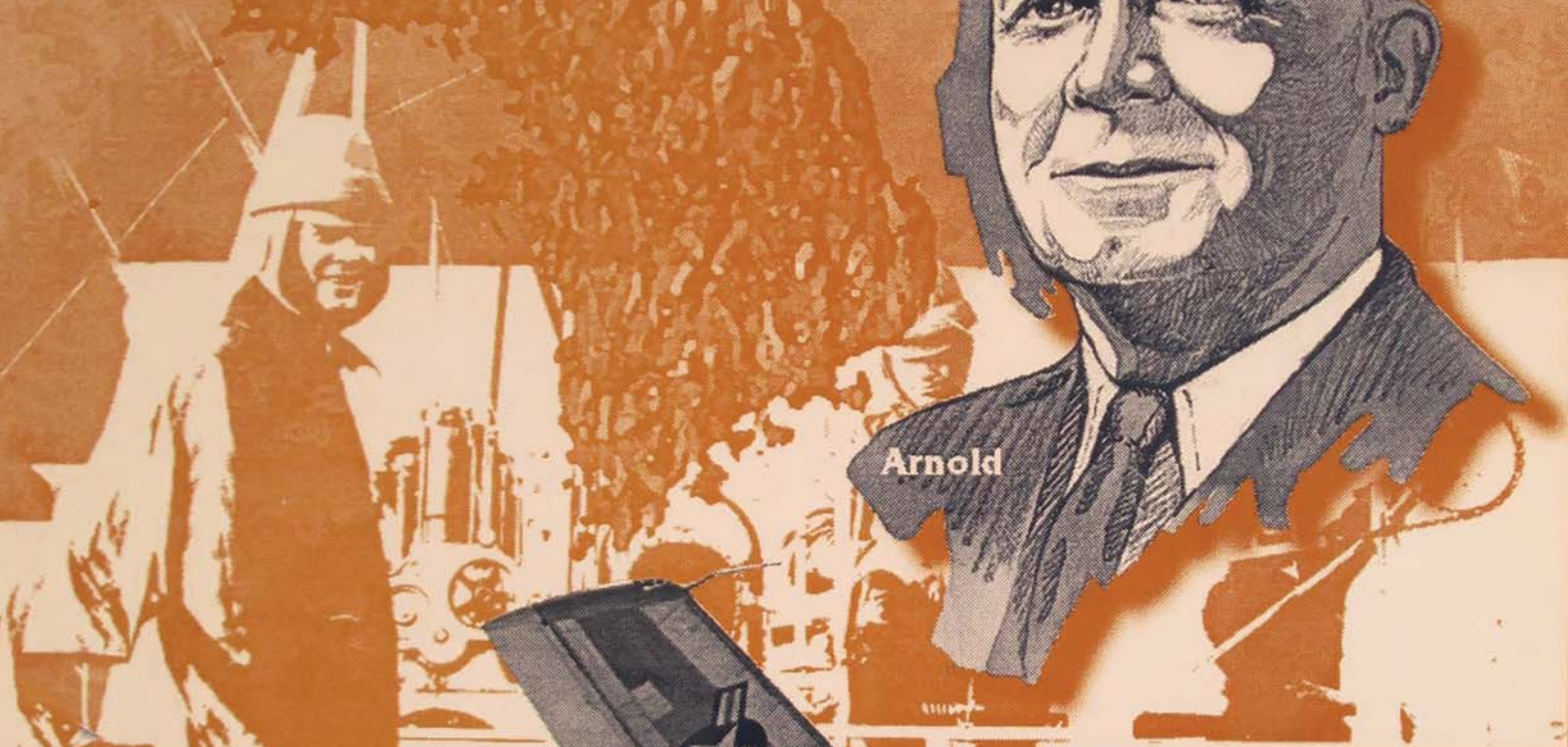
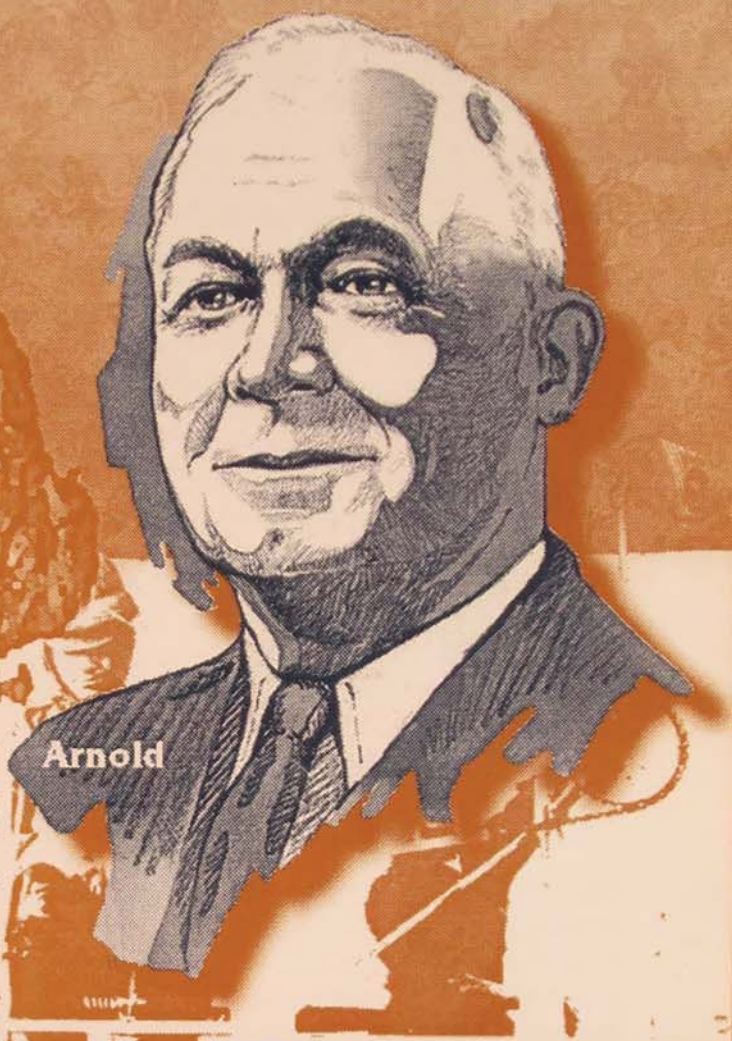


# AIRPOWER

Winter 1996

JOURNAL

Fifty Years of Professional Dignity





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## Flight Lines

LT COL JAMES W. SPENCER, EDITOR

### Quality: No Longer a Four-Syllable Word

COME ON, admit it. You and I have let our good friend Col Denny Drew, USAF, Retired, get us off the "quality" hook. Everyone remembers his column published in *Air Force Times* a while ago. It was beautiful. He managed to say what we had always wanted to say about the advent of *quality* in our professional lives. It was almost like he was there in the trenches with us. We allowed him to articulate all of the frustrations we experienced (read "four straight days of training," "I need metrics next week," "not walking the talk," etc.).

There are still Quality Air Force Assessments (QAFA) and inspectors who don't exactly have the system figured out yet (Deming turns in his grave). There are people claiming they can reinvent government using quality. A blind man can see that quality has nothing to do with it. Leadership can be the most frustrating of all sometimes. Of course, *my* leaders are great (so much for the gratuitous effort at keeping my job—let's cut to the chase).

Quality Air Force (QAF) sprang on the scene quickly and has hung around a while. Now it seems that almost as quickly as it was ushered in, QAF appears to be on the way out. "Quality is part of our culture now," our leaders tell us. "We don't need a special program or budget line or separate function at headquarters." The old paradigms are broken. We have teams now—many teams; many, many teams. But before we launch out on our next benchmarking effort, perhaps we should stop and examine where we've been. That's what I did recently when I signed up for an Executive Quality Leadership (EQL) course. And it wasn't my first.

Our Professional Journals Division experienced a lot of growth last year and handled

it rather successfully, due in part to a strategic plan we developed (OK, *I* developed) about two years ago. We're sitting on a world-class process—our Internet journal, *Air Chronicles*—but none of us have the time to push for that standing among our peers. Would knowing that we're "world-class" matter to you? With our next QAFA on the horizon, I thought I'd attend another EQL to pick up some planning tips, ideas for updating our original plan, and see if there were any pointers for the upcoming Air Education and Training Command (AETC) assessment. I walked into the classroom totally unsuspecting of what I'd find. There would be a modicum of pain. Five years had elapsed since my first EQL. So, even though I was an old dog, that was OK; these were old tricks. Wrong, wrong, wrong.

No longer was the word pronounced *KOO-WAL-I-TEE* as it had been five years earlier. Every time the word came out of the instructor's mouth in that first EQL, I was scurrying for my dictionary, even at that tender age (now any age before 40). By this time, use of the word *Quality* was hardly necessary during the entire two-day course. You and I have always known that quality was simply an extension of good management practices and principles by other means. And now it seemed that our instructor, Lt Col George ("Trash") Harper, was finally articulating that very idea: you don't need buzzwords, catchphrases, or names like Deming, Juran et al. attached to your efforts at making good management practices and principles work. That's right; when the word *was* used, it was properly pronounced with three syllables or it wasn't used at all. In all fairness, I have also heard it pronounced with only two syllables (*KWUL-TEE*) in some regions of our country.

The old "new uniform" took quite a beating from us all when it appeared. But if Air Force leadership was only trying to get us to think differently about our jobs, they accomplished that very well. After all, the moment you walked into your closet each morning, you viewed your job differently. QAF pro-

grams are supposed to work the same way. Like installing a new operating system on our computers, quality is supposed to help us think about our shops differently and hopefully more productively. Unfortunately, the QAF infrastructure generated so much bathwater that we couldn't see the baby anymore. And my fear is that we've all given up on quality to the extent that we've forgotten the baby's still out there where we've dumped everything else.

Are we really giving up the Baldrige criteria for our assessments? That's one system that is so objective no one can argue with the results, and subjective inspections (my apologies again, Brother Deming) don't have to happen. I'm reminded of the individual who reacted to an innovation by saying, "That's such a good idea that we couldn't kill it even if we wanted to." Seems now that many who have always wanted to do so (albeit secretly) are tossing everything associated with QAF—like the Baldrige system—onto the meat wagon.

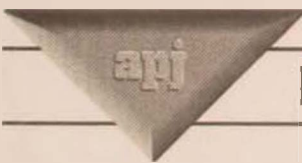
Not long ago, a friend called to relate an organizational "condition" pervading his relatively new staff office. The organization had experienced early successes but now was stagnating in its work, reticent to venture out into new territory. He described an office falling prey to the perceptual anxiety of

unrealized expectations. "Sounds to me like you need a little 'leadership commitment and operating style that inspires trust, teamwork, and continuous improvement'," I responded, never using the three-syllable word. Don't you think that was good advice? And if you do, you have just advocated the Quality Air Force credo as well. Forget the bathwater and go get that baby.

When Trash Harper was finished, I didn't feel patronized or placated—something new for me after quality training. And why was everyone attending our two-day class buoyant and complimentary after the course was over? Wasn't this supposed to be painful? Wrong, wrong, wrong.

Our shop's giving quality another look and we may discover that strategic quality planning is really just strategic planning. This time, we're all going to have a part in developing the plan. I'm turning on an offsite. You're invited. What we all need to realize is that we're sitting on potential world-class processes and that there's a baby out there who just needs a little time to grow. We're pushing *Air Chronicles* as world-class. You can help us, or tell us what you think about that later.

Colonel Drew is still my good friend and cohort in professional publishing. But I reviewed his article again and promptly circular-filed it a few days ago. You should, too. □



## Ricochets and Replies

*We encourage your comments via letters to the editor or comment cards. All correspondence should be addressed to the Editor, Airpower Journal, 401 Chennault Circle, Maxwell AFB AL 36112-6428. You can also send your comments by E-mail to editor@max1.au.af.mil. We reserve the right to edit the material for overall length.*

### REGARDING OUR SUMMER EDITION

Your leadoff article by Chuck Colson ("A Question of Ethics") in the Summer 1996 is-

sue could not have been a better choice. Hitting on the absolute existence of absolute truth and debunking the value of situational ethics as a way to live one's life are themes which cannot be discussed enough. I am very familiar with Mr Colson's writings and continue to appreciate his use of scholarly references and citations. While some may say that his comments regarding Christianity are presumptuous or unconstitutional, those

*continued on page 110*



# The Air Expeditionary Force

Taking the Air Force into the Twenty-first Century

BRIG GEN WILLIAM R. LOONEY III, USAF





**W**ITH THE DEMISE of the Soviet Union and the resulting lone superpower status for the United States, revolutionary changes swept through the American military. For the United States Air Force, reorganization was probably the most dramatic and far-reaching change. Now, five years after reorganization, another innovative Air Force approach may very well have the same far-reaching implications for the application

of American airpower. This new concept, the Air Expeditionary Force (AEF), makes the final transition from a force founded on the strategy of forward-based presence to one built on the vision of global engagement. The brainchild of Lt Gen John Jumper and his Central Command Air Forces (CENTAF) staff, AEFs are now rolling across the Southwest Asian deserts like the whirlwinds the region is famous for.

What exactly is an Air Expeditionary

Force? What are its mission, capabilities, and roles? What constraints affect its application? An Air Expeditionary Force is an airpower package (usually between 30 to 40 aircraft) that national command authorities may deploy to defuse a developing crisis situation, to quickly increase a theater's airpower capability, or to maintain a constant theater airpower capability. An AEF is comprised of units that have previously deployed and trained together and are now postured for short-notice crisis response.

The mission of the Air Expeditionary Force is to give regional commanders in chief (CINC) *rapid, responsive, and reliable* airpower capabilities and options that meet specific theater needs. In the days of the cold war, the stateside Air Force concentrated on generating and launching aircraft from the continental US (CONUS) to reinforce forces engaged in the European or Pacific theaters. US Air Forces in Europe (USAFE) and Pacific Air Forces (PACAF) units were "fight in place" forces located in established operational bases. Therefore, the stateside focus was on the ability to deploy aircraft, equipment, and personnel quickly from home station. With the closure of a number of overseas bases and our possible involvement in regions with little if any American military infrastructure, rapid deployment can be only one measure of merit for today's CONUS-based airpower.

Now we must be able to launch from CONUS, fly nonstop to our destination if possible, and then generate combat sorties upon arrival. If all we consider is our ability to launch within 24 hours of an execute order, we focus on only one aspect of the global engagement doctrine. Airpower does little for a regional CINC facing a crisis if it takes two or three days to arrive in-theater and then another few days before a combat sortie is generated. The goal of the AEF is to launch combat sorties in-theater 48 hours after an execute order is issued and then sustain combat airpower for the duration of the conflict or crisis.

In order to meet many of the CINC's taskings, AEFs are configured with basic capabilities inherent in strike packages—air superiority, precision strike, and suppression of enemy air defenses (SEAD). Other necessary capabilities such as command and control, jamming, electronic intelligence (ELINT) and signals intelligence (SIGINT) interception, combat search and rescue, and air refueling would in most cases be provided by in-place theater assets. Sending AEFs to parts of the world without such in-place assets would require deploying those assets also. A typical AEF package comprises 30 aircraft—12 air superiority, 12 strike, and six SEAD fighters. However, based on the CINC's requirements, the package could be tailored to meet specific needs and theater threats. In cases where in-place tanker assets are not available or are unable to provide required support, an AEF would also include four tankers. The number of personnel required to support the fighter package alone comes to 1,000 and increases to 1,175 with the addition of tankers. With this force, the AEF could generate between 40 and 60 combat sorties per day in support of the CINC's campaign plan. Additionally, CONUS-based bombers could launch from the United States and be integrated into AEF strike packages. From a roles perspective, planners envision the AEF operating in three scenarios—as a deterrent, an additive force, or a filler force, if required.

In the deterrent role, perhaps a simple statement from Washington that an AEF has been put on alert would be enough to deter or deflate a potential crisis. If not, the actual launching of an AEF to a crisis environment would send a very strong signal to any potential aggressor of America's intention to resort to military force, if necessary. An inherent advantage of the AEF is its rapid response. Within 48 hours of a national decision, the United States would have combat airpower in the region ready to engage.

The additive role would occur in the event that a regional CINC felt the need to increase airpower in time of crisis or height-

ened tensions, or just to preclude either. An AEF could be quickly deployed into the theater, and the additional shooters would significantly enhance a CINC's combat capability in short order.

Finally, when a carrier gap is projected for an area of responsibility (AOR), an AEF could either be put on alert for possible deployment or actually deploy to the region to bring the theater airpower up to the level enjoyed before the carrier departed. Although the exact capability onboard a carrier and that possessed by the AEF are not a one-for-one match, there are enough similarities (excluding support assets) to offer at least a reasonable substitute combat capability.

This final role could be viewed by some as an Air Force effort to replace the carrier. Nothing could be further from the case. At present, the United States does not possess enough of any one type of airpower, land-based or sea-based, to fill the many assignments levied on American forces these days. However, by efficiently blending sea- and land-based airpower, the United States has the force structure necessary to handle most, if not all, situations. Simply stated, the AEF is but another option decision makers can use to handle difficult situations. If a quick response is needed and a carrier is not in or close to the AOR or if an increase in airpower is required, even though a carrier may be in the AOR, then perhaps the AEF can meet the need. If, on the other hand, some of the constraints discussed below prevent the formation of an AEF, then a carrier is the obvious solution. Regardless, the AEF is an attempt to bolster US airpower options and capability, not an attempt to replace one for another. Land-based and sea-based air have unique characteristics and capabilities just as they also possess their own unique limitations. The key for decision makers faced with a crisis is to determine what airpower capabilities are required and what constraints affect the particular situation. From there, a decision can be made whether the answer is the AEF, the carrier, or both.

As alluded to earlier, the AEF is faced with constraints like any other military force. The favorable resolution of these constraints is always required before considering the deployment of an AEF.

First and foremost, an AEF would require access to the host country and/or clearances into any airspace that requires transit to get to the fight. This access will always be an operational constraint for an AEF, and one that diplomatic and military officials must successfully deal with in order to make the AEF a viable option for national decision makers. Granted, most countries in crisis situations tend to grant access readily, but there may be instances when US decision makers consider a situation "a crisis" before this assessment is realized or shared by the host country and its neighbors. Such situations will make access extremely challenging for negotiators, and without access the AEF is not an option.

Second, an AEF needs an established base (usually an operational host-nation base) to furnish a runway, an area for a tent city, and some basic water and fuel infrastructure. It would be impossible to fly into a nonoperational field and expect to be able to launch and sustain combat sorties shortly after landing. Although the requirements would be minimal, an AEF must operate out of an established base in a host country in order to meet the combat sortie requirements immediately.

Third, strategic airlift and tanker assets must be made readily available. At first glance, one might think this would create a severe constraint. However, the deployment of an AEF would most likely occur during periods with normal day-to-day airlift requirements, not, for example, during a severe crisis, a major regional conflict about to erupt, or early in an isolated crisis situation. In such cases, an AEF should be able to gain top priority for that period. The airlift requirement has not been fine-tuned to date, but will probably fall in the neighborhood

of 50 to 60 C-141 equivalents depending on the amount of prepositioning in-theater.

