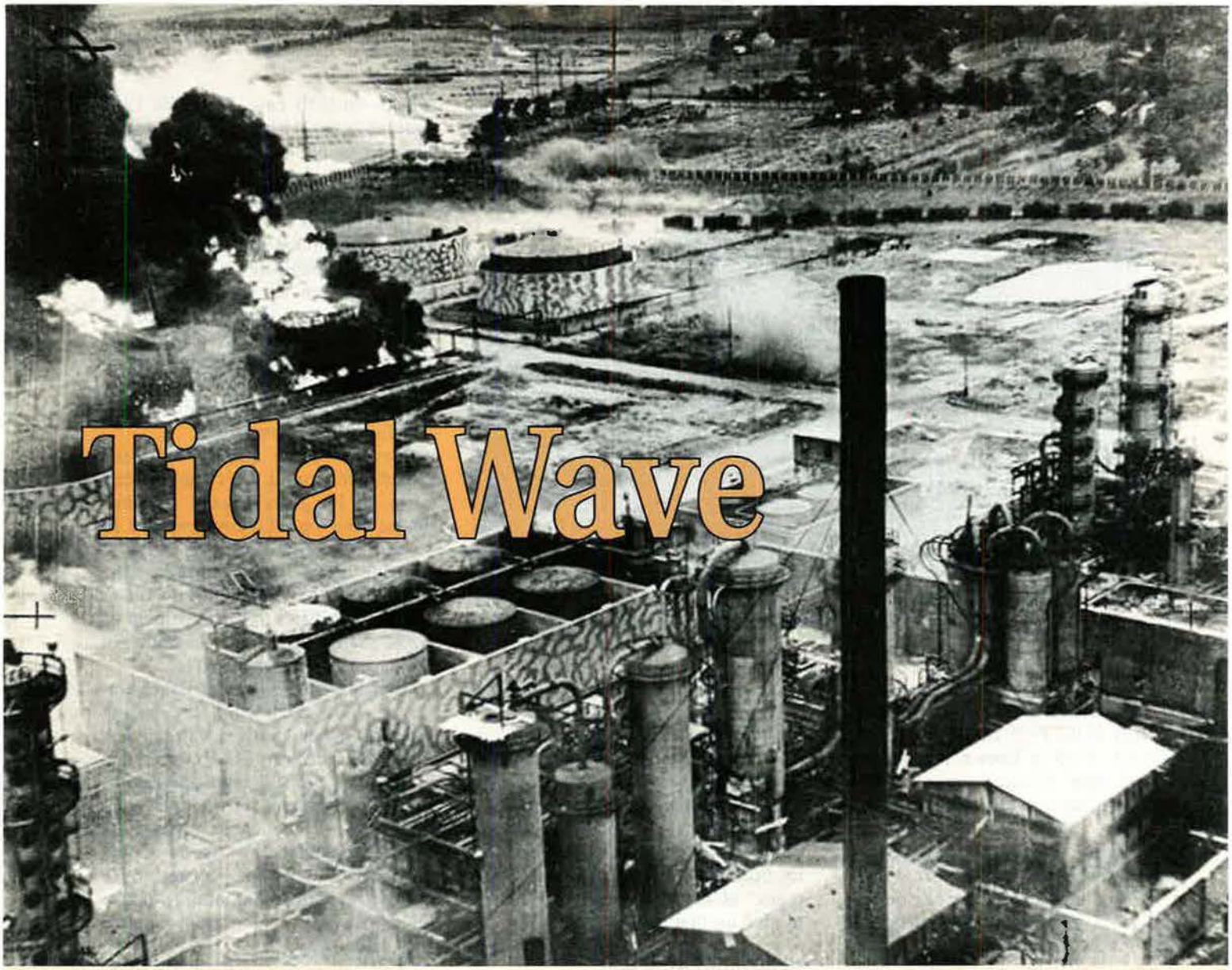
According to Torpy, part of the solution is to do a better job at detailing what airpower can and can't do. A recent British Army-RAF conference focused on air and land operations, giving participants at the O-5 level and above a chance to understand mutual dependencies. "None of this is rocket science, but we need to do better if we want to maintain what we all believe is a very important capability," said Torpy.

How can airmen explain airpower and clarify perceptions among service colleagues? "By arguing the case," Torpy said bluntly. Better understanding of airpower's role will strengthen the 21st century RAF, he said, noting that British defense policy puts "a clear emphasis on offensive effect" as an RAF mission.

Where operations may occur is anyone's guess.

"If you look back over the past 25 years, the character of our major operations—the Falklands, Gulf War 1, Bosnia, Kosovo, Gulf War 2—were all very different," Torpy told *Aerospace International* in September. "The conclusion I draw from this is that we need to be prepared for the unexpected." ■

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, "When Bombers Will Be Decisive," appeared in the November issue.*



Tidal Wave

It took sheer courage, and lots of it, for each bomber crew to press on into a huge cloud of flak at Ploesti.

By Walter J. Boyne

The Aug. 1, 1943 air raid on Ploesti, Romania, had an ambitious goal: Shorten World War II by knocking out much of Germany's petroleum production in a single blow. Called Operation Tidal Wave, the attack by five United States Army Air Forces bomber groups on Ploesti was well-planned and well-rehearsed.

It was undermined by an incorrect premise and faulty intelligence. The American forces operated under the illusion that a single strike could do irreparable damage to a major target. More immediately, American intelligence totally underestimated the strength and skill of the combined German-Romanian resistance and the ability of German intelligence.

Only the indomitable bravery of the Ploesti airmen under fire rescued the attack from failure. What might have been an utter disaster was turned into an admittedly costly American victory that established new standards for combat initiative, aggressiveness, and tenacity.

The raid called forth thousands of acts of heroism, most of them unrecorded, lost in the fiery crashes of B-24s disintegrating under the heavy German fire. There was one common denominator, however, easily measured. That was the sheer courage necessary for each bomber to press on to its target, flying into a huge black hurricane of anti-aircraft fire.

This was no impetuous attack, no spur of the moment decision, but rather a carefully thought out charge into the mouth of almost certain death.

In wartime, heroism is often overlooked in the press of events. That was not so with Ploesti, for a cascade of decorations proved how much the AAF leadership understood the risks and appreciated the sacrifice.

Five Medals of Honor were awarded from the mission that day, more than in any other single air action. There was a profusion of other medals as well, but the most important accolade shared by the survivors was the permanent acknowledgement that they had accomplished an important and dangerous mission.

Ploesti, a city of 100,000, was ringed by seven major refineries that produced about one-third of Germany's oil and

one-third of its aviation fuel. Air Force planners recognized from the start that it would be an extremely difficult target. It was located far from feasible bases and well-defended.

The impetus for the attack came from the very top, for it was agreed upon by Prime Minister Winston Churchill and President Roosevelt at the Casablanca Conference in January 1943.

