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JOURNAL OF THE AIR FORCE ASSOCIATION MAGAZINE

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November 2000, Vol. 83, No. 11

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About the cover: German MiG-29s fly for the first time with USAF F-16s during a 1999 Red Flag, epitomizing the training that the exercise's creators originally had in mind. See "Red Flag," p. 44. USAF photo by SSgt. Kevin J. Gruenwald.

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Editorial

Global Vigilance, Reach, and Power

THE United States is the world's preeminent military power primarily because of its superiority in air and space. Our other force capabilities are important; they are the best in the world. However, the critical advantage—the asymmetric capability that makes the great difference—is aerospace power, which has become the dominant element in armed conflict.

Strength in air and space is a fundamental requirement for the projection of US military power abroad in any form, and with increasing frequency, it is aerospace forces that lead the way.

Our continued superiority in the aerospace realm is not guaranteed, nor is our present position of leadership in world affairs. If the US defense program keeps declining, we will eventually lose our advantage.

Reductions to defense budgets and force structure have gone too far. The armed forces are stretched and stressed by operational and deployment demands in peacetime, and they are inadequately sized and equipped to carry out their wartime roles.

Readiness is flagging. Personnel problems abound. In 1999, for example, the Air Force experienced its first recruiting shortfall in 20 years. We are falling behind on force modernization. The nation is not prepared to meet new requirements now emerging, especially in space and information warfare.

The Air Force Association believes it is imperative to provide more adequately for all of the military services, but especially for the aerospace forces upon which the nation has become so reliant for global vigilance, global reach, and global power.

- Global vigilance includes not only intelligence, surveillance, and reconnaissance by airborne and spaceborne sensors but also all of the other aerospace forces, from ICBM sites to the no-fly zones, on alert and on guard, at home and abroad, every day of the year.
- Global reach allows us to put a military platform—for reconnaissance, humanitarian, or operational purposes—above any point on Earth in a matter of hours, and provides strategic mobility to rapidly position or reposition forces anywhere.
- Global power is the capability to operate from regional bases overseas or to fly or strike directly from the United States on missions that range from humanitarian aid to power projection and crisis response.

Falling Short. We do not accept the presumption that the defense program cannot be increased, regardless of threats or requirements, because of what is called in budgeteer's jargon a "stable topline."

Air Force Association 2001 Statement of Policy, adopted by the delegates to the Air Force Association National Convention, Washington, D.C., Sept. 10, 2000.

The defense budget does not cover today's needs, and it does not begin to address long-term requirements. Defense is the only major category of federal spending to decline in recent years.

There is obviously a limit to what budgets can cover and it is necessary to set priorities. It is a mistake, however, to get the process backwards. Unfortunately, it has become customary to set an arbitrary budget level, and if requirements do not fit within it, then it is the requirements that change, not the budget level.

The defense budget has fallen below 3.0 percent of Gross Domestic Product—down by almost 80 percent from its share at the postwar peak—and is headed lower. The nation can and should allocate 4.0 percent of GDP for national defense.

Missions and Strategies. The defense cuts of the 1990s began with the assumption that when the Cold War ended, the armed forces would have much less to do. It was also assumed that the nation would take this opportunity to make long-range investments in military capabilities for the future.

The assumptions were wrong. Under the strategy of engagement abroad, employment of the armed forces has increased. Old threats did not disappear. The long-range investments were scaled down, strung out, or canceled.

Accordingly, the armed forces are struggling to cover old missions, which have not gone away, and concurrently to prepare themselves for new missions that are coming along.

The Air Force is more heavily invested in the future than any other service, but at the same time, finds a rising demand for its traditional capabilities. It is about 40 percent smaller than it was in 1989 and 400 percent busier.

Our forces are supposedly sized to fight two major theater conflicts that occur almost simultaneously. In fact, they cannot meet this standard.

The nation's credibility and opportunity to influence global events would be diminished by moving away from the two-conflict standard. We have global responsibilities and national interests in both hemispheres. Considering both regional requirements and other needs, the standard is sound. We do not believe the measure should be set any lower.

In addition to regional concerns, the strategic nuclear threat persists. The Russians continue to field new ICBMs and have declared themselves more reliant than before on nuclear weapons. Chinese ballistic missiles can now hold any point in the United States at risk. A growing number of states, including smaller ones, seem certain to obtain weapons of mass destruction and the means to deliver them.

Our best choice is to maintain coun-

tervailing nuclear deterrence, as we did during the Cold War, and to combine that with active defense against ballistic missile attack. The technical problems of missile defense can be solved if we stay at it, and the sooner we find that solution, the safer the nation will be.

Among the most urgent of the new missions is the capability to defend and attack in the information regime. We agree with the decision of the Joint Chiefs of Staff, disclosed in "Joint Vision 2020," to raise the importance of information operations to the same level as dominant maneuver and precision engagement.

We must reach a firm decision to regard an attack on our critical information infrastructures as an act of war. Information superiority is vital to national security at the strategic, operational, and tactical levels. It is imperative that we master it to a far greater extent than we have done thus far.

Aerospace Integration. The demand for military space power is growing, and so is the demand for military airpower. They are complementary rather than competitive. It does not make sense to pit one against the other.

Air and space share common operational characteristics that include elevation, perspective, speed, range, and freedom from the geographic constraints of the Earth's surface.

The best approach is an aerospace force, operating in an integrated aerospace domain that stretches from the Earth's surface to the outer reaches of space and with emphasis on effects rather than on where the platforms fly, reside, or orbit.

Some military functions are migrating to space, and others will follow. Many of the emerging missions, especially those in the area of information superiority, will be conducted from there. Space will be the preferred domain for "low-density, high-demand" assets that are small in numbers but crucial to the support of operations everywhere.

We do not believe that the interests of anyone, least of all the nation, would be served by creating, as has been suggested, a space force as a separate military service.

The military space program has risen from embryonic beginnings primarily because of support from the Air Force, which provides about 90 percent of the assets, even though its own share of the defense budget is about the same as it was before the space program began.

The problems in the space program are budgetary, not organizational. The solution is additional funding, not a new service.

The United States must dominate the integrated aerospace domain in wartime. We must have access and be able to operate freely there while denying those capabilities to an adversary.

When our interests in the aerospace regime are challenged—and they will be—the US armed forces must be ready to protect them. The nation will expect and accept no less.

The Call To Transformation. The mandate of the Quadrennial Defense Review in the coming year is "transformation" of the armed forces from the Cold War model to configurations better suited to the needs of the 21st century.

Transformation seeks to exploit the so-called "revolution in military affairs," brought about by the combination of stealth, long-range precision attack, and information technologies. Capabilities attendant to the transformation, from precision engagement to information superiority, will be centered in forces operating in air and space.

The Air Force has found an excellent vehicle to carry out its transformation by grouping its operational elements into Aerospace Expeditionary Forces. The AEFs adapt the combat structure of the force for flexible deployment to smaller scale contingencies while preserving the capability to respond to threats and crises across the spectrum of conflict.

The long reach and precision strike of such forces have been demonstrated several times. Each AEF will package intelligence, surveillance, reconnaissance, and command and control of aerospace forces over a large region with air superiority and the capability to attack some 200 targets a day.

Transformation is further seen in the efforts to make the deployment forces even lighter and leaner than they are today. The goal is to reduce their forward support footprint by half, both by modifications to the force and by greater reliance on such concepts as "reachback," in which some functions supporting a deployment are performed from locations half a world away. The Air Force is working to expand the battlespace an AEF can cover and increase the number of targets it can strike.

The previous QDR in 1997 never broke free of its fiscal orientation, and the main consequence of it was to cut forces, infrastructure, and programs. We strongly urge that this QDR operate at a higher level of strategic responsibility and be faithful to its theme of transformation.

People. Today's active duty component is the smallest in the history of the Air Force. Nevertheless, it is hard to recruit and retain the people required to fill these diminished ranks.

Public attention has focused mostly on the shortfall in pilots, but the retention problem also extends to enlisted members in critical areas. In addition, a large technical manpower shortage now looms in the civilian workforce as half of the Air Force's civilian employees become eligible for retirement within the next five years.

The difficulty of competing in the booming job marketplace is only one of the obstacles to attracting and keeping the people the Air Force needs. A growing number of public schools ban military recruiters and refuse to make school directories available to them.

The Expeditionary Aerospace Force concept helps relieve the hardships of the punishing operations tempo that the services have maintained in recent years. It creates stable and predictable rotation schedules, but extensive deployments and family separations continue, and that takes a toll on retention.

Recruiting and retention problems are partly a consequence of the broader economic and employment situation, but they are also the result of repeated actions over the years that led to loss of faith by the troops. These actions ranged from broken promises on medical care to personnel actions in which career people who wanted to stay were put out of the service to meet short-term drawdown goals. Some parents with military backgrounds advise their children against joining the service because of past actions such as these.

Solutions to ongoing problems will depend greatly on a restoration of mutual respect and faith, and that is going to take some time.

We note and appreciate recent improvements to military compensation, both in pay raises and in the restoration of retirement benefits. However, problems remain, especially in health care.

The government has acknowledged that it cannot meet the promise, made to several generations of military people, of medical care for life if they served a full career. Tricare, the managed care system that is supposed to deliver partially on that promise, has not lived up to either expectations or billing and must be regarded as fatally flawed.

In many respects, the health care system for retired civil servants is superior to programs for military retirees. We are told that it cannot be an option for most military retirees because that would cost too much.

The idea that the nation cannot afford to provide to military retirees the same caliber of health care coverage that other federal retirees receive is wrong, insulting, and unacceptable and shows how far we have to go to reestablish good faith.

Total Force. The Air Force continues to set the example for all of the services with the employment and integration of its Guard and Reserve components. These components have attributes, such as depth in experience and aircrews, that match voids in the active force. Their greater participation in active missions is good for all concerned.

Among the examples of such integration is the ongoing consolidation of training, assets, and infrastructure through collocation and other measures. The Air National Guard and the Air Force Reserve Command now provide 10 percent of the manpower deployed in each rotational Aerospace Expeditionary Force.

The Air Force Association expresses its appreciation and regard for the support of employers of Guard and Reserve members. Without their cooperation, the strength of Total Force would not be possible.

Technology and Force Modernization. The outlook is dire. The United States owes its military superiority to systems and weapons that were developed before the budget cuts began. This equipment is aging, is wearing out, and is not being replaced.

Failure to make orderly investments these past 10 years has now led to a force modernization shortfall estimated at some $100 billion a year. Unless it is resolved, the nation could lose much of its relative military advantage by 2015.

Research and development and science and technology programs have been shortchanged as well. We have also seen critical force modernization programs singled out, one by one, and attacked as too expensive or unnecessary.

Neglect of force modernization also harms effectiveness. It also causes further aging of the aircraft fleet, which is already the oldest the Air Force has ever operated. This, in turn, complicates and worsens problems in readiness and maintenance, which have become concerns in their own right.

Defense cutters, and some tunnel vision advocates of particular systems as well, set up false choices, such as

pitting air superiority against long-range precision strike. These are not either/or propositions.

The nation got into the present predicament by pretending that requirements did not exist or that they could be deferred so the money could be spent on something else. We should not compound that mistake by making it again.

The force of the future will need intelligence, surveillance, and reconnaissance, command and control, attack warning, aerospace superiority, long-range precision strike, strategic mobility, agile combat support, and force protection at home and abroad. The time is now to invest in these capabilities.

War and Other Missions. The 1990s saw a steady drift in US policy toward intervention and engagement abroad, a tendency toward incremental or restricted actions, and more emphasis on military operations other than war.

We recognize that it may sometimes be in the nation's interest to conduct military operations for limited objectives. However, we are concerned that the dividing line between peace and war has become increasingly blurred and that the threshold for the armed forces to enter combat has been lowered.

The nation should commit military force only when there is a clear military objective to be achieved. We should not use lethal military force to "send signals" when we are not prepared to take serious, relevant, and sustained action if our warnings fail.

The first purpose of armed forces is to fight and win wars, and it is for that purpose that they must first be organized, trained, and equipped. All other considerations are secondary and subordinate to this.

A Force for the Nation. The cornerstone of our strength is the capability to project power rapidly and effectively to any point on the globe, and to provide the national command authorities and theater commanders with a range of effective options across the spectrum of conflict.

We believe the nation must have a balanced mix of land, sea, and aerospace forces. We do not advocate single-dimension strategies, and we do not claim that aerospace power will be decisive in every instance. However, it is the hardest-hitting, longest-reaching, and most flexible force that the nation possesses. It is difficult to imagine a future conflict of any major scope in which land power or sea power could survive—much less be decisive—without aerospace power.

The preponderance of the nation's aerospace power is vested in the US Air Force.

The Air Force can respond promptly to distant crises and project power from intercontinental distances. Airpower can support surface operations, but it can also achieve strategic, operational, or tactical objectives independent of surface power or with land or sea forces in support.

The Air Force can look deep, reach far and fast, penetrate hostile territory, maintain a global situational awareness, and strike with precision.

It is a force defined by global vigilance to anticipate and deter threats, by strategic reach to curb crises, and by overwhelming power to prevail in conflicts and to win America's wars. ■

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Letters

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Wow!

It looks as though our threat of a ground invasion has, at length, toppled the Milosevic regime. *[See "Aerospace World: 'Elementary Logic' for Serbian Leaders," August, p. 21.]*

Gen. Merrill A. McPeak,
USAF (Ret.)
Former Chief of Staff
Lake Oswego, Ore.

The Push–Pull for Money

I suggest a bit more reading of history than has been apparent so far in this discussion. *[See "Editorial: Fraudulent Flak," September, p. 2.]* What airpower can do might be grounded in some events during World War II.

In the Mediterranean, Allied bombing of the island of Pantelleria for several weeks induced the garrison to surrender without a foot soldier hitting the beach. But perhaps that is too small to be of much value.

So go to China. Fourteenth Air Force was by far the smallest air force in that conflict. According to Gen. Bruce Holloway, its effective airplanes never numbered more than 500 of all types. Its combat elements were the 23rd and 51st Fighter Groups, the 11th Bomb Squadron (B-25s), and the 308th Bomb Group (B-24s). Occasionally other units were attached. [As] a measure of its size, in January 1945 a max effort of the 23rd FG put 27 P-51s over Shanghai. Several Japanese airplanes were shot down, and 94 torched on the ground.

The China theater was larger than the European Theater of Operations and African combined. Yet after the war was over, the commanding general of the Japanese units in China said had it not been for 14th Air Force, he could have turned loose half of his 1.2 million troops to fight elsewhere and still taken any objective he wanted in China.

The Chinese army in China was largely ineffective because Gen. Joseph Stillwell, who was the US theater commander, refused to supply them with weapons and other support, preferring to keep this materiel for his use in preparing those Chinese army [forces] he was training to retake Burma. The Javanese had kicked them and the British out, just after Stillwell took over.

Whether one agrees or not with Stillwell's decisions, the net result was that the only fighting unit in the entire China theater for the entire war was Fourteenth Air Force. How do I know? I was there, assigned as a line pilot in the 75th Fighter Squadron, one of the units in the 23rd FG.

Historians might want to check again on the effectiveness of applied airpower. There are still too many turf wars among the top brass. There seems to be a constant push–pull on who is to get the money, instead of allocating funds according to properly assigned missions.

Lt. Col. Wallace H. Little,
USAF (Ret.)
Fort Walton Beach, Fla.

I found the editorial in the September issue to be a grand slam. Well done. [That] short piece encapsulated many of the things the Air Force Doctrine Center has been saying for the last three years. We have here, I believe, a very balanced view of what aerospace power can and cannot do for the nation. [John T.] Correll shores up our view and has expressed it very simply yet very powerfully.

Maj. Frederick L. "Fritz" Baier,
Air Force Doctrine Center
Maxwell AFB, Ala.

The Needs of the Force

I can't help but think of past decisions on aircraft, especially bombers, when I hear these calls for new aircraft. *[See "The Needs of the Force," September, p. 40.]* When the decision was made to build the B-1, we were building a 1960s–vintage aircraft with only minor improvements over the B-58 that had been phased out by 1970. It had few new technologies and has never had a vital role in the Air Force.

At least we now hear the need to consider technology when we design the next bomber. The B-52, the B-58, and the B-2 were aircraft that looked to the future. The B-1 was a legacy aircraft before it was built.

Maj. Gene Huffman,
USAF (Ret.)
Glenmoore, Pa.

START and Bombers

I read with interest Adam J. Hebert's article *["For Bombers, Does START Equal Stop?" p. 26]* on Start III reductions in the October issue. The concept of triad deterrence becomes even more essential as the number of strategic warheads continues to come down. In my view we must preserve triad deterrence and maintain the flexibility of manned bombers regardless of the level of warheads ultimately negotiated.

The Trident submarine's favored status is understandable given the difficulty of targeting submarines. But we should not forget how this seemingly untouchable force was badly compromised by John Walker and his family of spies. Today we believe submarine locations are once again secure, but how can we ever be certain?

The triad continues to be the best safeguard against hostile surprises and therefore the best deterrent.

Probably the biggest threat to world stability today comes from rogue nations and their agents. Only the manned bomber has sufficient flexibility to respond quickly to crisis situations anywhere in the world, and bombers do not require risky missile overflight of friendly nations. The bomber force is also a poor first-strike weapon, and that attribute aids strategic stability. Bruce Blair's proposed approach for preserving the

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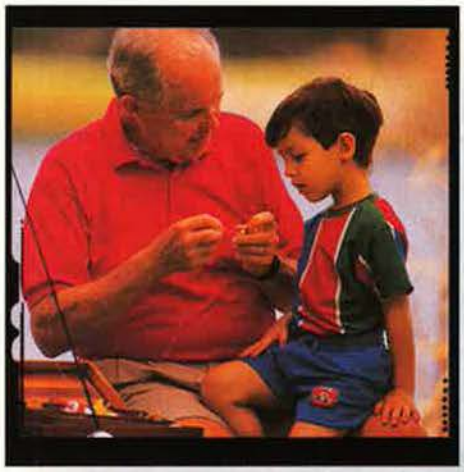

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triad while reducing to 1,500 warheads seems attractive because it preserves the triad and a healthy bomber force. The Trident missiles could be kept at four warheads each by sealing or removing half the missile tubes in his proposed 10-submarine fleet. Any approach which preserves the triad and maintains bomber flexibility is worth considering.

Jim Bunnell
Cedar Creek, Tex.

Air War Korea, 1950–53

I was delighted to see your article *[October, p. 36]* on the Korean War and the chronological history of major events. I would like to inject one event which happened on June 28, 1950, which I believe to have had a major impact on the ground support role of the F-80 Shooting Star.

It was the first official flight of the F-80 with the untested 265-gallon drop tanks and was the first combat mission flown by the 49th Fighter Group. The 9th Fighter Squadron was on gunnery maneuvers at Nagoya, Japan, when the conflict began and they were deployed to Itazuke AB [Japan] on the morning of the 27th. On the same day, 5th Air Force ordered the four sets of tanks which had been built by the squadron maintenance officers of the 7th, 8th, and 9th FSs to be shipped by C-47 to the 9th FS. The purpose of designing and building the tanks was to allow the 49th gunnery team that had won the Far East Air Forces gunnery competition to fly from Misawa, Japan, to Shemya [Alaska], Elmendorf [AFB, Alaska], and then to Nellis AFB, Nev., for the worldwide Air Force gunnery meet (William Tell).

When the paperwork reached the Pentagon "Puzzle Palace" some bright admin troop fired a wire back to FEAF to not allow the tanks to be flown on the aircraft until Wright Field [Ohio] had run a complete flight test program on them. The four sets that were made were obediently stored in the back of a hangar until the North Koreans made their adventure across the 38th parallel. As soon as the tanks arrived at Itazuke they were installed on the four 9th FS F-80s which were scheduled for the first 49th FG combat mission.

The weather on the 28th was so bad that the 8th Fighter Group which was based at Itazuke had to stand down their F-80s, but their group commander ordered the four 9th FS aircraft to take off with the statement to our squadron commander that he didn't care whether they could get back into Itazuke or not. They were needed to fly over Seoul and Suwon. The flight was flown carrying a full load of 50 caliber ammunition for the six machine guns in the nose and two 265-gallon tip tanks. At takeoff, the ceiling was 300 feet and visibility of a half-mile. It was the beginning of a configuration that gave [the F-80] the range and ability to stay on target at low altitude long enough to become the superior ground support aircraft it became.

The weather on the return for those first four aircraft was 150 feet and quarter-mile visibility, and the safe recovery of the aircraft without having enough fuel to use the ground control approach after two hours and 30 minutes in the air was a miracle. The pilots of that flight were Capt. John Salyards, 1st Lt. Tom Carraher, 1st Lt. N.C. "Bud" Evans, and 1st Lt. John Tedder.

The 9th FS also made the first landing and takeoff with full combat load from steel mat runways at [Taegu, South Korea]. The whole group deployed there to begin full combat operations in September 1950. The Pusan perimeter was closing in on Taegu and the F-80s were desperately needed to make short distant strikes against the North Koreans. It also placed the F-80s within range of the Yalu River and even Vladivostok, as mentioned in the article.

Lt. Col. Norvin C. "Bud" Evans,
USAF (Ret.)
Indialantic, Fla.

Unless they have started numbering aircraft engines from right to left the [caption] *[p. 44]* is in error. Your picture shows No. 4 propeller feathered. Not No.1. Thanks for a great article.

CMSgt. James R. Bailey,
USAF (Ret.)
Williamsburg, Va.

Engines are not feathered; propellers are. That's No. 4 engine with its prop feathered, not No.1.

Col. R. J. Powers,
USAF (Ret.)
Shreveport, La.

■ *That's a gotcha.*—THE EDITORS

I have yet to see a mention about the outfit I was assigned to, albeit the life of same was very short. The 1st Provisional Troop Carrier Group was formed at Tachikawa [Japan] and sent to Kimpo airfield, near Seoul, South Korea, the first part of October 1950. We got our hind end kicked out of

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there Jan. 3, 1951, and not by choice.

We were short lived, but we flew C-46s into places that fall and winter that no one else could get into. Some of the aircraft had been taken out of the scrap yards at Kadena [AB, Okinawa] and Clark [AB, Philippines] to be put back into service. Pyongyang, Hamhung, Hungnam, Wonsan, and several airfields carved out of the mountainsides [and designated] with only numbers were on the daily itinerary. Then there was the night we hauled wounded out of a field near the foot of MiG Alley. We helped haul the walking wounded out of the Chosin Reservoir area. The easy part was delivering frag orders to all the tactical groups by courier.

I wonder just how many tons of gas in 55-gallon barrels and how many thousands of rounds of artillery shells we delivered to the front lines? On the way back, we hauled wounded—Army, Marines,and allies.

There are several of us who remember that three months as a very intensive round-the-clock flying experience. I think it is strange that no other member of the 1st Pro has come forth to sing their song!

Lt. Col. Gerald E. Teachout,
USAF (Ret.)
Piedmont, S.D.

On NATO

Why is James Kitfield more interested in protecting the Europeans than they are themselves? *[See "Will Europe Ruin NATO?" October, p. 59.]*

NATO's original mission (for 50 years) was to protect Europe from the Warsaw Pact. We led that effort, paid for more of it than anyone—and rightly so since the Warsaw Pact was a large and world threatening association counter to our beliefs and interests. When the pact collapsed the NATO bureaucracy did not also disappear; it found a new mission. A large part of that mission is to maintain itself and keep Brussels one of Europe's most expensive cities.

NATO today has no large threat which justifies our leading the European branch or our continuing to pay more than our fair share of infrastructure costs. That fair share should be 1/18th. Europe today is more populous than the US, also richer. Almost all of the countries now are democracies, thereby giving the lie to theories, like that of the current Administration, that, if we were not there to protect them, they would immediately restart World War I.

As a former NATO staffer I see no reason we should continue to pretend the original purpose for our role in NATO is unchanged. We foolishly footed 85 percent of the combat cost of Kosovo. In the future we should give them 18 percent of the total they provide and our end should be heavy in transport and support, not combat forces.

It is evident they have no intention of meeting their [European Security Defense Initiative] commitment or of paying for the redevelopment of Kosovo, as they promised. So let's not kid ourselves any longer or create false arguments for why we daren't leave them to protect themselves. Let's call a spade a spade. We did great in leading them until the Warsaw Pact collapsed. Now they should be on their own with minimal help from us, so long as there is no threat, or the only threat is European regional.

We shouldn't be feeling guilty if the Europeans look to be ruining a NATO which is configured militarily primarily to defend them. We should be feeling stupid for volunteering to spend our resources to defend [people] who should be defending themselves. When NATO first was formed, Gen. [Dwight D.] Eisenhower, the first [Supreme Headquarters Allied Powers Europe] commander, said, "If we're still here 50 years from now, this will have been a mistake." He was right.

Bill Barry
Huntsville, Ala.

Misty FACs Return

In 1967–68, I was a public affairs technician (known then as an information technician) assigned to Phu Cat AB, South Vietnam. I've always been somewhat sentimental, but when I read Richard Newman's account "The Misty FACs Return" *[October, p. 64]* I could not hold back the tears.

I reported on the men assigned to the fighter units and Misty FACs that were at Phu Cat, and I've wondered over the years what happened to them.

In the Sept. 25, 1967, issue of the *Crossroads Courier,* our base newsletter, I reported: "Super FACs Hit Enemy Train." Although they were normally confined to performing Forward Air Controller duty for F-4Cs and F-105s or flying [rescue combat air patrol] for downed pilots, Capt. James E. Risinger and Maj. Robert M. Greene found themselves [on one mission] without strike aircraft available to direct in on the target, [which was] a railroad line with a hot engine [with] two cars hooked on behind running up a valley northwest of Quang Khe.

The Super FACs were previously told that Communist activity in the Mu Gia Pass area had been increasing in tempo and, if it was [possible] at all, [they] should go in there. This [was] from Capt. James E. Mack, another 37th Tactical Fighter Wing FAC.

Risinger made just one strafing pass on the locomotive. "It was a head-on pass," he said. "The first few shells hit right in front of it, then they walked up over the engine and cab and right down through the cars," the captain concluded. "I believe we're the first F-100 pilots that have ever hit a train."

And maybe you still are, Risinger, but we were sure happy to see you, Greene, Mack, and all the rest of the Misty FACs return safely to Phu Cat.

Thanks, Richard Newman, for reminding me. And I sure envied those guys on their return trip to Vietnam.

MSgt. Larry Slaymaker,
USAF (Ret.)
Monument, Colo.

In Yeager's Footsteps

Ah, the irony. [After] 22 years active service [and] about 25 years [as an Air Force Association] life member, the first time I get my picture in the magazine, I'm misidentified. *[See "In Yeager's Footsteps," September, p. 46.]*

Guy Aceto did an excellent job of capturing the essence of the Test Pilot School curriculum in his September photo essay. But [on] p. 51, Larry Barrett does, indeed, run the Skylark North Glider School in Tehachapi but did not graduate from the USAF Test Pilot School. The gentleman in the dapper hat and sharing an aerospace moment with the student is me. After spending eight years on the staff of the TPS in uniform, I have been supporting the school as a contracted academic and flight instructor for the past two years.

By the way, the student in the picture is Capt. Chris Morgan, a student test pilot in Class 00A.

Lt. Col. Gary Aldrich,
USAF (Ret.)
Lancaster, Calif.

What a surprise to find a picture of a C-12 on p. 49, flying in formation with an F-16 at Edwards [in the Test Pilot School feature]. The airplane brought back fond memories of my tour [with] Joint United States Military Advisory Group–Thailand during the 1970s.

When I first arrived in Bangkok in 1973, we had one of the last C-47s in the active force. Unfortunately, in the latter part of 1975 the old bird finally gave up the ghost (cracked rivets in a wing root). But we were fortunate in being moved up on the replacement list and received one of the earliest C-12 deliveries. The embassy received #73-1214 and we got #215. Both airplanes were flown from Wichita, Kan., to Bangkok in early 1976 in some 50+ hours. The Beech airplane was a wise choice. It is fuel efficient, comfortable, reasonably fast, and was economical to maintain.

Basically a Beechcraft B200, the military version had a revised cockpit and additional radios but otherwise was a stock airplane off the line. Spar 15 was the last USAF airplane I flew, in a more than 30-year career. It was a true delight and I am happy to see that the old bird is still soldiering on.

Col. Charlie Rose,
USAF (Ret.)
Burkburnett, Tex.

AFIT Under the Gun

The article "AFIT Under the Gun" *[September, p. 54]* by Bruce Callander was a timely reminder of the essential character of technological education to the long-term supremacy of USAF. Similar considerations hold for the Navy, which has been unofficially considering the closure of the US Naval Postgraduate School at Monterey, Calif.

As the author suggests, civilian institutions are sufficiently unreliable that it would be disastrous to base all of the two services' technical education on them. Both institutions should be not only upgraded but brought into a working relationship with each other to maximize their efficiency and effectiveness. The technology overlap of the two services is so great that coordination of the institutions not only can be done but must be done.

Shutting down one or both of the schools to add a few million dollars to force readiness would be literally penny-wise and pound-foolish.

Cmdr. Robert C. Whitten,
USNR (Ret.)
Cupertino, Calif.

Callander's article makes a strong case for continuing the in-residence graduate programs in engineering at AFIT. However, there appears to be no similar rationale or support for in-residence logistics and acquisition management.

AFIT appears to have no significant active role in the logistics and acquisition management community. For example, the Air Force Logistics Management Agency produces the *Air Force Journal of Logistics.*

I recommend that the in-residence logistics and acquisition management programs be eliminated and the remaining AFIT functions be transferred to the Air Force Research Laboratory, where they can expect to get more command support. AFRL would decide how to support the remaining functions (education with industry, civilian institutions, short courses, etc.).

Col. Bill Stringer,
USAF (Ret.)
Beavercreek, Ohio

The Pharmacy Issue

Thanks for the great article in the September issue about prescription drug benefits for retirees. *[See "The Pharmacy Benefit," p. 60.]*

My civilian job is selling Medicare supplements to seniors. Not counting the high premium of most supplements, the most predominant concern [for] seniors is how they are going to pay for the drugs they need to maintain [their] quality of life.

Even the current Presidential race has [focused attention on] the plight of seniors (military or not) who sometimes must make a choice between which medications they will purchase and which they will skip that month due to the high cost of drugs.

I remain under the impression that health assistance for life was a part of my career commitment to the Air Force. It would be nice for a retiree to benefit from the proposals mentioned in the referenced article. Quite frankly, we earned it.

MSgt. Jimmy W. Creekmore,
USAF (Ret.)
Sherman, Tex.

The article by Peter Grier is right on the mark. Another problem I experienced several years ago was the military treatment facility pharmacy dropping long-term medications, i.e., for hypertension, without notice.

Fortunately, I always call in when I have about a week's worth of medication left, so I had time to get a new prescription and take it to a local pharmacy. It's a real problem for others who wait until they only have one or two doses left.

When I asked the pharmacist why they didn't notify people receiving the drug, all I got was a shrug and, "That's not the way we do it." In this age of computers, why can't the pharmacy call up a list of people receiving the medication, print labels, and mail a postcard notice?

Another article in the same [issue] reported that a GAO study concluded DoD and VA could save enormous amounts of money if they combined their drug purchases. That needs to be pursued as well.

MSgt. Boyd A. Hemphill Jr.,
USAF (Ret.)
Enid, Okla.

The news item titled "Should DoD and VA Buy Drugs Together?" *["Aerospace World," September, p. 27]* discussed a possible savings of up to $300 million per year if both agencies banded to buy drugs together. [It said] that rivalries between the two have made it difficult for them to act together.

The item continued that both agencies believe the savings were overstated. The article also noted both agencies citing differences which would also make joint purchasing difficult.

May I suggest that this small item points to what is wrong with our politicized military today? Instead of figuring out what they did correctly to save the money, both agencies immediately jump on why they cannot do it. Rivalries? At football games, perhaps.

As long as [they] keep pointing out what is wrong and expending huge

amounts of energy telling us why things cannot be done, they will never get it done. Why do we not look at what is right and working and figuring out how to keep doing that and doing it better?

MSgt. Gil Bellefeuille,
USAF (Ret.)
Port Orange, Fla.

Rickenbacker

What a pity the inestimable Walter Boyne only spent a couple of paragraphs on Rickenbacker's love affair with Eastern Airlines because he did not paint the right picture about the end of his illustrious life. *[See "Rickenbacker," September, p. 68.]*

Boyne wrote that the collapse of Eastern was caused by Rickenbacker's choice of the Electra, a large turboprop aircraft that too readily came to pieces in flight. But other major carriers also had the Electra in abundance, suffered crashes with it, yet managed to prosper.

The real reason for the downward spiral of Eastern was that it had no less than 14 different types of piston aircraft when the first real jets came on the line. It was joked that there wasn't an airliner that Eddie didn't love. Convair, Martin, Lockheed, Douglas—you name the builder, he had a bunch of each, and the logistics of flying them were horrendous.

The very end for Eastern came years later after Rickenbacker had been replaced by astronaut Frank Borman, who was also unable to control costs.

One thing can be said of Eddie during his Eastern years—he gave a great after dinner speech and he invariably started it off with this anecdote:

"If you ever see a young man puffing a cigar, with his feet on the seat rest ahead of him trying to look casually at home, you'll know he is a first-time flier. If, in turbulence, you see a passenger comfortably reading his *Wall Street Journal* while gyroscopically holding his martini glass without spilling a drop, you'll know he is an old pro. But if you see a white headed old gentleman sweating while frantically staring out of the window, even though it's calm and smooth, you'll know he is one of my deadheading captains!"

George Fulford
Mill Valley, Calif.

What an article on a great American. I'm sure many of those who read it were not aware of some of the personal aspects and qualities of Rickenbacker that were [described].

One personal part of his life which I would have liked to have seen included concerned his ordeal after the B-17 he was in ditched in the Pacific. As the article mentioned, one of the fliers died of exposure while in the raft, a fate they all would soon share if they had not received food or water. It was then that seemingly out of nowhere a seagull landed on the side of the raft just above where Rickenbacker rested his head.

Carefully, he reached up and grabbed the gull, which was immediately butchered and consumed by the survivors. Rickenbacker never forgot that seagull. Later on, retired and living near the coast, one could see him every day at the seashore with a pail in one hand and feeding the gulls with the other. To most folks who saw him, he was just some old fuddy-duddy with nothing else to do. To Rickenbacker, it was his way of repaying an old debt of when a seagull gave him and his fellow airmen the nourishment they needed to survive.

CW3 John Guzman,
USA (Ret.)
Tallahassee, Fla.

Honoring Mistakes?

As I finished the [news item] "F-16 Air Show Accident Report Released" *["Aerospace World," September]* my eyes gazed upon a photo at the top of the page *[p. 29]* [showing] an F-16 being mounted on a display pole.

I was stunned to read in the caption that the aircraft tail number was for the F-16 that crashed at an air show. I thought dedications of this magnitude were to honor heroes or airmen who performed acts of valor.

No disrespect to the family of the departed Maj. Brison Phillips, but why honor someone who lost situational awareness which resulted in a terminal event?

There are so many airmen who've done it right and lost the fight who should be memorialized first. This dedication dishonors them and raises serious questions about who should be memorialized. I guess now Fairchild AFB can erect a B-52 in honor of Lt. Col. Arthur "Bud" Holland for his failed aerobatic maneuver that killed him and three others on June 24, 1994, during an air show practice.

Lt. Col. Mike "Rock" Houser,
USAF (Ret.)
Las Vegas, Nev.

Those Letters Rebutted

R.D. Truitt misses the point. *[See "Letters: Those Letters," October, p. 5.]* Humanitarianism, however commendable, should not be an open-ended justification to commit US military forces where there is no vital national interest involved (if you don't count the poor beggars who have to do the fighting).

I'm not sure whether Truitt's rhetoric about righting grievous and egregious wrongs, protecting the defenseless, and striking down despots reminds me more of King Arthur or Don Quixote. His assertion that regional security in the Balkans is an attainable security objective is highly questionable.

Bismarck expressed a more realistic view of the situation when he said that the Balkans were not worth the bones of one Pomeranian grenadier. How many American GIs is Truitt willing to sacrifice for his noble crusade?

CMSgt. George Reeve,
USAF (Ret.)
Fair Oaks, Calif.

I'm not sure who Truitt is, but it is obvious that he either lacks military experience or perhaps served as a journalist along with Al Gore for five

months. His comments could have easily come from a Democratic Party talking paper on how to abuse our troops.

The US military was not created to perform humanitarian operations around the world. It exists to defend the United States and its allies from hostile aggression. Truitt is quite right; I do believe that the US should only flex its muscle in support of national security objectives.

If we were to employ forces as Truitt suggests, to deal with humanitarian problems around the globe, then we would have bombed Sudan to stop slavery, gone into battle to right "grievous and egregious wrongs" committed against the citizens of Chechnya, or committed troops to scores of other locations around the globe that fit his criteria. As for Kosovo, Truitt must have forgotten already that up until the time President Clinton decided to intervene, the Kosovo Liberation Army was on the State Department's list of terrorist organizations because of their atrocities against Serb citizens. Should we have launched cruise missiles against the KLA first?

Lastly, we still need to ask the question of whether the people of Kosovo are better off now than before our intervention. The answer is no. It will be years until their houses are rebuilt, until they have heat again in the winter. And as the KLA continues to commit atrocities against Serb civilians, the hatred will continue for centuries to come. In the meantime, US forces will suffer even greater readiness problems as more and more troops opt to leave the service rather than spend their lives living in tents around the world for dubious causes.

Lt. Col. James V. Kelso III,
USAF (Ret.)
Peachtree City, Ga.

More Views of USAF Aircraft in Korea

I disagree with [retired Col. William H. Cox's] statement about the mapping. *[See "Letters: Loved It, But," September, p. 11.]* As he stated, the 91st was a reconnaissance and surveillance unit.

Our unit, the 6204th Photo Mapping Flight, had the assigned mission of mapping North Korea from the 38th parallel to the Manchurian border. We were at Johnson [AB, Japan] in the time period he mentioned. We were the four RB-17Gs that had the hangar at the north end of the ramp, which we shared with the South African pilots while they checked out in F-51s.

The photo mapping flight lines started at the 38th parallel. They ran east to west from coast to coast and were spaced four miles apart all the way to the Manchurian border. On a good day, one airplane could photograph 1,000 miles of flight line. With four airplanes, we did not cover all of the area before snow cover made the photographs unusable.

[You] can check with the 5th Army map making unit to see which unit's ID is on the photos used. They were stationed in Tokyo at that time.

Our closest encounter to a firefight was when a Rollerskate, trying to be cute, slid in on our tail with his turrets tracking us, at the time period that we had been briefed that the Chinese might use rebuilt B-29s to infiltrate the North Korean airspace. Navy fighters looked us over when we overflew the "Mighty Mo" one morning. We picked up anti-aircraft fire several times.

I wonder where Cox was the day the 91st B-29 shot out its own nose gear on the ramp at Johnson?

Maj. William J. Harvey,
USAF (Ret.)
Nixa, Mo.

I waited to see if anyone would defend [retired] Col. John F. Sharp about his letter concerning the engines on the F-82G. *[See "Letters: Loved It, But," p. 10.]* You are correct on the engines if you are talking about the "Betty Jo" F-82 (carrying two pilots), developed as escorts for the B-29s. I believe you will find that this is what the Office of Air Force History was referring to in 1978.

I thought that it wasn't important enough to write about, but Sharp must feel that it is. I wonder if the colonel told you that he was the squadron commander of the 4th Fighter Squadron on Okinawa, and on his first flight in an F-82G he flew from Tachikawa, Japan, to Naha, Okinawa, for his first landing? No one would check us out as there was only one set of flight controls. He may not have told you that the F-82s we flew were all-weather fighters, carrying one pilot and one [Radar Operator], also that there were only 300 spare engines in the Air Force. In those days we had one pilot for one airplane. There were 15 aircraft, 12 pilots, and six ROs in the 4th FS when the then–lieutenant colonel took command.

I just wanted you to understand that Sharp knows the F-82G. He may not remember me, but he may remember the young first lieutenant who flew a mission in the F-82 with his wife as the RO. If that doesn't jog his memory, I flew him in my P-61 to Japan to pick up two F-82s. He may

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AFA's Mission

To promote aerospace power and a strong national defense.

To support the needs of the Air Force and Air Force people.

To explain these needs to the American people.

remember because I lost all electric power, radios, and radar after takeoff. I climbed [instrument flight rules], then flew, with the colonel as a passenger in my gunner's seat, using dead reckoning to Mt. Fuji, then let down over Tokyo Bay, and up the river to Tachikawa.

Ben R. Games
Apollo Beach, Fla.

Upon reading the letter from Sharp on the F-82 Twin Mustang in Korea, something clicked in my mind and I dug out my good old *War Planes of the Second World War* book on American fighters and, sure enough, you are both wrong on the engines.

The F-82 used in Korea had Packard V-1650-23/35 Merlin engines with counterrotating props.

I have used this set of books for 30 years and haven't found a mistake yet. I flew P-38s (Gs and L-5s) and P-39Qs in World War II and had several squadron mates go to Korea. The section in this book on these planes has been absolutely and meticulously correct. In particular, the data on the P-38 is the only truly accurate information that I have ever found. I have no reason to believe that they are off on the F-82.

R.E. Stinson
Acme, Mich.

Sharp's letter, correcting the size of the Allison engines in the F-82 Twin Mustang, was, in fact, correct. Whatever your source for the information, it was wrong. The F-82s were powered by the large Allisons. The left fuselage housed an Allison V-1710-143, which turned to the right, and the right fuselage housed an Allison V-1710-145, which turned to the left. Both engines were rated at 2,250 bhp with water injection, although at cruise power they produced right at 1,100 bhp.

Dan Stroud
Oklahoma City, Okla.