Finally, the ability to get munitions into the location can be both a logistical and diplomatic issue. Prepositioned dumb/smart bombs along with missiles, either brought in on deploying fighters or airlifted, will offer initial combat capability. But to sustain operations, munitions transfer will be required. The key, of course, is moving the munitions from in-theater locations rather than from CONUS in a timely and efficient manner. Though certainly not a showstopper, this constraint has to be dealt with up front along with all the others.

Assuming the constraints are favorably resolved, one could envision the following scenario unfolding with a fully developed AEF. Wing commanders of designated CONUS AEF units receive a call from higher headquarters warning of a possible AEF execute order. (Note: the idea of a completely cold-start, shot-out-of-the-blue, no-warning-whatsoever scenario is probably unrealistic. Although such a scenario is possible, recent contingency deployments have included some strategic warning before execute orders.) Immediately, the affected units begin to ready for an execute order by canceling routine training missions, uploading external fuel tanks on aircraft, placing personnel on short response times, and prepacking some equipment. If the execute order does not come shortly thereafter, the wing returns to normal operations; if it does, the wing is properly postured. When the execute order does come (usually within eight to 72 hours), three to four geographically separated wings simultaneously begin generating aircraft, packing equipment, and mobilizing people. Within 12 hours, the first airlift aircraft depart CONUS with personnel and equipment. An additional 12 hours later, the fighter aircraft launch on their deployment as the first airlift missions are touching down at the host AEF destination. Personnel begin to unload the airlift aircraft and pull prepositioned equipment out of expandable shelters,

otherwise known as K-spans. When the fighters arrive, they are turned and uploaded with munitions where required, and deploying pilots are replaced by rested pilots who came over on the first airlift aircraft. Shortly after touchdown of the last deploying fighters (usually five hours), the first combat launch of the AEF takes place. If all-out hostilities have started, the members of the AEF would live out of the K-spans and eat meals ready to eat (MRE) until either there is a lull in the action or time permits erecting a tent city. Once in-theater, resupply lines would be established, and the AEF would continue to generate combat missions in support of the CINC's campaign plan.

To date, the Air Force has not developed the AEF concept to the point described here; however, significant progress has been made. Three AEF deployments have been completed, one in Bahrain, one in Jordan, and the third in Qatar. Each has lasted approximately three months, and when completed has left some prepositioned equipment (vehicles, tents, ground equipment, bombs) in K-spans for future deployments. The first AEF to Bahrain used a reduced force of 18 aircraft and 600 people. The AEFs in Jordan and Qatar used the typical force structure and personnel of an AEF (34 aircraft and 1,175 personnel) and operated for three months flying combat missions in support of Operation Southern Watch. Two more Southwest Asia countries are expected to host AEFs in the next nine months.

AEFs I, II, and III have built the necessary minimal infrastructure and developed, in concert with their host countries, the plans to accept an AEF on short notice as discussed above. CONUS-based wings have been assigned for these locations: Langley AFB, Virginia, is the core unit for Jordan; Moody AFB, Georgia, for Bahrain; and Seymour Johnson AFB, North Carolina, for Qatar. This is a takeoff on the Checkered Flag programs of cold war days when CONUS-based wings were assigned to European bases. Langley, Moody, and Seymour Johnson have

developed command relationships with their hosts, along with detailed plans, to accommodate the set-up and operation of a follow-on AEF. These plans will be reviewed and updated through periodic visits from members of the core units to their host countries, and by future AEF deployments.

An inherent advantage of any land-based deployment is the opportunity to develop and enhance working relationships with the host country. The AEF deployments have been no exception; and in the Bahrain, Jordan, and Qatar experiences, US airmen interacted with their host counterparts in professional and social settings for three months. The results of these interactions were instrumental in increasing cooperation, understanding, and mutual admiration between our countries and our air forces. As a matter of fact, all three countries regretted seeing the AEFs leave and look forward to the next deployment. This time spent together, sharing expertise and helping one another, will pay huge dividends for the United States in this region for years to come.

Once AEFs IV and V have completed their initial deployments, built some minimal infrastructure, and developed the necessary activation plans, the AEF concept will be an up-and-running option for the Central Command (CENTCOM) AOR. However, the CENTCOM AOR is certainly not the only application for an AEF. The Pacific, Southeast Asia, South America, and even parts of

Europe may be very viable locations for an AEF.

Another possible spin-off of the successful implementation of the AEF concept is reduction of deployed force structure overseas. This could result in significant decreases in the number of days deployed for Air Force personnel. Certainly, being tied to a beeper at Langley AFB, Virginia, is a better option than being deployed to Southwest Asia on 90-to-120-day stints. However, before any serious thought is given to deployed force structure reductions, the AEF has to prove it can accomplish its demanding mission.

As the Air Force enters the twenty-first century, it must prepare itself to furnish devastating combat airpower at a moment's notice anywhere in the world. This force must be able to mobilize and deploy rapidly; upon arrival, it must be able to respond to the CINC's wartime air tasking; and finally, it must be able to furnish reliable and sustained airpower.

AEF II deployed to Jordan nonstop in 13.5 hours, launched an air tasking order (ATO) combat package of 14 aircraft into southern Iraq on an Operation Southern Watch mission five hours after arrival (total of 43 hours from execute order), and maintained a 98.6 percent mission-effectiveness rate during a three-month deployment. It can be done, and one day it will be done! □

*Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young. The greatest thing in life is to keep our mind young.*

—Henry Ford

# Airpower and Peace Enforcement

JAMES S. CORUM



**I**N THE LAST five years, the world community has seen a dramatic increase in peace-enforcement operations conducted by multinational forces in locations such as Somalia, Haiti, and Bosnia. Accordingly, peace-enforcement operations have taken on an unprecedented level of importance for the militaries of the major powers that are dispatching large military forces, along with significant humanitarian relief, in support of these operations. One major

problem is a lack of clear doctrinal guidance for the particular issues and conditions typically faced by military forces during these operations.

This article draws primarily from the experience of the United States Air Force (USAF) in supporting peace-enforcement operations to assess our present Air Force doctrine, or lack thereof, and to pinpoint areas in which we need to make changes in our force structure and operational methods in

order to carry out these operations more effectively. Although the article deals primarily with the USAF, the lessons learned by the US military and most conclusions regarding changes and reforms are directly applicable to other air forces. After all, peace-enforcement missions are multinational operations, with United Nations (UN), North Atlantic Treaty Organization (NATO), and other major organizations involved in sanctions enforcement, airlift, and combat operations. Like other multinational combat operations, peace enforcement requires a common approach to doctrine among the various military forces involved.

### Definition of Peace Enforcement

The present UN and US definition of peace enforcement is rather vague. The US Joint Staff maintains that "Peace Enforcement includes appropriate forceful military actions to separate belligerents involved in the conflict—with or without their consent. There is a clear distinction between peacekeeping and peace enforcement."<sup>1</sup> Former UN secretary-general Boutros Boutros-Ghali defines the term as "actions to keep a ceasefire from being violated or to reinstate a failed ceasefire."<sup>2</sup> As Donald M. Snow points out, a subtle difference exists between the UN and US definitions of peace enforcement. The UN definition implies the existence of some will for peace, whereas "the American ver-

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*Peace enforcement is decidedly not peacekeeping.*

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sion more realistically portrays another, far more difficult matter. By definition, in the situation for which peace enforcement is a potentially appropriate response, war and not peace describes the situation, and one or

more of the combatants prefers it that way."<sup>3</sup> Despite these differences in definition, one aspect of peace enforcement remains clear. Although US doctrine calls it a "peace operation," peace enforcement is decidedly not peacekeeping. Peace enforcement may not have the consent of all parties; further, intervening forces are not likely to be neutral, and they are authorized to use force in situations other than self-defense. Peace enforcement is not defined as war, but it still involves military combat operations and falls into the traditional American category of low-intensity conflict (LIC).

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*Within the context of a peace-enforcement operation . . . the US military and other air forces have often exhibited a doctrinal vacuum.*

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In effect, for the UN, the US, and regional multinational organizations, the term *peace enforcement* has become a euphemism for military intervention. Most cases of peace enforcement deal not with a conflict between two established and recognizable states, but with a country undergoing civil war. In the most dramatic cases of peace enforcement, the world community must deal with countries that have imploded or moved beyond a war between recognizable factions to a collapse of the economy and of social and governmental order. Such situations have occurred in Somalia, Haiti, Rwanda, and Liberia. Chaos and anarchy are the best descriptions of the situation encountered by peace-enforcement forces upon their arrival. In such cases, these forces may encounter numerous armed factions but few organizational or governmental entities with whom to negotiate.

Faced with the problem of a country's collapse and the consequent loss of innocent lives by famine, disease, and violence, the



*The difficulty of peace-enforcement intelligence is that, normally, the threat does not come from large conventional forces that we could easily observe from spacecraft and aircraft and monitor with high-tech equipment. Rather, it comes from small factions or militias, often dressed in civilian clothes, who live amidst the civilian population and operate from cities and villages.*

UN, the major powers, and many smaller nations have often demanded that something be done for humanitarian reasons. The result is multinational military intervention—not as the preferred solution but as the only remaining alternative to alleviate human

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***One of the most important services that an air force can provide in a peace-enforcement operation is psyops support.***

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suffering. Given the state of the world today and the marginal nature of the economic and societal order of many countries, the

UN, NATO, and other multinational bodies probably will have to conduct more peace-enforcement operations in the future.

## State of the Problem

The military in peace enforcement, unlike peacekeeping, is much more than a support force to assist diplomatic efforts. In peace enforcement, the military assists diplomats, but it also may have to apply force, assist humanitarian operations, help and train indigenous forces, and assist international and national agencies in nation building. As in any military operation, airpower—Air Force airlift and combat units as well as Army helicopter lift and combat units—plays a major,



perhaps even a decisive, role in making peace-enforcement operations a success.

An examination of airpower's record in peace-enforcement operations reveals several major areas in which airpower can make a significant contribution. These include humanitarian operation support, troop/equipment airlift, force protection, psychological operations (psyops), reconnaissance, and surveillance. The USAF and other services have proven themselves quite capable of conducting most of these operations within the context of a conventional war. Within the context of a peace-enforcement operation, however, the US military and other air forces have often exhibited a doctrinal vacuum. It is more often a case of learning and improvising as we go along. We might accomplish the mission, but the lack of planning and doctrine leads to inefficiency, waste, and needless loss of equipment and personnel.

Peace-enforcement operations are, in many respects, much more complex than conventional wars, which entail defeating the opposing armed forces and imposing our will upon the enemy. Targeting an enemy military for destruction requires considerable operational finesse but no great degree of political sophistication. A peace-enforcement operation, however, does not aim for the destruction of an enemy armed force or for the overthrow or submission of an enemy state. The mission "to impose peace" is quite vague. We are authorized to use military force but not too much. We cannot destroy a nation's industrial power if the country has imploded and therefore has no industrial activity. Targeting enemy armed forces is difficult when we are not even sure who the enemy is. Our opponents may not even have anything resembling conventional armed forces to target. Moreover, if the mission is to promote peace and to assist in reestablishing the basis for a functioning government and economy, it is best not to use too much military force. Overkill would merely increase devastation and add to the problem, compounding it with the ill will

directed against foreign troops and organizations that any military intervention is likely to provoke.

For all the above reasons, this highly complex mission is not popular with the military. Since it will not go away, however, the only reasonable response is to attempt to create—or at least modify—airpower doctrine to try to deal with some of the problems specific to this kind of mission. This article concentrates upon areas in which, according to our experience, the greatest level of doctrinal vacuum exists. Further, while not proposing any comprehensive solution, it offers a few ideas that might serve as starting points for debate to foster doctrinal study and change.

## Humanitarian Operations

Most peace-enforcement operations have provided humanitarian relief—as will most future operations. The Somalia operation from 1992 to 1994 certainly falls within this category. From 1991 to 1995, military and civilian agencies made an enormous effort to provide food and supplies to refugees of the besieged populations of Bosnia. Similarly, future peace-enforcement operations will likely be triggered by the need to assist large populations facing famine and disease caused by conflict.

The USAF, as well as other air forces, has sound doctrine and considerable experience in the airlift and airdrop of supplies. Acquisition of more C-17 airlift aircraft by the USAF and of the Osprey light transport by the US Marine Corps will enhance US ability to conduct effective airlift into difficult terrain and tough tactical environments. Improvements in helicopter technology leading to greater lift and speed, as in the UH-60 Blackhawk, also have given us additional capability to get food and supplies to civilians in isolated areas.

The experience of the American military in Somalia, however, indicates that we can

save money and gain efficiency by implementing certain low-tech solutions. The USAF discovered a need for twin-engined, fixed-wing, light transport aircraft of the CASA 100 type, capable of carrying a small number of passengers or limited supplies to short, rough airfields scattered throughout the country.<sup>4</sup> It found that a light, twin-engined short takeoff and landing (STOL) transport had about the same lift capacity as a UH-60 helicopter—approximately 12 passengers or three to four tons of cargo. Helicopters with significant lift capability, however, were highly restricted due to their relatively short range. Transports, on the other hand, have approximately three or four times the range of lift helicopters. In addition, fixed-wing light transports require only a fraction of the maintenance required by helicopters, and the per-hour cost for flight operations is approximately one quarter the cost of lift helicopters. Consequently, the USAF chartered a number of these aircraft for use in Somalia. Since future humanitarian operations will probably entail flying people and supplies to small outposts scattered over a broad area, the USAF ought to consider maintaining a squadron of twin-engined light transports within its force structure—possibly within the Reserve forces.

One major problem of deploying airpower in humanitarian operations is the effective coordination of relief efforts with civilian nongovernmental organizations (NGO) such as the International Red Cross, CARE, and so forth. The prime providers of humanitarian aid in situations such as Somalia are UN agencies and large NGOs that usually operate under contract to the UN to organize and provide assistance to devastated populations. In peace-enforcement operations, US military doctrine mentions that the US military should cooperate with NGOs, coordinating efforts through a civil/military operations center (CMOC).<sup>5</sup> Still, effective cooperation and coordination by civilian agencies is a hit-or-miss affair. Although civilian agencies require military assistance to conduct their

missions in places like Somalia, many of them have a cultural bias against working with the military.

One example of civilian/military friction comes from the initial stages of the Somalia airlift. The USAF was providing airlift support to UN-contracted humanitarian agencies flying relief supplies into Somalia beginning in July 1992, five months before the intervention of American ground troops.<sup>6</sup> The primary disagreement between USAF aircrews and the International Red Cross concerned the security of relief supplies, Red Cross workers, and USAF aircrews. One of the rules of the International Red Cross—at that time one of the primary players in the Somalia relief operation—was that US aircrews flying Red Cross relief supplies into Somali airstrips could not be armed, even though the airstrips were often surrounded by volatile armed groups. Oftentimes, Somali factions quickly looted relief supplies. For example, a flight of four US relief planes landed at Mogadishu in August 1992, only to have three guards killed and two UN observers wounded by gunmen as they looted the shipment. The USAF aircrews, ordered to comply with the Red Cross request, flew their missions into Somalia unarmed. At the same time, however, the Red Cross hired heavily armed Somali “technicals” for its own security and thus always traveled well-armed—even on aircraft flown by unarmed US aircrews.<sup>7</sup> In fact, the NGOs’ approach of hiring their own security in humanitarian operations might actually encourage social breakdown by contributing to the problems of unstable countries. Although some of the NGO technicals in Somalia were loyal employees, many of the hired security forces were little better than bandits.<sup>8</sup>

Another issue of contention during the Somalia operation was the manner in which the operation itself was conceived. Once relief supplies from international agencies arrived on the ground, the agencies preferred a transport system of ground convoys, which were difficult to secure and highly vulner-

able to land mines and ambush by various Somali factions. Some Western air forces operating in support of Somali relief made the commonsense proposal to eliminate most of the convoys. They argued that they could supply starving people in the hinterlands by dropping double-bagged food sacks out of low-flying C-130s at sites just outside remote villages. This proposal probably would have worked, but several NGOs opposed it. Some people participating in the operation believe that the NGOs—whose *raison d'être* is humanitarian relief—saw direct supply to the Somali people by air as a threat to their organizational function.

As already mentioned, no requirement presently exists for civilian and military agencies to coordinate their efforts. In many cases, frictions, lack of cooperation, and lack of coordination have needlessly complicated humanitarian missions. Clearly, the UN needs to renegotiate the relationship between NGOs and supporting military forces in UN-sponsored humanitarian missions. If contract agencies, which receive their funding from the UN and other governments, require military support to carry out their mission effectively, the military must exert greater control over many aspects of the relief effort, in order to increase security and efficiency. Clearer rules and a certain amount of military control are justified, even though the NGOs are likely to resist such changes.

## Command and Control

Command and control (C<sup>2</sup>) is likely to be one of the most difficult aspects of any multinational operation. The shoot-down of two US Army UH-60s by two US Air Force F-15s over northern Iraq in 1994, resulting in the loss of 26 lives, is a sobering reminder of the tragic consequences of failing to coordinate and communicate in a peace-enforcement operation. A military effort involving several nations and much less restrictive

rules of engagement increases the chances of such mistakes.

At the outset of the operation in Somalia, no single agency coordinated the air effort in that country. The United Nations Task Force (UNITAF) coordinated the tactical aviation effort through two agencies. One was the J-3 of the Air Staff Division, with authority to task subordinate commands for the support of task-force missions and to maintain central tasking authority over some resources, such as carrier aircraft. The other agency was the Airspace Control Agency (ACA), set up as a special staff function that served as a central clearing agency for publishing flight schedules for fixed-wing aircraft and for establishing procedures for airspace control and deconfliction.<sup>9</sup>

This command setup generated some confusion. Some units weren't certain which agency controlled which function and would often contact the wrong agency, retarding the coordination process. In addition, the Third Marine Air Wing found that, initially, it had neither the trained personnel nor the facilities to operate the ACA. Eventually, the ACA was disbanded, leaving all C<sup>2</sup> functions to the J-3 air and subordinate units.<sup>10</sup> The primary lesson learned from Somalia is that, in future peace-enforcement/humanitarian operations, we should deploy an adequately staffed and trained ACA/air operations headquarters at the very beginning of the operation and regulate and coordinate all fixed-wing operations through one central agency.

One important aspect of the C<sup>2</sup> of military air operations in peace enforcement concerns the bureaucratic rules governing the sharing of supplies and equipment by various participating military forces. The US military is encumbered by numerous peacetime regulations that inhibit something as simple as giving water to a neighboring German air force unit.<sup>11</sup> The military needs to review the various regulations governing peacetime logistics and contracting operations and to ensure that many of these are not applied to multinational peace-enforcement

operations. Commanders who deploy ought to receive a reasonable budget, under their own control, to spend as they see fit. It should include money for contracting and providing supplies and maintenance to participating multinational forces. The sound solution is to do what is necessary to enable a commander to carry out the mission with the least bureaucratic burden. We should properly budget each mission and let the State Department sort out the accounts afterwards.