No one asked the commander of Ninth Air Force, Maj. Gen. Lewis H. Brereton, if the mission was feasible. He was simply ordered to do it. Brereton selected Brig. Gen. Uzal G. Ent to oversee preparations for the raid, and also had the services of Col. Jacob E. Smart, a trusted advisor to Gen. Henry H. "Hap" Arnold.

It was Smart who proposed a low-level mission, an extraordinary departure from the cherished AAF doctrine of high-altitude precision bombing.

Smart—who was later shot down, spent 11 months as a prisoner of war, and ultimately retired as a four-star general—felt there was no choice. Analysis indicated that at least 1,400 heavy bombers were necessary to achieve success with a high-altitude raid, and these were not available. He opted for the one tactic that might work—a surprise low-level attack. Col. Edward J. Timberlake planned the mission, and selected Maj. John L. Jerstad as operations officer.

There would be fewer than 200 bombers for the 2,300-mile round-trip mission.

In one way the raid was unlike most of those fought in Europe. The American forces were quartered in the Libyan wasteland in austere, uncomfortable accommodations and unhygienic conditions. The defending Germans, happy not to be on the Eastern Front, were enjoying the Romanian summer, where food, liquor, women, and gasoline were readily available.

Dysentery was rife in the American camp, striking even the top leaders, while on the German side the greater hazard was from hangovers.

Unfounded Optimism

Under Smart's guidance, the Americans planned a low-level attack to evade German radar and allow a simultaneous assault against the seven key targets. The time over target for the attacking wave was to be so brief that the bombers were intended to be en route home before the flak could respond or fighters scrambled.

This optimistic view was clouded when an Axis prisoner revealed that Ploesti was heavily defended. The mission was so important that Ent confided that "if nobody comes back, the results will be worth the cost."

German strategy was based on experience and helpfully stimulated by the only previous American attack on Ploesti.

When the United States declared war on Nazi-occupied Romania and Hungary on June 5, 1942, a decision was made to attack Ploesti. On June 12, 1942, 12 B-24s raided Ploesti—the first American bombing raid on a European target. The damage to the oil refineries was minimal but all 12 bombers landed safely—six in Iraq, two in Syria, and four in Turkey, where the aircraft were seized and the crews interned.

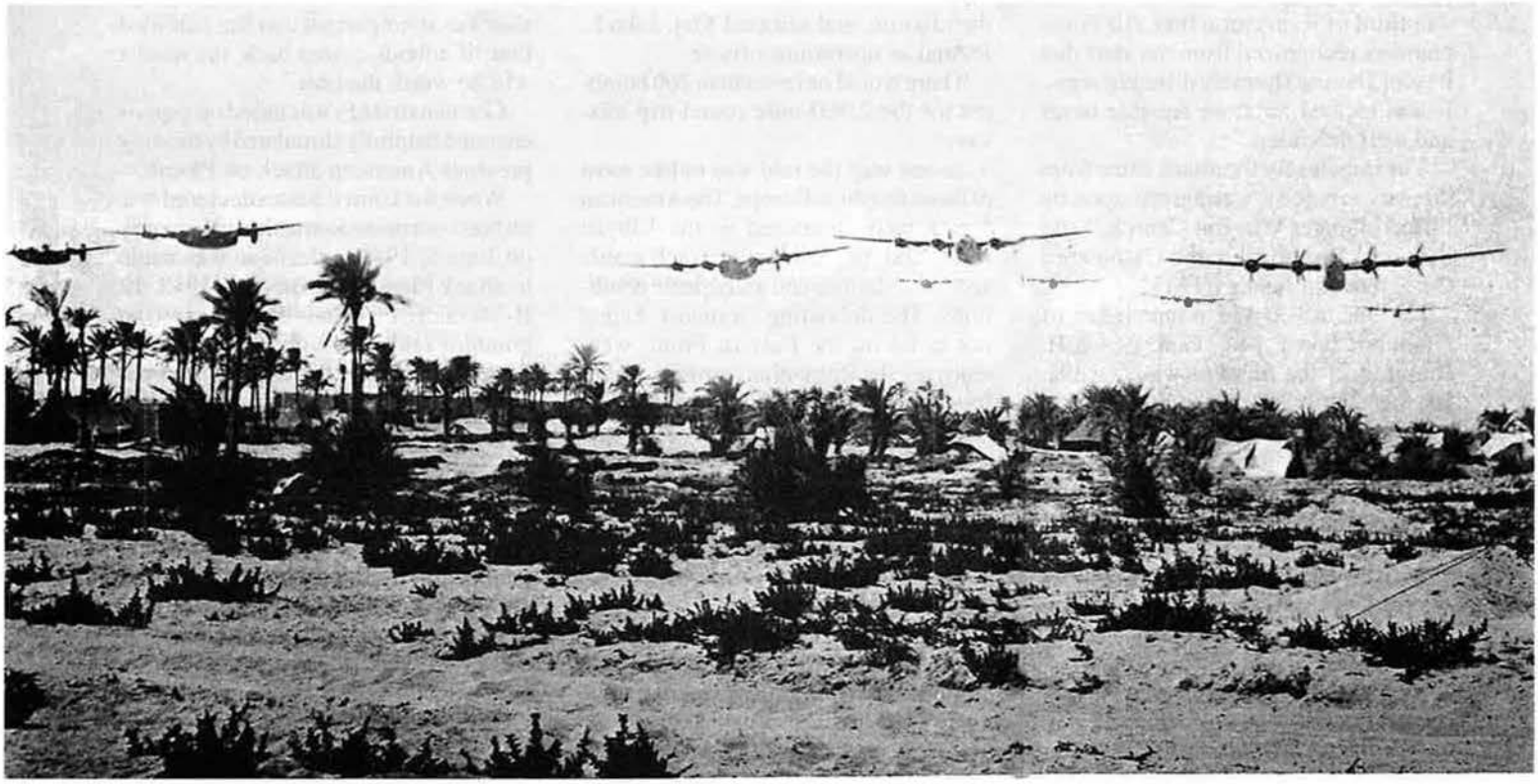
That raid was a gift to Col. Alfred Gerstenberg, the wily Luftwaffe officer commanding Ploesti's defenses. At a time when every gun and fighter was required either for the Eastern Front or the air defense of Germany, Gerstenberg used the importance of the Ploesti petroleum output and its vulnerability to Allied air raids to obtain massive defensive reinforcements.

Gerstenberg connected the important refineries circling Ploesti with a ring of piping that allowed him to isolate damage and facilitate repairs.

He then placed another ring around the city. This one comprised 237 separate 88 mm and 105 mm anti-aircraft guns. There were also hundreds of batteries of 37 mm and 20 mm cannons, balloons, light flak towers, and countless machine gun installations.

Gerstenberg camouflaged his anti-aircraft guns in buildings and haystacks. His piece de resistance was a train able

Opposite, thick oil smoke rises over Columbia Aquila refinery. Left, an unidentified Ninth Air Force aircrew member fastens up his flak suit before the Operation Tidal Wave mission.



to move through the target area pulling freight cars laden with concealed anti-aircraft batteries.

