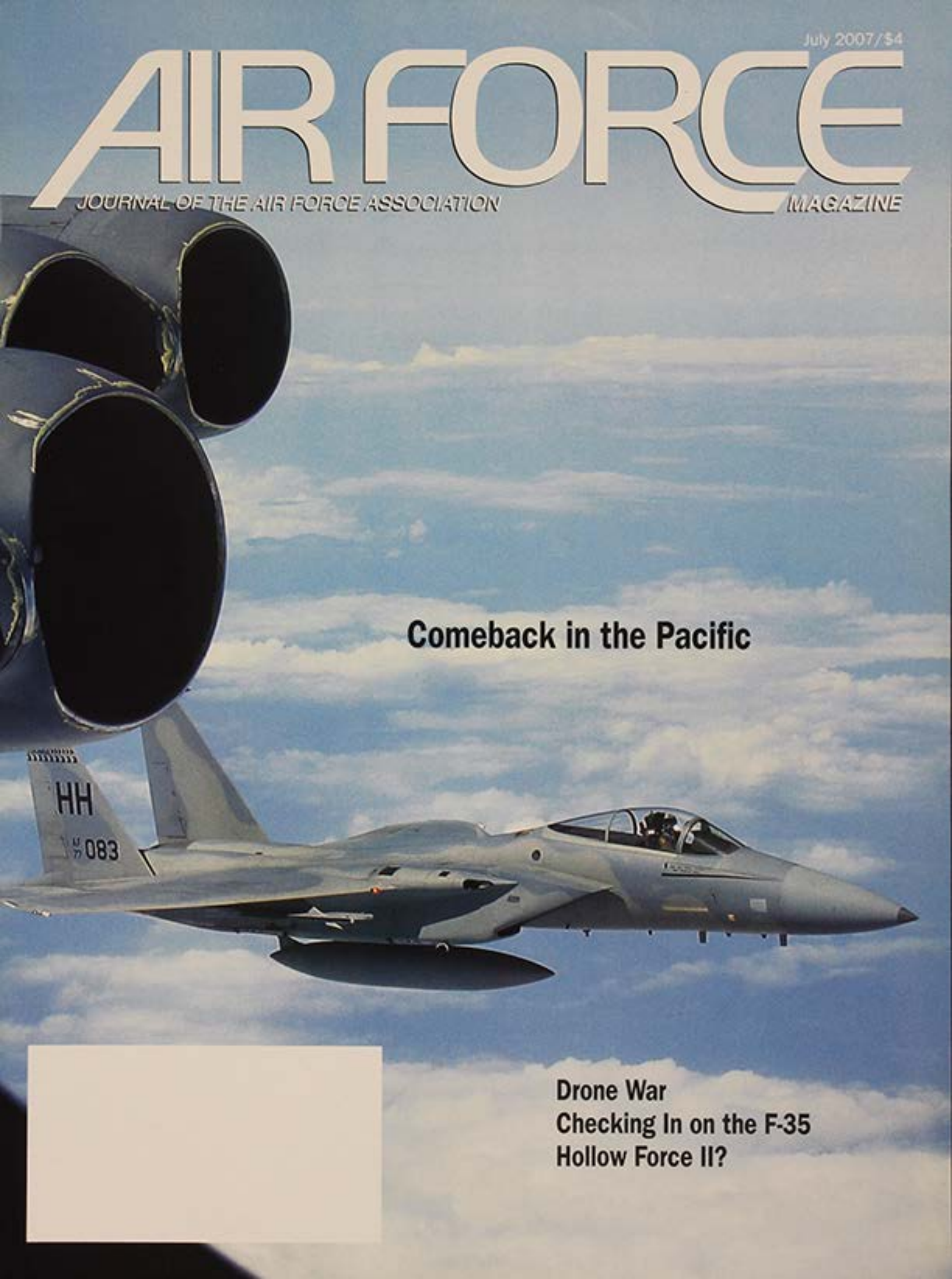


July 2007/\$4


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JOURNAL OF THE AIR FORCE ASSOCIATION

MAGAZINE



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Hollow Force II?**

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About the cover: A Hawaii-based F-15 escorts a B-52 during a recent Koa Lightning exercise. See "Comeback in the Pacific," p. 24. USAF photo by Maj. Eric Sikes.



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By Robert S. Dudney, Editor in Chief

The "Affordability" Hustle

THE Government Accountability Office, that ever-flowing font of military advice, is at it again. It has sent forth a new report—"Tactical Aircraft: DOD Needs a Joint and Integrated Investment Strategy"—that takes a hard shot at service fighter plans.

The watchdog agency does not attack the *requirement* for USAF F-22s, Navy F/A-18E/Fs, and joint-service F-35s. Rather, it directs fire at their supposed *unaffordability*. As GAO puts it, "These plans are likely unexecutable, given competing demands." It provides numerous charts and graphs making that point.

What does GAO recommend? Pre-emptive surrender. The military is urged to curtail "service-centric" programs, link arms jointly to rub out "duplication" of capabilities, and accept "efficiencies"—which is GAO-speak for "reductions."

As usual, that kind of talk drew a crowd. The Senate Armed Services Committee, for example, promptly authorized a study of "alternatives" that, "while not necessarily satisfying all current requirements," might "require less funding."

Anyone with rudimentary knowledge of fighter planning will sense something wrong here. It has been about three decades since the US bought a new generation of fighters. USAF's F-15s, F-16s, and A-10s and the Navy's F-14s and F/A-18s began arriving in the 1970s, and the Marine Corps AV-8 shortly after. Is it plausible that the world's richest nation cannot bear up under a 30-year fighter replacement cycle? The question answers itself.

Actually, the bigger budgets expected in the near future will reflect a more or less routine upturn in the fighter procurement cycle, which plunged in the 1990s when the services were force-marched into a long, post-Cold-War "procurement holiday."

Today's fighter program is modest, comprising a total of 183 F-22s for the Air Force, 462 F/A-18E/Fs for the Navy, and 2,458 F-35s for the Air Force, Navy, and Marine Corps. Plans also call for lengthening the service lives and upgrading the capabilities of a few hundred F-15s, A-10s, and other "legacy" fighters.

Those numbers are considered, at

best, the minimum needed to equip USAF's 10 air and space expeditionary wings, the Navy's 10 carrier wings, and the Marine Corps' expeditionary units.

The proper perspective on the size and cost of this plan can be gleaned from data contained in the GAO's own 81-page report. For example:

■ The total tri-service fighter program is expected to cost roughly \$400 billion, when all is said and done. If you purchased all of the fighters in a single year, it would consume just three percent of US Gross Domestic Product—not an insurmountable burden in its own right. However, nobody is talking about doing

Is it plausible that the world's richest nation cannot bear up under a 30-year fighter replacement cycle?

that; the cost actually would be spread over more than 20 years.

■ Over the past three decades, the Department of Defense has spent \$534 billion to develop, procure, and modify fighters flown by USAF, the Navy, and the Marine Corps. The amount, while large, caused no financial crisis or even serious fiscal pain, though both the US economy and federal budget were far smaller.

■ Experts expect the period 2007-13 to be a time of great budget stress. Even so, DOD in that period will invest just \$109 billion in fighters—roughly what the Army and Marine Corps will spend to add 92,000 ground troops.

■ Over the past decade, the tactical air forces' share of the total defense budget stayed consistent. Counting everything, the fighter forces took in any given year roughly 11 to 12 percent of total Pentagon spending. The cost of fighter acquisition will average \$16 billion per year.

Sexy hardware gets the bulk of critical attention, but it is only one part—and not the biggest part—of the fighter enterprise.

In 2007, the Air Force will spend \$36 billion on fighters. Of that, about

a third—some \$13 billion—will go to hardware. The rest is needed to fund personnel, operations, maintenance, and construction. Those are sunk costs, unaffected by new fighter acquisition.

To be sure, we don't know anyone who thinks execution of the fighter plan will be a snap. Certainly, that is not the case in the service we know best—the Air Force. Let us stipulate that the GAO's auditors have a certain point in their worries.

It is true that increased costs of new aircraft, caused by long fighter development times and overruns, have reduced DOD buying power; it now expects to buy one-third fewer modern fighters than it had planned. Until new aircraft are ready in sufficient numbers to replace legacy fighters, however, DOD will have to hold onto more of its old systems. They, in turn, must be sustained and upgraded, which takes money. That money, once allocated, will no longer be available to pay for new aircraft, which again drags out the schedule, starting the whole cycle anew.

Note, however, that all of the worries flow from a specific assumption about defense outlays—that the DOD "topline" is fixed and cannot be adjusted upward. The bean counter's preferred solution in the event of cost growth is to trim a program to fit an arbitrary budget level. That is certainly one option. Indeed, that has been DOD's favored approach for years.

However, it is only one option, and not a good one. The nation has run out of time and space for using it. The affordability hustle is just the latest distraction which could divert Congress and the US public from employing the best solution: raising the defense budget to pay for validated defense needs.

Regular readers of this page are well aware of our view, based upon hard fact, that the US today spends a relatively small share of its national wealth on defense—less than four percent of GDP. That is a fact official Washington should ponder long and hard before deciding to further cut fighter programs.

As for the GAO, it would do us all a favor if it gave the "affordability" riff a rest and spent a bit more time helping the nation determine the true cost of defense. ■



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More on Long-Range Strike

The Air Force seems hopelessly confused about the purpose of its new bomber. Secretary Wynne argues that this should be a system that can be both unmanned and manned for nuclear missions and those requiring man-in-the-loop [*Washington Watch: Long Road to Long-Range Strike*, May, p. 14].

Firstly, let us observe that UAVs do not leave the man out of the loop. A man is always in the loop—he's just in Nevada, not in the cockpit.

Leaving that aside, why does the Air Force want a new nuclear-capable bomber at all? The United States does not lack the capability to deliver nuclear weapons. What the nation lacks is the capability to conduct persistent surveillance and conventional precision strike operations against time-sensitive targets at long ranges and in denied areas. A stealthy unmanned bomber best provides this capability, and giving such a bomber provisions for a pilot in order to conduct nuclear missions is simply a waste of weight. Why suboptimize the aircraft for its everyday mission (persistent surveillance-attack) so that it can conduct a highly improbable mission (nuclear attack)?

Meanwhile, Secretary Wynne also announced the retirement of the Air Force's stealthy, nuclear-tipped cruise missiles [*Washington Watch: You Cruise, You Lose*, May, p. 12] on the grounds they are too costly, they have a very low probability of use, and there are other alternatives like the B-2 and ICBMs. Since we have these alternatives, and nuclear missions are very rare, tell me again why the new bomber must be nuclear-capable? Why not just keep the cruise missiles instead of going to great trouble and expense to put a cockpit in the future "optionally manned" bomber for the nuclear mission?

Quite obviously, the Air Force needs to think more clearly about long-range strike and nuclear deterrence. Otherwise, these mission areas may well be removed from its portfolio.

Dexter Scott
San Diego

Happy Hooligans

Thank you very much for your quick response to the concerns we had regarding the May 2007 issue of *Air Force*

Magazine, which serves as the USAF Almanac. In this issue, there is only one mention of the 119th Fighter Wing of the North Dakota Air National Guard—and that is in the ANG installations section. Having very recently retired our F-16 aircraft and its associated missions, I can understand how the almanac couldn't be updated in time for publication. I'd like to provide you with a synopsis of where the 119th is today.

Currently, we fly the MQ-1 Predator, 24/7/365, in support of Air Combat Command missions and are able to support any tasking where this system could be utilized, whether in support of the GWOT or for CONUS missions including emergency response or homeland defense. We are also maintaining and flying eight C-21 aircraft, assigned to us as a "bridge mission" until the Joint Cargo Aircraft (JCA) is acquired. We understand we are to be the first ANG unit to take delivery of the JCA upon its acquisition and look forward to that mission with great enthusiasm. Additionally, we have just activated the largest Air National Guard security forces squadron in the nation as a GSU of the 119th and located it at Minot AFB [N.D.], to assist in the Space Command mission there. All of this we have done while simultaneously supporting USAF with continual AEF volunteers and our state missions when called upon by the governor of North Dakota.

As you can see, the BRAC and Total Force initiatives have had a dramatic impact on our unit and it has been, and is, a very dynamic period for us. But the Happy Hooligans of the North Dakota Air National Guard are proud to excel in these new missions, despite the radical cultural change we are enduring after

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Publisher

Donald L. Peterson

Editor in Chief

Robert S. Dudley

Editorial

afmag@afa.org

Editor

Suzann Chapman

Executive Editors

Adam J. Hebert, John A. Tirpak

Associate Editors

Lauren A. Bigge, Tamar A. Mehuron,
Marc V. Schanz

Contributors

Walter J. Boyne, Bruce D. Callander,
John T. Correll, Rebecca Grant,
Peter Grier, Tom Philpott

Production

afmag@afa.org

Managing Editor

Juliette Kelsey Chagnon

Assistant Managing Editor

Frances McKenney

Editorial Associate

Dina Elshinnawi

Senior Designer

Heather Lewis

Designer

Jeannene S. Hoppe

Photo Editor

Zaur Eylanbekov

Production Manager

Butch Ramsey

Media Research Editor

Chequita Wood

Advertising

adv@afa.org

Advertising Director

Patricia Teevan
1501 Lee Highway
Arlington, Va. 22209-1198
Tel: 703/247-5800
Telefax: 703/247-5855

US and European Sales Manager

William Farrell • 847/295-2305
Lake Forest, Ill.
e-mail: BFarr80708@aol.com

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E-Mail Addresses

Field Services.....fldsvecs@afa.org

Government Relations.....grl@afa.org

Industry Relations.....irl@afa.org

Information.....information@afa.org

Member Services.....service@afa.org

Policy & Communications (news media).....
.....polcom@afa.org

Magazine

Advertising.....adv@afa.org

AFA National Report.....natrep@afa.org

Editorial Offices.....afmag@afa.org

Letters to Editor Column.....letters@afa.org

Eaker Institute.....eaker@afa.org

Air Force Memorial Foundation...afmf@afa.org

For individual staff members
first initial, last name, @afa.org

(example: jdoe@afa.org)

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Col. Robert J. Becklund
Commander, NDANG
Fargo, N.D.

Not Rocket Science

Am I the only one whose head was spinning after reading your April 2007 issue? First, "Washington Watch" starts out with a background interview stating that USAF needs \$20 billion per year for 20 years to "get well" for budgetary shortcomings dating back to the early 1990s [*"Washington Watch: USAF Readiness: Going, Going ...,"* p. 10]. This was immediately followed by an article where Rep. John P. Murtha (D-Pa.) (of all people!) is begging for a list of needs so they can be funded [*"Murtha Demands, 'Give Us a Number!'"* p. 10]. Then you had not one, but two articles ("For the Air Force, the Bill Comes Due," p. 28, and "The Risk Goes Up," p. 34) whining—for lack of a better term—about how the force is being underfunded.

Excuse me, I'm not the sharpest knife in the drawer, but if Congress is begging for a shopping list to fund, isn't it the job of our leadership to give it to them? This doesn't seem like rocket science to me—if our generals aren't up to the task, I'm sure their wives could put together an adequate shopping list for Representative Murtha! In all seriousness, whether or not the list gets funded or not is one issue, but the least USAF should be prepared to do is make the case to Congress—not just to the readers of your magazine, which is kind of preaching to the choir.

Maj. James E. Rotramel,
USAF (Ret.)
Lexington Park, Md.

Precursor to Constant Peg

In late 1969, Lt. Col. Joseph J. Maisch and I, members of the 175th Tactical Fighter Group, Maryland ANG, were given orders to proceed to Nellis AFB, Nev., to participate in a classified flying program. The project, code-named "Have Drill," lasted three days and involved a series of canned maneuvers between our aircraft, the F-86H, and a captured MiG-15 or -17 (my memory is not that good). One of the things I observed was that while the MiG had us beat all to hell in turning radius, it had a rather slow rate of roll. It was obvious that a rapidly reversing scissors would create problems for the MiG. In almost all other categories—turn radius, acceleration, deceleration—it was more than a handful. I particularly remember the Marine Corps major running the project for the US Navy. He was a good fighter pilot and could really fly that MiG. I must admit it was a most enlightening experience (and quite a few years before

the "Constant Peg" missions) [*"Constant Peg,"* April, p. 86].

Col. Leslie H. Waltman,
USAF (Ret.)
Baltimore

Tanker Voices

[I wish to elaborate on a reader's comments in] "Letters: Tanker Voices," April, p. 6. I was maintenance supervisor in the 421st Refueling Squadron at Yokota AB, Japan, during the fall of 1964 and want to add to, and clarify, several points relating to the tanker crashes.

The August KB-50 crash in Japan was over unpopulated low mountains while night refueling near Misawa Air Base. The uncontrollable fire in No. 3 and 4 engines, plus [the pilot's subsequent] dive of the aircraft to blow out the fires, caused the No. 3 engine chin cowl to separate down and back, tearing the right horizontal stabilizer and elevator off. The tail did not break off as stated in the letter. After the October KB-50 crash at Takhli, Thailand, all aircraft returned to Yokota and were grounded.

Inspections later revealed heavy inner granular corrosion of the rear wing spar on several aircraft, plus pitting corrosion on all large fuel lines in the flap well of most of our KBs, which was the real reason for premature retirement of all KB-50Js. Our TDYs at Wake Island were regular, where the salt and spray took its toll, even with continuous wash jobs. I was disappointed that the article made no mention of SAC KC-97s. Thanks for articles about KB-50s.

CMSgt. Laddie Ondracek,
USAF (Ret.)
Tulsa, Okla.

Verbatim

In reference to "Tin Ear Revisionists" ("Verbatim," May, p. 27): I heartily agree with Mr. Thompson. What exactly do "sovereign options" have to do with the Air Force mission statement? When Gen. John Ryan was Chief of Staff, he had a wooden hand-carved plaque hanging in his office that read: "Our mission is to fly and fight and don't you ever forget it!"

Take that to Congress and see if they can understand it.

Maj. Gen. James B. Currie,
USAF (Ret.)
San Antonio

Almanac Correction

The May 2007 Air Force Almanac, on p. 107, lists Maj. Gen. Scott Mayes as commander of 1st Air Force. General Mayes has retired and Maj. Gen. Hank Morrow has been assigned as commander.

MSgt. Jerry D. Harlan
Tyndall AFB, Fla.

Washington Watch

By John A. Tirpak, Executive Editor

Congress Tries to Sort it Out; Big Wars and Little Wars; New Roles and Missions Flare-up

Let the Air Force Do It

In separate moves, the armed services panels of the House and Senate wrote provisions evidently aimed at giving to the Air Force all medium- to high-flying UAVs and tactical mobility responsibilities.

The House Armed Services Committee, in its 2008 defense bill, gave the Defense Department about one year to explain what it plans to do about creating an executive agent for UAVs that fly above 3,500 feet. The Air Force has pressed the Pentagon to give it that job for UAVs that fly at medium to high altitude. (See "Editorial: A Better UAV Flight Plan," April, p.2.)

The measure, offered by Rep. Jim Marshall (D-Ga.), orders the Pentagon to set out its way ahead in a report submitted not later than March 1, 2008. Marshall initially proposed that the Pentagon name an EA by next March. This was watered down in the committee.

Marshall said the Defense Department essentially punted on the UAV issue two years ago. In 2005, it declined to name the Air Force executive agent, instead assigning such responsibilities to the UAV Center of Excellence, a joint organization.

Because the center lacks clout to align and streamline service activities, Marshall said, the result has been a possibly "wasteful expenditure of taxpayer resources." He wants an EA named as soon as possible to eliminate duplication of effort among UAVs.

The bill includes provisions that may mollify the services that don't get the executive agency job. For instance, it directs that the joint force commanders will always get the final say on the best approach to allocation and control of UAVs in a conflict.

Meanwhile, the Senate Armed Services Committee wants to put the Air Force in charge of all air mobility capabilities, and specifically the Joint Cargo Aircraft, with which USAF has been partnered with the Army.

In its 2008 authorization bill, the Senate panel said the Air Force should be in charge of fixed-wing airlift, and it moved \$157 million of Army money to the Air Force to conduct the JCA program. The Army could also be cut out of the acquisition and operation of the aircraft, which was initially intended to replace Army C-23 Sherpa and C-12 Huron small transports, said committee members.

The Senate panel said it was pondering "whether this fixed-wing, intratheater lift mission should be assigned solely to the Air Force" or kept as a joint program.

The Army has claimed it needs some control because the Air Force has not always supported the Army when it asked

for help. The panel, however, said Army leaders had failed to produce any concrete evidence for this charge, despite hearing many Army anecdotes about being stiffed.

The committee said the Army had failed to make the case that it can't count on tactical airlift if it doesn't "own" it. The committee found no case where a joint force commander had to intervene to get USAF to support the Army after such a request was denied.



USAF photo

Will all UAVs go to the Air Force?

The Air Force is "better positioned" to provide tactical airlift in both war and peace, the Senate panel said, admonishing the Army to spend its money on core missions known to be "underfunded," rather than try to have its "own air force."

Who Handles Big Wars?

The armed forces should redistribute responsibilities for major and minor wars, mainly assigning the Air Force and Navy to fight the big ones and the Army and Marine Corps to fight the little ones, according to a new RAND study.

The "little ones" are defined as fights against insurgents and the conduct of stability operations. "Big ones" would be, say, conventional conflicts with big regional powers.

The study is titled, "A New Division of Labor: Meeting America's Security Challenges Beyond Iraq." In it, five authors said the US is likely to get drawn into military operations other than war in many places, and it's time to adjust the functions of the military branches accordingly.

The authors argued that the US will face three big military challenges in the future: fighting terrorist groups, countering regional nuclear threats, and coping with the rising military and economic powers of Asia, primarily China.

The first two challenges will require an enormous amount of "hands on" action on the part of US ground forces, which



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Big wars require Air Force airpower ...

would either fight terrorists and insurgents directly or train local forces to do so. However, the Army and Marine Corps are not primarily trained for these kinds of operations and perpetually struggle to balance expertise in such actions with the need to stay trained and ready to fight several major ground wars.

The RAND group suggested “relieving” the ground element of the requirement to fight more than one major ground war, and emphasizing smaller operations in training and equipping, since these are the most likely combat operations ground forces will face. Air and naval forces can play an important role in such operations, but it will be the ground forces that will have to work most directly with “their host-country counterparts.”

However, “the most plausible major combat operations that US forces might be called on to fight in the coming years—involving Iran, China (over Taiwan), and North Korea—call for heavy commitments of air and naval forces

and, in the first two cases, smaller numbers of US ground forces,” they said.

Given limited resources, the defense leaders need to judge how to apportion risk: They can maintain ground forces in readiness for large ground wars where they likely won’t be needed in huge numbers—and do a poor job at counterinsurgency—or they can shift resources to let the air and naval forces take on “some of the burden for large force-on-force” conflicts.

“We suggest that DOD’s leaders consider the latter course,” the analysts wrote.

Removing the need for the Army and Marine Corps to fight more than one big war would “improve their stability operations capabilities qualitatively and quantitatively ... [and] keep overall demands on the forces of these two services manageable.”

The Navy and Air Force would “retain their primary focus on large-scale power-projection operations,” although both would continue to enable stability operations through logistics, fire support, and intelligence-surveillance-reconnaissance functions.

Both services would need to “place much greater emphasis on defeating enemies armed with nuclear weapons and with more sophisticated anti-access capabilities than have heretofore been encountered.”