Finally, the UN system of planning, deployment, and budgeting for peace-enforcement operations needs fundamental reforms. The UN rule that provides \$1,000 per month per soldier to a government providing troops to UN operations, as well as rules allowing countries to send broken and obsolete equipment to UN operations, needs to be changed. UN peace operations have become, in effect, moneymaking opportunities for many of the poorer, third world militaries. UN regulations allow countries to deploy obsolete—even broken—equipment to UN operations. When that equipment arrives in-theater, the UN is responsible for its repair and maintenance. The air transport of substandard equipment constitutes a waste of valuable airlift assets. For example, the Zimbabwe army provided several 1950s-vintage British Puma armored cars, some of which were nonoperational. These vehicles were deployed to Somalia, at great expense, whereupon the UN had to repair and then maintain them. Such ancient vehicles were probably not worth the cost of airlifting them to Somalia.<sup>12</sup>

Wealthy Western nations should insist upon UN reforms to eliminate such practices. Changes in those countries' programs of military aid to poorer nations might be appropriate. Instead of funding poorly equipped third world infantrymen for deployment in peace operations, Western nations might provide the necessary equipment and training to help poorer nations create engineer units, logistics units, and modern air-transport squadrons—precisely the types of units needed for future peace-enforcement opera-

tions. The West would provide aid, training, and equipment on the condition that these specialist units from poorer nations would be available to the UN for deployment in future peace operations. Such an arrangement would probably be acceptable to many third world countries, enabling them to use UN peace operations to improve their own military efficiency without incurring the cost and inefficiency of the present system of financing. The UN should pay only for the actual costs of troop deployment for its operations.

## Psychological Operations

One of the most important services that an air force can provide in a peace-enforcement operation is psyops support. Modified C-130 transports of the USAF's 193d Special Operations Wing can transmit radio and television messages throughout a wide variety of frequencies. In Haiti, USAF aircraft transmitting messages prepared by US Army psyops specialists carried out an intensive campaign aimed at the Haitian population weeks before the US invasion in late 1994. USAF aircraft also dropped leaflets. Information disseminated to the Haitians discouraged any further exodus by boat and sought to calm them at a time when violent repression by the government appeared possible.

During the US invasion of Haiti, the psyops message disseminated by radio and leaflet informed the populace of US intentions and played an important role in keeping people calm. Much of the credit for the lack of Haitian resistance can be attributed to an effective psyops campaign—particularly airborne psyops. The lesson of Haiti is that the US military should enact a comprehensive psyops campaign *before* fully initiating a peace-enforcement operation.

In Somalia in December 1992, the USAF and Army—and later the Marine Corps—deployed psyops personnel to conduct an information campaign designed to reassure the local populace regarding the policies and

intentions of the multinational force. Again, psyops proved its worth in convincing Somalis not to resist foreign forces. Still, the US made a major mistake in the campaign in May 1993, when it reduced its forces in Somalia and withdrew military psyops units and specialists just as the UN took over the mission. Rather than conducting a humanitarian mission, the US began active opposition to Gen Mohammed Farah Aidid's faction as part of a nation-building campaign. Without a proper psyops campaign to explain this change in UN policy, a large part of the Somali population—not just Aidid's clan—became more hostile to the UN force. Somali resistance and UN casualties increased, leading eventually to the humiliating withdrawal of UN forces from Somalia. The lesson of Somalia is that at *all* stages of a peace-enforcement operation, the US military should conduct a full campaign of broadcasts, leaflets, and information dissemination.

Psychological operations have proven their worth in conventional wars and in low-intensity conflicts. Even though the USAF already has some capability to conduct such operations, psyops specialist forces of the Air Force and Army should be expanded if the US plans to involve itself in large-scale operations.

## Intelligence

Because USAF and US military intelligence is geared, in general, toward conducting conventional war operations, it emphasizes the technological side of intelligence gathering. LIC operations, however, require effective political/human intelligence, which can be gathered and analyzed only by well-educated people with operational experience. Further, they must possess a thorough understanding of the language, culture, and politics of the nation in which they are operating. The difficulty of peace-enforcement intelligence is that, normally, the threat does not come from large conventional forces that we could easily observe from spacecraft and aircraft

and monitor with high-tech equipment. Rather, it comes from small factions or militias, often dressed in civilian clothes, who live amidst the civilian population and operate from cities and villages.

The US military never seems to have enough language-capable intelligence officers with the regional expertise to provide commanders with accurate analysis and advice about LIC threats. Indeed, ours is the only major military force in the world that does not require, or even expect, intelligence officers to be fluent in a foreign language. The US Army has a foreign area officer (FAO) program in which a very small number of officers complete a graduate degree in area studies, undergo language training, and finally receive training in a foreign country. FAOs can provide a commander with in-depth knowledge of the politics and military forces of a foreign country.<sup>13</sup> Although FAOs can be a major force multiplier in LIC, the program that produces them is being reduced, along with other Army forces.

The lack of FAOs is compounded by the shortage of enlisted linguists to serve as translators/interpreters. The Army seldom fills intelligence units with multiple contingency requirements at 100 percent of their linguist authorizations.<sup>14</sup> The general shortage of linguists has a serious effect on intelligence gathering in peace operations. For example, the US Marine Corps had only two Somali linguists when it went into Somalia in 1992.<sup>15</sup> The lack of FAOs or military linguists meant that the US military was forced to hire Somalis who knew a bit of English. Although some Somalis provided useful service as interpreters, many were tainted by their clan affiliations and other local loyalties. In the best of circumstances, a military force should not rely upon local civilians as an accurate and objective source of political or social intelligence.

The USAF is in even worse shape, having no equivalent of the Army's FAO program. Only a handful of USAF officers are truly capable of providing accurate advice to com-

manders concerning countries where peace-enforcement interventions or LICs are likely to occur. The USAF is biased toward finding a technological solution to all problems. Mere technology, however, cannot analyze the political/social dynamics of a foreign society. The employment of force in politically sensitive situations such as peace enforcement requires that the Air Force seek to develop a greater degree of area and language expertise. In other words, the Air Force needs an FAO program.

Not having accurate intelligence about countries in which we intervene or not possessing a clear understanding of political/cultural factors that motivate competing parties can be deadly. For instance, the disastrous bombing of US marines in Lebanon in October 1983 that cost almost 300 American lives is largely attributable to a lack of understanding of the nature of the threat in a LIC situation. US forces in Lebanon had little knowledge of how various Lebanese and Palestine Liberation Organization (PLO) factions were likely to respond as the US escalated military actions, including shore bombardment by the US Navy, against forces opposed to the Lebanese government in spring and summer of 1983.

The lack of linguists and area-expert officers also makes it difficult to mount an effective psyops campaign since only culturally knowledgeable personnel can plan and conduct such operations. We can solve all of these problems by making a relatively small investment in funds, personnel, and training resources. Improving the USAF's language/psyops and intelligence capabilities, however, will require a greater understanding of the nature of LIC and an act of will on the part of the military leadership to effect a change in Air Force attitudes.

If the US military's problem is bias against political/human intelligence, then the UN has a bias against dealing with military intelligence at all, viewing covert collection of intelligence as incompatible with the peacekeeping ethic.<sup>16</sup> The UN does not fol-

low careful procedures to control classified documents or information, a deficiency that became evident in Somalia when UN authorities failed to secure—and even abandoned—classified US intelligence documents.<sup>17</sup>

This episode not only demonstrates problems that can arise when a doctrinal vacuum exists but also provides another example of the need for reform in UN operations. Peace-enforcement operations require intelligence. If the UN wishes to play a central role, it will have to establish procedures for disseminating and safeguarding classified information, and these procedures will have to conform to US and NATO doctrine.

## Reconnaissance and Surveillance

Long gone are the days when the primary means of observation for peace operations was a light infantryman in a bunker with binoculars. The ability of military airpower to provide timely, comprehensive surveillance and reconnaissance in peace operations remains vital to a peace operation's chances of success.

Peace-enforcement operations are not likely to provide a high-threat environment for military aircraft. Therefore, although expensive, high-tech equipment such as airborne warning and control system (AWACS) and joint surveillance target attack radar system (JSTARS) aircraft will remain necessary for conventional war operations, the need to contain the costs of peace-enforcement operations will probably dictate the employment of lower-tech solutions whenever possible. Specifically, twin-turboprop light aircraft equipped to intercept emissions or employ side-looking airborne radar (SLAR) are inexpensive and able to operate from short, rough airfields. The US Army, for example, employs a modified version of the Beechcraft 200 twin turboprop (C-12 Guardrail) that has several hours of endurance and can operate from a 1,400-foot runway.<sup>18</sup> In

places like Rwanda or Somalia, such an aircraft should be sufficient for accomplishing the mission.

Still more important is the development of unmanned aerial vehicles (UAV) for surveillance of large areas. UAVs have undergone rapid evolution in the last 20 years and are likely to become the primary means of reconnaissance and surveillance in future peace operations. They are inexpensive and can operate from the field with a small ground crew.

Until recently, the drawbacks of UAVs have been their range, endurance, and payload, but improvements are rapidly overcoming these limitations. The Israelis, who are on the cutting edge of UAV development, already have UAVs with 14-hour (Searcher) and 16-hour (Vanguard) endurance.<sup>19</sup> Under development are UAVs like the Heron, which can carry a heavy payload and has an endurance of 24 hours.<sup>20</sup>

## Airfield Security

NATO nations have long trained and planned for the defense of airfields in a conventional war. In the past, the USAF has usually operated from airfields that were developed, hardened, and defended by friendly host-nation personnel. In peace-enforcement operations, however, we shall have to operate from rough, forward airfields, normally with poor facilities and an openly hostile environment—or at least an insecure one.

As already mentioned, in Somalia between July and December 1992, some US aircraft flew relief supplies into airfields where armed Somalis posed a threat to both the airlifters and relief providers.<sup>21</sup> We need to develop doctrine to deal with the kinds of threats encountered during peace-enforcement or humanitarian operations. Under US doctrine, the Army has the mission of protecting USAF bases. This mission, however, receives low priority, and the Army seldom trains for it.

At the same time, the USAF holds occasional exercises in air base defense but also tends to give this mission low priority.

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*The USAF needs to put considerably more effort and doctrinal thought into security for rough, forward airfields.*

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History shows that a considerable threat exists to aircraft and air bases in a LIC environment. During the Vietnam conflict, 393 American and allied aircraft were destroyed, and another 1,185 aircraft were damaged from ground attacks, normally from small, lightly armed ground units firing mortars and rockets or even from units raiding and leaving satchel charges.<sup>22</sup> In 1981, for example, a small Puerto Rican terrorist group sneaked into an Air National Guard installation in Puerto Rico, affixed satchel charges to 11 aircraft, and escaped undetected. The attack destroyed eight A-7 aircraft and damaged two.<sup>23</sup>

In a LIC such as a peace-enforcement operation, the threat does not come from an enemy who is likely to overrun an air base or even put an air base out of action. Rather, it comes from groups prepared to wage an attrition campaign against foreign troops by conducting harassing attacks or destroying the occasional aircraft. Improvements in light weaponry increase the threat from small, hostile forces, which can inflict moderate damage to aircraft from outside an airfield perimeter.<sup>24</sup> Airfields and aircraft are especially lucrative targets for any faction willing to enhance its prestige by destroying a high-value target such as an aircraft.

The USAF needs to put considerably more effort and doctrinal thought into security for rough, forward airfields. The present, lightly armed, 44-man security police detachments used by the USAF as reaction forces and air base defense are not large enough or properly equipped to meet the current threat

found in peace-enforcement operations. A RAND report proposes several practical solutions, including increasing the weapons training given to aircrews and ground personnel and adopting some of the ethos, organization, and tactics of the Royal Air Force (RAF) regiment.<sup>25</sup> A practical solution calls for establishing additional security police companies of 150 or more people, each equipped with light-armored vehicles and intelligence teams that would replace sensors, as well as a full array of ground surveillance equipment. This unit would specialize in security for rough, forward airfields. Such a properly trained and equipped force would be the first unit deployed in a peace-enforcement mission. In addition, the USAF should provide more light-weapons training to aircrews and ground personnel if they are to operate in insecure forward environments.

## Force Protection

Attack-helicopter aviation and troop-lift aviation are essential in any operation that might include combat. In peace-enforcement operations, Army helicopter aviation has truly come into its own. Attack helicopters such as the Cobra and Apache allow our forces to respond quickly and with devastating firepower. US forces in Somalia found that attack helicopters provided both a strong deterrent and coercive capability. UN and military representatives who regularly negotiated with hostile clan or faction leaders made sure that a section of attack helicopters hovered nearby. According to Army after-action reports, "The impact of the AH-1 (Cobra) attack helicopter cannot be overstated. The psychological impact of helicopters in this low intensity style conflict estab-



*US forces in Somalia found that attack helicopters provided both a strong deterrent and coercive capability.*



lished the aircraft's value—frequently, without firing a shot."<sup>26</sup> Army analysis of helicopter operations in Somalia described the deterrent effect of these impressive weapons:

A major impact of attack helicopters in the Somalia AOR [area of responsibility] was their psychological effect. This, combined with the judicious use of the weapons system under the rules of engagement, combined to make the aircraft an enormously valuable combat multiplier for the commander. On several occasions, the mere presence of the attack helicopters served as a deterrent and caused crowds and vehicles to disperse.<sup>27</sup>

The lesson from Somalia is clear: future UN multinational peace operations need to contain fewer light-infantry units and more Army helicopter aviation assets.

## The Limits of Airpower

The coercive use of airpower in peace-enforcement operations is important. Operation Deny Flight in Yugoslavia, for example, has had some success. Opponents that seriously threaten multinational forces should know that we can and will use powerful air strikes to punish them and reduce their military capability. Although this use of combat aircraft can deter a faction from taking action—even forcing it to yield territory or make other concessions at the negotiating table—it cannot ensure the success of an operation in which the opponents are motivated to fight and take losses.

Some American airpower thinkers have taken the admittedly impressive performance of airpower in the Gulf War as evidence that airpower is now the predominant means of exerting military force. Modern military airpower is capable of all-weather, stealthy operations; enormous firepower; and precision targeting. All of these attributes are useful and important, but some airpower theorists have taken their analysis of Gulf War performance to extremes, arguing that airpower

alone can force a hostile faction or state to conform to our dictates.

Carl Builder, a senior member of the RAND staff who specializes in strategy formulation and analysis and one of America's leading airpower theorists, is one such proponent. He points to the RAF's colonial constabulary role of the 1920s, which involved conducting police operations in Iraq primarily through the use of airpower, as a useful model for peace-enforcement operations. Builder argues that in the future, when effective airpower and space power combine with nonlethal weapons, "we might be able to find the tools to exploit our control [of] the air and space for controlling the use of the ground. If air and space power can be forged into means that can effectively deny people the use of the street for looting property or mobbing human victims, the dark shadow of one of the most vexing problems of the future will have been drawn back."<sup>28</sup>

Although the idea of coercing factions or states without endangering our ground forces is attractive, Builder's analysis is flawed from the beginning. First, the use of airpower as a constabulary force in the 1920s was successful primarily because the RAF sought only to coerce Arab tribesmen into minor changes of behavior—specifically, to ensure that tribesmen paid their taxes, posed no major threat to the British-imposed colonial government, and reduced their banditry against caravans. In this case, the coercive use of airpower was successful, but the affected tribesmen were not asked to yield territory or even to change their tribal leadership beyond providing minimal allegiance to the colonial government. People are more susceptible to coercion by force when they have little motivation to resist the will and strength of an outside party. Part of the explanation of airpower's enormous impact upon Iraqi morale during the Gulf War is simply that few Iraqis wanted to invade Kuwait and that few Iraqi soldiers felt motivated to fight and die for the cause of Saddam Hussein's prestige.

There are numerous other instances, how-

ever, of applying coercive airpower on a massive scale against nations, groups, or factions that were highly motivated to resist. In particular, the United States had complete air superiority over Vietnam in the 1960s and 1970s, employing tremendous amounts of airpower to coerce the Vietcong and North Vietnamese into changing their behavior. We heavily bombed North Vietnam with a wide array of aerial weaponry, including some of the most advanced weaponry in our conventional arsenal. Indeed, US aircraft dropped over 4,000 precision-guided bombs on North Vietnam in 1972 and 1973 alone. The North Vietnamese, motivated by nationalism and ideology, were nevertheless willing to accept severe losses and continue the fight. The Vietnam War showed that overwhelming airpower cannot invariably ensure the success of the mission.

Numerous, large-scale Israeli air strikes against Southern Lebanon in the early 1980s caused significant personnel losses to the PLO and other groups yet engendered no curtailment of terrorist activity against Israel.<sup>29</sup> The large-scale use of airpower, including American F-15s and precision guided munitions (PGM), only produced the impression in the public that "something was being done." The failure of Russian airpower to coerce highly motivated Afghans who were prepared to fight and take losses is another recent example of the fallacy of Carl Builder's airpower constabulary model.

Finally, we have the example of Yugoslavia. There, the use of airpower in the Deliberate Force operation of the summer of 1995 played an important part in the campaign to coerce the Bosnian Serbs into a truce arrangement. However, we should note that the limited and carefully prosecuted air campaign against the Bosnian Serb targets was only one element of the pressure brought by the Western alliance against the Bosnian Serbs. Economic sanctions placed upon the Serbian Republic had a disastrous effect upon its economy, and by 1994 the Bosnian Serbs had become a liability to the Belgrade govern-

ment, which began cutting aid to their cousins in Bosnia and pressuring them to negotiate. In 1995, the Croatian ground offensive in the Krajina Region, one of the most successful ground campaigns of the war, caused a major loss of territory for the Bosnian Serbs. The subsequent NATO air campaign finally pushed the Bosnian Serbs into accepting the same agreement that they had almost accepted the year before. Although the air campaign proved useful in getting a settlement, we should not overestimate its role. The ground offensive and sanctions on the Serbian Republic probably played a greater role than the air campaign in forcing an agreement.

In the long term, the use of airpower in Yugoslavia might ensure some minor concessions from the Yugoslavian factions. Airpower will also remain essential for the protection of US and NATO forces in Yugoslavia. However, the use of airpower in an attempt to compel any one faction to substantially disarm or to force any faction into major territorial concessions will most likely fail—and might even lead to an escalation of violence. All three groups in Bosnia are motivated by ethnic nationalism and by the conviction that their surrender on any major issue will lead to the victimization of their families. In fact, hatred is so strong in Yugoslavia that ethnic Serbs, convinced that Moslem government forces would desecrate the burial places of their dead, are exhuming bodies from Serbian graveyards in territory turned over to the Moslem-dominated government and are moving them to Serbian territory.<sup>30</sup> In Yugoslavia today, people prefer to give up their hometowns and villages rather than live under the control of another ethnic group. Consequently, even a massive application of force would probably never compel a significant number of people in Yugoslavia to live under a multiethnic government.