For interception, Gerstenberg had 52 Messerschmitt Bf-109s and 17 twin-engine Messerschmitt Bf-110s within 20 miles of Ploesti. Half of the 109s were flown by German and half by Romanian pilots. Also available were other German and Romanian aircraft, along with Bulgarian units.

Even more important, Gerstenberg had established a radar interception net along with an efficient signal detection unit in Athens which was monitoring Ninth Air Force transmissions. These were fed to the equivalent of a modern combined air operations center, a sophisticated fighter command headquarters in Bucharest. There the route of the "secret mission" was tracked soon after takeoff.

In short, Gerstenberg had been preparing for years to defend Ploesti. His antagonists had six weeks to prepare to attack it.

Yet American preparation was thorough. A low-level attack offers definite advantages, such as greater bombing accuracy. It also makes it more difficult for fighters to attack and gives enemy anti-aircraft gunners less time to fire.

Low-level assaults also have distinct disadvantages. The B-24 was not designed for close formation low-level work, and flying in formation at high speeds, close to the ground, in turbulent air, is dangerous. Navigating unfamiliar terrain while coming in low might make the enemy anti-aircraft gunner's job more difficult, but it also exposed the aircraft to every sort of ground fire, from pistols to 105 mm cannon.

Practice low-level strikes attacked enemy installations in Sicily. Both the new low-level bombsight and the tactics seemed effective.

Engineers also laid out dummy targets in the desert around Benghazi, complete with scale replicas of the refineries. A detailed sand-table model of Ploesti was constructed and a series of oblique sketches of the targets was made so that the aircrews would recognize them on their approach. There were models of specific buildings within the five refineries in Ploesti; the refinery at Campina, 18 miles northwest of the city; and one at Brazi, five miles to the south. These seven major targets were assigned to elements of the five groups.

Soapsuds

Famous Hollywood journalist and publicity man John Reagan "Tex" McCrary made a training film called "Soapsuds" (the original code name for the mission), which gave a good representation of the target. It should have been titled "Whistling in the Dark," however, for it predicted a weak defense and that the Romanians would leave their guns unmanned during the attack.

On a more practical level, the five groups practiced low-level formation flying, including two mock missions involving the entire task force on July 28 and 29. On the second mission, the task force destroyed the entire target in just two minutes, boosting morale.

Then, a crew shortage threatened. Extra efforts by maintenance personnel made additional aircraft available for the mission at the same time that dysentery forced several men off flying status. The problem was compounded when Hap Arnold sent orders forbidding Brereton, Timberlake, and Smart from flying on the mission. It took a judicious shuffling of available personnel to make up the deficiencies.

In the early morning hours of Aug. 1, the strike was launched with 178 Consolidated B-24s taking off from Libya, their sand-scoured engines straining to get them airborne.

There were 1,764 crewmen—and an Englishman, RAF Squadron Leader George C. Barwell—who was there unofficially and welcome for his gunnery expertise.

One aircraft crashed shortly after takeoff, incurring the first of the day's many casualties.

Each B-24 was equipped with extra bomb-bay tanks and fueled with 3,100 gallons of gasoline. The formation as

B-24s take off en route to Ploesti as part of Operation Tidal Wave.

a whole carried 311 tons of bombs, mostly of 1,000 and 500 pounds, with a sprinkling of incendiaries. They flew in route formation, boxes of six aircraft in two V formations of three. At low altitude, they passed the island of Corfu then headed northeast toward Albania and Yugoslavia.

Things began to go very wrong en route.

In the lead formation, one aircraft inexplicably went into a series of climbs and dives that led to its plunge into the sea. An accompanying aircraft departed the formation to look for survivors and was later unable to rejoin the mission.

In many accounts, the crashed *Wingo-Wango* is reputed to have carried the lead navigator for the mission, but Col. Keith K. Compton, 376th Bomb Group commander, later refuted this. Compton asserted that his aircraft, *Teggie Ann,* was in the lead, and its navigator, Capt. Harold Wicklund (who had flown on the first Ploesti raid) was lead navigator.

Ten other aircraft aborted, and the remaining aircraft faced 9,000-foot mountain ranges topped with clouds. All five groups crossed at about 11,000 feet, but began to separate because the two lead groups (376th BG and 93rd BG) used higher power settings, causing a major variance in speed.

As each group passed over the Balkan Mountains they descended rapidly, but the goal of a solid wave of five groups approaching seven targets at once was no longer possible.

The groups might have been reformed into a single unit had they not maintained the prescribed radio silence, unaware that the Germans had already concluded that the target was Ploesti.

All five groups reached Pitesti, 65 miles from Ploesti. From Pitesti, the 389th BG departed for an attack on its target at Campina. Halfway to the next waypoint at Floresti, Compton was monitoring the navigation closely—too closely—with Ent in the jump seat. Compton mistook the small town of Targoviste as Floresti and turned the 376th southeast on a heading to Bucharest.

Lt. Col. Addison E. Baker, leading the 93rd, turned with the 376th.

Chaos was in the making, even though some now broke radio silence to call attention to the mistake.

The turn plunged the two groups directly into the holocaust of Gerstenberg's anti-aircraft fire, but took them 40 miles from where the Messerschmitts were waiting.

Recognizing the error, Baker turned 90 degrees to lead the 93rd toward Ploesti, while Compton continued for a time toward Bucharest.

In the German fighter command headquarters, the ad hoc maneuvers were being watched and were misinterpreted as a masterpiece of strategy—a feint at Bucharest while the main force hit Ploesti.

Aboard *Hell's Wench,* with copilot Jerstad—who had already flown far more than a full tour from Great Britain—Baker led the 93rd into a black maelstrom containing a fury of 88 mm shells, barrage balloon cables laced with bomblets, and towering chimneys.

Hell's Wench took so many hits that Baker had to jettison his bombs to stay airborne. His formation, taking heavy losses as it bombed, turned the Columbia Aquila refinery into a mass of smoke and flames. Once through the inferno, Baker climbed high enough for some of his crew to bail out before *Hell's Wench* gave out and plunged to the ground. No one survived, but Baker and Jerstad were posthumously awarded the Medal of Honor for pressing on in the face of unimaginable fire and for the effort to save their crew.

Two elements of the 93rd, led by two future Air Force leaders Maj. George S. Brown (later Chief of Staff) in *Queenie* and Maj. Ramsay D. Potts in *The Duchess,* attacked the Astra Romana, Unirea Orion, and Columbia Aquila refineries on the south side of the city.

Attacking at 300 feet or less, 11 aircraft from the 93rd were lost in the target area.

In the lead group, Ent considered the anti-aircraft fire to be too intense to penetrate to the 376th's target, the Romana Americana refinery, and he told Compton to order an attack on "targets of opportunity."

For most of the 376th this turned out to be an attack from the east on Campina, the 389th's target. Five bombers plunged into the inferno to strike the Concordia Vega refinery.