The RAND group also suggested investing more in ISR systems—to “put an end to the situation in which sensor systems and the means to interpret the information ... are chronically ‘low-density, high-demand’ assets.” It also argued for greater investment in long-range strike capabilities, suggesting that USAF cannot count on overseas basing in a major conflict and that the US must be able to operate from its own soil if necessary.

Roles & Missions Scuffle

The Pentagon is “overdue” for an exhaustive, top-to-bottom re-think of the roles and missions of the military services, reports the House Armed Services Committee. Defense officials should conduct one soon, the panel went on, adding that it should repeat the process every four years, from now on.

Dramatic technological change—particularly in space, unmanned aerial vehicles, and mobility—have started to “blur the lines” between formerly “clear-cut service responsibilities,” in the committee’s estimation. The Defense Department should take note of areas in which the services have drifted from their core competencies and missions.

The panel issued its conclusions in a statement released with its version of the 2008 defense authorization bill.

The panel slammed “duplication of numerous capabilities across the department,” which wastes money and diverts attention from true service requirements.

After such a review, declared the committee, the United States military should organize itself into “core mission areas” such as dominance of ground, air, maritime, and space environments, expeditionary warfare, mobility, homeland defense, and cyber operations.

Panel members noted that the “division of labor between the military services has not dramatically changed since the current structure was established in the National Security Act of 1947.” The Defense Department should look for areas where the services are engaging in missions “for which they are not ideally organized, trained, and equipped.”

The mandated review would not only identify areas where the services are drifting outside their “core” functions, but also highlight fundamental missions within the services that



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... and US Navy sea power.



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aren't getting the attention and resources they deserve, the committee said.

The first review would take place in 2008 and would be presented to Congress in early 2009, along with the FY 2010 defense budget request. The next would be in 2012, and so on every four years.

The Pentagon currently conducts another every-four-years study, the Quadrennial Defense Review, but the House panel wants the roles and missions analysis done separately from the QDR, which assesses forces, policy, threats, and budgets. The next QDR is to take place in 2009, after the start of a new Presidential term.

The bill calls on the Pentagon to identify each service's core missions and the "core competencies" that go with them. It is also to review all of the capabilities that the services are maintaining or developing and certify that those activities match the core missions and competencies. If they don't match, DOD would have to offer a justification for continuing them.

The House panel also wants DOD's Joint Requirements Oversight Council to better focus the efforts of the services—and even has provided suggested ways to do this.

The JROC, headed today by the vice chairman of the Joint Chiefs of Staff, comprises the four service vice chiefs and ad hoc advisors. The panel certifies (or does not certify) that some new development or program meets joint needs. The House panel wants the JROC to give the services "clear guidance" on acquisition priorities—based on core missions—and the amount of resources the JROC expects the services to commit to those activities.

The House panel said it believes the JROC today is "too insulated from the realities of the acquisition and budget processes." It wants to make sure that "clear priorities and budget guidance" in the JROC process keep service imperatives from driving program decisions.

Major systems currently have to pass muster with the Defense Acquisition Board before they can move into major development, but the House panel also wants the JROC to certify that projects meet both joint and core needs before going forward, and that they are being pursued by the branch or agency with the "relevant core competency."

The JROC would also have to certify that cost estimates are "consistent" with the level of resources committed in what is known as the initial capabilities document. If a program were to exceed 25 percent of the cost estimate before going into full production, it would get kicked back to the JROC "for a decision on whether to terminate or continue the system."

The official assigned to lead the review of any particular program "must be" from a military department outside of the program's core mission area, the House panel added.

People Vs. Programs

The White House in May asked Congress to rein in its generosity on military pay and health benefits, highlighting the growing issue of balancing troop compensation with urgently needed hardware programs.

The appeal came just before the House voted to increase military pay by 3.5 percent, half a percentage point higher than the boost sought by the Bush Administration. The White House's Office of Management and Budget, in a plea issued before the vote, said the extra half point would cost \$265 million in 2008 and \$7.3 billion over five years. (See "Action in Congress: Pay Raise 2008," p. 22.)

The White House called the extra amount "unnecessary." The requested three percent raise, said OMB, is

sufficient to keep military pay "competitive" with private employment and "provides a good quality of life for service members and their families," especially "when combined with the overall military benefit package," which includes generous health care, housing allowances, retirement, and dependent services.

Even more costly, said OMB, would be the House's refusal to let DOD raise Tricare fees for military retirees under age 65. The agency said such fees would make the program "more sustainable." Denial of the fee increase and refusal to implement other recommendations of the Task Force on the Future of Military Health Care would together "add over \$1.86 billion in cost to FY 2008 and \$19.28 billion in cost from FY 2008 to FY 2013," OMB asserted. (See "Action in Congress: Higher Tricare Fees Backed," p. 23.)

Combined, the pay bump-up and absence of health care reforms will cost the Pentagon about \$26.5 billion more over the coming five-year program than it planned to spend. While OMB did not link the amount to any hardware program, such a sum is about what the Air Force expects

USAF photo



They're good, but they need weapons, too.

to spend on the F-35 fighter and KC-X tanker replacement program during that period.

The Senate seemed ready to agree with the House on the half-percent premium, making its passage likely.

However, the issue of people vs. programs has been heating up. The services have seen more and more of their modernization programs eaten up by the costs of the wars in Southwest Asia, rising maintenance costs on old equipment, and military personnel costs—led by pay and health care—which have swelled by 50 percent during the last six years.

The Air Force found itself so strapped for funds to pay for hardware modernization that it decided in 2005 to cut 40,000 full-time equivalent personnel from its ranks, rather than cut hardware programs any further. Air Force Secretary Michael W. Wynne said he had nowhere else to turn. ■

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Aerospace World

By Marc V. Schanz, Associate Editor

Roadside Bomb Kills Airman

Air Force SSgt. John T. Self, a member of the 314th Security Forces Squadron at Little Rock AFB, Ark., was killed on May 14 as he patrolled near Baghdad.

Self died from the blast of an improvised explosive device, or roadside bomb.

Self, 29, had been in Iraq since September on a voluntary 365-day deployment, according to squadron officials.

While deployed to Al Udeid AB, Qatar, he volunteered for Iraq duty in order to gain more experience. Self was a native of Pontotoc, Miss.

Intel Agency Formed

Effective June 8, the Air Intelligence Agency got a new name and found a new home.

AIA is now known as the Air Force Intelligence, Surveillance, and Reconnaissance Agency, or AFISR. Once



L-3 photo

L-3 Communications in June was awarded a contract to build the new Joint Cargo Aircraft—the C-27J Spartan, seen here. The C-27J is a multimission cargo aircraft that will replace the US Army's C-23, C-26, and some C-12 aircraft, and will augment USAF's existing fleet of intratheater airlifters.

USAF Helps Iraqi Air Force Expand

The Iraqi Air Force is growing and adding personnel, aircraft, and operating locations and expanding its repertoire of missions, according to Lt. Gen. Gary L. North, commander of US Central Command Air Forces and 9th Air Force.

North, who is the top USAF airman in Southwest Asia, briefed *Air Force Magazine* during a May tour of CENTCOM's Combined Air and Space Operations Center in the Persian Gulf.

The Iraqi Air Force currently has seven squadrons—one of which flies three C-130s that operate on the daily air tasking order put out by CENTAF. Pilots and crews have been trained in the US and work side by side with airmen, moving the Iraqi Army and senior national leadership around the country.

"To create a basic airman takes quite a bit longer because you have to teach flying skills in addition to combat skills," North said.

The Iraqi Air Force currently has two bases. Their main location is Al Muthana, situated next to Baghdad Airport, where C-130s and former Warsaw Pact helicopters fly alongside US-built helicopters that are part of their fleet.

The second base is at Kirkuk, where small intelligence-surveillance-reconnaissance aircraft, such as specially equipped Cessna Caravans, operate in support of counterinsurgency efforts.

"They have an ISR capacity where they can perform real-time data link" and electro-optical and infrared functions, North reported. American and coalition trainers are working with these pilots toward a goal of using the Iraqi aircraft to monitor electrical and oil lines as well as areas of high interest in the greater Kirkuk region.

The effort is slated to continue through 2012. About 400 airmen and coalition personnel are dedicated to the training program.

—Marc V. Schanz in the Persian Gulf region

part of Air Combat Command, AFISR, at Lackland AFB, Tex., now reports directly to a deputy chief of staff on the Air Staff in Washington, D.C.

The shift is part of a broader realignment of ISR functions under the Air Force deputy chief of staff for ISR, a post held by Lt. Gen. David A. Deptula.

Deptula now also directs the 70th Intelligence Wing and the Air Force Cryptologic Office at Ft. Meade, Md.; the National Air and Space Intelligence Center at Wright-Patterson AFB, Ohio; and the Air Force Technical Applications Center at Patrick AFB, Fla.

Maj. Gen. John C. Koziol, AFISR commander, said he expects the organization to become "the focal point" for the service's ISR development and modernization.

Cannon Eyed For Overseas Assets

Air Force Special Operations Command may move some Japan-based and Britain-based assets to Cannon AFB, N.M., its commander reported in May.

Lt. Gen. Michael W. Wooley, speaking with reporters in Washington, said AFSOC needed a second base on US soil, as its multiplying equipment and personnel have outgrown Hurlburt



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Air Force maintainers at a base in Southwest Asia finish up work on a group of F-16s. USAF fighters such as these have picked up the pace of operations over Iraq and Afghanistan, say officials. They are performing not only traditional close support operations but also strafing and nontraditional ISR.

Field, Fla. That new base is Cannon. AFSOC is adding 2,000 more people and 24 new transport aircraft over the next five years.

Wooley said Secretary of Defense Robert M. Gates had tasked Army Gen. Bryan D. Brown, head of US Special Operations Command, to “flesh out” plans to bring to Cannon some assets now located at Kadena AB, Japan, and RAF Mildenhall, Britain.

Chandler Tapped for PACAF

Lt. Gen. Carrol H. Chandler, the Air Force’s deputy chief of staff for operations, plans, and requirements, was nominated by President Bush in April for promotion to general and to head Pacific Air Forces.

Chandler would relieve Gen. Paul V. Hester, who is retiring in January. Hester has held the top PACAF job since July 2004.

The Senate Armed Services Committee as of mid-June had not placed Chandler’s nomination on its schedule.

Chandler, a fighter pilot, served several tours in the Pacific, most recently as head of Alaskan Command. He also in the 1980s was an aide to Adm. William J. Crowe, then commander of US Pacific Command.

New Life for Jammer?

The concept of turning B-52s into standoff jamming platforms is making a comeback.

An advisory group working for Deputy Defense Secretary Gordon England said in May it will approve development

of a Core Component Jammer—an electronic jammer that USAF would mount on the huge outer-wing pods on the B-52.

Last year, as costs exceeded \$7 billion, the Air Force cancelled the

program. The Chief of Staff, Gen. T. Michael Moseley, declared it unaffordable. (See “Where Next With Electronic Attack?” October 2006, p. 30.)

Under original plans, the B-52 jammer was to have been relatively cheap

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Senior Staff Changes

RETIREMENTS: Lt. Gen. Donald J. **Wetekam**, Maj. Gen. Stanley **Gorenc**.

NOMINATIONS: To be Lieutenant General: Kevin J. **Sullivan**, Donald C. **Wurster**. **To be Major General:** Garbeth S. **Graham**. **To be Brigadier General:** Mark W. **Tillman**. **To be ANG Major General:** Michael D. **Dubie**.

CHANGES: Brig. Gen. (sel.) Brian T. **Bishop**, from Dep. Dir., AF Concept of Ops., DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon, to Dep. Dir., LL, OSAF, Pentagon ... Maj. Gen. Kurt A. **Cichowski**, from DCS, Strat., Plans, & Assessment, MNF-Iraq, CENTCOM, Baghdad, to Vice Cmdr., AFSOC, Hurlburt Field, Fla. ... Brig. Gen. John W. **Hesterman III**, from Dep. Dir., LL, OSAF, Pentagon, to Cmdr., 48th FW, USAF, RAF Lakenheath, Britain ... Brig. Gen. (sel.) James M. **Holmes**, from Div. Chief, Checkmate, DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon, to Dir., Strat. Plans, Prgms., & Intl. Affairs, PACAF, Hickam AFB, Hawaii ... Maj. Gen. Kevin J. **Kennedy**, from Cmdr., AF Global Cyberspace Integration Center, Office of the Chief of Warfighting Integration & CIO, OSAF, Langley AFB, Va., to Dir., Air Component Coordinating Element, ACC, Bagram AB, Afghanistan ... Brig. Gen. (sel.) Robert P. **Otto**, from Asst. Dep. Dir., Global Ops., Jt. Staff, Pentagon, to Dep. Dir., Intel. & Air, Space, & Info. Ops. for Flying Tng., AETC, Randolph AFB, Tex. ... Brig. Gen. Robin **Rand**, from Cmdr., 332nd AEW, ACC, Balad AB, Iraq, to Principal Dir. to DASD for Middle East Policy, Office of the USD for Policy, Pentagon ... Maj. Gen. Eric J. **Rosborg**, from Asst. Dep. Undersecy. of the AF for Intl. Affairs, Office of the Undersecy. of the AF, Pentagon, to Chief, Office of Defense Cooperation, Turkey, EUCOM, Ankara, Turkey ... Brig. Gen. Robert P. **Steel**, from Cmdr., 48th FW, USAF, RAF Lakenheath, Britain, to Commandant, Natl. War College, NDU, Ft. Lesley J. McNair, D.C. ... Brig. Gen. Lawrence A. **Stutzriem**, from Dir., Weather, DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon, to Dir., C/S of the AF Strat. Studies Group, USAF, Pentagon ... Lt. Gen. (sel.) Kevin J. **Sullivan**, from Cmdr., Ogden ALC, AFMC, Hill AFB, Utah, to DCS, Instl., Log., & Mission Spt., USAF, Pentagon ... Brig. Gen. (sel.) Stephen W. **Wilson**, from Dep. Dir., Intel. & Air, Space, & Info. Ops. for Flying Tng., AETC, Randolph AFB, Tex., to Dep. Cmdr., Canadian NORAD Region, NORAD, Winnipeg, Manitoba, Canada ... Lt. Gen. (sel.) Donald C. **Wurster**, from Vice Cmdr., AFSOC, Hurlburt Field, Fla., to Cmdr., AFSOC, Hurlburt Field, Fla.

SES CHANGES: William H. **Budden**, to Exec. Dir., BRAC Implementation, DLA, Ft. Belvoir, Va. ... Steven F. **Butler**, to Exec. Dir., Warner Robins ALC, AFMC, Robins AFB, Ga. ... Fred P. **Lewis**, to Dir., Weather, DCS, Air, Space, & Info. Ops., P&R, USAF, Pentagon ... Brian A. **Maher**, to President, Jt. Special Ops. University, SOCOM, Hurlburt Field, Fla. ... Kenneth I. **Percell**, to Dir., Engineering & AF Smart Ops. 21 Advisor, Warner Robins ALC, AFMC, Robins AFB, Ga. ... Mary Christine **Puckett**, to Assoc. Dep. Asst. Secy. for Acq. Integration, Office of the Asst. Secy. of the AF for Acq., Pentagon. ■

and simple. The project was later crippled by a huge load of extra requirements.

England's group was unimpressed last fall by the Air Force pitch to reinstate the project, but continued cost and schedule improvements appear to have done the trick.

Col. Bob Schwarze, the Air Staff's chief of electronic warfare, told *Air Force Magazine* that the project has been more tightly focused on standoff jamming. The CCJ concept has better-defined requirements and is more "reality based," he said.

Over its projected service life, the jammer would cost \$2.8 billion to \$3.7 billion, a figure that includes 24 sets of 40-foot jamming pods, Schwarze estimated.

USAF says it could field eight sets of the CCJ by 2015.

Gunships Hit the Wall

The wing boxes on Air Force Special Operations Command AC-130U Spooky gunships—some of the "youngest" in the Hercules inventory—are becoming fatigued, requiring careful management of how and when they fly.

That is the word from Lt. Gen. Michael Wooley, the AFSOC commander, who in May told reporters that the culprit

is the high operating tempo for the AC-130Us, which are flown at almost three times the rate as their older stablemates, the AC-130Hs.

The U models fly two or three times a night in Iraq, but the H models fly only about once a night in Afghanistan.

Besides carefully managing the loads the U models are bearing, AFSOC has decided to replace their wing boxes. This will extend the model's service lives beyond 2018. The U models were bought as new H models and converted into gunships.

AFSOC will be taking delivery of four more AC-130Us in the near future, and these will prevent shortages of the type as the other, stressed aircraft go to depot to receive their wing box replacements.

In contrast to the AC-130Us, Wooley noted, older AC-130Hs are aging more "gracefully," although their ultimate health is harder to assess. He called the H models the "wildcard" of his fleet, in terms of potential age-related maintenance issues.

Second JSF Engine Lives On

In the House, the on-again, off-again campaign to develop an alternate F-35 engine is on again.

The House Armed Services Committee, completing its 2008 defense bill, added \$480 million to continue work on the General Electric-Rolls Royce F136 engine.



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The F-35's primary engine is the F135 power plant, built by Pratt & Whitney. Proponents of the second engine say financial and operational benefits will flow from having such a competition. That was the original plan, they note.

The Pentagon has twice tried to kill the second engine, saying that competition wouldn't save enough money to justify its start-up cost. It also says the F135 is working well, so it does not need a backup.

DOD has spent about \$1.6 billion on the alternate engine since 1996. Officials with GE said another \$1.8 billion would be needed in order for the motor to be delivered on schedule by 2012. (See "Lightning II: So Far, So Good," p. 30.)

Romania OKs US Bases

Romania in May approved a plan to allow US forces to use several bases.

The announcement came at the conclusion of Sniper Lance, a 10-day US-Romania exercise. It was the second such exercise held in Romania in nine months.

In 2005, the two nations set out guidelines on how Romania would host US forces. That agreement outlined the possible use of Mihail Kogalniceanu (MK) Air Base as well as a range and port facilities in the city of Constanta.

Bucharest has authorized the US to station on its soil as many as 3,000 US troops, but US Air Forces in Europe officials said there are no immediate plans to permanently station airmen there.

USAFE officials plan to establish in Romania this summer an office to help coordinate future exercises in the country.

Lt. Col. Stephen Ritter, chief of the MK integration branch, said US forces are getting the benefit of training opportunities in Romania, and USAF is working with local officials to coordinate access to training ranges by the Air Force and NATO partners.

Payton's Perspective

Despite headlines that suggest the Air Force's system of developing and buying new hardware is floundering, the service is doing a good job managing its programs, USAF acquisition chief Sue C. Payton said at a Washington, D.C., seminar in May.

While conceding that some top programs continue to run over budget, Payton insisted that, on the whole, the system is working well. Of the service's 127 major programs of record, only

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about 10 percent are having serious problems, she said.

In those cases where programs are suffering from problems, the main cause tends to be a lack of realism and honesty about costs, she said. "One of the problems was ... we estimated costs way too low," she said, adding, "We need some intellectual integrity about what we're telling the taxpayer we're doing."

Grand Forks Set for UAVs

Air Force civil engineering and communications airmen arrived at Grand

Forks AFB, N.D., in early May to ready that base for new Predator and Global Hawk unmanned aerial vehicles.

A 10-member Langley AFB, Va., team set up camp at the base with the goal of coordinating the arrival of the UAVs with the departure of old KC-135 tankers, which will permanently vacate the premises.

Both moves stem from 2005 decisions of the Base Realignment and Closure Commission.

The Air Force plans to install eight Predators at the base, with the first

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arriving in early 2009. Global Hawks are to arrive at the rate of one or two per year, starting in 2010.

A similar team has studied Grand Forks as a possible base for the Air Force's next tanker—the KC-X. (See "Aerospace World: Grand Forks Eyed as KC-X Base," May, p. 22.)

New Space Office Opens

The Operationally Responsive Space Office opened on May 21 at Kirtland AFB, N.M.

Col. Kevin McLaughlin was named ORS Office director. He is also commander of Kirtland's Space Development and Test Wing.

This joint force organization will coordinate various military and government agency efforts to develop fast-turnaround space capabilities. The targeted capabilities are technological and operational in nature.

Deputy Defense Secretary Gordon England, in an April report to Congress, voiced the need for such an office. He said that the nation needs a way to develop, acquire, and field space systems in "shortened timeframes and more affordable ways."

The office will manage responsive space efforts undertaken by the Air Force, Army, Navy, Defense Advanced Research Projects Agency, National Reconnaissance Office, and Missile Defense Agency.

Alaska Shield Unfolds

The Air Force, between May 7 and May 18, teamed with numerous US civilian agencies to stage Alaska Shield, a homeland defense exercise focused on domestic threats.

The exercise, held annually, was a key part of US Northern Command's Ardent Sentry-Northern Edge 2007.

The event allowed participants to practice coordination of Department of Defense and federal, state, and local agencies in disaster scenarios and terrorist incidents.

In a scenario this year, USAF's F-15C fighters based at Elmendorf Air Force Base intercepted a flight by an airborne narcotics trafficker from the Pacific Northwest. Canadian Air Force aircraft initially responded while the would-be intruder passed over Canadian airspace—and was then handed off to the pair of Eagles.

Joint Task Force-Alaska is the military component of Alaska's integrated response in such situations. The task force provides military support to civilian agencies and defends Alaska's airspace.

Two Vietnam MIA Identified

DOD announced on April 24 that remains of two Air Force members,

The War on Terrorism

Operation Iraqi Freedom—Iraq

Casualties

By June 14, a total of 3,508 Americans had died in Operation Iraqi Freedom. The total includes 3,501 troops and seven Department of Defense civilians. Of these deaths, 2,881 were killed in action with the enemy while 627 died in noncombat incidents.

There have been 25,950 troops wounded in action during OIF. This number includes 14,283 who returned to duty within 72 hours and 11,667 who were unable to return to duty quickly.

Sadr City Air Strike

US and coalition forces operating in Baghdad killed three terrorists and detained four suspects May 10 during a raid in the city's Sadr City district—calling in close air support after a sustained firefight.

The targeted individuals were suspected members of a cell transporting weapons and special penetrating explosives from Iran to Iraq, according to Multinational Force-Iraq officials.

When ground forces arrived, they received small-arms fire from two separate buildings. Despite efforts to subdue the armed terrorists, forces continued to receive fire—then called for close air support from Air Force F-16s which were covering the operation. The F-16s killed three of the men.

Intelligence reports indicated the cell had ties to a kidnapping network that conducted attacks within Iraq.

Operation Enduring Freedom—Afghanistan

Casualties

By June 9, a total of 397 Americans had died in Operation Enduring Freedom. The total includes 396 troops and one Department of Defense civilian. Of these deaths, 217 were killed in action with the enemy while 180 died in noncombat incidents.

There have been 1,319 troops wounded in action during OEF. This number includes 524 who were wounded and returned to duty within 72 hours and 795 who were unable to return to duty quickly.

Air Strikes Kill Taliban, Civilians

An estimated 11—and possibly many more—Taliban fighters were killed by US air strikes on May 15 when their compounds were struck in coordinated attacks, the Afghan Defense Ministry reported.

The insurgents were killed in the Zhari district of Kandahar Province.

The police chief of the province claimed that more than 60 died, including three regional commanders—Mullah Abdul Hakim, Mullah Abdul Manan, and Mullah Zarif.

The enemy fighters and commanders were killed in a raid during a joint NATO-Afghan operation, according to the Defense Ministry.