Peace-enforcement operations have had a poor record of success. The Congo, Lebanon from 1982 to 1984, and Somalia are certainly not model operations. In each case, the in-

roduction of some UN or multinational force was supposed to help bring about peace within a fairly short period of time but failed to do so. In reality, if peace-enforcement missions are to be effective, they will have to be of long duration. For example, the West African states have maintained a multinational force in Liberia since 1990. Stability is only now slowly returning to Liberia—and the Economic Organization of West African States (ECOMOG) forces are still there.

In any case, the US is certainly being overly optimistic regarding Haiti. Although military intervention may have ended the rule of a dictatorship and tamped down the internal crisis for a short time, the long-term prognosis for Haiti gives no cause for optimism. Eighty percent of the Haitian population is illiterate, and 80 percent is unemployed. The last two elections in 1995 are scarcely indications that democracy has taken root in Haiti. The municipal elections held last year under the government of Jean-Bertrand Aristide were so poorly organized that only a handful of the population was even able to vote, due to the lack of polling places and voting records. The presidential election of 17 December was poorly attended, with no more than 25 percent of the population taking part.<sup>31</sup> The assassination of 20 of President Aristide's opponents and the failure of Haitian authorities to cooperate in the murder investigations indicate that democracy is not returning to Haiti.<sup>32</sup> Before an impoverished country such as Haiti, with no history of democratic rule, can ever truly become a functioning nation, it will need a vast amount of aid and assistance over a period of several years.

Whenever a country has imploded, foreign troops should remain there for a long time to maintain order and retrain the indigenous forces. If there is to be a long-term solution, the country also needs assistance in rebuilding its basic infrastructure. Political leaders of developed nations should be open with the public; people deserve to know what a long-term solution will cost in terms of money and lives. This situation cer-

tainly applies to Bosnia. A one-year commitment of UN troops might tamp down some of the violence, but without costly, long-term investment in rebuilding the country, the present intervention likely will result in only a short-lived truce.

## The Doctrinal Vacuum

We can trace the lack of clear airpower doctrine for low-intensity conflict or subsets of LIC, such as peace enforcement, to the intellectual heritage of the Air Force. The USAF has a cultural tendency to view an enemy as a static system containing centers of gravity that serve as suitable targets for strategic attack. A model for strategic air warfare such as that of Col John Warden, which pictures all opponents as organized into five concentric rings (leadership, infrastructure, population, fielded forces, and government), might have limited use in planning a conventional war but can inhibit serious study of the dynamics inherent in a LIC such as peace enforcement. Dr Lewis Ware argues that this tendency toward simple modeling "minimizes the importance of all the intellectual, moral, and historical imponderables that characterize the nature of the enemy."<sup>33</sup>

During the early 1990s, as a new edition of Air Force Manual (AFM) 1-1, *Basic Doctrine of the United States Air Force*, was being prepared, some USAF people favored excluding serious consideration of LIC in Air Force doctrine: "There were a significant number of military officers—many of them very senior—who believed, for one reason or another, that special attention to such 'unconventional' strategies was ill-advised and perhaps counter-productive."<sup>34</sup> One Air Force officer involved in writing the new doctrine was advised by a very senior Air Force general that we should not be distracted by "those kind of wars" since we can always just "muddle through."<sup>35</sup>

Indeed, this bias toward midlevel conventional wars and against LICs has even resulted in considerable confusion within American

airpower doctrine. AFM 1-1 declares that "any enemy with the capacity to be a threat is likely to have strategic vulnerabilities susceptible to air attack."<sup>36</sup> However, it provides no historical or other proof to defend this assertion. Indeed, there is considerable evidence to the contrary. US forces have often taken significant losses from enemies who are not susceptible to an air campaign against their strategic targets.

In Vietnam, the Vietcong employed mortars, rockets, and even satchel charges to destroy and damage hundreds of American aircraft on the ground throughout the course of the war, despite a massive application of aerial firepower against them. The presence of considerable American airpower in the form of the US Sixth Fleet could neither deter nor effectively retaliate against the Islamic faction that bombed the US headquarters in Beirut in October 1983, killing 300 US marines. Nor could the presence of US airpower do anything about the Somali faction that killed 18 American soldiers and wounded more than 80 in an ambush in Mogadishu in October 1993. The Israelis, using American aircraft and precision munitions, bombed PLO installations in Southern Lebanon for years, inflicting heavy casualties. The air campaign, however, did not reduce the PLO shelling or terrorist attacks out of Lebanon in the 1980s. Only direct political negotiations and political compromise were able to lessen hostilities. Airpower and air campaigns are not likely to have a decisive effect in a low-intensity conflict.<sup>37</sup>

## Conclusion

If the political leadership wishes to commit US forces to peace-enforcement missions, numerous changes will have to be made in doctrine, policy, force structure, and service culture. The Air Force and other branches of the US military will need more money and personnel—not less—in order to field the right

kind of people and equipment for these operations. Additionally, our military will have to change several of its cultural attitudes and develop more officers capable of conducting psychological and intelligence operations in low-intensity conflicts. The US military has only begun to establish anything resembling a comprehensive doctrine for peace operations. At present, our doctrine contains considerably more information and text about the conduct of public affairs than about the conduct of humanitarian operations in peace operations.<sup>38</sup> Certainly, we need to place more emphasis on LIC operations.

As mentioned previously, the UN needs to make numerous reforms in the way it finances and controls peace operations. If the UN is unable to make some basic changes, it likely will lose its present credibility and effectiveness in conducting and overseeing peace operations. Although the UN, from the American perspective, is often very difficult to work with, it would be far more difficult for the US to conduct peacekeeping or peace-enforcement operations without the support of a respected multinational political organization.

Implementing the reforms discussed in this article, improving our doctrine, changing our service culture, and obtaining the right equipment will assist us in conducting peace-enforcement operations. But all of these changes still will not guarantee long-term success. The ability to put fire and steel on target with great efficiency cannot substitute for a coherent strategy based upon a sound understanding of the culture and politics of the people we are fighting or defending. In peace enforcement, the military is only one part of an equation that includes nation building and developing long-term political solutions.

Airpower can bring quick and dramatic results and, for that reason, is popular with the American public and political leadership. However, problems and tensions that generate implosions of whole countries and civil wars

such as those in Liberia, Yugoslavia, Rwanda, and Haiti require long-term commitment of troops and significant resources if we desire anything resembling a permanent solution. The US, UN, NATO, and major economic powers have the resources and military forces, but they need to use them with

greater efficiency in peace-enforcement operations. It remains to be seen whether Americans have the will to make the long-term commitment that peace-enforcement operations require. □

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22. David Shlapak and Alan Vick, *Check Six Begins on the Ground: Responding to the Growing Ground Threat to US Air Force Bases* (Santa Monica, Calif.: RAND, 1995), 30.
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Fall 1996

## IRA C. EAKER AWARD WINNER



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# Expectation and Reality

## The Great War in the Air\*

JOHN H. MORROW, JR.

**I**N 1883, one year before the invention of the dirigible, Albert Robida's book *War in the Twentieth Century* envisaged a sudden, crushing air strike, while Ivan S. Bloch's 1898 treatise on warfare expected bombardment from airships in the near future. With the evolution of airships—in particular, the flights of Count Ferdinand von Zeppelin's dirigibles toward the end of the

first decade of the twentieth century—speculation increased about the prospects for their military usage. In England, flight portended a new avenue of assault on an island nation hitherto immune to the land invasion that threatened continental European powers. Press magnate Alfred Harmsworth, Lord Northcliffe, had recognized that "England was no longer an island" when Alberto

\* This article is based primarily on my previous research, which appears in my book *The Great War in the Air: Military Aviation from 1909 to 1921* (Smithsonian Press, 1993). Much of the material on prewar thought came from Robert Wohl's book *A Passion for Wings: Aviation and the Western Imagination, 1908-1918* (Yale University Press, 1994). Also helpful were Lee Kennett's work *The First Air War, 1914-1918* (Free Press, 1991) and Guy Hartcup's work *The War of Invention: Scientific Developments, 1914-1918* (Brassey's, 1988).

Santos-Dumont flew in France in 1906, although his conception of the threat as "aerial chariots of a foe descending upon England" indicated a more classical and less realistic appraisal of its nature.

Writers speculated on the potential effect of powered flight on war, and perhaps the most famous of these was H. G. Wells's work *The War in the Air*, inspired by zeppelin flights in Germany and published in 1908. In the story, the Germans launch an attack with huge airships and flying machines called *Drachenflieger* against the United States. This aerial armada first decides a battle in the North Atlantic between German and American naval dreadnoughts by bombing the American battleships to destruction. It then soars on to New York and bombs the city to ruin and conflagration, leaving the dead in heaps and New York a "furnace of crimson flames, from which there was no escape." This lurid picture prefigured the fire raids of World War II.

Yet, Wells predicted that airships could not conclude wars because they could not transport occupation forces. Wars would consequently become "interminable" and worldwide, ultimately leading to the collapse of civilization. In the course of the world conflagration, the best airplanes and airships belonged not to Western powers but to the Asiatic Confederation; and Japanese pilots, carrying swords, sliced their German adversaries like sausages on the ground after blowing them out of the air.

In two books published in 1907, German prognosticator Rudolf Martin proclaimed that Germany's future lay in the air. In a monstrous aerial struggle between Germany and a ruthless Russian dictator, a Greater German Confederation would conquer the West and particularly the East into Asia Minor. Martin differed from Wells in that Germany's fleet of airships could transport entire armies of a half-million men to the attack and conquest of foreign lands. Like Wells, Martin deemed airships vastly superior to airplanes as military vehicles, in particular

because they could carry much larger payloads of bombs and men.

In France, Emile Driant—infantry officer, parliamentary deputy, and novelist—foresaw an era of terrible wars enabled by the new technologies. Like most Frenchmen, he preferred the airplane to the airship and foresaw far greater possibilities for it as a troop carrier and an instrument of attack. In February 1916, in such a terrible war as he had predicted, Colonel Driant would fall leading his chasseurs against the initial German attack on the French fortress of Verdun.

Artists invariably depicted the airplanes in these fantasies as similar to the Wright brothers' invention or occasionally as multi-winged insect-like machines, so prediction did not necessarily entail a realistic image of what heavier-than-air machines would become. The predictions in general did envisage aviators of the future in heroic terms, as a new warrior elite.

Other cultural effects predicted by these soothsayers ranged from German engineer N. Stern's proclamations in his book *Die Eroberung der Luft* (1909) that the airplane would help avoid war and bind nations together and unify diverse peoples, to German author Paul Scheerbart's observations in his work *Die Entwicklung der Luftmilitarismus und die Auflösung der Europäischen Land-Heere, Festungen, und Seeflotten* (1909) that aerial militarism would lead to the dissolution of armies and navies through fears of aerial war. Another German, Wilhelm Kress, thought that the flying machine would be so "frightful" a weapon that it would lessen the likelihood of war. Yet, French aerial expert Ferdinand Ferber was more equivocal, conceiving of it as useful primarily for peaceful purposes like the automobile but, unlike the automobile, a "wonderfully useful machine for military purposes." Meanwhile, English author R. P. Hearne was describing a German air attack on London.

By 1914, all army high commands had deemed the primary mission of the airplane as reconnaissance. The French army high



command had appointed commissions to study arming aircraft with machine guns and bombs, but the results of tests with machine guns and incendiary grenades, like those with photographic and wireless equipment, were still too fragmentary to determine correct uses of these weapons. In June 1914, a War Ministry commission did conclude that bombing troops with fléchettes (six-inch darts) and buildings with shells posed interesting prospects. These conclusions were rather belated, to say the least. As early as 1910 and 1911, General Roques, the first director of French aviation, had contemplated arming airplanes to fight aerial adversaries and using projectiles ranging from fléchettes to shells to bomb and demoralize enemy troops. Other officers were contemplating terror raids on enemy cities. While some people might consider such speculations the germ of aerial doctrine, Col Félix Marie, a participant in and authority on the early years of French aviation, wisely pointed out in 1924 that ideas greatly preceded realization in aviation in those early years and that what counted was the realization.

Aircraft companies and junior aviation officers were engaging in annual bombing

competitions and testing 37 mm cannon (a test higher commanders judged as savoring "more of Jules Verne than of reality") and armor plate on their fragile airplanes, but the high command did not support them because of its concern that armament might deflect crews from their primary mission of reconnaissance. Ferdinand Foch, allied commander in chief in 1918, reputedly stated in March 1913 that "aviation is fine as sport. I even wish officers would practice the sport, as it accustoms them to risk. But, as an instrument of war, it is worthless (c'est zéro)."

By 1912, the Germans were touting the zeppelin as a bomber, although French aviators derogatorily referred to it as a "soap bubble" that they obviously planned to pop in a future war. Helmuth von Moltke, chief of the General Staff, believed that zeppelins possessed "first-strike capability." On 24 December 1912, he informed the war ministry that "in the newest Z-ships we possess a weapon that is far superior to all similar ones of our opponents and that cannot be imitated in the foreseeable future if we work energetically to perfect it. Its speediest development as a weapon is required to enable us at the beginning of a war to strike a first

*"Aviation is fine as sport. . . . But, as an instrument of war, it is worthless (c'est zéro)."*



and telling blow whose practical and moral effect could be quite extraordinary." Aviation journals echoed such sentiments, as articles in the *Deutscher Luftfahrer Zeitschrift* anticipated pinpoint and unstoppable zeppelin attacks on enemy targets in the dead of night. Ironically, airships performed only one bombing trial before the war, and the army had only 10 airships in the summer of 1914.

The General Staff considered airplanes suitable for shorter-range reconnaissance, communications, and artillery spotting, although some dynamic aviation commanders like Maj Wilhelm Siegert anticipated aerial combat, bombing, and strafing. By 1914, the army had reached the stage of considering only the possibility of arming some planes with machine guns.

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*Oddly enough, the aspect of the airplane's use for which it became most famous—airial combat and as the vehicle for the great heroes of the war in general—was least anticipated before the war.*

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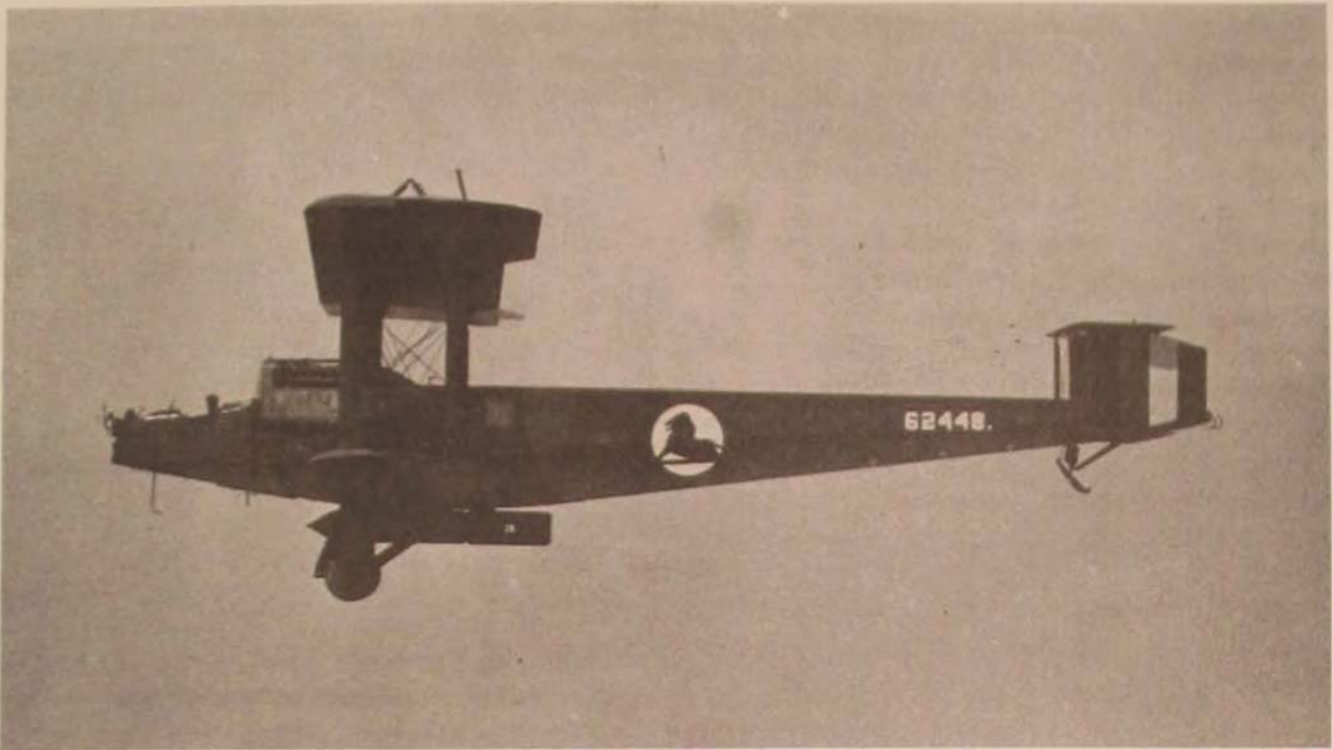
In England, the Royal Flying Corps was interested primarily in reconnaissance. The Royal Naval Air Service performed prewar experiments with wireless telegraphy, machine guns, bombs, and torpedoes. The service had both Capt Murray F. Sueter as the imaginative director of the Admiralty's air department and the strong backing of Winston Churchill, First Lord of the Admiralty and known in aviation press circles as the "fairy godfather" of naval aviation. In efforts to counter the zeppelin threat, it even tested a Vickers *one-and-one-half-pounder* semiautomatic cannon—whose recoil was so great that the plane stopped dead in the air and fell 500 feet—and shotguns firing chain shot and grenades on grapples. For aerial defense, the Admiralty and War Office also proposed an "aerial minefield" with mines

hoisted aloft by balloons on a cable, though Churchill quashed the idea with the statement, "Since Damocles there has been no such experiment." Admittedly, the minefield foreshadowed the barrage balloons of the world wars (without mines, of course) and German fighters dropping aerial mines upon formations of B-17s in World War II, but mention of Damocles sufficed to stop that line of thought.

British aviation historian R. A. Mason has asserted that by 1914 fundamental ideas of airpower had been formulated in Britain: its contribution to land and sea operations; the necessity of command of the air and an independent service to achieve it; airpower's ability to strike at the enemy homeland; and the consequent forced diversion of enemy resources to air defense. Yet, these were the ideas of a handful of civilians or aviation officers such as engineer F. W. Lanchester and Capt C. J. Burke, and they bore no relationship to the primitive state of British aviation in August 1914, when the airplane's fundamental role would be reconnaissance.

All countries were developing air services that employed either airplanes or airships or both. Only Italy had a chance to employ airplanes in a war prior to 1914, in the war in Libya. There, its small, foreign-made airplanes and dirigible fleet performed the first tactical reconnaissance, cartographic and artillery observation, day-and-night bombardment, and propaganda-leaflet dropping, prefiguring in a very small way the future of aerial warfare—*except aerial combat*—in places that later became famous during the North African campaign in World War II.