All Crews to Ploesti

In the meantime, Col. John R. Kane, 98th BG commander, and Col. Leon W. Johnson, 44th BG commander, reached Floresti and headed to their assigned targets—Asta Romana for the 98th, Columbia Aquila for the 44th. By now the defense reaction was at its peak, and the 98th and 44th also faced the low-level hazard of the delayed action bombs dropped by the 93rd and the horrendous explosions of the oil-filled storage tanks.

Kane knew the importance of the mission. He had told his bomb group that all crews were going to Ploesti, regardless of the number of missions they had already flown. "It would take an entire army a year to fight its way up here and smash this target," Kane told them. "We are going to do it in a couple of minutes with less than 2,000 men."

The attack of the two bomb groups paralleled the track of Gerstenberg's flak train, where the false sides of the cars disappeared to reveal a mix of batteries firing at the 98th on the left and 44th on the right, all flying 50 feet or less above the ground.

The B-24 gunners responded immediately, damaging the engine and killing enemy gunners.

Taking hits en route, the two groups flew into a pitch-black inferno filled with bursting flak, barrage balloons, and towering smokestacks. Over the target, aircraft were passing in every direction over and under each other, and once again the Germans marveled at the precise execution of what they believed to be an intricate American plan.

In the midst of the anti-aircraft fire and exploding bombs, some damaged aircraft plunged to the ground while oth-

A B-24 flies low over "Target White 4," the Astra Romana refinery.

ers, fatally wounded, flew on to attempt a forced landing in the countryside. Losses were heavy.

Both Kane and Johnson were awarded the Medal of Honor for their heroic leadership. Neither man could have been criticized for diverting to an alternate target, given the flames and smoke boiling up from their assigned tasks. Their Liberators lunged ahead, dropping their bombs on the coveted target, their 50-caliber machine guns firing to suppress the enemy gunners or ignite storage facilities.

Twenty-one of the 44th's 37 aircraft had been assigned to Lt. Col. James T. Posey for an attack on the Creditul Minier refinery south of Ploesti. The flak concentrations there had already decimated Baker's 93rd BG, and immediately poured an avalanche of fire into Posey's 44th.

The B-24s, some flying so low that their antennae were grass stained, took hits, but their 1,000-pound bombs demolished the target and they suffered no losses over the target.

The 389th BG was equally successful against the Steaua Romana refinery northwest of Ploesti. All 29 B-24s, led by Col. Jack Wood, made an attack just as they had practiced back at Benghazi, on the correct course and altitude, enabling the bombardiers to pick out their exact aiming points. Four aircraft were lost over the target, which was so damaged that it did not resume production during the war.

Twenty-two-year-old 2nd Lt. Lloyd H. Hughes was in the second wave of the 389th B-24s, screaming in to attack at less than 30 feet above the ground. His aircraft suffered numerous hits, puncturing his wing tanks and sending a vaporous stream of gasoline behind him. Hughes pressed on, waiting until his bombardier, 2nd Lt. John McLoughlin, dropped the bombs. The aircraft was ignited by flames from the target. The pilot crashed into a riverbed while attempting an emergency landing. Hughes and six of his crew were killed, but McLoughlin and two gunners, SSgt. Thomas Hoff and SSgt. Edmund Smith, survived. Hughes received the fifth Medal of Honor awarded for the mission.

Even More Heroes

Another gunner, SSgt. Zerrill Steen, was a fighting survivor. After his B-24 had crashed, killing the rest of his crew, Steen remained at his post, firing his 50-calibers at the enemy until the ammunition was exhausted. Only then did he break out of his turret and climb to relative safety. He was awarded a Distinguished Service Cross while still in captivity.

In the chaos, individual groups of battered B-24s were forced to fight off the attacking German and Romanian fighters.

More than half the B-24s fortunate enough to survive the attack were damaged, some critically so. They came together in small groups for their journey home, although some were forced to seek refuge in Turkey. The wounded formations often included aircraft with one or more engines out—perfect targets for the German, Romanian, and Bulgarian fighters stalking them.

In the end, 92 airplanes, many of them badly damaged, reached Benghazi. Nineteen landed at other Allied fields, seven were interned in Turkey, and three were shot down by German fighters, crashing at sea. In the final report, 54 airplanes were lost, of which all but 13 were lost in action.

Fully 30 percent of the airmen didn't make it home that day: Of the original 1,765 airmen who went airborne for the raid, 532 were either dead, prisoners, missing, or interned.

While the damage to the refineries was severe, the German ability to repair the facilities was underestimated.

Gerstenberg used reserve capacity and forced labor to quickly restore Ploesti to its full production. He also obtained reinforcements, knowing that the Americans would return.

When Fifteenth Air Force was ensconced in Italy, the bombers did return, beginning in April 1944. Now, however, the oil fields were within fighter range. More than 5,400 heavy bomber sorties, along with almost 4,000 fighter sorties, were flown against Ploesti, reducing it to rubble.

The missions ceased when the Soviet Army moved into the area in August 1944. All told, the AAF had expended more than 350 aircraft in the series of strikes on Ploesti. More than 2,800 airmen were injured or killed in the effort to shut down the Nazi fuel source.

The Romanians themselves were disillusioned by the occupying Germans and fearful of the Russians. As the war was grinding to a close, Lt. Col. James A. Gunn, the senior prisoner of war in Bucharest, made a two-hour flight to Foggia, Italy, in the tiny radio compartment of a specially marked Messerschmitt Bf-109G. The 109 was piloted by a 56-victory Romanian ace, Capt. Constantin Cantacuzino.

There, Gunn made arrangements for Operation Reunion, the evacuation of 1,271 Allied prisoners from Romania to Italy. They were brought home by a fleet of B-17s—the best possible finale to a monumental effort. ■

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

The Chart Page

By Tamar A. Mehuron and Heather Lewis

Wars and Rumors of Wars

The Constitution gives Congress the power to "declare war." Yet, while the US has resorted to arms many times, lawmakers actually have declared war—formally—only five times. As this page shows, the most recent occasion was some 65 years ago, in World War II. Three declarations were in the 19th century. In reality, Congress has been three times more likely to approve use of force without declaring war. It has on 15 occasions authorized "non-declared" wars—explicitly, implicitly, or on a contingent basis. The first time was in 1798 and the most recent in 2002. Moreover, the President on 10 occasions has committed US troops to overseas combat with no prior approval from Congress at all, as is shown in the final column.