According to the US Central Command Air Forces daily airpower summary, Air Force F-15Es dropped 500-pound Joint Direct Attack Munitions on insurgent positions and covered troops who came under small-arms fire.

An Air Force B-1 also dropped 2,000-pound JDAMs on a building occupied by insurgent fighters in Gereshk on the same day.

The Taliban's top military commander, Mullah Dadullah, was killed in the Sangin area of Helmand Province earlier in May.

both missing in action from the Vietnam War, had been identified. The two were Col. Norman D. Eaton of Weatherford, Okla., and Lt. Col. Paul E. Getchell of Portland, Maine.

Plans in both cases called for burial at Arlington National Cemetery.

The two airmen were lost on Jan. 13, 1969, during a night mission in a B-57B bomber over Laos.

In 1995, a joint US-Laotian team investigated the incident and inter-

viewed a citizen who recalled the crash. Another team surveyed the site later, discovering wreckage and materials. In 2003, a team uncovered Eaton's identification tag. Subsequent team visits led to positive identifications.

Turkey Buys More F-16s

Turkey will buy 30 more F-16s under a deal signed with the US government in May. Its existing fleet of about 212 F-16s are also being modernized; both the



USAF photo by SSGT Brian Ferguson

Air Force Chief of Staff Gen. T. Michael Moseley on June 12 awarded the first Air Force Combat Action Medal at the Air Force Memorial in Washington, D.C. The medal—the first of its kind—was designed to recognize airmen who have been directly in harm's way during combat.

Raptor Makes Unexpected Entry on Public Stage

The F-22A Raptor, the Air Force's new air superiority fighter, made its air show flying debut at Andrews AFB, Md., on May 18—nearly a year ahead of the schedule put forward by Air Combat Command.

Maj. Paul Moga, the sole F-22 demonstration pilot, told reporters in Washington, D.C., that ACC wanted to get the program out as soon as possible so that the public could get acquainted with the special capabilities of the fighter.

The 2007 season originally called for a simple series of flybys as Moga developed the final routine, but ACC decided to allow a "version 1.0" performance.

The initial routine involves extremely tight turns, maximum performance climbs, and a series of slow flight and high angle-of-attack maneuvers—including pitch flips and "tail slides"—demonstrating the F-22's ability to remain under control under virtually any conditions. The routine highlights the fact that a pilot can point the F-22's nose in any direction, regardless of airspeed or attitude.

Moga noted that all the maneuvers are part of the normal F-22 pilot training syllabus and are "nothing crazy," even though the aircraft at times seems to defy gravity, momentum, and aerodynamics. The tail slide—in which the aircraft stops ascending and begins to fall backward under total control—is something rookie F-22 pilots do on their third training sortie, Moga said.

As the season progresses, Moga said ACC will likely clear more maneuvers for the demo routine.

—John A. Tirpak

new aircraft and the upgraded ones will be of a common configuration similar to US Air Force Block 50-52 models.

The buy is considered a "bridge" purchase to keep the Turkish Air Force up to speed as it awaits delivery of F-35 Joint Strike Fighters in the next decade. Turkey is one of nine partner nations on the JSF program.

The new sale is worth \$1.8 billion and provides for the 30 new aircraft and associated equipment. Of that, Lockheed Martin and its subcontractors will receive about \$1.1 billion. The company received a \$635.1 million contract in December 2006 to upgrade Turkey's existing F-16s.

The new aircraft will undergo final

News Notes

- Art Cader, a first lieutenant with the Army Air Corps in World War II, received the Distinguished Flying Cross in a May 7 ceremony at Travis AFB, Calif. The medal was presented for his actions on Sept. 30, 1944, when he flew a B-24 to bomb Japanese oil refineries on Borneo. Cader's aircraft was attacked by Japanese fighters. As some crew members from other aircraft began to bail out, Cader took the airplane out of formation and descended to provide covering fire. With severe engine damage and low fuel, he still brought the airplane back to base.

- About 2,500 homes in the vicinity of the Warren Grove Gunnery Range, N.J., were evacuated in May due to a huge wildfire sparked by a flare from an Air National Guard F-16 training on the range. The fire consumed about 20 square miles of brush in the region, known as the Pine Barrens. The Air Force established a claims processing center at the Tuckerton New Jersey Army National Guard Armory for those affected.

- An annex to the chapel at Balad AB, Iraq, was named in honor of Maj. Troy L. Gilbert, who died in his F-16 in November 2006 while strafing enemy combatants. Gilbert was a volunteer at the chapel and at the USAF theater hospital, and "Troy's Place" is intended to be a quiet retreat from crowded base dormitories. The new facility was dedicated May 4. (See "Aerospace World: F-16 Pilot Awarded DFC," June, p. 14.)

- Boeing has begun flight testing the AC-130U gunship—equipped with new 30 mm Bushmaster cannons—at Hurlburt Field, Fla. Boeing is modifying four gunships for Air Force Special Operations Command. The U model features an increased standoff range, better accuracy, and a suite of electronic and infrared countermeasures that enhance survivability. The 30 mm cannons will eventually replace both the 40 mm cannon and the 25 mm gun on all U model gunships.

- Air Force pilots and joint terminal attack controllers in April practiced

urban close air support skills during exercises in the towns of Caliente and Panaca, Nev. About 50 members of the 16th Weapons Squadron, 8th WPS, and 422nd Test and Evaluation Squadron practiced calling in fire close to civilians and friendly forces. Six JTACs found targets on the ground and sent the information to pilots who "bombed" targets without dropping weapons.

- China announced May 14 that it had launched a communications satellite into orbit on behalf of Nigeria. It was the first time it has made such an arrangement. The Xichang space center in Sichuan Province lofted NIGCOMSAT-1 into orbit on a Long March 3B rocket. Chinese officials said the geostationary satellite will provide communications services over Africa and portions of the Middle East and Europe for Nigeria. It will become operational by the end of the year.

- The McGuire AFB, N.J., NCO Academy closed on May 3, after graduating more than 20,000 enlisted leaders over three decades. The building on base



SSgt. Sarah Hall inspects the pilot's mask while Capt. Scott Frechette conducts a safety check of a C-17 at Charleston AFB, S.C. A Charleston team has developed new techniques that will slice 90 minutes off of the time required to preflight one of the airlifters. The new routine may be adopted at all bases from which the C-17 is flown.

assembly near Ankara at the Tusas Aerospace Industries plant, which will also perform modifications to earlier aircraft. Tusas has assembled about 200 of the nation's F-16s to date.

When completed, the F-16 fleet modernization will have provided all Turkish F-16s with new radars, modular

mission computers, helmet-mounted cuing systems, Link 16, capability for night vision goggles, upgraded navigation systems, color cockpit displays, and other gear.

India Buys US C-130s

India will buy six new US-built C-

130J transports in a \$1.1 billion deal, according to a May announcement.

For decades, India acquired most of its military equipment from the Soviet Union. Then, when the USSR collapsed, Russia took up the slack.

The C-130 sale is the first major US deal with India, which has until recently kept its distance from the US as a result of Washington's close ties to Pakistan, an Indian rival.

The new transports will go to India's special operations forces. They will be equipped with missile warning systems, countermeasure dispensers, and secure voice communications gear, among other systems.

India has also expressed interest in buying F/A-18E/F Super Hornet fighters.

Japan Extends Iraq Support

Japan's parliament, the Diet, voted in May to extend for another two years that country's air support to the US-led effort in Iraq. Passage came only after spirited debate and expression of strong opposition.

Since 2004, about 200 Japan Air Self-Defense Force troops have been flying cargo and passenger flights into Iraq for the US and its allies. The Japanese support frees up US airlift for other missions.

While it continues to support US airlift activities, Japan has withdrawn 600 ground troops from a noncombat reconstruction mission in southern Iraq.

will be renamed the Tuskegee Airmen Professional Education Center, and it will now house the First Term Airmen Center and base career advisor.

- Fuels airmen at Shaw AFB, S.C., are testing the Air Force's only R-11 Hybrid Electric Aviation Refueler vehicle during a one-year test at the base that started in May. The test is intended to determine how much the diesel-electric hybrid reduces emissions and conserves fuel, compared to the regular diesel trucks.

- Boeing received a five-year, \$19 million contract in May to provide F-16 training to pilots at Shaw AFB, S.C., Misawa AB, Japan, and Spangdahlem AB, Germany. Boeing will run the bases' Mission Training Centers, which house four high-fidelity F-16 simulators with a 360-degree display system, plus operator and debrief stations. The company also provides several training products and services, including visual integrated display systems and combat environment servers.

- Reservists from the 445th Aero-

space Medicine Squadron and other units traveled to Guatemala as part of the exercise New Horizons 07 to treat more than 8,000 patients from April 14 to 28. The exercise is a US Southern Command joint engineering, medical, humanitarian, and civic assistance effort conducted every year in Central and South America. The physicians, dentists, optometrists, and medics treated a wide range of ailments in several locations.

- Members of the 820th Security Forces Group at Moody AFB, Ga., are employing a new high-tech tool in the war on terror. It helps airmen increase base security and deter attacks against friendly forces. The "Z backscatter van" is a \$1.2 million, lead-lined truck that uses low power X-rays to detect radiological materials and low-density substances such as explosives or drugs, hidden inside metal structures.

- Test pilots and engineers from Edwards AFB, Calif., put recently upgraded F-16s from Eielson AFB, Alaska's, 18th Fighter Squadron through a series of

tests during Red Flag-Alaska in early April. The exercise featured Eielson's F-16s with new M4.1 software upgrades that were tested at Edwards in 2005. Edwards test pilots and flight test engineers augmented the 18th FS as they put the fighters through their first large force exercise.

- Air Force Materiel Command is readying a new organization to take over management of its global supply chain. The Global Logistics Support Center will be located at Wright-Patterson AFB, Ohio. GLSC (Provisional) was activated in May to bring the new organization online. It will have subject matter experts from the air logistics centers and other agencies, plus contractors.

- The Department of Defense announced April 30 that Claude M. Kicklighter had been sworn in as the DOD inspector general—replacing Thomas F. Gimble, who had been acting inspector general since September 2005. Kicklighter retired in 1991 from the Army as a lieutenant general. ■



In this May 29 hookup, a KC-135 tanker prepares to refuel two A-10 fighters as part of Red Flag-Alaska. The A-10s were assigned to the 355th FS (Eielson AFB, Alaska), which has since been deactivated. The KC-135R is part of the Alaska Air National Guard's 168th Air Refueling Wing.

LRS Aircraft Taking Shape

The Air Force's next long-range strike system, planned to arrive in 2018, will be neither supersonic nor unmanned, but it will be much stealthier than any existing aircraft. Moreover, it must have very long range and loiter time.

Those were conclusions of a panel of experts speaking May 1 at an AFA-sponsored forum, "The Future of Long-Range Strike," held in Washington, D.C.

Maj. Gen. Mark T. Matthews, Air Combat Command's director of plans and programs, said recent analysis shows that the manned-subsonic combination offers the "best value" in meeting missions expected for the next bomber. It will have to carry 14,000 to 28,000 pounds of ordnance and have an unrefueled combat radius of at least 2,000 miles.

Technologies supporting unmanned operation and supersonic speed are not yet mature enough for a 2018 bomber, he said.

The analysis further shows that, despite advances in unmanned aerial vehicle autonomy, "having a man in the loop" will be necessary to adapt to "a dynamic battle environment" in which enemies will do everything possible to avoid detection, move, and spoof attacking aircraft. Adversaries know, Matthews said, that if the Air Force can see them, it can destroy them.

The approach of using cruise missiles traveling at high speeds to perform the long-range strike mission was discarded due to high cost per target and the challenges of constantly updating target information.

The new bomber will have "advanced" stealth qualities, new weapons, and new sensors, Matthews reported.

Storm Hunters Start Early

Air Force Reserve Command's 403rd Wing flew its first storm-hunting mission of the 2007 season on May 9, when the "Hurricane Hunters" tracked Subtropical Storm Andrea off the coast of Georgia.

The Atlantic Ocean hurricane season officially started June 1. Data collected by the Hurricane Hunters resulted in the National Hurricane Center declaring Andrea the first named storm of the season.

This year, the unit is adding stepped-frequency microwave radiometers to its WC-130Js. The devices measure surface winds directly below the aircraft. They can also determine rainfall rates within a storm system, providing significant structural detail about storms.

Two Hurricane Hunter aircraft are equipped with the radiometers, and another will be fitted each month until all 10 of the wing's aircraft are outfitted with the pod. ■

Inside the 379th Air Expeditionary Wing

Six years ago, the 379th Air Expeditionary Wing was an empty shell—800 airmen without any aircraft, acting as a placeholder for potential future action in US Central Command's area of responsibility.

Today, the unit boasts 105 aircraft deployed to a Persian Gulf airfield along with 8,000 personnel among 47 units.

Col. Jeff Fraser, the unit's vice commander, said the 379th is the largest and most diverse organization in CENTCOM's AOR.

"One of the unique things about the base is that not all of the aircraft belong to the wing or the Air Force," Fraser told *Air Force Magazine* at his host base.

Coalition personnel and assets from Australia, Britain, Singapore, and other nations are on the flight line next to US airmen, soldiers, marines, and naval aviators.

Airframes on the ramp include the KC-135R, C-130H and J models, E-8C Joint STARS, and B-1B bombers, which have operated out of the Persian Gulf since June 2006. (See "Aerospace World: Closer to the Bone," June, p. 20.) The site hosts 21 tankers that support any and all air missions in the AOR.

The wing has doubled the fuel storage capacity at its base. It is now capable of storing about 14 million gallons of fuel, up from nearly six million a year ago.

The fleet of Joint STARS and RC-135 Rivet Joints operate under the authority of the 379th alone, Fraser said, and are being used in new ways to connect forces in the field. Example: With the broad area coverage of a Rivet Joint, a fighter with a targeting pod can close in on a specific target of interest and get a concentrated look at it.

The increase in capacity has made the wing's combat, airlift, and surveillance aircraft more flexible and adaptable to missions over Afghanistan, Iraq, and the Horn of Africa. From January to mid-April this year, more than 2,000 intelligence-surveillance-reconnaissance aircraft hours had been flown. Additionally, the wing had answered about 1,500 requests for air support and moved 93 million pounds of cargo.

Despite the large and diverse operation, Col. Mike Arnold, commander of the 379th Expeditionary Maintenance Group, says maintainers are keeping a close eye on the logistics footprint around the wing, setting up the appropriately sized parts depots for frequently used items such as gears and brakes for C-130s and KC-135s.

"We're trying to keep our maintenance footprint as small as possible," he said.

—Marc V. Schanz in the Persian Gulf region



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 **BOEING**

Action in Congress

By Tom Philpott, Contributing Editor

A Richer Pay Raise?; At Stake in the Defense Bill; The Push to Raise Tricare Fees

Pay Raise 2008

A 3.5 percent pay raise for military members next January became a near-certainty in late May when the Senate Armed Services Committee voted for an increase of that size in its mark of its Fiscal 2008 defense authorization bill (S 567).

The House earlier had included the same raise in its own version of the bill (HR 1585). A 3.5 percent raise is a half-percentage point higher than recent wage growth in the private sector.

The Bush Administration sought a three percent raise for next year, which would have ended at eight, the number of consecutive annual military raises set at least a half-percentage above private sector wage growth.

The Office of Management and Budget argued for a return to the practice of setting military raises to match wage growth nationwide, as measured by the government's Employment Cost Index (ECI). It said such raises would be enough to sustain recruiting, retention, and quality of life.

House members and Senators disagreed. In fact the House voted to keep annual military pay raises a half-percentage point above ECI-tracked wage growth through January 2012. The Senate committee's language deals only with the 2008 raise.

CRSC, Reserve Retirement

The House-passed bill and the Senate committee's version both include a variety of initiatives for active duty and reserve component members, military retirees, and survivors. Some House and Senate provisions are identical, virtually assuring passage.

For example, both reject the Pentagon's call for higher Tricare fees, deductibles, and co-payments and would restore \$1.9 billion to the health care budget.

Most personnel initiatives appear in only one version of the bill, though more Senate initiatives might be added during floor debate.

Here is what will be at stake for military people when conferees go behind those closed doors:

- Expansion of CRSC—Both the



USAF photo by A1C Nathan Doza

Reservists may get an improved GI Bill benefit.

House and Senate bill would expand eligibility for Combat-Related Special Compensation (CRSC) to Chapter 61 retirees, those forced by disability to leave service short of 20 years. The Senate committee would allow all retirees with combat-related disabilities, regardless of their years of service, to receive both disability compensation and CRSC. The CRSC would be equal in value to military retired pay based on years served. For example, an eligible retiree forced out after 16 years would receive monthly CRSC equal to 2.5 percent of monthly basic pay multiplied by 16 years. The House bill is more limited. It would expand CRSC eligibility only to those Chapter 61 retirees who served at least 15 years and have combat-related disabilities rated 60 percent or higher.

- Survivor indemnity allowance—The House bill would establish up to a \$40 a month allowance as a modest initial step toward eliminating the so-called SBP-DIC offset that impacts 61,000 surviving spouses. These spouses now see payments under the military's Survivor Benefit Plan reduced by amounts they receive in Dependency and Indemnity Compensation from the Department of Veterans Affairs. Surviving spouses complain that the offset is unfair, particularly in light of recent actions by Congress to

relax a long-standing ban on concurrent receipt of both disability compensation and military retirement for certain categories of disabled retirees. The survivor indemnity allowance would begin Oct. 1, 2008. The Senate bill proposes no such allowance.

- Reserve GI bill—The House bill says it is laying the groundwork to improve Reserve Montgomery GI Bill benefits in future years by voting to transfer oversight for the program from the Department of Defense to the Department of Veterans Affairs. Under DOD, Reserve GI Bill rates have been frozen for years. Proponents say they need to be raised to provide a more robust benefits package to all reservists. If the program is turned over to VA, benefits would be raised annually along with active duty MGIB rates. Defense officials oppose the move, saying Reserve MGIB is an important recruiting and retention tool they should manage. Rep. Vic Snyder (D-Ark.), chairman of the House military personnel subcommittee, said once VA has oversight of Reserve GI Bill, the House will move to raise benefits closer to those provided to active duty members. Snyder also wants to see reserve benefits made portable so reservists can use them after they leave drill status. The Senate bill is silent on the issue.

- Reserve Retirement—The Senate

committee's bill would lower from age 60 the start date for reserve retirement by three months for every 90 days of active duty mobilization. Because of funding challenges, this change would only take effect for mobilizations after the 2008 authorization bill is signed into law. Senators did not find the funds to make this change retroactive to call-ups that have occurred since the 9/11 attacks. The House bill is silent on this issue.

■ **Survivor benefits**—The Senate committee would allow guardians and caretakers of dependent children to receive SBP benefits. This would close a coverage gap brought to light with casualties in Iraq and Afghanistan that left some grandparents who care for surviving children ineligible for SBP benefits to help raise them.

■ **Retail pharmacy discounts**—Both the House bill and Senate committee bill would pressure the pharmaceutical industry to provide federal price discounts to medicines bought for dispensing through Tricare retail pharmacies. The discounts already are provided on medicines dispensed at base pharmacies and through the military's mail order program. The House language would allow the department to exclude drugs from the Tricare retail program if not made available at deep discount. The Senate committee thought that approach could hurt patients. It merely would order the pharmaceutical industry to apply federal discounts to all Tricare outlets. The change would take effect Oct. 1.

■ **Accumulated leave**—The number of unused leave days that any service member can carry over from one fiscal year to the next would be raised to 90 under the Senate committee's bill. The current ceiling for unused leave days is 60. Senators say the pace of operations in recent years has prevented many service members from using their leave. The problem becomes a greater sacrifice if they permanently lose unused leave because of the 60-day rule. The House bill is silent on this issue.

Higher Tricare Fees Backed

The Congressionally created Task Force on the Future of Military Health Care on May 31 delivered its interim report to the Congress, calling for military members to pay higher fees. (See "Action in Congress: Raising Tricare Fees," March, p. 28.)

The report landed as Congress moved to block for another year higher Tricare fees proposed by the Bush Administration.

The 14-member task force said Tricare fees, deductibles, and co-payments should be raised for under-65 retirees and their families.

It also recommended raising benefi-



Gen. John D.W. Corley leads the Tricare task force.

ciary co-payments on prescriptions filled in the Tricare retail pharmacy network; indexing Tricare fees and deductibles so beneficiary costs rise automatically each year with health care costs; and establishing a "tiered" Tricare fee structure so that retirees with bigger annuities pay more than retirees with smaller annuities.

The task force is co-chaired by Air Force Vice Chief of Staff Gen. John D.W. Corley and economist Gail R. Wilensky. The interim report doesn't include specific new fee levels for Tricare. Those will be presented in a final report to Congress and defense leaders in December.

Because Tricare fees haven't been raised since the program began, defense officials recommended sharp fee increases in a package of proposals first sent to Congress in 2006. That "Sustain the Benefit" package was criticized by lawmakers as trying to raise fees too far and too fast. The task force agreed in part, recommending that changes be phased in over three to five years.

Also, the task force said the higher Tricare fees and deductibles, when fully phased in, should be no more burdensome for retirees and their families than were Tricare fees when set some 11 years ago.

The report says that to soften the impact of fee increases, Congress could consider a one-time increase in military retirement pay.

Veterans' Gains

The House in May approved a package of bills to strengthen veterans' health care and other benefits.

The Returning Service Member VA Health Care Insurance Act (HR 612) would extend the period of eligibility for free health care for combat service in the Persian Gulf or future hostilities

from two years to five after a veteran's discharge. This change should help veterans who may have health problems, such as post-traumatic stress disorder, whose symptoms can surface long after they leave service. The bill would apply only to veterans who served in combat during or after the 1991 Gulf War.

The Traumatic Brain Injury Health Enhancement and Long-Term Support Act of 2007 (HR 2199) directs the VA to screen veteran patients for brain injury; develop and implement a long-term care program, through rehabilitation, for traumatic brain injury (TBI) patients; and establish a TBI transition office at each VA polytrauma network site to coordinate health care to those who suffer moderate to severe TBI and are in need of health services not immediately offered by VA. The bill also would establish a TBI health registry to track and notify veterans of new brain injury treatment.

The Early Access to Vocational Rehabilitation and Employment Benefits Act (HR 2239) would expand eligibility for these programs to injured service members before their discharge. Current law doesn't allow VA to provide VR&E benefits until after discharge, which can delay convalescence and slow their entrance into the job market.

The Veterans Outreach Improvement Act of 2007 (HR 67) would improve VA outreach activities by making grants to state veterans' agencies larger and more predictable.

HR 1470 would amend the Department of Veterans Affairs Health Care Programs Enhancement Act of 2001 to require VA to provide more chiropractic care and services. No fewer than 75 Veterans Affairs medical centers would have chiropractic care by calendar year 2010. ■



Comeb the



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USAF has been steadily injecting new equipment and forces into this vast and explosive region.

By John A. Tirpak, Executive Editor

A Hawaii-based F-15 escorts a B-52 during the recent Koa Lightning exercise.

The United States Air Force is expanding its capabilities throughout the Pacific, and its power there soon will be stronger than in any other region. Commanders are reasonably confident that the enhanced power can deter major conflict for years to come.

In addition, USAF is working to improve its military-to-military relations with Pacific nations. The service hopes that these ties will reduce suspicion and the danger of miscalculation.

These officers are wary of China's broad-based military growth and North Korea's belligerence and erratic behavior. They are mindful that the world's biggest military powers—the US, China, Japan, and Russia, not to mention North and South Korea—come together in Northeast Asia.