Then came the Great War, the ultimate test of all these predictions. As we all know, the war itself defied the great majority of predictions about its very nature. For European powers obsessed with the power of the offensive, the war became on its most crucial front—the western—a struggle of trenches and stalemate. Most people expected a short, glorious conflict of six weeks to six months. Instead, the European powers embarked upon a



*Strategic raids were performed by two- to six-engined giants [such as this British Handley-Page].*

four-year struggle of attrition, feeding their youth to "The Great Sausage Machine," as British soldiers referred to the front.

Of course, there were precedents for the war that occurred, such as the Russo-Japanese War and certain phases of the Civil War, but military observers had discounted their applicability to European warfare. The machine gun and its predecessors, for example, had been very effective in colonial warfare—witness the British observation "for we have got the Maxim gun, and they have not." Yet, as John Ellis's book *The Social History of the Machine Gun* explains, the colonial powers concluded that disciplined European troops would have no difficulty coping with its rapid fire. Am I to presume that European songs, such as those that German youth sang as they charged at Langemarck, were more powerful than the chants of colonial warriors or that machine gun bullets had some innate respect for the white race that had invented the weapon?

A very few prognosticators like Ivan Bloch did anticipate a longer and more catastrophic

war, but who was to be believed—the few or the many? And how could one hope to distinguish the validity of predictions until the war proved or disproved them, at which point in time flexibility of response to changing circumstances would become a primary determinant of success and survival? Certainly the war, to appropriate the title of Guy Hartcup's book on World War I, *The War of Invention*, was a conflict that entailed the mobilization of science and technology. But the evolution of certain weapons was often too rapid to be adequately anticipated or incorporated. One such example is the development of the tank from ideas of a gigantic land battleship with 40-foot wheels, proposed by certain Englishmen in 1914, to its smaller, more practical, tracked realization of 1916–18.

The rapid evolution of some machines, combined with the failure of others when faced with the realities of World War I, led to unanticipated consequences, as the air war demonstrated. The literature of the prewar era had foretold nearly every role that aircraft would play in the First World War, in-

cluding the bombing of civilians with the assumption that civilian morale would disintegrate into panic and chaos. Yet, the zeppelin had generated unrealistic expectations in Germany that a minuscule fleet could deliver a telling first strike against enemies, in a way similar to later German expectations that a submarine fleet of inadequate size could drive the British from the war in 1917.

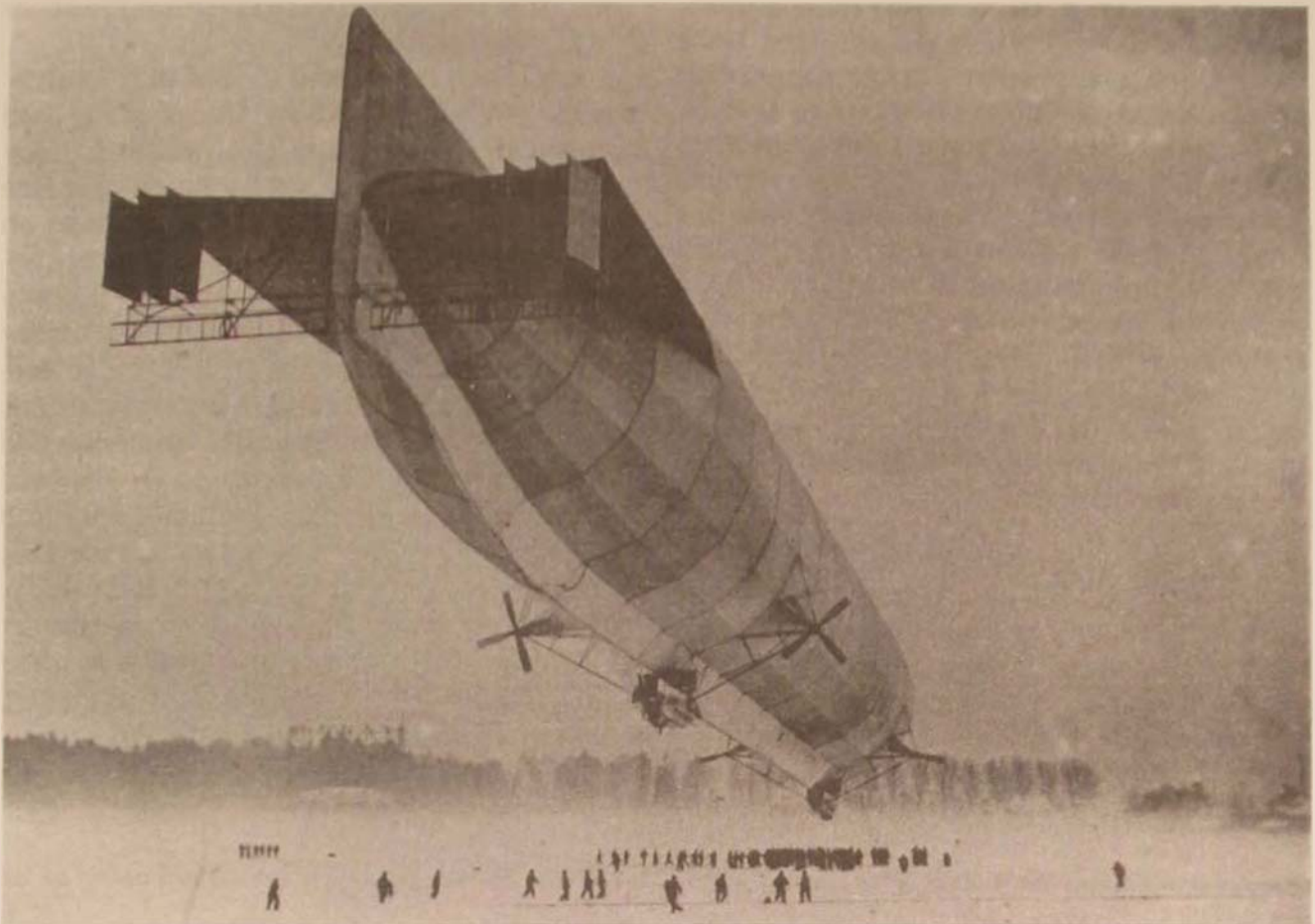
In the case of zeppelins, these costly monsters were quickly removed from combat over the western front, first from daylight sorties, then sorties on moonlit nights, and ultimately altogether, as they made irresistible targets for gunners. They thereby fulfilled the unheeded prewar warning of German ballistics expert General Rohne that dirigibles would be vulnerable to incendiary shells. The zeppelins continued to serve successfully as scouts for the German navy, and then they were launched against Britain in the first strategic air raids of the war. They ultimately failed in the strategic assault as aircraft and antiaircraft defenses drove them

so high that they became vulnerable to gale-force winds that would blow returning dirigibles all over the European continent and occasionally further.

The airplane became the primary aerial vehicle of the war. It had inspired much popular excitement but not such apocalyptic visions as the zeppelin because mass destruction had clearly been beyond the capabilities of the fragile craft of the prewar era. From 1914 to 1918, the airplane evolved from an instrument of reconnaissance used singly in 1914 to a weapon for fighting, bombing, and strafing in 1918. Aviation played a significant role in the tactical war, first in rendering ground forces more effective through reconnaissance or artillery observation. Later, the airplane's effectiveness as a weapon for fighting, bombing, and strafing required its deployment en masse. Air services that had begun the war with some 200 frontline airplanes would have 2,000–3,000 airplanes at the front in 1918. National aviation industries that had a few thousand workers to de-

*Engine problems affected day bombing. The DH-9 was so underpowered that experts considered the aircraft inferior to its predecessor, and in November 1917 they predicted disaster in day bombing.*





*Helmuth von Moltke was so impressed by the zeppelin in 1912, that he believed the "Z-ships" (here the Z-1) provided a "weapon . . . far superior to all similar ones."*

liver 100 planes a month in 1914 employed hundreds of thousands of workers to manufacture thousands of planes and engines monthly in 1918.

Oddly enough, the aspect of the airplane's use for which it became most famous—aerial combat and as the vehicle for the great heroes of the war in general—was least anticipated before the war. Yet, aerial fighting was only one aspect of air warfare. Ground attack, reconnaissance, and bombing were significant roles that directly intruded on the course of the ground war. The Germans, for example, evolved special units of battle or storm fliers equipped with light, maneuverable two-seat biplanes to attack enemy batteries, strong points, infantry reserves, and tanks. These aircraft used machine guns, grenades, and light fragmentation bombs. Such units and

their tactics are the direct ancestors of our A-10 units today. Two-seat biplanes also executed reconnaissance, the essential task of aviation throughout the war. The best biplanes were the German Rumplers of 1917 and 1918, capable of 20,000-foot ceilings, their crews equipped with oxygen bottles, and their automatic cameras capable of taking in miles of enemy territory.

Finally, the powers undertook both tactical and strategic bombing. Tactical raids were conducted primarily by fast two-seaters like the French Breguets and English DH-4s. Massed tactical raids of hundreds of these aircraft, often escorted by single-seat fighters, ranged over German lines in 1918, striking targets on and behind the battlefield. Strategic raids were performed by two- to six-engined giants—Gothas and R-planes in Germany, Handley-

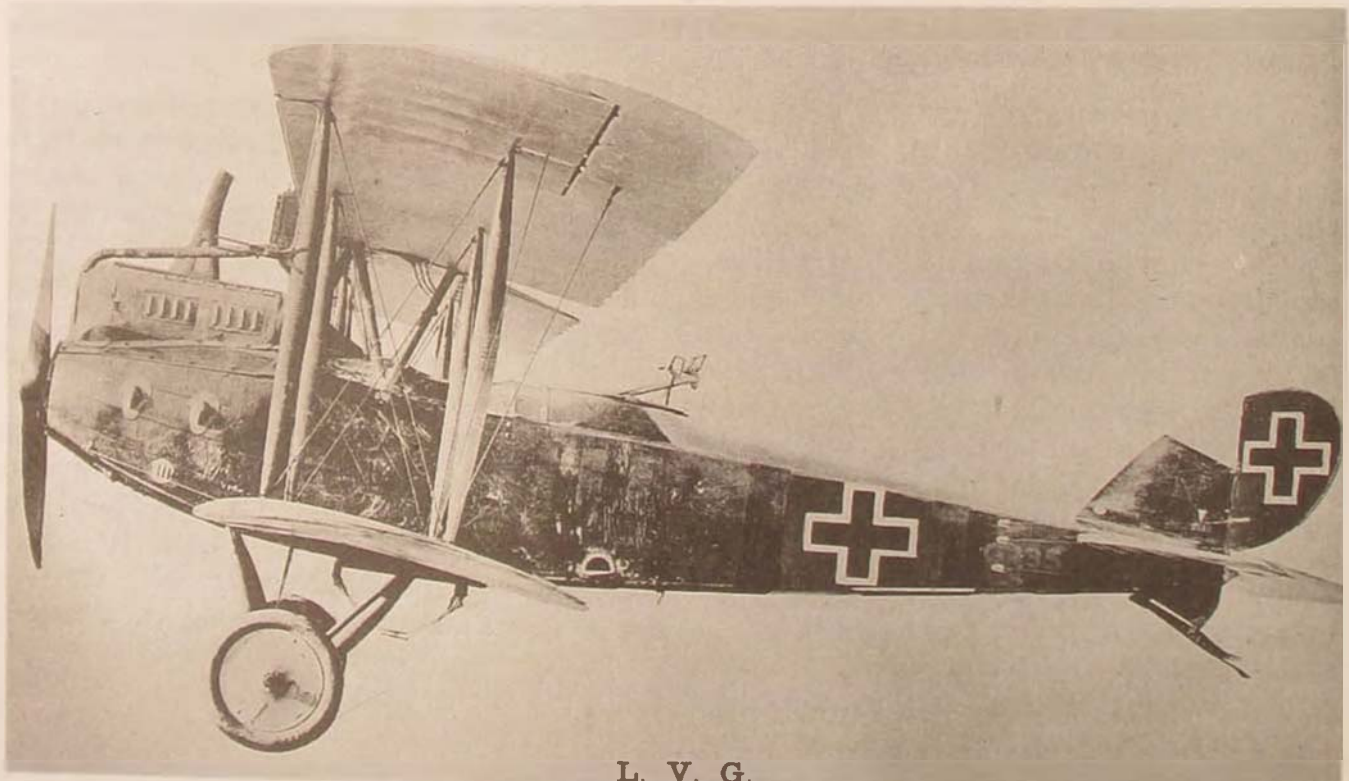
Pages in England, Capronis in Italy, and Sikorskys in Russia. The German aerial campaign against England to drive it from the war indicated a willingness to strike at civilian morale. The British, unable to retaliate against German civilians until 1918, wanted to start, in the words of Secretary of State for Air William Weir, a "really big fire" in a German town, assuming that such attacks would undermine German morale. The war ended with the British poised to begin bombing Berlin and with the value of strategic bombing unproven. But the notion that the bombing of civilians could undermine their morale and ultimately their government remained intact.

The air weapon of World War I was truly a child of the era of total war, which conflated civilian and military targets and deemed the bombing of civilians an acceptable means of winning. The war of 1914-18 left a dual legacy for airpower in the twentieth century—the romantic idealization of individual aerial combat rooted in the past and the brutal vi-

sion of massive civilian destruction foreshadowing the future.

Ironically, the factual lessons of the battlefields of 1914-18, where the airplane had proved its worth as a tactical weapon affecting the ground war, were obscured in the minds of many theorists by speculations on the seductive and unproven potential of strategic bombardment to force enemy capitulation by bombing enemy cities, thereby wrecking morale and industry. Civilian morale had become the target but without any realistic assessment of what bombers could do, because the estimates were removed from the historical reality of what they had done in World War I. Perhaps the warning from the lessons learned from the air war of 1914-18 for prognosticators and theorists of future wars is just how difficult it is to glean history lessons that are rooted more in the facts than in wishful thinking, myth, and preconceived notions that impel them to perceive certain lessons while ignoring others. □

*The L.V.G. was an efficient observation aircraft. These German two-seaters, capable of 20,000-foot ceiling by late 1917, often proved to be challenging opponents.*



L. V. G.



# Theater Missile Defense

Reflections for the Future

LT COL MARK KIPPHUT, USAF

**A**S A RESULT OF Gulf War efforts countering Saddam Hussein's short-range ballistic missiles (SRBM), theater missile defense (TMD) has emerged as a leading doctrinal issue. Our inability to halt Scud attacks spurred a virtual cottage industry. Pundits and prognosticators of all shapes and sizes are offering insights into how we should best counter this "new" threat. The two distinctive TMD

lessons that emerged from the Gulf War were (1) that missiles will play a significant role in future wars, and (2) that locating, targeting, and destroying mobile missile transporter-erector-launchers (TEL) is both time and resource intensive. Yet before the United States Air Force (USAF) develops new TMD doctrine, tactics, techniques, and procedures, it would serve us well to first reflect on the past.

## Background

The Gulf War was not the first time airpower was required to counter enemy cruise or ballistic missile attacks. During World War II, Operation Crossbow, the Allied attempt to counter German V-1 and V-2 operations became the dominant focus shaping airpower employment during the critical spring and summer months of 1944. Unfortunately, Gulf planners did not learn Crossbow's lessons, because, as this article shows, most of the challenges faced in World War II resurfaced during efforts to suppress Scuds during the Gulf War.

Two factors inhibited Gulf War air planners from properly anticipating or countering the Iraqi Scud menace. First, Air Force officers are poor students of history. Our intellectual foundation tends to be based on Jominian reductionism. Rather than properly studying history to gain a rich appreciation of the subtleties of war, we ransack the history record in search of principles that guarantee success. This "cookie-cutter" approach typically leads to dogmatic application, not strong doctrinal thought.<sup>1</sup>

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***Before the USAF develops new TMD doctrine, tactics, techniques, and procedures, it would serve us well to first reflect on the past.***

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To avoid this pitfall, the Air Force must reject its biases toward using history to discover the indisputable laws of war and instead adopt a Clausewitzian view that requires that history be properly studied to gain an appreciation of the physical and psychological factors governing conflict. This approach instructs us how to think, not how to act. For Clausewitz it was not a matter of "knowing that," which is important, but of "knowing how to act," which is critical!<sup>2</sup> The examination of history, therefore, yields no specific formula, no single guide for action; instead, it

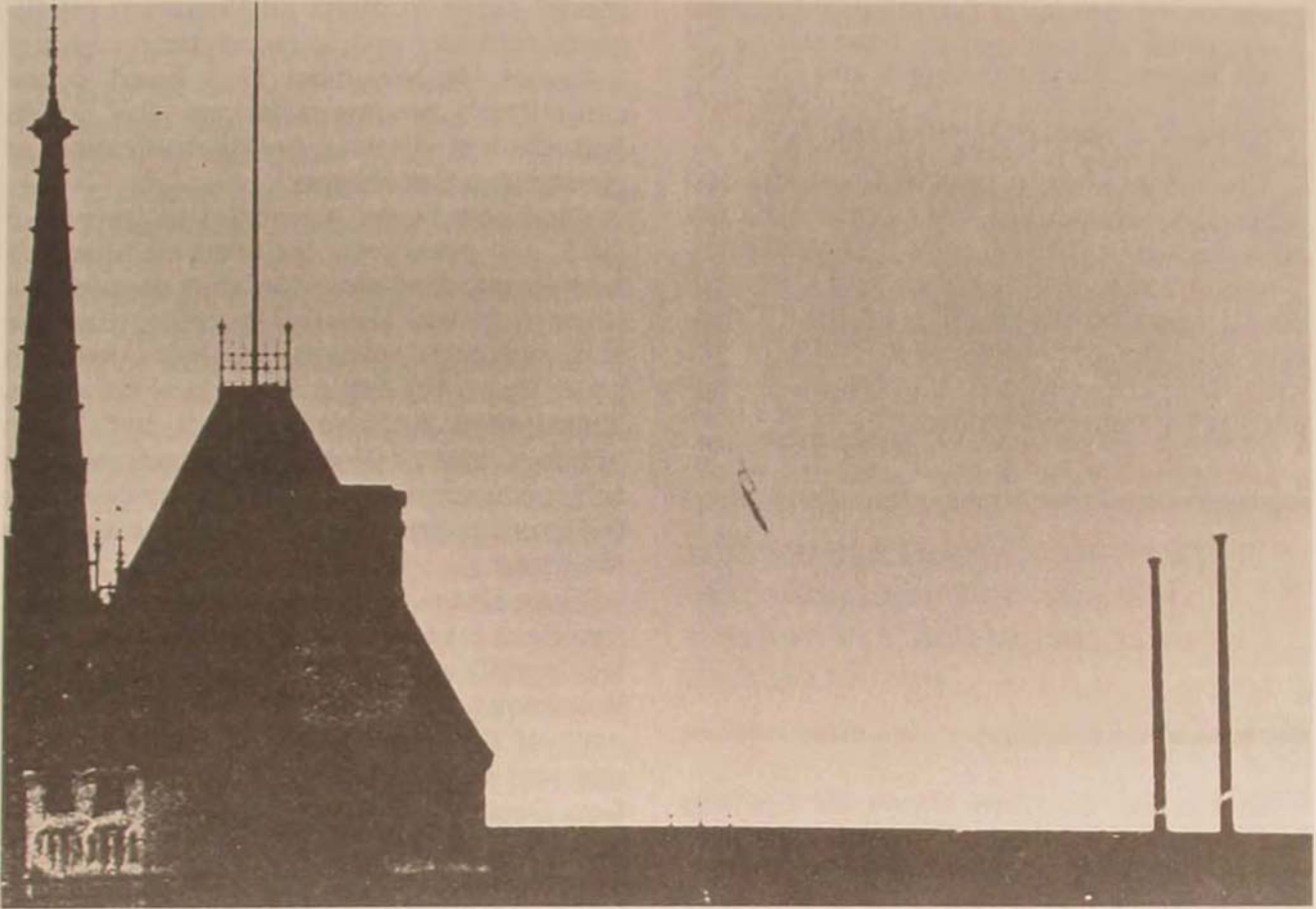
educates the warrior to find his way through the jungle of chance and uncertainty that characterizes the combat environment.