America's Many Routes to Armed Conflict

Declarations of War	Explicit Authorization of Force	Implicit Authorization of Force
Britain, 1812	Quasi-War, 1798	Spain, 1898
Mexico, 1846	Tripoli, 1802	Mexico, 1914
Spain, 1898	Algeria, 1815	Cuba, 1962
Germany and Austria-Hungary, 1917	Civil War, 1861	Vietnam, 1964
Japan, Germany, Bulgaria, Hungary, and Romania, 1941-42	Lebanon, 1983	
	9/11 attackers, 2001	

Contingent Authorization	Conflicts without Formal Authorization
Paraguay, 1858	Philippines, 1899-1902
Formosa, 1955	Mexico, 1916
Middle East, 1956	Korea, 1950-53
Gulf War, 1991	Dominican Republic, 1965
Iraq, 2002	Grenada, 1983
	Panama, 1989
	Somalia, 1992-94
	Haiti, 1994
	Bosnia, 1995
	Kosovo, 1999

Source: *Congress at War: The Politics of Conflict Since 1789*, by Charles A. Stevenson, 2007, The National Defense University Press-Potomac Books, Inc.

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AFA National Report

natrep@afa.org

By Frances McKenney, Assistant Managing Editor

Region, State Presidents Meet

The Air Force Association's region presidents and state presidents received a comprehensive orientation to AFA during two days in late October in Arlington, Va.

The association has 10 new region presidents and 18 new state presidents for the upcoming year. They were among the 42 field leaders attending the information sessions and workshops.

In opening remarks to them, AFA Chairman of the Board Robert E. Largent said, "The Air Force values what the association does," and "it is a vital time for the Air Force Association to stand up for the Air Force." He challenged the field leaders "to better the grassroots AFA"—the chapters, states, and regions—that they are responsible for.

Directors of the association's headquarters staff gave an overview of their departments, and the Membership Operations staff presented information that the presidents will need to carry out their responsibilities.

Day Two was devoted to group meetings and training conducted by Vice Chairman of the Board for Field Operations Joseph E. Sutter. He told the attendees that one of the most important benefits from this annual orientation is "sharing good ideas."

Staff photo by Jim Simpson

AFA Board Chairman Bob Largent (far right) and Vice Chairman for Field Operations Joe Sutter (front row, blue shirt) stood for a group photo with AFA's region presidents during the annual orientation and training session. Front row (l-r): Mason Botts, Sutter, Joan Sell, Maxine Rauch, Leonard Vernamonti, Laird Hansen, Marvin Tooman, James Wheeler, Largent. Back row (l-r): Ronald Mielke, Terry Cox, John Timothy Brock, Michael Peters, Ronald Thompson, Ronald Adams, and Don Michels.

Convention in Colorado

At the Colorado State Convention, hosted by the **Mile High Chapter** in Denver, keynote speaker Lt. Gen. Craig R. McKinley and AFA Board Chairman Largent both highlighted the role of the Air National Guard. As ANG director, McKinley pointed out the importance of the Guard in keeping up the overall operations tempo of the military. In turn, Largent spoke of the AFA as a professional organization representing the entire Air Force community, including the Guard and Reserve.

Their remarks were apropos since nearby Buckley Air Force Base, which became an active duty facility seven years ago, is home to the Colorado Air National Guard.

Some 200 guests attending the convention and its awards banquet included Maj. Gen. H. Michael Edwards, the adjutant general for the state; Brig. Gen. William Hudson, the assistant adjutant general; AFA National Directors Jerry E. White and Charles P. Zimkas Jr.; and George M. Douglas, former AFA Board Chairman (1977-79).

The banquet honored Colorado AFA members who received national-level awards (listed in November, p. 93-94), state-level award recipients, and a dozen active duty, Guard, Reserve, and Air Force civilian personnel. One standout was the **Lance P. Sijan Chapter;** it earned the national-level Jack Gross Award for recruiting 325 new members in 2007. Sijan Chapter President Brian Binn took home a fistful of national and state awards and was named state AFA Member of the Year. He was also elected state executive VP. Others elected to state offices were Gayle White, state president, Ronald G. Kriete, treasurer, and Debbie Estrem, secretary.

The Mile High Chapter, led by Ronald A. Geurts, received the state Chapter of the Year award. Timothy J. Donahue received the state Teacher of the Year award, as a science and honors chemistry teacher at Cherry Creek High School, Greenwood Village, Colo.

Alamo Symposium

The **Alamo Chapter (Tex.)** co-sponsored with Air Education and Training Command a symposium and Air Force birthday ball in San Antonio in September.

Two days of symposium presentations were structured around four themes: the expeditionary warfighter, deciphering culture, the War on Terror, and accelerating change. Lt. Gen. Gary L. North, commander of 9th Air Force and US Central Command Air Forces, was a keynote speaker. In addition, a group of senior leaders from AETC units fielded questions from the audience during a panel discussion.

According to Kaye H. Biggar, chapter

secretary, more than 2,500 guests attended the culmination birthday ball. Heading the list were Air Force Secretary Michael W. Wynne and AFA Board Chairman Largent.

The hundreds of volunteers who carried out these events came not only from AETC and the Alamo Chapter but also from the **Paul Revere Chapter** in Massachusetts. The out-of-staters—led by Chapter President Angela M. Dupont—lent a hand with registration and other logistics, sharing experience they have gained through sponsoring the Revere Chapter's annual C2ISR summit.

Funds raised through corporate sponsors of the Texas symposium have been allocated by the Alamo Chapter's aerospace education foundation to 2nd Air Force and 19th Air Force, AETC headquarters, Air University, Air Force Recruiting Service, and the chapter's scholarship and educational outreach programs.

USAF photo by SSgt. Celena Wilson

AFA Board Chairman Bob Largent (right) attended an Air Force Ball as part of Air Force Week in Atlanta in October. He's pictured with (l-r): Lt. Col. Arlene Salmon, AFA National Director Michael Bolton, Georgia State President Gregory Bricker, CMSAF Rodney McKinley, AFRC chief Lt. Gen. John Bradley, US Rep. Phil Gingrey (R-Ga.), Georgia Adjutant General Lt. Gen. David Poythress, TV personality Mark Winne, and retired CMSAF Gerald Murray, president of the Dobbins Chapter.

Keys to the Jag

The **Wright Memorial Chapter** in Dayton, Ohio, was the host for five air-conditioned tent chalets at the Vectren Dayton Air Show in July.

According to Chapter President Kent D. Owsley, about 2,000 visitors stopped by the tents for a "first-class view" and refreshments. VIPs from nearby Wright-Patterson Air Force Base included Gen. Bruce Carlson, commander of Air Force Materiel Command, and the AFMC vice commander, Lt. Gen. Terry L. Gabreski.

Guests of the chalet had a chance to win a double prize of a $100 gift certificate to a local steakhouse and the keys to a Jaguar XK coupe—albeit only for a weekend—courtesy of a car dealership. TSgt. Travis Haywood and his wife, SSgt. Amy Haywood, won the drawing. They are soon to deploy to Iraq, Owsley reported, so the chapter was "delighted that they had the lucky entry."

With chapter member Jim Heitz heading up the project, the chapter hosts the chalets every year at this air show, held at Dayton Airport. This year, they invited military personnel

who recently returned from overseas, Owsley said.

The headline act for the air show was the US Air Force Thunderbirds and their Brazilian Air Force demonstration team counterparts.