Even so, commanders believe the Pacific has a better-than-even chance of evolving in a peaceful way.

The Air Force's best fighters of several different types, regular contingents of bombers, and new intelligence-surveillance-reconnaissance aircraft, as well as factory-fresh transports, are all being deployed to the Pacific region, creating the most capable presence the US has enjoyed there in decades.

"Our own readiness ... to do whatever we are called upon to do is essential," Air Force Lt. Gen. Daniel P. Leaf, deputy commander of US Pacific Command, said in an interview.

"Without that, our efforts would be ... meaningless. We have to have a foundation of strength—and we do—in the Pacific."

While joint exercises and developing close relationships between the US military and those of other countries help build understanding and aid in problem solving, Leaf said, there is another dimension of mil-to-mil work, as well.

"When we bring any military representative from any nation to see our forces—our commanders and leaders, right down to our NCOs and enlisted members [and] our hardware—we also endeavor to show them our strength and readiness. And that has a deterrent side to it," Leaf asserted.

He went on to explain, "It's not just that we want to be friends, but also, we are a strong and prepared military with close relationships to our allies, and we're prepared to do what's necessary." That is true, he said, even though "our goal is to build a peaceful and stable future in the Pacific."

The Air Force is in the midst of a



A pair of F-22s from Langley AFB, Va., skirt Okinawa during the Raptor's first overseas deployment, from February to April.

five-year effort to put its prime combat aircraft in the Pacific region, and it will continue to deploy additional fighters and bombers there on a rotational, "temporary-permanent" basis. Airlift assets will also be modernized.

This summer, USAF will introduce the first F-22s into Alaska, noted Gen. Paul V. Hester, head of Pacific Air Forces. In a March interview, he explained that the first permanent Raptor contingent at Elmendorf AFB, Alaska, will number a half-dozen airplanes, building up to a full squadron of 18 by January 2008.

A dozen F-22s were deployed to Kadena AB, Japan, early this year as part of an Air and Space Expeditionary Force (AEF) package.

Plans call for initial operational capability to be declared with the first squadron of F-22s at Elmendorf in mid-2008, Hester said, and a second squadron should reach initial operational capability a few months later. By late 2008, Elmendorf should have a permanent complement of 36 Raptors.

In just three years, the Hawaii Air National Guard will trade in its F-15s for F-22s. The squadron will be an all-Guard unit, and its aircraft will be "worldwide deployable" and full participants in the AEF structure, Hester reported.

When not deployed, the F-22 unit will be responsible for the air defense of the Hawaiian islands and Guam. When the squadron does go to a forward location, it will be backfilled by another unit.

"We will always have either F-22s or other deployed fighters in here that will continually stand alert for the air

defense of Hawaii and Guam," Hester explained.

Under current Air Force plans, the Pacific Theater will be the only region outside of the continental United States to have permanently based F-22 squadrons.

Many Fighter Upgrades

Hester detailed other combat upgrades. At Kunsan AB, South Korea, the Air Force's Block 30 F-16s will be swapped for Block 40 models, making Kunsan an "all-Block 40" unit. The Block 30s will move to Eielson AFB, Alaska, where they will form the core of an Aggressor unit that will routinely train with US and foreign air forces in Red Flag-Alaska exercises.

Older-model F-15s at Kadena Air Base, located on the Japanese island of Okinawa, recently have been replaced by USAF's hottest F-15s—those

which have been fitted with active electronically scanned array radars, helmet-mounted weapon cuing systems, upgraded engines, and similar advances.

The Air Force has also upgraded its F-16s based at Misawa AB, Japan, in the northern part of the country. They are now Block 50 models, with the best air-to-air and air-to-ground suites in the US fleet, as well as capabilities to conduct suppression of enemy air defenses missions. Even Yokota Air Base, near Tokyo, has traded up its C-130E tactical airlifters for C-130H models.

Hester said that, at Hickam AFB, Hawaii, one sees lots of new "concrete" on the airlift side of the base, to accommodate eight new C-17s permanently assigned there and to sharply increase the base's ability to transship air cargo bound for the western Pacific. Beginning this summer, eight more C-17s will be based at Elmendorf, giving PACAF 16 C-17s that will serve both Air Mobility Command and PACAF assignments. The eight at Elmendorf will associate with the Guard.

Besides new and improved fighters, PACAF has been beefed up with a bomber contingent it hasn't maintained since the 1960s. The heavyweights are based at Andersen AFB, Guam, in the western Pacific.

"For the past three years, we have had a continuous bomber presence," Hester noted. He added, "Our expectation is that the ... bomber presence will continue."

He said that squadrons of B-1s, B-2s, and B-52s have been deployed to the island on a rotational basis, conducting not just in-area operations but long-dis-

"Overmatch" in the Pacific

The US is "well-postured" in the Pacific region to repel an attack by North Korea or any other nation. So said Adm. William J. Fallon, in his last testimony to the House Armed Services Committee as head of US Pacific Command in March. Fallon is now head of US Central Command.

"The Asia-Pacific area is primarily a maritime and air region," because of its vast expanses of ocean, he told the HASC. Particularly in airpower, Fallon said the US has an "overmatch" capability versus any other nation in the Pacific Theater and will enjoy regional air superiority for the near term, he asserted.

If war did come to the Korean Peninsula, Fallon said, it would fall to the Air Force and Navy to carry the brunt of the fighting for the US at first, since US ground forces are heavily engaged in Afghanistan and Iraq. However, the combination of US airpower with US ground forces and South Korea's 500,000-man army would make a Korean campaign brief and successful, though costly in the damage inflicted by the North Koreans, he asserted.

In fact, Fallon reported, PACOM depends on air and naval assets as its principal method of dealing with the North Korean threat day to day. The US air component is extremely capable against a North Korean Air Force that has mostly older aircraft and aircrews that only get a tenth as many flying hours as American pilots do. North Korea has not purchased any new combat aircraft for many years, but they do upgrade what they have, he said.

tance missions to exercises in Alaska, Australia, Hawaii, Japan, South Korea, and Thailand.

Guam is sovereign US territory, offering an array of military options not available on foreign bases. Guam provides the ability to fly missions “in times of anger,” without the need to gain the approval of a foreign government.

Guam is “the furthest tip of American sovereignty into the western Pacific,” Hester observed.

Even fighter squadrons deploy to Guam as part of the AEF system. Dual-role F-15Es deployed last year, and F-16s from Cannon AFB, N.M., are there this summer. Hester noted that the US Navy, US Marine Corps, and services of allied nations also use the sprawling runway complex at Andersen, which, during the Vietnam War, hosted up to 170 B-52s at a time.

Allied nations have been invited to use Guam’s ranges for training, said Hester, “and that’s been expanding.” Even Japan has dispatched aircraft to perform bombing runs.

All these measures, however, don’t “fill up the ramp” at the large island base, so PACAF is moving some functions such as security forces training to Andersen. Moreover, Hester plans to bring Global Hawk unmanned aerial vehicles to Guam.

He notes that the first of these high-flying aircraft will arrive in 2009, while the last—there may be as many as 10—would arrive around 2014.

Hester has been touting an arrangement wherein a number of regional air forces could cooperatively view RQ-4 Global Hawk intelligence-surveillance-reconnaissance (ISR) data, the better



At Kunsan AB, South Korea, SSgt. Carl Valvota and TSgt. Mike Geske arm an F-16 with an Mk 82 500-pound bomb.

USAF photo by TSgt. Erik Gudmundson

to keep watch on danger zones like the Strait of Malacca, through which a sizable portion of regional maritime traffic moves and which has been plagued by piracy.

At the Air Force Association’s Air Warfare Symposium in February, Hester said he hopes to begin a multinational program in which representatives from Pacific nations could jointly use data from Global Hawk operations. (See “The Risk Goes Up,” April, p. 34.)

Notionally, Hester said, the aircraft could launch from Guam, fly over the region for 28 hours, refuel in Thailand, fly over the Indian Ocean and return, paying special attention to areas where friends “need our assistance with the persistency of this ISR platform.”

In exchange for the information, and

a chance to pick the routes and targets, partner countries could offer rights to overfly their territory and provide alternative landing strips.

Hester went on to say the program could help solve problems related to “piracy [and] sea lines of communication” before a crisis breaks. Foreign representatives could watch the data come in at Hickam’s air operations center, Hester said.

Surfeit of Firepower

Hester has also told Air Force headquarters that he needs to have in the PACAF area two squadrons of MQ-1 Predator aircraft; one detachment in South Korea; and one in Hawaii or Guam. Moreover, he is pushing to have aircraft shelters built on Guam that can serve any aircraft now in the inventory, or planned.

All in all, so much USAF firepower has been dedicated to the Pacific that Hester saw fit to back some off.

Note, for example, that those newer F-15s at Kadena offer such an improvement over previous versions that one of three F-15 squadrons has been given back, a move Hester said will have no impact on capability. Even with threatening moves from North Korea, USAF doesn’t see “a necessity to put ... more firepower ... into Okinawa at all.”

Another big boost for USAF is the air and space operations center (AOC) at Hickam, which collects information from “airborne, surface, subsurface, and national platforms,” according to Col. Michael R. Boera, commander of the 613th Air and Space Operations Center.

USAF photo by MSgt. Robert Wieland



An RC-135 Cobra Ball reconnaissance aircraft from Offutt AFB, Neb., breaks away from a tanker over the Pacific Alaska Range Complex.

Is Long-Range Strike the Answer?

Is the "tyranny of distance" in the Pacific, coupled with fewer bases, the military rise of China, and tensions on the Korean Peninsula reason enough to put huge new resources into long-range strike systems? Congress has been debating that issue for the last several years. The answer, according to Lt. Gen. Daniel P. Leaf, deputy commander of US Pacific Command, is to find a balance between aircraft and bases.

Long-range systems "are very responsive," Leaf said, and offer the advantages of speed and being able to operate from the continental US. Forward bases, on the other hand, "offer and maintain access, but more importantly, provide direct interaction with other Pacific nations." However, "bases are expensive."

A balanced approach to "systems and basing is essential, and we're pursuing that," Leaf said. He maintained that the US has "good, affordable access" in the region. That access is not just in permanent locations such as Japan and South Korea, but on a visiting basis with Singapore and other countries.

Once the US and South Korea resolve their plans to have joint but not unified command over the next four years, and after the realignment of forces in and around Japan and to Guam, "it'll probably be time for another look" at the US basing structure in the region, Leaf suggested.

"This is a weapon system," Boera declared in a March briefing at the facility, and personnel who "crew" the AOC must pass "check rides"—analogous to those taken by flight crews—in order to be certified in AOC functions.

The AOC at Hawaii is connected to other Falconer sites around the world, and in time of a Pacific war outside of Korea, it would manage all the aspects of air and space power being brought to bear. In quieter times, it runs regional Operation Noble Eagle air sovereignty missions, tracks aircraft, and builds the daily air tasking order for the Pacific, while planning operations "about 96 hours out," Boera said.

A good chunk of the AOC's attention is also devoted to planning and monitoring ISR flights in theater. The AOC provides warning to ISR aircraft when foreign aircraft approach them and keep the ISR flights apprised of changing tasks and weather.

The facility at Hickam is named after Maj. Richard I. Bong, the top Army Air Forces ace of World War II. The Bong AOC is part of the Kenney Headquarters warfighting center. If the facility were to be hit by an enemy, it will soon be possible for another Falconer to take over, almost without missing a beat, Boera reported.

The AOC underwent an upgrade in March, providing operators with larger workstations and greater connectivity to the rest of the Air Force and the other armed services. The Hickam AOC has 61 "T1" lines connecting it to other elements of the armed forces. A T1 line can carry 24 digital channels of data. By comparison, US Central Command's AOC has 13 T1 lines; an aircraft carrier has just two.

Sometimes it's hard to gauge the

AOC's effectiveness, Boera said, noting that the facility's management of tsunami relief is still being studied. However, few deny the value of having a centralized facility that has near-total visibility into the functions of nearly every aspect of PACAF, he said. About 50 people crew the AOC on a 24/7 basis, but the facility in wartime could be augmented by up to 629 persons or more. Part of the facility is given over to liaison officers from, for example, Australia, to coordinate joint operations and exercises.

The 613th is also the lead for joint personnel recovery in the Pacific Theater, because of its ability to marshal and coordinate assets from multiple services and, at times, nations.

The unit is also the control mechanism for the region's likely wartime

joint force air component commander and head of 13th Air Force. Lt. Gen. Loyd S. Utterback, Hester's deputy and 13th Air Force commander, said his job is to be the wartime air coordinator in the theater.

"I would bring the operational punch and capability, because we here in Hawaii, through our air operations center, have the ability to command and control joint forces. And we practice that every day."

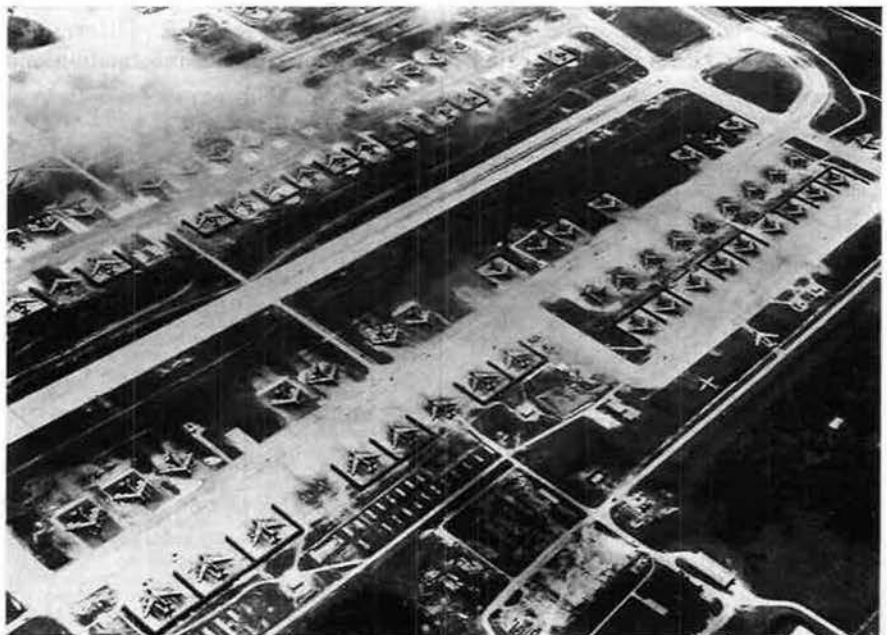
Utterback said there are about 25 exercises per year that refine the AOC's ability to command and control forces across the Pacific Theater, and "it's going to go up to 30 next year."

Safe Harbors

PACAF is developing a plan that would put the Hickam AOC in control of ballistic missile defense for the entire Pacific, Utterback said. While in peacetime he has no control over Navy ships or Marine aircraft, if he was "so designated" as the JFACC in wartime, the other services' air assets would "chop" to his command.

For ballistic missile defense, Utterback does not order Navy ships to conduct operations, but directs them to areas where the "effect" of BMD is required, "and at that point [the 7th Fleet commander] moves his ships and puts them where they need to be."

While the Hickam AOC wouldn't "run" a war on the Korean Peninsula, it would be in charge of "the time-phased deployment process for Korea," Utterback noted.



During the Vietnam War, more than 100 B-52s lined the ramps at Andersen AFB, Guam.



This Hickam AFB, Hawaii-based C-17 Globemaster III unloads two Army Stryker combat vehicles at Daegu, South Korea, for the Foe Eagle 2007 exercise in April.

“There’s not a single plan in Korea that’s not written in coordination with us. Because you can’t fight Korea in isolation.” The Hickam AOC would also take over if “connectivity” to the AOC at Osan was lost, Utterback noted.

As the ISR clearinghouse for the Pacific, the Hickam AOC collects “all source” information from US assets and allied nations with whom the US has an intelligence sharing agreement.

“We have not been too surprised in the years that I have been out here when something happens,” Utterback reported.

He said the US closely monitors situations of tension in the region and has commitments to honor if things go bad. Some of those commitments are complicated.

For instance, he said, there are “coordination and deconfliction challenges if we were asked to defend Taiwan”—namely, the US can’t send flag officers to Taiwan to coordinate its defense—“but we have thought through those challenges.” He said he couldn’t explain further, but added he is confident that “we could stand up to whatever we’re tasked to do out here.”

Utterback said PACAF is working to engage military forces throughout the region, toward building lines of communication that smooth the way for coalition-building in times of crisis.

India’s air force, he noted, is one with which the US now has a budding relationship of joint exercises. (See “Aerospace World: Cope India Wraps Up,” January 2006, p. 12.) He called the Indian Air Force a “capable and professional air force.” USAF has twice exercised within India’s territory

and has offered a reciprocal visit to its Red Flag event. India may send Su-30 Flankers to Red Flag Nellis next year, Utterback reported.

Australia represents the best possibility to be a US ally on the order of Japan or South Korea, Hester observed. The US has full intelligence sharing with Australia and Britain—“a pretty strong statement about the relationship between America and those two countries.” And although Australia has struck its own military cooperation deals with China, he doesn’t see it as a shift in Canberra’s attitudes.

“The relationship [with Australia] is as strong as it ever was; in fact, it’s stronger,” Hester asserted.

He noted that Australia is partnered with the US in development of the F-35 Joint Strike Fighter and ensured that its new AWACS-type aircraft would be compatible with US systems for future coalition work. Australia has also recently purchased four C-17s, and USAF embedded Australian crews on its own C-17s for their training in the airlifter.

Moreover, US aircraft have been permitted to train on ranges in northern Australia, and Hester expects that when the F-22 is based at Hickam, it will go to those ranges for exercises “more frequently than we have in the past.”

Australia also played a key role in introducing US military officials to their counterparts in Indonesia during the tsunami relief efforts of 2004. For a decade, US policy prohibited official mil-to-mil contacts with Indonesia. The restriction has since been lifted.

Lt. Gen. David A. Deptula, deputy chief of staff for ISR, previously held

Utterback’s job. He said operations such as the massive tsunami relief effort in Indonesia and neighboring countries provide huge dividends for the US.

Getting to Know Them

Deptula said friends in Indonesia’s air force told him that their country’s military textbooks “warn against allowing America in,” because the US will “never leave.” For that reason, US forces were given a time-certain when they had to be out of Indonesia, even though the relief operation was not yet over.

On the day US forces had to withdraw, “there was a picture on the front page of the Jakarta newspaper of a woman in full Muslim dress, holding a sign that said something like “I heart America, America not go,” Deptula related. “You can’t buy that kind of goodwill.”

Leaf said the tsunami relief was an example of something that doesn’t “fit into the traditional view of military operations.” However, there are two important points to make about it, he said.

“One is, *somebody’s* got to do it—somebody’s got to work to alleviate the human suffering, and two, ... the United States armed forces do it well and respond rapidly and do it with a great deal of compassion,” Leaf noted. Such operations “are very efficient in returning a positive and appropriate image for the United States of America. And by doing the right thing, and providing relief, we also engender more credibility, more acceptance in the region.” He added, “That’s not why we do it, but it certainly happens.”

Leaf said he’s optimistic about the Pacific region.

The progress of the six-party talks with North Korea, a new wave of exchanges and exercises with China, success in partnering with the Philippines to capture or kill terrorists, re-establishing mil-to-mil relationships with Indonesia, and expanding cooperation with India are reasons to be upbeat, Leaf asserted.

However, he warned that such a situation has come about because of diligence, attention, and patience and could be undone if those things are lacking.

“If there is anything that would worry me, it would be any party, any country, taking the progress that we have made in the Pacific for granted,” Leaf said. ■

Lightning II: So

THE F-35 Lightning II is starting to look like a fighter that will punch well above its weight. And that is good, because militaries around the world have quite a lot riding on this fifth generation warplane.

In the United States, the Air Force is counting on the F-35A, a conventional multirole variant, to provide next generation stealth and sensor fusion to go with the powers of its stablemate—the F-22. Introduction of the Lightning will let USAF start retiring its aged F-16s in a few years. Later, F-35s will take the place of ground-attack A-10s, too.

The US Marine Corps needs the short takeoff and vertical landing (STOVL) F-35B to replace its fleet of old F/A-18s and AV-8B Harrier jump jets. Marine Corps squadrons will, in fact, be the first to go operational with F-35s, in 2012.

The Navy, meanwhile, is eager to acquire the F-35C carrier variant of the Lightning. It will bring much-needed stealthiness to its big decks and allow retirement of older F/A-18C Hornets. The Navy's premier carrier fighter, the F/A-18E/F, possesses no stealth capabilities.

Apart from the US services, many other nations are looking to benefit from the \$300 billion F-35 program. Nine "partner" nations—notably Britain, which will equip both the Royal Air Force and Royal Navy with F-35s—now are in the queue for the aircraft over the next few decades.

All told, partner nations' air forces and navies have booked orders for a total of 3,173 Lightnings. That may not be the end. Israel and Singapore have also signed on as "security cooperation participants" and could well wind up purchasing significant numbers. Essentially, every nation that currently flies the F-16 is considered a possible F-35 customer.

"We see the potential," said Brig. Gen. Charles R. Davis, program director for the F-35. He added, "We're getting



Far, So Good

The fifth generation F-35 has cleared some hurdles, but the stakes are high and the challenges many.

By Adam J. Hebert, Executive Editor



The first flying F-35 air vehicle, dubbed AA-1, is of USAF's conventional takeoff and landing variety that is destined to replace the F-16. It is shown here during a recent test flight.

Lockheed Martin photo



The F-35 is supported by nine partner nations contributing developmental funding, manpower, and design input. Partner nation flags are seen here on AA-1's fuselage.

great performance out of the system right now.”

Indeed, the first flying F-35 air vehicle, designated AA-1, is quickly accumulating test flights. It flew for the 19th time on May 3—the first flight took place late last year. These flights represented the initial 20 hours of a rigorous, 12,000-hour flight-test plan for a program that will eventually produce three highly common stealth fighters.

In rapid succession, the fighter passed several milestones this spring. Pentagon acquisition chief Kenneth J. Krieg approved the program for low-rate initial production in April. More than half the developmental aircraft are now under construction, and plans call for AA-1 to fly an average of six times per month.

Program officials are evaluating a variety of key performance parameters, and results in most areas are better than planned. Reality is exceeding plan in the areas of combat radius, radio frequency signature, mission reliability, sortie generation rate, and logistics footprint. STOVL performance, meanwhile, is near the stated requirement.

Network readiness is an area that still needs some work. Many of the F-35's early communications requirements were tied to Demand Assigned Multiple Access satellites that are going out of service, to be replaced by Mobile User Objective System (MUOS) satellites around 2014. With initial operational capability (IOC) in 2012, the program office has decided to build the F-35 to MUOS specifications.

This means, however, that F-35s will

lack a direct beyond-line-of-sight communications capability until MUOS is operational. Until that time, Lightnings will have to route those communications through E-3 AWACS, E-8 Joint STARS, or other assets.

It was on Dec. 15 that AA-1 lifted off from Lockheed Martin's Fort Worth, Tex., facility for the first time to fly a 35-minute sortie. Pilot Jon Beesley took the aircraft to 15,000 feet, performed a series of maneuvers to test engine and subsystem operation, and returned to base.

The aircraft had no fuel leaks during ground tests or the first flight—unprecedented for a new fighter design.

No flight-test program makes it through without hitches, however, and AA-1 experienced what Davis described as a “fairly significant electrical problem” in May. It was the first problem of the sort. The pilot returned to base after a 45-minute sortie, and the redundant systems on-board worked as expected, said Lockheed Martin spokesman John A. Smith.