The second inhibiting factor is the Air Force doctrinal bias for air superiority based on neutralizing manned fixed-wing aircraft. Airmen often proclaim that, first and foremost, the enemy's air forces must be defeated by air supremacy—a war cannot be won without it.<sup>3</sup> This belief suffers from "mirror-image" analysis. Because America relies on fixed-wing aircraft as the primary means of waging air war, then these must be the only "things" that are really important. *This is dogma, not doctrine.* It ignores the trend within the third world, where ballistic missiles play an important role.<sup>4</sup> The initial drafts of the latest Air Force doctrine are reexamining the restrictive definition of air superiority, but changing doctrine requires more than just new words; we must refocus our thinking!<sup>5</sup>

Just seven days after D day, a V-1 launched from France hit a railroad bridge in London. Thus, a new era in warfare was born—the employment of missiles against civilian and military targets. Iraqi use of Scuds during Desert Storm continued this trend.<sup>6</sup> Adolf Hitler and Saddam Hussein had similar purposes for launching their missiles. Each wanted to incite civilian terror to erode public support for the war effort and to provoke a reaction from his enemy that could fundamentally alter the war. Despite inaccuracy and small warheads, ballistic missiles can leverage an opponent and contribute to breaking the enemy's will to fight.

Hussein learned this during the savage Iran-Iraq war. In response to Iranian missile attacks against Baghdad, he ordered the launch of almost 200 missiles at Iranian cities, primarily Tehran.<sup>7</sup> The Iraqi missile attacks caused little destruction, but each warhead had a psychological and political impact—the strikes boosting Iraqi morale while causing almost 30 percent of Tehran's population to flee the city. The threat of rocketing the Iranian capital with missiles capable of carrying chemical warheads is cited as a primary





*A V-1 ends its flight. Airpower failed to achieve its objective of "limiting the intensity" of either the V-1 or V-2 once German launch operations began.*

reason why Iran accepted a disadvantageous peace agreement.

Despite the role ballistic missiles played in ending the Iran-Iraq war, coalition commanders and their staffs did not appropriately anticipate the impact that Scud attacks would have on their plans. They grossly underestimated political pressures and their impact on resource allocations as a result of the attacks on Israel. In both World War II and the Gulf War, airpower was the principal means employed to stop enemy missiles, and in each case the results were at best inconclusive, and at worst, absolute failures.<sup>8</sup>

### Crossbow Campaign

Originally, Hitler had set the end of December 1943 as the target date for the start

of the V-1 and V-2 assault.<sup>9</sup> However, the effects of Allied air attacks and German developmental problems delayed the first attacks until D day. The German objective was to attack the United Kingdom with approximately 94,000 tons of high explosives per month and by 1945 German planners estimated they could strike southern England with one million tons of explosives per year. *This would have equaled 60 percent of the total Allied Combined Bomber Offensive (CBO) tonnage dropped during 1944, the best year of the CBO!*

If achieved, this objective would certainly have altered the war, especially if one considers the small geographic nature of southern England. Gen Dwight D. Eisenhower concluded that

if the Germans had succeeded in perfecting and using these new weapons six months

earlier, *our invasion of Europe would have been exceedingly difficult, perhaps impossible . . . if the Portsmouth-Southampton area had been one of the principal targets, OVERLORD might have been written off* (emphasis added).<sup>10</sup>

Ultimately, due in part to Crossbow and other Allied operations, the Germans did not achieve their primary goals. Nevertheless, V-weapon suppression efforts had a tremendous impact on Allied air planning. Crossbow affected not only the conduct of the CBO, but also strained the resources supporting Operation Overlord.

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*The Gulf War was not the first time airpower was required to counter enemy cruise or ballistic missile attacks.*

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Despite the Allies' best efforts, the Germans launched approximately 15,500 V-1 and V-2 missiles between June 1944 and March 1945, forcing Eisenhower to direct that Crossbow take priority over all other Allied air operations, including those in support of the Normandy beachhead and the CBO.<sup>11</sup> By the end of the war, suppression of V-weapons accounted for more than 69,000 strike sorties and almost 137,000 tons of munitions. Clearly, the Germans had created a major diversion, and if this threat was not neutralized quickly, the continued diversion of scarce airpower resources away from the Normandy lodgment and CBO could have jeopardized the entire Allied war strategy.

#### *Allied Intelligence and Warning*

By late 1942, the frequency of reports concerning new German "secret weapons" was increasing; and in early 1943, the British government received "unambiguous warning" of German intentions to attack Britain using unmanned missiles, possibly with chemical, biological, or nuclear weapons. In response, Prime Minister Winston Churchill tasked a

special panel to direct all V-weapon intelligence activities and to recommend countermeasures. In November 1943, based on the committee's recommendations, the British War Cabinet directed an intensification of countermeasure efforts.

Crossbow began in earnest in December 1943, and eventually included all Allied offensive and defensive V-weapon countermeasures.<sup>12</sup> It was also in December that the British finally revealed to their American counterparts the full magnitude of the threat. Before then American aircraft had flown missions against V-weapon targets without fully understanding why. This delay slowed the full coordination of Allied efforts to suppress the threat

Once all the critical details were disclosed, American leadership, both military and civilian, rapidly realized the potential impact of V-weapons employment. A conclusive estimate of German capabilities and intentions was sent to Gen Henry ("Hap") Arnold and Gen George Marshall by Eisenhower in December 1943. It claimed that "the equivalent of at least a 2,000-ton bombing attack [could be achieved] in a period of 24 hours."<sup>13</sup> This compares favorably with German planning that called for a maximum of just over 3,000 tons per day by mid-1944.<sup>14</sup>

#### *Crossbow Planning*

The objectives of Crossbow were to "delay the beginning of attacks and to limit their intensity once begun."<sup>15</sup> Overall, the height of the campaign was from August 1943 until August 1944, as the Allies first attempted to delay the introduction of V-weapons and then to suppress their use. Ironically, formally coordinated countermeasure plans were not developed and approved until after August 1944, when the threat had diminished.

The Allies established a combined planning cell to determine the best strategy for reducing missile capabilities. This organization, dominated by British officers, directed Anglo-American operations against all elements of German long-range missile programs, including research facilities, manufacturing

plants, storage sites, launch sites, and airborne intercept operations until July 1944. Throughout Crossbow, the British approach focused on the physical destruction of the launch sites, while the American approach was to destroy the broader V-weapons support infrastructure, focusing on production capabilities, logistical support facilities, and the electric grids supporting the launch sites. These disagreements were never fully resolved; in fact, there was no single target set whose destruction could have halted German missile operations. Crossbow's success in delaying the introduction of V-weapons came from the cumulative effects of repeated operations against all elements of the "system."

Crossbow offensive operations can be divided into two phases: Crossbow I, April 1943 to early June 1944; and Crossbow II, mid-June 1944 to May 1945. The first phase consisted of the initial identification of the V-weapons target set, primarily by aerial reconnaissance, and attacks against German-based research facilities plus the operational launch and support facilities being built in France. The second phase was more active, and arguably more critical, because it attempted to stop missile operations once strikes against England and other targets started. This phase broadened the focus of bombing to include supply sites, supporting infrastructure, and production facilities. In the end, the entire enemy V-weapon "system" was attacked—research and development facilities, manufacturing plants, transportation nodes, supporting electric grids, storage areas, and launch sites.

#### *Crossbow Results*

While the Allies succeeded in destroying or neutralizing all permanent V-weapon sites, the Germans displayed a capability to continue launch operations by limiting the signature of new, modified firing sites that utilized small, simplified launchers protected by extensive camouflage, concealment, and deception (CC&D) techniques. The United States Strategic Bombing Survey (USSBS) concluded that air attack against the entire V-weapon

"system" slowed the introduction of the V-1 and V-2 by three-to-six months.<sup>16</sup> Therefore, Crossbow achieved one of its stated objectives: *"delaying the beginning of the attacks."* This allowed the Allies to execute Overlord before the full impact of Hitler's "secret" weapons could be realized. Both General Eisenhower and General Bradley make this point in their autobiographies.<sup>17</sup> *Based on this judgment, Crossbow I can be labeled a qualified "success"; however, without question Crossbow II must be labeled a dismal failure.* Airpower failed to achieve its objective of "limiting the intensity" of either the V-1 or V-2 once German launch operations began.<sup>18</sup> Despite the application of thousands of sorties against over 250 targets during the critical summer months of 1944, the Germans averaged just over 80 launches per day. German sources contend that they never failed to launch due to direct intervention by Allied airpower or a shortage in weapons.<sup>19</sup> On the other hand, Allied leaders devoted a significant effort to suppressing the threat at the expense of other critical missions.<sup>20</sup>

#### *Crossbow Sortie Allocation:*

Crossbow operations between August 1943 and April 1945 required 68,913 strike sorties delivering 136,789 tons of munitions. They involved both strategic and tactical sorties.<sup>21</sup>

**Strategic Air Forces.** Overall, strategic air forces flew 53 percent of all Crossbow sorties (36,795) and delivered 84 percent of all tonnage (114,790). This equates to 5.6 percent of all sorties and 6.8 percent of all tonnage delivered between 1939 and 1945. Between August 1943 and August 1944, Crossbow consumed 14 percent of all Allied strategic sorties and 16 percent of total tonnage.

**Tactical Air Forces.** Tactical air forces flew 47 percent of all Crossbow sorties (32,091) while delivering only 16 percent of the total tonnage (21,999). From August 1943 to August 1944, tactical air forces devoted 17 percent of total sortie generation and 13 percent of total tonnage to Crossbow operations. Likewise, the RAF Fighter Com-

mand flew an additional 4,600 sorties, or 79 percent of all its offensive sortie generation, following the elimination of the strategic air threat to the United Kingdom, aimed at suppressing V-2 launch operations. Finally, Crossbow consumed 40 percent of reconnaissance sorties after 1943.

### *Crossbow Observations*

The four major lessons airmen should derive from Crossbow are:

- Attacking an enemy's missile infrastructure can be effective as a long-term strategy, but such an approach is unlikely to have an immediate impact on stopping launch operations.
- Effective attacks against small, mobile targets employing CC&D efforts requires real-time reconnaissance support; otherwise, targets are going to be difficult to find, if not impossible to attack.
- Planning requires comprehensive intelligence support that extends well beyond simply focusing on the technical capabilities of an enemy system. The corollary is that operational plans must fully take into account enemy actions and reactions.
- Political pressure can directly determine resource allocation.

Throughout Crossbow an extensive debate erupted over the best methods of neutralizing the threat. The British believed the destruction of the launch sites by heavy bombers would provide the best means to an end, while American airmen held the destruction of the supporting infrastructure by heavy or medium bombers would complement fighter-bomber attacks against V-1 sites.<sup>22</sup> These differences were never fully resolved, and only after extensive efforts failed to slow V-1 launch rates was the American approach finally accepted and implemented.<sup>23</sup>

The lack of a unified approach also wasted time and resources. For example, even after Allied intelligence confirmed that the fixed V-1 and V-2 sites were neutralized in July 1944, political pressure by the British gov-

ernment required Gen Carl Spaatz to continue to send heavy bombers against them. Precious resources were used to attack militarily insignificant targets while the legitimate needs of the CBO and the battle in Northern France went unsatisfied.

Overall, while air attacks did delay the introduction of V-weapons, it did not seriously hinder or halt launch operations once they were initiated. It appears that the better approach would have been to adopt a strategy closer to American recommendations, augmented by additional defensive operations.<sup>24</sup> Postwar analysis shows that the greatest impact on German efforts came from the indirect effects that bombing had on disrupting V-weapon production and distribution. Silencing V-weapons eventually required ground forces to overrun the launch sites. Against this backdrop, the focus shifts ahead nearly 50 years to examine the challenges posed by Iraqi ballistic missiles.

## The Great Scud Chase

By the time the United Nations authorized the coalition to "use all necessary means" to evict Iraqi forces from Kuwait, Hussein had few strategic options remaining.<sup>25</sup> One was Scud missile attacks against Israel to undermine the integrity of the coalition and to intimidate Saudi Arabia. Within 24 hours of the opening of Desert Storm, Iraq launched the first of at least 88 Scuds at Israel and the Arabian Peninsula.<sup>26</sup> Just as in Crossbow, the coalition responded by diverting precious resources away from other areas to counter Scuds. Hussein, like Hitler, created a significant diversion.

Approximately 4,750 anti-Scud sorties were planned, including the change or addition of 553 sorties.<sup>27</sup> Daily Scud-hunting sorties numbered between 75 and 160, or about 5 percent of planned daily sorties. Overall, counter-Scud efforts represented between 2 and 5 percent of all 55,075 offensive fixed-wing sorties generated by coalition airmen,

4 percent of all scheduled sorties, and 11.5 percent of all new sorties added to the daily air tasking order.<sup>28</sup> The anti-Scud strategy had essentially three parts: (1) preplanned attacks against production, storage, and fixed sites; (2) 24-hour patrols to disrupt prelaunch activities; and (3) 24-hour patrols to attack launch sites after they fired their missiles.<sup>29</sup>

Contrary to the postwar assessments of several authors, the existence and extent of Iraq's ballistic missile programs were fairly well understood.<sup>30</sup> Although, in retrospect, some US prewar technical estimates were less than 100 percent accurate, the general capabilities of Iraqi missile programs were well documented.<sup>31</sup> Additionally, Iraqi employment practices during its war with Iran were well understood by the US intelligence community and the academic world.<sup>32</sup> Had planners, both in Washington and in-theater, fully appreciated airpower's limitations during Crossbow and better understood Hussein's employment of ballistic missiles in the Iran-Iraq war, there would have been fewer surprises.

#### *Coalition Intelligence and Warning*

By 1990, Iraq had three mobile Scud or Scud-based variants in its inventory: the Soviet-supplied 160-mile-range SS-1 (Scud), plus two indigenous Scud variants, the 325-mile Al-Husayn and the 400-mile Al-Hijarah.<sup>33</sup> All were inaccurate and could only strike cities or other large-area targets. As a result, Iraqi Scuds were judged to be more of a psychological than a military threat.

Although the absolute number of Scud missile airframes available to the Iraqis was unknown, the Defense Intelligence Agency (DIA) had estimated that the Soviet Union delivered at least 600 missiles.<sup>34</sup> Postwar disclosures showed Baghdad had purchased around 800 missiles, many of which had been utilized to build Iraqi extended-range Scuds.<sup>35</sup> All Iraqi variants could be launched from either fixed sites or mobile launchers.<sup>36</sup>

The Iraqis used well-known Soviet doctrine for the deployment and employment of

their SRBMs.<sup>37</sup> Iraqi missile crews required 60 to 90 minutes to set up and launch a missile from a presurveyed site. Based on Soviet and Middle Eastern models, it was believed that the Iraqis would launch from concealed locations and minimize their exposure while moving to and from launch locations. This included launching under the cover of darkness or weather.

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*Air Force officers are poor students of history. . . . Rather than properly studying history to gain a rich appreciation of the subtleties of war, we ransack the history record in search of principles that guarantee success. This "cookie cutter" approach typically leads to dogmatic application, not strong doctrinal thought.*

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In an attempt to improve its capability to threaten Israel, Iraq constructed five fixed launching complexes in its western desert near the Jordanian border. These contained 28 launch positions, allowing the Al-Husayn missile to hit all major Israeli cities, nuclear facilities in the Negev desert, and Syria. The existence of these fixed launch sites led many planners to believe they had found their trump card: if these sites were destroyed, the threat to Israel would be diminished.<sup>38</sup> This was shortsighted because it minimized the role of mobile Scud operations and discounted a demonstrated Iraqi capability during the Iran-Iraq war.

In retrospect, the role the fixed sites played in Iraqi strategy is unclear. Iraq had the ability to target Israel using mobile launchers, and although the use of fixed sites may marginally improve accuracy, Scud missiles remained an area weapon. Therefore, there is a possibility that the fixed sites were an elaborate deception effort. Certainly the

Iraqis, probably through their relationship with the Soviets, *the masters of modern deception*, considered using replicas to draw off enemy combat power.

Postwar analysis shows that the Iraqis also relied on other types of deception. They employed elaborate high-fidelity decoys to complicate targeting and protect TELs. This also confused the battle damage assessment process.<sup>39</sup> Planners should have anticipated Iraqi use of CC&D given the close Baghdad-Moscow relationship and Soviet doctrinal emphasis on active and passive deception techniques to protect high-value targets.<sup>40</sup>

The number of Scud TELs in service at the time of the war remains a source of contention. The uncertainty over this issue is often cited as the reason *why* coalition forces could not stop launches.<sup>41</sup> Prewar estimates and postwar analysis do not differ greatly. The lowest prewar count was 12, while the upper estimate was 22.<sup>42</sup> Postwar analysis places the number at 36 (33 operational), a number supported by the *Gulf War Air Power Survey (GWAPS)*, the air warfare survey commissioned by the USAF.<sup>43</sup> It was also believed before the war that Hussein's "missile-men" had presurveyed a number of launch sites within Iraq and Kuwait to support launch operations against Saudi Arabia and Israel.