Mountaineer Leadership

In West Virginia this past June, the **Chuck Yeager Chapter** co-sponsored its most successful leadership school yet for AFJROTC cadets.

Called Mountaineer Cadet Officer Leadership School, the session lasted for six days, hosted by Concord University in Athens, W.Va. Chapter Secretary-Treasurer Herman N. Nicely II reported that 270 cadets—102 of them females—spent the week working on academics and leadership skills, drill and ceremonies, physical fitness, and other activities.

MCOLS in West Virginia got its start in 2001, organized by David F. Slaughter, then the chapter's aerospace education VP and now a member of the **Gen. Bruce K. Holloway Chapter (Tenn).** Some 40 cadets attended that inaugural session.

This year, attendees represented five states, coming from the Mountain State as well as Virginia, Kentucky, Tennessee, and North Carolina. The commandant, retired Col. Randall Cantrell, came from North Carolina, too; he is the senior aerospace science instructor at Ragsdale High School in Jamestown and a member of the **Tarheel Chapter.** He has headed up this project since 2005. This year, with assistance from Yeager Chapter President Ira S. Latimer Jr. and Nicely, he led a cadre of nearly 40 adult staff members and 29 cadet trainers.

AFA's Central East Region helped fund the awards earned by the cadets. Andrew Alston from Virginia took home the award for Outstanding MCOLS Cadet.

Sweet Sound of P-51s

When 77 P-51s flew into Columbus, Ohio, for an air show in September, the Capt. Eddie Rickenbacker Memorial Chapter was there to hear "that sweet sound of the V-12 Rolls Royce Merlin" engine, as one spectator put it.

The chapter joined with the Motts Military Museum of Groveport, Ohio, to man a display at the air show called the "Gathering of Mustangs and Legends." It was held at Rickenbacker Airport. Among those handing out copies of *Air Force* Magazine and AFA membership applications were Chapter President Richard H. Coots Jr., Treasurer Chris M. Gibson, and chapter members Warren E. Motts and Richard W. Hoerle.

Peter J. Hennessey, an AFA national director from Columbus, stopped by the AFA area, as did visitors from seven foreign countries. It was a World War II WASP uniform jacket that attracted people to the display, Hoerle noted. Other attention-grabbers? P-51 artwork, Eddie Rickenbacker memorabilia, and a uniform blouse, helmet, goggles, and medals from Hump pilots of the World War II China-Burma-India Theater.

The chapter hosted a luncheon during the air show. About 100 guests gathered at the 121st Air Refueling Wing's Red Tail dining facility at Rickenbacker Air National Guard Base, including a half-dozen Red Tails themselves—Tuskegee Airmen. They received AFA commemorative plaques during a ceremony at the luncheon, as did several former prisoners of war. Also honored: a group of AFA charter members, including Hoerle and James C. Gorman, who both joined in September 1946, William Runser, Bob Dean, and William Schubert.

Retired Col. Randall Cantrell salutes cadets during a pass and review at an AFJROTC leadership school co-sponsored by the Chuck Yeager Chapter last summer in West Virginia. Cantrell is a member of the Tarheel Chapter in North Carolina.

USAF photo by SMSgt. John Rohrer

From left, Lt. Gen. Craig McKinley, director of the Air National Guard, Brig. Gen. Scott Schofield, and Maj. Gen. H. Michael Edwards chat with James Hall at the Colorado State Convention. McKinley was keynote speaker for the convention, hosted by the Mile High Chapter.

Hoerle said that chapter research produced the names of 14 AFA charter members still living in Ohio, a state with three charter chapters of the association: the Rickenbacker Chapter, **North Coast Chapter** (chartered as the Cleveland Chapter), and the **Wright Memorial Chapter.**

AFA has 13 active chapters that were chartered before Dec. 31, 1948 and that are considered original charter chapters.

"Fabulous"

The **Gold Coast Chapter (Fla.)** teamed up with the **Miami Chapter,** the **John W. DeMilly Jr. Chapter,** and Civil Air Patrol members to present the second annual aerospace education workshop for teachers.

Held at Coast Guard Station Miami in Opa Locka, the workshop attendees had breakfast together, then each collected a binder of lesson plans and a generous amount of donated freebies: a book on space activities, pen, keychain, rubber ball, candy, calendar, beach towel, banner, balsa and Styrofoam airplanes, and posters.

More important, the workshop featured top-notch instructors: 2006 State Teacher of the Year Kathleen A. Foy and 2007 Gold Coast Chapter Teacher of the Year Peter Pompura. Both are Gold Coast Chapter members. A chemistry, astronomy, and space science teacher at South Plantation High School, Pompura gave the first presentation. He covered the NASA Explorer Schools program, which incorporates NASA content into curricula for grades four through nine, and also gave the 30 teachers a lesson on GPS. This led the teachers to conduct what Virginia Montalvo, chapter secretary, called a "field experiment": using GPS coordinates to navigate around the Coast Guard station.

Foy taught a workshop on building paper "rockets" and launchers made of PVC pipes and bicycle pumps. Outside once again, the teachers launched their rockets, using what they had just learned about launchpad safety and estimation of trajectories.

NASA education specialist Les Gold, from the Kennedy Space Center, was luncheon speaker, providing an update on the agency's news.

Montalvo said feedback about the workshop was positive. A typical comment: "This is fabulous, and we've learned so much." The Gold Coast's Fran C. Shaw, AFA Florida southeast area VP, organized the workshop.

More AFA Chapter News

■ At the **Central Florida Chapter,** William A. Yucuis ran the chapter's *USA Today*-AFA Visions of Exploration program until recently. This contributed to the newspaper naming Yucuis, from Lyman High School in Longwood, to its All-USA Teacher Team of outstanding educators nationwide. According to Chapter President James E. Callahan, Yucuis had oversight of more than 200 classrooms. This school year, an estimated 1,100 classrooms across the US—elementary to high school level—are expected to participate in Visions of Exploration, a program that

William Begert of the Flying Yankees/Gen. George C. Kenney Chapter in Connecticut slices an Air Force 60th anniversary cake with University of Connecticut ROTC cadet Eric Paliuca and SSgt. Scott King, 103rd Security Forces Flight. Begert, who retired in 2004 as PACAF commander, spoke about his Air Force career at the celebration. It was sponsored by the chapter and the Bradley Aero Guard Association.

encourages the study of math, science, and technology.

■ The **Tidewater Chapter (Va.)** bought T-shirts for cadets and shirts for instructors who took part in an AFJROTC summer leadership school held at Oscar Smith High School. Other Chesapeake area high schools that sent students to the course: Deep Creek, Great Bridge, Indian River, and Western Branch. Outgoing Chapter President Gordon Strong was the officer in charge of the leadership school, with new Chapter VP William Auth as one of the instructors. Former Chapter President Allan Berg, Membership VP Edwin Spencer, and William M. Cuthriell spent time with the cadets, telling them about their Air Force experiences. The chapter sponsored all of the awards given to the top units and cadets on "graduation."