The F-35 team did not expect any delays in flight testing as a result of the incident.

The next aircraft to fly will be a Marine Corps version, in March 2008. That will be a highly important event.

The reason is that the toughest IOC target date is that of the Marine Corps—in the year 2012. Davis noted that, for various reasons, production has been pushed further into the outyears, meaning there will be fewer F-35s available in the target year. The Marine Corps, therefore, is concerned that airplane delays could delay IOC.

“They are on the ragged edge,” said Davis.

The Air Force's 2013 IOC date offers more flexibility. The Air Force doesn't always deploy full squadrons, so the service is now determining actual requirements for operational status.

Numbers Game

Air Force plans call for acquisition of 1,763 of the new strike fighters, but top officials have said USAF could cut that number at some point. Because the F-35 Joint Strike Fighter will be more capable and reliable than the aircraft it



The Lightning II will come in three highly common variants for the Air Force (F-35A), Marine Corps (F-35B), and Navy (F-35C). The full-scale mock-up shown here can simulate all three, and is used for antenna testing.

is replacing, USAF might make do with fewer of them.

Earlier this year, the Air Force reduced its expected maximum purchase rate. The old plan was to purchase 110 aircraft per year beginning in 2015. The new maximum buy rate is 80 F-35s per year, and a handful of aircraft were also cut from the near-term plans.

The moves reduce the amount of money the Air Force will have to spend on the program in any given year, but the resulting loss of scale economies will raise the overall program price.

"I don't think the Air Force, with all of its other competing priorities, [was] going to buy 110 airplanes a year," said Davis. "They never had the budget capacity ... to do that." USAF is "struggling" to make sure it can "establish the budget capability to buy even the max rate they have now," 80 aircraft a year at peak production, he added.

However, the age of the Air Force's legacy fighters is such that the service simply must hold to the maximum production rate of 80 F-35s a year. Otherwise, it will not be able to fill out squadrons and allow aircraft to retire without being forced into unplanned service life extension programs.

In Davis' words, "Eighty just kind of keeps their heads above water."

USAF's program has now been stretched; the last purchase, once planned for 2027, will now take place in 2034.

The Air Force program has taken at least one major new departure in recent times. USAF no longer plans to procure STOVL variants of the F-35 as its A-10 replacement.

"There isn't a big payoff for us in STOVL," Gen. Ronald E. Keys, head of Air Combat Command, recently said. "Our plan now is not to acquire the STOVL version."

The Air Force determined that the increased utility offered by being able to operate from shorter or unimproved airstrips did not justify the added cost, the additional logistics, and the changes in operational doctrine that the F-35B would require.

For the time being the issue is dead. "I don't think there's any serious discussion within the Air Force about buying the STOVLs," said Davis. "We're certainly not responding to any questions, and I know of no activity."

The lead opinion on whether USAF should buy the STOVL JSF seems to depend on who the Chief of Staff is at the time. Gen. Ronald R. Fogleman, Chief of Staff from 1994 to 1997, first suggested

The Great Engine Debate

The Defense Department zeroed out funding for the F-35's alternate engine program in the 2008 budget request. Now Congress has to determine whether to order the GE-Rolls Royce engine program to continue, or to let the Pratt & Whitney engine be the sole JSF engine supplier.

Three independent studies of the engine issue are in the works this year.

In the first, the Government Accountability Office determined that "competitive pressures" from two engine suppliers make it "reasonable to assume that competition on the JSF engine program could yield savings" that offset the cost of the second program. There are also likely to be nonfinancial benefits from competition, GAO found, such as better engine performance and reliability, industrial base stability, and "more responsive contractors."

By press time, other engine studies by the Pentagon's Cost Analysis Improvement Group and the Institute for Defense Analyses had not been released.

David G. Ahern, a senior official in the Office of the Secretary of Defense, testified in March that "the CAIG analysis of JSF engine alternatives showed relatively modest additional life-cycle costs or savings" resulting from a competition. The CAIG also found benefits in competition "other than cost savings," but did not evaluate them in its analysis.

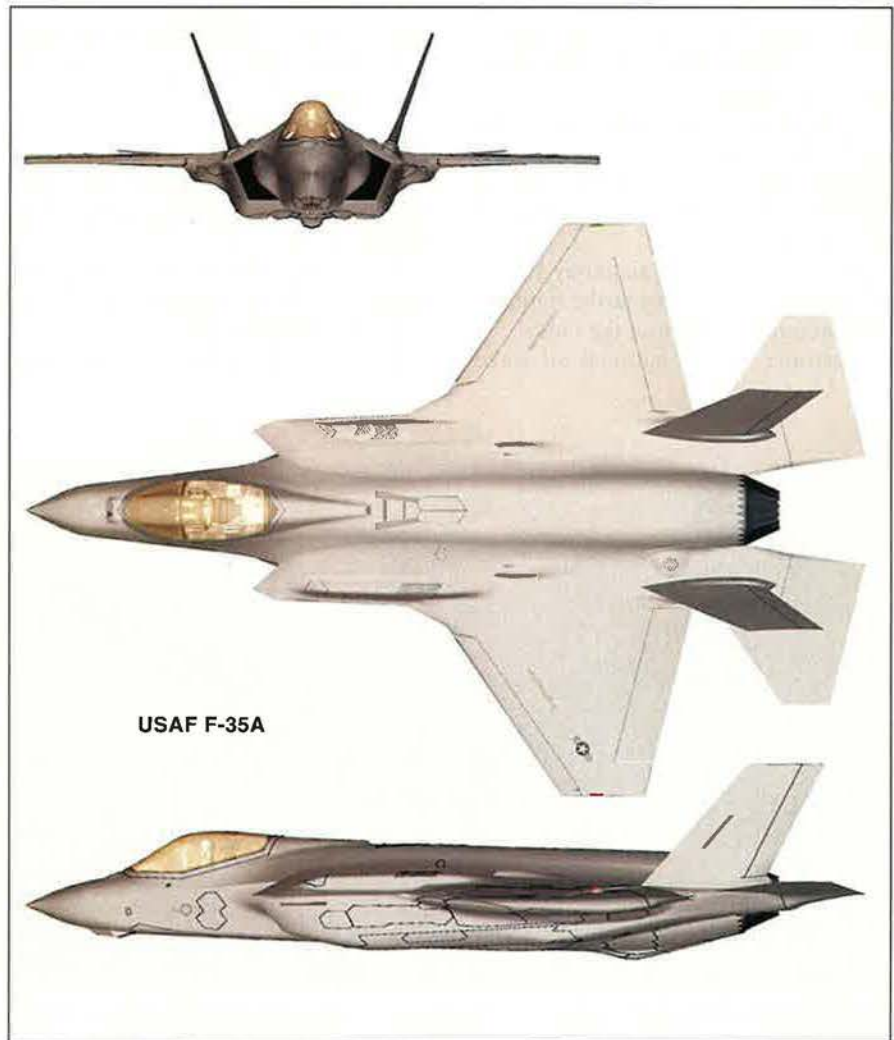
In April, Air Force officials told Congress that IDA officials have "not yet indicated which alternative their study will support."

acquiring the STOVL version to replace some A-10s. The proposal came back to life under Gen. John P. Jumper, Chief from 2001 to 2005. (See "The F-35 Gets Real," March 2004, p. 44.)

Current modernization and structural

improvement programs will keep the A-10 in service into the 2020s, giving the Air Force more than a decade to change its mind again, if it so chooses.

The Navy-Marine Corps team has an overall requirement for 680 Lightnings,



Lockheed Martin illustration

with the exact split between the two services yet to be determined. The Department of the Navy still is sorting out the deck requirements for naval F-35s and Marine Corps STOVLs.

Vice Adm. James M. Zortman, commander of naval air forces, said last year that the carrier fighter requirement falls "somewhere between 360 and 380." At about the same time, USMC Col. Robert Walsh, deputy commandant for aviation, said that, "right now," the Marine Corps requirement was 420 aircraft.

Thus, the combined requirement ranges from 780 to 800 fighters. Yet to be seen is how the Navy Department will cover this demand with a buy of only 680 F-35s.

Davis characterized the ongoing discussions as a "healthy debate."

The partner nations have thus far produced a combined requirement for 730 aircraft.

Foreign partners such as Britain and Australia are eager to ditch their obsolete fighter aircraft and move on to the sleek, stealthy Lightning. At present, both the RAF and Royal Navy fly Harrier jump jets, fighters that have proved effective and versatile but tend to be unreliable.

The F-35 schedule is critically important for the Royal Navy, which wants to retire the Harriers as planned and move the F-35s onto two new 60,000-ton-class aircraft carriers, HMS *Queen Elizabeth* and HMS *Prince of Wales*, in 2012 and 2015, respectively.

Britain's services plan to buy 138 F-35s, and it has been the strike fighter's top foreign partner from the outset.

Australia, whose national air force



The Marine Corps will have the first operational F-35s, of the short takeoff, vertical landing variety. An X-35 concept demonstrator is shown here in a hover test.

still flies 1970s-era F-111 fighter-bombers, is up against a similar problem. However, as anxious defense leaders approached an internal deadline, they flinched, abandoning a plan to wait for the F-35's arrival. Canberra, said Davis, made a "political decision," to purchase a "gap-filler" group of 24 Boeing F/A-18 fighters.

Nine Partners

Australia did not want to take the risk that the F-35 would not be ready in time to replace the F-111.

Fortunately for the F-35 program, Australia still plans to buy a total of 100 Lightning aircraft.

The nine F-35 partner nations recently

signed a memorandum of understanding reaffirming their commitment to participation in the production phase of the program. By the end of February, the US, Australia, Britain, Canada, Denmark, Italy, Netherlands, Norway, and Turkey all had signed the MOU codifying an agreement on the "common" portions of the production, sustainment, and follow-development.

These partner nations are committing more than \$4 billion to develop the F-35. The MOU also spelled out each nation's expected purchases.

For an aircraft program of this scope and magnitude, harsh questions about cost always will be close at hand.

One way to measure cost is the recurring unit flyaway cost, which excludes sunk costs such as research and development and test. Estimates now are \$48 million for each Air Force F-35A, \$67 million for each Navy F-35C, and \$67 million for each Marine Corps STOVL F-35B. (These estimates are calculated in 2002 dollars, which are used as the baseline.) Air Combat Command notes that the conventional takeoff and landing (CTOL) unit cost is less than the cost of a new F-16 with advanced radars.

Still, the F-35 program is in the grip of serious financial questions. Two recent developments illustrate the problems facing the F-35 program office.

The Pentagon announced earlier this year that the F-35 program's price had grown by 8.5 percent in then-year dollars, which factor in inflation out to 2034. (Measured in constant dollars, the cost of growth is a more modest 4.5 percent.)



The Navy is buying the beefed-up F-35C for carrier use, as depicted in this Lockheed Martin illustration. The carrier variant will give the Navy its first stealth fighter.

The spike stems mostly from a decrease in the annual procurement quantities and stretch-out of the production, the April announcement read.

Not all the recent cost growth is due to DOD budget adjustments, however. The F-35 program is now using much more titanium than previously expected, and this change occurred at the same time that the cost of titanium shot up in the world market. This added billions in cost to the program.

The Government Accountability Office, for example, isn't happy with the F-35's acquisition strategy, Davis said. In a recent report, the Congressional auditors recommended that the Pentagon limit annual procurement quantities to 24 aircraft per year until the flight-test program proves each variant's flying capabilities, around 2010.

GAO's concern is that the concurrent development, procurement, and test schedules will force delays or require large numbers of aircraft to be retrofitted as problems are identified.

Davis feels that GAO wants the F-35 to be purchased "like the F-16: Put a block out there, fly it for a few years, put another block out there—do very simple increments."

He continued, "That can be done, but that can be a very costly process, too. I am concerned about the concurrency" between the F-35's test, development, and acquisition schedules, but the program is building on the lessons from the F-22 program, which was "a great risk-reducing pathfinder for us."

F-35 radar development is "at least a year ahead of where the F-22 was at this point in their program," said Davis. "They had to figure all this out on their own." While development will certainly be difficult, "we think we're going to be able to overcome a lot of those concurrent challenges."

The F-35's alternate engine program suffered a more dramatic fate, and its future is now in the hands of Congress, after the Pentagon moved to kill it.

Currently, the JSF program has two engine programs in place: Pratt & Whitney is developing the aircraft's primary F135 power plant, which is derived from the F-22 Raptor's engine. Also under development, as a competitor, is the GE-Rolls Royce F136 engine, intended as an interchangeable but alternative power source. The Pentagon zeroed out funding for the alternative engine in its Fiscal 2008 budget request, again strictly for financial reasons.

"I believe there is always value in



Lockheed Martin photo

The first flying F-35 is shown here with its afterburner blazing on takeoff. The program has a challenging development process ahead.

competition, and there's value in having additional sources," Gen. T. Michael Moseley, Chief of Staff, told Congress earlier this year. "At the end of the day, this is about money. It's \$2 billion that we don't have."

Davis said his hope is that Congress will fund whichever engine development programs it finds appropriate. The worst-case scenario would be for Congress to order the alternate engine program to proceed but not provide funding, requiring the money to come from the program's general account.

Such an unfunded mandate would force the Air Force and Navy to each give up \$800 million to \$900 million worth of airplanes. "That is my biggest concern," Davis said, "If Congress uses this program as a source to fund this engine, ... we will have serious problems."

Fact of Life

Every budget perturbation is a problem because affordability is a hallmark of the program. "We have probably lost, cumulative, over a billion dollars' worth of buying power just due to normal budget adjustments over the years," said Davis, a fact of life in Washington that is hardly unique to this program.

Affordability is why JSF was created in the first place, to create efficiency out of what historically would have been three separate fighter programs.

"The biggest thing that concerns

me ... is just trying to keep these production numbers stable," said Davis. "The single most damaging thing that can happen to the program right now is continued degradation of the numbers of airplanes. That just drives cost." (See "Struggling For Altitude," September 2006, p. 38.)

Program stability is key. "I need to keep the budget stable; I need to keep the production schedule stable. ... You can very easily force this program into a situation where it rapidly becomes unaffordable and you have schedule problems. It's the old story: We've proven time and time again that the [cost] to the program is at least three or four to one for every dollar you take out."

Davis said, "We've got to deliver to the services what we've promised, but on the other hand, I need the department and the services to try to provide us stability."

The program has an opportunity over the next year to prove its progress. One variant is in the air, and the F-35B is next. This was the variant that forced the radical redesign in 2004, as the STOVL aircraft had grown 3,000 pounds overweight. (See "The F-35, Ready for Prime Time?" June 2005, p. 28.) The F-35B still has the tightest development schedule.

Davis is confident the program can prove that performance is on track with the first STOVL flight next spring. Many of the world's air forces are hoping he's right. ■

USAF is locked in a battle with the other services over the management and operation of unmanned vehicles.

The Drone War

By Rebecca Grant



Readying an Air Force Predator for takeoff.

In the Global War on Terrorism, Air Force Predators and other unmanned aerial vehicles are constantly in action. They have become principal providers of critical intelligence-surveillance-reconnaissance data and have played a combat role, too. Now, Washington is in the grip of an unusually nasty and public war over who will have responsibility for medium- and high-altitude UAVs.

Gen. T. Michael Moseley, Air Force Chief of Staff, touched off the conflict on March 5 by distributing a memo to Deputy Defense Secretary Gordon England, the Chairman and vice chairman of the Joint Chiefs of Staff, the service Chiefs, and all the theater combatant commanders. (See "Editorial: A Better UAV Flight Plan," April, p. 2.)

The memo proposed that the Air Force take over as executive agent for all UAVs designed to operate at or above 3,500 feet. If approved, the move would give USAF significant control over the development, planning,

funding, and operational concepts for unmanned aircraft, defensewide.

Army Brig. Gen. Stephen D. Mundt, director of aviation for the Army's deputy chief of staff for operations and plans, fired the opening shots in an interview with *Defense Daily*. "We absolutely disagree, and every other service does, too, and the Joint Staff does as well," Mundt said.

"Someone explain to me when a line in the sky became a service core competencies [sic]. My helicopters fly above 3,500 feet," Mundt continued. "That does not mean they belong to the Air Force."

Air Force Brig. Gen. Jan-Marc Jouas, commander of the Air Intelligence Agency, shot back in a March 28 service commentary. Mundt "recently disparaged" the Air Force's efforts to improve ISR and UAV capabilities, Jouas wrote. "Mundt's caustic comments, reminiscent of an era prior to the maturation of jointness and service interdependence, would have been better aimed at reducing competing UAV programs and mission redundancies."

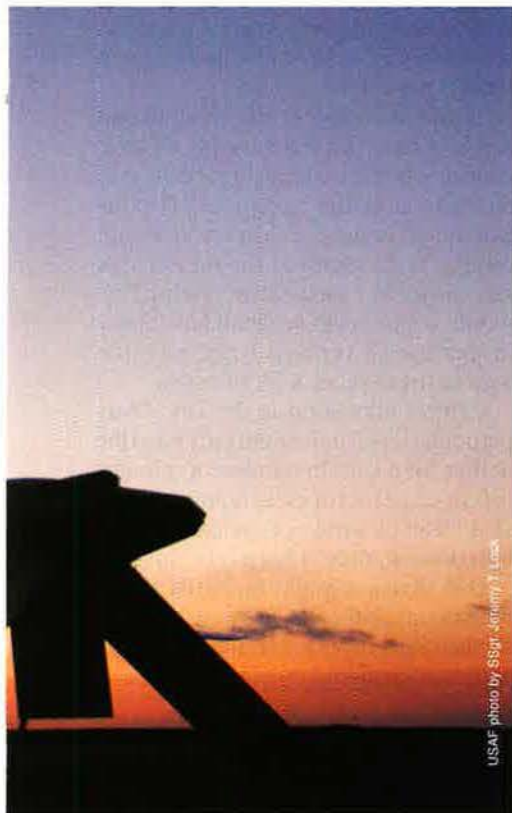
Mundt described the Air Force plan thusly: "You give me the responsibility for everything above 3,500 feet, I'll sign up for a \$15 billion program and cover everything that needs to be done." Mundt added, "The fact is, they can't."

"A lot of us were just flat caught off guard," claimed Mundt.

"This issue is not a surprise," said Lt. Gen. David A. Deptula, Air Force intelligence director, in an interview with *Air Force Magazine*. "The Army and the Air Force have been talking about this subject over the last two years."

Indeed, the Air Force two years ago had formally proposed that it be given UAV executive agency, but the Joint Staff shot down the idea at that time. (See "Washington Watch: The UAV Skirmishes," June 2005, p. 11.)

In his controversial memo, Moseley proposed a plan to increase the interdependence of medium- and high-altitude UAVs "beginning with establishment of the Air Force as executive agent (EA) for them." The proposal encompassed five primary ISR platforms: USAF's MQ-1 Predator, RQ-4 Global Hawk, and MQ-



USAF photo by Sgt. Jeremy T. Lock

9 Reaper; the Army's MQ-1C Warrior; and the Navy's Broad Area Maritime Surveillance (BAMS) system. Smaller UAVs designed to operate with units and at lower altitudes were not part of the proposal.

Moseley proclaimed a need for a joint, theaterwide ISR strategy for everything flying above 3,500 feet. High on the list of benefits was a potential savings of around \$1.7 billion to be gleaned from executive agency consolidation of the various programs.

End the "Stovepipes"

"It is reasonable to expect that the present [medium- and high-altitude] UAV investment budget could be reduced perhaps by up to 10 percent," stated an Air Force fact sheet. "DOD cannot afford the inefficiencies that result from individual service UAV stovepipes." (The word "stovepipe," a pejorative term, refers to an artificial walling off of an activity so as to prevent the involvement of others outside of the organization.)

Of specific interest to the Air Force is a potential merger of the closely related Air Force Predator and Army Warrior programs, and a similar consolidation

of the Air Force Global Hawk and its Naval sibling, the BAMS. USAF's plan would transfer procurement authority for all of these systems to the Air Force to save on costs, eliminate duplication, and direct investment to areas where it would be most useful.

Army objections stem from a belief that its systems need to be developed by ground force personnel (otherwise, they might not be suitable to ground force needs) and under tactical control of ground force commanders (otherwise, they might not be available at times when Army units need them).

The Air Force in recent years has been expanding its UAV capabilities. For example, it led the development of the Remotely Operated Video Enhanced Receiver, or ROVER, the popular laptop downlink system. Using this method and hardware, the Predator can push its video data down to battlefield airmen, special operators, and soldiers in the field.

To Moseley, "designating the Air Force as the EA for medium- and high-altitude UAVs is the step we can take now to increase combat effectiveness" worldwide.

"If I sound emotional about this, it's because I believe there is a way to fight a joint and coalition fight much more effectively, much more efficiently, and afford these systems," Moseley told a group of defense writers in April.

The Army's Mundt countered with the case of the Army Shadow. Shadow is a light, tactical UAV with a range of some 75 miles. It is designed to give about four hours of coverage over a brigade's full area of interest. Shadow shapes up as "the eyes and ears" of a commander in a tactical fight. It has a service ceiling of 16,000 feet. "Under their plan," said Mundt, "I give them the Shadow, [and now] I have to put my request in and compete to get that same capability back, which is ludicrous," Mundt fumed.

The institutional Air Force is, of course, not seeking to micromanage actual use of the UAVs; operational control would go to the air component commander at the combined air operations center in a combat theater, the best place to centrally coordinate and parcel out the capabilities. The air boss is usually, but not always, an Air Force officer, and he answers to the theater commander, not to service officials.

The Air Force believes that executive agency would provide a coordination benefit. "All UAVs operating above

the designated coordinating altitude must have common, interoperable systems to facilitate ... safe and seamless operations," explains an Air Force fact sheet on the subject. "As EA for MHA UAVs, the Air Force would be postured to integrate these requirements into the UAV programming and acquisition process at the outset."

The Army immediately took the point in resisting the Air Force plan. Yet the first reactions from the Navy and Marine Corps were not warm, either. "I've seen the memorandum," Adm. Michael G. Mullen, Chief of Naval Operations, said March 29. He suggested further discussion, adding, "As I read it, I'm not supportive."

The JCS Chairman, Gen. Peter Pace (a Marine Corps officer), lent partial support. "It makes absolute good sense to me that things flying above 3,500 feet should be part of an ATO, air tasking order, so that there's deconfliction of the airspace," he told Washington reporters in April.

His support came with a caveat: Pace said that different armed forces would need different payloads on UAVs, so "we need to be careful not to override the needs of the troops on the ground by some kind of a generic package."

After the initial furor, Moseley reopened the debate. Referring to some of the previous comments from members of other services, he raised the prospect that "what their staff says, or what some people say in an emotional moment, may not necessarily be what a service Chief thinks." The real debate is about "meeting the joint land, maritime, special ops commanders', [and] component commanders' requirements," Moseley went on. "This is no different [from] close air support."

The heart of the issue is how to provide responsive ISR for a wide range of users. Here, the Air Force believes it has a compelling case for better authority.

Predator combat air patrol orbits have risen dramatically over the past several years. They doubled from six aircraft airborne at all times in 2001 to 12 in 2007, with a plan to reach 21 CAP orbits in 2010. Meanwhile, additional orbits are dedicated to special operations forces and to other government agencies, such as the CIA.