■ *Uncle! We apologize to Col. John F. Sharp. To R.E. Stinson: apparently the Packard Merlins were used on early versions of the F-82, not the ones flown in combat in Korea. Thanks to all.—THE EDITORS*

When I first saw the picture of the B-26 in Walter Boyne's article "Air Force Aircraft of the Korean War" *[July, p. 64],* I paid it a cursory glance. However when I looked at it again I realized that the outside port wing was missing. I believe this is the 13th Bomb Squadron aircraft that lost 9 feet 7 inches off the wing when it hit a telephone pole while flying an unauthorized low-level training mission over South Korea in the fall of 1952.

When he hit the pole, the pilot was not sure if the airplane would continue to fly but it did, and he safely landed the aircraft at Kunsan [AB, South Korea].

Colonel LeBailey, the 3rd Bomb Wing commander, was reputed to have said, "I don't know whether to court-martial him or give him a [Distinguished Flying Cross]." At the time, the armistice talks were under way, and the commanders did not want to lose crews unnecessarily, and the B-26s were restricted from flying on the deck.

I don't remember [the pilot's] name, but in civilian life he was a fireman from New York City. Above all I remember his feat of airmanship.

Col. Sigmund Alexander,
USAF (Ret.)
San Antonio

Turf Fight?

I am driven to write this letter by the ridiculous turf fight with the [Association of the US Army] and AFA. *[See "Letters: Another Shot at 'Nine Myths,'" September, p. 6.]* The comment from AUSA, concerning the broken promises of airpower, clearly misstates the obvious!

In the Persian Gulf, the objective was to free Kuwait. As good as airpower is, it cannot remove 450,000 Iraqi troops from Kuwait. The only possibility that airpower could have done it alone would have been if we had turned Baghdad into radioactive glass and then we could have tested Douhet's theories of breaking national will. The only way to remove troops and take territory is to put your people in their snack bar!

The second falsehood was to even insinuate that the Kosovo bombing campaign was strategic! It was just as strategic and as effective as the bombing of North Vietnam—and for the same reason! Targets picked by committee with lax security controls, graduated response, and tactics driven by politics all re-proved why we lost in Vietnam!

A better topic for AUSA to consider might be why it took over a month to deploy Apaches from Germany to Kosovo and why it took six months to build the ground forces for Desert Storm!

We have different military branches to accomplish different objectives and to support different parts of every mission. The Army may have been able to do Desert Storm alone, but at what cost, without the 63 days of airpower "tenderizing" of the Iraqis? The Army general—active or retired—who says they can go it alone is just as stupid as the USAF general who says airpower can win wars alone!

As far as AUSA and AFA go, I would like to suggest that these organizations spend more time caring for the people rather than rewriting history! We are faced with a hollow military [and] sinking morale. What happened to free medical care for life for military retirees? Solve this myth!

Lt. Col. Clifford Smith,
USAF (Ret.)
Pembroke Pine, Fla.

Corrections

In the September issue, the Lockheed Electra was not a turbojet, as stated in "Rickenbacker," p. 68, but a turboprop. We caught that error—too late, but thanks to retired Lt. Col. Tom Garcia of Brunswick, Maine, for writing to correct the record.

In October "Books" on p. 87, the number of pages listed for *The Flying Prostitute,* by Lawrence J. Hunter, should be 234.

Aerospace World

By Peter Grier

Chiefs: Annual $50 Billion–$60 Billion Boost Needed

The US military chiefs have delivered to Congress this message: The country's fighting forces are OK for the moment, the future looks troubling, and the get-well effort can't be carried out on the cheap.

That is the essence of extended Sept. 27 testimony to the armed services committees in the House and Senate. The panels heard from heads of all four services and the Chairman of the Joint Chiefs of Staff, Army Gen. Henry H. Shelton.

The chiefs, under questioning, indicated that the Pentagon budget needs to be boosted by $50 billion–$60 billion per year for the next 10 years. Annual increases included $20 billion–$30 billion for the Air Force, $17 billion for the Navy, $10 billion for the Army, and $1.5 billion for the Marine Corps.

Shelton said the US is prepared to fight and win two Major Theater Wars at more or less the same time, which is the basis of US national security strategy.

However, Shelton went on, the next President and Congress will have to increase defense spending to keep the troops ready and equip them with the kinds of weapons they need.

"We must find the resources necessary to modernize the force," said Shelton.

Shelton's comments were amplified by the other chiefs: Gen. Michael E. Ryan, USAF Chief of Staff; Gen. Eric K. Shinseki, Army Chief of Staff; Adm. Vernon E. Clark, Chief of Naval Operations; and Gen. James L. Jones, Commandant of the Marine Corps.

Though the service chiefs offered hard numbers, Shelton himself mentioned no specific budget figures and said the amount of additional defense spending would depend on the outcome of a planned Pentagon review next year.

Shelton said an overly large chunk of DoD spending is being used to fill gaps in near-term readiness, rather than going to pay for new equipment. "We are, collectively, robbing Peter to pay Paul," Shelton said.

Boeing photo by Ron Bookout

Boeing's X-32A Joint Strike Fighter concept demonstrator lands at Edwards AFB, Calif., after its first flight Sept. 18. Fred Knox piloted the aircraft. It took off from Palmdale, Calif., and went through airworthiness tests, including flying qualities and subsystems checkouts. The X-32A and Lockheed Martin's JSF version, X-35A, will undergo five months of testing at Edwards.

Boeing JSF Makes First Flight

Boeing's Joint Strike Fighter concept demonstrator, the X-32A, made its first flight Sept. 18 from Palmdale, Calif., to Edwards AFB, Calif.

Its planned 40 minutes in the air was cut short to 20 after a chase airplane noticed hydraulic fluid leaking from the aircraft.

Company officials termed the leak "minor," saying they were still able to complete planned tests. After it was repaired, a second flight Sept. 23 lasted nearly an hour and took the airplane to 10,000 feet.

"The airplane is a pleasure to fly," said Boeing JSF chief test pilot Fred Knox.

The flights were the first of a planned five-month test program at Edwards. The program calls for 50 flights, totaling about 100 hours, to validate the Boeing airplane's handling characteristics.

Boeing's JSF test aircraft got into the air earlier than its Lockheed Martin counterpart, but Lockheed officials were quick to note their JSF concept demonstrator is much closer in design to their planned production aircraft.

Boeing has made several changes in its design that are not reflected in its X-32A. It has added horizontal tails and changed its wing shape, among other things.

AEF Cycle 2 Coming Up

As the Air Force neared the end of its first 15-month Aerospace Expeditionary Force cycle, officials are gathering up lessons and implementing changes to improve AEF Cycle 2.

The service launched the Expeditionary Aerospace Force concept Oct. 1, 1999, part of an effort to make the lives of its personnel more stable and predictable.

After the first 10 deployments of the AEFs, officials are pleased with the results. "My general impression is that the Aerospace Expeditionary Force is going very well," said Brig. Gen. Dennis R. Larsen, commander of the AEF Center at Langley AFB, Va. "There are some growing pains, but any time you make a transition that is this major and involves an

Key Senator Opposes New Service for Military Space

Sen. Wayne Allard, a Colorado Republican, serves on the Senate Armed Services Committee and chairs that panel's Strategic Subcommittee, which oversees military space. Moreover, military space is, for him, a major local political issue, given the fact that Colorado is the home of US Space Command, Air Force Space Command, North American Aerospace Defense Command, and numerous space contractors.

At a Sept. 21 session of the Defense Writers Group in Washington, D.C., Allard was asked about the workings of the new, Congressionally mandated space commission and its key issue—should Congress take military space activities away from the Air Force and hand them over to a newly created military service? Allard's response:

"[Sen.] Bob Smith, my predecessor as chairman of the Strategic Subcommittee, has pushed for a separate agency. ... I think that the constraints on our military financially are such that this is not the time to be setting up a new agency, because it just means that much more money gets diverted from some other military needs which I see as much greater—for example, operation and maintenance of our equipment. We are at a time when our budget is severely constrained with the increased deployments that we're having. ... I think it would be inadvisable, at least at this time, to set up a separate space agency, or [give] space a seat on the Joint Chiefs of Staff, or something like that. I think it would be inadvisable. I think you'd set up a whole new bureaucracy, with ranking and commands. We've got better places to put our resources."

organization as big as the Air Force, there are bound to be some problem areas."

As the service moves into its second cycle, the Air Force will be lengthening the deployments of the on-call Aerospace Expeditionary Wings.

"The AEWs will go from 90 days to 120 days, Larsen said.

AEW commanders found that, in 90-day deployments, the wings did not have enough time to recover and then be ready to go back on call.

"This also rotates who is on call for the holiday and summer season," said Larsen.

Early Notification Strengthens AEFs

Improvement in the notification process stands out as one of the EAF's biggest successes so far, said the AEF Center's Larsen.

Prior to AEFs 5 and 6, notifications went out some 15 days before deployment. For the second cycle, which begins Dec. 1, notification comes 120 days prior to the start.

Shortfall rates—the measurement of units unable to carry out their AEF taskings—have also improved.

"We started out with about 3.2 percent of our taskings coming back as shortfalls in AEFs 5 and 6, but currently we're down to 0.5 percent for AEFs 1 and 2 for the second cycle," said Larsen.

With earlier notification, units now have time to make sure they have all the personnel they need to do their assigned jobs. Plus, the number of people covered by the AEF organization has increased. The service has gone from 90,000 to 141,000 AEF–deployable people.

Guard and Reserve units make up a significant portion of this manpower. Ten percent of combat support taskings and 24 percent of aviation unit commitments for the second cycle are filled by Guard and Reserve units.

Pentagon Warily Eyes North Korea

A new Pentagon report, publicly released Sept. 22, holds that North Korea, despite its recent overtures to the West, is still a major military threat that continues to devote a disproportionate share of its resources to armed might.

Pyongyang has deployed large numbers of rocket launchers, artillery pieces, and other weapons along its demilitarized zone border with South Korea, says the report, which is titled "2000 Report to Congress: Military Situation on the Korean Peninsula." It was written at the behest of Congress by US commanders in South Korea and defense intelligence officials in Washington.

North Korean forces have stockpiled more than 500 shorter-range Scud missiles and still makes and fields No Dong missiles able to hit US forces in South Korea and Japan.

Moreover, said the report, North Korea has the ability to produce anthrax and other biological agents and has "produced munition stockpiles estimated at up to 5,000 metric tons of several types of chemical agents."

North Korea "maintains a dogged adherence to a 'military first' policy even against the backdrop of a nation facing severe economic and social challenges," the report states. It says the army is more than just a military organization, serving as "the central unifying structure in the country."

The report concludes that "until North Korea's conventional military threat is significantly reduced and its quest for nuclear weapons is eliminated, the Korean peninsula remains a dangerous theater."

DoD Left Deutch Probe to CIA?

The Pentagon insists it was not reluctant to investigate former Deputy Secretary of Defense John M. Deutch's mishandling of classified information.

Instead, DoD at first thought it best to leave any such probe to the Central Intelligence Agency, officials said Sept. 20. Deutch left DoD to become director of the CIA in 1995.

"The CIA had already started down this road," said a Pentagon spokesman, Rear Adm. Craig Quigley, at a

"Significant Readiness Challenges, Today and in the Future"

From the Sept. 21 testimony of Lt. Gen. Robert H. Foglesong, deputy chief of staff, air and space operations, to the House Armed Services Military Procurement Subcommittee:

"Overall combat readiness is down a total of 23 percent since 1996. Air Combat Command, active duty combat units, led this decline, and their readiness dropped by a sharp 42 percent over the same period. As we strive to keep the readiness of our forward deployed units up, our Stateside units are paying the price as we operate in a limited resource environment marked by multiple contingencies.

"Today, our Air Force men and women and their commanders continue to 'make things happen' by coping with the readiness challenges, despite heavy tasking and tough fiscal constraints. Nonetheless, the mission capable rates for major Air Force weapon systems steadily declined by nearly 11 percent since 1991 to a mission capability rate of 73 percent today.

"Parts cannibalization rates are still very high and indicate increased workload on our maintenance personnel. These indicators continue to point to significant readiness challenges today and in the future."

briefing for reporters. "Rather than duplicating their effort, we felt that the best course of action was to let that professional investigation proceed."

Deutch has admitted that he wrongfully violated CIA rules by writing and storing thousands of pages of classified data on home computers that were also used to access the Internet.

The CIA and the Pentagon have been investigating whether he committed similar violations during his Defense Department tenure.

The Pentagon's internal damage assessment effort began after Secretary of Defense William S. Cohen received a CIA report in February 2000. DoD's inspector general is looking into Deutch's handling of department computers and where those computers now are. Some were disposed as surplus, some ending up at a Baltimore scrap dealer.

Readiness Still a Concern

US military readiness has improved, but in some key areas—particularly manning and training—problems remain, according to the Pentagon's latest quarterly readiness report.

"Most major combat and key support forces are ready to meet assigned taskings, although there are force readiness and capability shortfalls that increase risk in executing operations," concludes the report.

Added funds are helping ease some critical maintenance problems, officials noted. The Department of Defense has added $150 billion to its defense program since the 1997 Quadrennial Defense Review—largely to bolster personnel, operations, and maintenance.

For its part, the Air Force has poured an extra $2 billion into spare parts in an effort to end aircraft cannibalization and increase mission capable rates.

The report judges all the services in three major areas: personnel, training, and equipment. It also highlights joint readiness concerns provided by theater commanders in chief, who focus on areas such as intelligence, surveillance, reconnaissance deficiencies, information vulnerabilities, and the ability to disengage from current operations to meet timelines set for a two Major Theater War situation.

The latest report states that the "risk factors for executing ongoing operations and responding to a Major Theater War are moderate, while the risk for a second Major Theater War is high."

Pilot Discharged Over Anthrax Shots

The Air Force on Sept. 1 discharged another active duty pilot for refusing to agree to an anthrax vaccination.

The pilot, former 1st Lt. Jamie C. Martin, had been assigned to Dover AFB, Del. He was discharged for disobeying an order.

Martin already had taken three shots of the six-shot anthrax vaccination program. He refused to take a fourth shot.

Martin told the *Delaware State News*, a Dover newspaper, that he received his first three shots, at two-week intervals, during August and September 1999, but that he refused to take any more because he became ill from the inoculations.

Martin, according to the newspaper, said, "The first wasn't that bad. It was hardly noticeable. The second gave me some flu-like symptoms for about five or six days, but the third was a real doozy. It put me in bed. ... I had severe headaches and every move was an effort because my body muscles hurt so badly. ... When I was able to get up, I had vertigo and had to grab hold of furniture until the dizziness went away. I also had ringing in my ears and short-term memory loss."

He said the side effects from the third shot continued for months.

Martin was assigned to Dover in June 1999 and was a captain-select, in line to fly C-5 aircraft. He said that, after refusing the fourth shot, his captain-select status was rescinded. He was given an honorable discharge under general conditions but fined $1,200.

F-22 Testing Moves Ahead

The F-22 fighter program by early fall had passed three of nine flight test milestones to be completed this year.

The most recent milestone entailed flight maneuvers with open weapons

Strange Stories About *Enola Gay*; They Just Keep Coming

Reporter Bob Thompson didn't do his homework for his cover story, "The Museum of the American Century," in *The Washington Post Magazine* Sept. 17. His subject was the National Air and Space Museum, so eventually, he got around to the controversy in 1994–95 when the museum planned to use the *Enola Gay*, the B-29 that dropped the atomic bomb on Hiroshima, as the centerpiece in a political horror show.

Thompson didn't put it that way, of course—but then he talked only to one side in the controversy, and he also ignored what his own newspaper had to say about it at the time.

In 1994, *Air Force* Magazine and the Air Force Association brought the museum's plans to the attention of the public, the news media, and Congress. The museum cast the Japanese as victims more so than as aggressors in World War II and took a harsh view of American motives and actions.

The plan finally collapsed in 1995. The ill-fated exhibition was canceled and replaced with one that showed the aircraft and gave a straightforward account of events. The nonpolitical exhibition ran for three years and drew almost 4 million visitors—the most ever for a special exhibition at the museum.

Thompson, however, cites a "notorious" and "heavily politicized struggle" in which the exhibit was "stripped of meaningful content" when a "vehement attack by the Air Force Association sparked a widespread public outcry."

In fact, the "meaningful content" stripped out was claptrap about World War II in the Pacific. "For most Americans," the script said, "it was a war of vengeance. For most Japanese, it was a war to defend their unique culture against Western imperialism."

Although Thompson may not know it, his newspaper came to the same conclusion that AFA did. A *Post* editorial in January 1995 said that early drafts of the *Enola Gay* script were "incredibly propagandistic and intellectually shabby" and had "a tendentiously anti-nuclear and anti-American tone."

The next month, another *Post* editorial said, "It is important to be clear about what happened at the Smithsonian. It is not, as some have it, that benighted advocates of a special-interest or right-wing point of view brought political power to bear to crush and distort the historical truth. Quite the contrary. Narrow-minded representatives of a special-interest and revisionist point of view attempted to use their inside track to appropriate and hollow out a historical event that large numbers of Americans alive at that time and engaged in the war had witnessed and understood in a very different—and authentic—way."

—*John T. Correll*

bay doors at high angles of attack. Raptor 4002 successfully completed this test Aug. 22.

Specific maneuvers included 360-degree rolls and full pedal sideslips. They were intended to test the ability of the weapons bay doors to withstand the stresses of intense pressure changes.

The "F-22 continues to perform outstandingly in all tests that we have performed, and it remains unsurpassed in both its handling and flight performance," said Lockheed test pilot Jon Beesley.

Upcoming milestones include first flight of Raptors 4003, 4004, 4005, and 4006; radar cross section testing; weapons separation testing; and avionics flight tests.

As of Sept. 1, the F-22 had also completed 13 of 19 planned air vehicle ultimate load static tests. The latest static test, completed Aug. 23, was designed to test the strength of the aircraft's midfuselage structure and engine inlet ducts.

USAF photo by Phil Kocurek

The Air Force's first CV-22 lands at Edwards AFB, Calif., on Sept. 18 after a nearly six-hour flight from a Bell Helicopter Arlington, Tex., facility. Maj. Tom Currie was the pilot. The tiltrotor will now undergo two years of testing at Edwards.

Reserve Pilot Killed in Crash

An Air Force Reserve Command pilot was killed when his F-16C fighter crashed near Tulia, Tex., on Aug. 28.

Maj. Stephen W. Simons was assigned to the 301st Fighter Wing's 457th Fighter Squadron, based at NAS Fort Worth JRB (Carswell Field), Tex.

Simons had been returning to Carswell from Hill AFB, Utah, when the accident occurred. The aircraft was carrying an inert AIM-9M training missile but no live munitions or bombs, according to a USAF news release.

Air Force officials said an accident report board has been established.

Edwards Gets Air Force Osprey

USAF's first CV-22 Osprey arrived at Edwards AFB, Calif.—opening the tiltrotor era for the Air Force.

The aircraft, which will be used in

The Air Force Memorial

Congress Grants an Extension

Partly in reaction to a large volume of mail from their home districts, the House and Senate voted unanimously to extend the deadline to build an Air Force Memorial in metropolitan Washington, D.C.

This means the Air Force Memorial Foundation has an additional five years to finish fund-raising and break ground for construction. So far, $24.5 million of the approximately $30 million required has been raised.

Contributors include several aerospace firms and more than 70,000 individual donors, who generated a flood of mail to Congress in support of the memorial.

The project was initially authorized by Congress in 1993 and proceeded in orderly fashion through the numerous procedural and design reviews. A site on Arlington Ridge, adjacent to Arlington National Cemetery and overlooking the Potomac River, was selected, and the proposed design for the memorial received considerable acclaim, including a *Washington Post* report that heaped praise on it.

In 1997, however, a neighborhood group calling itself "Friends of Iwo Jima" began an opposition to the project, on grounds ranging from increased traffic in the area to a claim that the Air Force Memorial would "encroach" on the Marine Corps Iwo Jima Memorial—which is 500 feet up the slope and with a stand of mature trees in between. In time, Marine Corps veterans joined in the objection.

Parties seeking to block the Air Force Memorial brought suit in federal court and lost twice, the second time with prejudice. What the protests did achieve was to slow down fund-raising.

Without the extension, approved by the House Sept. 12 and the Senate Oct. 3, the project would have had to return to the beginning of the process and go through the series of reviews and approvals all over again.

Groundbreaking is now tentatively scheduled for the fall of 2001.

flight testing, is a Marine Corps MV-22 reconfigured into the CV configuration at Bell Helicopter's Flight Research Center in Arlington, Tex. Changes included addition of multimode radar for terrain following and terrain avoidance, auxiliary fuel tanks, and an integrated electronic warfare suite.

The CV-22 is intended to be used by Air Force units dedicated to US Special Operations Command.

"The arrival of this [first] aircraft means combined developmental and operational testing for the US Special Operations Command's No. 1 acquisition priority," said Lt. Col. Jim Shaffer, CV-22 multiservice operational test director.

The test program is scheduled to end in August 2002.

The Air Force plans to replace its fleet of MH-53J Pave Low helicopters with 50 CV-22s. Initial operational capability is set for 2004. The first set of four production aircraft will go to the 58th Training Squadron at Kirtland AFB, N.M., where they will be used for advanced aircrew training.

Fire-Fighting Effort Winds Down

Air Force Reserve Command's support of fire-fighting efforts in the West wound down in September.

Two Modular Airborne Fire-Fighting System–equipped C-130s from the 302nd Airlift Wing, Peterson AFB, Colo., went home after Labor Day, ending a nearly six-week stint of fire fighting. Two C-130s and 49 Air National Guardsmen from the 146th Airlift Wing, Channel Islands ANGB, Calif., also flew home Sept. 5. The aircraft were sent home by the National Interagency Fire Center in Boise, Idaho. The center will rely on commercial businesses to keep up the fire war in the fall.

Since the beginning of the year, 75,089 fires have burned some 6.6 million acres in western states, according to the fire center. By way of contrast, an average year sees 62,435 fires burn about 2.96 million acres.

Guard and Reserve C-130 units have dropped more than 970,000 gallons of fire retardant on fires in California, Idaho, and Montana. The molasses-like retardant is 85 percent water, 11 percent salt, and 4 percent flow conditioners and red coloring agent. It does not extinguish fires so much as inhibit the combustibility of trees and undergrowth.

Missile Defense Cost Goes Up

The projected cost of the proposed National Missile Defense system has gone up, according to its chief military overseer.

Air Force Lt. Gen. Ronald T. Kadish, head of the Pentagon's Ballistic Missile Defense Organization, told lawmakers that total acquisition and lifecycle cost of the basic NMD system would be $40.3 billion.

The estimate covers the program through Fiscal 2028. That estimate, Kadish said in Sept. 8 testimony before a House military subcommittee, includes the $5.7 billion already spent

The Joint Direct Attack Munition–Extended Range is shown on an F-16 before a cross-range flight test at White Sands Missile Range, N.M. The JDAM–ER uses a strap-on wing device called a Diamond Back—a low-cost, high-performance wing kit that increases the JDAM's range and allows attack on multiple, widely separated targets from a single release point.

What a site!

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Daily Air Force News
Benefits Information
Battlefield Accounts

Hardware Guides
Military Gear
Unit Homepages

Visit the trusted online home for the military community.

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In association with
THE HISTORY CHANNEL

on the program and represents a $4 billion increase over previous figures.

Every Airman a Recruiter?

"Get the word out: The Air Force is hiring."

That is what Undersecretary of the Air Force Carol DiBattiste told members of the 81st Training Wing, Keesler AFB, Miss., during a recent visit.

This year the Air Force has begun an intense public awareness program to let school systems, businesses, civilian leaders, and retirees know that the Air Force needs people and has much to offer. The service recently launched a major ad campaign that brings home the Air Force message in movies and prime time, cable, and sports television broadcasts, DiBattiste said.

Enlistment bonuses are being offered in such hard-to-fill areas as mechanical and electronics engineering. The number of recruiters doubled from 800 in November 1999 to 1,600 today.

Retention goals are 55 percent for first-term airmen, 75 percent for second-term airmen, and 95 percent for USAF's career personnel. Current figures are 52, 69, and 91, respectively.

Pay raises, improved retirement benefits, and improved health care should help retention, said the service's second-ranking civilian. "The Air Force is a retention force and if we're going to retain our quality people, we have to take care of our families," she said.

Recruiting Service Sweeps

Not since January 1992 had all 28 of Air Force Recruiting Service's squadrons overshot monthly enlistment contract goals.

They did so in August.

The AFRS units reported signing up from 101.2 percent to 155.9 percent of their contract quotas. The AFRS overall average was 114 percent.

Enlistment contract goals are purposely set higher than actual Air Force personnel needs, noted AFRS officials. That allows for cancellations and a typical 10 percent disqualification rate.

More recruiters, targeted bonuses, and TV ads all helped the AFRS push.

"We should also acknowledge all Air Force people who contributed to this success through the We Are All Recruiters program," said Brig. Gen. Duane Deal, AFRS commander.

Reserve Recruiting Droops

While US armed forces have improved their recruiting for active duty personnel, attracting part-time warriors is proving harder than ever.

The Air Force, Army, and Navy now have all missed reserve recruiting goals for three years running, according to a report in the *New York Times.*

This year is unlikely to see a turnaround. Air Force Reserve Command is projected in Fiscal 2001 to fall 2,000 personnel short of its 11,321 recruitment quota.

The Navy reserve will likely be 4,000 short of its 18,410 goal.

A number of factors are contributing to this shortfall, say officials. For one, the post–Cold War force drawdown means that there is a smaller pool of active duty personnel to try and lure into the reserves when they separate from service. Such recruits have traditionally formed the backbone of the reserve force.

Also, propensity to serve in the reserves is declining. Among personnel leaving the Army, 21 percent now say they would consider the reserves. Four years ago, the figure was 41 percent.

This declining interest may stem in part from a realization that service in the reserves today means much more than weekends and summer camp. From the Balkans to the Gulf, USAF is leaning on reserve units to help carry out its missions. The average USAF reservist served 58 days last year. Aircrews served an average 110 days.

USAF Begins Flight Test of B-2 Upgrades

New B-2 flight tests at Edwards AFB, Calif., will examine upgrades that are intended to improve the operational capability of the nation's stealth bomber fleet.

The first change to be tested will be the application of magnetic radar-absorbing materials on surface panels. The new materials should help technicians by reducing from hours to minutes the time necessary to get at the aircraft systems behind the panels.

Future upgrades to be tested include improved satellite links that will increase communications speed to the point where an entire mission can be uploaded to the aircraft while it is in the air; software upgrades to increase crew situational awareness; and integration of the joint air-to-surface standoff missile.

Team ABL Says Effort Is On Track

The Airborne Laser program is on track to attempt to shoot down a ballistic missile in September 2003, Team ABL officials said Sept. 12.

Col. Ellen Pawlikowski, the program manager, said the ABL is ready to go as it heads toward the engineering, manufacturing, and development stage.

Recently completed tests have validated the ABL's optics, said Pawlikowski. The optics compensate for disturbances in the atmosphere via a deformable mirror. This compensation results in from two to 15 times more energy on target, according to tests.

Modifications on the ABL platform,

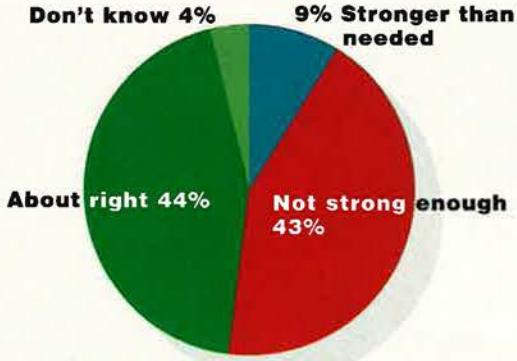
USAF photo by Larry McTighe

During Dover Downs (Del.) International Speedway's tribute to USAF, Gen. Hal Hornburg, AETC commander, swears in 25 enlistees Sept. 24. The USAF NASCAR Winston Cup series car in the background raced in North Carolina in May.

Polls Indicate Public Concern About US Strength

From all appearances, a large part of the public would like to see the US military put on a bit more muscle.

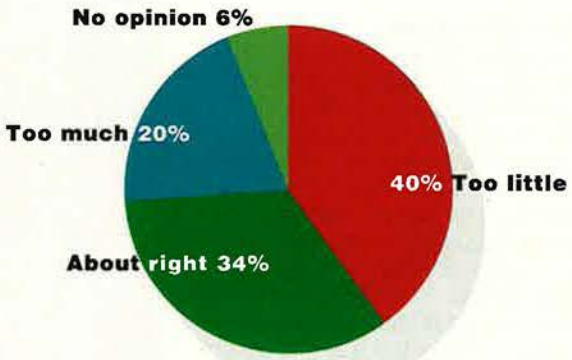
That is the gist of two public opinion polls taken in late summer. One was conducted by Princeton Survey Research Associates for *Newsweek*. The second poll came from the Gallup Organization. In the first poll, 43 percent of Americans said they thought US armed forces weren't as strong as they needed to be. The second poll found 40 percent of the respondents believing that Washington spends too little on military power.



PSRA/Newsweek Poll
(Aug. 25, 2000)

Do you, yourself, feel that our national defense is stronger now than it needs to be, not strong enough, or about right?

Source: Princeton Survey Research Associates, Aug. 24–25, 2000, and based on telephone interviews with a national registered voters sample of 753. Survey Sponsor: *Newsweek*
Data provided by The Roper Center for Public Opinion Research, Univ. of Connecticut.



Gallup Poll
(Aug. 30, 2000)

There is much discussion as to the amount of money the government in Washington should spend for national defense and military purposes. How do you feel about this? Do you think we are spending too little, about the right amount, or too much?

Source: Gallup Organization, Aug. 24–27, 2000, and based on telephone interviews with a national adult sample of 1,019. Data provided by The Roper Center for Public Opinion Research, Univ. of Connecticut.

a used Boeing 747, are near the halfway mark. When finished, the aircraft will have a bulkhead between the crew and the laser modules and chemicals, a 14,000-pound nose turret, and a titanium belly skin to handle and channel out laser exhaust.

Tailhook, the Sequel

Once again, the Tailhook Association is facing allegations of misconduct at one of its conventions.

Nine years ago, riotous behavior and debauched assaults on women at a Tailhook convention in Las Vegas caused the Navy to break off its official relationship with the group, which supports Navy and Marine Corps aviation. The new charge is much less serious, but if proved true, it could still cause the Navy to again sever its Tailhook ties.

The allegations stem from the claims of a married couple that was staying at the Sparks, Nev., hotel that was hosting this year's Tailhook convention. The husband and wife allege that, to reach their room, they had to shoulder their way through a hallway crowded with naval aviators. As they did so, they were subject to verbal harassment, and at least one aviator made inappropriate physical contact with the woman, according to their allegations.

The Navy's inspector general and its criminal service have begun an investigation.

World War II Memorial Moves Forward

A proposal to place a World War II memorial on the National Mall in Washington took a giant step forward Sept. 21 when the National Capital Planning Commission voted narrowly to approve the final design.

USAF photo by MSgt. Val Gempis

Members of Joint Task Force–Full Accounting look around a cave at Marble Mountain, near Da Nang, Vietnam, in September. The task force, formed in 1992, has investigators, linguists, analysts, and other specialists who search for remains of Americans still unaccounted for from the Vietnam War.

Some design issues were deferred. These issues included the plan for a central statue and plans for lighting and roadways. "We are absolutely delighted," said Mike Conley, spokesman for the American Battle Monuments Commission. "It is the culmination of a very long and very public process, and it clears the way for us to break ground on Nov. 11."

Opponents of placing a World War II monument on the Mall argue that it will spoil the open nature of the site and ruin the sight lines toward the Lincoln Memorial.

They also complain that it could infringe on areas where the crowd gathered to hear the Rev. Martin Luther King's historic "I Have a Dream" speech in 1963.

Proponents feel that recognition of the World War II generation is long overdue and that the design is in keeping with the nearby Korean War and FDR Memorials.

"The bottom line is, this is a revered spot where people can come to reflect and learn about sacrifice of their family, neighbors, and friends," said former Sen. Robert Dole, who led fund-raising for the $140 million memorial.

Report Details US Nuke Problems

The Department of Energy has reported that it has had to put off reliability testing of and repairs to major nuclear weapons as a result of problems caused by poor maintenance at DoE weapons facilities.

A new study, prepared by DoE's inspector general, said basic maintenance problems have also set back the schedule for disassembling some older warheads. The report was made public Sept. 26.

According to a Sept. 27 *Wall Street Journal* story, the symptoms of deferred maintenance include leaky roofs and fire hazards. The problems are blamed on budget cutting, with the DoE study estimating it will need an additional $5 billion to $8 billion over 10 years to cope with the backlogs in its Stockpile Stewardship program, designed to keep the US nuclear weapons force effective without testing warheads.

Responding to the inspector general's findings, Madelyn R. Creedon,

Senior Staff Changes

RETIREMENTS: Brig. Gen. Frank J. **Anderson Jr.,** Maj. Gen. Richard C. **Marr.**

NOMINATIONS: To be **Lieutenant General:** John H. **Campbell.**

CHANGES: Maj. Gen. John R. **Baker,** from Dir., Jt. Matters, DCS, Air & Space Ops., USAF, Pentagon, to Asst. DCS, Air & Space Ops., USAF, Pentagon ... Brig. Gen. Kevin P. **Chilton,** from Cmdr., 9th Recon Wg., ACC, Beale AFB, Calif., to Dir., Politico–Military Affairs (Asia–Pacific & Middle East), Jt. Staff, Pentagon ... Maj. Gen. Daniel M. **Dick,** from Cmdr., 13th AF, PACAF, Andersen AFB, Guam, to Dir., Strategy, Rqmts., & Integration, JFCOM, Norfolk, Va. ... Brig. Gen. Stanley **Gorenc,** from Vice Cmdr., 5th AF, PACAF, Yokota AB, Japan, to Cmdr., 9th Recon Wg., ACC, Beale AFB, Calif. ... Brig. Gen. Michael A. **Hamel,** from Dir., Rqmts., AFSPC, Peterson AFB, Colo., to Dir., Space Ops. & Integration, DCS, Air & Space Ops., USAF, Pentagon ... Maj. Gen. Theodore W. **Lay II,** from Dep. Dir., Politico–Military Affairs (Asia–Pacific & Middle East), Jt. Staff, Pentagon, to Cmdr., 13th AF, PACAF, Andersen AFB, Guam ... Brig. Gen. (sel.) Dale C. **Waters,** from Chief, AF Colonel Matters Office, Pentagon, to Vice Cmdr., 5th AF, PACAF, Yokota AB, Japan. ■

deputy administrator for defense programs at the Energy Department, wrote that the agency agrees. She said that while the problems haven't harmed the reliability of US nuclear weapons, "we face a number of challenges if we are to meet future requirements."

The maintenance problems were found at two DoE facilities, one in Amarillo, Tex., and the other in Oak Ridge, Tenn.

News Notes

■ World War I Navy Yeoman Frieda Mae Hardin, the nation's oldest woman veteran, died Aug. 9 in a nursing home in Livermore, Calif. Hardin was 103 and had been a featured guest speaker at the October 1997 dedication of the Women in Military Service for America Memorial at Arlington National Cemetery.

■ Heavy rains exceeding 23 inches caused major flooding at Kunsan AB, South Korea, during the period Aug. 24–27. Numerous base facilities flooded in the record downpour, and service personnel had to work with Republic of Korea army troops to clear mud slides from the primary road between the base and Kunsan City.

■ The Dec. 15, 1999, crash of an Air Force HH-60G helicopter in Kuwait was caused by pilot error, according to an accident report released Aug. 28. The HH-60, assigned to the 332nd Expeditionary Rescue Squadron, was on approach to a desert landing zone when it made a hard touch down and rolled to its side. The pilot had allowed the helicopter airspeed to drop too low, according to the report. The crew sustained only minor injuries.

■ A Navy inspector general report has found that naval aviation is suffering from serious training and financing problems and that many lower-level personnel do not believe Navy leadership will address their issues. A lack of training in use of precision guided weapons, for instance, led to a less-than-optimal hit rate in Kosovo during last year's air campaign, according to the Navy inspector general.

■ The Federal Aviation Administration is investigating a report of a Sept. 7 near miss between a United 757 and an F-117 from the 410th Flight Test Squadron, Edwards AFB, Calif. The F-117 was not in stealth configuration and was flying according to FAA rules at the time of the alleged incident.

■ The only surviving World War I Army Air Corps pilot celebrated his 104th birthday Aug. 14. Retired Lt. Col. John Potts, who lives today in a Sarasota, Fla., retirement community, also served in World War II and the Korean War.

■ On Aug. 31 a T-6 Texan II trainer assigned to the 12th Flying Training Wing, Randolph AFB, Tex., crashed just south of San Antonio. The aircrew, which was on a familiarization flight and conducting instrument procedures at the time, ejected with minor injuries.

■ US 3rd Air Force, based at RAF Mildenhall, UK, was granted Honorary Freedom of the Borough by the St. Edmundsbury council in an Aug. 27 ceremony. The honor—the first ever granted an American military unit—allowed 3rd Air Force to "parade through the streets of the borough with fixed bayonets, regimental band playing and colours flying," according to the proclamation.

■ The 400th Missile Squadron, F.E. Warren AFB, Wyo., has been named the best missile squadron in the Air Force for 1999 by winning the Association of Air Force Missileers' General Samuel Phillips Award. The squadron is the only Peacekeeper unit in the Air Force.

■ On Aug. 23, a Boeing Delta III rocket successfully placed a data-gathering simulated payload into orbit. Instruments from the 9,500-pound satellite were to provide information to further validate baseline data on launch vehicle performance.

■ Elmer E. Mooring Jr. was presented with the Civil Air Patrol Brewer Award during the national conference of the CAP in San Antonio on Aug. 19. The award is given for contributions in providing aerospace education to young people.

■ The 30th Airlift Squadron and 374th Aeromedical Evacuation Squadron recently completed a historic mission—the first humanitarian mission flown by the US Air Force into Communist China. The mission to Shanghai IAP returned an 83-year-old quadriplegic to her home. The woman had been living in the US and suffered a fall that broke her neck last April.

■ On Aug. 17, a Titan IVB successfully launched a classified payload for the US Air Force and the National Reconnaissance Office. It was the second Titan IV launch of the year and the 30th overall. ■

John Frisbee, 1917–2000

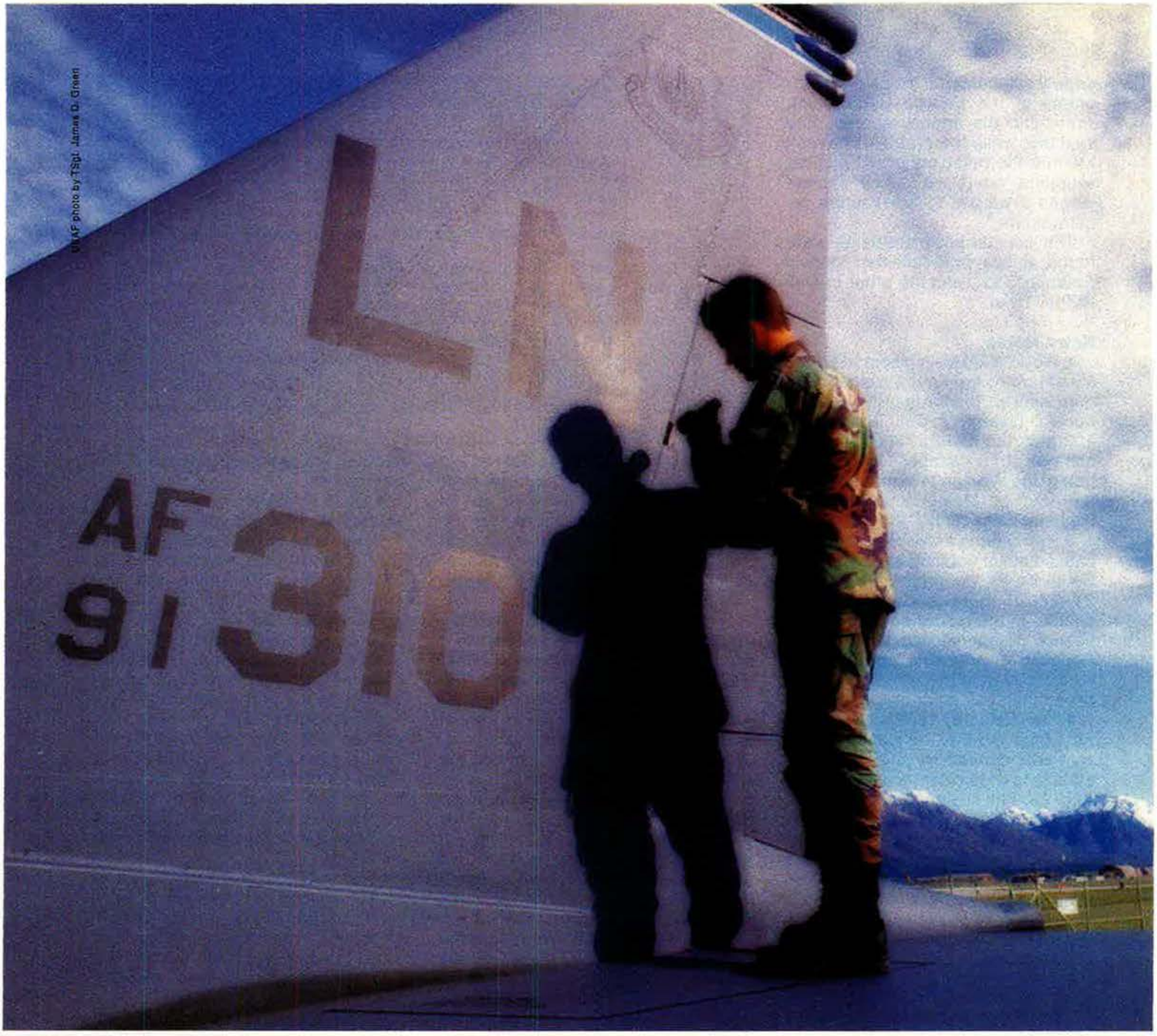
John L. Frisbee, 83, longtime author of *Air Force* Magazine's "Valor" series, died Aug. 26 in Marshall, Va. He was buried in Arlington Cemetery.