■ The **Chuck Yeager Chapter** recently selected its 2007 State and Chapter Teacher of the Year. He is William J. Murphy of Matewan (W.Va.) High School. Murphy teaches ninth- and 10th-grade science classes and has been a teacher for just over two decades. An Army veteran of the Vietnam War, Murphy was selected particularly for his popular student program on building and launching rockets. Chapter President Ira S. Latimer and Secretary-Treasurer Herman N. Nicely II made the TOY award presentation. ■

Reunions

reunions@afa.org

3rd BG, (WW II). April 23-27, 2008, in Austin, TX. **Contact:** Bill Robinson, 4302 Horseshoe Dr., Needville, TX 77461 (281-342-0599) (wdrobinson55@airmail.net).

96th Air Refueling Squadron, Altus AFB, OK, (1953-65). April 29-May 2, 2008, in Branson, MO. **Contact:** Dick Lyon, 1054 Woodlore Cir., Gulf Breeze, FL 32563 (850-932-0124) (lyondick@member.afa.org).

307th BW B-47/KC-97 Assn. May 13-18, 2008, in Branson, MO. **Contact:** Brent Horn, 12014 West 68th Terrace, Shawnee, KS 66216 (abhorn@everestkc.net).

456th FIS. May 1-4, 2008, at the Holiday Inn in Dulles, Va. **Contacts:** Patrick Perry (972-355-2116) (popperry@hotmail.com) or Lou Pizzarello (703-481-6872) (loupizz@comcast.net).

Ramey AFB Historical Assn. April 15-19, 2008, in Tucson, AZ. **Contact:** Ken Coombs, 412A Depot St., Andover, NH 03216 (603-735-4291) (kenbon@msn.com).

USAF Pilot Class 53-E. Jan. 17-20, 2008, at the Lexington Hotel in Orlando, FL. **Contact:** John Brill (317-501-8610) (jwbrillsr@aol.com). ■

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.

Correction

The November "AFA National Report" news item on the scholarship received by Joe Walker-Mon Valley Chapter (Pa.) member Chad DuBarr should have stated that it was awarded by The Retired Enlisted Association.

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.

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SYMPOSIUM REGISTRATION FEE:
The Symposium registration fee is $895.

GOLF TOURNAMENT:
The Central Florida Chapter of AFA will sponsor a golf outing on Wednesday, February 20 at Walt Disney World's Magnolia Palm Courses.

GALA
The Central Florida Chapter of AFA will sponsor their 24th annual black-tie Gala on Friday, February 24 at the Rosen Shingle Creek Hotel.

Please visit the Air Force Association website at www.afa.org for additional information, and to register.

For additional information, please contact:
BARBARA COFFEY regarding Military/DOD/Industry inquires, at (703) 247-5805 or bcoffey@afa.org

JIM DEROSE regarding the Golf Tournament, at (407) 356-0461 or james.l.derose@lmco.com

TOMMY HARRISON regarding the Gala, at (407) 886-1922 or tgharrison@aol.com

We hope you join us!

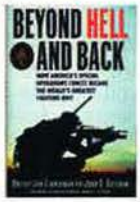
Books

Compiled by Chequita Wood, Media Research Editor

Air Combat: An Oral History of Fighter Pilots. Robert F. Dorr. Berkley Caliber, New York (800-631-8571). 343 pages. $16.00.

Forgotten Fields of America, Vol. IV: World War II Bases and Training, Then and Now. Lou Thole. Pictorial Histories, Missoula, MT (406-549-8488). 144 pages. $21.95.

NATO'S Gamble: Combining Diplomacy and Airpower in the Kosovo Crisis, 1998-1999. Dag Henriksen. Naval Institute Press, Annapolis, MD (800-233-8764). 263 pages. $24.00.



Beyond Hell and Back: How America's Special Operations Forces Became the World's Greatest Fighting Unit. Dwight Jon Zimmerman and John D. Gresham. St. Martin's Press, New York (646-307-5151). 320 pages. $25.95.

Green Hornets: The History of the US Air Force 20th Special Operations Squadron. Wayne Mutza. Schiffer Publishing, Atglen, PA (610-593-1777). 134 pages. $35.00.

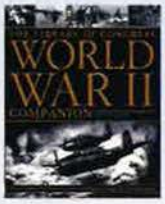
Not Just A Name Upon the Wall. Lt. Col. Linn E. Mann, USAF (Ret.). Order from Vantage Press, New York (212-736-1767). 187 pages. $22.95.

F-15 Eagle Engaged: The World's Most Successful Jet Fighter. Steve Davies and Doug Dildy. Osprey Publishing, New York (866-620-6941). 288 pages. $35.00.

John Warden and the Renaissance of American Air Power. John Andreas Olsen. Potomac Books, Dulles, VA (800-775-2518). 349 pages. $32.95.

Pentagon 9/11. Alfred Goldberg, et al. GPO, Supt. of Documents, Washington, DC (866-512-1800). 280 pages. $31.00.

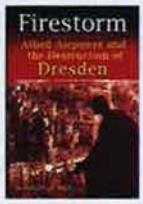
Fairbanks Station. Winton Cass. Order from Red Lead Press, Pittsburgh (800-834-1803). 53 pages. $10.00.



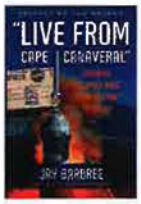
The Library of Congress World War II Companion. David M. Kennedy, ed. Simon & Schuster, New York (800-223-2336). 982 pages. $45.00.

Shooting for the Moon: The Strange History of Human Spaceflight. Bob Berman. Lyons Press, Guilford, CT (800-962-0973). 215 pages. $24.95.

Firestorm: Allied Airpower and the Destruction of Dresden. Marshall De Bruhl. Random House, New York (800-726-0600). 346 pages. $27.95.



"Live From Cape Canaveral": Covering the Space Race, From Sputnik to Today. Jay Barbree. Smithsonian Books, Washington, DC (800-242-7737). 321 pages. $26.95.



Special Forces Today: Afghanistan, Africa, Balkans, Iraq, South America. Alexander Stilwell. Potomac Books, Dulles, VA (800-775-2518). 192 pages. $18.95.

Flying for Her Country: The American and Soviet Women Military Pilots of World War II. Amy Goodpaster Strebe. Greenwood Publishing Group, Westport, CT (800-225-5800). 109 pages. $39.95.

Losing the Golden Hour: An Insider's View of Iraq's Reconstruction. James Stephenson. Potomac Books, Dulles VA (800-775-2518). 175 pages. $23.95.

US Air Force Aviation: A Military Photo Logbook, Vol. 1. Dennis R. Jenkins. Specialty Press, North Branch, MN (800-895-4585). 120 pages. $19.95.

Artwork by Zaur Eylanbekov

HH-3 Jolly Green Giant

The HH-3 Jolly Green Giant was a long-range transport helicopter that performed key duties for the Air Force for 30 years. It served in both the Vietnam and Gulf Wars. In Vietnam, the HH-3E built a legendary rescue record, plucking hundreds of warriors from enemy territory. The powerful Jolly Green Giant often fought its way through intense enemy fire to snatch downed airmen. Few combat jobs were as dangerous.