Lt. Gen. Michael W. Wooley, commander of Air Force Special Operations Command, noted in May that he has a requirement for 30 Predator orbits a day in the US Central Command area and that the military is "having a hard time"



USAF Chief of Staff Gen. T. Michael Moseley, shown testifying on Capitol Hill, touched off a firestorm with his UAV proposal.

reaching half that number. The UAV resources are all badly stretched.

Deptula explained, “When you get into the medium- and high-altitude systems, like Predator, like Global Hawk, there are a finite number of systems that we have available today.”

Given this situation of scarcity, the big question comes down to this: Who will provide ISR to the Army’s tactical units? The Army says it should. The Warrior UAV, an enhanced Predator derivative, gives the Army an organic capability. Warrior could operate at altitudes up to 25,000 feet and remain airborne for as long as 36 hours. The Army wants to buy up to 132 of these extended range, multipurpose UAVs.

The problem is that the Army Warriors are available for tasking through the land component only. If this approach were taken to its logical conclusion, every division might own its medium-altitude UAVs for ISR and strike operations, but it would make none available to any other division. Warrior UAVs would deploy as part of a division’s equipment set, just like Stryker vehicles, and then rotate home with the rest of the force.

Thus, assigning medium-altitude UAVs such as Warrior to ground units takes those valuable platforms out of the pool for joint ISR and unmanned strike operations. “Part of the frustration now,” said Deptula, “is that not every unit on the ground gets Predator video all the time. That’s because of the rack and stack of the priorities.”

Don’t blame the Air Force—the problem lies with the joint system. The process for allocating Predator coverage

begins with the joint combatant commander. “Every operational Predator that the Air Force has is currently assigned to Central Command,” said Deptula. The joint force commander, through the air commander, “divvies those up between ... major areas of operation, principally Afghanistan and Iraq.”

Needed: Central Allocation

Next, the joint task force commanders for Afghanistan and Iraq—both currently Army general officers—set priorities for UAV tasking, then hand orders down to the joint force air component commander for execution.

“The system we have allocates medium- and high-altitude UAVs to combatant commanders to execute, and it

works very, very well,” Deptula said.

Deptula said the goal is “ensuring that small units have the most responsive ISR coverage that is physically possible.” And in that respect, Army ownership would make responsive assignment harder, not easier.

“Folks at organic levels, at small unit levels within the Army, want to have control of their own Predators, because of the information that it provides,” Deptula explained. Predator, however, does not cover a wide swath of the theater: It’s famous for its “soda-straw” view of the world, which is big on detail but narrow in aperture. Covering a dispersed battle area in detail takes a lot of assets.

Central allocation is the key. “Any particular small unit might only need the ability for a certain number of minutes [of coverage] out of every hour,” Deptula said. “But by virtue of the fact that the unit owns it, they’ll keep it occupied.”

One division might hoard its UAVs while another division had a greater need for that capability. Under JFACC control, commanders are able to better shift around the assets to meet combat needs.

Airspace management is another benefit of centralized control. The problem of collisions is growing steadily. Although most near-misses happen at low altitudes, where hordes of small UAVs are buzzing around, Wooley noted that he “loses sleep” over the prospect of “beak-to-beak” collisions between his SOF aircraft and unmanned aircraft. The mid- and high-altitude UAVs in question regularly operate in the airspace where AFSOC normally flies.

Today, only CENTCOM has the Predator in regular operation, but other



Centralized UAV allocation is key, says Lt. Gen. David Deptula (l), deputy chief of staff for ISR. Here, Deptula meets with Brig. Gen. Charles Shugg, head of the 379th AEW in the Gulf.



combatant commanders want them, too.

The MQ-9 Reaper is of particular interest in Korea. Gen. Paul V. Hester, commander of Pacific Air Forces, has said he would like to base some of the UAVs on that heavily armed peninsula. In some scenarios, the Predator, Reaper, and other UAVs may go into action without ground forces. There is risk in limiting access to a major share of the nation's medium- and high-altitude UAVs by locking them into the Army force structure.

Ground commanders will not back off from their need for responsive ISR, because it is central to current operations and to future force concepts. It may be up to the Air Force to demonstrate how UAV executive agency can save money and better deliver combat capability.

Deptula drew an analogy. "GPS [the Global Positioning System] is 100 percent owned and operated by the Air Force, yet its effect has become so ubiquitous that it's depended upon by all the services without any concern. We can do that with medium- and high-altitude UAVs," he testified in April.

At least two combatant commanders are strong supporters of the USAF plan. Adm. Timothy J. Keating, head of US Pacific Command, told Congress he believes the Air Force is the best choice to be executive agent for fielding and integrating and operating UAVs. A week later, the Air Force got support from Marine Corps Gen. James E. Cartwright, commander of US Strategic Command, who declared, "I would agree with Admiral Keating."

"I know that people that wear this uniform may not agree with me," said



US Army photo

Top, soldier prepares to launch a Shadow, an Army UAV tied more or less exclusively to a brigade's operations. Above, the Army's disputed MQ-1C Warrior, which can reach 25,000 feet altitude.

Cartwright, referring to other members of the Marine Corps, but Air Force executive agency, in his opinion, was "exactly right."

Deep Roots

Chairman Pace left the door open, too. "It's not a bad idea to take a look at all UAV operations to see who ought to be on the control stick, so to speak, for those operations. And if that's a place where the Air Force could free up Army troops to do other things, it's worth a discussion." This willingness to discuss the issue was significant, for it was Pace, as vice chairman of the Joint Chiefs, who signed the memo rejecting the Air Force's previous EA proposal in 2005.

Today's UAV imbroglio has its roots in problems left unsolved during the rush to develop multiple UAV systems in the 1990s. The US military began using UAVs routinely during conflicts in the Balkans. The Air Force led breakthrough developments in combat employment. "Remember, it's Air Force initiatives and Air Force programs that brought

us the laser on the UAV, that brought us the big sensor suite on the UAV, that brought us an armed UAV, that brought us the ROVER ground station," said Moseley.

Critics in the 1990s usually urged the services to speed up. "Members of Congress and segments of the defense community have criticized DOD for its seeming inability to develop and field a tactical UAV," charged the Congressional Budget Office in a 1998 report. And during NATO's Kosovo war of 1999, USAF accelerated Predator systems to provide better target coordinates. The

Balkan postwar stability operations saw the Army bring in Hunter UAVs, while Marine Corps Dragon Eyes saw action, too. Most complaints in those days centered on the need for more.

Soon after, the Joint Requirements Oversight Council began deconflicting some service programs. The JROC directed the Army and Navy to pursue tactical needs in different ways, a move leading the Army to field the Shadow. By then, as CBO pointed out, there were budding concerns about cost and control.

"When the demand for UAVs outstrips their availability," said CBO, "the needs of tactical commanders may be sacrificed to those of higher echelons. That would probably not happen if the tactical commanders had their own, exclusive UAV systems."

Unity was not on the agenda. The Army moved swiftly to expand and develop its own unmanned systems as its appetite for UAVs grew. Ground warriors took a traditional view of the upstart platforms. The main mission for UAVs would be surveillance. Brigade



or division commanders would put UAVs over their unit's operating area and move the UAVs forward with the ground maneuver unit. Army-owned UAVs could provide intelligence, spot targets, and feed damage assessments back to headquarters.

The notion of division-controlled surveillance was irresistible. Tests in Army wargames at the National Training Center made soldiers quick converts. "I will give up a tank battalion for a UAV company," Maj. Gen. Paul J. Kern, commander of the 4th Infantry Division, said after a 1997 exercise.

By 2001, the Army was programming for multiple unmanned systems to support ground maneuver commanders. Experience in Afghanistan and Iraq further increased the Army's appetite for the systems—and for ownership.

Major impetus for UAV development came from Operation Anaconda, an unsuccessful March 2002 Army-led operation staged in Afghanistan. In Anaconda, Army troops were inserted into high mountain landing zones only to be attacked by al Qaeda fighters based nearby. "If we had had more UAVs on landing zones prior to us going in there, we would not have had this problem," noted Lt. Gen. Robert W. Noonan Jr., head of Army intelligence. "We don't have enough organic UAVs," Noonan told *Defense Daily*. "We feel very strongly that all of our brigades have got to have UAVs."

"Infantry, scout, intelligence, aviation, artillery, maneuver, and even medical units benefit from the availability of UAVs," claimed a 2004 brief prepared by the Association of the United States Army.

Then, in 2005, the Army set up a UAV Center of Excellence at Ft. Rucker, Ala., its goal being to "ensure that all Army UAV activities are cohesive,



USAF's RQ-4 Global Hawk (top) and MQ-9 Reaper (above) outclass other UAVs, but the Army, Navy, and Marine Corps all are bent on acquiring and operating their own variants.

coordinated, and in support of current and future warfighting requirements," Brig. Gen. Jeffrey J. Schloesser said at the time.

Airspace Problems

By that summer, a total of 574 UAVs of all types and from all services were operating in Afghanistan and Iraq. Most of them, however, were tactical systems belonging to the Army. (See "The Chart Page: That Giant Droning Sound," March, p. 10.)

Airspace was becoming a problem. "We've already had two midair collisions between UAVs and other airplanes," said Gen. John P. Jumper, then USAF Chief of Staff. "We have got to get our arms around this thing."

The Air Force's first executive agency

request was made shortly thereafter. It drew immediate fire from the other armed services, and Jumper retreated a bit. Referring to executive agency, Jumper said, "Let's not use that [term], but let's get everybody under the same roof and make sure [we are] organizing these things so we can get them where they are needed."

USAF's request was denied on July 5, 2005. The Joint Staff instead ordered the creation of a Joint UAV Center of Excellence at Creech AFB, Nev. The Air Force moved to support the new joint center, which sprang up a few blocks from USAF's UAV battlelab.

(See "Smashing the UAV Stovepipe," February 2006, p. 50.)

Things rocked along for the next two years, but, by 2007, looming operational and fiscal problems made it impossible to put off a search for a permanent solution. Specifically, it was the mounting overlap between Predator and its Warrior variant—both in operations and in acquisition plans—that forced the issue.

The Air Force is ready to keep taking the heat generated by the UAV imbroglio. The service is "dead serious about UAVs, and dead serious about delivering this effect to the joint force commander," said Moseley. Still, more than two years after this matter became an urgent program, it is still unclear if or when the Air Force actually will take control of UAVs. ■

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, "Actionable Intelligence," appeared in the June issue.

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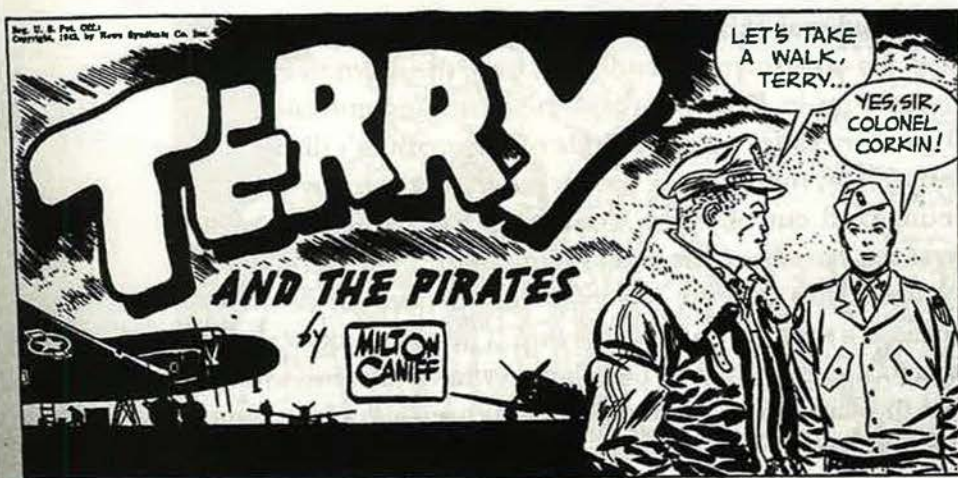
A Brush With the



Milton Caniff was out front with “Terry and the Pirates,” but other cartoonists also found their calling in the wild blue yonder.

Air Force

By John T. Correll



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In October 1934, Terry Lee—described as a “wide awake American boy” of about 10 years of age—and Pat Ryan—termed a “two-fisted adventurer”—arrived in China. They had a treasure map, left to Terry by his grandfather, and were in search of a lost gold mine. Before they reached their destination, though, they ran afoul of pirates operating along the southern coast of China. The pirate leader was a remarkable woman known as the Dragon Lady.

The setting for all this was “Terry and the Pirates,” a syndicated comic strip written and drawn by Milton A. Caniff. It was enormously popular. It spun off a long-running radio show, a movie serial, and other products, and claimed 30 million readers at its peak.

However, chasing pirates and brigands wasn’t Terry’s ultimate destiny. In World War II, he became a pilot in the US Army Air Forces and flew P-40s and P-51s with the Fourteenth Air Force Flying Tigers in China. That is the image of him that has been remembered ever since.

Terry got involved in the war before the United States did, joining the resistance to the Japanese invaders in 1938. Caniff’s syndicate, wary of strong isolationist sentiment in the United States, objected to naming the aggressors as Japanese in the comic strip. Caniff had to call them “the invaders” until they bombed Pearl Harbor.

Terry, grown to young manhood, learned to fly in China with Col. Flip Corkin. Caniff liked to model some of his characters on real people. The

prototype for Corkin was Air Force Col. Philip Cochran, a noted World War II pilot and leader of air commandos in Burma. (See “The All-American Airman,” March 2000, p. 52.) He became a continuing character in “Terry.”

In a famous “Terry and the Pirates” Sunday page from 1943, Corkin opened with, “Let’s take a walk, Terry,” and then delivered an inspirational talk about the war and the Air Force as he and the newly fledged pilot Terry strolled around the flight line. The page was “read” into the Congressional Record and reported in the newspapers.

Terry, Flip, and their colleagues had a great following among airmen, and the strip had considerable morale and public relations value. Gen. Henry H. “Hap” Arnold, Chief of the Army Air Forces, assigned an officer to assist Caniff with any technical details he needed. Caniff produced another strip, “Male Call,” without charge for camp and base newspapers. It featured Miss Lace, who was reminiscent of the Dragon Lady but less standoffish.

It is difficult today to comprehend what a big deal the funnies used to be. Everybody read the comic strips. Characters were as well known as movie stars. The strips were printed much larger than present comic strips are. On Sunday, a popular strip might get a whole color page to itself.

During a newspaper strike in 1945, New York City Mayor Fiorello H. LaGuardia read the funnies to children over radio station WNYC. His “dramatic reading” of “Dick Tracy” was fondly remembered.

When Caniff killed off Raven Sherman, a character in “Terry and the Pirates,” in 1941, he got 1,400 letters, newspapers played it as a news story, and 450 students at Loyola University in Chicago staged a vigil.

“Comic” strips were so called because they began with the likes of “The Katzenjammer Kids,” “Moon Mullins,” and “Mutt and Jeff.” By the 1930s and 1940s, though, the “funnies” had matured and were also the domain of adventure continuity strips, including “Flash Gordon,” “Dick Tracy,” “Little Orphan Annie,” “Prince Valiant,” and “Smilin’ Jack.”

Among these classic adventure strips, “Terry and the Pirates” stood out. Caniff was an excellent storyteller with a good ear for dialogue. Many of his panels, rendered in bold lines and shadows with a Winsor & Newton No. 1 brush, were good enough to frame. Caniff

At left: Milton Caniff drew Steve Canyon talking with an F-15 pilot for a cover of Air Force Magazine in 1972. Steve was an Air Transport Command pilot in World War II, transitioned to jet aircraft in 1952, and commanded an air defense interceptor squadron. Above: This is the opening panel from the famous “Let’s take a walk, Terry” Sunday page in 1943. It was read into the Congressional Record.

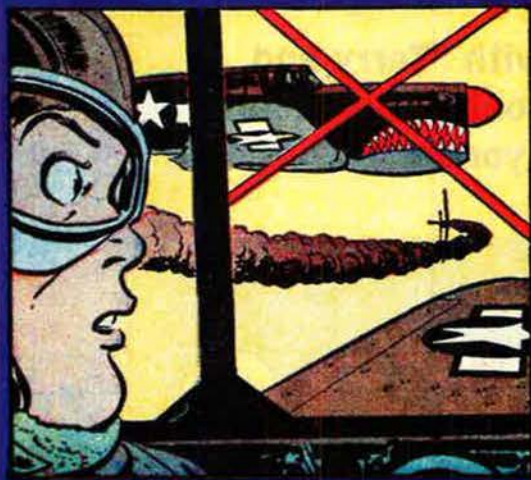
TERRY AND THE PIRATES



COLOR SUNDAYS

Volume 10
(1944)

FLYING BUTTRESS
Delacorte
Liberty



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has been called the “Rembrandt of the Comic Strip.”

Terry ended the war as a lieutenant and in 1946 was recruited by US intelligence as an undercover agent. He took a job as a pilot for Air Cathay, a down-at-the-heels freight line flying war surplus transports.

At that point, Caniff bailed out. He wanted to control his own strip, but the syndicate held the copyright on “Terry and the Pirates.” When Caniff quit, George S. Wunder took over drawing “Terry.” He suffered harsh treatment from critics, most of it unjustified. By any reasonable standard, Wunder’s Terry was usually good and often excellent. His only sin was that he wasn’t Caniff. The strip continued in his hands until it folded in 1973.

Caniff launched a new strip, “Steve

Canyon,” with great fanfare on Jan. 13, 1947. Its beginning was the cover story that week for *Time Magazine*.

Steve Canyon had been a captain in Air Transport Command in World War II and he “had been everywhere.” He was an older and more rugged version of Terry, and for the first several years of the new strip, he ran Horizons Unlimited, an air service that specialized in dangerous assignments.

Jet Pilot

He was called to active duty as a major during the Korean War. In 1952, he qualified in jet aircraft, was promoted to lieutenant colonel, and became commander of an air defense interceptor squadron. One of his pilots, introduced in 1953, was Lt. Peter Pippier. Again basing a character on a real person, Caniff modeled the ebullient Pippier on the newly elected Senator from Massachusetts, John F. Kennedy.

Steve Canyon remained in the US Air Force until the end of the strip, although he was often off on special assignments and adventures that had little connection with regular military service. He was recognized by Gen. Nathan F. Twining, the Air Force Chief of Staff, as “an officer in my command.” He had his own serial number, AO-041044.

Caniff also had a special relationship with the Air Force Association. He served as president of AFA’s Iron Gate Chapter in New York, was on the AFA Board of Directors, and in 1965 was AFA’s Man of the Year. When Terry Lee joined AFA in 1946, it was the subject of the strip on July 19. As Caniff told



This is George Wunder’s version of Terry, who is a lieutenant colonel in the Vietnam War in this panel from the late 1960s.



In this panel (top left) from 1944, Flight Officer Terry Lee watches a Japanese fighter go down in flames under the guns of Flip Corkin’s P-40. In the above promotional drawing, Terry wears the patch of the Fourteenth Air Force Flying Tigers on his leather jacket.

it, AFA had Flip Corkin send Terry and his sidekick, Hotshot Charlie, their lapel pins with a letter saying, “Glad you’re in the lodge.” Corkin wrote on AFA letterhead, which let Caniff provide the AFA address to his readers.

Caniff died on April 3, 1988. His assistants continued to produce the strip for another few months, after which it was discontinued. Col. Steve Canyon retired from the Air Force on April 3, 1989, exactly a year after Caniff’s death. McGuire AFB, N.J., worked up Canyon’s personnel records and presented them to the Milton Caniff Research Room at Ohio State University. The file included assignments, decorations, citations, family data, flight and personnel records, and Servicemen’s Group Life Insurance forms.

Terry and Steve weren’t the only airmen in the funnies, nor were they the first. “Fliers were celebrities in the ’20s and ’30s, like ballplayers, prizefighters, and movie actors,” said Ron Goulart in *The Adventurous Decade: Comic Strips in the Thirties*. “People wanted to follow aviation not only in real life

but in all the entertainment media. So there were air movies, air pulps, and a slew of air-minded comic strips."

The first aviation strip was "Tailspin Tommy," introduced in 1928. It featured Tommy Tomkins and his pals and their exploits in biplanes and open cockpit monoplanes. Both the artwork and the writing were awkward, but it nevertheless achieved circulation in 250 newspapers. The strip hung on until 1942.

Another early entrant was "Buck Rogers" in 1929. Buck, a World War I pilot, went to sleep and woke up in the 25th century. It was more of a space opera than an aviation strip, but the first flying machines to appear were a squadron of biplanes. Even the spacecraft looked and performed much like airplanes. The artist, Dick Calkins, had been in the Army Air Service in World War I and sometimes signed his work "Lt. Dick Calkins."

The aviation strip took a big jump in popularity with Zack T. Mosley's "Smilin' Jack" in 1933. Jack Martin was a pilot with a Clark Gable mustache and a permanent smile. In the 1930s,



Steve Canyon is a registered trademark of the Milton Caniff Estate. Used by permission of the Milton Caniff Estate.



Above: Bert Christman drew this "Scorchy Smith" panel in 1937. Christman became a pilot, joined the Flying Tigers, and was killed in combat in Burma. Left: Steve Canyon sports a leather flying jacket and a pistol in a shoulder holster for this drawing that accompanied the announcement in January 1947 of Caniff's new comic strip.

his adventures took him to a multitude of exotic locales. He fought in both theaters in World War II. The people in the strip were sketchily drawn, but the airplanes were first-rate.

Mosley was one of the volunteer pilots who helped form the Civil Air Patrol. He flew more than 300 hours of CAP anti-submarine patrols off the Atlantic Coast in 1942-43 and was awarded the Air Medal. In 1976, he was inducted into the CAP Hall of Honor. "Smilin' Jack" ended in 1973 after the longest run of any aviation strip.

"Scorchy Smith" began in 1930, featuring a flying soldier of fortune modeled loosely on Charles A. Lindbergh. The drawing was lackluster until Noel Sickles took over as artist in 1933 and raised the quality. If "Scorchy" had a strong resemblance to "Terry and the Pirates," it was no coincidence. Sickles shared a studio with Caniff in the middle 1930s and the two often contributed to each other's strips. In fact, it was Sickles who designed the distinctive logo for the Sunday "Terry" pages.

In 1936, Sickles quit in a dispute with the syndicate and was replaced in midstory by A. Bert Christman. Christman drew "Scorchy" for two years and became a pilot himself. In 1941, he

joined the American Volunteer Group, the famous Flying Tigers, engaged by China to protect the Burma Road. On Jan. 23, 1942, Christman was flying a P-40 in the defense of Rangoon when he was shot down. He bailed out of his aircraft, but a Japanese pilot strafed and killed him as his parachute came down.

"Buz Sawyer," drawn by Roy Crane, came along in 1943. John "Buz" Sawyer, was a Navy pilot. He and his gunner, Roscoe Sweeney, flew off the aircraft carrier *Tippecanoe* and from other locations in the South Pacific. It was great stuff, but it did not achieve the acclaim and following that accrued to "Terry." (Buz wasn't the only Navy pilot in the comics. Terry's old buddy, Pat Ryan, returned to "Terry and the Pirates" as a Navy aviator during the war years.)

There were various other aviation strips. Among them: "Ace Drummond" (1935-40), "Barney Baxter" (1935-50), "Bruce Gentry" (1945-51), "Flyin' Jenny" (1939-52), and "Skyroads" (1929-42).

There were also a great many aviation/Air Force comic books. Few of them were of a quality and caliber comparable to the comic strips, but one stood out. Every red-blooded boy read "Blackhawk."