Frisbee was a combat pilot in World War II, taught at West Point, was head of the History Department at the Air Force Academy, and retired from the Air Force in 1970 after extended service in the Pentagon. He then came to *Air Force* Magazine, rising from senior editor to executive editor to editor before his second retirement in 1980.

In 1983, he began his third career at age 66, taking over "Valor"—a monthly series about heroism in aerial combat—which he wrote until his health forced him to stop in 1998. Frisbee's "Valor" is recognized as the best and most extensive body of work anywhere in the world on Air Force heroism. All 176 of his articles are available on the World Wide Web at www.afa.org.

In 1987, Frisbee edited *Makers of the United States Air Force*, published by the Office of Air Force History.

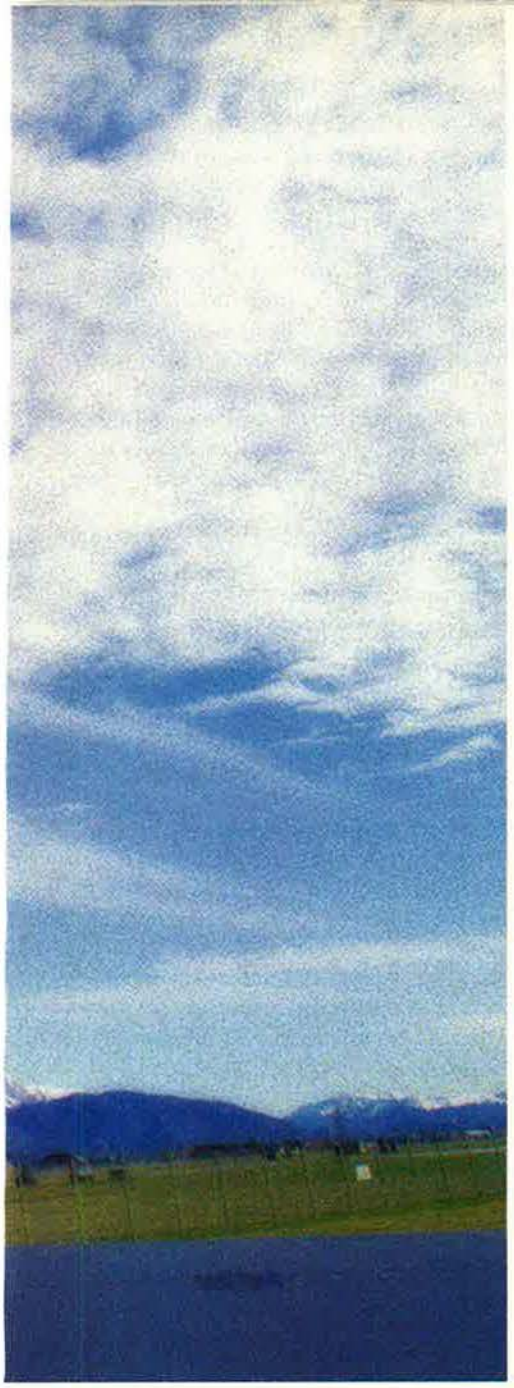
Index to Advertisers



USAF photo by TSgt. James D. Grieri

The Air Force's largest overseas command still is recovering from the stresses of Allied Force.

The Fighting Force in Europe



Mission capable rates for USAFE aircraft are running higher than for Stateside units. However, the Air Force still doesn't have enough spares to guarantee the flexibility it wants. Here, A1C Kenneth Randall checks over an F-15E, based at RAF Lakenheath, UK, but deployed to Aviano AB, Italy.

By John A. Tirpak, Senior Editor

GEN. Gregory S. Martin, head of US Air Forces in Europe, says his command today falls far short of the level of precision guided munitions it would need to be able to conduct another Major Theater War such as Operation Allied Force. Restocking the bins that were depleted by that 1999 air campaign over the Balkans could well take up to a decade, he added.

Precision guided and standoff weapons have become the "preferred" munitions for conducting aerial attacks, but only one-quarter to one-third of the required number actually is on hand, according to the USAFE commander.

Martin delivered his views in a September interview with *Air Force* Magazine and in extended remarks to the Defense Writers Group in Washington, D.C.

USAFE is, "in the precision weapons area, [at] about 25 percent of the need we would have in a Major Theater War in Europe," Martin reported. Funds in the pipeline would, within a few years, raise that level to "50 to 60 percent" of requirements, with the remainder to be funded in the out-years.

"That's a general view of where I would say our precision ordnance is now," Martin added.

He also discussed readiness issues confronting USAFE, technology efforts under way by allies, the nature of NATO war planning in the post–Cold War era, the availability of training ranges, and his perceptions of what NATO allies think about continued US military presence in Europe.

The shortfall in precision guided munitions stems from two main factors. First, only PGMs were used in the early phases of the Balkans conflict, when pinpoint accuracy was considered critical. Stocks—which were not at full levels to begin with—were drawn down rapidly. Second, continued success of precision weapons in conflicts throughout the last decade has caused USAFE to rethink the question of how many of the smart munitions it needs to fight a war. It wants more.

The Joint Direct Attack Munition, for example, was still technically completing its test phase when it was called on for the Balkans conflict. The satellite-guided weapon consistently performed better than specification, typically hitting within a few feet of its intended impact point in all weather, and strike planners clamored for as many JDAM missions as they could get. Halfway through the 78-day conflict, JDAMs had to be rationed for critical targets requiring the munition's unique capabilities.

Robbing Peter ...

USAFE "may actually have enough to prosecute three months' worth of war" if it tapped rounds slated for test and training as well as those held in reserve for another conflict close on the heels of the first, Martin noted. These other rounds would be pressed into operational service. However, when they were gone, "then there wouldn't be [any] ... left over."

USAFE would have to "ask some of the other theaters to provide weapons if we're in a Major Theater War," Martin admitted.

The calculus of how many weapons are needed is conducted under a process called the Non-Nuclear Consumables Analysis, he explained. The NNCA is "a method by which we determine what the right numbers of each type of weapon are and ultimately where they should be distributed," he told the DWG, "but those numbers change based on our experience."

The high degree of success achieved by PGMs, coupled with an increasing intolerance for stray weapons of any kind, means greater and greater reliance on them, explained Martin.

"Before, we used [precision guided munitions] for specialized targets" and used general-purpose bombs—of which "we have plenty"—for the bulk of airstrikes, said Martin. "What we're finding now is the kinds of targets we want to go after now require more precision."

"The numbers of weapons that we want—we haven't achieved those inventories yet," Martin said. Pro-

curement rates have been increased, but the total number desired may take "five to 10 years to ultimately procure."

One key program is to upgrade the many laser-guided bombs in the inventory with Global Positioning System capability. This improvement will allow a precision strike mission to go forward even if the target area is obscured by smoke or bad weather, thus improving the speed and efficiency of an air campaign.

Martin also eagerly anticipates receiving the new Joint Standoff Weapon. This stealthy glide bomb will be able to carry the BLU-108 sensor fuzed weapon, which can target many ground vehicles at once, and "will become very important," said the USAFE chief. "They will begin to help us with the mobile target business."

The BLU-108, he explained, lays down "a pattern of ordnance that will destroy moving targets." The JSOW is in production but has not yet entered the inventory in significant numbers.

A key lesson of Allied Force was that NATO allies needed to more aggressively pursue the acquisition of precision weapons for their inventories, and Martin said that is happening—slowly.

"With respect to filling up their stores, ... we're seeing that they are spending a certain amount of resources to try and replenish, particularly, those precision weapons," he said.

However, he added, "It's going to take years—several years. And they're working very hard to make the most prudent decisions that will have the most bang for the buck, because they have fewer bucks."

"White Paper" Exercise

After the Balkans war, Martin noted, the UK raised its defense budget by about $3 billion, but "that doesn't appear to have been the case in many of the other NATO countries."

Martin contended that the allies over the last two years have gone through a "white paper" process—that is, an analysis of defense forces and requirements.

"Most of those reports ... tend to talk about reduced size and force structure," he noted.

Shortfalls in allied air forces included precision weapons, command-and-control systems, and secure communications. Martin said, "They will also tell you that they are short in the area of tankers and lift and they are not able to pursue some of the actions they'd like to pursue without using American lift and tankers. Those are the areas that I think they've felt a little behind in." He added that "I think they are pursuing many of those areas but not quite as rapidly as we are."

With the exception of the UK, he continued, "I think almost all of the [NATO partners] have either reduced their defense budget or have flat lined it, and there are no indications that they are willing to turn that around and spend more money on some of these programs" that need attention. And, observed Martin, "They'd rather not just 'buy American.' They have an industry ... that must be sustained."

However, he pointed out that most of the allies are keeping up with modernization of systems, noting that the F-16 partner countries had recently installed the midlife update, which blends the maneuverability of an F-16 Block 15 fighter with the displays and avionics of a Block 50.

"Those guys are good," Martin said of the Allied forces equipped with these systems. "When it comes to training and proficiency ... there is absolutely no question" about the commitment of NATO allies. "They've got good systems [and] they are proud of them. ... They are ... very professional."

Mission Capable Rates Up

The munitions situation aside, Martin said USAFE is in good shape, in terms of readiness. Mission capable rates of USAFE aircraft are running higher than that for Stateside bases, though he admitted that USAFE gets "a little higher priority in terms of the effort for spares and parts," so that the European–based units get a "full complement."

The mission capable rate for USAFE aircraft is "very close in many of our areas" to the Air Force–wide standards. The standard for fighters is 80 to 85 percent. Maintaining such a rate means that, within a day or so, given a surge effort, "somewhere between 90 and 95 percent" of aircraft can be brought to bear in a conflict. Dropping too far below the 80 percent level "slows your reaction time," Martin asserted. The 80 percent level is "about right" in that it doesn't overstress the workforce, he added.

Air Force–wide, Martin said, fighters have a mission capable rate of 75 to 80 percent. The C-5 fleet is about 60 to 65 percent mission capable, well under the standard of 70 to 75 percent. The C-130 force is at 75 to 80 percent in overseas locations, lower in the States. The C-17s are "significantly higher; they're doing fine."

The decline in spares that characterized most of the 1990s has been "arrested," Martin said.

"We have not turned the corner and

USAF photo by TSgt. Cary Humphries

The Balkans operation highlighted the need to add even more precision to US and NATO strike capabilities. The Joint Standoff Weapon here will add stealth and range to precision attacks, and USAFE units will likely get them first.

filled up the spares to the point where we have the flexibility that we want," he cautioned. "Some units are in pretty good shape. Others don't quite have enough to give them the confidence that they can pursue a major activity for a length of time ... without having to pull from other units."

Martin said the Air Force leadership simply failed to foresee the onset of the spare parts problems that plagued USAF in the mid-1990s. He was frank to acknowledge that he was a part of that leadership. He explained that the Air Force in the post–Cold War years began to draw down from 36 wings to 20 wings, which meant "we had lots of parts left over." The remaining force was able to live off of these parts for quite a while, and the Air Force did not have to put much money into operations and maintenance accounts. At the same time, additional people were available to fix airplanes.

"While opstempo was going up, we had excess people, we had excess parts, and these were very capable people that disguised the fact that we were running out of those parts," Martin explained. "It wasn't until 1995 that we bottomed out and began to see the parts were gone, the people [were] gone, the opstempo was up, and we [were] in pretty big trouble."

Even so, it was hard justifying a strong reinvestment in spares because diligent ground crews continued to work around shortages and turn in better mission capable rates on their aircraft. Martin noted that, without "unimpeachable data" to point to, it was difficult to raise alarm about the spares shortages.

"There is a reluctance to say the sky is falling, until you have really got the facts there to establish it," he said. "We are taken to task every time we make an exaggerated statement."

Recovery funding got "turned on" in about 1996, but there is generally a two-year lag time between funding for spares and the time they begin showing up in parts bins. In 1998, spares began arriving, but then operations began to heat up.

In Allied Force, "we flew a year's flying hours in two-and-a-half months," Martin said, putting a major dent in the progress toward recovering readiness.

Projections for readiness and mission capable rates looked rosy in 1998, but the Balkans conflict and the ongoing strikes against Iraq have blunted the healing power of the added funds.

USAF photo by MSgt. Blake R. Borslc

Martin believes the US military is welcome in Europe, but issues such as availability of ranges continue to challenge the relationship. These jets from the 52nd Fighter Wing at Spangdahlem AB, Germany, go far afield for low-level work.

Diversion of Funds

"We basically got the system turned on," said Martin. "It started responding and then we used up that surge for the war. ... Now, we are not ahead of the game. We have arrested the decline. ... We are not filling up those spares and war reserve materiel stocks as quickly as I think the 1998 projection would have led you to believe."

He said that "we are probably a year behind in our readiness recovery" due to combat action in Yugoslavia and Iraq.

Readiness, however, is more than just spare parts and munitions. Martin added that his people, while highly capable and proficient at what they do, are suffering from two problems: a shortage of mid-level supervisors and neglect of USAFE installations throughout the 1990s.

The supervisory ranks are "thinner than we'd like," and the problem is being worked by accelerating the training and promotion of some junior people as well as by putting funds into retention programs.

When the armed forces began to be drawn down in the early 1990s, very little money was applied to shoring up European facilities, because no one at that point knew which ones would be closed, Martin explained. As defense budgets grew tight, plus-ups in the budget added by Congress went mainly to home districts, not to overseas locations.

Now, though, he says members of Congress who have seen the problem in firsthand visits are giving support to halting the decay of USAFE bases.

"We've gotten great support from both the Administration and Congress in our family housing program, and in the military construction, we are beginning to turn the corners," Martin asserted. The troops feel they are being noticed again, he said.

"The people over there, now, they have a pretty good attitude about where we are going," said Martin. "People are seeing that the country is behind them, and it is making a difference." Martin pointed to gains in retirement and pay, medical coverage, facilities refurbishment "and now, very importantly, education" as strong motivators helping with retention.

He noted that USAFE enjoys better retention rates than other commands. One reason is that some airmen are on controlled tours of duty and therefore cannot retire out of USAFE. Also, the hot job market that attracts many is an ocean away in the US. Finally, USAFE people get great satisfaction from being on the front lines, performing a mission "where they feel they are making a difference," said Martin.

USAF photo by SrA. Delia Castillo

Germany–based C-130s are among the busiest in the Air Force, stitching the far-flung USAFE command together with hauls of everything from engines to mail. The C-130s also participate in allied paradrop missions, such as this one.

Today's Scenarios

Martin said NATO and USAFE no longer plan for war with Russia as such. Today's war plans have "nowhere near the elegance of the set piece" plans that had been drawn up for a possible world war in Europe against the forces of the Warsaw Pact.

"We are still in a period ... of definition and transformation," Martin said, from a posture of pure defense of NATO territory to one of "out of area" operations in places such as the Balkans.

NATO still does some planning for generic scenarios against a possible peer competitor "that may look a lot like ... Russia or China," but "it's fairly dangerous to announce that you have decided to do some deliberative planning against a specific country [with whom] ... you're now fostering a relationship."

Instead, NATO conducts "an appropriate series of exercises" that works the command-and-control sinews of the alliance and refines tactics, techniques, and procedures while not directing it all against any particular threat.

He reported recently returning from NATO Air Meet 2000, in which Poland played a large air role for the first time.

There are scenarios for out-of-area action, Martin acknowledged, and there has been "what if" consideration given to how NATO would react to conflict between Serbia and Montenegro, but Martin emphasized that NATO's "focus is not pre-emption."

In the Balkans, if there was some sort of a "flare-up" NATO has contingency plans for "what kind of air commitment that the NATO Alliance should provide and have on call or in theater."

Martin believes the new members of NATO that are strapped for cash and need new systems to better integrate with the allies would do well to team up and buy systems together.

"Cooperative development is an area of opportunity that industry needs to grab onto and make it work," said Martin. "That gives us the best opportunity for interoperability, at the most reasonable cost for everyone."

Buy Together?

He said the places where the alliance would benefit from coordination in buying single systems together are those where no one country has a solution yet to a technological military problem. However, the new members could save significant amounts in support and operating costs if they would buy something off-the-shelf.

"There are six nations right now that are looking at a supersonic interim fighter" and are considering the Swedish Gripen, the US F-16 and F/A-18, and the French Mirage 2000.

"What if they all came together and chose one, and industry supported that? Then, all of a sudden, their ... costs go down [in] ... software integration, their weapons certification, their training, their depot, their ... sustainment."

Martin held out the NATO Airborne Warning and Control System and the F-16 aircraft multinational efforts as good examples of how NATO can coordinate on systems, but he added, "I've got to be real careful when I use those examples, because it makes it look like I'm saying, 'Buy American.' " In fact, he said, he's more interested in interoperable, capable systems than that they be of any particular type.

Martin will be launching a series of symposia, including alliance members and "industry from all over the aerospace world," to "see if we can get some of these juices flowing for the potential of coalition."

He also noted that the former Warsaw Pact nations may have a harder time doing cooperative projects because of their experience in the Cold War.

"NATO is a significantly different animal than the Warsaw Pact," he said. Whereas NATO has evolved with an elaborate—and sometimes tortuous—set of multilateral and bilateral arrangements between member countries, the Warsaw Pact members typically worked only with Moscow.

"The Soviets seemed to work on more of a bilateral basis with each of the countries, and [they] did not necessarily coordinate, communicate, and cooperate among themselves," Martin observed.

To get the new member countries to cooperate, there will have to be constant confidence-building measures and "a constant drumbeat and a demonstration and a series of successes," Martin said.

Mobile targets and advanced, "double digit" surface-to-air missiles continue to be the biggest operational challenge to USAFE, Martin said. For four or five years, he said, the Air Force has been working on technologies for hitting mobile targets—like Scud launchers and anti-aircraft missiles. The same techniques for finding Scuds apply to hunting mobile SAMs. He noted, "You pattern them, you look for a footprint, you look for ... their ma-

neuvers, movements, their signals, and you cue the systems."

Part and parcel of the mobile targets challenge is Martin's biggest headache: trying to lash together the various sensors, command-and-control systems, surveillance and reconnaissance assets within the command to form an integrated picture of the battlespace.

Martin noted that his predecessor, Gen. John P. Jumper, now commander of Air Combat Command, first voiced this problem and has provided money in an effort to solve it. This fall's Joint Expeditionary Force Experiment was focused on trying to resolve the issue. It highlighted the fact that the air operations center is becoming a weapon system in its own right.

However, said Martin, "you've got to be careful that you don't turn your whole Air Force upside down for that one objective, because if you do, you'll miss some other very important areas."

In a broader sense, Martin is grappling with disparate intelligence, surveillance, and reconnaissance systems throughout NATO. The various systems are "stovepiped," he said.

"It is not integrated, fused, and displayed in a holistic way." He said work is proceeding on a NATO airborne command-and-control system "which will ultimately be in all their air operations centers and be connected to our battle management platforms." This, he said, is an example of the alliance "trying to come to a common solution" on a hardware issue where no one country has solved the problem, yet.

The Way, Not the Will

Martin expressed his concern with the notion that airstrikes can be targeted against an enemy's "will" to conduct war. Rather, he believes the emphasis should be on depriving the enemy of the ability to make war—and leave it up to him as to whether he wants to capitulate.

"I'm going after his capability to prosecute war," said Martin. "He'll make up his mind later if he's going to prosecute the war or not. I'm not going to guess about whether this will affect his will."

Targets that matter most, Martin said, are communications, command-and-control nodes, ground forces, ammunition storage, and manufacturing areas—and industry, if it is critical to an enemy's ability to operate as a nation and produce war materiel.

For Martin, a serious emerging problem concerns finding good ranges for pilot training. Very little flying training is done in Germany anymore. Ever since the Cavalese accident (in which a Marine EA-6B aircraft sliced through the cable of a mountain tramcar, killing 20 Europeans), range training in Italy has become a "sensitive" subject, Martin said.

He said USAFE pilots get range training in Morocco, Poland, Turkey, and the UK and lately have been getting good training at the Kuchyna range near Malacky airfield in Slovakia.

Denmark has opened up to more training opportunities and hosted this year's NATO Air Meet 2000, which Martin likened to a Red Flag exercise. Norway will host the event next year.

USAFE provides the forces behind Northern Watch, the no-fly zone operation over northern Iraq. As a result, USAFE watches Iraq very closely, said Martin, but "we haven't seen changes in movements that are things we haven't seen before."

Operations Northern and Southern Watch have made frequent strikes against provocative systems that endanger aircraft patrolling the no-fly zone, Martin said.

"I think we have been very effective at reducing significant numbers of ... his missile systems," he added. However, Saddam Hussein is, overall, "probably not significantly different [in capability] than where he's been."

Europeans are more receptive to having Americans garrisoned in their nations than they were in the 1970s, Martin said.

At that time, "we had many more Americans over there than we do today. We had just come out of the Vietnam War, and there were nations there that did not support what we were doing" in Southeast Asia.

"It's different today," he asserted. Efforts at producing an outside–NATO European Security and Defense Identity so far have not borne fruit. The Europeans he encounters say, " 'We need you,' and 'We want Americans here.' " They never then say, " 'And we want them to behave,' ... but that's implied."

The Europeans also say they want Americans "to be agreeable to [their] way of doing things," Martin asserted.

"Americans have a tendency to be very aggressive in terms of leadership positions. But in the end, it's my impression that most of the nations I've dealt with are glad we're there, want us to be good guests, believe that we enhance security, but they don't want us to try to control them." ■

USAF photo by SSgt. Mitch Fuqua

Deployed for range training in Slovakia, SrA. Esther Solhiem keeps the "book" on the 510th FS, Aviano–based F-16 for which she's a crew chief. The mission markings along the airplane attest to its combat service over Yugoslavia.

The Secretary of the Air Force says his successor will inherit a stout force—and many serious problems.

A Heads-Up From Whit Peters

By Peter Grier

THANKS to the Presidential campaign, readiness has gotten lots of attention in recent months. That is fine with F. Whitten Peters, President Clinton's last Secretary of the Air Force.

Anyone who cares about defense of the US should welcome debate on the state of its military, Peters said in an address to the Air Force Association's National Convention. The trick, Peters warned, is to avoid polarizing the debate along partisan lines.

Peters's remark clearly referred to charges by Texas Gov. George W. Bush that readiness had slipped badly in the Clinton years—a charge with which many, though not all, analysts agree.

In Peters's own estimation, however, today's Air Force is prepared to fly, fight, and win against any foe. Men and women of the Air Force proved it last year in Kosovo, he said, just as they continue to prove it every day over Iraq.

"So, if you ask me today whether the Air Force is ready, I can answer unequivocally, Yes," Peters declared Sept. 13.

He went on, "There may be those who, armed with reams of data, will disagree with this assessment, but I don't think you will find Slobodan Milosevic or Saddam Hussein among them."

That said, Peters conceded the future holds vexing problems which the next Secretary of the Air Force cannot avoid.

Of all the problems that will land on the desk of the next Secretary, none is more pressing than "recapitalization." Current trends in personnel and maintenance costs may be squeezing the service's ability to pay for modernization and replacement of its equipment at the very moment such steps have become critical.

Peters pointed out that personnel costs are increasing at a rate of 1.5 percent a year, in real terms. This year, growth will be even greater. Meanwhile, operations and maintenance spending is already at a historic high as a percentage of the defense budget, and it, too, is growing at a rate of 1.3 percent a year in real terms.

Moreover, the Clinton Administration's switch to Tricare, the Pentagon's managed care health program, gave the military a onetime savings, but now the program is subject to the same medical inflation rate as the civilian sector.

The overall budget is not inexhaustibly elastic. Every dollar spent on maintenance is a dollar not spent on the F-22, or the Joint Strike Fighter, or some other new weapon system or badly needed piece of equipment.

"In this case, we're not robbing Peter to pay Paul," warned Peters. "We're robbing Peter to pay Peter."

Airlift Shortfalls

Strategic airlift remains a difficult area. The service will not become less expeditionary—indeed, the opposite is more than likely to be true. Yet the Air Force cannot meet current wartime lift requirements without accepting risk—and future requirements are growing.

"We do not today have an executable plan to meet those growing needs," said Peters.

The C-17 production line is fully funded only through 2002. Service leaders say they are working on a plan whereby commercial C-17 sales could keep the line open and lower the airplane's price, but that plan is still far from reality. The Senate is looking at an industrial fund for stra-

tegic airlift, but that plan is no closer to fruition.

"This is a high-priority problem that needs a solution," said Peters.

Simply maintaining today's force of strategic weapons poses a difficult predicament.

Consistent with the terms of the START II treaty, the Air Force has envisioned replacing aging Minuteman warheads with more modern warheads removed from decommissioned Peacekeeper ICBMs. However, delay in implementation of the strategic arms accord has kept such a switch in abeyance. Current law prohibits Air Force reduction of its nuclear forces to Start II levels, meaning it cannot currently replace Minuteman warheads. And they are getting to be terribly expensive to keep up.

"The cost to extend the service life of the existing Minuteman warheads is roughly equal to the gross domestic product of Texas," said Peters. "We need a bipartisan policy and legislative solution to this problem."

The next Air Force Secretary will also find that military space has become so important to America's national security that some people believe space forces and issues should be handled by a separate service.

Indeed, a Congressionally mandated commission has been investigating such alternatives and is due to report its findings early next year.

USAF's Space Effort

Peters finds this notion troubling and hard to fathom. Today, he pointed out, the Air Force provides 90 percent of the nation's military space budget and employs 95 percent of the people who do military space work.

Peters further pointed out that space is the only part of the USAF budget that kept growing during the lean years of the 1990s. This year, sustainment and modernization of space and missile forces will account for 31 percent of the Air Force's budget authority, he noted. And in five years, 55 percent of the service's science and technology budget will be devoted to the space mission.

Warned Peters: "To drive an artificial wedge between air and space today will almost certainly ensure that we exploit neither to its fullest in the future."

In the general category of military space, the specific issue of satellite communications remains a problem. Each of the armed services—not just the Air Force—has begun to assume that fast, reliable data transfer will provide the means to achieve information and decision dominance in the future. However, the "pipelines" that support this transfer—namely military Satellite Communications systems—may not be large enough to support the effort, said Peters, nor will commercial systems be available to take up the slack.

"As we field SATCOM–intensive systems like Global Hawk and the unmanned combat aerial vehicle, our existing transmission capabilities will be sorely tested," observed the Secretary. "And even if these systems don't saturate our capacity, [the communications demands of] the 'digital Army' surely will."

The Air Force also needs a better approach to its earthbound Information Technology systems, said its civilian chief. The service has far too many different servers and networks and personal computer systems and such. The Air Force network community needs to consolidate.

Moreover, explained Peters, many commercial Information Technology systems are based on the assumption that bandwidth is both cheap and readily available—something that is not always true in the Air Force's overseas locations.

"In the IT arena, we are moving fast, but we haven't really begun the journey," said Peters.

The service's physical plant, on the other hand, suffers from an excess of capacity. As Peters tells it, too many bases translate into too many buildings poorly maintained.

"I know, as you do, that we need at least one more round of base closures, perhaps more," said Peters. "We simply have too many buildings, too many heating plants, and too many runways [for a force of the current size]. It is like working in a room from which the air is being slowly pumped. At first you may not even notice it, but sooner or later the lack of oxygen makes you woozy and it eventually kills you. This drain of resources by unneeded infrastructure is slowly asphyxiating us, making it impossible for us to do what we need to do on the bases we need to keep."

Congress, however, has put the subject of base realignment and closure off-limits at least until 2002.

The Essence of Readiness

At the AFA convention, Peters used much of his address to deal with the question of readiness. He claimed the issue cannot be solely defined by statistics. In fact, said the service's top civilian, he could, by making selective use of data that flows over his desk, "prove" either of two contradictory propositions—that the Air Force *is* ready or that it is *not* ready.

According to Peters, any meaningful discussion about readiness should go behind the numbers and start with some difficult questions: Ready for what? At what cost? And with what degree of risk?

"When you do that, you'll find an Air Force that is strong and ready to respond to the missions it is likely to be asked to carry out," said Peters. "It is now and will continue to be the world's premier aerospace force. Dig still deeper and you'll find an Air Force that has shed its Cold War organization and is evolving to face the kind of threats that will dominate the new century. The undeniable truth is this: We are prepared today to fight and win against any enemy anywhere on the face of the globe."

Inevitably, any discussion of the state of the Air Force returns to the question of spending and proper levels of Pentagon budgets. Peters went to some lengths to provide context for how and why the DoD budget got to today's low point, which compares to the post–Vietnam and post–Korean War retrenchments.

"To understand where we are today," he said, "I think you have to understand how we got here. As you all recall, shortly after Desert Storm, our Soviet foes practically melted before our eyes, like the wicked witch in 'The Wizard of Oz.' This left us with a historic opportunity to reclaim some of the enormous budgets that fueled our defenses during the Cold War.

"The so-called peace dividend was born. President Bush, President Clinton, and successive Congresses—Democratic and Republican—all approved steep declines in defense spending in an effort to cut the massive budget deficits that were plaguing the country a mere decade ago."

(Defense analysts can and do question Peters's version of events. For one thing, the Soviet Union imploded in December 1991 and, by that time, DoD already had suffered through six straight years of declining budgets and was into its seventh. The Soviet collapse did accelerate the budget decline, but the record is clear that Congress forced Bush to accept defense cuts that went far deeper, far more quickly, than he wished. Finally, President Clinton significantly cut Bush's defense program. Example: Bush's "base force" concept called for maintaining a fleet of 26 Air Force fighter wings. The Clinton Administration lowered that number to 20 wings.)

Down by 40 Percent

Overall, the budgets for DoD and for the Air Force have dropped by about 40 percent from their Cold War height in 1985. This has had a deep and lasting effect. Active duty personnel were being offered early retirement as late as 1997, when Peters was confirmed as undersecretary of the Air Force.

The cuts were the right thing to do, but they created real turmoil, Peters told AFA. By making the reductions with voluntary retirements and discharges, the service ended up with serious personnel imbalances.

"Today in the Air Force, ... we still have broken career fields [ranging] from security forces, to crew chiefs, to public affairs and pilots," said Peters.

In the early years of the decade, pilot production was halved, to 550 new pilots per year. Because the services thought the force drawdown would provide an enormous windfall of spare parts and components, purchase of these items was scaled back dramatically. The service converted to two-level maintenance and closed two of its five big maintenance depots.

"Again, these were the right things to do conceptually, but viewed with 20/20 hindsight, there were many slips in execution," said Peters.

Take depot closures. Such a closure requires a major effort, involving the transfer not just of hundreds of jobs but also of heavy industrial equipment and whole production lines. Indeed, the Air Force is still hundreds of people short at two depots.

"The most serious aircraft readiness problems we had last year were caused not by lack of funds but by our inability to move depot production lines on schedule," said Peters.

While all of this was going on, the service was called upon to fly and fight over northern Iraq, southern Iraq, Bosnia, and Serbia, as well as support numerous humanitarian operations.

By the time Peters moved into the Air Force civilian hierarchy, concern was focused on three key issues: the faltering retention of skilled enlisted personnel, pilot shortages, and declining mission capable rates.

Money has gone some ways toward fixing all these problems. The Defense Department budget path has flattened out in the last few years and even turned up a bit. Service personnel received their biggest pay raise in 20 years. Retirement benefits have been returned to former levels. Bonuses of all sorts have been increased. The Air Force forged the Expeditionary Aerospace Force concept to help deal with its operations tempo problem.

Pilot Production Is Up

Pilot production has been ramped back up to about 1,100 pilots per year. This latter accomplishment was not easy. It required years to train new instructor pilots, put more training aircraft on the flight lines, and figure out how to use Guard and Reserve units to augment active duty trainers.

Some pilot training changes are still in progress. "For example, we have just opened undergraduate pilot training at Moody AFB [in Georgia], but students won't actually start training there for about another year," said Peters. "Before we can declare victory, we need to field the T-38C and the first units of the T-6 [Joint Primary Aircraft Training System] aircraft."

The expenditure of an extra $2 billion for parts and repairs has helped on the mission capable front. Cannibalization rates have gone back down. Back-ordered spare parts are down by 50 percent since last year. The number of engines for which the service lacks war reserves has dropped from 11 to six. "Of the remaining six, most have never been and will never be at war-readiness levels, because we have accepted some risk," said Peters.

Money cannot solve all these readiness problems, however—or, at least, not right away.

No matter how big the stores of spare parts, it takes trained airmen to install them, and the Air Force is experiencing a shortage of five-level maintenance workers.

"Money is not the issue; the issue is it takes time to build experience," said Peters.

It is true that by some measures Air Force readiness is lower than it was at the end of the Cold War. In May 1991, the service's aggregate aircraft mission capable rate was about 83 percent. Today, that figure has fallen to 73 percent, roughly the same as the rate that USAF had in the mid-1980s.

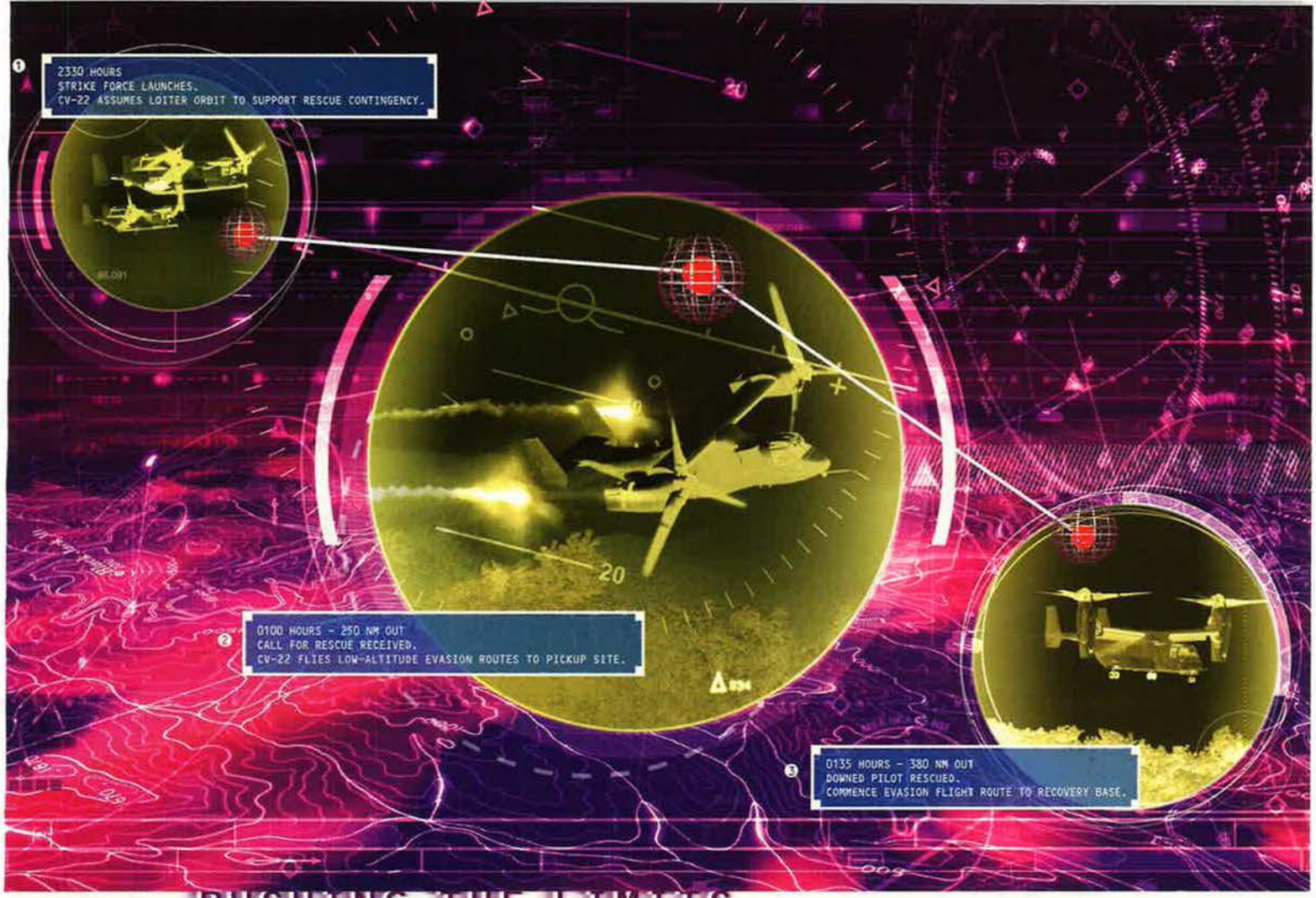
Such statistics are not always reflective of the true state of affairs. Even before budget increases began flowing last year, the Air Force managed to boost the mission capable rate of aircraft directly supporting operations in Kosovo to 90 percent or better.

As Peters sees it, the choices that lie before the next Air Force leadership will be stark.

The US could accept reduced readiness levels. It could adjust its national military strategy to one that calls for something less than the ability to fight two nearly simultaneous Major Theater Wars. It could reduce its global commitments. Or it could choose to pay more for its defense.

"We have already started down this road [of raising national defense expenditures], but I submit that we will need to do more," said Peters. "In the end, this is an American decision, and it is also an unavoidable decision. Even if we do not make an explicit choice, we will have chosen by default to pay more for national defense while receiving less." ■

Peter Grier, a Washington editor for the Christian Science Monitor, *is a longtime defense correspondent and regular contributor to* Air Force *Magazine. His most recent article, "The Pharmacy Benefit," appeared in the September 2000 issue.*



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The old tank units have big problems, but can the lighter alternative survive and win?

The Army Ponders Its

HAD Operation Allied Force become a ground campaign, the US Army would have been a long time arriving to fight in Kosovo.

Early in NATO's 1999 air war against Yugoslavia, the Army put an armored task force into adjacent Albania, but the main routes from there into Kosovo were fraught with obstacles. Chief among them were 12 bridges, 11 of which were too spindly to support the Army's 70-ton M1 Abrams tanks.

Classified studies estimated that reinforcement of those bridges would have taken four heavy engineering battalions a full four months of nonstop work, according to Maj. Gen. B.B. Bell, chief of the Army's Armor Center at Ft. Knox, Ky.

"It would have totally telegraphed what we intended to do," said Bell. "We had a tank that was incompatible with the infrastructure it came up against."

For at least a decade, the mobility limitation of the Army's most powerful weapon has been one of war planners' gnawing concerns. The M1 Abrams tank was built to outgun Soviet tanks on the plains of central Europe; on NATO's eastern rampart, bridges, autobahns, and other rights-of-way were designed or redesigned to make sure the behemoths could get to the fight quickly.

Not so in the rest of the world. Even during the 1991 Persian Gulf War, when the M1 devastated the Iraqis' Russian–made T-62 and T-72 tanks in engagement after engagement in open desert, war planners saw vulnerabilities.

"Everybody was nervous as a cat," recalled Bell, who was the executive officer to Gen. Norman Schwarzkopf, the commander in chief of coalition forces in Desert Storm. "Had we been forced to go to Baghdad, many of the bridges and causeways [in Iraq] would not have been able to handle our tanks."

The Cupboard Was Bare

The Kosovo war made the problem unavoidable. When Army planners looked for ways to rush a ground force into Yugoslavia, they considered sending the elite 82nd Airborne Division. That idea was nixed. The paratroopers could have dropped into Kosovo within days of an "execute" order. However, the Army concluded that they lacked the firepower to stand up to Yugoslav armor and might have been overwhelmed before relief arrived.

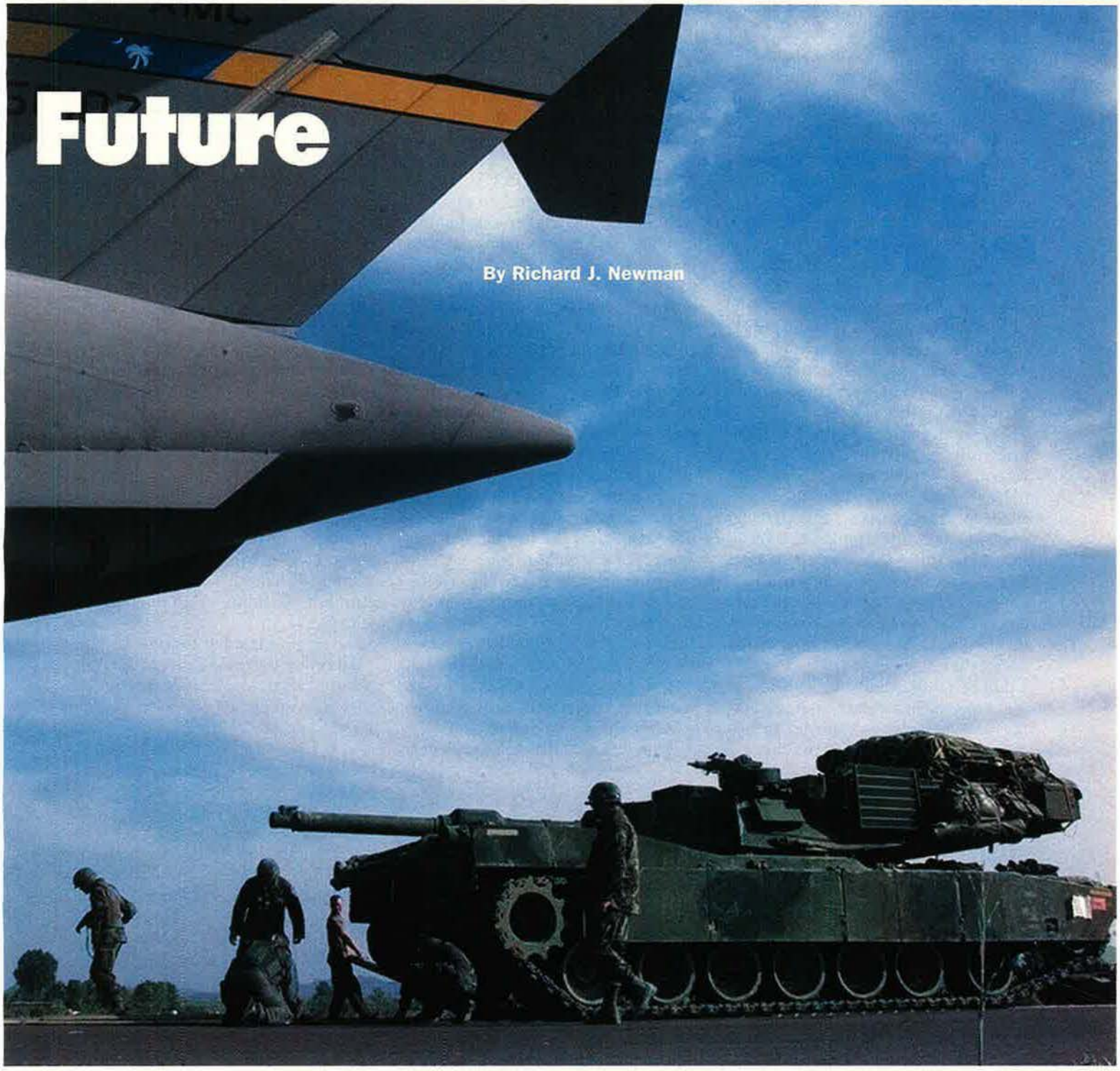
Deployment of the Army's heavily armored powerhouse units would have taken weeks. Rapidly deployable infantrymen would have been outgunned. In between, the Army had nothing.