The Air Force HH-3 was an offshoot of the basic Sikorsky SH-3 aircraft developed for the Navy and first flown in 1959. The SH-3 was adaptable to a wide variety of duties. The initial USAF versions essentially were utility versions of the SH-3. The first USAF-specific version featured a redesigned fuselage, a rear cargo ramp, and tricycle landing gear. The Air Force ordered 51 and then 84 new HH-3s designed specifically for combat search and rescue. Modifications included self-sealing fuel tanks, titanium armor plate, defensive weapons, external fuel tanks, jungle penetrator, and rescue hoist.

The first models, sent to Vietnam in 1965, were used mainly for clandestine missions along the Ho Chi Minh Trail. Flown by superbly trained and motivated crews, the HH-3s soon established a magnificent reputation for rescue operations under fire. They operated out of air bases at Da Nang, South Vietnam, and Udorn, Thailand. Their range and refueling ability allowed them to reach any point in North Vietnam and return to base. Jolly Greens were also used in a wide variety of other duties. In 1991, HH-3s flew more than 250 missions during Operation Desert Storm.

—Walter J. Boyne

This aircraft: USAF HH-3E helicopter #67-14703—*Dusty 703*—as it looked in 1977 when assigned to the 302nd Special Operations Squadron, Luke AFB, Ariz.

An HH-3E in action during the Vietnam War.

In Brief

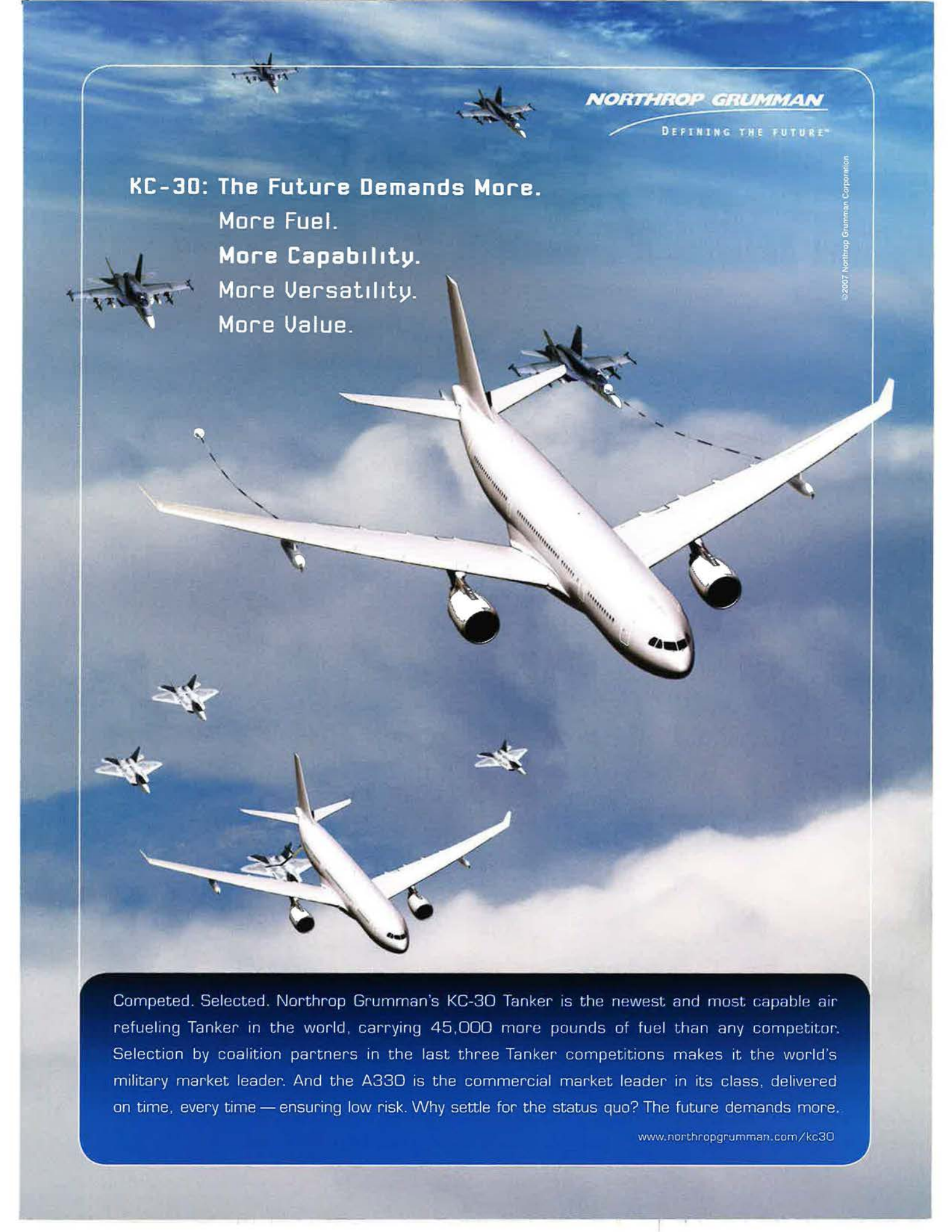
Designed, built by Sikorsky ★ first flight (USAF model) June 17, 1963 ★ crew of 2 or 3 ★ capacity 25 troops or 5,000 lb cargo ★ two GE T58-GE-5 engines ★ number built 135 (USAF) ★ **Specific to HH-3E:** max speed 164 mph ★ cruise speed 154 mph ★ max range 760 mi ★ armament two GE 7.62 mm M60D machine guns ★ weight (max) 22,000 lb ★ span (rotor diameter) 62 ft ★ length 73 ft ★ height 18 ft 1 in.

Famous Fliers

Medal of Honor: USAF Capt. Gerald O. Young. **Air Force Cross:** Capt. Ralph W. Brower, SSgt. Eugene L. Clay, CMSgt. Duane B. Hackney, Capt. Leland Kennedy, Sgt. Larry W. Maysey, TSgt. Donald G. Smith. **Notables:** Lt. Col. Royal Brown (32 saves); Lt. Col. Herbert E. Zehnder, pilot of HH-3 in 1967 trans-Atlantic flight and 1970 raid on Son Tay POW camp.

Interesting Facts

Flown in 496 of 980 aircrew rescues 1966-70 in SEA ★ rescued future generals Michael Dugan (later Chief of Staff), Charles Boyd, Robert Russ ★ boasted 1,000 lb of titanium armor ★ made first nonstop trans-Atlantic helicopter flight (1967) ★ brought down 17 times in Vietnam War ★ flew in 1991 Gulf War ★ used in 1980 rescue of 61 passengers from liner *Prinsendam* ★ developed as a US Navy anti-submarine warfare platform ★ nicknamed for distinctive green-and-tan camouflage scheme.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