Throughout the fall of 1990, estimates of the size and capabilities of the Iraqi SRBM force were under continual refinement as more information became available. DIA established a special Scud Cell at its Washington-based Joint Intelligence Center. This group identified (1) the prewar dispersal of missiles from their garrisons; (2) the likelihood that Iraqis would use darkness or poor weather to mask employment; and (3) expected employment strategies, including attacks against Israel. The culmination of this effort came in December 1990, when the cell provided Central Command (CENTCOM) and its air component, CENTAF, a full appraisal of the Iraqi Scud force, including the expected launch sequences, existence of presurveyed launch points in the western Iraqi desert, use

of dispersed logistical support, and the correct size of the mobile launcher force.<sup>44</sup>

Hussein stumbled onto a Clausewitzian approach, attacking Israel to provoke an Israeli counterstrike by overflying either Saudi Arabia or Jordan, or both. He reckoned Arab coalition members could never accept alignment with Israel against another Arab state; thus, by striking at Israel, he indirectly targeted coalition unity.<sup>45</sup>

Despite knowing this, US military authorities throughout the Gulf were surprised by the amount of political pressure generated by the attacks. Many senior leaders admit they underestimated the Scud's impact because of its notorious inaccuracy and small warhead.<sup>46</sup> Gen H. Norman Schwarzkopf regarded the missiles as "militarily irrelevant." His most senior airman and joint force air component commander (JFACC), Lt Gen Charles Horner, thought the missiles were "lousy weapons." His chief planner, Brig Gen Buster Glosson, believed they were "not militarily significant."<sup>47</sup> It was only after significant pressure was imposed from Washington that the commander in chief (CINC) of CENTCOM "got the message" and redirected his forces to attempt to stop, or at least try to suppress, missile launches.<sup>48</sup>

### *Counter-Scud Planning*

To understand how coalition counter-Scud operations were conducted, it is necessary to first consider how the air campaign plans were derived and integrated into the CINC's joint campaign. In August 1990, President George Bush specified US national objectives as:

- Immediate, complete, and unconditional withdrawal of all Iraqi forces from Kuwait;
- Restoration of Kuwait's legitimate government;
- Security and stability of Saudi Arabia and the Persian Gulf; and
- Safety and protection of American citizens abroad.<sup>49</sup>

As the third policy objective implied, the

president determined early on that, in addition to the restoration of Kuwait, US forces would eliminate Hussein's capability to continue to threaten the region. Implied was the destruction of Iraqi ballistic missiles and any program to mate them with weapon of mass destruction (WMD) warheads. This objective was central to all subsequent political and military strategies adopted throughout Desert Storm.

To achieve the president's objectives, General Schwarzkopf, in concert with Secretary of Defense Dick Cheney, identified five primary operational objectives:

- Neutralize the Iraqi national command and control system;
- Eject Iraqi armed forces from Kuwait;
- Destroy the Republican Guard;
- Destroy Iraqi ballistic missile and nuclear, biological, and chemical (NBC) capability; and
- Assist in the restoration of the legitimate government of Kuwait.<sup>50</sup>

From these objectives, General Schwarzkopf refined his mission statement to include the need to "as early as possible, destroy Iraq's ballistic missile and NBC capabilities."<sup>51</sup> He established the following as the focus for CENTCOM Operations Order 91-001, 17 January 1991, which directed combined military operations during Desert Storm:

- Attack Iraqi politico-military leadership and command and control;
- Gain and maintain air superiority;
- Sever Iraqi supply lines;
- Destroy nuclear, biological and chemical production, storage, and delivery capabilities;
- Destroy Republican Guard forces in the Kuwait theater; and
- Liberate Kuwait City.<sup>52</sup>

This demonstrates that General Schwarzkopf had little latitude concerning the reduction of Iraqi missile capabilities. Scuds, along with Iraq's NBC program, were to be destroyed. By accomplishing this, it was assumed that the regional threat posed by Hussein would

be eliminated and the "security and stability of Saudi Arabia and the Persian Gulf" would be maintained. General Schwarzkopf relied on airpower, under the direction of General Horner, to achieve this objective. General Horner, in turn, directed his staff to eliminate Iraqi Scud capabilities as quickly as possible during the opening phase of the air campaign.

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*Had planners, both in Washington and in-theater, fully appreciated airpower's limitations during Crossbow and better understood Hussein's employment of ballistic missiles in the Iran-Iraq war, there would have been fewer surprises.*

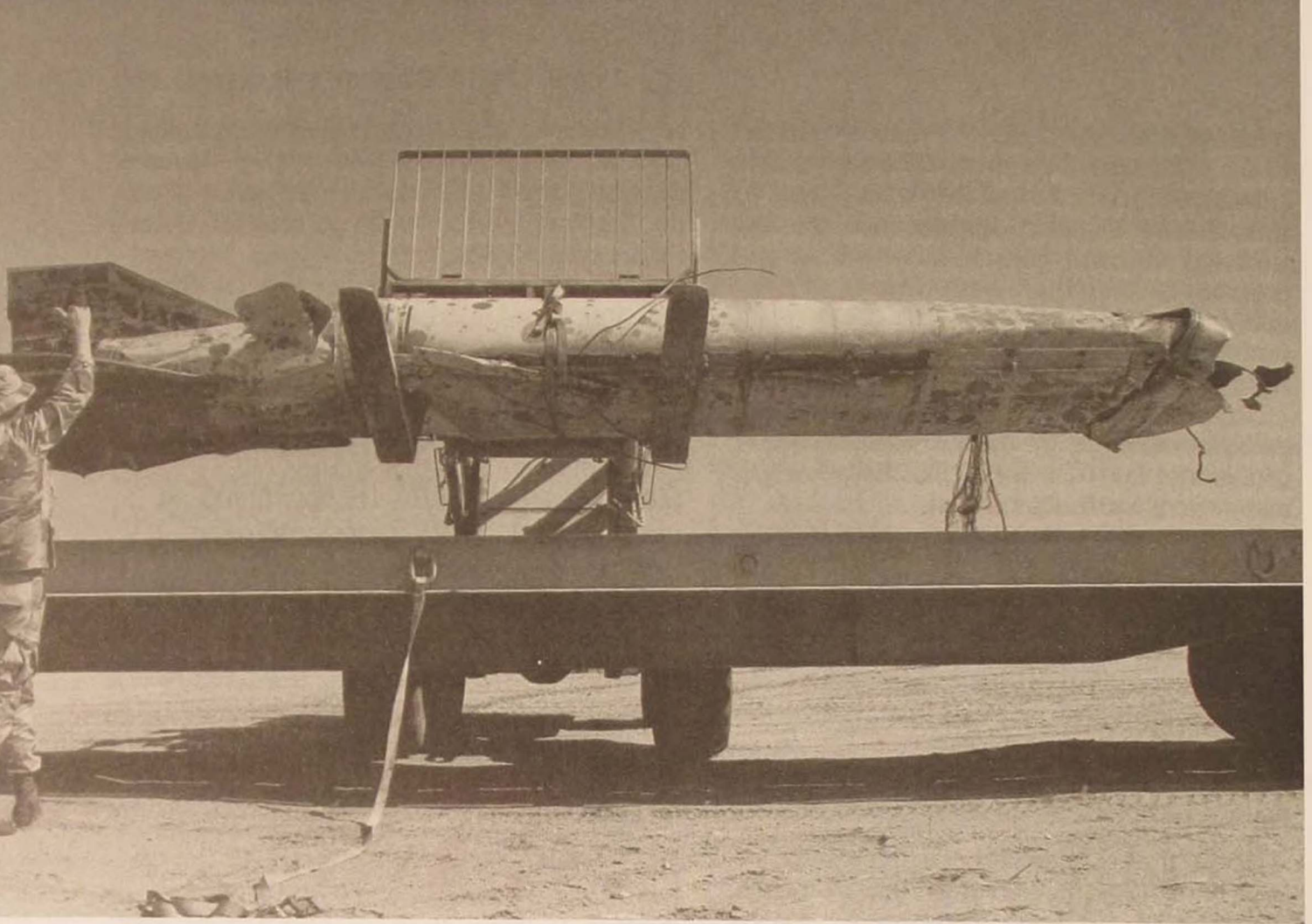
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General Horner envisioned three counter-Scud objectives: (1) keep Israel out of the war; (2) destroy Iraq's Scud-associated production facilities; and (3) find and destroy Scud TELs that threatened the Arabian Peninsula. Initially, only a few missions were planned against the western launch sites and a limited number of other missile production and support facilities. The following target sets were to "reduce [the] offensive threat to regional states and friendly forces":

- Fixed Scud launchers,
- Ballistic missile support bases,
- Known surveyed launch sites for mobile launchers,
- Hardened aircraft shelters possibly hiding mobile launchers, and
- SRBM research, development, and production facilities.<sup>53</sup>

However, when the war started and Iraq began launching missiles, counter-Scud efforts rapidly expanded and eventually consumed the daily sortie-generation equivalent of a fighter wing.<sup>54</sup>

Iraq's ballistic missile program was considered critical; however, due to assumptions



*While on the surface it appears the counter-Scud operations enjoyed some success in achieving their objectives, closer examination reveals several major shortcomings. A defeated Scud (above) and Scud damage (below, left and right).*





made in Washington, and later retained by theater planners, initial efforts focused solely on attacking the fixed sites in western Iraq and SRBM production and storage facilities.<sup>55</sup> The hope was to neutralize the short-term threat to Israel and to eliminate the long-term threat to the region.<sup>56</sup> The theater commanders and staffs recognized that the potential impact of the Iraqi mobile launcher targeting problem was too difficult to solve and that despite best efforts some TELs would escape to launch their missiles.<sup>57</sup> Reflecting the views of Generals Schwarzkopf and Horner, planners regarded Iraqi Scuds as "nuisance weapons." They believed the best strategy was for the coalition and Israel to absorb the attacks. In their view, to attempt to locate and destroy mobile TELs was sortie-intensive and counterproductive.<sup>58</sup> Therefore, a prewar search-and-destroy scheme for finding and attacking mobile Scuds was not devised.<sup>59</sup> Only after Scuds were launched at Israel did the theater develop a counter-TEL strategy.<sup>60</sup>

The low priority initially placed on counter-Scud efforts is reflected by the growth in the total number of SRBM targets. In August 1990, 24 were identified, but by mid-January the number grew to 121.<sup>61</sup> Postwar analysis concluded that by July 1992 there were at least 154 SRBM-associated targets located within Iraq, a 583 percent growth from August 1990.<sup>62</sup> This was the largest growth in any single strategic target category and it reflected the same phenomena as existed in Crossbow, when total targets grew from under 10 to over 100.

### *Counter-Scud Operations*

In the opening hours of Desert Storm, counter-Scud efforts progressed as planned; however, within hours of the first air attacks, Hussein initiated launches against Israel. These attacks revealed the true face of the threat—mobile launchers capable of moving quickly from hidden sites, firing, then hiding again before an air attack could be mounted.<sup>63</sup> However, despite his best efforts, Hussein could not provoke an aggres-

sive Israeli response. Tremendous political pressure was applied to Washington by Jerusalem, forcing significant diversions of air resources from other missions. General Horner remarked that the greatest pressure placed upon him during the war was to stop, or reduce, Scud launches.

During the course of Desert Storm, the coalition scheduled and flew 1,460 strikes against Scud-related targets.<sup>64</sup> Fifty percent were directed against fixed launching sites or other "structures" (e.g., aircraft shelters, overpasses, etc.) suspected of hiding TELs.<sup>65</sup> Of the remaining strikes, 30 percent were directed against infrastructure or production facilities with only 15 percent conducted against exposed TELs.

By the third day of the air war, coalition "hunter-killer" aircraft remained continuously airborne over suspected launch areas. Theoretically, these combat air patrols (CAP) could rapidly react to either airborne or ground-based queuing or targeting, although in practice this proved almost impossible. Counter-Scud sorties and strikes exceeded those generated for suppression of enemy air defense missions, destruction of military-associated production facilities, and the severing of the lines of communications from Iraq to Kuwait.<sup>66</sup> Only attacks against air bases and ground forces required a greater effort.

Multiple strategies were used to deter launches. Aircraft flew along roads believed to support Scud movements and dropped bombs at predetermined intervals to disrupt movement or launch preparations. As the air war progressed, highway overpasses, culverts, bridges, and other suspected Scud hiding places were attacked using precision guided munitions, mainly laser-guided bombs. Entire areas were targeted with CBU-89 area denial mines to hamper the TELs' mobility and deny them use of suspected assembly and launching areas. A key element in this strategy was the employment of British and US special operations forces who provided vital targeting information for attacks on suspected Scud missile sites.<sup>67</sup>

*Counter-Scud Results*

To judge the overall effectiveness of Gulf War counter-Scud efforts, we should return to the original objectives of the campaign: to destroy ballistic missile production facilities and their infrastructure, to reduce the post-war long-term regional threat, to destroy Iraqi launch capabilities, and to maintain Israel's neutrality and minimize the impact on Gulf states.<sup>68</sup> While on the surface it appears that the counter-Scud operations enjoyed some success in achieving these objectives, closer examination reveals several major shortcomings.

First, postwar inspections showed that Iraq's long-term ballistic missile program was not destroyed. Second, there is no technical evidence that a single TEL was actually destroyed during the war, despite the claims of some 100 "kills" by aircrews and special forces.<sup>69</sup> Finally, fixed sites were neutralized, but it can be argued that these strikes were ineffective since the Iraqis relied exclusively on mobile launchers for employment. The exact impact of coalition operations against mobile systems is more problematic. Iraqi launch operations never stopped and only diminished somewhat over time, although during the last week of the war launch operations increased in tempo.<sup>70</sup> At best, it can be said that counter-Scud efforts only maintained "pressure" on Iraqi missile operations and that Scud CAP operations apparently were successful at harassing but never halting Iraqi launch operations.

The harsh reality is that airpower did not stop Scud employment. This failure can be attributed to multiple reasons, but the root causes can be traced to three primary planning issues.<sup>71</sup> First was the low priority that planners placed on Scud suppression and the resulting failure to anticipate the political pressure generated by attacks on Israeli cities. Second was the false assumption that Iraq could significantly threaten Israel only from fixed sites. Finally, planners assumed that if required to find and destroy mobile Scuds, intelligence would provide adequate

queuing for aircraft and that Iraqi CC&D would not complicate targeting.

The first failure was predictable. The neutralization of Scuds was a low prewar priority for CENTCOM. This is reflected by senior leader comments and by how CENTCOM portrayed the SRBM threat in prewar exercises. Only seven Scud-associated facilities made CENTAF's July 1990 exercise Internal Look target list (of a total of 218), while none were on CENTCOM's target list (of a total of 293).<sup>72</sup> Later, during the early months of Desert Shield, the Scud threat was perceived as a distraction, and Scud attack facilities played only a minor role in the development of targeting strategies. The focus was on neutralizing fixed sites and destroying Scud garrisons, storage, and production facilities.<sup>73</sup> No real thought was given to dealing with the mobile launchers, except to keep a few fighter-bombers on strip alert to attack launch preparations based on queuing by national or theater sensors. Planners assumed, incorrectly, that intelligence would provide one to three hours' warning of launch preparations, which would allow coalition forces to locate and attack the launch site.<sup>74</sup> This is a classic case of "wishing away" the threat. In December 1990, DIA provided guidance that (1) mobile Iraqi missile crews were dispersed and would not require more than 60 minutes to launch a missile, (2) the intelligence indicators that air planners were relying upon to identify and target launch sites would not exist, (3) the Iraqis were prepared to use presurveyed sites and were taking steps to enhance survivability, and (4) attacking mobile launch operations would be very difficult, if not impossible.<sup>75</sup>

The second mistake was more damaging because it assumed away a proven enemy capability. During the Iran-Iraq war, Hussein demonstrated time and time again that he could hit Tehran with missiles launched from Iraqi territory.<sup>76</sup> The distances from Iraqi border areas are the same as those from the western desert to Israeli cities, and therefore it should have been apparent that Iraqi mobile launchers could be utilized to conduct op-

erations against Israel. Instead, airmen became focused on the fixed sites. This, coupled with undervaluing the mobile threat, resulted in the failure to consider the need for round-the-clock Scud CAPs.<sup>77</sup>

Finally, the final fundamental planning error was made when planners assumed decoys and other CC&D efforts would not greatly complicate targeting, thereby disregarding well-known *maskirovka* practices.<sup>78</sup> This ignored evidence gathered during prewar Air Force and Navy tests designed to determine the degree of difficulty aircrews would face in finding and destroying highly mobile targets. During Desert Storm, over 80 percent of the Scud launches occurred at night, and the lack of success in locating TELs during prelaunch and postlaunch operations reiterated the findings from Touted Gleem.<sup>79</sup> This test aptly demonstrated the difficulty US aircraft, such as the F-15E, would have in finding a field-deployed TEL.

These critical planning assumptions proved incorrect. Because of the earlier miscalculation of the nature of the Iraqi threat, General Horner had to divert significant numbers of sorties as well as other resources away from their planned missions to attempt to suppress the Scud threat. This diversion of resources, although not hindering the accomplishment of other missions due to the plethora of available aircraft, did fail to clearly and decisively accomplish any goals established for counter-Scud efforts. It can be argued that the Scud was Hussein's most effective weapon. It drew off significant numbers of sorties from other missions and provided him with his only real offensive potential.<sup>80</sup>

## Future Considerations

Due to the growing proliferation of SRBMs, future Air Force leaders will face more challenges than their predecessors. Technological enhancements, combined with increased employment sophistication, will make future counterballistic and cruise missile operations more difficult and will likely require even more resources. Hitler and Hussein effectively

tied up hundreds of aircraft and thousands of sorties with small numbers of launchers and missiles while retaining the capability to threaten allied unity and strategy. Ballistic missiles offer smaller, resource-constrained states a cost-effective alternative to fielding large manned air forces. The Department of Defense's (DOD) final report on the Gulf War was clear on this point:

Locating and destroying mobile missiles proved very difficult and required substantially more resources than planned. *This could be a more serious problem in the future against an enemy with more accurate missiles or one who uses weapons of mass destruction* (emphasis added).<sup>81</sup>

It is imperative that DOD and the Air Force intensify efforts to develop doctrine, tactics, techniques, and procedures for neutralizing enemy ballistic missiles. Our aerospace control doctrinal concepts and definitions need to be expanded to include both the enemy's aviation and missile assets. Countering ballistic missile operations must become integral to our planning efforts and exercise scenarios. Dedicated TMD exercises such as the Roving Sands series are a step forward, but greater emphasis must be placed on indoctrinating TMD principles and mind-set throughout US forces.<sup>82</sup> By examining and comparing World War II and Gulf War countermissile efforts, future planners can glean the following insights.

First, planners must not allow themselves to become doctrinally constrained when developing air campaign concepts. Even after the full implications of German and Iraqi missile programs were known, theater leadership did not fully appreciate the magnitude of the threat until *after* enemy attacks began.<sup>83</sup> Initial countermeasures in both wars mimicked our approaches to neutralizing traditional air force structures; that is, they focused on destroying fixed installations, including production facilities, launch locations, and support infrastructure. Little thought was given to suppressing mobile launchers. Furthermore, General Schwarzkopf's reluctance to employ special forces to enter Iraq to

monitor Scud deployments significantly undercut his abilities to influence later enemy operations.