That predicament has produced a set of reforms the Army calls Transformation. First announced by Gen. Eric K. Shinseki, the Army Chief of Staff, in the fall of 1999, the principal goal is to develop a number of units that can deploy to a conflict nearly as rapidly as light infantry but with enough combat power to take on an armored enemy force.

USAF photo by SSgt. Chris Steffen

Future

By Richard J. Newman



Toward extinction? *The main battle tank long has been the king of land combat, but the reign of heavy armor may well be ending. Here, soldiers prep a 70-ton M1A1 battle tank for loading on a C-17 transport.*

"When ordered, we intend to get to trouble spots faster than our adversaries can complicate the crisis," Shinseki declared a year ago. "We will erase the distinctions, which exist today, between heavy and light forces."

Shinseki wants the new units to be well-equipped for peacekeeping and other low-intensity missions but to be able to hold their own in combat as well. His goal is to deliver one such "medium-weight" brigade anywhere in the world within 96 hours, a division within 120 hours, and five divisions within 30 days.

Making that happen is a daunting task, to put it mildly. Critics inside and outside the Army say Shinseki's change is too marginal, too dependent on unproven technology, and may ultimately leave the Army with less combat power than it has now.

One such critic is Andrew F. Krepinevich, a retired Army officer who now serves as executive director of the Center for Strategic and Budgetary Assessments, a Washington, D.C., think tank. "It sounds like this thing isn't supposed to fight," said Krepinevich. "It's just supposed to get to Albania in four days. They ought to be given a pat on the back, but there are a lot of holes there."

For one thing, analysts have noted, the Army hasn't clearly stated what the new units are supposed to accomplish. Then there is the cost of transforming the Army—more than $70 billion over the next 10 to 20 years—which could soon collide with other high-profile military programs in all of the services.

An Army brigade equipped with M1 tanks can't deploy within 96 hours unless it is falling in on equipment that is already in place. An M1 does not fit on a C-130 cargo airplane—the Pentagon's most plentiful transporter. The C-17, the only other USAF cargo aircraft capable of landing on unimproved airfields, can indeed haul an Abrams, but only one at a time. Kosovo demonstrated that there are not nearly enough C-17s to meet all of the demands for airlift during a conflict. At the time the Army asked for C-17s to move tanks from Germany to Albania, the airlifters were engaged in delivering supplies to uprooted Kosovar refugees and supplies and support equipment to USAF units, which actually were doing the fighting. The Army ended up waiting.

From this experience, the Army has concluded that it must field a new combat vehicle that will perform like a tank but fit on a C-130. That has led the Army to acquire a new set of interim combat vehicles, each of which will weigh no more than 20 tons. With the lower weight comes vulnerability. A 20-ton tank will not have enough armor to stop most anti-tank rounds and even some smaller caliber weapons.

That vulnerability changes everything—from Army fighting doctrine to the morale of troops.

Discomfort

"I'm not comfortable dropping down in something where, with one shot, I can be killed," said 1st Sgt. Donald Norman, deputy commandant at the NCO Academy at Ft. Knox. "We're tankers. We jump in this big iron beast and we're invincible. Now, you put me in this thing where I'm not necessarily the baddest guy on the block. I'm concerned."

Army wargames show those concerns are justified. When the Army first ran simulations pitting medium-weight brigades against the Yugoslav Army, on Kosovo terrain, the results were alarming.

"In the first few runs, the loss ratios were pathetic," observed an Army officer involved with the tests. "They were like 1-to-1. We prefer 10-to-1 and even much greater."

Since Army forces were unable to survive first hits from Yugoslav tanks, they suffered heavy losses in ambushes while they moved through ravines and other choke points in the rugged Balkan terrain. The thin-skinned medium-weight vehicles also took a pounding from enemy artillery.

The simulated drubbings revealed a number of new concepts the Army would have to incorporate into medium-weight brigades. The vulnerability of the 20-ton fighting vehicle to a first shot means that the new unit will have to find and kill enemy tanks, artillery, and other armor defeating weapons before they can target US vehicles.

That makes intelligence gathering and target acquisition—the Army calls it situational understanding—a higher priority than ever, and this came through loud and clear in the wargames. Said an Army officer who helped shape the games, "We dramatically increased the number of UAVs [Unmanned Aerial Vehicles], to make sure there was nothing going on we didn't know about."

The Army has established a two-track process for integrating those insights into the force.

First, Army plans call for constructing as many as seven interim combat brigades that will rely on new combat vehicles instead of tanks. The initial unit is scheduled to be ready to deploy by 2002. Second,

US Army photo by Spc. Christina Ann Horne

Iron beast. *Soldiers (such as these in South Korea) say the power of a battle tank makes them feel "invincible." Wheeled vehicles will make it over more rickety bridges and into more airlifters, however.*

the Army is ramping up research and development on a new Future Combat System that is supposed to begin replacing the M1 by 2012. Designs are vague, but the Army hopes the FCS will be the backbone of a force that is three times as effective as the current Army with just one-third the sustainment.

"Tough Mark on the Wall"

Michael Andrews, the Army's chief scientist, conceded that the plan is "a very tough mark on the wall."

The first two interim brigades are being fielded at Ft. Lewis, Wash., where the 3rd Brigade of the 2nd Infantry Division swapped out all of its M1s earlier this year. The battalion commanded by Lt. Col. Dana Pittard memorialized the moment with a ceremony in which the troops stood in formation as the tanks were turned in. Family members came. As the last two tanks rolled past, the soldiers saluted. "There was a lot of emotion," said Pittard. "As a tanker, you live and breathe armored warfare."

Not any more. Formerly a mechanized armor unit, Pittard's battalion is now a new kind of intelligence unit which will serve as the lifeline for the interim brigade. The Reconnaissance, Surveillance, and Target Acquisition Squadron will consist of about 400 soldiers whose primary job will be to keep tabs on the enemy. They'll be equipped with two UAVs and a full load of other sensors and gizmos for tracking enemy movements and rapidly communicating the information to the main force. "Never before has this much intelligence been concentrated in a brigade," said Pittard.

The RSTA squadron's mission is similar to that performed by a cavalry unit: It patrols ahead of the main force, seeking out the enemy. But its methods will be fundamentally different. "We do the reconnaissance missions of a cavalry squadron," explained Maj. Jody Petery, executive officer of the squadron. However, he said, without tanks, "we lack oomph. We don't have the tanks, the Bradley [fighting vehicles], or the Apache [attack helicopters] to do security operations."

That is forcing a change in longstanding Army doctrine. Instead of "movement to contact"—in which the ground force fights the enemy wherever he encounters him—the interim brigades will "make contact, but by means other than stumbling into them and being fired upon," said Petery. The scouts, in other words, will above all attempt to remain stealthy while they transmit intelligence on enemy movements back to brigade headquarters. If fired upon, they will report the action and fall back.

US Army photo by SSgt. Milton H. Robinson

Lighten up. *Army troops on Kosovo peacekeeping duty. Shinseki wants a "medium weight" force fast enough to rush to a distant flare-up but strong enough to hold its own in combat when it arrives.*

The rest of the brigade—consisting of three mechanized infantry battalions, along with artillery, engineering, and anti-tank units—will fight differently, too. Since the new fighting vehicle will be at a disadvantage against an enemy's tanks, it will have to fight from a distance, or with surprise, if it is to prevail.

"You don't want to stand up and fight in a conventional war," said David Estes, deputy director of the Mounted Maneuver Battlespace Lab at Ft. Knox, where the new brigade structure has been extensively tested. "You'll have to pick your fight."

New tactics will include hiding or maneuvering rapidly in order to strike opposing vehicles, such as the T-72, in the side or rear, to avoid a head-on confrontation where the interim vehicle might have to absorb a fatal first strike.

The Army expects that the new unit's combat advantage will come not from firepower but from information. The brigades will rely upon a system of satellites, UAVs, soldier reports, and other intelligence tools to provide a common and detailed picture of what's happening on the battlefield, in near real time, to commanders at every level.

Information Supreme

"If you can internet overhead and ground sensors, your ability to understand the situation rises geometrically," said Maj. Gen. James M. Dubik, head of the Army's Transformation program. Army officials expect that such information superiority will enable commanders to gather intelligence and act on it so quickly that a rapid tempo of operations will make up for any firepower shortfalls.

The 3rd Brigade doesn't expect to start getting the new vehicles until 2001, so for now they are practicing with surrogates—a number of light armored vehicles on loan from the Canadian armed forces. Precise tactics and doctrine will only be established once the new vehicles are in place and maybe not until the brigade is actually deployed. "It will be hard to see how this will work until we actually use it," said Estes.

That remarkable degree of uncertainty and the trade-offs that come with downsizing from the Abrams to a replacement less than one-third its size have provoked widespread criticism.

The new brigade "is undergunned and not survivable," complained one armor officer. "This is a static outfit incapable of concentrating significant combat power."

USAF photo by SSgt. Chris Steffen

The beast in the belly. ***The C-17 (shown here) is the only USAF cargo aircraft that can both carry an Abrams and land on an unimproved strip. The airlifter can haul only one big tank per trip, however.***

Rich Sinnreich, a retired US Army colonel who played an enemy commander in the Army's showpiece wargame last spring, said, "We're counting more on information than we have any right to." Sinnreich said that, in the wargame, he flooded the friendly force's sensors with information—almost all of it false.

Information will be such a crucial weapon that the high ground may be reserved not for combat forces but for computer technicians. Under a concept commanders at Ft. Lewis call "maneuvering the network," the goal of the brigade's movement will be not to gain the best fighting positions but to position the brigade's command-and-control vehicles, radio relay platforms, and other computer processing equipment in the best spot for transmitting and receiving. It's a daunting concept. "Cisco [the computer-networking company] has told us no company in the world is trying to set up this kind of Internet," said Col. Tony Coroalles, chief of staff for Transformation.

Krepinevich argues that the Army should be experimenting with a number of different force designs, tailored to the kinds of conflicts the Army is likely to encounter in the future—one for urban warfare, another for deep strike missions using precision artillery and attack helicopters, and perhaps a third operating in an environment where the enemy has cut the logistics tail.

The Army's own analyses confirm that it still has numerous holes to plug. A wargame run by the Army's Training and Doctrine Command showed that, in addition, to being vulnerable to an armored assault, the interim brigades have other weaknesses. The unit's heavy reliance on counter-battery artillery, for instance, required more battlefield sustainment than is programmed into the brigade. That means the unit could become overdependent on big supply depots that are increasingly easy for an enemy to target.

Lack of Lift

An August study by the General Accounting Office, a Congressional watchdog agency, pointed out that the Air Force does not have enough airplanes to meet the Army's airlift requirements, a fact that raises questions about the logic of designing a force for 96-hour deployment.

The report also pointed out that the Army's new deployment timelines depend heavily on the Air Force and the Navy.

Army leaders remain unfazed. "The lift allocation is a function of the crisis," said Dubik. "It will be there if the crisis is big enough."

Dubik further disputed claims that the new brigade is undergunned. "This brigade combat team would have no difficulty going against an up-armored enemy in the right terrain," he insisted. "I'd take it to Korea and dare a mechanized force to attack it. I'd use the RSTA battalion and the anti-tank units to set up ambushes so that armor would not have a chance." The same would hold true for Kosovo, he said.

Fighting with these outfits in the Iraqi desert, with fewer terrain features, would be tougher. Army analysis shows that, in Operation Desert Shield in late 1990, the new brigades would have been a more effective screen than the troops of the 82nd Airborne. Even so, said Dubik, "I wouldn't counterattack with it."

The Army calls its new brigades "interim" because it has grander plans. The service hopes that, by 2012, it will be able to field a Future Combat System that is as durable and lethal as an M1 but deployable as the 20-ton interim vehicle. Even though research and development contracts would have to be signed by 2003, Army scientists haven't yet sketched out the details.

Some broad concepts have emerged. The Future Combat System will probably be a network of several vehicles. A system of UAVs may gather targeting data, then transfer it to an unmanned rocket or missile launcher. A human controller may be in a third vehicle, somewhere behind the front lines, to OK all weapons launches.

Making those components survivable against the armor penetrators on the market in 2010 will require some breakthroughs in armor technology. One concept is "active armor" that will automatically sense when a round is inbound and send out sheets of flak to deflect the weapon. The Army may also experiment with ceramics and other high-tech materials.

"The scientists told us at first, we're not sure [the new penetrators] can be defeated," said Bell. "Now, they're saying it's feasible."

If there's a note of encouragement in that, it's that the odds are probably better than the prospect of getting an Abrams tank across a Balkans bridge. ■

Richard J. Newman is senior editor and Pentagon correspondent for US News and World Report. *His most recent article for* Air Force *Magazine, "The Misty FACs Return," appeared in the October 2000 issue.*

Air Force Historian Richard Hallion demonstrates that ground commanders no less than airmen have found airpower to be the critical element in battle.

Airpower, From the Ground Up

THE following is excerpted from "Quotable Quotes on Airpower From the Perspective of Surface Commanders and Political Leaders: From the 'Great War' to Allied Force," compiled by Air Force Historian Richard P. Hallion.

■

"I hope none of you gentlemen is so foolish as to think that aeroplanes will be usefully employed for reconnaissance from the air. There is only one way for a commander to get information by reconnaissance, and that is by the use of cavalry."

—British Gen. Sir Douglas Haig, summer 1914, addressing the British Army Staff College. Within three months, World War I's First Battle of the Marne and the Battle of Tannenberg had been decided on the basis of information furnished via aerial reconnaissance.

■

"[Australian air attacks] exacted the most frightful sacrifice from [troops], severely damaging their morale. The feeling of helplessness in the face of the enemy fliers instilled a paralysis in both officers and men. The columns of savaged artillery pieces, automobiles, and motor transport, together with shattered wagons, horses, and men, blocked the road in many places."

—German Gen. Liman von Sanders, commenting in his postwar memoirs on Australian air attacks against Turkish and German troops at the Wadi el Far'a in Palestine in September 1918. With resistance shattered, and with Turkish communications knocked out by an airstrike on the telephone exchange at Nabulus, Turkish forces fell back in confusion. Damascus surrendered by the end of the month and the Ottoman Empire a few weeks later.

■

"[In World War I] aircraft became an offensive weapon of the first order, distinguished by their great speed, range, and effect on target. If their initial development experienced a check when hostilities came to an end in 1918, they had already shown their potential clear enough to those who were on the receiving end. ... We do not have to be out-and-out disciples of Douhet to be persuaded of the great significance of air forces for a future war and to go on from there to explore how success in the air could be exploited for ground warfare, which would in turn consolidate the aerial victory."

—German Maj. Gen. Heinz Guderian, comment in 1937. Guderian became the father of the blitzkrieg used in World War II.

■

"The air force has become the hammer of modern warfare on land. ... Aviation gives modern battle a third dimension. ... Modern battle is the fight for cubic space."

—Ferdinand Miksche, a Loyalist infantry officer in the Spanish Civil War and postwar military commentator, writing in 1942.

■

"[At the battle of Alam Halfa] nonstop and very heavy air attacks by the RAF, whose command of the air had been virtually complete, had pinned my army to the ground and rendered any smooth deployment or any advance by time schedule com-

pletely impossible. ... We had learned one important lesson during this operation, a lesson which was to affect all subsequent planning and, in fact, our entire future conduct of the war. This was that the possibilities of ground action, operational and tactical, become very limited if one's adversary commands the air with a powerful air force and can fly mass raids by heavy bomber formations unconcerned for their own safety. ... Anyone who has to fight, even with the most modern weapons, against an enemy in complete command of the air, fights like a savage against modern European troops, under the same handicaps and with the same chances of success. ... The fact of British air superiority threw to the winds all the tactical rules which we had hitherto applied with such success. In every battle to come, the strength of the Anglo–American air force was to be the deciding factor."

—World War II German Field Marshal Erwin Rommel, the "Desert Fox," in 1942.

■

"If I didn't have air supremacy, I wouldn't be here."

—US Gen. Dwight D. Eisenhower, supreme allied commander, in comments made while surveying buildup area at the Normandy bridgehead after Operation Overlord, late June 1944.

■

"The Normandy invasion was based on a deep-seated faith in the power of the Air Force in overwhelming numbers to intervene in the land battle, ... making it possible for a small force of land troops to invade a continent. ... Without that Air Force, without its independent power, entirely aside from its ability to sweep the enemy air forces out of the sky, without its power to intervene in the ground battle, that invasion would have been fantastic. [Indeed] it would have been more than fantastic; it would have been criminal."

—Eisenhower, in 1945 Congressional testimony, arguing for the creation of an independent United States Air Force.

■

"From the very first moment of the invasion, the Allies had absolute air supremacy. Therefore, the enemy, our own troops, and the population asked the obvious question, 'Where is the Luftwaffe?' "

—German General of Fighters Adolf Galland, in postwar memoir on Allied airpower at Normandy.

■

"[On D-Day, June 6, 1944] the whole of the area through which the [Nazi] divisions must march was being most intensively patrolled by the Allied air forces. No road movement by day was possible in view of this air umbrella, which reached from Normandy to the Paris area."

—German Lt. Gen. Bodo Zimmerman, chief operations officer, Army Group D, in a postwar memoir.

■

"The enemy's air superiority has a very grave effect on our movements. There's simply no answer to it."

—Rommel, when he was commander of German Army Group B at Normandy, days before he was strafed off the road by Spitfires and seriously injured.

■

"Utilization of the Anglo–American air forces is the modern type of warfare, turning the flank not from the side but from above."

—German Vice Adm. Friedrich Ruge, Rommel's naval aide, at Normandy.

■

"In the face of the total enemy air superiority, we can adopt no tactics to compensate for the annihilating power of air except to retire from the battlefield."

—German Field Marshal Hans Guenther von Kluge, who succeeded Rommel as commander of Army Group B, in a letter to Hitler after taking over German forces in Normandy.

■

"[German Field Marshal Walter Model] did not immediately grasp the full gravity of the situation in France and hoped that he might yet restore it. But he was soon to realize the unimaginable effects of the enemy's air supremacy, the massive destruction in the rear area, the impossibility of traveling along any major road in daylight without great peril—in fact, the full significance of the invasion."

—Zimmerman, reflecting on the leadership of Model, who succeeded von Kluge as commander, Army Group B.

■

"The long duration of the bombing, without any possibility for opposition, created depressions and a feeling of helplessness, weakness, and inferiority. Therefore the morale attitude of a great number of men grew so bad that they, feeling the uselessness of fighting, surrendered, deserted to the enemy, or escaped to the rear, as far as they

survived the bombing. ... The shock effect was nearly as strong as the physical effect. ... For me, who, during this war, was in every theater committed at the points of the main efforts, this was the worst I ever saw. The well-dug-in infantry was smashed by the heavy bombs in their foxholes and dugouts or killed and buried by blast. The positions of infantry and artillery were blown up. The whole bombed area was transformed into fields covered with craters, in which no human being was alive. Tanks and guns were destroyed and overturned and could not be recovered, because all roads and passages were blocked."

—German Lt. Gen. Fritz Bayerlein, in a postwar memoir on experiencing the Operation Cobra bombing at St. Lo, which set the stage for the Allied breakout across France.

■

"The chief credit in smashing the enemy's spearhead must go to the rocket-firing Typhoon planes of the Second Tactical Air Force. The result of this strafing was that the enemy attack was effectively brought to a halt, and a threat was turned into a great victory."

—Eisenhower, reflecting on the role of airpower at the Battle of Mortain, where the German Army attempted to split the invasion front at Normandy, supreme allied commander's dispatch, 1945.

■

"The greatest benefit derived from the tactical air force was in the offensive action of the fighter–bomber in blunting the power of the armored thrust and striking specific targets on the front of the ground troops."

—US Gen. Omar Bradley, 12th Army Group commander, reflecting on airpower at the Battle of the Bulge, in the "Effect of Airpower on Military Operations: Western Europe," 1945. The 9th SS Panzer Division abandoned its attack on Liege, Belgium, after a single fighter–bomber blew up a fuel truck carrying three tons of gasoline, delaying the German advance for two days.

■

"The Ardennes battle drives home the lesson that a large-scale offensive by massed armor has no hope of success against an enemy who enjoys supreme command of the air."

—German Maj. Gen. F.W. von Mellenthin, chief of staff of the Fifth Panzer Army at the Bulge, in a postwar memoir.

■

"[Lt. Gen. Fritz Bayerlein] particularly noted the disastrous and calculated selection of fuel tank trucks as fighter–bomber targets. He and others have vivid memories of precious forward gasoline dumps lost through air attack."

—Bradley in 1945. Bayerlein's Panzer Lehr Division had to abandon 53 tanks from lack of fuel, and the Sixth SS Panzer Army had to abandon 180 tanks.

■

"[Allied air forces] found worthwhile targets throughout the whole area of our offensive. Bomb carpets were laid down on the roads and railways behind the front, and our already inadequate supply system was throttled. The mobility of our forces decreased steadily and rapidly."

—German Gen. Hasso von Manteuffel, Fifth Panzer Army commander at the Bulge, in a postwar memoir.

■

"[Field Marshal Gerd von Rundstedt, the commander of the attack at the Bulge, stated] that the main reason for the failure of the Ardennes offensive was his own lack of fighters and reconnaissance planes and the tremendous tactical airpower of the Allies."

—Bradley in 1945.

■

"From the high command to the soldier in the field, German opinion has been agreed that airpower was the most striking aspect of Allied superiority."

—Bradley in 1945.

■

"[With the beginning, in May 1944, of the Allied attack on oil centers] a new era in the air war began. It meant the end of German armaments production."

—Albert Speer, Nazi armaments minister, in his postwar memoirs.

■

"The morale of the German people, both at home and at the front, is sinking ever lower. The Reich propaganda agencies are complaining very noticeably about this. The people think that [they are] facing a perfectly hopeless situation in this war. Criticism of our war strategy does not now stop short even of the Führer himself. ... The people will continue to do their duty and the front-line soldier will defend himself as far as he has a possibility of doing so. These possibilities are becoming increasingly limited, however, primarily owing to the enemy's air

superiority. ... The total paralysis of transport in west Germany also contributes to the mood of increasing pessimism among the German people."

—Nazi Propaganda Minister Joseph Goebbels, diary, March 12, 1945.

■

"Not only our military reverses but also the severe drop in the German people's morale, neither of which can now be overlooked, are primarily due to the unrestricted enemy air superiority."

—Goebbels, diary, March 15, 1945.

■

"Again and again we return to the starting point of our conversation. Our whole military predicament is due to enemy air superiority."

—Goebbels, reflecting on a conversation with Hitler, diary, March 21, 1945.

■

"The thing that brought about the determination to make peace was the prolonged bombing by the B-29s."

—Japanese Prince Fumimaro Konoye, in a postwar interrogation, 1945.

■

"It seemed to me unavoidable that, in the long run, Japan would be almost destroyed by air attack, so that, merely on the basis of the B-29s alone, I was convinced that Japan should sue for peace. On top of the B-29 raids came the atomic bomb, ... which was just one additional reason for giving in. ... I myself, on the basis of the B-29 raids, felt that the cause was hopeless."

—Japanese Premier Kantaro Suzuki, in a postwar interrogation, 1945.

■

"The weapon of superior reach or range should be looked upon as the fulcrum of combined tactics. Thus, should a group of fighters be armed with bows, spears, and swords, it is around the arrow that tactics should be shaped; if with cannons, muskets, and pikes, then around the cannon; and if with aircraft, artillery, and rifles, then around the airplane."

—British military historian Maj. Gen. J.F.C. Fuller, *Armament and History,* 1945.

■

"No one who fought on the ground in Korea would ever be tempted to belittle the accomplishments of our Air Force there. Not only did airpower save us from disaster, but without it, the mission of the United Nations forces could not have been accomplished."

—US Army Gen. Matthew B. Ridgway's memoir, *The Korean War,* 1967.

■

"If we had had strong air support, we could have driven the enemy into the sea."

—Captured Communist report, 1951, reflecting on how UN air superiority had prevented Communist airpower from intervening in the ground struggle.

■

"I would like to tell you frankly that, in fact, without direct support of your tactical aerial bombing alone, your ground forces would have been unable to hold their present positions. ... Without the support of the indiscriminate bombing and bombardment by your air and naval forces, your ground forces would have long ago been driven out of the Korean peninsula by our powerful and battle-skilled ground forces."

—North Korean Army Lt. Gen. Nam Il, in armistice discussions with UN representatives at Panmunjom, August 1951.

■

"I learned after a while that my casualties were tremendously decreased if I used the airpower and airstrikes and used [them] properly. And it was there to use."

—An unidentified US Army troop commander in Vietnam, quoted by John Sbrega, "Southeast Asia," in B.F. Cooling's *Case Studies in the Development of Close Air Support,* 1990.

■

"When you're in real life, you're pinned down under fire, and here comes the Air Force, and they just drop the bombs right where they belong and they knock out what they are supposed to knock out, ... it's a fantastic feeling. It's more than thanks. You just can't express it, really."

—An enlisted soldier, quoted by Sbrega, "Southeast Asia," in Cooling's *Case Studies in the Development of Close Air Support,* 1990.

■

"Because the enemy had escalated rapidly, was bombarding us massively, and was using many types of new [air] weapons, ... many units and local areas suffered heavy losses. Almost all the impor-

tant bridges on the railroad and on the road corridors were knocked down. Ground transportation became difficult. Coastal and river transportation were blocked."

—North Vietnam's official history, commenting on US air attacks on its forces during the spring 1972 invasion of South Vietnam.

■

"The minimal requirement for a successful [maritime] operation is a favorable air situation. Air superiority will be a requirement for sea control where a robust challenge from the air is possible. Air supremacy is a necessary precondition of command of the sea."

—Royal Navy, *The Fundamentals of British Maritime Doctrine,* BR 1806, 1995.

■

"Airpower is the decisive arm so far, and I expect it will be the decisive arm into the end of the campaign, even if ground forces and amphibious forces are added to the equation. ... If anything, I expect airpower to be even more decisive in the days and weeks ahead."

—Army Gen. Colin Powell, Chairman of the Joint Chiefs of Staff, in Feb. 21, 1991, Congressional testimony on the Gulf War.

■

"During the Iran War [the 1980–88 Iran–Iraq conflict], my tank was my friend because I could sleep in it and know I was safe. ... During this war [the 1991 Gulf War], my tank became my enemy. ... None of my troops would get near a tank at night, because they just kept blowing up."

—Remarks by an Iraqi general, in a POW interrogation, as quoted by Gen. Charles A. Horner, Desert Storm air boss, in USAF publication "Reaching Globally, Reaching Powerfully," 1991.

■

USMC interrogator: "How many of your soldiers were killed by the air war?"

Iraqi officer: "To be honest, for the amount of ordnance that was dropped, not very many. Only one soldier was killed and two were wounded."

USMC interrogator: So then you feel the aerial bombardment was ineffective?

Iraqi officer: "Oh no! Just the opposite! It was extremely effective! The planes hit only vehicles and equipment. Even my personal vehicle ... was hit. They hit everything!"

—Quoted by John G. Heidenrich in spring 1993 *Foreign Policy.*

■

"It could be said the coalition air forces won the war. Laser guidance was so precise that coalition aircraft were able to deliver two bombs into the same crater—a level of accuracy unprecedented in warfare."

—Gen. Sir Peter de la Billiere, the commander of British forces in the Gulf War, in his memoir *Storm Command.*

■

"The air campaign was decisive."

—Secretary of Defense Dick Cheney, April 14, 1991.

■

"Gulf Lesson One is the value of airpower."

—President George Bush, speech at Air Force Academy graduation ceremony, May 29, 1991.

■

"One of the great things that people should have learned from this is that there are times when airpower—not backed up by [NATO's] ground troops—can make a difference."

—Ambassador Richard Holbrooke, on Feb. 21, 1996, PBS "NewsHour," commenting on NATO's 1995 Operation Deliberate Force in Bosnia.

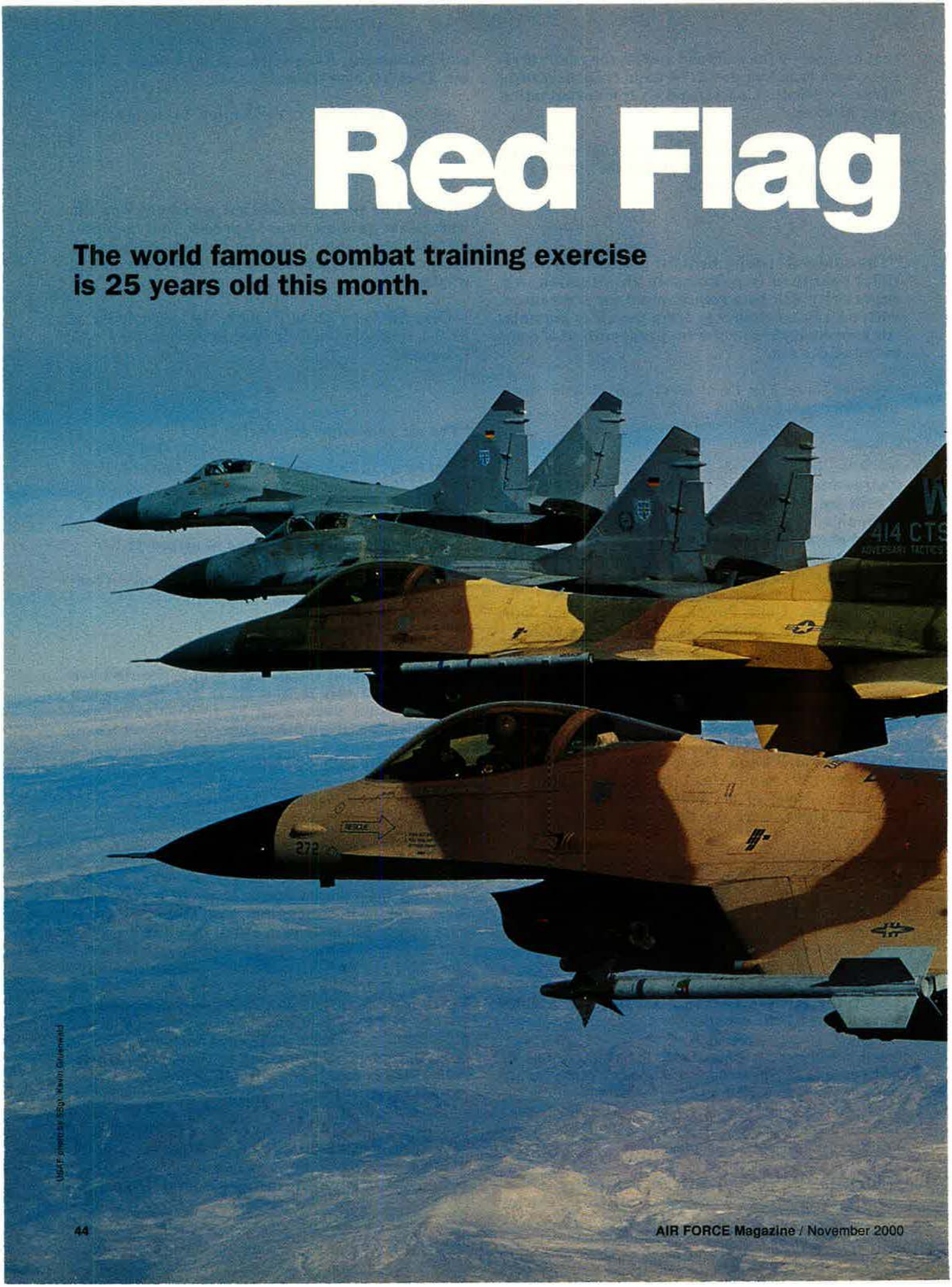
■

"They knew everything about us. There wasn't anything they didn't know. If we lit a cigarette, they could see it. God knows what they were dropping on us. All sorts of bombs. We didn't expect that intensity. We couldn't fight planes with mortars. And our anti-aircraft guys couldn't do anything. ... It felt like we went over every inch of Kosovo. ... We spread out, one of us every hundred meters, but they just picked us off. Bosnia was a spa compared to Kosovo. Everywhere, there was a smell of bodies. ... I'm going to the woods, where everything is absolutely calm. I'm going to spend 10 days there, thinking of nothing, alone. I want to be alone."

—Reflections of "Milos," a Yugoslavian soldier bombed during Operation Allied Force, quoted by journalist Rory Carroll in *The Observer,* June 20, 1999. ■

Red Flag

The world famous combat training exercise is 25 years old this month.



USAF photo by SSgt. Kevin Gruenwald

FROM the very start—and that date was Nov. 29, 1975—Red Flag has been at the forefront of the Air Force drive to dominate the enemy in air combat operations.

The first Red Flag exercise, which took place 25 years ago this month, opened the pathway to a radically new type of fighter training, one that in no small way helped forge the professional Air Force that today sets the world standard. It also changed the thinking of airmen around

By Walter J. Boyne

As recently as the Vietnam War, USAF fighter pilots conducted air combat maneuver training against similar aircraft. Red Flag changed that. Last year, six MiG-29 Fulcrums played the aggressor force for the first time in Red Flag. These F-16s are from the 414th Combat Training Squadron. The MiGs are from the 73rd Steinhoff Fighter Wing, Laage, Germany.

the world, including those in adversary air forces, and it has influenced the training of the US Army and Navy air arms.

Red Flag, which was developed to help the Air Force "train as it fights," is a simulated combat training exercise that pulls in the air forces of the United States and allies. Conducted over a huge range north of Nellis AFB, Nev., Red Flag is managed by the Air Warfare Center through the 414th Combat Training Squadron.

Most of the deployed aircraft and personnel are part of the "Blue Forces." These use a variety of tactics to attack targets such as airfields, missile sites, and tanks. The targets are defended by an enemy "Red Force," which electronically simulates anti-aircraft artillery, surface-to-air missiles, and electronic jamming equipment. In addition, Red Force "Aggressor" pilots, flying the F-16C, closely emulate known enemy tactics.

A typical Red Flag exercise involves a wide variety of aircraft. Thorough mission debriefings are based on the Red Flag Measurement and Debriefing System along with TV ordnance scoring and threat video. Participants can replay the mission and learn exactly what was done correctly and what needs work.

Over a quarter century, Red Flag has become one of the greatest of Air Force success stories. Like many successes, Red Flag can trace its roots to an earlier failure. It came in Southeast Asia in the 1960s.

Staff photo by Guy Aceto

F-16 "aggressors," like this one launching, were part of a Red Forces air package during a recent Red Flag. The Red Baron study in the 1970s pointed out the need for more complete, realistic training for USAF fighter aircrews.

Goodbye to 10-to-1?

During the Vietnam War, it became apparent that the overwhelming concern about flying safety in peacetime compromised air-to-air combat training to an unacceptable degree. The most tangible symptom of this failure was the decline in the exchange ratio (enemy losses vs. US losses) between USAF and enemy forces. The exchange ratio obtained in the Korean War had been a highly satisfactory 10-to-1. Recent research has cast some doubt on this figure, but for many years 10-to-1 was not only widely accepted as historically accurate but also was held out as the standard in any subsequent contest.

In the Southeast Asian conflict, however, that exchange ratio fell to less than 1-to-1 during a period in the spring of 1972. There were reasons for this. Air warfare was focused on the air-to-ground dimension; American aircraft were employed in integrated strike packages designed to get bombs on important targets. They were opposed by a sophisticated defense system that incorporated anti-aircraft artillery, surface-to-air missiles, and interceptors operating under ground control.

More important in regard to the exchange ratio was the change in enemy tactics. In the Korean War, the enemy forces made repeated attempts to contest US superiority in the air. The North Vietnamese never did that, for Hanoi had another agenda. Its main goal was to prevent American bombs landing on North Vietnamese targets. The task of their fighters was not to engage in air-to-air combat but to force US fighter–bombers to jettison their bomb loads en route to the target.

When that was done, North Vietnam's fighters essentially had accomplished their mission.

Whenever possible, USAF and Navy fighters sought out air combat. That is because they operated under

Staff photo by Guy Aceto

Weather, range area, and ramp space—they all played a big part in the selection of Nellis AFB, Nev., as the home of Red Flag. The series of exercises now involves more than 12,000 sorties annually.

rules of engagement generally which prohibited attacks on MiG airfields, and that meant that the only way to eliminate the fighter threat was to destroy it in the air. The enemy usually had to be lured into battle. However, once a North Vietnamese fighter engaged, it was a formidable opponent.

The MiG-17 fighter, though frequently written off as an upgrade to the obsolete, Korean War–vintage MiG-15, proved to be highly effective at the altitudes and airspeeds at which the North's pilots would engage. They also carried powerful cannons. The supersonic MiG-19 appeared later and in smaller numbers, but it had roughly the same characteristics as the MiG-17. The modern delta wing MiG-21 was much faster and armed with the effective, heat-seeking Atoll missile. In the designated areas in which they worked, Navy fighters typically encountered MiG-17s and MiG-19s. USAF fighters usually ran into MiG-17s and MiG-21s.

Dissimilarity

The Communists' aircraft had characteristics (speed, turn rate, sustained turn rate, rate of roll, climb rate) that were totally different from USAF's F-4s. Yet, up to that time, the Air Force had conducted almost all air combat maneuver training by matching identical aircraft—F-4 against F-4. Not only that, but USAF's training exercises usually featured duels between fighter aircraft from the same squadron.

The F-4 was a big, highly capable aircraft—but it had not been designed specifically for the air superiority role. It could do many missions well. However, it was large and unwieldy, it provided relatively poor visibility to the pilot, and it was saddled with flight envelope limitations that undercut its effectiveness in the air superiority role. Later, when USAF fielded the F-4E and its pilots had thoroughly absorbed Col. John Boyd's concept of aerial maneuverability, USAF could overcome the opposition with the E's greater relative strength in certain parts of the combat envelope. That took a while, though.

Moreover, USAF aircraft were equipped with Sidewinder and Sparrow missiles designed to strike at bombers, not fighters that were engaging in high-g combat maneuvers. For their part, USAF pilots were inhibited by rules of engagement requiring visual identification of the enemy and thus ensuring that air combat would occur at close ranges, where gun armament had an edge over missiles. Experienced leaders helped pilots cope with such disadvantages but at the cost of intensive in-theater training and combat losses.

Soon, the failure of USAF's peacetime training approach became only too apparent. The exchange ratio in the best of times was no better than 2-to-1 and, at the lowest, actually fell to under the break-even 1-to-1 level.

During the Vietnam War, USAF conducted a thorough analysis of air superiority operations. It was called "Red Baron," after Manfred von Richthofen, the famed German ace of World War I. The study demonstrated three sobering facts about USAF aircrews:

- The enemy often caught them by surprise.
- They had inadequate training for the mission.
- They were not fully informed about the enemy.

The problems became especially acute whenever pilots with relatively little fighter experience rotated into the cockpit. As a result, the service during the war considered various proposals to change the training system. However, they were not thought to be feasible. The pressure to get pilots through the pipeline and into combat operations was so great that USAF had no assets to begin new programs.

In the early 1970s, USAF pilots and leaders came home from the Vietnam War bent on making some serious changes.