The Blackhawks were freelance fighter pilots, operating from an island in the Atlantic, first fighting Hitler and, later on, despots and criminals



Smilin' Jack was always smilin'. He was usually flyin' as well. The artist, Zack Mosley, flew anti-submarine missions for the Civil Air Patrol and is in the CAP Hall of Honor.

of assorted stripes. Blackhawk's team was multinational: Olaf, Hendrickson, Andre, Chuck, Chop Chop, and Stanislaus. Their leader, Blackhawk, came from Poland.

That Strange Airplane

They appeared first in *Military Comics* (1941), then *Modern Comics* (1945), and, in the postwar years, in *Blackhawk Comics*. James Steranko, writing in his book *The Steranko History of Comics*, noted that, at one point during World War II, "Blackhawk was outselling everything but Superman."

The question was, what was that strange-looking airplane that the Blackhawks flew? The two engines and the leading edge of the wing were well forward of the fuselage and the cockpit. It looked almost as if the airplane held the wing in its teeth, like a knife blade. Bill Ward, one of the artists who drew "Blackhawk" from 1942 to 1945, did not know what the airplane was, either. He worked from art samples he had been given and assumed the airplane to be fictional. As airplane enthusiasts saw right away, the Blackhawk airplane was a Grumman F5F-1 Skyrocket. It was the prototype for a Navy fleet defense fighter, designed in 1938. It first flew in 1940 but soon gave way to more effective aircraft designs.

Over the years, Air Force newspapers and magazines and publications related to the Air Force have carried the work of numerous artists. Three of these—Bob Stevens, Jake Schuffert,

and Jack Tippit—were in the major leagues of comic art.

Bob Stevens was commissioned in the Air Corps in 1943. He flew just about every World War II fighter the Army Air Forces had except for the P-39. He transitioned to jets and set a world speed record in 1950 in the F-86 Sabre. He later commanded the first Atlas missile squadron and retired as a colonel. In his second career, he was an editorial cartoonist for Copley News Service and his work was syndicated in more than 300 newspapers. He continued to fly his own puddle-jumper airplane.

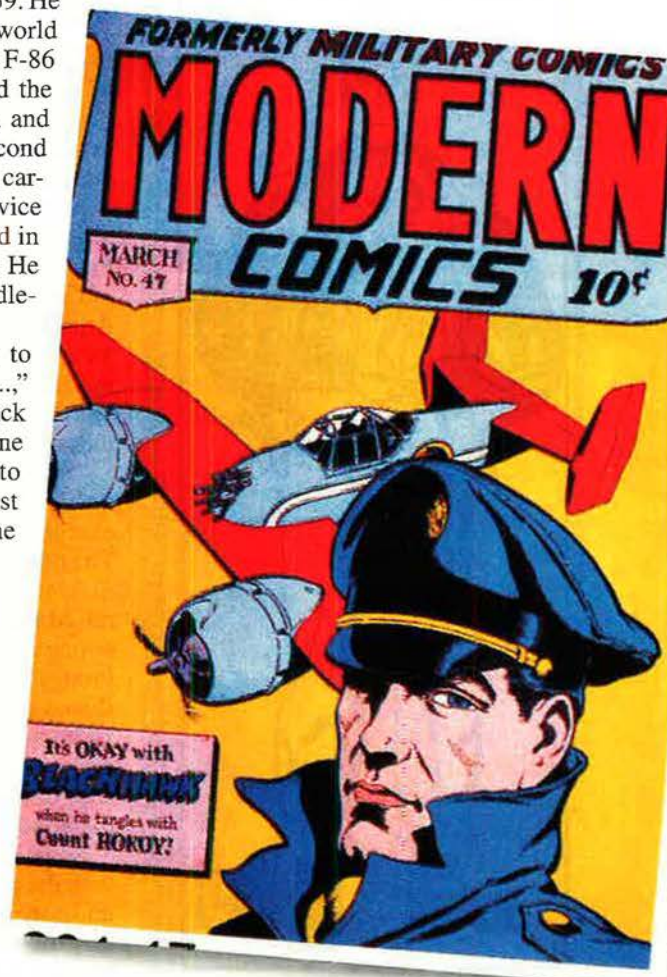
Stevens' greatest claim to fame was "There I Was ...," which appeared on the back page of *Air Force Magazine* every month from 1964 to 1993. It was one of the most popular features the magazine

Many of the "Blackhawk" readers—and some of the artists—were in the dark about the strange-looking aircraft, seen here on a comic book cover from 1946. It was a Grumman F5F-1 Skyrocket.

ever published. (See "Aerospace World: Obituaries," August 1994, p. 21.) Stevens had to be good. His subject was everyday life in the Air Force and, month after month, he laid it before people who had been there and done that. Fortunately, Bob Stevens knew his stuff, and he did not make many mistakes. Books reprinting selections from "There I Was ..." sported back-cover blurbs with praise for Stevens from such luminaries as Ira C. Eaker, Francis S. Gabreski, Chuck Yeager, and Milton Caniff.

Jake Schuffert's cartoons will be instantly familiar to all except the youngest of Air Force veterans. A typical Schuffert character had a big nose, an ample waist, and frequently a cookie duster mustache. Jake drew fast and produced a great deal of material. It appeared in *Airman Magazine*, *Air Force Times*, and in all sorts of other places, including the Air Force Art Collection and USAF Humor exhibit at the National Museum of the US Air Force.

Sgt. John H. Schuffert was a radio operator and gunner on B-24s during World War II. (See "America's Airmen," January, p. 22.) His airplane was shot down in 1944 and he spent the rest of the



IT-WAS-BOUND-TO-HAPPEN-DEPT. :

...AND
THERE I WAS
HANGIN' ON MY
PROP...!!

44TH
JET
TRAINING
SQDN

COLONEL,
WHAT'S A PROP ?



© Barbara Stevens

In "There I Was . . ." Bob Stevens often made note of the changes in flying as experienced by different Air Force generations.

war evading the Germans with the help of Yugoslav partisans. During the Berlin Airlift in 1948, Jake was a radio operator for Lt. Gen. William H. Tunner, the airlift commander. Jake drew cartoons for *The Task Force Times*, and some of them had an edge. Tunner backed Jake and overruled a base commander who tried to ban the paper from his base.

Jake spent 13 years on flying status before entering the graphics career field. He kept on drawing, retired from the Air Force as a master sergeant in 1962, returned as a civilian employee, and retired again in 1986. His cartoons appeared in *Airman* for more than 27 years. At first, his page was called "It All Counts for 20," then "It All Counts for 30," and finally, "Here's Jake." For a year following his death in 1998, *Airman* ran a monthly selection of the best of Jake's cartoons. In 1999, some of Jake's drawings from *The Task Force Times* were shown at a special exhibition at the Allied Museum in Berlin.

Jack D. Tippit flew combat missions as a B-24 pilot in the Southwest Pacific in World War II and jet aircraft in the Korean War. He never lost his affection for airplanes and airmen, and remained in the Air Force Reserve. Tippit had a successful civilian career as a syndicated cartoonist. "Amy," which he drew for many years, won the National Cartoonists Society award for panel cartoons in 1970. His work appeared in all major magazines, including *The*



This Jack Tippit illustration appeared with an article on "Washington Duty" in the May 1973 issue of *Airman*.



The Jake Schuffert look shows in these two panels from *Airman*. The one at right is from "Memories of the Berlin Airlift," published in 1973, in which Jake recalled his experiences from 25 years before.

New Yorker and *The Saturday Evening Post*. He was president of the National Cartoonists Society in 1971-73 and the first director of the Museum of Cartoon Art in 1974.

"Jungle Jollies"

As an Air Force Reservist, Jack Tippit had a long affiliation with *Airman* Magazine, beginning in 1963. He drew a monthly page, "Jungle Jollies," during the Vietnam War, and developed the little spaceman who for years presided over the magazine's letters page. He was at his best illustrating articles that had a lighter side. He retired as a colonel in 1974.

The surface forces were represented in the comics as well:

- "Don Winslow of the Navy" was begun in 1934 by Navy Reserve Lt. Cmdr. Frank V. Martinek to help Navy recruiting and public relations. Winslow was a Navy intelligence officer whose adventures satisfied the need for action in peacetime. In World War II, Lieuten-

ant Commander Winslow and his pudgy partner Lt. Red Pennington saw plenty of combat. The strip lost some of its steam after the war but continued for years in both newspapers and comic books.

- Long before he created "Dennis the Menace," Hank Ketcham drew "Half Hitch" for his camp newspaper while serving in the Navy during World War II. "Half Hitch" was picked up for a while in the 1940s by *The Saturday Evening Post* but was discontinued when the war ended. In 1970, Ketcham revived "Half Hitch" for King Features Syndicate. The strip featured Half Hitch—so named because he was short—his fellow sailors on the aircraft carrier *Clagmire*, and a seagull named Poopsy. It ran for five years.

- "Willie and Joe," among the most famous cartoon characters to come out of World War II, were first drawn in 1940 by Army Pvt. Bill Mauldin for the 45th Division News. Mauldin, working in the evenings and in his spare time, depicted a pair of disheveled dogfaces who got through the privations and dangers of war with as much good humor as they could muster. They eventually moved to a bigger readership in *Stars and Stripes*. Gen. George S. Patton was not amused





are currently in print. Used copies of others, including the comprehensive *There I Was ... 25 Years*, are easy to find and obtain on the Internet.

Newspaper funnies have mostly reverted to being funny. Only a few adventure continuity story strips remain and none of them are about the Air Force. Now and then, we see the World War I American air ace Snoopy flying his doghouse against the Red Baron, but such episodes are infrequent. Besides, artist Charles Schulz is dead and "Peanuts" is in reruns.

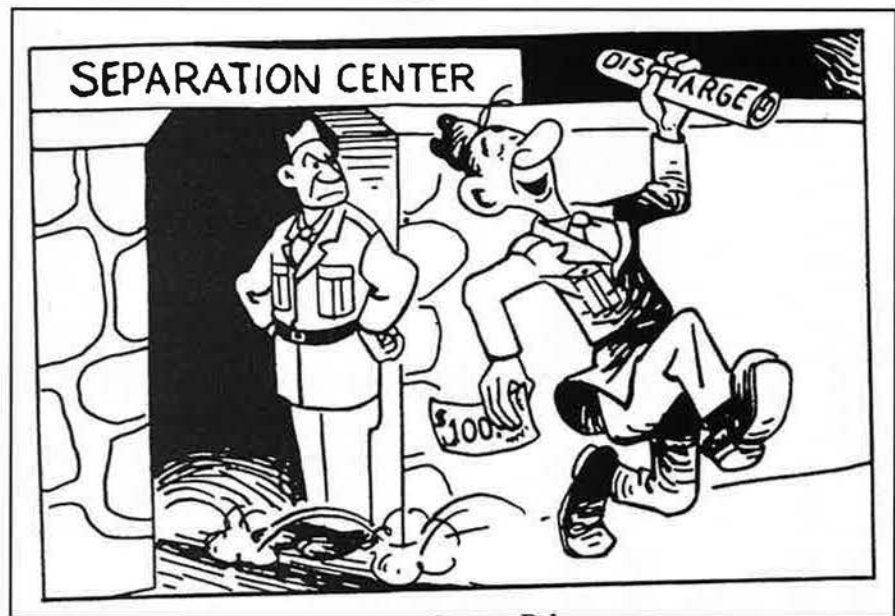
Nevertheless, the tradition of Air Force adventure in the comics is still alive, or flickering anyway, with "Green Lantern," the popular superhero of DC Comics. This is not the same Green Lantern with the purple cloak that older readers may remember from the 1940s. The character has gone through metamorphosis several times.

In the current version, there is a

and attempted to squelch Mauldin, but he was not allowed to do so. Willie and Joe were featured in Mauldin's postwar book, *Up Front*, and Mauldin went on to a long career as a Pulitzer Prize-winning editorial cartoonist. Mauldin, a neighbor of Caniff's in New York, joined the cast of "Steve Canyon" as Lt. Upton R. Bucket.

■ "The Sad Sack" by Sgt. George Baker began in the Army weekly magazine *Yank* in 1942. (Baker said he took the title from the Army term "sad sack of ...") Sack, a hapless private with a hangdog look, was put upon by first sergeants, mess sergeants, drill sergeants, officers, and almost everybody else. There was no dialogue, as Sack's misery was conveyed perfectly without words. Sad Sack finally showed a smile as he skipped out the gate of the separation center, discharge in hand, in 1945. The strip went civilian with the Bell Syndicate after the war. Naturally, Sack's luck in the civilian world was no better than it had been in the Army.

■ "Beetle Bailey" by Mort Walker began in September 1950 as a college humor strip but nobody was interested. After six months, Walker had only 25 client newspapers signed up. Beetle joined the Army March 13, 1951. It was a stroke of fortune for Walker. "Beetle Bailey" currently runs in more than 1,800 newspapers. How it worked out for Beetle himself is open to question. He has 56 years time in grade as a private. He and the troops at Camp Swampy still wear Army uniforms from the 1950s.



At top: Hank Ketcham, who had a big winner going with "Dennis the Menace," revived "Half Hitch" from World War II, but it did not catch on. Above: This was one of the few times that Sad Sack ever smiled. His gloomy look soon returned when his luck in civilian life was no better than it had been in the Army.

The heyday of the airpower cartoon and the aviation adventure strip is over. The last of them disappeared with the death of Jake Schuffert in 1998. However, many of the old strips and cartoons have been collected in reprint anthologies. Some of these books, notably volumes of the early "Steve Canyon,"

Green Lantern Corps, and the most prominent member is Hal Jordan, a test pilot equipped with a green ring that endows him with super powers. When not rigged out in his Green Lantern regalia, Jordan serves in the United States Air Force Reserve and flies an F-22. ■

John T. Correll was editor in chief of *Air Force Magazine* for 18 years and is now a contributing editor. His most recent article, "A Brave Man at the Right Time," appeared in the June issue.

Force readiness has dropped by 17 percentage points.



Worse Than the Hollow Force

By Megan Scully

Three decades ago, when Steven Pennington entered the Air Force, the service was facing such deep budget problems that squadrons were running out of toilet paper. It was the nadir of the infamous “hollow force” era, the post-Vietnam hangover that saw military readiness fall to calamitous levels.

“In some ways, the problem is worse now,” charged Pennington, now a colonel serving as the Air Force

Operations Group commander at the Pentagon.

The vagaries of operating the oldest fleet of aircraft in the service’s history and the pressures of high operational tempo have sent readiness rates plummeting and pushed operation and maintenance costs to record levels.

The Air Force has seen readiness decline by 17 percentage points across its fleet since 2001, and readiness is down 12 percent in just the past three

years. The areas most affected are in the “older airplane arena,” Gen. T. Michael Moseley, Chief of Staff, said recently, because tankers and other old aircraft continue to log many flying hours decades into their service lives.

Today’s problem is unique because, even during the hollow force era, Pennington and his fellow airmen were flying F-4s and other aircraft that, by the standards of today, would be considered brand-new. And by the early



USAF photo by AIC Matthew Davis

In recent years, the Air Force has pulled the same duty with an older and smaller fleet of aircraft. Here, crew members work on an old F-16 at Shaw AFB, S.C.

1980s, large numbers of next generation aircraft—including A-10s, F-15s, F-16s—were entering into service.

Today, however, the Air Force is still flying many of those same airframes from the early 1980s and is managing the oldest fleet in its 60-year history.

The average age of an Air Force aircraft is now 24 years. Many of the oldest types—including C-130E cargo airplanes and KC-135E tankers—do

not even fly because of flight safety concerns.

“When you look at the 17 percent degrade of the readiness rates,” Moseley told reporters in April, “you begin to see you are getting higher failures, higher cost per flying hour, more maintenance action per flying hour—all of the things that are attendant whether you have a ’57 Chevrolet or a ’57 KC-135.”

The readiness problems for the fleet are being exacerbated by continuous heavy usage for missions in both the United States and abroad. The constant deployments, officials say, have accelerated the “service life consumption” even for many newer platforms. As the aircraft continue in heavy use as they wear out, it “takes more money and more time” to operate them, Moseley said.

High Usage Rate

Indeed, Air Force plans devised years ago called for deploying only two of the service’s 10 air and space expeditionary forces at a time. But since the outset of operations in Afghanistan and Iraq, the Air Force has been sending far more to the fight than that. The deployment level spiked as high as 4.5 AEFs’ worth of personnel and equipment during the initial invasion in Iraq, said Maj. Gen. Paul J. Selva, USAF director of strategic planning.

Now, the Air Force routinely maintains between 2.5 and 2.75 AEFs’ worth of manpower and materiel in theater—still far above the number the Air Force had planned. This has a cumulative effect.

The high utilization level forces expeditionary units to share between 10 and 15 percent of their airframes and other assets with other deployed units, Selva said.

Back at home stations, nondeployed units are lending higher numbers of supervisory personnel and senior noncommissioned officers to the units heading to a theater. This reduces the number of experienced airmen with needed technical skills at the home bases.

The result of all these factors is a continued downward trend in readiness. Before operations began in Iraq and Afghanistan, roughly 70 percent of the Air Force’s units were ready to deploy. (The rate will never be 100 percent, because the AEF system builds in recovery and “spin-up” time before and after deployments.)

The decline has been steep, and perhaps even more troubling, it has been accelerating. In 2001, 73 percent of the

Air Force’s units were rated “green,” or fully mission capable. That rate fell to 68 percent in 2004 and is at 56 percent today. “Unless significant changes are made to our budget, hard work alone will not be able to keep more precipitous declines at bay,” officials wrote in a statement. Some service officials postulate that the percent of units considered ready to deploy could eventually bottom out in the low 40s.

“We’re flying about the same flying hours that we were 10 or 15 years ago, but we’re doing it with about 1,300 less airplanes,” Moseley said. “So as your fleet ages and you hold constant the utilization rate on the airplanes and they’re old airplanes [that] have a tendency to break, ... that’s where the 17 percent comes from.”

This is a “trend line that is in the wrong direction,” the Chief added.

Moseley and other Air Force officials estimate that the service will need \$45 billion right out of the gate and a whopping \$20 billion annually over the next 20 years to right the force. The extra money, Moseley said, would allow the Air Force to keep up with rising O&M costs while also buying needed aircraft faster. Higher purchase rates serve a number of purposes. They eventually drive down per-unit costs and allow reliable new airframes to replace problematic older ones.

The Air Force typically flies more than 430 sorties of all sorts per day over US Central Command’s area of responsibility, which includes Iraq and Afghanistan. By April, that translated into more than 82 percent of the coalition’s 353,373 sorties for Operation Iraqi Freedom and 78 percent of the coalition’s 211,427 sorties for Operation Enduring Freedom.

At the same time, USAF airmen also are performing nearly 100 percent of the missions for Operation Noble Eagle. Every day, there are more than 100 fighters, a dozen tankers, and a “handful” of E-3 Airborne Warning and Control System aircraft committed to this homeland air defense mission, Moseley said.

The Air Force is currently in the middle of major programs to upgrade some of its oldest platforms, such as the C-5B, which has avionics and engine modernization programs on the books. (See “Life With the C-5,” June, p. 58.)

Modernization and service life extension programs have kept aircraft flying years past their expected service lives, in some cases. This results in unexpected repairs, such as from blown engines and rust spots.



USAF photo

The Air Force must spend \$1.4 billion to renovate the struts on its 85 KC-135Es, such as this one taking off.

As the aircraft age, the cost to keep them flying continues to increase. Service officials estimate that operation and maintenance costs have grown by a staggering 180 percent in the last decade, largely due to extensive and continuous repairs required on the airframes.

Older aircraft have known problems, such as overstressed center wing boxes on C-130Es, but old fleets are also plagued with “the unknown unknowns,” the Air Staff’s Pennington said. “We simply haven’t had airplanes that have flown this long [and] that you’re going to continue to fly,” he noted, making it increasingly difficult to predict what might break next.

Delicate Balance

Rebuilding old airplanes, Pennington said, is like running a car well beyond its life expectancy. It also forces the service to strike a difficult balance between maintaining what the Air Force has now and attempting to invest in the future. In the end, it is often the future investment that gets the short shrift.

Under the current topline, USAF can’t afford to fully fund both modernization of existing equipment and recapitalization with new hardware. “The budget won’t allow us to do that,” Pennington said.

The need for more resources—for personnel, equipment, and aircraft—is something service leaders are attempting to drive home in the media and to Congress. But as service officials campaign for more cash, the Air Force is finding itself in a de facto competition with the Army and Marine Corps.

The ground force services keep the highest profile in Iraq, have suffered the most casualties, and have subsequently benefited from heightened Congressional

support. This has resulted in generous plus-ups to Army and Marine Corps equipment repair and replacement accounts.

Air Force officials, however, stress the folly of using USAF and Navy accounts to fund increases in the Army and Marine Corps budgets. There is a strategic danger in fixating on the immediate needs in Iraq.

“Perhaps more so than any other capability of the joint force, the ability of US airpower to respond quickly and violently, throughout the depth and breadth of their territory, keeps potentially rogue regimes from following their worst instincts,” reads Air Force testimony submitted to a Senate Armed Services subcommittee April 26.

Airpower provides worldwide deterrence even while the military has more than 100,000 ground troops tied down

in Iraq. Curtailing aircraft buys would be “extremely shortsighted and costly” to the country in the next 20 years, the Air Force asserts. “If we do not replace our aging combat aircraft with sufficient numbers of advanced, modern platforms, we will surrender a deterrent of immeasurable value.”

The Air Force, Selva stressed, provides the bulk of US airpower that “potentially sets the conditions for victory.”

The Air Force needs more than money to solve its vexing readiness problem, however. Congressional restrictions on retiring older aircraft continue to bedevil the service as it pays hefty bills to maintain aging airplanes that USAF hoped to send to the “Boneyard” at Davis-Monthan AFB, Ariz., years ago. (See “Under Lockdown,” September 2006, p. 54.)

Many of the aircraft date back to the procurement heydays of the 1960s, when the Air Force bought, on average, more than 600 new airplanes a year. Across the fleet, the average airframe dates to 1983.

The money spent maintaining obsolete aircraft would be better spent on new equipment. “Those maintenance guys who are stretched pretty thin don’t need to go out and turn the tires and check the interiors of those broken airplanes,” Maj. Gen. Thomas P. Kane, director of plans and programs for Air Mobility Command, told *Air Force Magazine* last year. “Those are combat ineffective aircraft that we’re maintaining on the ramp.”

But lawmakers, who do not want to

USAF photo by SSGT David Miller



TSgt. John Ryan, crew chief with the 746th Aircraft Maintenance Unit, inspects a C-130 in Southwest Asia.

and made other appearances as part of the science fair activities.

Preparing the flight deck mock-up for display was a complicated project, headed by Lohmann. The model originally had been at the Honolulu Airport but five years ago was moved to unprotected storage at the former NAS Barbers Point. The chapter received permission to renovate it for display. Lohmann supervised volunteers from Hickam, the Civil Air Patrol, Honolulu Community College, and a local flight school, as they repaired the frame, electrical wiring, lighting, and cockpit switches. The team installed a ventilation fan and a computer for audio and visual effects and created artwork and display stands for etched-glass panels. After the science fair, the chapter returned the shuttle flight deck mock-up to protected storage, Lohmann said.

What's for Dinner?

Corned beef and cabbage. That's what the **Lufbery-Campbell Chapter** of Ramstein AB, Germany, served to guests of the Fisher Houses at Landstuhl Regional Medical Center.