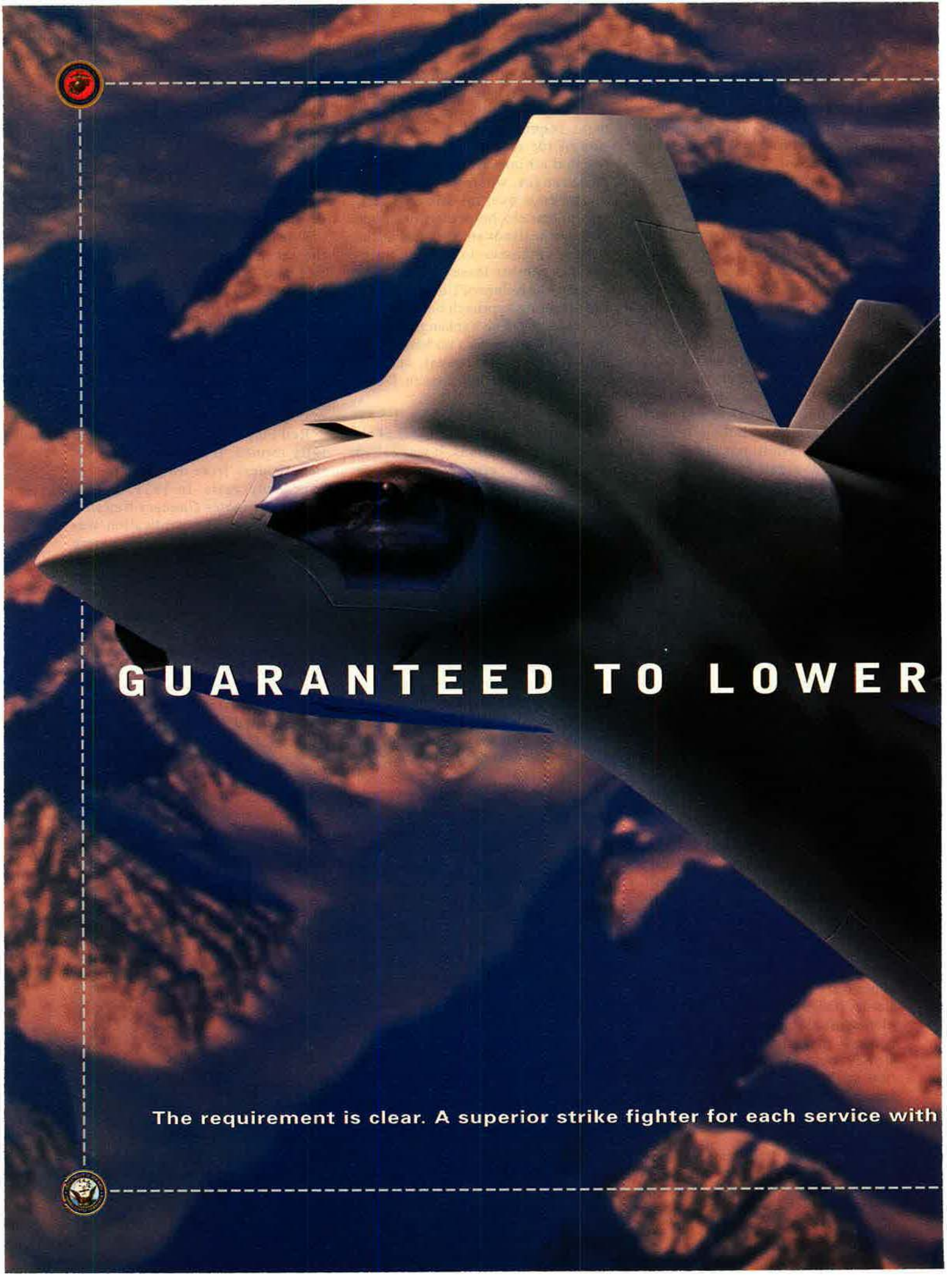
One change, of course, concerned the service's main air fighting instrument—the fighter aircraft itself. Problems with the jack-of-all-trades F-4 generated the drive to produce the specialized F-15 air superiority fighter. Just as important, however, was the renewed emphasis on training the human beings who had been shown in the Red Baron study to be poorly prepared for battle.

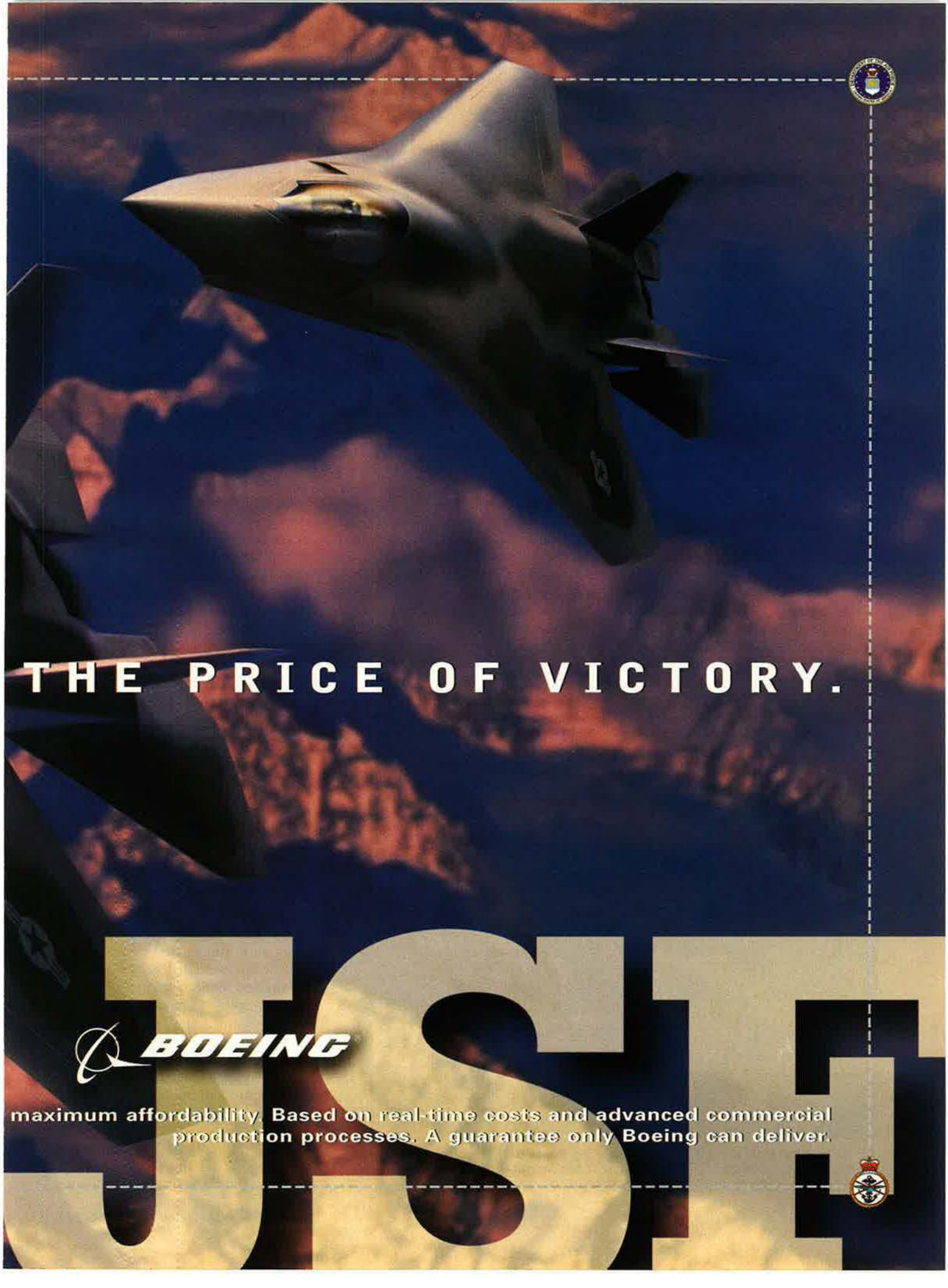
Red Flag did not come into being fully formed. It derived from a series of ideas from different people over many years. In 1951, Vol. 1, No. 1, of *Fighter Gunnery Newsletter* appeared. The publication was dedicated to "spreading the gunnery gospel." The January 1954 issue of *Fighter Gunnery* contained an article, by Maj. Frederick C. "Boots" Blesse, which maintained that positioning oneself at the proper angle was 85 percent of the air battle, while adjusting the pipper was 10 percent and actually firing was only 5 percent. In the March 1968 issue, an article noted a change in Tactical

Continued on p. 50.

Staff photo by Guy Aceto

The integrated and instrumented range complex at Nellis affords control from the ground. The Red Flag Measurement and Debriefing System, TV ordnance scoring, and threat video are part of a lessons-learned replay afterward.


GUARANTEED TO LOWER
The requirement is clear. A superior strike fighter for each service with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Air Command procedures calling for training in dissimilar aircraft.

"Aggressors"

For many years, the idea of an "aggressor" squadron germinated. One important event was the transformation of the 4520th Combat Crew Training Wing at Nellis into the Tactical Fighter Weapons Center, under the leadership of Maj. Gen. R.G. "Zack" Taylor. Taylor saw that the huge area surrounding Nellis would be ideal for an aerial training range of mammoth proportions, ultimately reaching 12,000 square miles.

Meanwhile, things were happening back in Washington, D.C. In the Pentagon's basement, in the electronic combat directorate, Col. William L. Kirk had some majors working for him, and they knew that among the problems was the need for more rigorous training. Maj. John A. Corder, for example, was aware that the Foreign Technology Division at Wright–Patterson AFB, Ohio, had a number of Soviet aircraft. He thought these could be used to provide realistic air combat maneuvering training. As desirable as this might have been, there were too many administrative problems in the way, and the project was shelved. But Corder was soon joined by two other officers who would be heard from in years to come—Maj. Richard Moody Suter and Lt. Col. Charles A. Horner.

Gen. John D. Ryan, the then–Chief of Staff, had become dissatisfied with the loss rate in Vietnam and accuracy of bomb delivery. He approved a proposal made by Kirk and Corder that recommended, among other things, the formation of an air-to-air aggressor squadron. Horner then advanced the idea of using excess Northrop T-38 Talons for the new unit. He proposed that fighter squadrons rotate through Nellis to train with the aggressors and that the aggressors would go out to "visit" squadrons in the field.

The Air Force in fall 1972 established the 64th Fighter Weapons Squadron at Nellis AFB, Nev. It was equipped initially with T-38s and then with Northrop F-5E Tiger aircraft. These small supersonic aircraft were used to simulate the MiG-21 in air combat maneuvers. The resulting exercises were deemed to be so useful that the Air Force fashioned a second squadron—the 65th FWS—at Nellis and two more for overseas training.

Photo by Ted Carlson

This Nellis–based F-16, in the role of the enemy Red Force, bears the multicolor Warsaw Pact–style camouflage, as did the F-5Es that simulated MiG-21s in the early years of Red Flag.

A Way to Cut Losses

In the meantime, Moody Suter, who had been a strong proponent of the aggressor squadron concept and had worked out the training program at Nellis, was visualizing a large-scale combat training operation going beyond mere air-to-air combat maneuvering. A charismatic if sometimes contentious figure, Suter elaborated on Corder's and Horner's original work with air-to-air aggressors to create a briefing that outlined the basic concepts of what would become Red Flag. He saw it from the start as a means of improving and extending the ability of Air Force integrated strike packages to get to their targets with maximum accuracy and minimum losses.

Suter was once described as a man who performed systems management before systems management was invented. He had the ability to visualize operations on a grand scale and know exactly what would be required—not only of the fighter force but also of all the supporting elements. Among his many challenges

Staff photo by Guy Aceto

An Mi-24 Hind from the US Army's Opposing Force unit lends authenticity to many Red Flag exercises. The presence of the Soviet–made attack helicopter allows for training against the capabilities of the real thing.

was finding a way to conduct realistic training while accommodating the general Air Force–wide desire for flying safety. This desire was certainly justified.

In 1951, USAF lost 824 aircraft. The figure dropped to 472 in 1959 and 262 in 1965 as a result of adherence to rigorous safety guidelines. No one in the Air Force wanted the numbers to rise, yet the emphasis on safety made a mockery of air combat training. Training missions had become standardized, with as much emphasis on filling squares on paper as putting bombs on target.

Suter knew of studies demonstrating that the majority of combat losses occur during a pilot's first 10 combat missions. After that point, losses dropped nearly to zero. Suter argued for the creation of a training environment so realistic that a new pilot would log his first 10 "combat" missions in a controlled environment. The idea was that when he went into actual combat, the pilot would have "survived" his most vulnerable period.

Suter acknowledged that realistic training, no matter how carefully controlled, could result in accidents. His argument was that the acceptance of a few losses in training would prevent large-scale losses in combat. In essence, Red Flag was to teach pilots how to adapt quickly to combat and show them what would happen to them if they did not.

Suter envisioned from the start an environment that offered an intense learning opportunity—and was not a career-threatening test.

After having secured the necessary approvals in the Pentagon, Suter went to Tactical Air Command in May 1975 to brief its commander, Gen. Robert J. Dixon, and his senior staff. Dixon listened intently and then approved the idea. He instructed his operations deputy, Maj. Gen. Charles A. Gabriel, and the commander of the Tactical Fighter Weapons Center, Maj. Gen. James A. Knight Jr., to establish Red Flag at Nellis within six months. He instructed his comptroller, Col. Richard Murray, to find the money to do it.

Dixon's Deal

Dixon would prove to be a strong patron of Red Flag. He conferred with Gen. David C. Jones, Chief of Staff, on the matter of flying safety and got Jones to go along. They agreed to take the risk of realistic training as long as TAC kept the accident rate below seven per 100,000 flying hours. This was an almost heroic position to take, given the tenor of the times.

Staff photo by Guy Aceto

Red Flag now includes a full spectrum of assets, like this EC-130H Compass Call. Although the first exercise featured 37 aircraft, today as many as 750 aircraft of different types participate annually.

At Nellis, Suter was well-known and well-liked. He had 232 Vietnam combat missions (as wing weapons and tactical officer) under his belt; other pilots listened to what he had to say. The series of briefings that he delivered inspired enthusiasm among key personnel at the base. These included Col. P.J. White, Lt. Col. Marty Mahrt, Col. David Burney, and Ned Greenhalgh, a civilian computer expert. This small crew undertook the mammoth task of establishing the program. Their hard, imaginative work over the early years would confirm Red Flag's promise and turn it into the finest training system in aviation history.

Suter's briefing was remarkably farsighted, lifting the whole concept of air combat training to a new, more sophisticated level. In the past, range training was routine. Instructors knew the routes, the headings, and the call signs by rote, and the students were given much the same training as was given to World War II–era students.

In Suter's view, the Air Force had to create a new program to provide realistic training against a realistic threat to test hardware and tactics. He argued that Red Flag should be not only a proving ground but also a laboratory, one where the service could quickly test possible solutions for urgent problems.

Suter wanted to employ the whole force—tankers, electronic countermeasures, bombers, fighters, reconnaissance aircraft, and so forth—against a realistic enemy that operated advanced radar systems, integrated missile and anti-aircraft systems, and first-rate, dissimilar interceptors.

As a cheerleader for the program, Suter was indefatigable, visiting squadrons all over the world, hammering home the notion that realistic training was vital and that saving lives in combat would not be the only result. He knew that the skills gained in Red Flag not only kept Air Force pilots alive but also enabled them to score victories against the enemy and to get their bombs on target with greater proficiency.

The first actual Red Flag took place on Nov. 29, 1975, exactly on Dixon's schedule. It featured participation by 37 aircraft, shepherded by 561 people. Some 552 sorties were flown. The effort was small compared to later efforts. Today's Red Flag over a single year will involve as many as 250 different units and 750 aircraft of many different types. About 11,000 aircrew and squadron personnel will amass more than 12,000 sorties and 21,000 flight hours in the course of the year.

Though small, the first Red Flag was an unqualified success. Initially oriented primarily to air-to-surface

Photo by Paul Kennedy

Red Flag teaches pilots to adapt quickly to combat. It has become the model for Flags conducted by other major commands and air forces of other countries.

training, Red Flag had from the start a substantial air-to-air component, and this would grow over time. Other US services joined in, as did units from around the world. Red Flag grew in size and sophistication.

Nonetheless, skepticism prevailed for a long time outside Nellis and TAC headquarters. Air Force commanders were concerned that accidents would reflect poorly on their leadership. For many, their initial participation was somewhat conditional. The accident rate indeed was high during the first two years of the program, with about eight aircraft being lost.

Perseverance

To Dixon's credit, he persevered, and the accident rate came down to below that of the Air Force as a whole. Further, when Air Force Systems Command sought to use Red Flag for operational test and evaluation, Dixon refused. He wanted it to evolve, to grow, to let all the major commands contribute their good ideas.

Dixon saw that Red Flag could be expanded to provide benefits to other commands, including Strategic Air Command, and to other air forces. The international Maple Flag was created and is hosted by Canadian forces. Blue Flag was established at Hurlburt Field, Fla., to train people for the command and control system in the European theater. Green Flag was created to integrate electronic countermeasure warfare with Red Flag activities. Other flags would follow. By the time Dixon completed his tour at TAC, training standards had progressed dramatically—so much so that it became harder to qualify for a stint at Red Flag than it had been to qualify for combat operations in Vietnam. Dixon's successor, Gen. W.L. Creech, greatly accelerated and expanded Red Flag. The rest, as they say, is history.

One major milestone in that history, without question, was the stunning performance of American airmen in the Gulf War of 1991. It was the first war to showcase the results of Red Flag, and it produced a curious tribute. It came from an Air Force pilot who, returning from a combat mission over Iraq, was heard to remark, "It was almost as intense as Red Flag." ■

The Man Behind Red Flag

Richard Moody Suter had many friends, and each one has a load of Moody Suter stories. He was a larger-than-life character, quick to laugh, quick to show anger, always so intensely focused on the mission that he threw off heat and energy like a boiler.

He would have considered himself first and foremost a fighter pilot, a man whose job was destruction of the enemy. Even so, he was a visionary. He produced a constant flow of ideas—not unusual for a visionary—but he also had an intimate knowledge of the USAF system that allowed him to bring his ideas to fruition.

Suter had the ability to inspire people, to translate his far-out ideas into fighter pilot terms that stirred the soul and led to great actions. He also had the ability to irritate people, regardless of rank or position. There is no question that he took pride and pleasure from doing this.

Aviation artist Keith Ferris, one of Suter's friends, has over the years compiled a list of "Suterisms." For example, if a pilot showed up slightly the worse for wear, he'd say, "The fruit flies are circling around his head." If he did not have a great opinion of someone's intellect, he'd say, "He looks at his name tag a lot." To inquisitive superior officers, he'd say, "We are looking at a glaring glimpse of the obvious."

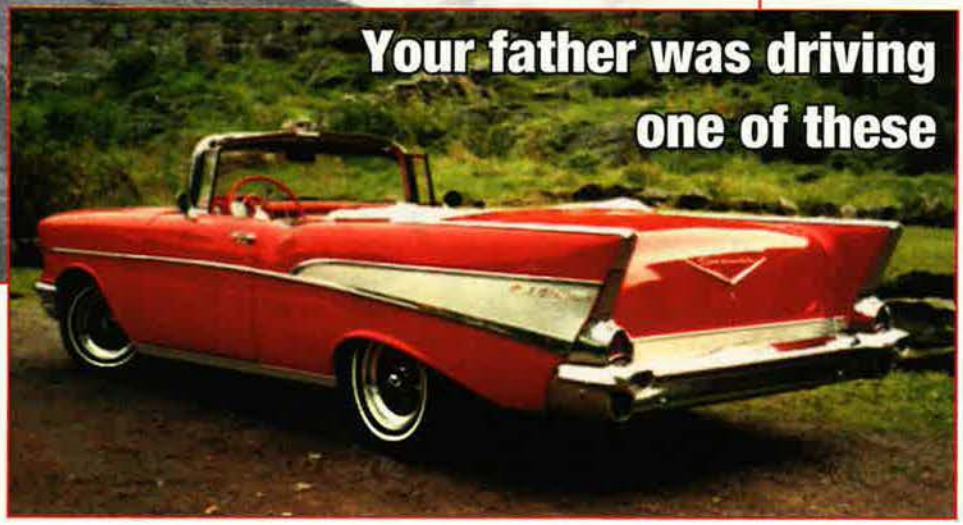
He provided the following advice on air combat:

Mount it with the sharp end in front of you. Move all shiny switches outboard and forward. And don't [mess] with the red-covered or rusty knobs.

After he retired in July 1984, Suter stayed abreast of technological advances and development of the airman's art and did so until his death in January 1996. By that time, he was already a legend.

Walter J. Boyne, former director of the National Air and Space Museum in Washington, is a retired Air Force colonel and author. He has written more than 400 articles about aviation topics and 29 books, the most recent of which is Beyond the Horizons: The Lockheed Story. *His most recent article for* Air Force *Magazine, "The Man Who Built the Missiles," appeared in the October 2000 issue.*

The last time a traditional spacecraft supplier built a new manufacturing factory



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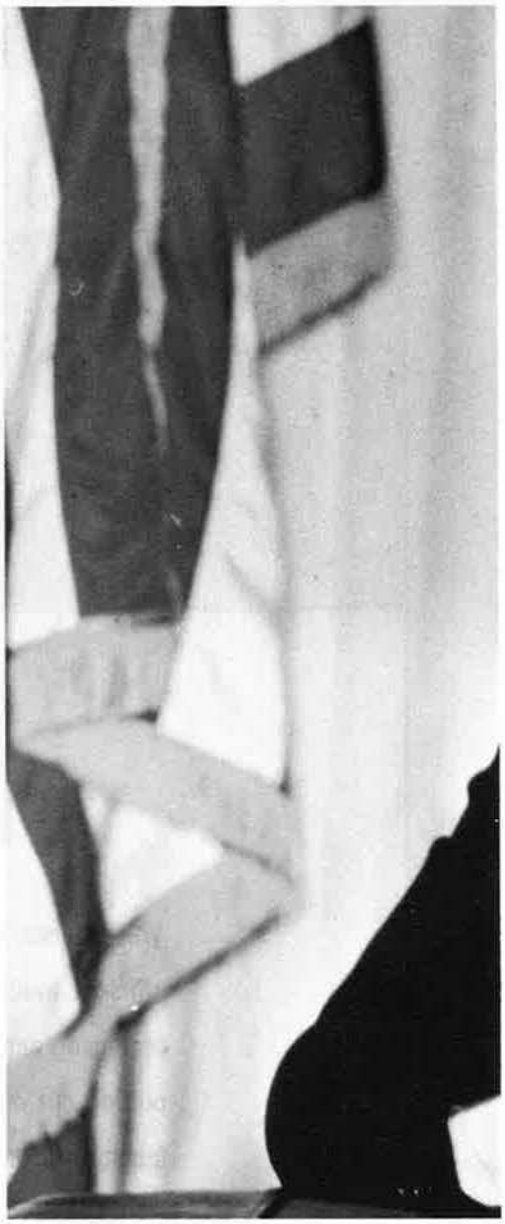
"We've got to stop the sons of bitches, no matter what, and that's all there is to it," he said.

Truman's War



By Herman S. Wolk

In late November 1950, Chinese Communist troops entered the Korean War in force, driving South Korean forces into retreat. This attack 50 years ago by 250,000 Chinese troops transformed the conflict and precipitated a massive US military buildup. Gen. of the Army Douglas MacArthur, commander of United States forces in the Far East and commander in chief, United Nations Command, emphasized, "We face an entirely new war."

It may be known as "the Forgotten War," but the Korean conflict in many ways shaped the American military–political landscape for half a century. China's bold entry into war forced decisions and generated consequences that remain part of today's military, political, and geographical picture. Korea remains divided between north and south at the 38th parallel, and United States forces still stand guard.

The Korean War, though close to World War II in time, was far different. It was an undeclared war, a "police action" that triggered a national emergency and a military buildup. The American military fought the war under restrictions—the first major American war, as one historian observed, that was not fought as a crusade. The conflict resulted in the firing of an American Secretary of Defense; the relief of a popular and powerful military commander; brought into military usage the term "limited war"; and produced the "never again" school of US officers, military leaders, and governmental officials committed to the proposition that the US should not ever again become embroiled in a land war in Asia.

This experience of the Korean War brought about a significant emphasis on the nuclear deterrent and transformed the Air Force's Strategic Air Command into a major pillar of US foreign policy.

"Stop the SOBs"

Korea was Harry Truman's war. Under a severe time constraint, the President acted without seeking the consent of Congress or the American people. Truman admonished Dean Acheson, his secretary of state, with these words: "Dean, we've got to stop the sons of bitches, no matter what, and that's all there is to it."

In his memoirs, Truman called his

decision to intervene in Korea the "toughest" decision of his presidency. He took this action without convening the National Security Council. This was ironic, in that, once the US entered the war, Truman placed heavy reliance on the NSC and regularly participated in its deliberations.

His failure to seek Congressional approval flowed from Acheson's advice that he should base the military intervention on the President's constitutional authority as Commander in Chief of the armed forces. Truman, it will be recalled, had also decided in 1948 to confront the Soviets with the Berlin Airlift without calling upon the NSC, which had been established by the National Security Act of 1947.

Once Washington had intervened, Truman formed a system through which he held tight control over the conduct of the war. In this regard, he set a precedent as Commander in Chief that would be followed by Presidents for the rest of the 20th century. He received daily briefings either from Army Gen. Omar N. Bradley, the Chairman of the Joint Chiefs of Staff, or from a member of the Joint Staff. Truman directed that he give his own approval to all substantive orders concerning the conflict before anyone transmitted them to Far East Command.

Even though the military chiefs carried out the daily strategic direction of the war, Truman gave increased importance to the recommendations of the National Security Council. He directed that the NSC convene weekly, and he regularly attended these meetings. The President insisted that recommendations which required his approval be staffed through the NSC. Policy was formulated through this institutionalized structure.

Truman maintained a clear picture of what being Commander in Chief required. Although he wanted all but routine military issues to receive his personal approval before being implemented, he trusted his military advisors, especially Bradley. Moreover, he allowed a theater commander flexibility as long as he followed established policy.

He believed firmly that the Commander in Chief should not meddle in tactical situations. "I am not a desk strategist," Truman emphasized,

At the beginning of the Korean War, FEAF's major combat element, 5th Air Force, flew missions from Japan (above). It launched successful interdiction attacks and gained air superiority in the early days.

"and I don't intend to be one." Strategy and tactics were best left to the military, and "I don't expect to interfere in it, now."

At the outbreak of war in Korea, Far East Air Forces was commanded by Lt. Gen. George E. Stratemeyer. FEAF was suffering from what Air Force historian Robert F. Futrell, with tongue in cheek, described as "an overdose of economy." Its major combat element, 5th Air Force in Japan, had been trained primarily for defensive operations such as the protection of Japan, Okinawa, and the Philippines. MacArthur protested in early 1950 that his air units were inadequate even to perform the strictly defensive mission as laid down by Washington.

Punishing Interdiction

Nonetheless, 5th Air Force, commanded by Maj. Gen. Earle E. Partridge, quickly gained air superiority over the North Koreans and launched punishing interdiction attacks from bases in Japan. Maj. Gen. William F. Dean, commanding the 24th Infantry Division, reported that "without question FEAF's close support sorties had definitely blunted the initial North Korean thrust to the southward."

Dean continued, "Without this continuing air effort, it is doubtful if the courageous combat soldiers, spread thinly along the line, could have withstood the onslaught of the vastly numerically superior enemy."

Truman saw right away that the US military required an immediate infusion of funds and resources. At the same time, Secretary of Defense Louis A. Johnson knew he was in trouble. Although he claimed to be trimming fat from the defense budget, Johnson and the Administration actually had cut deeply into the military's capabilities. In September 1950, Truman decided to replace Johnson with retired Gen. George C. Marshall. Truman described Johnson as an "egomaniac," the biggest one he'd ever encountered, "and I've seen a lot." Truman added, "He offended every member of the Cabinet."

Although Johnson initially had been stunned by Truman's request for his resignation, he left full of praise for the President and Marshall. In order to appoint Marshall, Truman requested Congressional legislation, since the National Security Act of 1947 prohibited a military officer from becoming Secretary of Defense within 10 years of being on active duty. The legislation was drafted, both the House and Senate quickly approved, and on Sept. 21, 1950, Marshall became Secretary of Defense.

Meanwhile, MacArthur's stunningly successful landing at Inchon, followed by the Eighth Army's breakout from the Pusan Perimeter and the subsequent drive northward, convinced Truman and Acheson that the North Korean army must be pursued above the 38th parallel and destroyed. Thus, instead of restoring the status quo, all of Korea was to be unified.

In late September, the President approved a directive to MacArthur, stating: "Your military objective is the destruction of the North Korean armed forces. In attaining this objective, you are authorized to conduct military operations, including amphibious and airborne or ground operations north of the 38th parallel in Korea." A United Nations resolution passed in early October gave approval for this decision to unify Korea. It authorized all necessary steps to ensure conditions of peace throughout the whole of Korea.

However, Truman emphasized that MacArthur would not be allowed to cross the borders of North Korea into Manchuria or the Soviet Union. MacArthur was also instructed to use only South Korean ground troops in provinces bordering China and the USSR.

Troubling Indications

Supported by FEAF, the allied forces in October 1950 drove northward, and the campaign seemed everywhere successful. In October, however, allied military leaders picked up indications of Chinese intervention. To better understand this fast-moving military situation and to gain a personal assessment of his Far East commander, Truman traveled to Wake Island in mid-October to meet with MacArthur. Truman later wrote in his memoirs that MacArthur assured him that victory in Korea was around the corner and that Chinese intervention was unlikely. MacArthur looked forward to the end of enemy resistance by Thanksgiving and to the withdrawal of the US Eighth Army to Japan by Christmas.

"No commander in the history of war," emphasized the Far East commander, "has ever had more complete and adequate support from all agencies in Washington than I have." MacArthur again insisted that there was "very little" chance that the Chinese Communists would enter the war, saying, "Had they interfered in the first or second months it would have been decisive. We are no longer fearful of their intervention."

Nonetheless, after the success of the Inchon landings, the Chinese had intensified their threats to intervene in the conflict. The Indian govern-

ment reported that if UN or US forces crossed the 38th parallel, China would send troops into North Korea. Even as the CIA provided evidence that Chinese troops were already in North Korea, Washington discounted the Chinese threats as no more credible than the numerous other threats made by China over the years against "American imperialists."

Truman's NSC met in early November 1950, and its members noted that China's objectives might include forcing the United States to fight a war of attrition or even driving the UN Command out of Korea. The point was also made that the Yalu would soon freeze over and become passable without bridges.

The fact is, however, that the US government could not fathom China's intentions, and it did not know that, as officials attempted to solve the puzzle, China was completing a massive infiltration of North Korea that had been under way since October. It had moved some 250,000 troops at night into the mountains of North Korea, where they awaited combat.

By Nov. 11, 1950, Eighth Army, advancing northward, had run into stiff resistance just above the Chongchon River. Eighth's commander, Gen. Walton H. Walker, informed MacArthur that the enemy's resistance included "fresh, well-organized, and well-trained units, some of which were Chinese Communist Forces."

MacArthur decided to launch an offensive on Nov. 24. For nearly two days it went well, but late on Nov. 25, more than 200,000 Chinese troops attacked, driving through the South Korean Army's II Corps and pulverizing the right flank of Eighth Army. In an instant, the war had been transformed.

Truman, now deeply concerned, convened the NSC again, emphasizing that the US had to avoid being sucked into a general war against China. He reaffirmed the prohibitions against bombing Manchuria and Yalu dams and hydroelectric stations.

MacArthur's late November offensive—he called it "a reconnaissance in force"—had brought a massive Chinese response, and critics claimed the US had suffered a defeat. Truman, though he continued to give MacArthur his strong support, stuck to his conviction that the conflict had to remain "limited."

"My decisions had to be made on the basis of not just one theater of operations but of a much more comprehensive picture of our nation's place in the world," Truman explained. "Neither [MacArthur] nor I would have been justified if we had gone beyond the mission that the United Nations General Assembly had given us. There was no doubt in my mind that we should not allow the action in Korea to extend into a general war. All-out military action against China had to be avoided, if for no other reason than because it was a gigantic booby trap."

Gen. Douglas MacArthur (second from left) visits a Far East Air Forces base in Korea shortly before Truman relieved him of command. With him are Maj. Gens. Doyle Hickey, Leven Allen, and Earle Partridge.

Heading Off General War

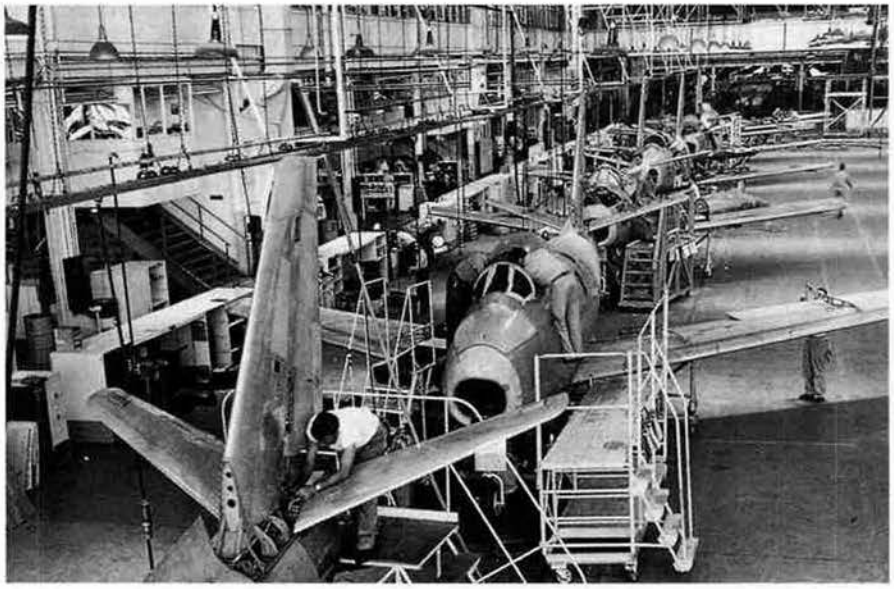
The Chinese onslaught left the armed services and the Washington establishment deeply shaken. Gen. Hoyt S. Vandenberg, Air Force Chief of Staff, had all along been concerned that, with the US preoccupied in Korea, the Soviet Union might make a move westward in Europe. With the move by China into Korea, Vandenberg recommended to the chiefs that the US attack targets in Manchuria. He also directed Gen. Curtis E. LeMay, head of USAF's Strategic Air Command, to bring his forces to alert status.

At the same time, the chiefs forwarded to the theater commanders a communiqué of warning that read, in part: "The JCS consider that the current situation in Korea has greatly increased the possibility of general war. Commanders should take such action as feasible to increase readiness without creating an atmosphere of alarm." It seemed that major war might soon break out.

This precarious military situation held both dangers and possibilities for USAF. Tactical Air Command's 9th and 12th Air Forces only a few years earlier had distinguished themselves in Europe during World War II. However, in the short interval between the end of World War II and the start of the Korean War, both had been significantly reduced in size. TAC could put into the air only 11 fighter groups and fewer than 32,000 men. The Air Force had placed top priority on SAC, its nuclear deterrent force. Moreover, in December 1948, the Air Force had reduced TAC to an operational and planning headquarters under Continental Air Command. Ninth and 12th Air Forces, in addition to being separate TAC units, became CONAC subordinate units. Consequently, TAC was forced to relinquish administrative and logistic control over its forces, with CONAC allocating them for specific missions or training assignments.

The outbreak of war in Korea immediately caused the Air Force to begin the rebuilding of TAC. On Dec. 1, 1950, just a few days after China entered the war, TAC was separated from CONAC and restored to its status as a major command, headed by Gen. John K. Cannon, one of the greatest tactical air commanders of World War II.

For all the dangers it posed, China's



This busy F-86 assembly line at North American Aviation in Los Angeles symbolizes the vast Air Force buildup that the Joint Chiefs of Staff requested after the Chinese entered the Korean War.

push into Korea did not shake Truman's conviction that the West's true enemy was the Soviet Union. The Chinese leaders, noted Truman, were "known to be in close relations with the Kremlin." In a special message to Congress on Dec. 1, the President described the Chinese "act of aggression in Korea" as "serving the ends of Russian colonial policy in Asia." Vandenberg, also suspicious of Soviet motives and fearful that the Kremlin would take advantage of the Asian war to cause trouble in Europe, thought it best to avoid getting bogged down in a war of attrition in Asia.

These factors helped to generate a brief international nuclear flap. At one point, Truman's public statements seemed to suggest that the American leader had not ruled out use of atomic weapons in Korea. Subsequently, he made clear that he was not giving any consideration to nuclear weapon employment but was, instead, pushing for a conventional buildup.

Defense Budget Boost

Truman on Dec. 1 asked Congress to increase the defense budget by a whopping $129 billion (as calculated in today's dollars, with compensation for inflation), which amounted to a one-year 35 percent rise. He emphasized that this funding was required not only to sustain the United Nations action in Korea but also to increase American military readiness "in other areas of the world."

The budget growth continued for several years, too. The three Korean War–era budgets were as follows: 1951, $366 billion; 1952, $481 billion; and 1953, $400 billion. By contrast, the last prewar budget, for 1950, was only $141 billion.

To Truman, the Chinese attack was merely part of a global strategy directed from Moscow by Soviet leaders. "The aggressors were armed with Soviet Russian weapons," he noted. "From the early days of the attack, it became clear that the North Korean forces were being supplemented and armed from across the frontier. Men and equipment were coming out of these dark places which lie behind the Iron Curtain."

For the Air Force, Truman's military buildup had a major, long-lasting impact. When war broke out, USAF comprised 48 wings of varying operational capability. After the Chinese came in, the Joint Chiefs requested a 95-wing Air Force by mid-1952. The vast Air Force buildup was under way.

Following the Chinese attack, with Truman's decision to limit the war, restore the status quo at the 38th parallel, and preserve the independence of the Republic of Korea, FEAF again performed a critical role, as it did in the earlier stages of the conflict, pounding the invaders and relieving the pressure on Eighth Army. By mid-1951, Seoul had been recaptured and the war entered a long stalemate.

End of MacArthur

MacArthur, meanwhile, had become high strung and somewhat petulant after China entered the war, and by early 1951, his calls for widening the conflict struck an increasingly sour note in the ears of the chiefs and the President. In April 1951, Truman, feeling that his Far East commander was attempting to circumvent the nation's official policy, relieved MacArthur and replaced him with Army Lt. Gen. Matthew B. Ridgway.

Military historians still recall the testimony of Army commanders that, without support from the Air Force, UN forces would have been pushed off the peninsula. As a result, the conflict led to a substantial expansion of the Air Force. Soon, the Joint Chiefs were setting the new requirement at 143 wings.

Truman's conduct of the war set a precedent. He became the first US President to confront the possibility of a major war in the nuclear era. He laid down the principle that, in the age of atomic and thermonuclear weapons, wars would have to be fought for limited and carefully delineated political objectives. The era of fighting a war as a crusade ended with the Second World War, in his view. The age of limited wars had been inaugurated.

As Commander in Chief, Truman held a close rein on the conflict. He steadfastly refused to expand the war after the UN drive to the Yalu precipitated Chinese intervention. The war remained a "police action," with Truman settling for a stalemate that proved highly unpopular at home.

Perhaps forgotten by the public at large, the Korean War nonetheless made an impact on the political and military psyches of the United States. There, the war is still very much alive. Fifty years after it broke out, the Forgotten War is anything but forgotten. ■

Herman S. Wolk is senior historian in the Air Force History Support Office. He is the author of The Struggle for Air Force Independence, 1943–1947 *(1997) and a contributing author of* Winged Shield, Winged Sword: A History of the United States Air Force *(1997). His most recent article for* Air Force *Magazine, "The Blueprint for Cold War Defense," appeared in the March 2000 issue.*

Verbatim

By Robert S. Dudney, Executive Editor

Tin Cups Prohibited

"Yesterday, Secretary Cohen met with the service chiefs and the commanders in chief of the various areas—the commander in chief of our European forces, the Pacific Command, the Southern Command, the Special Operations Command—and, acknowledging that this is a tricky political time, said to them that he expected them to play straight on the readiness issue, to give the facts, not to beat the drum with a tin cup in hand to try to generate more pressure for defense spending, but, on the other hand, to talk honestly about the pressures they face from the operations their forces are undergoing."***—Pentagon spokesman Kenneth H. Bacon, in Sept. 7 Pentagon news briefing.***

Duke's View

"With critical readiness issues and our security at stake, you owe it to military men and women, Congress, and the American people to [allow] full, open, and honest discussion of the remaining problems we face by our service leaders. ... Please put principle above politics and stop toeing the political line that has been drawn by your bosses at the White House."***—Rep. Randy "Duke" Cunningham (R–Calif.) in a reply to the "tin cup" statement that Bacon attributed to Cohen.***

The Real Powell Doctrine

"I have always strived to minimize friendly casualties in any military operation. Only a madman would do otherwise. But nothing in my writings or actions suggests a 'no casualties' approach. ... My philosophy remains what it has always been—our troops deserve to know and understand what they are fighting for, and they need to be given the military resources and political support to prevail quickly and decisively. Such action will usually minimize casualties. Casualties occur in war, and soldiers know that is a risk they take when they put on the uniform. ... The no casualty approach is not a military strategy. It is a political strategy, used when a political judgment is made that the American people will not support the loss of their GIs for the goals being pursued."***—Retired Gen. Colin L. Powell, former Chairman of the Joint Chiefs of Staff, writing in Sept. 14*** **Wall Street Journal.**

Campaign Morality Then ...

"[President Bush's spokeman, Marlin Fitzwater, has criticized] an endorsement of Gov. Clinton the other day by 22 retired military officers. The list of names was pretty impressive [and was] intended to counter charges by the Bush campaign that Mr. Clinton was not fit to be Commander in Chief. ... What [Fitzwater] chose to do ... was attack the endorsers. ... The ugly implication was that no real military officer could be for Mr. Clinton."***—Oct. 14, 1992,*** **Washington Post** ***editorial approving retired officers' endorsement of Democratic candidate Bill Clinton.***

... Campaign Morality Now

"When senior retired military people endorse a Presidential candidate, ... it marks a major step toward politicizing the American military."***—Former Chief of Air Force History Richard H. Kohn, same newspaper, Sept. 19, after some 85 retired officers endorsed Republican candidate George W. Bush.***

Military Hardware

"What concerns me is ... that, when you add up the capital available to our entire military–industrial complex today, it's significantly less than that of Home Depot. That is a sad state of affairs in America, when the defense industry we rely on to build the kinds of technologies we need has less capital available than a large chain of home supply stores."***—Rep. Curt Weldon (R–Pa.), House Armed Services Committee, quoted by reporter Kerry Gildea in Oct. 6 "Defense Daily," a Washington, D.C., newsletter.***

Is There Some Question About It?

"Depending on which of several plans is adopted, ... additional [health care] benefits for [military] retirees could end up adding as much as $5 billion a year to a defense budget that most policy-makers ... argue ... is already overburdened. Retirees 65 and over, who now get Medicare, would in addition get the equivalent of free, full Medigap insurance so that virtually all their health care expenses would remain covered without charge. The retirees are said to deserve that by virtue of their past service to the country."***—From Sept. 29 editorial in the*** **Washington Post.**

Dim Prospects

"The Air Force, still smarting over perceived slights during the last QDR [the Quadrennial Defense Review, conducted in 1997], will trumpet its dubious achievements in the air war over Kosovo and continue to pitch its 'halt phase' theme. ... Airpower advocates, seeking to gain a bigger advantage in the QDR process, aim to discount the Army's relevance to the national military strategy. They push the argument that technological advances in stealth and precision guided munitions have made ground forces virtually obsolete, except as peacekeepers. ... Airpower advocates also characterize the Army as too slow and heavy to be relevant while neglecting the fact that the Air Force fails to provide sufficient lift assets."***—John Kreul, analyst with the Institute of Land Warfare, in July paper, "Son of QDR: Prospects for the Army."***

Bismarck Wept

"Herr [Rudolf] Scharping [the German defense minister] is not a lucky man. The other day, he was hurled against the roof of his car when it tried to pass the security gate at the Pentagon. A few years ago, he was seriously injured while riding his bicycle. This summer, on the way to the European summit in Lisbon, the government delegation took off without him. The aircraft returned midflight only after another minister asked: 'Where is Rudolf?' "***—From Sept. 13*** **The Times** ***of London.***

Something to Celebrate

Photo by Cort Durocher via Robert F. Dorr

The end of a tour of duty was sometimes marked by a special celebration when you were stationed far from home during the Vietnam War. At Bien Hoa AB, South Vietnam, a miniature version of the Cessna A-37B Dragonfly was used by some pilots to designate a final combat mission. Made from old wingtanks, scrap metal, and miscellaneous parts, the mock-up couldn't fly, but it could be driven in a kind of victory lap down the flight line.

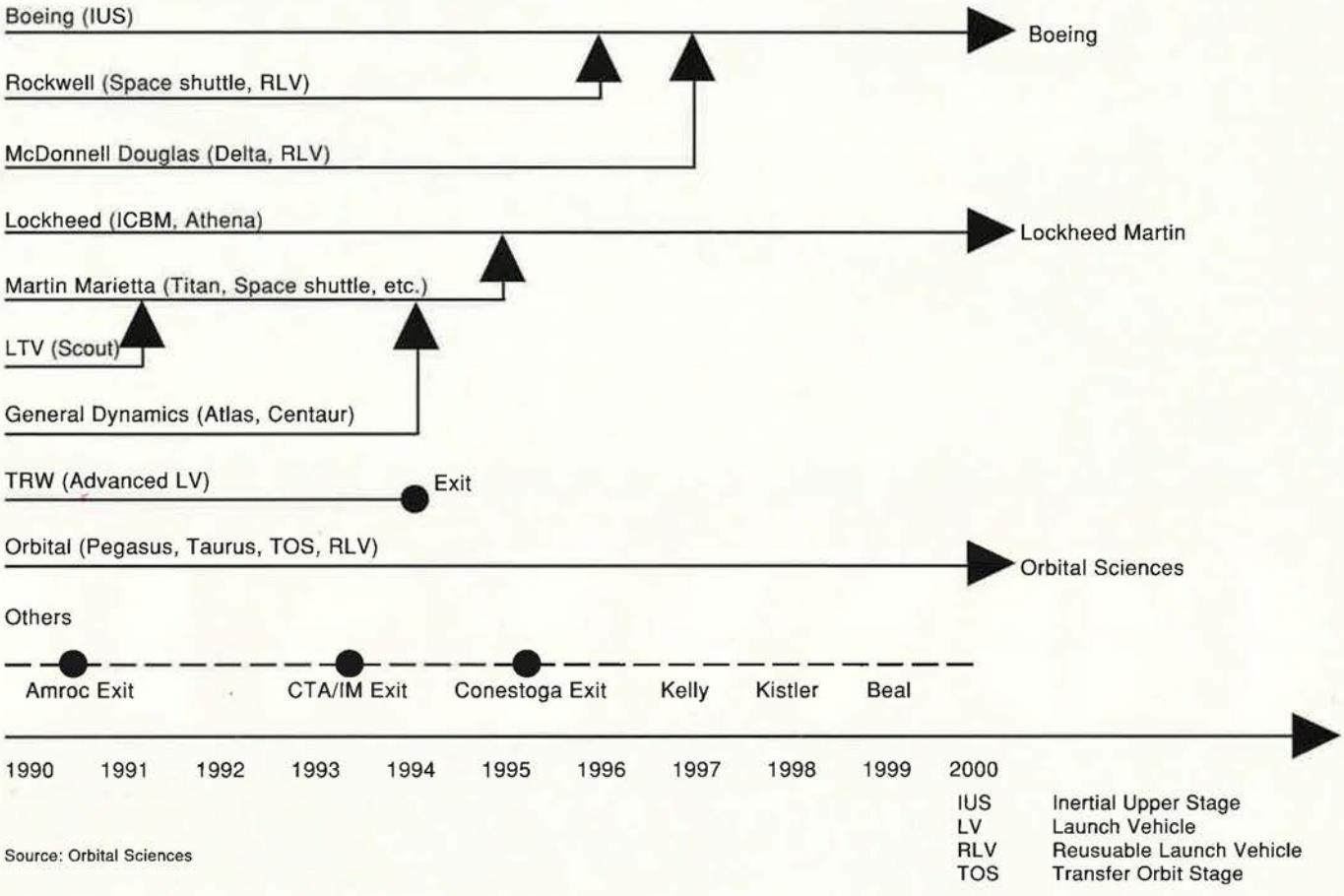
The Chart Page

By Tamar A. Mehuron, Associate Editor

Consolidation of US Launch Industry

What a difference a decade makes. In 1990, the US launch industry boasted nine major firms and several smaller companies. By 2000, the number of launch companies had shrunk to just three—Boeing, Lockheed Martin, and Orbital Sciences. Boeing absorbed Rockwell and McDonnell Douglas in the mid-1990s. Lockheed merged with Martin Marietta (which earlier acquired LTV) and General Dynamics. TRW, another of the nine majors, exited the field. Throughout the aerospace industry, the trend was toward consolidation.

Contraction Throughout the 1990s



Source: Orbital Sciences

AFA 2000 NATIO

CONVENTI

By **Tamar A. Mehuron,** Associate Editor

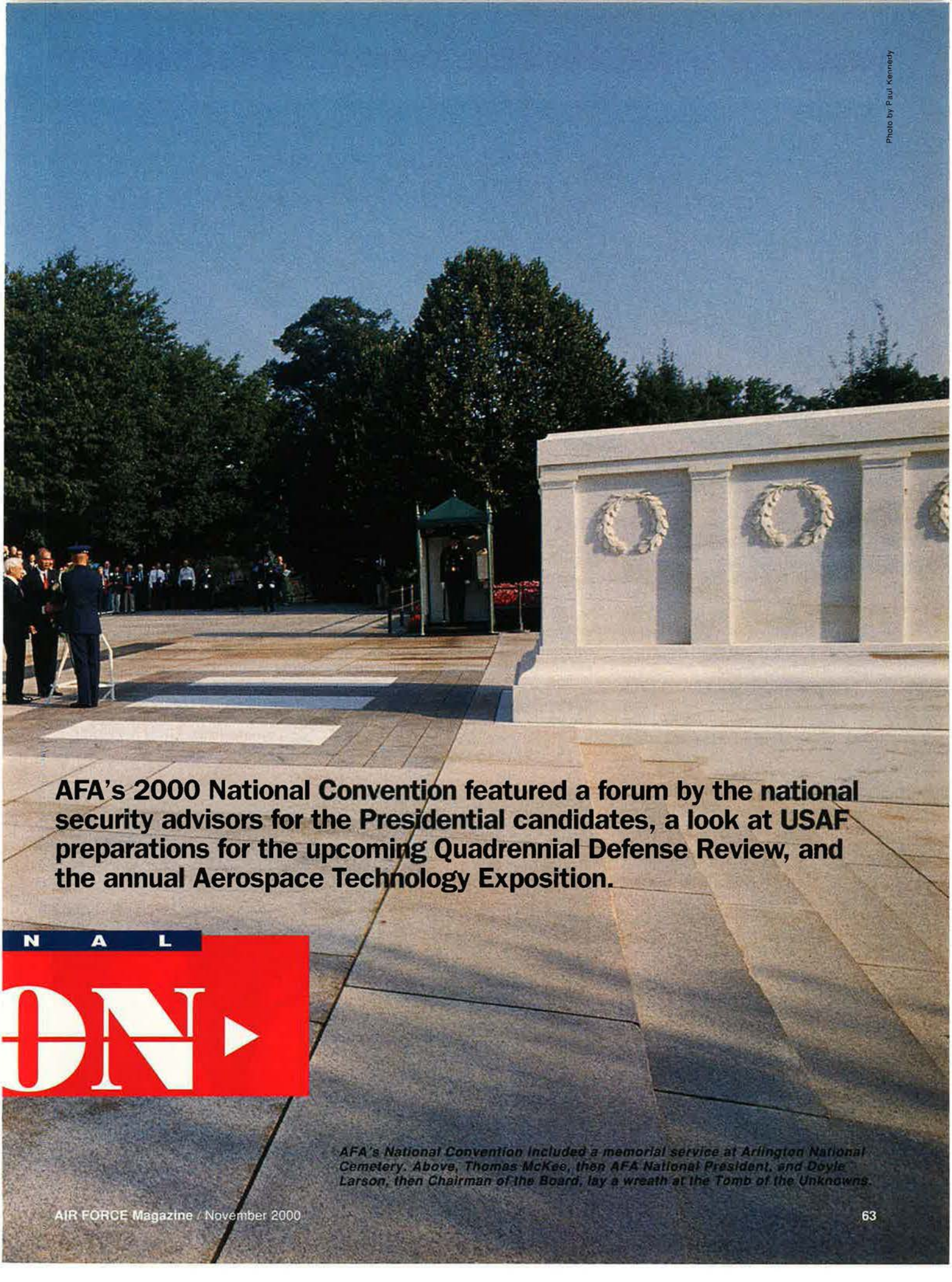


Photo by Paul Kennedy

AFA's 2000 National Convention featured a forum by the national security advisors for the Presidential candidates, a look at USAF preparations for the upcoming Quadrennial Defense Review, and the annual Aerospace Technology Exposition.

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AFA's National Convention included a memorial service at Arlington National Cemetery. Above, Thomas McKee, then AFA National President, and Doyle Larson, then Chairman of the Board, lay a wreath at the Tomb of the Unknowns.

Photo by Paul Konnedy

Thomas McKee, then AFA National President, addresses delegates during a business session at the convention. The 307 registered delegates came from 44 states, the District of Columbia, and Pacific and European chapters.

On the 10th anniversary of Desert Shield (and, subsequently, Desert Storm), the Air Force Association's National Convention, held Sept. 10–13 at the Marriott Wardman Park Hotel in Washington, D.C., honored Air Force, Congressional, and aerospace industry leaders.

Many AFA delegates traveled by bus to Arlington National Cemetery for a memorial service on Sunday. Donald J. Harlin, AFA National Chaplain, gave the invocation and closing prayer, and the Memorial Tribute List was read by Air Force representatives. Then–National President Thomas J. McKee and then–Chairman of the Board Doyle E. Larson laid a wreath at the Tomb of the Unknowns, assisted by the Air Force Honor Guard.

At the Air Force Anniversary Dinner, Sept. 12, Gen. Michael E. Ryan, Air Force Chief of Staff, received the H.H. Arnold Award, AFA's highest honor recognizing a military contribution to national security in a given year.

In that same evening, AFA awarded Rep. Floyd D. Spence (R–S.C.), chairman of the House Armed Services Committee, the W. Stuart Symington Award for his outstanding civilian contributions to national security.

Simon Ramo and Dean E. Wooldridge, the co-founders of Ramo–Wooldridge, which later merged with Thompson Products to form TRW, were honored with the John R. Alison Award for industrial contributions to the nation's security. Donald C. Winter, executive vice president and general manager of TRW Systems and Information Technology, accepted the award on their behalf. Gen. Bernard A. Schriever, USAF (Ret.), father of the USAF ICBM and military space programs, sent a congratulatory letter to his longtime professional colleagues.

The USAF Band Brass Quintet opened the evening festivities with a musical presentation. A special program by singer Gloria Loring and the USAF Band's Airmen of Note, under the direction of Col. Lowell E. Graham, highlighted the evening.

On Monday morning, Gen. Richard B. Myers, vice chairman of the Joint Chiefs of Staff, presented the convention keynote address. As part of the day's activities, AFA honored the Air Force's 12 Outstanding Airmen of the Year at that evening's dinner. Gen. John W. Handy, USAF

Staff photo by Guy Aceto

Ivan McKinney (center), AFA national director, William Cocke (right), Louisiana state president, and Ark–La–Tex (La.) Chapter member Thomas Keal consider various convention activities.

Photos by Paul Kennedy

AFA's newly elected National President John Politi speaks to Undersecretary of the Air Force Carole DiBattiste (left), who was among USAF's top leadership attending the convention.

vice chief of staff, was the dinner speaker. CMSAF Jim Finch was toastmaster.

AFA convention delegates and military attendees and other guests heard major addresses by F. Whitten Peters, Secretary of the Air Force, and Chief of Staff Ryan. Ryan gave AFA's McKee the USAF Exceptional Service Award, the highest honor bestowed on a civilian for contributions to the Air Force. Peters presented to AFA's Larson a painting, by renowned aviation artist Keith Ferris, in recognition of his work on behalf of the Air Force.

Convention week featured a policy forum on Sept. 11, focusing on the Presidential candidates and their views on national defense. Convention attendees heard remarks by Leon S. Fuerth and Stephen J. Hadley, national security advisors, respectively, to Presidential candidates Vice President Al Gore and Texas Gov. George W. Bush.

AFA delegates also attended a briefing Monday on "Working With Congress" by Maj. Gen. T. Michael Moseley, Air Force director of legislative liaison.

On Sept. 12, Brig. Gen. David A. Deptula, director of Air Force preparations for the upcoming Quadrennial Defense Review 2001, gave a presentation on the Air Force's basic position. Sept. 13 featured a presentation by Lt. Gen. Robert H. Foglesong, deputy chief of staff for air and space operations, on "The Air Force in the Next Conflict—the Expeditionary Aerospace Force."

About 8,500 people participated in one or more convention-related activities. The 307 registered delegates representing 44 states, the District of Columbia, and AFA's Pacific and European chapters were joined by senior military and government officials for the Aerospace Technology Exposition, speeches, and social events. The three-day exposition featured 129 exhibitors. On hand to cover convention activities were 103 reporters and other members of the media.

Holding meetings concurrently were AEF trustees, Air Force Memorial Foundation Board of Trustees, and Air Force Command Chief Master Sergeants. Also meeting were AFA's Air National Guard Council, Civilian Advisory Council, Enlisted Council, Junior Officer Advisory Council, and Reserve Council.

Election of officers. Thomas J. McKee, Fairfax Station, Va., was elected AFA's National Chairman of the Board. John J. Politi, Sedalia, Mo., was elected National President. Daniel C. Hendrickson, Layton, Utah, was elected National Secretary, and Charles A. Nelson, Sioux Falls, S.D., was elected National Treasurer. All were elected for first terms.

By decision of the National Convention delegates, the National Chairman of the Board henceforth will be considered AFA's highest elected official. Previously, the National President had been so designated. By tradition, AFA leaders serve for two years as National President and then for two years as Chairman of the Board.

The convention delegates concluded that both AFA and its elected officials would benefit by its top leader having first been President, thus gaining two years' seasoning. The delegates also decided that this step would put AFA leadership in line with the practices of other professional and business organizations.

Other elections. Four new Region Presidents were elected, and

Stephen Hadley (center), national security advisor to Presidential candidate George W. Bush, joins McKee in listening to William Spruance (right), an AFA national director emeritus, make a point.

Photos by Paul Kennedy

AFA's new National Treasurer, Charles Nelson (right), poses with AFA stalwarts from the Montgomery (Ala.) Chapter, Mark Dierlam (left) and Roy Boudreaux, a national director.

10 Region Presidents were re-elected. Newly elected are Thomas G. Shepherd (Central East Region), W. Graham Burnley (Midwest Region), Gary H. Olson (North Central Region), and M.N. "Dan" Heth (Texoma Region).

Elected to the Board of Directors for three-year terms were John E. Craig II, Arlington, Va., Thomas J. Kemp, Fort Worth, Tex., Robert E. Patterson, Shalimar, Fla., Coleman Rader Jr., Maple Grove, Minn., Arthur F. Trost, Walnut Creek, Calif., Howard R. Vasina, Colorado Springs, Colo. Elected for a one-year term was Robert M. Williams of Omaha, Neb., who fills the position vacated by Politi.

Three new Leadership Development Directors (formerly known as Under-Forty Directors) joining the AFA Board are Stephen P. Condon, Ogden, Utah, Theron G. Davis, Alexandria, Va., and Thomas J. Stark, Bonaire, Ga.

For a complete list of AFA Region Presidents and Directors, including those re-elected, see "This Is AFA" on p. 94.

AFA's Aerospace Education Foundation elected the following officers: Jack C. Price, Pleasant View, Utah, as Chairman of the Board; Richard B. Goetze Jr., Arlington, Va., as President; Charles P. Zimkas Jr., Colorado Springs, Colo., as Vice President; Victoria W. Hunnicutt, Gray, Ga., as Secretary; and Mark J. Worrick, Denver, Colo., as Treasurer.

The newly elected AEF trustees are L. Boyd Anderson of Ogden, Utah, Samuel M. Gardner of Garden City, Kan., Ivan L. McKinney of Bossier City, La., and Ronald M. Sega of Colorado Springs.

Congressional activity. AFA state delegations sponsored 15 Congressional breakfasts on Tuesday and Wednesday with 29 members of Congress participating. Among them were Sens. James Inhofe (R–Okla.) and Pat Roberts (R–Kan.) on the Senate Armed Services Committee and Sens. Arlen Specter (R–Pa.) and Byron Dorgan (D–N.D.), who are on the Senate Appropriations Committee. Other senators who attended the meetings were Republicans Charles Grassley of Iowa, Orin Hatch of Utah, Kay Bailey Hutchison of Texas, and Craig Thomas of Wyoming. Democratic senators attending the breakfasts included Kent Conrad of North Dakota.

Also participating in the AFA breakfast meetings were several members of the House Armed Services Committee, including ranking minority member Ike Skelton (D–Mo.), Jim Hansen (R–Utah), and J.C. Watts Jr. (R–Okla.). Congressmen Randy "Duke" Cunningham (R–Calif.), Jim Kolbe (R–Ariz.), Tom Latham (R–Iowa), and John Sununu (R–N.H.), members of the House Appropriations Committee, also participated. Co-chairman of the Air Force Caucus Rep. Sam Johnson (R–Tex.) also attended a breakfast.

Other congressmen attending the breakfasts were J.D. Hayworth (R–Ariz.), Lois Capps (D–Calif.), John Mica (R–Fla.), and Karen Thurman (D–Fla.), Bob Barr (R–Ga.), Mac Collins (R–Ga.), Gil Gutknecht (R–Minn.), Frank Lucus (R–Okla.), and Steny Hoyer (D–Md.), Charles Stenholm (R–Tex.), Norman Sisisky (D–Va.), and James Moran (D–Va.).

State delegations meeting separately with their representatives included the Arkansas delegation, which met with Reps. Asa Hutchinson (R) and Marion Berry (D); the Mississippi delegation, which met with

A new AEF fellow program honors retired Gen. Bernard Schriever (center), who attended AEF's "State Fair" with wife, Joni James–Schriever. AEF Board Chairman Jack Price (right) sports a bandana in keeping with the fair's western theme.

Rep. Gene Taylor (D); the Ohio delegation with Sen. Mike DeWine (R); the Massachusetts delegation which met with Sen. Edward Kennedy (D); and the Nebraska delegation with Rep. Lee Terry (R).

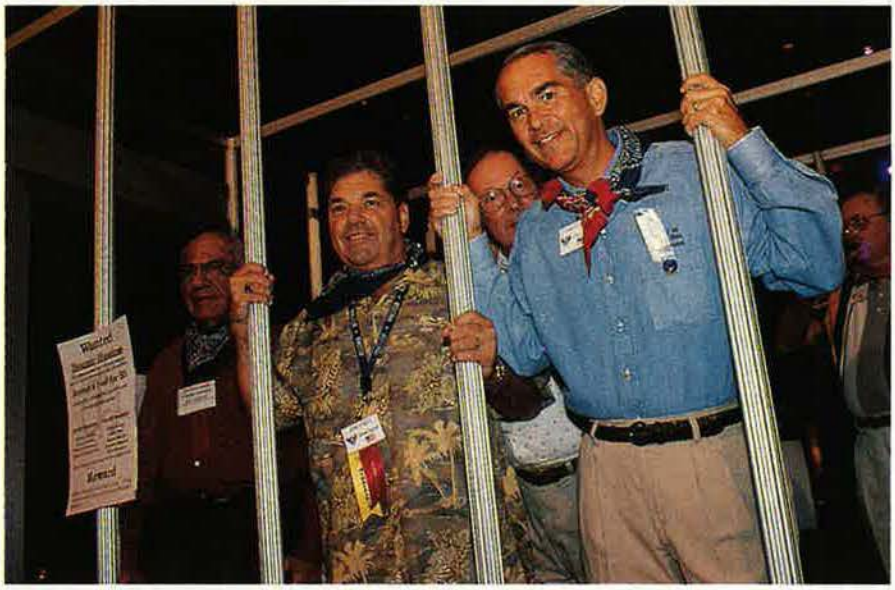
Representatives Mica and Thurman received AFA awards for service to USAF.

Air Force Secretary Peters visited breakfasts hosted by Ohio, Oklahoma, and Wyoming. Chief of Staff Ryan visited the breakfasts hosted by Arizona, California, and Texas. Vice Chief Handy attended the North Carolina and the North Central Region breakfasts.

Aerospace Education Foundation. A video on the theme of why young people should join the Air Force JROTC program won AEF's annual Jimmy Stewart Aerospace Education Award. The winning entry was from Unit UT-081 at Clearfield High School in Clearfield, Utah. In a fast-paced video with sharp graphics, the cadets noted that AFJROTC presents the chance to demonstrate leadership, service, and patriotism. It concluded with the words "AFJROTC: More than a class, it's an experience!"

Melinda D. Kelley, from Chester, Va., won the Christa McAuliffe Memorial Award as the year's outstanding aerospace science, mathematics, and computer science teacher. The Gen. Bernard A. Schriever Los Angeles Chapter received the Sam E. Keith Jr. Aerospace Education Award of Excellence. The award is named in honor of the late AFA leader and former National President and Board Chairman from Fort Worth, Tex. Patricia Fleener–Ryan, Brig. Gen. James R. McCarthy Chapter, Fla., won the George D. Hardy Memorial Award. The winner is nominated by an AFA chapter for outstanding contributions toward furthering the scientific, technical, and aerospace education of the nation.

Photos by Paul Kennedy



A new event at convention was the AEF State Fair, which drew a large crowd (top photo) with its casual atmosphere, barbecue buffet, silent auction, and varied entertainment. Part of the entertainment included an opportunity to put "desperadoes," like Tofie Owen (far left) of the Nation's Capital Chapter, Politi, director emeritus Martin Harris, and McKee in "jail" by making donations to AEF. It took another donation to get them released.

On Tuesday afternoon Ryan presented the Chief of Staff Team Excellence Awards to the 109th Airlift Wing Team Antarctica, Schenectady County Airport, N.Y.; the Lakenheath Propulsion Power Team, 48th Component Repair Squadron, RAF Lakenheath, UK; the Smart Pay Tracking System, 917th Maintenance Squadron, Barksdale AFB, La.; the 12 O'Clock High Aircraft Debrief Action Workout Team, 437th Logistics Group, Charleston AFB, S.C.; and the Environmental Safety and Occupational Health Cost Reduction and Productivity Improvement Team, AETC Directorate of Logistics, Randolph AFB, Tex.

Acknowledgments. Parliamentarian for the AFA National Convention was Joan Blankenship. Inspectors of Elections were Charles G. Durazo (Chairman), Ted O. Eaton, and Mark J. Worrick. Robert J. Cantu chaired the Credentials Committee, serving with Craig E. Allen and Robert E. Largent.

The association is particularly grateful to a corps of volunteers who assisted the staff in convention support: Cecil Brendle, Jimmy Canlas, Marietta Church, Jason Evans, Francisco Flores, Noel Garcia, Amy Hunter, Max Keeney, Brandon Leifer, Chris Petek, Tom Plunkett, Glenda R. Shepela, Debbie and Gregg Snyder, Dana Steinhauser, Charlie Tippett, and Leola Wall.

The 2001 convention will be held at the Marriott Wardman Park Hotel, Washington, D.C., Sept. 16–19, 2001. ■

Congressional Breakfasts

Congressional Breakfast gatherings on the morning of Sept. 12 gave members of Congress, their staffers, and AFA guests an opportunity to talk informally about issues important to the Air Force and the association.

Here, Rep. James P. Moran (D–Va.) speaks to guests at the AFA Central East Region's breakfast.

Photos by Susan Kennedy

Undersecretary of the Air Force Carole DiBattiste (above) was among the Air Force senior leaders who attended several breakfasts.

At the Northwest Region breakfast (left), Tom Moore, a legislative assistant from the office of Rep. Darlene Hooley (D–Ore.), talks with John Lee (left), Oregon state president, and Barbara Brooks–Lacy, region president (Northwest Region).

Photos by Susan Kennedy

Rep. Michael "Mac" Collins (R–Ga.), at right, chats with Dan Callahan, an AFA national director and Carl Vinson (Ga.) Memorial Chapter member, at the Georgia State breakfast on Capitol Hill. Collins is a member of the House Ways and Means Committee and the House Budget Committee.

In all, 29 members of Congress attended the gatherings, and many more were represented by their staff members.

The audience at the North Carolina breakfast enjoyed remarks from "Red" Smith, an AFA national director emeritus (above).

At right, AFA National Chairman of the Board Thomas McKee addresses one of the 15 Congressional Breakfasts held that morning.

Rep. Steny Hoyer (D–Md.) poses with (at left) John E. Craig II, former region president (Central East Region), and Gen. Michael E. Ryan. The USAF Chief of Staff attended several breakfasts, as did Air Force Secretary F. Whitten Peters.

Some AFA delegates met individually with Congressional representatives from their home states. The convention's location in the Nation's Capital presented many opportunities for AFAers to exchange ideas with members of Congress and their staffs, as well as USAF and AFA leadership.

Awards

Photo by Paul Kennedy

The award named for John R. Alison (left) went to Simon Ramo and Dean Wooldridge, whose company eventually became TRW. Donald Winter (right), a TRW executive, accepted the award on their behalf. Alison was AFA's National President, 1954–55, and is now a national director emeritus.

National Aerospace Awards

Award	Recipient(s)
H.H. Arnold Award *AFA's highest honor in national security to a member of the armed forces*	Gen. Michael E. Ryan, Air Force Chief of Staff
W. Stuart Symington Award *AFA's highest honor in national security to a civilian*	Rep. Floyd D. Spence (R–S.C.), chairman, House Armed Services Committee
John R. Alison Award *AFA's highest honor for industrial leadership*	Simon Ramo, Los Angeles, and Dean E. Wooldridge, Santa Barbara, Calif.
David C. Schilling Award *outstanding contribution in flight*	31st Air Expeditionary Wing, Aviano AB, Italy
Theodore von Karman Award *outstanding contribution in science and engineering*	Air Force Weather Agency, Offutt AFB, Neb.
Gill Robb Wilson Award *outstanding contribution in arts and letters*	Rebecca Grant, Arlington, Va.
Hoyt S. Vandenberg Award *outstanding contribution in aerospace education*	Advanced Education and Training Branch, Space Warfare Center, Schriever AFB, Colo.
Thomas P. Gerrity Award *outstanding contribution in logistics*	Maj. Socrates L. Greene, Shaw AFB, S.C.
Department of Veterans Affairs Employee of the Year	Margo L. Duckett, Sacramento Veterans Affairs Medical Center, Mather, Calif.

Crew Awards and Special Citations

Award	Recipient(s)	Achievement	Accepted by
Lt. Gen. Claire L. Chennault Award	Maj. Phil M. Haun, Spangdahlem AB, Germany	Best aerial warfare tactician	Maj. Phil M. Haun
Brig. Gen. Ross G. Hoyt Award	Aircrew Ogre 01 (MC-130P), 67th Special Operations Sq., RAF Mildenhall, UK	Best air refueling aircrew	Lt. Col. James N. Pankau
Gen. Curtis E. LeMay Award	Crew Havoc 11, 2nd Bomb Wing, Barksdale AFB, La.	Best bomber aircrew	Capt. Jeffrey D. Neischel
Gen. Jerome F. O'Malley Award	Rivet Joint Crew, 38th, 95th, and 343rd Reconnaissance Sqs.; 488th Intelligence Sq.; and 55th Operations Support Sq.	Best reconnaissance crew	Lt. Col. Michael L. Zenk MSgt. Jeffrey F. Adams
Gen. Thomas S. Power Award	Crew Sierra 600, 341st Operations Gp., Malmstrom AFB, Mont.	Best missile combat crew	Capt. Keith A. McCartney
Space Operations Award	Charlie Crew, 21st Space Wing, Peterson AFB, Colo.	Best space operations crew	Capt. Andrew S. Kovich
Lt. Gen. William H. Tunner Award	517th Airlift Sq., Elmendorf AFB, Alaska	Best airlift aircrew	Lt. Col. Paul A. Curlett
Airborne Battle Management Crew	Crew 3, 12th Expeditionary Airborne Command & Control Sq., Robins AFB, Ga.	Best ABM crew	Maj. John L. Mahaffey
USAF Test & Evaluation Team of the Year	Defensive Systems Test Team, 46th Test Wing, Eglin AFB, Fla.	Best test team	Capt. Richard A. Dennery

Air National Guard and Air Force Reserve Command Awards

Award	Recipient(s)	Achievement	Accepted by
CMSgt. Dick Red Award	CMSgt. Thomas A. Childers, 121st Air Refueling Wing, Ohio ANG	Best ANG aerospace maintenance	CMSgt. Thomas A. Childers
Maj. Gen. Earl T. Ricks Award	Lt. Col. Randall G. Riccardi, 122nd Fighter Sq., Louisiana ANG	Best ANG airmanship	Lt. Col. Randall G. Riccardi
Best Air National Guard Unit	172nd Fighter Sq., Michigan ANG	Top ANG unit	Maj. Clifford W. Latta Jr.
Best Air Force Reserve Unit	70th Air Refueling Sq., 349th Air Mobility Wing, Travis AFB, Calif.	Top AFRC unit	Col. James R. Lynott
President's Award	70th Air Refueling Sq., Travis AFB, Calif.	Best Reserve aircrew	Maj. Jeffrey T. Pennington

Citations of Honor

Recipient	Achievement
Air Force Expeditionary Aerospace Force Implementation Div., Washington, D.C.	Directed the rapid creation of the Expeditionary Aerospace Force, resulting in 10 Aerospace Expeditionary Forces for the 21st century.
Warrior Preparation Center, Einsiedlerhof AS, Germany	Produced consistent, comprehensive, and timely strike analysis to force commanders in the successful air war during Allied Force.
USAFE Turkish Collective Labor Agreements Negotiating Team	Concluded key collective labor agreements with the Turk Harb-Is Labor Union for 2000–02, avoiding renewed labor unrest and establishing the foundation for future positive labor relations.
32nd Air Operations Group, Ramstein AB, Germany	Planned, coordinated, and directed all Allied Force tactical deception operations, developed psychological warfare themes, and facilitated secure operations by stealth and unmanned aircraft.
48th Intelligence Sq., Beale AFB, Calif.	Demonstrated during Allied Force that reachback can provide enhanced, integrated intelligence to deployed joint forces.
77th Bomb Sq., Ellsworth AFB, S.D.	Conducted first sustained combat action, armed with a major B-1 system modification, launched 100 missions, 100 percent on time, and delivered 22 percent of all munitions released during Allied Force.
86th Contingency Response Group, Ramstein AB, Germany	Established communications, maintained air traffic control, and provided force protection for AEF combat airlift into new airfields during and after Allied Force.

Photo by Paul Kennedy

Rep. Floyd Spence (R–S.C.) received AFA's highest honor in national security for a civilian. Spence is chairman of the House Armed Services Committee.

Professional, Civilian, and Educational Awards

Award	Recipient
CMSAF Thomas N. Barnes Award for Crew Chief of the Year	TSgt. Stewart J. Crerar, Whiteman AFB, Mo.
Gen. Billy Mitchell Award for C^4 Excellence	Capt. Angela M. Cadwell, Robins AFB, Ga.
Paul W. Myers Award for Physicians	Maj. James A. Fike, Ramstein AB, Germany
Verne Orr Award for Human Resources	31st Fighter Wing, Aviano AB, Italy
Juanita Redmond Award for Nursing	Capt. Thomas G. Fevurly, Lackland AFB, Tex.
Stuart R. Reichart Award for Lawyers	Col. Stephen C. Donnelly, Ramstein AB, Germany
Personnel Manager of the Year*	TSgt. W.T. Little, Hickam AFB, Hawaii
Civilian Wage Employee of the Year*	David V. Bauch, AFPCA, Pentagon
Civilian Program Specialist of the Year*	Tracy W. Young, Cannon AFB, N.M.
Civilian Program Manager of the Year*	Clark W. Brandon Jr., Arnold AFB, Tenn.
Civilian Senior Manager of the Year	Ann-Cecile M. McDermott, Washington, D.C.
AFROTC Cadet of the Year	Bernard F. Murphy III, Cornell University
CAP Aerospace Education Cadet of the Year	Barbara Lee Bolinger, Durango, Colo.
Joan Orr Award for Air Force Spouse of the Year	Maureen M. Arceneaux, Aviano AB, Italy
Christa McAuliffe Memorial Award for Teachers	Melinda D. Kelley, Chester, Va.
Sam E. Keith Jr. Aerospace Education Award of Excellence	Gen. B.A. Schriever Los Angeles Chapter
George D. Hardy Memorial Award	Patricia Fleener–Ryan, Brig. Gen. James R. McCarthy Chapter, Fla.
Outstanding Initiative in Visions of Exploration Program Award	Central Florida Chapter, Fla.
Outstanding Visions of Exploration Chapter Award	Gen. E.W. Rawlings Chapter, Minn.
Jimmy Stewart Aerospace Education Award	UT-081 Unit, Clearfield High School, Clearfield, Utah

Management and Environmental Achievement Awards

Award	Recipient
AFMC Executive Management Award*	Col. Stephen A. Henry, Hanscom AFB, Mass.
AFMC Middle Management Award*	David Wheeler, Eglin AFB, Fla.
AFMC Junior Management Award*	Capt. David M. Coley, Kelly AFB, Tex.
Gen. Edwin W. Rawlings Award for Environmental Excellence (Management)*	Lt. Col. Brian J. Cullis, USAF Academy, Colo.
Gen. Edwin W. Rawlings Award for Environmental Excellence (Technical)*	James A. Holley Jr., Eglin AFB, Fla.

*These awards are now presented at the recipient's locations by an AFA chapter.

2000 AFA Membership Awards

Arthur C. Storz Sr. Membership Awards

AFA's most prestigious membership awards are named for Arthur C. Storz Sr., a former permanent AFA national director, a life member, and a principal founder of the Ak–Sar–Ben (Neb.) Chapter. The Storz membership awards, made possible through a generous endowment to the association by his son, Art Storz Jr., have been awarded for membership excellence based on criteria approved by AFA's board of directors for the year ending March 31, 2000.

State Award

Presented to the AFA state organization that produces the highest number of new members during the 12-month period ending March 31, 2000, as a percentage of total state membership as of March 31, 1999, and meets certain other minimum indicators of overall performance and excellence.

Delaware State, Del.

Chapter Award

Presented to the AFA chapter that produces the highest number of new members during the 12-month period ending March 31, 2000, as a percentage of total chapter membership as of March 31, 1999, and meets certain other minimum indicators of overall performance and excellence.

Fairbanks Midnight Sun, Alaska

Individual Award

Presented to the AFA member(s) who has (have) done the most to promote AFA membership during 1999–2000.

Dan Callahan, Ga.
Denise Camejo, Ga.
Jack H. Steed, Ga.

2000 Unit Activity Awards

Outstanding State Organization
Florida

AFA Unit of the Year
Wright Memorial, Ohio

Outstanding Small Chapter
Leigh Wade, Va.

Outstanding Medium Chapter
John W. DeMilly Jr., Fla.

Outstanding Large Chapter
Enid, Okla.

Exceptional Service—Best Single Program
Eglin, Fla.

Exceptional Service—Communications
Alamo, Tex.

Exceptional Service—Community Partners
Colorado Springs/Lance Sijan, Colo.

Exceptional Service—Overall Programming
Cape Canaveral, Fla.

Exceptional Service—Veterans' Affairs
Gen. E.W. Rawlings, Minn.

Jack Gross Award

These awards recognize the chapter in each size category with the highest number of new members as a percentage of chapter size at the beginning of the membership year. A minimum of 10 is required. *(The award is based on their recruitment of new members during the 12-month period ending March 31, 2000.)*

Small Chapter	Pensacola, Fla.
Medium Chapter	Richard D. Kisling, Iowa
Large Chapter	Anchorage, Alaska
Extra Large Chapter	Central Florida, Fla.
Chapter Larger Than 1,500	Carl Vinson Memorial, Ga.

Special Recognition—Sustained New Member Recruitment

These awards recognize chapters that have attained the quarterly new member recruitment goal for three consecutive quarters, from October 1999 to June 2000. *(The awards are based on their recruitment of new members during the 12-month period ending March 31, 2000.)*

Badger State, Wis.
Bill Harris, Ore.
Brig. Gen. James R. McCarthy, Fla.
Brig. Gen. Pete Everest, W.Va.
Carl Vinson Memorial, Ga.
Central Florida, Fla.
Columbus–Bakalar, Ind.
Contrails, Kan.
Dacotah, S.D.
David J. Price/Beale, Calif.
Del Rio, Tex.
Delaware Galaxy, Del.
Diamond State, Del.
Dolomiti, Italy
Earl D. Clark Jr., Mo.
Enid, Okla.
Fairbanks Midnight Sun, Alaska
Gen. David C. Jones, N.D.
Gen. E.W. Rawlings, Minn.
Gold Coast, Fla.
Golden Triangle, Miss.
James H. Straubel, Mich.
John W. DeMilly Jr., Fla.
Leigh Wade, Va.
Maj. Gen. Oris B. Johnson, La.
Mercer County, N.J.
Miami, Fla.
Miss Veedol, Japan
Mount Clemens, Mich.
Northeast Texas, Tex.
Palm Springs, Calif.
Pensacola, Fla.
Richard D. Kisling, Iowa
Richard S. Reid, Ariz.
Savannah, Ga.
Swamp Fox, S.C.
Union Morris, N.J.
Worcester, Mass.

AFA Staff Member of the Year

A donation from Jack Gross, national director emeritus, enables AFA to honor staff members each quarter. Those members become eligible for AFA Staff Member of the Year.

1992	Doreatha Major
1993	Jancy Bell
1994	Gilbert Burgess
1995	David Huynh
1996	Sherry Coombs
1997	Katherine DuGarm
1998	Suzann Chapman
1999	Frances McKenney

2000 Individual Activity Awards

Member of the Year

Mary Anne Thompson, Va.

Presidential Citation

Bonnie B. Callahan, N.Y.
Joseph M. Capriglione, N.J.
Dan Heth, Tex.
Thomas J. Kemp, Tex.
John J. Politi, Mo.
Clayton C. Pyle, Minn.
James I. Wheeler, Ariz.

Central East Region

Medal of Merit

1st Lt. Kelly Ayer, D.C.*
James Behring, Del.
James H. Carlock, D.C.
James D. Dellaripa, Va.
Mike Engelmeyer, Va.
CMSAF Jim Finch, D.C.*
John P. Gaffney, Va.
Pat Garvey, Va.
Robert C. Hudson, Va.
Melinda D. Kelley, Va.
James R. Lauducci, Va.
SMSgt. Troy McIntosh, D.C.*
Tofie M. Owen, D.C.
Jesse O. Sandlin, Va.
Maureen Sealund, Del.
James Seevers, Va.
Jim Welteroth, Va.
Margaret Whitman, Del.
Stephanie Wright, Del.

Exceptional Service Award

Mason S. Botts, Va.
Maj. Tracey L. Hale, Va.*
James T. Hannam, Va.
Stephen A. Mosier, Va.
Fred W. Rhodes, Va.

Special Citation

Maj. Gen. John F. Regni, D.C.*

Far West Region

Medal of Merit

William H. Anders, Calif.
Phil Barger, Calif.
Dennis R. Davoren, Calif.
John P. Delaney, Calif.
Jarrard Galbreath, Calif.
Brian McLaughlin, Calif.
Armand J. Petri, Calif.

Exceptional Service Award

John L. Hill, Calif.
Richard L. Jones, Calif.
Arthur F. Trost, Calif.

Florida Region

Medal of Merit

Mark Andrews, Fla.
John T. Brock, Fla.
Larry Danner, Fla.
Emil M. Friedauer, Fla.
David J. Froiseth, Fla.
Bruce E. Marshall, Fla.
Elizabeth May, Fla.
Loyal L. Weaver, Fla.

Exceptional Service Award

Ronald H. Byrd, Fla.
Robert F. Cutler, Fla.
Shirley A. Jones, Fla.
Dennis M. Moran, Fla.
Raymond Turczynski Jr., Fla.

Great Lakes Region

Medal of Merit

Karen Bell, Ind.
Larry D. Fields, Ky.
J. David George, Ind.
Aaron D. Hagan, Ohio
Daniel Kelleher, Ohio
Donald K. Naragon, Mich.
Capt. Jeff Tyrcha, Ohio*
Patricia M. Ventling, Ohio

Exceptional Service Award

Hyrle A. Ivy, Ind.
Sharon M. Johnson, Ohio
Timothy P. Kern, Ohio

Midwest Region

Medal of Merit

Rhonda Briggs, Iowa
Robert Hurst, Neb.
Robert D. Lewallen, Iowa
Jerry Needham, Neb.
Louis M. Rapier, Iowa
Phil Schumer, Ill.
Steven H. Smith, Kan.
Stacie F. Toole, Mo.