SMSgt. Kenneth E. Gammons, chapter president, brought in the dish because it was St. Patrick's Day. Other chapter members brought in a variety of home-cooked food for three families who were staying at the facilities on March 17. First Lt. Crystal Schneider cooked tortellini with chicken marinara. Lt. Col. Margaret H. Beaty brought a casserole and, with Lt. Col. Connie J. Lutz and Capt. Amy E. Russo, provided the sides. Apple pie from Lt. Col. Edward E. Jezisek II topped the dessert menu.

Gammons said this was the second time chapter members had sponsored a dinner at the facilities.

Landstuhl has two Fisher Houses. They enable family members to stay near a military person who is hospitalized. Built by the Fisher House Foundation, the first Fisher House opened in 1991 at Bethesda's National Naval Medical Center.

Mae-sie the Riveter

The **Olmsted Chapter (Pa.)** billed her as "Mae-sie the Riveter," after the iconic World War II factory worker Rosie the Riveter.

Rosie was a bandana-clad, no-nonsense female in overalls. Westinghouse artist J. Howard Miller created her for the "We Can Do It" poster used to recruit women to work in defense jobs during the war.

The Olmsted Chapter's guest speaker was the real thing, though. As an 18-year-old, fresh out of high school in Pennsylvania, Mae Eckley Graybill moved to Baltimore in 1942 to become



AFA Board Chairman Bob Largent greets MSgt. Ross Wood, president of the Fort Worth Chapter, at the chapter's black-tie gala in March. See "Evening at the Speedway" and "Intro to NAS JRB Fort Worth," p. 72.

a metal riveter for the Glenn L. Martin aircraft company.

She helped build B-26 Marauders. "She and her female construction partners assembled the portion of the fuselage immediately in front of the tail section, hoisted in place by a large crane," wrote Chapter President E. Thomas Kuhn Jr. in his invitation to the dinner that featured Graybill. She also had a hand in building the Martin Mars Flying Boat that came out of the factory.

Graybill brought to the chapter meeting some memorabilia from those days: four-inch sections of sheet metal containing rivets, a rivet gun similar to the one she wielded, a poster of Rosie the Riveter, and a cloth-doll version of Rosie as portrayed by Norman Rockwell on the cover of a *Saturday Evening Post*. Graybill even played a CD for the chapter members, with the swing-style 1943 song "Rosie the Riveter."

In the audience that evening was Raymond Hamman, president of the **Liberty Bell Chapter**, and Robert R. Bender, chapter VP. Kuhn noted that they drove more than 100 miles from Philadelphia to hear Graybill's presentation.

Awards in South Carolina

At the South Carolina State Convention, hosted by the **Columbia Palmetto Chapter** in May, US Sen. Lindsey O. Graham (R-S.C.) was taken back to his high school days.

Today a member of both the Senate Armed Services and Veterans' Affairs Committees and an Air Force Reserve colonel, Graham graduated from D.W. Daniel High School in Central, S.C. The school garnered two awards at the South Carolina convention.

Graham presented the state Teacher

of the Year award to Larry Jones, a physical science instructor at the school. Jones has a role model in fellow faculty member Patrick A. Welsh, who received the Christa McAuliffe Memorial Award in 2005, as AFA's national Teacher of the Year. (See "The 'Doctor' Is In," March 2006, p. 72.)

Graham also presented the JROTC Unit of the Year award to D.W. Daniel High School. **Clemson Chapter** member retired Col. Alton C. Whitley Jr., the senior aerospace science instructor, accepted the award, with several of his cadets.

The convention's awards luncheon included a second distinguished guest speaker, US Rep. Joe Wilson (R). Both Graham and Wilson, who is on the House Armed Services Committee, talked about challenges of military service.

Other recipients honored during the convention's award ceremonies included MSgt. Michael J. Landry, of the 609th Air Support Operations Squadron at Shaw Air Force Base, who received top honors as Outstanding Air Force Person; Ronald Powell of the **Charleston Chapter**, named the state's AFA Member of the Year; and the **Swamp Fox Chapter**, selected as Chapter of the Year.

Rodgers K. Greenawalt, South Carolina state president, mentioned that it took a tremendous amount of work to coordinate the convention schedule with Graham's and Wilson's calendars, but having two award recipients from Graham's alma mater? "It just worked out that way," he said.

"Flyboy to Grunt"

The guest speaker for the **Cochise Chapter's** May meeting at Ft. Hua-

chuca, Ariz., billed his talk as “Flyboy to Grunt”—a reference to his transformation from Air Force blue to Army green during his half-year of Army duty in Southwest Asia.

The Cochise Chapter presented awards at this meeting to MSgt. David Bagwell and TSgt. Dwight Bechel, as Senior NCO and NCO of the Year, respectively. They are both assigned to the 314th Flying Training Squadron. Bechel, an intel specialist who had just returned from Baqouba, Iraq, was the evening’s guest speaker.

He described his crash-course training at the Army’s Camp Shelby, Miss., and the Spartan conditions he found on arriving at his Army assignment in Iraq. Bechel’s unit was involved in document exploitation. An Arizona newspaper that reported on this AFA chapter meeting noted that the airman processed detainees and went through thousands of documents to glean information.

The chapter selected Bagwell for the senior NCO award because of several suggestions that he came up with, to save on training time and per diem costs.

State Champs

When AFA in Virginia sponsored a statewide AFJROTC drill championship for the first time last year, it was a “fairly small” event, said Thomas O. Moran of the co-host **Richmond Chapter**.

This year, the numbers “exploded,” he said. Twenty-six AFJROTC programs sent more than 400 cadets to the April drill meet, held at Atlee High School, north of Richmond.

Western Branch High School, Chesapeake, Va., was the repeat overall state champion. Great Bridge High School, also from Chesapeake, took home second place honors; Gordon Strong is Great Bridge’s senior aerospace science instructor and also president of the drill meet’s co-host **Tidewater Chapter**. Third place went to a Northern Virginia school, Chantilly Academy, whose JROTC unit is supported by the **Gen. Charles A. Gabriel Chapter**.

Virginia State President Scott van Cleef presented the trophies, donated by the Gabriel, **Langley**, and **Donald W. Steele Sr. Memorial Chapters**. Judges for the meet came from Virginia Military Institute and included recruiters representing the Air Force, Army, Marine Corps, Army National Guard, and the Coast Guard. Along with event coordinator Moran, AFA volunteers at the meet included Tidewater members Allan Berg, William M. Cuthriell, and Robert Hudson and Richmond Chapter members Harper S. Alford, Barry Drossner, and Elizabeth Hart Jones.



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More AFA News

■ The **Danville Chapter (Va.)** in April presented two eighth-grade physical science teachers with AFA Chapter Matching Grants. Chapter President Gerald L. Hovatter and John Wilt, chapter aerospace education VP, presented the funds to Donna Fitzgerald of Westwood Middle School and Lisa Fain from E.A. Gibson Middle School.

Fitzgerald’s grant bought GPS units and geographic information system (GIS) software. Fain’s grant went to probeware to teach concepts such as velocity, momentum, and Newton’s second law of motion. Probeware refers to sensors hooked up to computers that display the information gathered in real time. AFA’s Chapter Matching Grants double the amount—through



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a matching donation—that a chapter puts up to fund a local educator's or organization's activities.

■ Hyperspectral imagery was the topic of two consecutive meetings of the **Gen. Joseph W. Ralston Chapter** in Ohio. John A. Glaser, an Environmental Protection Agency scientist in Cincinnati, presented information on a NASA-EPA project that uses a hyperspectral camera about the size of a loaf of bread mounted on a Cessna 210. Hyperspectral imagery—consisting of hundreds of measurements of reflected or emitted energy—is used in this case for crop management. Glaser's PowerPoint presentation particularly interested the University of Cincinnati ROTC cadets at the meeting and prompted chapter members to suggest inviting a follow-up guest speaker: In April, former USAF Maj. Russell Finney took to the chapter podium to talk about hyperspectral imagery he gathered as an RF-4C reconnaissance pilot in the 1990s.

■ **Central Oklahoma (Gerrity) Chapter** members and guests listened to an update on the Oklahoma City Air Logistics Center from its executive director, Robert J. Connor, in April. Connor, who retired in May, reported on how the ALC is reducing the number of days it takes to maintain or repair aircraft. Jack T. Snoddy, chapter corresponding secretary, reported that Connor's presentation was part of a series of mission briefings that the chapter began holding a year ago to educate the public about airpower and the Air Force. The most recent briefings have covered contracting at the ALC and RC-135 operations.

■ In Iowa in April, the **Richard D. Kisling Chapter** meeting featured one of their own as guest speaker—chapter member Harry Johnson. A retired USAF major, Johnson spoke to the dinner guests at the South Sioux City Eagles Club about his life: his roots in Iowa, college years in Sioux City, basic training at Lackland AFB, Tex., in 1951, commissioning, and Korean War assignment as a B-29 pilot. Donald Persinger, chapter membership VP, arranged for Johnson to speak because "we knew he would have a good story."

■ The **Dallas Chapter** awarded \$600 scholarships in May to Civil Air Patrol cadets Paul Blahut, Travis Lame, Brandon Maso, Garrett Nalls, Matthew Patrick, Derek Prucha, Edward Schroder, James Schulgen, Andrew Smith, and Grayson Strakele. The 2007 AFA Flight Scholarships will allow the CAP cadets to attend flight academies. "AFA's monetary help demonstrates a high civic consciousness and goes a long way towards helping young persons achieve a life-changing personal dream," CAP said in its news release.

■ In Columbus, Ind., the legendary "Peacemaker" was the topic at the **Columbus-Bakalar Chapter's** meeting. Retired MSgt. James S. Peters, a chapter member, had hands-on experience with the B-36: He was an RB-36 and GRB-36 maintainer, assigned to the 99th Strategic Reconnaissance Wing, in the early 1950s. The GRB-36 was a modified version, designed to retrieve and launch an F-84, to extend its range. James R. Alvis, the chapter secretary, commented that Peters brought to the speaker's podium facts, figures, and enough knowledge about the bomber to be considered a B-36 historian.

■ The **Genesee Valley Chapter (N.Y.)** sponsored a color guard that marched in Rochester's signature springtime Lilac Festival. The group of students from Henry Wadsworth Longfellow School was sponsored by the chapter and a local state senator, trained under a JROTC instructor, and was directed by Chapter President Alfred E. Smith. Festival organizers said that, with 125 entries, the parade was its largest so far and was part of a record-breaking attendance figure—more than 200,000 visitors viewing lilacs in Rochester's Highland Park.

■ Putting the Air Force on page 1. That's what **Southern Indiana Chapter**

President Marcus R. Oliphant did when he tipped off the local newspaper about a hometown boy now flying the Air Force's newest fighter aircraft. Oliphant prompted the *Bloomfield Free Press* to headline a March edition with the story of Lt. Col. Kevin Fesler, who took command that month of the 94th Fighter Squadron at Langley AFB, Va. The 94th is the legendary Eddie Rickenbacker's "Hat in the Ring" unit from World War I. Today it is equipped with F-22s. The chapter also marked the milestone for the 94th's new commander by signing up Fesler as a chapter member.

■ The **Southern Indiana Chapter** tipped its hat to World War II veterans at its dinner meeting held on V-E Day—May 8—where guest speaker Van T. Wright, a chapter member, related his experiences in the Army Air Corps. He described training as a B-17 gunner, missions over Germany, and being shot down and held as a POW until the war's end. Chapter President Oliphant noted that more than 60 years had passed since the events Wright described, but the 86-year-old guest speaker nevertheless "remembered many details amazingly well." Among the audience at this chapter gathering were nine other World War II veterans.

■ In May, a local NBC TV newscast reported on the theft of an American



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In Florida, Michael Emig (center), the Red Tail Memorial Chapter president, attended the awards program in April for AFROTC Det. 150 at the University of Florida in Gainesville. He presented AFA's W. Randolph Lovelace Memorial ROTC Award to Maureen Hartney (right). At left is cadet Kathleen Pihana.

flag from the front yard of **Fort Worth Chapter (Tex.)** member Marvin Adams. The reporter said that Adams had been flying the flag, specially lighted for visibility night and day, and had vowed to do so until the war in South-west Asia was over. Two AFA chapters responded to the story. Fort Worth Chapter Treasurer Richard Walker suggested the chapter replace the flag for Adams, a 32-year veteran whose service spanned World War II through Vietnam. The **Northeast Texas Chapter**—led by Marsha D. Krotky—obtained a World War II medallion and certificate. Former Fort Worth Chapter President Bill Lawson presented the flag and medallion to Adams.

■ When TSgt. R.C. DeLano and SSgt. James Lorenzo from Fairchild AFB, Wash., received the Armed Forces Persons of the Year award from the Spokane Regional Chamber of Commerce in April, the head judge was a representative of AFA's **Inland Empire Chapter**. William P. Moore, chapter president, has for the past four years been one of five judges who comb through the nominations. Moore said he was chosen because he is the AFA chapter president, has an Air Force background, and can read quickly

through lengthy, wordy nomination packages. "It's the best hard job I've ever had," Moore said. All candidates, he added, are winners. ■

Have AFA News?

Contributions to "AFA National Report" should be sent to *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Phone: (703) 247-5828. Fax: (703) 247-5855. E-mail: natrep@afa.org. Digital images submitted for consideration should have a minimum pixel count of 900 by 1,500 pixels.

Unit Reunions

reunions@afa.org

12th and 15th TFW, MacDill AFB, FL. Aug. 17-19 at the Phoenix Grand Hotel in Salem, OR. **Contact:** Denny Smith, 3541 El Dorado Loop S, Salem, OR 97302 (503-910-5100) (jedstrom2@comcast.net).

23rd TASS, Nov. 1940-present. Aug. 24-26 at Meacham Field, Fort Worth, TX. **Contact:** (nail21www@aol.com).

39th BG, Guam (1945). Aug. 1-5 at the Radisson Hotel Downtown Market Square in San Antonio. **Contacts:** Liz Van Kampen, 5418 Honeysuckle Ln., Oregon, WI 53575-1751 (608-835-0923) (liz.vankampen@sprintprint.com) or Bob Weiler, 2045 Hyde Park St. #3, Sarasota, FL 34239-3941 (941-365-8287) (bobweiler@39th.org).

93rd FS (WWII), Sept. 8-14 in Reno, NV. **Contact:** Bill Harvey, PO Box 1237, Desert Hot Springs, CA 92240 (760-251-0965) (sixfinvrabt@webtv.net).

301th FW, July 14 at the Green Oaks Hotel in Fort Worth, TX. **Contact:** Larry Patterson (817-732-8683 or 817-366-3067).

309th FS, Sept. 5-9 in Cincinnati, OH. **Contact:** Dalton Smith (201-244-5854) (dallonsmith@optonline.net).

315th BW Assn, Northwest Field, Guam. Sept. 6-10 in St. Louis. **Contact:** Bev Green (217-893-3197).

504th BG, 313th Wg, 20th AF. Sept. 5-9 in Albuquerque, NM. **Contact:** Tim Schoolcraft, 2000 Single Oak, Seguin, TX 78155 (830-303-5732) (pecanderos@aol.com).

804th Engineer Aviation Brigade and 804th Civil Engineer Sqs. Sept. 9-12 in Branson, MO. **Contact:** David Anderson (907-852-2418) (804eabces@gci.net).

FB-111 Reunion, July 20-22 in Plattsburgh, NY. **Contact:** Michael Stephenson (518-563-7973) (fb111reunion@cox.net).

Seeking graduates of **AFROTC Det. 850**, University of Utah, for a reunion on Sept. 8. **Contact:** Lt. Col. Kent Wong (801-581-6236) (kent.wong@afrotc.utah.edu). ■

E-mail unit reunion notices four months ahead of the event to reunions@afa.org, or mail notices to "Unit Reunions," *Air Force Magazine*, 1501 Lee Highway, Arlington, VA 22209-1198. Please designate the unit holding the reunion, time, location, and a contact for more information. We reserve the right to condense notices.

AFA Conventions

July 14	Florida State Convention , Daytona Beach, Fla.
July 27-28	Colorado State Convention , Denver
July 27-29	Texas-Oklahoma State Convention , Wichita Falls, Tex.
Aug. 8	Michigan State Convention , Mount Pleasant, Mich.
Aug. 11	Georgia State Convention , Warner Robins, Ga.
Aug. 11	Massachusetts State Convention , Boston
Aug. 18	Indiana State Convention , Indianapolis
Aug. 25	North Carolina State Convention , Raleigh, N.C.
Sept. 22-23	AFA National Convention , Washington, D.C.
Sept. 24-26	Air and Space Conference , Washington, D.C.



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Airpower Classics

Artwork by Zaur Eylanbekov

Typhoon



The Typhoon, Britain's renowned World War II fighter-bomber, became one of history's deadliest close air support aircraft, but it did so only by a circuitous route. Designed by Hawker Co. as an interceptor, the Typhoon was supposed to replace the Hurricane as a destroyer of German escort fighters in air-to-air combat. It went through a long and troubled development, finally becoming an altogether different animal—a bristling, heavyweight scourge of Nazi Germany's land and close-in naval forces.

Work began in 1937. The all-metal Typhoon had a thick wing incorporating wide-track landing gear and, initially, 12 machine guns. It suffered many setbacks, including engine fires, rear fuselage failures, and poor low-speed handling. Yet it was speedy at low altitudes and was the only aircraft able to intercept Fw-190s raiding Britain. More importantly, the Typhoon had swapped its machine guns for cannon, rockets, and bombs and could generate immense firepower. It was

said that a single Typhoon could produce a fusillade equal to a destroyer's broadside. And it had a champion, RAF Wing Cmdr. Roland P. Beamont, the famous test pilot and ace. He believed in the Typhoon and promoted its use in close support, a mission at which it excelled.

From mid-1943 onward, the Typhoon rolled up a stellar record strafing Nazi coastal convoys, communications, transport facilities, troop concentrations, and armored vehicles. The Typhoon's greatest triumphs came on and after D-Day at Normandy in June 1944, when near-constant air attacks, guided by forward air controllers, wreaked havoc on German targets. The Typhoon was a key factor in the 1944 slaughter of German ground forces at Falaise Gap in France. It destroyed up to 150 locomotives per month. Once an air combat fighter of dubious value and reliability, it had become one of the truly awesome weapons in the Allied arsenal.

—Walter J. Boyne

This aircraft: Typhoon Mk 1B—#MN570—as it looked on D-Day, June 6, 1944, at a base in England. This airplane was flown by Wing Cmdr. Peter Brooker, 123rd Wing, hence the "B" on the fuselage.



RAF airmen reload a Typhoon on May 3, 1944.

In Brief

Designed by Hawker ★ built by Hawker and Gloster ★ first flight Feb. 24, 1940 ★ crew of one ★ number built 3,330 ★ **Specific to Mk 1B:** one 24-cyl Napier Sabre IIC engine ★ armament, four 20 mm Mk 2 cannon, eight 3-inch rocket projectiles, two 500 lb or 1,000 lb bombs ★ max speed 412 mph ★ cruise speed 330 mph ★ max range 610 mi ★ weight (loaded) 13,250 lb ★ span 41 ft 7 in ★ length 31 ft 11 in ★ height 15 ft 4 in.

Famous Fliers

RAF Aces: Wing Cmdr. J.R. Baldwin (top Typhoon ace, 15 victories), Wing Cmdr. R.P. Beamont, Wing Cmdr. Pierre Clostermann, Group Capt. T.P. Davidson, Group Capt. Billy Drake, Group Capt. Hugh S. Dundas, Group Capt. D.E. Gillam, Sq. Leader R.A. Laffemant. **RNZAF Aces:** Sq. Leader F. Murphy, Group Capt. D.J. Scott. **Notable:** Wing Cmdr. (later, Air Marshal) Dennis Crowley Milling; Paul Richey, author of *Fighter Pilot*.

Interesting Facts

RAF's first 400 mph fighter ★ called "Tiffy" by pilots ★ used in attack that wounded German Field Marshal Erwin Rommel ★ given black-and-white wing stripes to differentiate from Luftwaffe Fw-190 ★ nicknamed "Bombphoon" (bomb-equipped type) and "Rocketphoons" (rocket carriers) ★ 141 lost in a day (Jan. 1, 1945) in Operation Bodenplatte ★ FR 1B used for photoreconnaissance ★ only one surviving Typhoon, displayed in RAF Museum.

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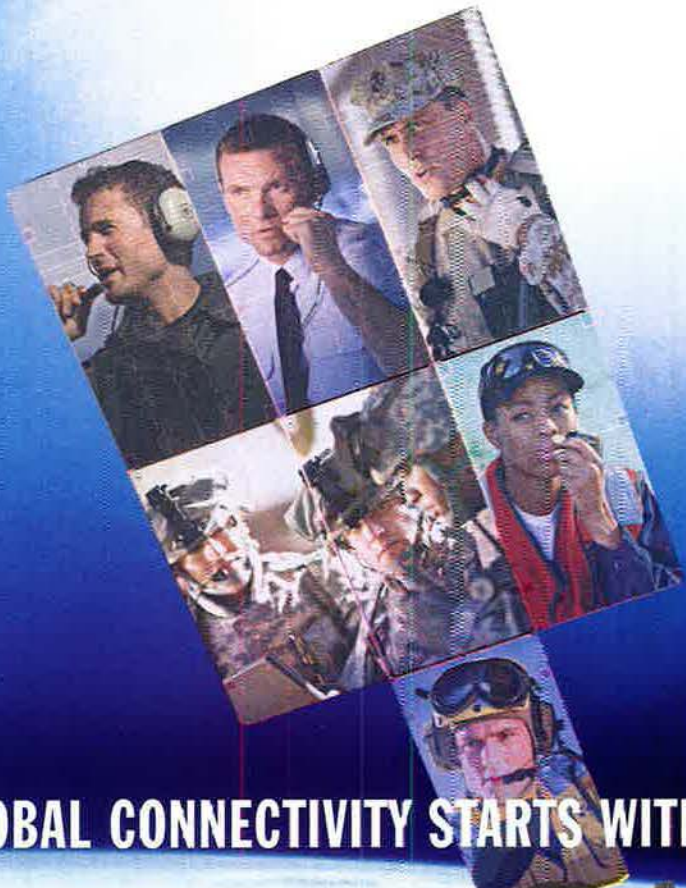
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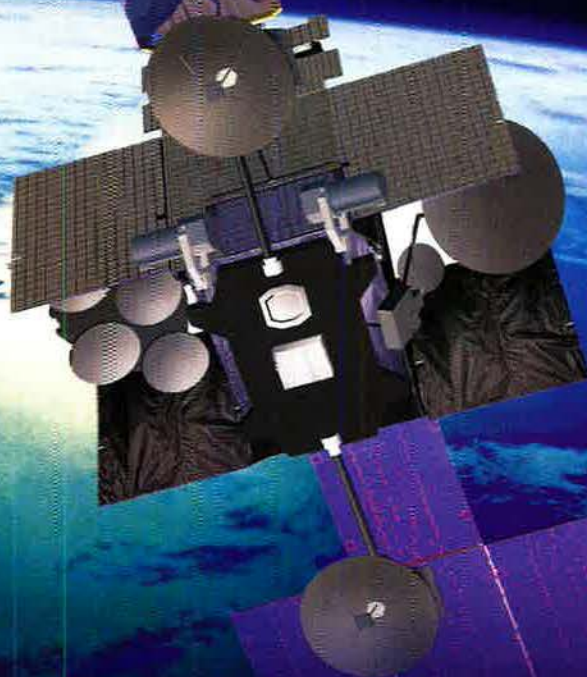


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