Exceptional Service Award

Samuel M. Gardner, Kan.
Rodney G. Horton, Mo.
Richard R. Neely, Ill.
Jack Weatherford, Mo.

Special Citation

Nebraska ANG, Neb.

New England Region

Medal of Merit

Joseph P. Bisognano, Mass.
Wayne B. Ferris, Conn.
Terry K. Hardy, N.H.
David L. Ladd, Vt.
Chris Skomars, Mass.
Eric P. Taylor, N.H.
Erwin R. Waibel, Vt.

Exceptional Service Award

David T. Buckwalter, R.I.
Herbert E. Follansbee Jr., N.H.

North Central Region

Medal of Merit

Jaromir J. Bon, Minn.
James M. Crawford, N.D.
John E. Evans, N.D.
Christopher G. Mueller, Minn.
John E. Swanstrom, Minn.

Exceptional Service Award

James A. Armstrong, Minn.
Keith M. Bischoff, Minn.
Coleman Rader Jr., Minn.

Northeast Region

Medal of Merit

Louis E. Cardaneo, N.J.
Jack Dennis, N.J.
Jim Kaletta, N.Y.
Paul V. Kelly, N.J.
Stephan R. Kovacs, N.Y.
Paul Metro, N.J.
Dale M. Smith, Pa.
Michael H. Wysong, N.J.

Exceptional Service Award

Maj. Gen. W. Reed Ernst II, Pa.*
Almalinda B. Fairlie, N.J.
Karen G. Hartman, Pa.
Zygmunt Wozniak, N.J.

Northwest Region

Exceptional Service Award

Victor R. Davis, Alaska
Joseph E. Tucker, Wash.

Rocky Mountain Region

Medal of Merit

Jeri Andrews, Colo.
Lamberth W. Blalock, Colo.
Ireta Collins, Utah
Stephen P. Condon, Utah
Janet L. Cowley, Wyo.
Ryan Frazier, Utah
Grant W. Hicinbothem, Utah
Thomas Rice, Colo.
Kit K. Workman, Utah

Exceptional Service Award

Stephan A. Pappas, Wyo.
Joan Sell, Colo.

Special Citation

Sam Zakhem, Colo.

South Central Region

Medal of Merit

Paul W. Bixby, Ark.
Lawrence R. Colletta, Ala.
Richard A. Davis, Miss.
David M. McIntosh, Miss.
William L. Sherrill, Tenn.

Exceptional Service Award

CMSgt. Paula Campa, Ala.*
Mark J. Dierlam, Ala.

Southeast Region

Medal of Merit

Harriet Camejo, Ga.
Ron Carter, N.C.
Glen R. Downing, N.C.
William D. Duncan, N.C.
Thomas C. Gentry, N.C.
Anna F. Pennington, N.C.

Exceptional Service Award

Lewis M. Epperson, N.C.
Robert E. Largent, Ga.
Bobby G. Suggs, N.C.

Southwest Region

Medal of Merit

Pete Gillespie, Nev.
John Riggs, Nev.

Texoma Region

Medal of Merit

Kermit J. Bjorge, Tex.
Michael Blunt, Okla.
Phoebe Caldwell, Tex.
Charles J. Davis, Okla.
John R. Di Piero, Tex.
David A. Dietsch, Tex.
Robert C. Griffiths, Okla.
Seth J. McKee III, Tex.
John Nelson, III.
James H. Powell, Tex.
Karen S. Rankin, Tex.
Kevin B. Smith, Okla.
Bill Solemene, Tex.

Exceptional Service Award

Jack E. Beam III, Okla.
Brig. Gen. Jack Gingerich, Okla.*
Elisabeth Humphries, Tex.
Cassandra Y. McMillan, Tex.
Sandra A. Nichols, Okla.
Richard C. Walker, Tex.

Special Citation

Oscar L. Curtis, Okla.
Charles R. Ford, Okla.

Pacific

Medal of Merit

Jeff Decker, Kadena AB, Japan
Keith Kenyon, Kadena AB, Japan

Exceptional Service Award

Deborah K. Dusek, Pa.

*Recognized by Awards Committee for significant achievement as members of AFA Advisory Councils or as Presidential Advisors.

AFA Member of the Year 2000 Mary Anne Thompson and several past Members of the Year line up for a commemorative photo: Left to right are William Spruance (1966), Jack Price (1992), Ivan McKinney (1998), Jack Steed (1999), Thompson (2000), Martin Harris (1972), George Douglas (1991), Charles Durazo (1988), and Tommy Harrison (1996).

Photo by Paul Kennedy

2000 Community Partner Membership Awards

The following chapters have qualified for these awards based on their recruitment of new members during the 12-month period ending March 31, 2000.

Exceptional Service Award

Selection for this award is made by the National Awards Committee from among the chapters that have recruited the greatest percentage of Community Partners, in terms of chapter membership.

Enid, Okla.

Gold Award

These awards recognize chapters that have a total number of Community Partners equal to or greater than 6 percent of overall chapter membership, with a minimum number of Community Partners to qualify. The minimum number is determined by the chapter size.

Altus, Okla.
Ark–La–Tex, La.
Cape Canaveral, Fla.
Col H.M. "Bud" West, Fla.
Contrails, Kan.
Del Rio, Tex.
Diamond State, Del.
Eagle, Pa.
Enid, Okla.
Fairbanks Midnight Sun, Alaska
Florida Highlands, Fla.
Fort Wayne, Ind.
Gen. David C. Jones, N.D.
Golden Triangle, Miss.
Happy Hooligan, N.D.
High Desert, Calif.
John W. DeMilly Jr., Fla.
Leigh Wade, Va.
Llano Estacado, N.M.
Lloyd R. Leavitt Jr., Mich.
Maj. Gen. Oris B. Johnson, La.
Montgomery, Ala.
Northeast Texas, Tex.
Richard D. Kisling, Iowa
Richard S. Reid, Ariz.
Robert H. Goddard, Calif.
Steel Valley, Ohio
Swamp Fox, S.C.
Wright Memorial, Ohio

Achievement Award

These awards recognize chapters that have a total number of Community Partners equal to or greater than 3 percent of overall chapter membership, with a minimum number of Community Partners to qualify. The minimum number is determined by the chapter size.

Anchorage, Alaska
Badger State, Wis.
Cape Fear, N.C.
Carl Vinson Memorial, Ga.
Chautauqua, N.Y.
Cheyenne Cowboy, Wyo.
Concho, Tex.
David D. Terry Jr., Ark.
David J. Price/Beale, Calif.
Delaware Galaxy, Del.
Earl D. Clark Jr., Mo.
Gen. B.A. Schriever Los Angeles, Calif.
Harry S. Truman, Mo.
Highpoint, N.J.
Hurlburt, Fla.
Jackson, Miss.
Long's Peak, Colo.
McChord AFB, Wash.
Mercer County, N.J.
Mount Clemens, Mich.
Palm Springs, Calif.
Panhandle AFA, Tex.
Pope, N.C.
Savannah, Ga.
Total Force, Pa.
William A. Jones III, Va.

Named in Memorial Tribute

Deaths during the past year formally recognized at the convention

Mrs. Betty Adams
Lt. Col. Reginald W. Adams Jr., USAF (Ret.)
Fred E. Bamberger Jr.
Frances L. Banghardt
Col. Henry W. Boardman, USAF (Ret.)
Raymond E. Close
Col. Louis B. Cole, USAF (Ret.)
John Dunderdale
Gen. James Ferguson, USAF (Ret.)
Brig. Gen. Claire M. Garrecht, USAF (Ret.)
Maj. Gen. Francis S. Greenlief, USA (Ret.)
Col. Robert W. Gregory, USAF (Ret.)
Lt. Col. Lloyd Grimm, USAF (Ret.)
Donald R. Hayden
Frances L. Henneke
Gen. Bruce K. Holloway, USAF (Ret.)
Mrs. Dorothy Watkins James
Maj. Gen. Oris B. Johnson, USAF (Ret.)
TSgt. Albert H. Lambert
Maj. Gen. Andrew S. Low Jr., USAF (Ret.)
Harold E. Lucht
Frank M. Lugo
Evelyn Collins McKee
J.B. Montgomery
J. Gilbert Nettleton Jr.
Michael J. Nisos
Col. Billy F. Nunley, USAF (Ret.)
Lt. Col. Paul E. Parker Jr., USAF (Ret.)
CMSgt. Norman T. Parnes (Ret.)
Maj. Brison Phillips, USAF
Joseph D. Rebo
Lt. Col. James S. Speese, USAF (Ret.)
Col. John P. Stapp, USAF (Ret.)
Eva L. "Topsy" Taylor
Lt. Col. Harry J. "Jim" Tiernan, USAF (Ret.)
Brig. Gen. Arthur P. Tesner, USAF (Ret.)
Lt. Col. George D. Troutman, USAF (Ret.)
MSgt. William D. Warnock, USAF (Ret.)
Lt. Gen. Lavern E. Weber, USA (Ret.)
Forest E. Williams
Lt. Col. Irwin Ziff, USAF (Ret.)
Eugene M. Zuckert

The Outstanding Airmen

By Tamar A. Mehuron, Associate Editor

THE Air Force Outstanding Airman award is an annual program that recognizes 12 outstanding enlisted personnel for superior leadership, job performance, community involvement, and personal achievements.

The program was initiated at the Air Force Association's 10th annual National Convention, held in New Orleans in 1956.

The Chief Master Sergeant of the Air Force and the command chief master sergeants from each USAF major command form the selection board. The selections are reviewed by the Air Force Chief of Staff.

The 12 selectees are awarded the Outstanding Airman ribbon with the bronze service star device and wear the Outstanding Airman badge for one year.

SMSgt. Timothy C. Bosch. Deputy Fire Chief, Fire Protection Flight, 15th Civil Engineer Squadron, Hickam AFB, Hawaii (Pacific Air Forces)—Named Air Force Civil Engineer Military Superintendent of the Year for outstanding supervision of 60 military and civilian firemen. ... Advocated emergency medical training, resulting in 28 firemen becoming nationally certified. ... Directed fire-fighting effort when an F-15 burst into flames, saving the $40 million aircraft.

SMSgt. Cathryn L. Casto. Superintendent, Management and Systems Flight, 347th Supply Squadron, Moody AFB, Ga. (Air Combat Command)—Maintained superb accountability for supplies, equipment, and fuel for A-10, F-16, HC-130, and HH-60 aircraft. ... Streamlined the receiving process of more than 3,000 monthly receipts. ... Proposed a work around solution to a software problem that was adopted for all ACC bases.

SrA. Cyril R. Charity Sr. Security Forces Specialist, 113th Security Forces Squadron, Andrews AFB, Md. (Air National Guard)—Raised the mission capable rate from 40 percent to 95 percent for the squadron's all-terrain vehicles. ... Selected as deployment manager, organizing and directing squadron deployments for Southern Watch (Saudi Arabia) and Cope Thunder (Alaska and Korea). ... Helped the squadron and the 113th Wing achieve the highest scores by an ANG unit for the 1999 unit compliance inspection.

SMSgt. Daniel F. Cooler. Operations Superintendent, 32nd Intelligence Squadron, Ft. Meade, Md. (Air Intelligence Agency)—Transformed staff into a motivated, professional intelligence corps at National Security Agency's intelligence production and reporting center. ... Set clear goals and examples for senior and junior enlisted personnel. ... Directed Conventional Remote Operations Facility's Y2K planning. ... During a sudden power outage, key missions were safely transferred and intelligence coverage maintained.

MSgt. Rocky D. Dunlap. Chief, Explosive Ordnance Disposal Flight, 62nd Civil Engineer Squadron, McChord AFB, Wash. (Air Mobility Command)—Identified the explosive device smuggled into the US by a suspected terrorist and provided authorities with information about its connection to a terrorist cell. ... Directed explosive ordnance disposal and searches by security dogs at the World Trade Organization talks in Seattle. ... Enhanced security for Eskan Village, Saudi Arabia, by using actual munitions planted in vehicles during training for security dogs.

DoD photo by Larry McTighe

The 2000 USAF Outstanding Airmen line up at the Hall of Heroes in the Pentagon. They are (l–r) MSgt. Rocky Dunlap, SMSgt. Daniel Cooler, MSgt. Paul Sanchez, SrA. John Jordan, SMSgt. Cathryn Casto, SSgt. Tammy Stiles, SSgt. Jasmin Wiltshire, SSgt. Susan Robinson, TSgt. Matthew Marshall, SrA. Cyril Charity Sr., SMSgt. Timothy Bosch, and SSgt. Michael Solyom.

SrA. John M. Jordan. Pararescueman, 321st Special Tactics Squadron, RAF Mildenhall, UK (Air Force Special Operations Command)—Awarded the Bronze Star for his participation in the rescue of the downed F-117 pilot during Allied Force. ... Assisted in humanitarian relief missions for refugees in Albania in support of Shining Hope. ... Administered lifesaving emergency care in a traffic accident while participating in a New Orleans Health Department's ambulance ride-along program.

TSgt. Matthew M. Marshall. Noncommissioned Officer in Charge, Fuels Distribution, 52nd Supply Squadron, Spangdahlem AB, Germany (US Air Forces Europe)—Assumed the duties of an operations superintendent. ... Led servicing of 1,573 aircraft with nearly 2 million gallons of jet fuel for Allied Force. ... Supervised 31 personnel in distribution section, normally a master sergeant's job. ... Directed fuel servicing of 14,000 aircraft, with an average response time of 11 minutes, well above the 30-minute standard.

SSgt. Susan A. Robinson. Noncommissioned Officer in Charge, Civil/Environmental Law Divisions, San Antonio Air Logistics Center, Kelly AFB, Tex. (Air Force Materiel Command)—Directed USAF's largest law center during a lengthy absence of the law office manager, a master sergeant position. ... Established a litigation support unit to handle a multimillion dollar union grievance alleging asbestos exposure. ... Managed the Military Justice Division, processing several special and general courts-martial actions. ... Organized staff to expedite wills and powers of attorney for 159 clients deploying on short notice for Allied Force.

MSgt. Paul S.N. Sanchez. Supervisor, Command-and-Control Radio and Television Systems, Air Force Pentagon Communications Agency, Washington, D.C.—Managed audiovisual systems for National Military Command Center. ... Served as lead manager for the center's emergency conference room renovation and video upgrade. ... Installed interface for two command-and-control computer terminals to show simultaneous displays of Allied Force war operations plans and battle damage assessments. ... Completed all technology upgrade projects ahead of schedule.

SSgt. Michael M. Solyom. Computer Programmer, 17th Training Support Squadron, Goodfellow AFB, Tex. (Air Education and Training Command)—Devised a new interactive courseware program, "Multimedia Lessons," earning praise from AETC's inspector general. ... Trained 20 interactive courseware developers. ... Developed a new interactive courseware tracking database for labor costs and production reports.

SSgt. Tammy M. Stiles. Noncommissioned Officer in Charge, Family Advocacy Clinic, 60th Medical Operations Squadron, Travis AFB, Calif. (AMC)—Spearheaded a suicide-awareness education program, revised course material, and streamlined training aids. ... Established a curriculum for managing stress from critical incidents, and trained more than 200 individuals in management of traumatic events. ... Chosen over four others for NCOIC position of Family Advocacy Clinic.

SSgt. Jasmin D. Wiltshire. Public Health Journeyman, 45th Aeromedical Dental Squadron, Patrick AFB, Fla. (Air Force Space Command)—Selected as 1999 AFSPC Public Health Airman of the Year. ... Managed 400-personnel hospital employee health program. ... Achieved 98 percent occupational health exam compliance rate, far above USAF norm of 80 percent. ... Conducted 33 environmental and sanitation inspections at base food and public facilities, identified FDA discrepancies, retrained workers, and initiated corrections. ■

Industrial Associates

Listed below are the Industrial Associates of the Air Force Association. Through this affiliation, these companies support the objectives of AFA as they relate to the responsible use of aerospace technology for the betterment of society and the maintenance of adequate aerospace power as a requisite of national security and international amity.

3M/Federal Systems
AAI Corp.
ACS Defense, Inc.
Advanced Technical Products
Aerojet
Aerospace Corp.
Aerospatiale, Inc.
Alliant Techsystems, Inc.
Analytic Services, Inc. (ANSER)
Anheuser–Busch, Inc.
Anteon Corp.
ARINC
Armed Forces Journal International
Astronautics Corp. of America/Kearfott Guidance & Navigation
AT&T Federal Systems
Atlantic Research Corp.
Autometric, Inc.
BAE SYSTEMS, Canada
BAE SYSTEMS, Inc.
Battelle Memorial Institute
Bell Helicopter Textron
Boeing Co.
Bombardier Inc., Canadair
Booz•Allen & Hamilton, Inc.
Bose Corp.
Brown & Root Services Corp.
Burdeshaw Associates, Ltd.
CACI, Inc.–Federal
Camelbak
Computer Sciences Corp.
Computing Devices International
COMSAT Aeronautical Services
CSC/Nichols Research
Cubic Defense Systems
Cypress International, Inc.
Derco Aerospace, Inc.
DFI International
Dowty Aerospace
Dynamic Concepts, Inc.
DynCorp
Eastman Kodak Co., C&GS
ECC International Corp.
EDO Corp., Government Systems Div.
EDS
EFW, Inc.
E.H. Industries
E.I. du Pont de Nemours & Co.
Emergent Information Technologies, Inc.
Evans & Sutherland
Firearms Training Systems, Inc.
FLIR Systems, Inc.
GE Aircraft Engines
GEICO
General Atomics
Gentry & Associates, Inc.
Georgia Tech Research Institute
Gulfstream Aerospace Corp.
Harris Electronic Systems Sector
Harris Government Communications Systems Div.
Harris Government Support Systems Div.
Honeywell, Inc., Space and Aviation Control
Howell Instruments, Inc.
Hughes Space and Communications
IBP Aerospace
IMO Industries, Inc.
Ingersoll–Rand Co.
Innovative Technologies Corp.
Intergraph Corp.
Interstate Electronics Corp.
Israel Aircraft Industries International, Inc.
ITA Corp.
ITT Defense
Jane's Information Group
JGW International
Johnson Controls World Services, Inc.
Kollsman
Lear Siegler Services, Inc.
Litton Advanced Systems
Litton Data Systems
Litton Guidance & Control Systems
Litton Industries
Litton PRC
Lockheed Martin Corp.
Lockheed Martin Aeronautics Co.
Lockheed Martin Systems Integration
Lockheed Martin Corp., Fairchild Systems
Lockheed Martin Technology Services
Lockheed Martin Space Systems Co.
Logicon, Inc.
Logistics Management Institute
Lucas Aerospace, TRW Aeronautical Systems
Lucent Technologies, Inc.
Management Consulting & Research, Inc.
Martin–Baker Aircraft Co., Ltd.
Miltope Corp.
Motorola, Inc., GSTG
MTS-3, Inc.
NavCom Defense Electronics, Inc.
NCI Information Systems
Nortel Networks
Northrop Grumman Corp.
Northrop Grumman, Air-borne Ground Surveillance & Battle Management Systems
Novalogic, Inc.
Orbital Sciences Corp.
Perry–Judd's, Inc.
Per Udsen Co.
Precision Echo, Inc.
PricewaterhouseCoopers, LLP
Racal Communications, Inc.
Rafael USA, Inc.
RAND
Rational Software Corp.
Raytheon Aircraft Co.
Raytheon Co.
RECON/OPTICAL, Inc.
Reflectone, Inc.
Robbins–Gioia, Inc.
Rockwell Collins Avionics & Communications Div.
Rolls Royce, Inc.
Sabreliner Corp.
Sargent Fletcher, a Cobham plc company
Science Applications International Corp.
SDS International, Inc.
Sensis Corp.
Sikorsky Aircraft
Smiths Industries, Aerospace & Defence Systems
Spectrum Astro, Inc.
Sun Microsystems Federal, Inc.
Sverdrup Technology, Inc.
Symetrics Industries, Inc.
Systems & Electronics, Inc.
Teledyne Brown Engineering
Teledyne, Inc.
Telephonics Corp.
Textron
Textron Defense Systems
Themis Computer
Thiokol Corp.
TRW Space & Electronics Group
TRW Systems & Information Technology Group
Ultra Electronics
Unisys Corp.
USAA
UTC, Hamilton Sundstrand
UTC, Pratt & Whitney
UTC, Pratt & Whitney/ Space Propulsion Operations
Veridian
Virtual Prototypes, Inc.
Vought Aircraft Industries
W.L. Gore & Associates

Aerospace Technology Exposition

Staff photos by Guy Aceto

The Air Force Association's Aerospace Technology Exposition featured nearly 130 exhibitors, this year.

The BAE Systems booth (at left) illustrates the international flavor evident among exhibitors, whose displays covered more than an acre of floor space. Below, visitors to the EADS booth found a MiG-29 model alongside a model of the new Eurofighter. EADS customers include many European air forces as well as USAF.

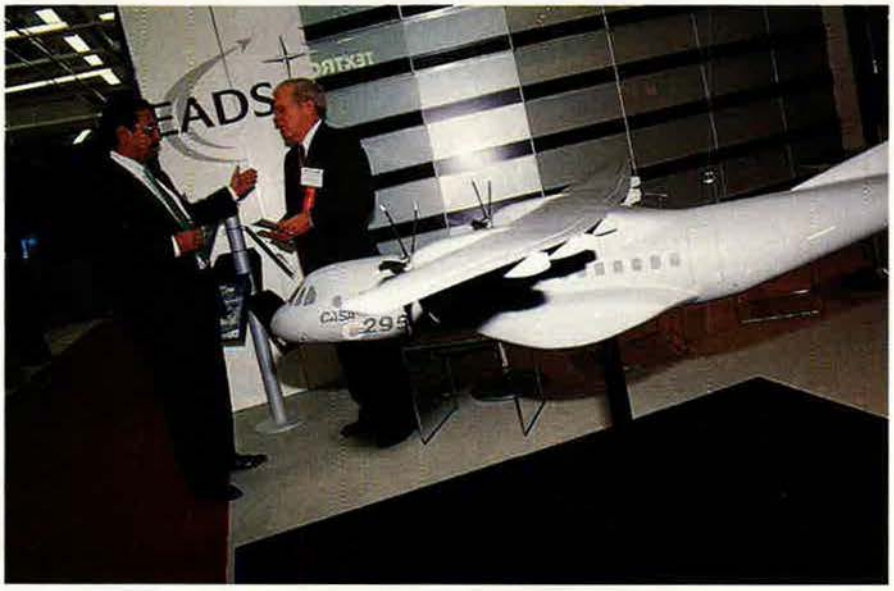
The Joint Strike Fighter caused a lot of buzz at this show, with competing contractors Lockheed Martin and Boeing promoting their new technologies. Boeing introduced visitors to its system through a notional JSF cockpit, complete with cueing and tracking on the inside of the helmet's visor.

Staff photos by Guy Aceto

At left, Capts. Dexter Harrison and Gary Town listen to Lockheed representative Johnny Walther explain what the company has to offer the future force. Harrison, from Langley AFB, Va., is chairman of AFA's Junior Officer Advisory Board and Town, from Hurlburt Field, Fla., is a board member.

Exposition guests—who numbered nearly 8,500—could also learn about Lockheed's products and services on their own, through laptop computers set up on informal cafe style tables.

Above, Amn. Vatusana Khinesavath, a dental technican from Langley, signs up to receive more information from one of the exhibitors.



Above, James Callahan, a member of AFA's Audit Committee, speaks with a representative from EADS–CASA, a first-time exhibitor this year.

The Martin–Baker booth, at left, featured several ejection seats, prompting AFA's "All–American Airman" John Alison (right) to tell stories about not using an ejection seat—or even seat belts, for that matter. Joining the AFA national director emeritus at the exhibit are (l–r) William Burdeshaw and Eugene Deatrick.

Staff photos by Guy Aceto

Aerea S.p.A. from Milan, Italy, displayed its multifunction rail launcher, touted by a company representative as "the most important piece of equipment between the airplane and the weapon." Below, Brig. Gen. Tibor Kiss, Hungarian air attaché, was one of the many international visitors to the three-day event.

Warfighter training personnel from the Air Force Research Laboratory, Human Effectiveness Directorate, linked UAV imagery and F-16 and A-10 simulators at their exhibit with Joint STARS, AWACS, and RAF Tornados in a virtual and real-time environment.

At right, between battles visitors get up close to this virtual world. A-10 pilot Maj. Guy Schmidt from the Research Lab gives pointers to Patty Saunders of Rolls Royce North America.

The section devoted to units that entered the Air Force Chief of Staff Excellence Award program is always a highlight. Here, USAF Chief of Staff Gen. Michael Ryan visits with some members of the 109th Airlift Wing (ANG) Team Antarctica, from Schenectady County Airport, N.Y.

The Aerospace Technology Exposition focuses on the best of the best and offers attendees a chance to catch up on the latest technology.

Aerospace Exhibitors in Review

Companies represented at the AFA Aerospace Technology Exposition

3M Federal Systems/3M Aerospace and Aircraft Maintenance Department Bonding, joining, and fastening systems, high-performance structural adhesives, paint solutions, and much more.
AAR Cadillac Manufacturing Leading supplier of mobility systems and components for DoD, government agencies, and commercial customers.
ACCOM Real-time nonlinear editor, used to edit Unmanned Aerial Vehicle video imagery.
AEREA S.p.A. Specializes in design, development, production, maintenance, and integrated logistic support of aircraft armament equipment.
Aeronautical Systems Center Develops, acquires, modernizes, and sustains the world's best aerospace systems.
Airborne Laser DoD's highest technology and most revolutionary weapon.
Air Force Flight Test Center
Air Force History Support Office Commemorating the 50th anniversary of USAF's participation in the Korean War, 1950–53.
Air Force Intelligence Agency The single agency for the performance of Air Force–wide intelligence roles and functions.
Air Force Junior ROTC World's largest aerospace education organization.
Air Force Materiel Command AQ Acquistion reform in the Air Force.
Air Force Research Laboratory The latest Air Force technologies with applications in directed energy.
Air Force Research Laboratory, Human Effectiveness Directorate, Warfighter Training Research Division, Mesa, Ariz. Real-time "Training for Dynamic Aerospace Control."
Air Force Weather Agency Develops doctrine, policy, requirements, and standards for weather support.
Alenia Marconi Systems, Inc. USA center for the development of air-to-surface guided weapons, support equipment, and instrumented training range systems.
Anderson Fine Scale Replicas Museum-quality model replicas of aircraft, helicopters, and prototypes.
Armed Forces Bank "Your Hometown Bank Around the World."
Armed Forces Benefit Association Multifinancial services company offering insurance, banking, and investment products.
Armed Forces Journal International
Army and Air Force Mutual Aid Association A nonprofit organization that provides high-quality, low-cost life insurance values.
Arnold Engineering Development Center World's most advanced and largest complex of flight simulation test facilities.
Atlantic Research Corp. Designs and builds propulsion systems for a range of uses in commercial, space, and military projects.
AVPRO–Avionics Production Division, Robins AFB, Ga. Explicates how the Air Logistics Centers—and avionics—contribute toward the DoD mission.
BAE Systems Offers a range of sophisticated state-of-the-art electronic systems to meet airborne operational requirements from sensor to shooter.
Bell Helicopter Textron, Inc. World's leading manufacturer of vertical flight aircraft for commercial and military customers.
Belleville Shoe Manufacturing Co. A full line of military-style boots.
Boeing Co., The World's largest manufacturer of commercial jetliners and military aircraft; provides related services worldwide.
Booz•Allen & Hamilton A global leader in management and technology consulting.
Butler Manufacturing Co. World's leading manufacturer of metal buildings and provider of related construction services.
California Industrial Facilities Resources, Inc. A leading manufacturer of rapid deployable military shelters for USAF bare base program and NATO forces.
CDI Technical Services Provider of engineering support and proposal development services, technical staffing, and telecommunications solutions.
Cessna Aircraft Co. The premier manufacturer of light and midsize aircraft.
Compaq Computer Corp. The broadest array of products and computing expertise in the industry.
CRM Learning Helps government agencies improve quality and create more productive employees.
Dayton T. Brown A broad range of engineering and testing support in aircraft structures, armament systems, life support systems, and components.
Defense Acquisition University (Defense Systems Management College) Offers DoD acquisition corps a broad range of resident and online courses, publications, and facilities around the country.
Defense Information Systems Agency Provides innovative and integrated information services that provide a fused picture of the battlefield.
Defense Logistics Agency
Defense News A weekly newspaper for defense professionals.
Dowty Aerospace Provides technology solutions to major aircraft and engine manufacturers.
DRS Photronics Manufacturer of modern common boresighting systems for both rotary and fixed wing aircraft.
Druck, Inc. Manufactures pressure measurement systems.
Dupont Co. The technology leaders in life protection systems providing flame resistance and ballistic resistance.
DynCorp Technical Services, Inc. Provides on-site aircraft and ground equipment maintenance and modifications as well as logistics and automated management systems.
E.H. Industries The EH101 is the most technologically advanced helicopter in production today.
EADS–CASA Aircraft USA, Inc. Supporting the marketing and sales operation for the military transport aircraft business unit of North America.
EADS Deutschland GmbH Design, manufacture, and support of military and training aircraft.
EDO Marine and Aircraft Systems Suspension and release equipment used to carry internal and external stores on fighter aircraft.
Flight International Weekly magazine for aerospace professionals.
Flight Refueling, Ltd., and Sargent Fletcher, Inc. Underwing cargo pod and common rail launchers.
Galaxy Aerospace Co. Markets and supports the Astra SPX transcontinental business jet and the Galaxy intercontinental business jet.
GE Aircraft Engines Engine programs of today's United States Air Force.
General Atomics/General Atomics Aeronautical Systems, Inc. Capabilities in UAVs, advanced repair technologies, and much more.
Government–Industry Exchange Program A government-wide system for exchanging technical information between government agencies and contractors about nonconforming products.
Gulfstream Aerospace Corp. Designs, develops, manufactures, and markets intercontinental business jet aircraft.
Honeywell Global provider of integrated avionics, engines, systems, and

Staff photo by Guy Aceto

Gen. Lester Lyles (left), commander of Air Force Materiel Command, enjoys chatting with Col. Jerry Straw, chief of the Warfighter Training Research Division at the Air Force Research Lab.

The Aerospace Technology Exposition has been a part of AFA's National Convention since 1964.

Staff photo by Guy Aceto

A class of cadets from the Colombian air force academy came to the exposition. Here, two of them listen to Maj. Steve Smiley explain the Air Force Airborne Laser program. Special guests from foreign air forces included a class from the Inter-American Defense College and New Zealand's Chief of the Air Staff, Air Vice Marshal Donald M. Hamilton.

service solutions for aircraft manufacturers, military, space, and airport operations.
Hughes Space and Communications A major provider of space systems to US government.
Innovative Concepts, Inc. Tools based on Improved Data Modem technology.
Innovative Solutions & Support, Inc. RVSM–compliant air data systems; fuel quantity and flow measurement instruments; and other products.
Jane's Information Group Delivers impartial intelligence for defense security and transportation professionals.
Joint Program Office for Biological Defense Principal advocate and single point of contact for all biological detection and vaccine acquisition efforts for DoD.
Kauai Economic Development Board Supports, along with its member businesses, the Pacific Missile Range Facility at Barking Sands, Hawaii—the lead range for Navy theater ballistic missile defense testing.
Kerrigan Media Intl., Inc. Publisher of military information technology and other trade magazines.
Kwajalein Missile Range The US Army's premier missile test range.
L-3 Communications A leading merchant supplier of secure communications systems and products.
Litton Industries
Advanced Systems Electronic warfare receivers for rapid passive threat radar geolocation, radar warning, targeting, and situational awareness.
Data Systems Latest correlation fusion engine; single integrated air picture; theater air control system.
Guidance and Control Systems Smart multifunction displays and the ring laser inertial navigation system and fiber-optic inertial navigation system.
TASC, Inc. Providers of high-end information technology solutions.
Lockheed Martin A global enterprise engaged in research, design, development, manufacture, and integration of advanced technology systems, products, and services.
maingate.com Online quality-of-life network for military communities.
Martin–Baker Aircraft Co., Ltd. US16B ejection seat being developed for the Joint Strike Fighter.
Military.com Offers members daily service-specific news, extensive resources, and unique online services.
Military Retirement Center, The Financial planning for military retirement.
Miltope Corp. Design, development, and production of complete line of rugged computer products for commercial, industrial, airborne, and military applications.
Minolta–QMS, Inc. Develops and manufactures document-imaging solutions for demanding applications.
Motorola, Inc. Provides integrated communications solutions and embedded electronic solutions for military programs.
National Imagery and Mapping Agency Provides timely and accurate imagery, intelligence, and geospatial information in support of the nation's military, policy-makers, and civil users.
Northrop Grumman Corp. Provides technologies and core competencies in systems integration, defense electronics, and information technology.
Orbital, Fairchild Defense Contractor in the design, development, production, integration, and test of advanced digital electronics and avionics systems.
Pacific Missile Range Facility Supports a wide variety of exercises and development tests involving space, air, surface, and subsurface units.
Parker Aerospace Designs, manufactures, and services hydraulic, fuel, and pneumatic components.
Pentagon Federal Credit Union One of the largest and safest credit unions serving Army, Air Force, and DoD personnel worldwide.
Pratt & Whitney A United Technologies Company.
P&W Canada Full-scale PT6 cutaway engine.
P&W Military Engines Military engines F100, F119, JSF119, and the F117.
P&W Space Propulsion Designs, develops, tests, and supports space propulsion systems, providing industry with solid, liquid, and hypersonic propulsion.
Rafael USA, Inc. Python 4 air-to-air missile; Have Lite air-to-ground missile for single cockpit; Litening II day/night navigation targeting pod for fighter aircraft.
Raytheon Co. Air-to-air missiles, AIM-9 Sidewinder, AMRAAM, Strike system—HARM, HARM Targeting System, JSOW, Maverick, Paveway laser-guided bomb, JSF sensor suite, AESA radar, ATFLIR system.
Rolls Royce North America A global company providing power on land, sea, and air.
Saab AB Gripen aircraft and the BOL airborne countermeasures dispenser system.
Smiths Industries Aerospace Flight management system which leads the way for Global Air Traffic Management.
TEAC America World's leading supplier of mil-qualified airborne video recorders for military and aerospace.
Teal Group Corp. Forecasts developments in the aerospace/defense industry for strategic planners, market researchers, and business executives.
Team SBL IFX Program designed to advance and assess feasibility of developing and deploying a space-based laser missile defense and its required technologies.
Textron Systems Smart warfare solutions. Anti-combat vehicle, area coverage munitions, sensor fuzed weapon, and JSOW; JDAM and AIM-9X control systems; airborne surveillance and UAV payloads.
Themis Computer OEM supplier of single board computers and systems based on Sun ultraSPARC technology for the embedded systems market.
Thiokol Propulsion World's leading solid propellant rocket developer and manufacturer.
Toys and Models Corp. Aerospace display models for promotional purposes, awards, gifts, and collectibles.
Trimble Navigation Industry leader in SAASM and GRAM compliant receiver development.
TRW, Inc. Advanced space and software systems and technologies for space- based surveillance, communications, and remote sensing; command and control; national missile defense; and directed energy.
US Army Corps of Engineers
Ultra Electronics A leader in design, manufacture, and support of miniature air compressors for military aircraft.
United Technologies Corp. Provides broad range of high-technology products and support services to the building systems and aerospace industries.
US Army Space and Missile Defense Command
USAA Services offered include auto and property insurance, life and health insurance, investments, banking services, and travel and merchandise services.
USAF Joint Direct Attack Munitions Office JDAM provides an improved, autonomous, adverse weather, aerial delivery capability for existing warheads.
VSI/USAF ASC/SMH JHMCS VSI is designer and producer of the Joint Helmet Mounted Cueing System selected for F-15, F-16, F/A-18, and F-22 aircraft.
Wah Chang, an Allegheny Technologies Co. Produces hafnium, niobium, titanium, vanadium, and zirconium alloys in mill product forms and custom shapes.
W.L. Gore & Associates Gore-Tex products: head-to-toe weather protection.
WorldCom Government Markets A leader in providing advanced telecommunication solutions worldwide.
Z Microsystems Ruggedized, field-ready, deployable computing solutions.

A Force in Perpetual Motion

By Peter Grier

Top USAF leaders sum up the current state of the force.

Gen. Michael E. Ryan

As Gen. Michael E. Ryan sees it, the people of the US Air Force have much in common with pro golfer Tiger Woods. They are busy, they are winners, and they make that winning look easy.

"But it's not easy, not by a long shot," USAF's Chief of Staff told attendees at AFA's National Convention. "That's what professionals do."

Where Woods has US, British, and Canadian Open crowns, USAF has to win each day in what Ryan calls the "World Open."

In Southwest Asia, Air Force professionals are fired on virtually every day as they patrol no-fly zones over Iraq. Many are back for their fourth or fifth rotation, living in austere conditions.

More than 2,000 US airmen continue to support air operations in the Balkans, where they have flown more than 31,000 sorties over the last two years.

In Central America, US Air Force airfield experts, air traffic controllers, and security forces support counterdrug and other operations of Joint Task Force–Bravo at Soto Cano AB in Honduras.

In the US, hundreds of active and reserve Air Force personnel helped dispense nearly two million gallons of fire retardant to fight this year's western forest fires. Air Force people conducted numerous launches to support space missions. Air Force members continue to train thousands of new personnel, as well

> ***"We see the empty bins refilling and cannibalization rates level off. But we have not turned readiness around. At best, we've leveled off."***
>
> ***— Ryan***

as units from air forces around the world.

Despite these intensely demanding missions, the Air Force is on the verge of setting a new record low for numbers of aircraft accidents. The service is on track for its best year ever in ground safety, as well.

"These records are all the more impressive when you consider the conditions under which they are performed and the scope of our worldwide operations," Ryan told AFA.

The scope of Air Force operations also makes the service's readiness challenges easier to understand.

Ryan said he and the rest of the Air Force leadership have worked for three years to reverse declining readiness trends. With the help of the Administration and Congress they have obtained billions of new dollars for parts and maintenance.

"That is having an effect as we see the empty bins refilling and cannibalization rates level off," said Ryan. "But we have not turned readiness around. At best, we've leveled off."

Furthermore, those efforts have come somewhat at the expense of modernization programs. And recapitalization of the force, not readiness, is the service's real long-term challenge, said Ryan.

Recruitment has been another troubling area. Last year, the Air Force missed its recruiting goal by 1,700 personnel.

"This year I'm happy to report we will make our overall recruiting goal," said Ryan. "We are doing it while maintaining our high standards."

Retention, on the other hand, still has some way to go. Today, USAF has only three-fourths of the mid-level aircraft mechanics it needs. The service remains more than 1,000 pilots short of its requirement. Keeping computer and information professionals on board remains a challenge.

One bright spot here is a new program aimed at luring former Air Force members back to active duty.

"We have nearly 800 takers so far," said Ryan.

And the Expeditionary Aerospace Force schedule, with its predictability, has proved another retention booster.

Everyone in the service—active, Guard, Reserve, and civilian—has helped turn the EAF into a reality during the last year, said Ryan. The Air Reserve Components now make up more than 20 percent of Aerospace Expeditionary Force packages. They provide 10 percent of expeditionary combat support requirements.

Service leaders continue to hone the EAF effort to make it more efficient. Some 2,600 billets have been added to wings to ease the burden on bases. More will be added next year. Air Mobility Command has been able to reduce the number of airlift sorties required to deploy forces by 22 percent.

"We will iron out the wrinkles and round out the size and capability of our 10 AEFs," said Ryan. "But if there's one thing I know for certain it's that Air Force people will make it work, will stand proud of their accomplishments, and from the outside, make it look easy."

Ryan himself will be one of the people working hardest to make the AEFs successful. Proposed changes in AEF structure or operation land on the Chief's desk, not that of a subordinate, said another speaker at the AFA convention.

Lt. Gen. Robert H. Foglesong

"If we want to move one squadron out of one bucket and put it into another bucket because we think we have a capabilities issue or an operational issue, ... that goes all the way to the big guy," said Lt. Gen. Robert H. Foglesong, the deputy chief of staff for air and space operations.

Not that Foglesong foresees a string of such requests. He said the AEFs are working well, to the point where worldwide Commanders in Chief do not complain about the capabilities provided.

"That may be the best measure of success," said Foglesong.

Everywhere you look, aerospace power has become essential to the projection of force, Foglesong told AFA attendees. And it is the US Air Force that has become the all-purpose air force of the world.

It is the only one with breadth and depth of capabilities necessary for many of the world's aerospace tasks.

In recent years Foglesong has flown through or visited dozens of countries and met hundreds of officers from other air forces. To them, the US is the equivalent of basketball great Michael Jordan. Everybody wants to be like the US.

"They all want to train like us, they all want to sound like us, they all want to use our tactics," said Foglesong.

Fame is fleeting. The US Air Force will have to continue to strive for constant improvement if it is to remain the first among unequals.

For one thing, the importance of space operations must be driven home throughout the service. US dependence on space today is overwhelming, according to Foglesong.

For another, the US military cannot forget that the tanker fleet is crucial to almost everything it wants to do.

"We never want to get to the point where we undersell the importance of the air bridge," said Foglesong.

The ability to reach out and strike someone, of course, remains crucial, but modernization, manpower, readiness, and budget must be brought in line with the demands placed on today's Air Force.

Brig. Gen. David A. Deptula

The upcoming Quadrennial Defense Review might be one opportunity to plan such improvement.

Congress has been specific about

Foreign air forces "all want to train like us, they all want to sound like us, they all want to use our tactics." — Foglesong

what it wants the Air Force to address in the QDR planning exercise, the service's director of the effort told AFA.

Legislators have handed Air Force leaders 13 questions, which range from how today's strategy and force structure interact to what the breakthrough technologies of the next 20 years might be and how they could affect the strategy the US should pursue and the force structure it might develop.

The QDR will kick off with the inauguration of the next President, who has 150 days to establish his own national security strategy.

"One thing I might like to point out is the importance of making this a strategy-driven exercise as opposed to a budget exercise," said Brig. Gen. David A. Deptula, director, Air Force Quadrennial Defense Review.

The Air Force would like to view the QDR as akin to an operational readiness inspection, Deptula told AFA. It is something that is forced upon the service, yet it is also an opportunity for the Air Force to show its capabilities.

"The bottom line is, we want to do the right thing for the nation," said Deptula.

One thing the Air Force wants to do with the review is to make sure the nation's leaders are aware that what Deptula referred to as "our legacy warfighting constructs" have changed. Airpower, he said, can do things never imagined even a decade ago, such as operating with impunity in exclusion zones.

This means that as planners work through the resource allocation process, they should not automatically default to operational concepts of the past.

"You will see us articulate the fact that the US Air Force is leading what has become known as the Revolution in Military Affairs," said Deptula.

Service leaders hope the QDR leads national command authorities to a real understanding of the need to recapitalize the air-breathing combat force.

"I don't think there is ... much realization of the degree of the problem that exists out there," said Deptula.

During one of his last sorties as Operation Northern Watch commander, a post he filled from April 1998 to October 1999, Deptula happened to fly an F-15C that he had also flown when it was new and he was a captain, 20 years ago.

"Our legacy warfighting constructs have changed. Airpower can do things never imagined even a decade ago."
— Deptula

When he first saw it, the aircraft had 20 hours on it. Today, it has more than 5,500.

Nosing up to a tanker, Deptula was suddenly facing a cockpit panel flashing with warning lights—all kinds of warning lights. Back at the base, he discovered that 20-year-old insulation on a wiring bundle had just crumbled away, and the wires leading to the lights had fused together.

So recapitalization "is not just about modernizing the fleet," said Deptula. "It's about the impact of what happens when the fleet ages."

The average age of the tanker fleet is 38 years. Some B-52s are planned to fly until they are 75 years old.

Base infrastructure is in even worse shape. Right now, the Air Force has a 250-year infrastructure recapitalization schedule. Industry standard is 50 years.

Unless more money is directed into recapitalization of the force, the service is going to fall off a cliff, said the Air Force QDR director.

"Hopefully we'll be able to make the case so we can reprioritize our current baseline budgets to put the resources into the POM [Program Objective Memorandum]," said Deptula. "Even if decisions are made not to fully budget this vision force, we'll have a construct established."

The Air Force is not the only service that sees the advantage in aerospace power. To varying degrees the Army, Navy, and Marines are also investing in aerospace capabilities—investments that the Air Force agrees with.

"The bottom line is you hear lots and lots of folks talk about the asymmetric advantage that our adversaries are going to use against us. Well, guess what, folks? America has got an asymmetric advantage, too. It's our aerospace power," said Deptula.

Gen. Richard B. Myers

In the old days, the aerospace capabilities of the different services were often separate stovepipes. But ahead is an era of fully integrated interoperable joint warfighting systems and operations, Gen. Richard B. Myers, vice chairman of the Joint Chiefs of Staff, told the Air Force Association convention.

"The need to adapt certain functions to a new reality of a constantly changing defense environment remains pressing for all of us," said Myers.

The good news is that the US military is structurally evolving to make such cooperation easier. At the purple-suit level of joint service leaders, the Joint Requirements Oversight Council now seeks to more efficiently use service resources by putting together the right capabilities for warfighting Commanders in Chief. At the blue-suit level, AEFs provide forces to CINCs and theater commanders who count on them as key parts of their joint warfighting teams.

"Evolving structures go hand in hand with changing functions," said Myers. "I applaud the Air Force for setting the right course." ■

Peter Grier, a Washington editor for the Christian Science Monitor, *is a longtime defense correspondent and regular contributor to* Air Force *Magazine. His most recent article, "The Pharmacy Benefit," appeared in the September 2000 issue.*

Books

Compiled by Chanel Sartor, Editorial Associate

Aiming for the Stars: The Dreamers and Doers of the Space Age. Tom D. Crouch. Smithsonian Institution Press, PO Box 960, Herndon, VA 20172-0960 (800-782-4612). 338 pages. $16.95.

Condemned to Live: A Panzer Artilleryman's Five-Front War. Franz A.P. Frisch and Wilbur D. Jones Jr. White Mane Publishing Co., Inc., 63 W. Burd St., PO Box 152, Shippensburg, PA 17257 (888-948-6263). 156 pages. $24.95.

The Stars Were Big and Bright: The United States Army Air Forces and Texas During World War II. Thomas E. Alexander. Eakin Press, PO Drawer 90159, Austin, TX 78709-0159 (800-880-8642). 262 pages. $26.95.

Angels Zero: P-47 Close Air Support in Europe. Robert V. Brulle. Smithsonian Institution Press, PO Box 960, Herndon, VA (800-782-4612). 176 pages. $29.95.

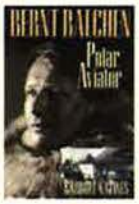
Luftwaffe at War, Focke Wulf 190: Defending the Reich, 1943–1945. Morten Jessen. Stackpole Books, 5067 Ritter Rd., Mechanicsburg, PA 17055-6921 (800-732-3669). 72 pages. $13.95.

Steadfast and Courageous: FEAF Bomber Command and the Air War in Korea, 1950–1953. GPO, Supt. of Documents, Mail Stop: SSOP, Washington, DC 20402-9328 (202-512-1800). 58 pages. $3.50.

Assault on the Empire: Vol. 1 Stemming the Tide of Conquest 1942–1943. John W. Lambert. Specialty Press Publishers and Wholesalers, 11605 Kost Dam Rd., North Branch, MN 55056 (800-895-4585). 112 pages. $18.95.

Luftwaffe at War, German Rocket Planes. Manfred Griehl. Stackpole Books, 5067 Ritter Rd., Mechanicsburg, PA 17055-3921 (800-732-3669). 72 pages. $13.95

Training to Fly: Military Flight Training 1907–1945. Rebecca Hancock Cameron. GPO, Supt. of Documents, Mail Stop: SSOP, Washington, DC 20402-9328 (202-512-1800). 677 pages. $58.00.



Bernt Balchen: Polar Aviator. Carroll V. Glines. Smithsonian Institution Press, PO Box 960, Herndon, VA 20172-0960 (800-782-4612). 310 pages. $16.95.

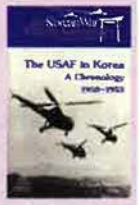
MiG Alley: The Fight for Air Superiority. William T. Y'Blood. GPO, Supt. of Documents, Mail Stop: SSOP, Washington, DC 20402-9328 (202-512-1800). 48 pages. $3.50.

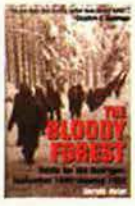
The Transformation of American Air Power. Benjamin S. Lambeth. Cornell University Press, Sage House, 512 E. State St., Ithaca, NY 14850 (607-277-2338). 337 pages. $29.95.

Black Cross/Red Star: The Air War Over the Eastern Front, Vol. 1 Operation Barbarossa, 1941. Christer Bergström and Andrey Mikhailov. Pacifica Military History, 1149 Grand Teton Dr., Pacifica, CA 94044 (800-453-3152). 307 pages. $39.95.

The Mighty Eighth in WWII: A Memoir. Brig. Gen. J. Kemp McLaughlin, USAFR (Ret.). The University Press of Kentucky, 663 S. Limestone St., Lexington, KY 40508-4008. (800-839-6855). 208 pages. $22.00.

The USAF in Korea: A Chronology 1950–1953. A. Timothy Warnock, ed. GPO, Supt. of Documents, Mail Stop: SSOP, Washington, DC 20402-9328 (202-512-1800). 100 pages. $7.00.





The Bloody Forest: Battle for the Huertgen, September 1944–January 1945. Gerald Astor. Presidio Press, Inc., 505 B San Marin Dr., Ste. 160, Novato, CA 94945-1340 (415-898-1081). 393 pages. $29.95.

Principles of Global Security. John D. Steinbruner. The Brookings Institution, 1775 Massachusetts Ave. NW, Washington, DC 20036 (800-275-1447). 270 pages. $18.95.

While America Sleeps: Self-delusion, Military Weakness, and the Threat to Peace Today. Donald Kagan and Fredrick W. Kagan. St. Martin's Press 175 Fifth Ave., New York, NY 10010 (212-674-5151). 483 pages. $32.50.

AFA / AEF National Report

By Frances McKenney, Assistant Managing Editor

AEF Names Teacher of the Year

Melinda D. Kelley, a seventh-grade science teacher at Colonial Heights Middle School in Colonial Heights, Va., was selected as the Aerospace Education Foundation's Christa McAuliffe Memorial award recipient. She is the 15th recipient of the award.

A member of the **Leigh Wade Chapter,** Kelley was the chapter's Teacher of the Year in 1996 and the regional Teacher of the Year in 1998.

Kelley's students have conducted a lab exercise with plants, in collaboration with the December 1997 space shuttle mission, and have participated in a NASA–sponsored educational program on cloud data gathered by satellites. They used a computer simulation program to plan a moon-based space station. Kelley also co-sponsors her school's Space and Aeronautics Club that this year involves sixth- through eighth-grade boys and girls.

A teacher for 15 years, Kelley is a "military brat" who grew up primarily in Arkansas. The Christa McAuliffe award caps a year of recognition for her. In his proclamation for Space Day 2000, Virginia Gov. James S. Gilmore specifically cited her as an example of teachers who integrate aerospace activities into the science curriculum. Colonial Heights even declared May as Space Month in honor of Kelley.

The AEF award was nevertheless special to her. "I thought it was awesome to be considered in the same category as Christa McAuliffe," Kelley said.

Photo by Paul Kennedy

Melinda Kelley shows the Christa McAuliffe teacher of the year award to her husband, Michael, at the AFA National Convention. Kelley is science department chairman at Colonial Heights Middle School in Colonial Heights, Va., and is a Leigh Wade Chapter member.

AFA Charters New Chapter

AFA's newest chapter, the **Lt. Col. Philip Colman Chapter,** received its charter in an August ceremony at Ft. Gordon, Ga.

The chapter is named for a World War II ace who later served in the Korean War and, on retirement in 1983, was a wing operations officer in the Georgia ANG. Colman was on hand for the charter presentation, made by then–AFA Chairman of the Board Doyle E. Larson to the chapter's three officers: Col. (sel.) Teresa A. Parker, president; Maj. Scott Muessig, vice president; and Maj. Steven Bohon, treasurer.

Home of the US Army's Signal Corps, Ft. Gordon is adjacent to Augusta and houses the Ft. Gordon Regional Security Operations Center. It is staffed by personnel from all military services. Parker is the center's vice commander. Muessig is from the 31st Intelligence Squadron, the USAF component at GRSOC. Bohon commands a communications training unit at the post.

According to Parker, Larson had encouraged the formation of this chapter after learning there was a strong Air Force intel presence at the post. Georgia State President Robert E. Largent contacted Parker to get the ball rolling, and she then worked all spring and summer to start the chapter.

The Lt. Col. Philip Colman Chapter was chartered with 23 members.

POW/MIA Ceremony

Gene Smith, AFA's National President from 1994 to 1996 and Chairman of the Board 1996–98, was keynote speaker at the annual National POW/MIA Recognition Day ceremony on Sept. 15 at the Pentagon.

As a 355th Tactical Fighter Wing F-105 pilot in the Vietnam War, Smith was shot down by ground fire Oct. 25, 1967. He was a major at the time, based at Takhli, Thailand, and his target that day was the Paul Doumer Bridge, over the Red River in Hanoi. It was his 33rd mission. Smith was a POW for more than five years, held at the Hoa Lo Prison ("Hanoi Hilton") and at the Son Tay Prison. He was repatriated March 14, 1973, and continued to serve on active duty until retiring from the Air Force in August 1978.

In introducing Smith to the audience, Deputy Secretary of Defense Rudy de Leon said, "Gene Smith has served our nation as an officer in the United States Air Force, as an unbroken Prisoner of War, as past President of the Air Force Association, and to this day, as an advocate for military people everywhere. He has said that the 27 years since his release from the Hanoi Hilton have been

'clearer, prettier, and sharper' than any he remembers."

Gen. Richard B. Myers, vice chairman, Joint Chiefs of Staff, also delivered remarks to an audience that included Thomas J. McKee, then AFA National President.

National POW/MIA Recognition Day is observed each year on the third Friday of September.

USAF photo by Peggy Marish-Boos

Former AFA National President Gene Smith delivers the keynote address at the annual National POW/MIA Recognition Day ceremony at the Pentagon in September.

Golden Golf

The **Golden Triangle (Miss.) Chapter** hosted its 12th annual POW/MIA Charity Golf Tournament at West Point, Miss.

The two-day event brought together some special participants, including three former POWs: Kenneth Fisher, George R. Hall, and Gene Smith.

Fisher was a captain and F-4C pilot when he was downed Nov. 7, 1967, and was repatriated on the same date as Smith. Hall was an RF-101 pilot and a captain when he was shot down Sept. 27, 1965. He was repatriated Feb. 12, 1973.

The golf tournament raised more than $10,000, according to Chapter Treasurer Ronald J. Vaughan. The funds will support AFROTC scholarships and several charities.

New AEF Fellowship

At the AFA National Convention, AEF announced the establishment of a fellows program named for retired Gen. Bernard A. Schriever, the father of the Air Force's missile systems and space program.

The program is the initiative of the AFA chapter named for him, the **Gen. B.A. Schriever Los Angeles Chapter,** and represents a $2,500 donation by the chapter to AEF to be given in honor of those who have served at the Space and Missile Systems Center at Los Angeles AFB, Calif.

The chapter's chairman of the board, G. Wesley Clark, was named as the first Schriever Fellow.

No. 1 Again

Air Force Majs. Andrew T. Klemas and Kimberly Markland Robinson won the Air Force in Motion Classic 10K on Sept. 2 at Bolling AFB, D.C.—Klemas repeating his 1997 and 1998 victories and Robinson demonstrating some of the stuff that made her the 1999 Air Force Female Athlete of the Year and top female finisher in the 1998 Marine Corps Marathon.

A **Donald W. Steele Sr. Memorial (Va.) Chapter** member, Klemas, 37, was the overall winner, crossing the finish line in 37 minutes, two seconds. His two previous first place finishes in this annual road race were in 33:40. This year, the heat and humidity were his biggest challenges, he said.

Robinson, 35, finished the race at 40:04, about 3.5 minutes ahead of her nearest female competitor.

Hosted for the fourth year by the **Nation's Capital (D.C.) Chapter,** the 10K and 5K road race and fun run for kids brought out 193 registered runners, including Lt. Gen. Robert H. Foglesong, USAF deputy chief of staff for air and space operations, and Lt. Gen. Donald L. Peterson, USAF deputy chief of staff for personnel. Several ranked runners from the D.C. area participated, including Steele Chapter's Lt. Col. Paul Hough, who is 23rd in age category 40–44.

Dan Tarr, 38, won the 5K in 17:49, while Sharon Donovan, 26, was the top female 5K runner at 20:06.

Klemas is a program manager at the National Imagery and Mapping Agency at Bolling and has represented the US armed forces on interservice teams at six cross-country championships. Robinson is chief, professional staff actions, at the Surgeon General's Office at Bolling. A road racer for only five years, she ran in the Olympic marathon trials and be-

Chapter Helps Scouts Earn Badge

Members from several California AFA chapters helped the Castle Air Museum in Merced, Calif., conduct an aviation course that helped area Boy Scouts fulfill the requirements for an aviation merit badge in their drive to become Eagle Scouts.

The rigorous half-day classes were held over a five-day period in late July at the museum. The Scouts and other interested students in the class of 29 ranged from fifth- to ninth-graders.

Among the many volunteer instructors were R.K. Chisholm, who taught aviation history. Stanley P. Thurston and an FAA examiner tackled charts and navigation. Nelson E. Howlett covered physical health. Edith A. Magerkurth spoke about careers in aviation. Charles T. Winter led model aircraft building. All of these volunteers came from the **Maj. Gen. Charles I. Bennett Jr. Chapter,** along with Jack R. Gotcher. Don Hirschaut of the **C. Farinha Gold Rush Chapter** taught the basics of forces of flight. George Morse, president of the **Bakersfield Chapter,** covered safety.

Many of these AFA members serve on the museum's education committee, chaired by Magerkurth, who is AFA's state aerospace education vice president, an Aerospace Education Foundation trustee, and the 1997 recipient of AEF's George D. Hardy Memorial Award.

During the course, the Scouts and other students toured some of the museum's 43 aircraft on display. Even lunchtime was put to good use: The students watched videos on topics such as the Thunderbirds and the SR-71.

Magerkurth later said the course showed that AFA chapters have the resources in their own membership to carry out top-notch workshops at little cost. She and the education committee have even more ambitious plans for aviation courses next summer.

Charles Winter of the Maj. Gen. Charles I. Bennett Jr. Chapter works with the Scouts on model aircraft.

George Morse of the Bakersfield Chapter teaches Scouts about aircraft maneuverability.

fore her current assignment was in the Air Force World Class Athlete Program.

Results from the Air Force in Motion Classic were posted on the Web at www.racepacket.com and featured photos of Klemas and Robinson crossing the finish line.

Military Recruiting

The **Golden Gate (Calif.) Chapter** held a July work session to discuss how the chapter can try to reverse a 1991 resolution that bans military recruiting in San Francisco schools.

Lt. Col. James P. McCaw Jr., 364th Recruiting Squadron commander in Sacramento, Calif.—and a member of the **C. Farinha Gold Rush (Calif.) Chapter**—spoke to the gathering, which included representatives from the local American Legion post and other veterans organizations.

The attendees formed working groups to plan actions they can take to counter the San Francisco Board of Education resolution that banned military recruiting on school campuses. The groups decided on a joint project with three immediate goals: to sponsor public forums on the topic, to gather facts on the issue, and to draft a new resolution for the Board of Education.

Scholarships: Helping Your Own

The **Frank P. Lahm (Ohio) Chapter** awarded $4,000 in scholarships to eight college students for the 2000–01 academic year.

From Ohio State University, the students were Michael Keller and Michael Mottern. From North Central State College, the students were Nicole Buntin and Audra Carpenter. The other award recipients were Matthew O'Brien, attending Bowling Green State University; Shannon

Scherer, a Franklin University student; Jonathan Spragg from the College of Wooster; and David Dille, Marion Technical College.

According to Chapter President ANG Capt. Timothy P. Kern, most of the eight are members of the 179th Airlift Wing (ANG), Mansfield Lahm Airport, Ohio, or a family member of the unit's current or retired personnel.

Kern reported that the chapter has awarded 75 scholarships, totaling $40,000, over the past five years.

Working the Crowds

Spirit of St. Louis (Mo.) Chapter President Loran C. Schnaidt and Chapter Vice President for Membership Gary Young literally walked among fairgoers, handing out AFA applications and fielding questions, during the annual St. Louis County Fair and Air Show over the Labor Day weekend.

The four-day event took place at the Spirit of St. Louis Airport in Chesterfield, Mo., and featured performances by the Navy's Blue Angels, Stearman aircraft owners, and several other military and civilian groups. A military flyby included a B-1, B-2, F-117, and KC-135. Among the many aircraft on static display were an F-16, F-14 Tomcat, T-38 Talon, EA-6B Prowler, MH-53J, experimental aircraft, and vintage warbirds.

The huge lineup of aircraft was just part of a fair jammed with everything from carnival rides to motocross races to a historical village demonstrating 19th century crafts.

In working the crowds, Schnaidt and Young answered questions such as, "Can a civilian join AFA?" and "What sort of commitment is required?" They also talked to visitors about AFA membership benefits and told them about chapter activities.

Armed With a Slugger

Brig. Gen. Richard B. Bundy, vice director of the joint staff's Operational Plans and Interoperability Directorate, spoke to a meeting of the **Gen. Russell E. Dougherty (Ky.) Chapter** about total force readiness and about the Kosovo after-action report.

Chapter President Nat Millican was able to line up Bundy as a speaker because he had served with him as a C-5 squadron operations officer back in the early 1990s; the general commanded the 436th Operations Group, Dover AFB, Del., at the time. Millican said about 50 chapter members and community and Air National Guard leaders attended the evening meeting and held a lively discussion with Bundy about lessons learned in Kosovo.

As a token of appreciation, Millican presented Bundy with a Louisville Slugger, a locally made bat like those used by baseball legends such as Babe Ruth, Mickey Mantle, and Hank Aaron. Millican told Bundy he was to use it in budget battles back at the Pentagon.

University of Louisville AFROTC, Moore High School AFJROTC, and Civil Air Patrol members received Outstanding Cadet awards at the end of the evening. According to Millican, the chapter will emphasize aviation awareness and AFA membership for cadets, this school year.

Convention: Georgia

A keynote address by retired Gen. Charles A. Horner highlighted the Georgia State Convention, hosted in August by the **Carl Vinson Memorial Chapter** at the Museum of Aviation at Robins AFB, Ga.

Horner was the coalition air boss in the 1991 Gulf War and a former commander in chief of NORAD and US Space Command and commander of Air Force Space Command. In his remarks to the chapter, he outlined the strengths and weaknesses of US military strategy and tactics. He also signed copies of the 1999 book *Every Man a Tiger,* which he co-authored with Tom Clancy.

Nation's Capital Chapter member and National Security Briefing Team leader Col. Peter R. Faber delivered a Force Strategic Planning Directorate briefing. Other presentations were made by CMSgt. Paula T. Campa, who is chairman of AFA's Enlisted Council and a **Montgomery (Ala.) Chapter** member; and AFRC Maj. David R. Calland, a member of AFA's Reserve Council and the **Dobbins (Ga.) Chapter.**

The Carl Vinson Chapter's Martin Jubelt (chapter president), Arthur D. Bosshart (vice president), Jeane W. Paris (secretary), Tom McMichael (treasurer), Lt. Col. Thomas J. Stark (membership chairman), and Bob Cripe made a virtual clean sweep of the awards presented, and the unit was named the state's Chapter of the Year. Angela Gail Mitchell, a science teacher at Alfred E. Beach High School in Savannah, Ga., received the Teacher of the Year award.

State officers elected during the business meeting were Robert E. Largent, president; MSgt. John M. Manna, secretary; and Marlan L. Nichols, treasurer. All are from the Carl Vinson Chapter.

Special guests included Maj. Gen. Dennis G. Haines, commander of the

Frank Lahm P. Chapter President ANG Capt. Tim Kern (standing, right) and Chapter Secretary Ralph Shadel (standing, left) flank recipients of the chapter's academic scholarships. Standing between them are A1C Michael Keller, Jonathan Spragg, and SSgt. Matthew O'Brien. Seated are Audra Carpenter, Lt. Shannon Scherer, and SSgt. Nicole Buntin.

Warner Robins Air Logistics Center, and Zack E. Osborne, region president (Southeast Region).

Salute to SMC

At its annual Salute to Space and Missile Systems Center at Los Angeles AFB in August, the **Gen. B.A. Schriever Los Angeles Chapter** presented Gen. Lester L. Lyles, commander, Air Force Materiel Command, Wright–Patterson AFB, Ohio, with its highest award.

The Gen. Bernard A. Schriever Award recognized Lyles's outstanding achievements in support of Air Force missile and space programs.

Lyles began his Air Force career as a propulsion and structures engineer at Los Angeles AFB. He later commanded SMC from 1994 to 1996 before becoming director of the Ballistic Missile Defense Organization and then USAF vice chief of staff.

"Not since General Schriever have we had a four-star general who has been so well versed in the space business," said G. Wesley Clark, chapter president. "He is a strong advocate for space systems acquisition, both within the Air Force and the Congressional realm."

At the black-tie gala, Lt. Gen. Roger G. DeKok delivered the keynote address on "Winners: Their Courage, Determination, and Right Attitude."

Along with Lyles and several honcrees from SMC, the event recognized the Far West Region Teacher of the Year, John Wietting. A fifth-grade teacher from Oak Street Elementary School in Inglewood, Calif., Wietting later wrote to Aerospace Education Foundation President Jack C. Price: "Teaching/learning is mostly an isolated experience between teacher and students, with little contact with the outside world during the day. When anyone comes to our classes or recognizes our efforts, we are delighted. When an organization as celebrated as yours honors us, it is the greatest."

Five Decades

The **Albany–Hudson Valley (N.Y.) Chapter's** first annual Brother Leo Merriman Achievement Award was presented to AFROTC cadet Jill M. Evenski at a commissioning exercise for Det. 550 at Rensselaer Polytechnic Institute in Troy, N.Y., in May.

The chapter holds its meetings at RPI, explained Edward J. Hayes Jr., chapter vice president and AFA state vice president for the central region. He said Evenski was active in the chapter, making her a natural choice for this award. Now a second lieutenant stationed at Hanscom AFB, Mass., Evenski had majored in electrical engineering at RPI.

Merriman presented the plaque to her, with the chapter's officers present: Raymond J. Gosnell, president; Hayes; and William J. Dickerson Jr., secretary. Hayes said chapter officers always attend RPI's commissioning ceremony.

The new award is named for Merriman, who trained as a B-29 mechanic during World War II and, at the war's end, was stationed with the occupation forces in Kitzingen, Germany, as a military policeman. He served in the military for two years.

A Conventual Franciscan friar who has been the AFA state chaplain for 46 years, Merriman has held all offices for the Albany–Hudson Valley Chapter, one of AFA's original charter organizations.

This past May, he observed 50 years as a friar, with several AFA New York officials on hand for the celebration. They included William G. Stratemeier Jr., national director; James E. Callahan, former national director and member of the **L.D. Bell–Niagara Frontier Chapter;** Bonnie B. Callahan, former state president and also of the Bell–Niagara Chapter; and Albany–Hudson Valley Chapter officers.

More AFA/AEF News

■ US Rep. Ray LaHood (R–Ill.) spoke to a **Land of Lincoln (Ill.) Chapter** luncheon in June, stressing the importance of a strong national defense. It was the third time he had accepted the chapter's invitation to be guest speaker. Chapter President Frank J. Wombwell and Vice President Richard R. Neely presented LaHood with an F-16 model bearing the markings of the local ANG unit, the 183rd Fighter Wing, Capital MAP, Ill.

■ It's becoming an annual event: **Enid (Okla.) Chapter** Secretary Oscar Curtis presented Enid High School AFJROTC cadet Kristoffer M. Lemoins with an AFA Award and $200. Lemoins had received an AFA award and savings bond last year, too. Curtis presented the award at a chapter quarterly meeting and told the audience that Lemoins had also earned the JROTC Member of the Year award at the Oklahoma State AFA Convention and had been voted as his school's Distinguished AFJROTC Cadet of the year.

■ The **Langley (Va.) Chapter's** Salute to 1st Fighter Wing luncheon in August featured Lt. Gen. Charles F. Wald as guest speaker. Now 9th Air Force commander, Wald was the key Pentagon spokesman during Operation Allied Force. He spoke to a gathering of more than 400. To mark the occasion, Chapter President Steve Mosier presented Wald and Col. Stephen M. Goldfein, wing commander and a chapter member, with commemorative gifts. The 1st FW is the host unit at Langley AFB. ■

Unit Reunions

reunions@afa.org

12th/15th TFW (1962–64). April 27–29, 2001, in Hampton, VA. **Contact:** Hank Brodsky, 13 Carriage Hill Dr., Poquoson, VA 23662 (757-868-7741) (midatcom@visi.net).

38th BW, Laon, France (1952–59). May 30–June 1, 2002, at The Westin Oklahoma City in Oklahoma City. **Contacts:** Glen Brady (405-946-3457) (gcbrady@aol.com) or Theo McCool (405-364-6329) (mccoolpe@telepath.com).

41st Military Airlift Sq, Charleston AFB, SC. June 21–24, 2001, in Pigeon Forge, TN. **Contact:** Scotty White (work: 843-740-1435 or home: 843-763-6516) (douglas.s.white@boeing.com).

42nd BG (M), Thirteenth AF (WWII), all squadrons. May 24–27, 2001, in Montgomery, AL. **Contact:** F.J. Saler, 700 S. FM 1417, Apt. 1106, Sherman, TX 75092 (903-868-1256).

59th Medical Gp, Burtonwood AB, UK. May 20–23, 2001, in Branson, MO. **Contact:** Gerald Westfall, RR 1, Box 28F, Jacksonville, MO 65260-9705 (660-295-4534) (gwestfall@hotmail.com).

66th FIS, Alaska. May 2, 2001, in Laughlin, NV. **Contact:** G.W. Zinkan, 3941 SW 317th St., Federal Way, WA 98023-2134 (253-927-9338).

67th Tactical Recon Wg. April 26–29, 2001, at the Air Force Museum at Wright–Patterson AFB, Ohio. **Contacts:** Linda Irvine, 4005 S. Ione St., Kennewick, WA 99337 (509-582-9304) or Joseph L. Krakovsky, 18227 W. Valley Dr., Wildwood, IL 60030 (847-223-2907).

116th Wg/128th Observation Sq. Nov. 3–5, 2000, at Robins AFB, GA. **Contacts:** Omar Owens, 3132 Vandiver Dr., Marietta, GA 30066 or Dick Roberts (770-455-3094).

475th FG, Fifth AF (WWII). April 25–28, 2001, at the Quality Inn Beachside in Gulf Shores, AL. **Contacts:** Archie Weidner, 389 Clubhouse Dr., Apt. GG5, Gulf Shores, AL 36542 (334-698-8455) (juliene@gulftel.com) or P.J. Dahl, 4232 Brentwood Park Cir., Tampa, FL 33624 (tallyho38@mindspring.com).

551st/552nd AEW&C Wgs and 553rd Recon Wg. June 28–July 1, 2001, at Tinker AFB, OK. **Contact:** Dean Boys, RR 3, Box 193, Shelbyville, IL 62565 (217-774-4998) (reunion@dean-boys.com) (http://www.dean-boys.com/joint_reunion.htm).

555th, 563rd, 564th, 566th, and 573rd Signal Air Warning Battalions (Radar), ETO (WWII). Sept. 13–16, 2001, in Midland, MI. **Contact:** Don Hawkins, 504 W. Chapel Ln., Midland, MI 48640-7328 (517-631-2283).

773rd Airlift Sq. July 13–15, 2001, at Dyess AFB, TX. **Contacts:** Robert Dudley, 4609 Bay Ln., Memphis, TN 38118 (901-369-9815) (dudmobile@juno.com) or Gray Dempsey, 3306 Equestrian Trl., Marietta, GA 30064 (770-421-0956) (dgdempsey@aol.com).

862nd Engineers Aviation Battalion (1942–57). May 3–6, 2001, at the Ramada Inn Central Williamsburg in Wiliamsburg, VA. **Contact:** Sherl Hasler, RR 7, Box 1111, Bloomfield, IN 47424-8003 (812-384-4666).

Aerospace Audiovisual Service/Air Combat Camera Service. June 18–22, 2001, cruise out of Los Angeles. **Contact:** John W. Moseley, 105 Bush Trail Bend, Cibolo, TX 78108 (210-658-8287) (jwmoseley@email.msn.com).

NATO Tiger Assn. June 21–25, 2001, near Kleine Brogel AB, Belguim. **Contacts:** Jumbo Wray, 2401 Willow Ln., Lynn Haven, FL 32444 (850-271-4634) (jetjock1@worldnet.att.net) or Dene Fahey, 22 English St., Sumpter, SC 29150 (803-775-6400) (odfahey@cpis.net) (www. natotigerreunion. org).

Seeking members of the **57th FG,** 64th, 65th, and 66th Sqs, for a reunion at Wright–Patterson AFB, Ohio, in spring 2001. **Contact:** Thomas Wells, PO Box 83, Bloomington, IN 47402-0083 (812-333-5333).

Seeking former or present **air traffic controllers,** stationed at Clark AB, Philippines, for a reunion in August 2001 in Las Vegas. **Contacts:** Theresa Thurmond (916-961-3027) (tangotango60@aol.com) or Rodney Shipp (650-574-7863) (rshipp@iopener.net).

For a reunion in fall 2003, seeking **Cold War recon units** (1945–present) that flew or supported reconnaisance aircraft. **Contacts:** William H. Ernst, 410 Greenbriar Ct., Bellevue, NE 68005 (billernst@aol.com) or John H. Kovacs, 564 Sartell Dr., Fairborn, OH 45324-5745 (j1a2c3k@aol.com).

Seeking former **Matador/Mace Missileers** for a reunion in October 2001 in Orlando, FL. **Contact:** Joe Perkins, 2019 Cornell Rd., Middleburg, FL 32068 (904-282-9064) (perkster@fcol.com). ■

Mail unit reunion notices well in advance of the event 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.

Bulletin Board

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Seeking information on **William Armstrong,** an African–American from Ohio, who was an auto mechanic before serving in the AAF in Dijon, France, in September or October 1945. **Contact:** M. Philippe Coulaud, 1 rue Jean Mermoz, Chennevieres S/M, France 94430 (0145-768-401) (pompomx@worldonline.fr).

Seeking **USAF Sgt. Sherman Reeder. Contact:** Reg Cunningham, 801 Morningside Dr., Fort Worth, TX 76104 (817-924-3480).

Seeking **Robert A. Lawrence** from Menlo Park, CA, Pilot Class 49-A, Goodfellow AFB, TX, and Williams AFB, AZ. **Contact:** Al Bennett, 1319 W. 11th Ave., Anchorage, AK 99501 (phone: 907-272-6215 or fax: 907-272-6200).

Seeking a **USAF cap** with a WWII B-24 Liberator and Eighth AF insignia with the name "Mistah Chick" on it. **Contact:** Jack Gormely (qltrglf@aol.com).

Seeking **tokens from military service clubs** in the Philippines, specifically Clark AB, John Hay, Wallace AS, Mactan AB, Subic Bay, Sangley Point, and smaller or closed bases. **Contact:** Earl Honeycutt, 1319 Westmoreland Ave., Norfolk, VA 23508-1320 (ehoneycu@odu.edu).

Seeking retired **MSgt. or CMSgt. Vernon Briley,** former historian of the 32nd TFS, Camp New Amsterdam, Netherlands, 1984–90, who later became assistant command historian of 3rd AF at RAF Mildenhall, UK. **Contact:** Henk Scharringa, Leliestraat 3, DS de Bilt, Netherlands 3732 (henk_s@member.afa.org).

Seeking XX and XXI Bomber Command, 20th AF, **B-29 photos,** specifically nose art photos and serial number information on 29th and 30th BGs, 315th BW, aircraft. **Contact:** T. Britton, 9209 Cynthia St., Manassas Park, VA 20111 (703-393-9875) (usaafhistorian@yahoo.com).

Seeking information on **Lt. Col. Dayton C. Ragland,** 336th FS, 4th FIG, a POW who later died in combat in Vietnam in May 1966, supporting the Carolina Moon project. **Contact:** K. Werrell, Airpower Research Institute, 410 Chennault Cir., Maxwell AFB, AL 36112-6428 (334-953-8858) (ken.werrell@cadre.maxwell.af.mil).

Seeking retired **CMSgt. Kenneth Dale Lewis,** formerly with USAF Foreign Technology Division, Wright–Patterson AFB, OH, in the late 1970s. **Contact:** Philip F. Peterson, 2024 Washington Creek Ln., Dayton, OH 45458 (937-433-3754).

Seeking information on **Lt. Robert A. Metz,** 350th FS, killed Aug. 11, 1944. **Contact:** Charles H. Keck, 10109 E. Chestnut Dr., Sun Lakes, AZ 85248 (480-895-2875).

Seeking **Earnest Cox,** a B-24 tail gunner from Wisconsin or Minnesota, who had the bubble shot off in his face by an Me-109 during a raid on Ploesti oil fields. Also seeking **Marcus Singer** of New York, who was stationed in Smyrna AAF, TN, 1945. Also seeking PAC **patch** worn on left sleeve. **Contact:** Adam Stepanchenko, 28206 Norwood St., Warren, MI 48092-5626 (810-573-6420).

Seeking **Douglas Williams,** who had basic training at Langley AFB, VA, during the summer of 1950. **Contact:** Eugene M. Wilson (202-544-4004).

Seeking **Sam Chandler,** 26th TRW, Zweibruecken AB, Germany, 1974–75, and Holloman AFB, NM, in December 1975. His wife was named Judy, and he had two children, Michelle and Jamie. **Contact:** Dee Anne Egan (214-331-7900) (eganda@juno.com).

Seeking members of the **305th Air Mobility Wg** for information on MacDill AFB, FL, 1951–59, and Bunker Hill/Grissom AFB, IN, 1959–94, for 50th anniversary in 2001. **Contact:** Gerald A. White Jr., 2901 Falcon Dr., McGuire AFB, NJ 08641-5002 (609-754-3350) (305amw.ho@mcguire. af.mil).

For history, seeking copies of logs, memorials, diaries, and photos from **USAF veterans** who served in Italy, 1943–45. **Contact:** Ferdinando Pedriali, via Podgora 7/C, Pinerolo (Torino), Italy 10064 (0121-70224) (pedrialiferd@libero.it). ■

If you need information on an individual, unit, or aircraft, or want to collect, donate, or trade USAF–related items, write to "Bulletin Board," *Air Force* Magazine, 1501 Lee Highway, Arlington, VA 22209-1198. Items submitted by AFA members have first priority; others will run on a space-available basis. If an item has not run within six months, the sender should resubmit an updated version. Letters must be signed. Items or services for sale, or otherwise intended to bring in money, and photographs will not be used or returned. We reserve the right to condense notices.

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Pieces of History

Photography by Paul Kennedy

A Long Way Down

Courtesy of the US Air Force Museum, Wright-Patterson AFB, Ohio

In the 1950s, USAF faced the problem of planning for safe bailouts from high-altitude vehicles. Project Excelsior in 1958 helped study the situation. Wright Field technician Francis Beaupre developed a parachute system to stabilize and control the descent of those who bailed out, and Capt. Joseph W. Kittinger Jr. began testing it, as depicted by this display at the US Air Force Museum. On Nov. 16, 1959, he jumped from 76,400 feet off a helium balloon gondola. On Aug. 16, 1960, he made the last of three Excelsior jumps, this time from 102,800 feet. It was the highest parachute jump in history. Enduring temperatures as low as minus 94 degrees Fahrenheit, Kittinger descended at more than 700 mph but landed safely in the New Mexico desert, proving that man could survive a high-altitude emergency escape.

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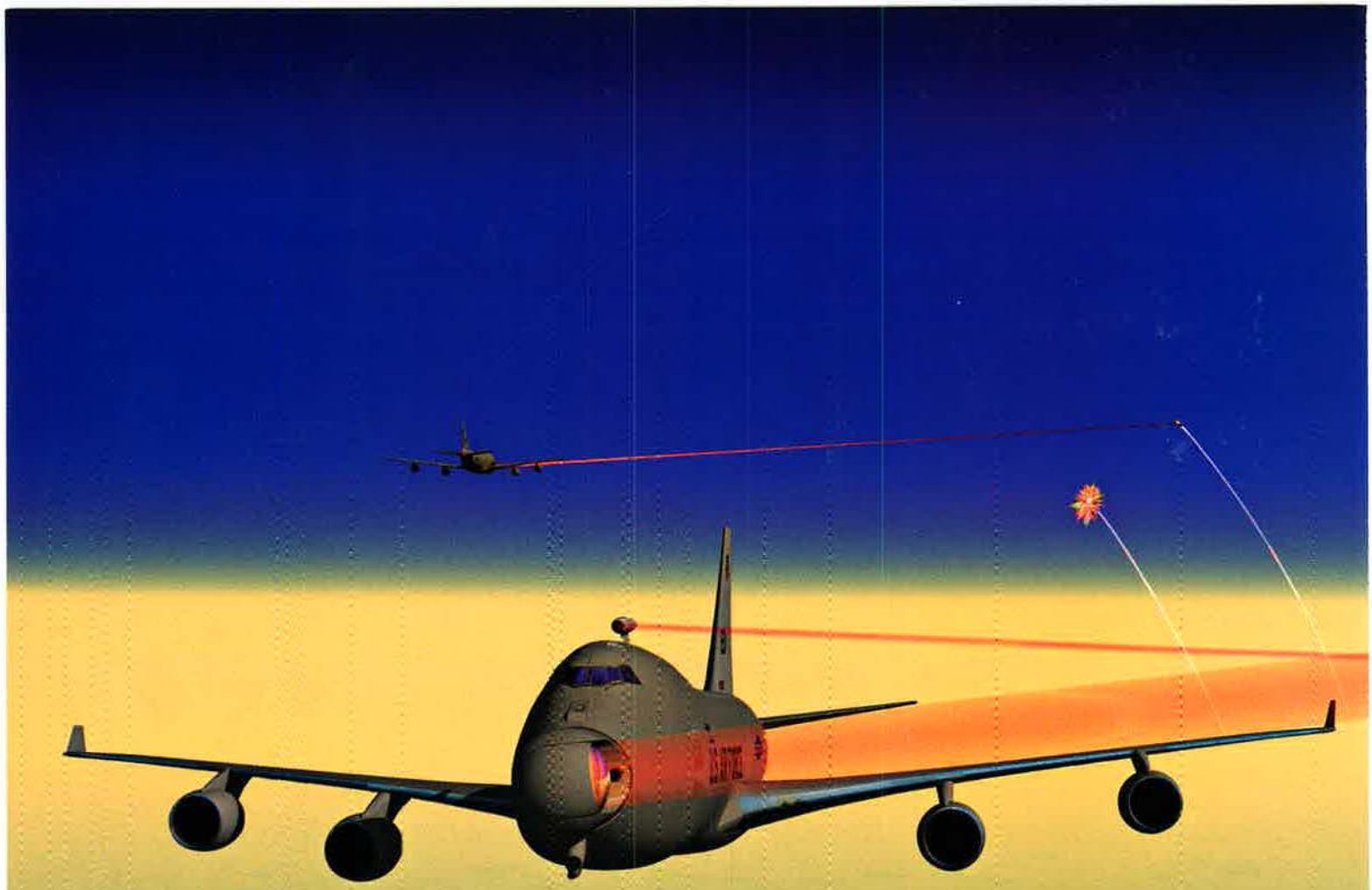

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