Second, countering enemy ballistic missiles is time- and resource-intensive. Future joint force commanders must recognize that gaining control of the battlespace requires the elimination of both aircraft and missiles. Future missile suppression efforts will be as resource-intensive as past operations, perhaps more so. Roving Sands '95 demonstrated this tactic when ballistic missile attacks consumed 17 percent of all air efforts over the first five days. Despite this level of effort, friendly forces succeeded in reducing the enemy missile infrastructure by only 40 percent.<sup>84</sup>

Third, the Air Force must continue to widen its concept of air superiority to include remotely piloted vehicles and cruise and ballistic missiles. The Air Force must revise the belief, as articulated by some theorists, that without air superiority, "victory" is not possible.<sup>85</sup> When Hitler unleashed his missile assault, the Allies had mastery of the European skies, yet his forces launched over 15,000 missiles. Almost 50 years later, Iraq launched Scuds after losing air supremacy. Neither the Germans nor the Iraqis controlled the air, yet if the Germans had disrupted Overlord operations or the Iraqis had succeeded in hitting an Israeli city with a chemical warhead, either conflict would have changed fundamentally.

Aerospace control infers denying enemy aviation and missile forces effective use of the environment, yet Air Force doctrine continues to focus on countering enemy air forces as the primary method of achieving aerospace control. To eliminate this deficiency, Air Force doctrine must be broadened to incorporate TMD as contributing to aerospace control, especially given the increasing role of ballistic missiles in the world today. The latest draft of Air Force doctrine is addressing this shortfall by expanding the definition of air and space control to include ballistic and cruise missiles. But the same draft goes on to state that

offensive operations are most effective when conducted against theater missiles *before they*

*are launched* (emphasis added) . . . preemptive destruction of known missiles and launch facilities may greatly limit subsequent theater missile attacks against friendly forces.<sup>86</sup>

This makes one wonder if the author is aware of the findings for either Crossbow or counter-Scud operations. Although advances in mating sensor and computer technology have reduced, if not eliminated, much of the enemy's ability to hide ballistic missile TELs, the complete and rapid neutralization of enemy missile forces remains unlikely. Prelaunch suppression of individual mobile launchers will remain a difficult challenge until the advent of long-dwell, all-weather sensors that can monitor a force once it disperses. Until then, alas, most planners will probably continue to rely upon the path of doctrinal dogma: *If it's easiest to destroy aircraft on the ground, then the same must be true for ballistic missiles.*

Fourth, planners must be aware that political pressures will force resource diversions after a threat fully materializes. A "kitchen sink mentality" develops to achieve immediate results. Enhancements in telecommunications and real-time news reporting will increase the pressures placed on theater commanders to halt enemy missile launches. This pressure will be greatest when civilian populations are at risk or the integrity of a political coalition is threatened. Israel demonstrated restraint, but only after the US maintained a 24-hour Scud CAP and the Israelis were allowed to nominate counter-Scud targets. Imagine the impact counter-Scud efforts would have had on mission accomplishment if the US had gone to war sooner. Fewer available combat, especially PGM-capable, aircraft; the predictable expansion of the target base; and the strains due to unanticipated mission requirements could have doomed the war effort.

Fifth, planning assumptions matter. Faulty assumptions will corrupt planning and can undermine a strategy. While developing the initial offensive air plans for Desert Storm, planners made several flawed assumptions about Iraqi Scud capabilities. Unfortunately, these were never adjusted, and they continued to provide the basis for TMD planning

throughout Desert Shield and Desert Storm.<sup>87</sup> A critical mistake was made by not adjusting to new intelligence. During the six months preceding the war, new or updated intelligence regarding Iraqi SRBM capabilities was almost ignored. The result was that we were caught off guard when Hussein initiated an asymmetrical response to coalition air operations, forcing fundamental changes to the Desert Storm air execution.

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*If the Air Force is to remain the leader in air and space power, it must require its members to become better students of history.*

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Sixth, the application of airpower must support the attainment of operational and national objectives, not attempt to validate Air Force doctrine. Although this point may seem trivial, past experiences show airmen can allow preconceived views of airpower employment to override specific instruction from higher command authorities. Despite direction to the contrary, warriors in both wars resisted pursuing aggressive counter-SRBM strategies until ordered because they regarded these weapons as having little military consequence. Resistance reinforces the perception that airpower is more interested in justifying its own doctrine and independence than winning the war.

The political process will generate pressure to shift operational emphasis if tactical efforts are perceived to be either ineffective or not contributing to "ending the war." The media-generated drama played out each time a Scud was launched is an example of what the future portends. Planners must remain intellectually agile enough to respond to a wide range of contingencies while developing the mental toughness to maintain focus on proper mission execution. Our natural tendency is to resist change, but only by developing the ability to embrace change will the military retain its relevance. Only through

rigorous planning can we learn to better anticipate friendly as well as enemy reactions to our actions. Preparation and deliberate planning before a crisis occurs are essential keys in maintaining a decisive edge—acquiring lessons from history or conducting doctrinal reflection after the crisis starts is fruitless.

Finally, future ballistic missile suppression operations will require dedicated, joint efforts to be effective. Joint doctrine acknowledges this, and Joint Pub 3-01.5, *Doctrine for Joint Theater Missile Defense (JTMD)*, highlights the requirement for effective JTMD operations to integrate both offensive and defensive approaches. This is similar in many respects to current counterair concepts to neutralize enemy fixed-wing airpower.<sup>88</sup> Intelligence integration using space-based, airborne, and surface-based systems is critical. Fundamentally, successful TMD requires a "family of systems" approach combined with joint war-fighting techniques. Airborne Scud CAPs remain the best response to enemy missile launch operations. Computer integration and logic-processing enhancements provide great promise for enhancing launch-point estimations and queuing for terminal attack operations. Finally, simulations and exercises remain critical in testing the synchronization between sensor and shooter links. Centralized command and control is also critical to integrate surface and air attacks against mobile launcher locations. Operational staffs must understand how to integrate airpower with operational fires to counter enemy SRBMs. Proven joint war-fighting concepts such as joint suppression of enemy air defenses (J-SEAD) provide excellent models for future planners.

## Conclusions

The conduct of war is an intellectual process. Fighting battles and linking success to achieve operational objectives remains more art than science.<sup>89</sup> There are no absolute governing principles in war. Warfare is too complex, too nonlinear, to describe using a

series of standardized doctrinal checklists. As Clausewitz observed over 175 years ago, the practice of war is an art requiring intellectual mastery, not mindless observance of a series of principles or application of formulae.<sup>90</sup> Military action produces not a single enemy reaction, but dynamic interactions. Because war is a mixture of physical and psychological activities, a universal theory of war that attempts to provide strict guidelines is unattainable. Ultimately, the study of the theory of war "is meant to educate the mind of the future commander, or, more accurately, to guide him in his self-education, not accompany him to the battlefield, just as a

wise teacher guides and stimulates the student's intellectual development but is careful not to lead him by the hand for the rest of his life."<sup>91</sup> Therefore, the best path to understanding the future lies in mastering the past. If the Air Force is to remain the leader in air and space power, it must require its members to become better students of history. While not yielding specific doctrinal templates, history does provide fertile ground for developing judgment. If Air Force leadership and doctrine are to remain reliable and relevant to the future, our understanding of history must prove equally as sound. □

#### Notes

1. An example of this approach was articulated by Col John Warden, USAF, Retired, a leading airpower theorist, in "The Enemy as a System." *Airpower Journal* 9, no. 1 (Spring 1995): 41-45.

2. Michael Howard, *Clausewitz* (Oxford: Oxford University Press, 1983), 32.

3. This position has been articulated by several theorists, including John Warden. The fundamental underpinnings are found in Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Air Force*, vol. 1 (Washington, D.C.: Government Printing Office, 1992), 10-11.

4. Many states already incorporate ballistic missiles in their inventories: China, Egypt, India, Iran, Iraq, Israel, Libya, North Korea, Pakistan, Russia, Saudi Arabia, Syria, and Yemen. By 2000, over 20 states are projected to either have SRBMs or have the capability to produce them. Also, despite the reduction of Iraq's ballistic missile program, Baghdad is still assessed to possess a limited number of ballistic missiles. John Harvey, "Regional Ballistic Missiles and Advanced Strike Aircraft—Comparing Military Effectiveness," *International Security* 17, no. 2 (Fall 1992): 41; Thomas A. Keaney and Eliot A. Cohen, *Gulf War Air Power Survey (GWAPS) Report*, vol. 2, pt. 2, *Effects and Effectiveness* (Washington, D.C.: Government Printing Office, 1993), 321; Secretary of Defense, *Annual Report to the President and Congress* (Washington, D.C.: Government Printing Office, January 1994), 51-56; and Robert M. Soofer, "Joint Theater Missile Defense Strategy," *Joint Forces Quarterly*, Autumn 1995, 71.

5. Air Force Doctrine Document-1(AFDD-1), draft, "Air Force Basic Doctrine," Air University, Maxwell AFB, Ala., 5 August 1995, 11. The authors correctly are expanding the definition of offensive counterair (OCA) to incorporate all enemy air and missile power, including fixed- and rotary-wing aircraft, unmanned aerial vehicles, cruise missiles, air defenses, and ballistic missiles.

6. Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, vol. 3, *Argument to V-E Day, 1944-1945* (1948; new imprint, Washington, D.C.: Office of Air Force History, 1983), 84.

7. *Conduct of the Persian Gulf War: Final Report to Congress* (Washington, D.C.: Government Printing Office, 1992), 1.

8. In both Crossbow and Desert Storm, planners employed both offensive and defensive missile countermeasures, although this paper only addresses offensive operations taken against enemy missiles.

9. The "V" designation originally meant *Versuchmuster* (experimental type), but was later interpreted as *Vergeltungswaffe* (vengeance weapon) by German propaganda services.

10. Gen Dwight D. Eisenhower, *Crusade* (New York: Doubleday, 1948), 260.

11. Craven and Cate, 527; and Richard Davis, *Carl A. Spaatz and the Air War in Europe* (Washington, D.C.: Smithsonian Institution Press, 1992), 428.

12. The focus of this article is on offensive countermeasures, but the Allies also poured a tremendous amount of resources into defensive measures; by the height of the V-1 assault, some 2,000 barrage balloons, 400 batteries of anti-aircraft artillery, and 22 squadrons were deployed to defend London. Jozef Garlinski, *Hitler's Last Weapons* (New York: Time Books, 1978), 162.

13. Headquarters, European Theater of Operations, G-2, memorandum to the chief of staff, United States Army, providing all known details on German V-weapon programs, 13 December 1943, 4.

14. United States Strategic Bombing Survey (USSBS), Military Analysis Division, *V-Weapon (CROSSBOW) Campaign* (Washington, D.C.: Military Analysis Division, 1945), 4.

15. *Ibid.*, 2.

16. *Ibid.*

17. Eisenhower, 260; and Gen Omar Bradley, *A General's Life* (New York: Simon & Schuster, 1983), 238.

18. USSBS, *V-Weapons (CROSSBOW) Campaign*, 2.

19. Phillip Henshall, *Hitler's Rocket Sites* (New York: St. Martin's Press, 1985), 187.

20. Walter J. Boyne, *Clash of Wings: World War II in the Air* (New York: Simon & Schuster, 1994), 338.

21. USSBS, *V-Weapon (CROSSBOW) Campaign*, 25-29.

22. The British and Americans agreed that the "large" sites required attack by heavy bombers to be effective.

23. The acceptance of the American approach came too late.

By the time it was implemented, Allied ground forces had already broken out of the Normandy beachhead and were threatening German V-1 launch areas.

24. Defensive operations were increasingly effective and by mid-August were successful in shooting down 74 percent of all V-1s crossing the coast. This improved to 83 percent by September. F. H. Hinsley, *British Intelligence in the Second World War*, abridged edition (London: Her Majesty's Stationary Office, 1984), 567.

25. *Conduct of the Persian Gulf War*, 21.

26. *Gulf War Air Power Survey (GWAPS) Report: Summary Report* (Washington, D.C.: Government Printing Office, 1993), 87. After the war, Iraq claimed it launched 93 modified Scuds to UN authorities documenting and destroying Iraqi ballistic missile, nuclear, chemical, and biological weapons programs.

27. "The Great Scud Chase" is a phrase immortalized by Gen Merrill McPeak, former Air Force chief of staff, at a news conference on 15 March 1991.

28. *GWAPS*, vol. 1, pt. 2, *Command and Control*, 216-45.

29. *Ibid.*, 247.

30. An example is found in *GWAPS: Summary Report*, 123-24.

31. Thomas Christie and William Barlow, *DESERT STORM Scud Campaign* (Washington, D.C.: Institute for Defense Analyses [IDA]), I-13.

32. The best description of Iraqi and Iranian ballistic missile capabilities and employment practices was first published in 1990 in Anthony Cordesman and Abraham Wagner's *The Lessons of Modern War*, vol. 2, *The Iran-Iraq War* (San Francisco: Westview Press, 1990). This book accompanied many CENTCOM and CENTAF staff officers to the gulf throughout the summer and fall of 1990. Unfortunately, most apparently did not read this book since it very accurately described what would become the cornerstone for Iraqi strategy and tactics.

33. A third, longer-range variant, the 430-mile Al-Abbas, was not used during the war. *Conduct of the Persian Gulf War*, 13-14.

34. *GWAPS*, vol. 1, pt. 1, *Planning*, 210-11.

35. Richard Hallion, *Storm over Iraq: Air Power and the Gulf War* (Washington, D.C.: Smithsonian Institution Press, 1992), 178. In many cases, it required two or three basic Scud airframes to make a single Iraqi extended-range modified Scud missile. After the war, the UN Special Commission team responsible for the elimination of Iraq's weapons of mass destruction and ballistic missile programs verified the destruction of around 140 missiles. Altogether, the missiles destroyed by the UN, those fired during the Gulf War and the Iran-Iraq war, and those utilized to create extended-range Scud variants account for 570-640 Scud-B airframes. Due to the uncertainty in determining exactly how many Scud airframes the Iraqis had received, speculation continues that Iraq retains some 100-200 Scud-B airframes. *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 321.

36. *Ibid.*, 320.

37. The *GWAPS* concluded Iraqi Scud strategies remained uncertain in the months prior to the war. However, review of the Gulf War Collection, Air Force Historical Research Agency (AFHRA), Maxwell Air Force Base, Alabama, reveals multiple assessments were made by a variety of national and theater intelligence agencies concerning Iraqi basing and employment philosophies, including launching procedures and time requirements. Virtually all the assessments, especially those by Defense Intelligence Agency (DIA), stated there was little uncertainty that Hussein would employ ballistic missiles against regional population centers, including Israel, if coalition military action was taken to liberate Kuwait. The threat was taken so seriously that much of the discussion focused upon an Iraqi preemptive option.

38. General Horner predicted to Secretary of Defense Dick Cheney in December 1990 that the air campaign would "preclude" Iraqi missile attacks. *GWAPS*, vol. 2, pt. 1, *Operations*, 182.

39. Air Force Intelligence Agency (AFIA/INID), *Denial and*

*Deception Digest*, 91-02, 12 February 1991; and Christie and Barlow, 1-18. Air Force Historical Research Agency (AFHRA), Gulf War Collection.

40. During the war, allied aircrews claimed some 80 mobile launcher kills, yet the postconflict *Gulf War Air Power Survey (GWAPS)* concluded there was no evidence the coalition destroyed any mobile launchers and most, if not all, of the kills were actually against high-fidelity decoys or other vehicles bearing a similar signature. *GWAPS: Summary Report*, 83-90.

41. For the two best examples of critics of the intelligence community who contend the underestimation of the number of mobile launchers constituted an intelligence "failure," see Hallion, 179; and James A. Winnefeld, Preston Niblack, and Dana J. Johnson's *A League of Airmen: US Air Power in the Gulf War* (Santa Monica, Calif.: RAND, 1994), 132. These authors contend the number of launchers possessed by the Iraqis was closer to 225, but neither presents any evidence to support this contention.

42. In addition to the initial estimates sanctioned by the US intelligence community, several rumors were circulating around Washington during August 1990 suggesting Iraq might possess several hundred, if not thousands, of mobile launchers. This highlights the difficulty planners can face during crisis periods in acquiring accurate and reliable information. Author's interview with several members of Checkmate and the Black Hole, 25-29 March 1996 and 15 May 1996.

43. Sources used include data acquired by the UN inspection teams, intelligence collected during the war, and defector reporting. The *GWAPS* concluded the Iraqis started the war with a total mobile launcher inventory in the high twenties to mid-thirties. *Ibid.*, ix, *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 320-22, and *GWAPS: Summary Report*, 87.

44. These estimates are contained in the AFHRA, Gulf War Collection, CIS-37-CIS-44.

45. Michael Gordon and Bernard Trainor, *The General's War: The Inside Story of the Conflict in the Gulf* (New York: Little, Brown and Company, 1995), 228-33.

46. *GWAPS*, vol. 1, pt. 1, *Planning*, 103.

47. *Ibid.*, 103-4; and Gordon and Trainor, 229.

48. Colin Powell with Joseph E. Persico, *My American Journey* (New York: Random House, 1995), 510-11.

49. *Conduct of the Persian Gulf War*, 19.

50. *Ibid.*, 73.

51. *Ibid.*

52. *Ibid.*, 74.

53. *GWAPS*, vol. 1, pt. 1, *Planning*, 165-66.

54. James Coyne, *Air Power in the Gulf* (Arlington, Va.: Air Force Association, 1992), 55.

55. Planners made the mistaken assumption during the construction of Instant Thunder, the predecessor to the Desert Storm air campaign, that if the fixed Scud sites were neutralized, the threat to Israel would be diminished. Theater planners later recognized the potential role mobile launchers could play but believed the resources necessary to reduce this threat would exceed expected gains. AFHRA, Gulf War Collection, Maxwell AFB, Ala., File CHSH-5 (Instant Thunder briefing), 8; and author's interviews with former Black Hole planners, 15 May 1996.

56. *GWAPS: Summary Report*, 43.

57. *GWAPS*, vol. 1, pt. 1, *Planning*, 166.

58. AFHRA, Gulf War Collection, 17 August 1990 CENTCOM/CENTAF briefing to CJCS on the nature and capabilities of the Iraqi ballistic missile threat.

59. *Ibid.*; *GWAPS: Summary Report*, 43.

60. The degree to which Washington worried about Scuds more than theater leadership became evident in October when Joint Chiefs of Staff planners, at the insistence of Secretary Cheney, considered placing ground forces in suspected Scud launching areas that threatened Israel. Although discarded, this

concept resurfaced in December. *GWAPS*, vol. 1, pt. 1, *Planning*, 103.

61. *Ibid.*, 214.

62. *Ibid.*, 219.

63. Hallion, 186.

64. *GWAPS: Summary Report*, 65.

65. *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 330.

66. *Conduct of the Persian Gulf War*, 159.

67. Douglas C. Waller, *The Commandos* (New York: Simon & Schuster, 1994), 346–51.

68. These are the measures employed by GWAPS to judge overall effectiveness. *GWAPS: Summary Report*, 78–90.

69. Despite the lack of technical evidence, based on the number of attacks and analysis of postwar intelligence, it is likely a limited number of TELs were destroyed. *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 340. Coalition crews reported destroying about 80 TELs and special forces another 20. Most reports probably reflected the results of a highly effective Iraqi CC&D effort and attacks against unfortunate Iraqi fuel tanker trucks that possessed “Scud-like” signatures. *GWAPS: Summary Report*, 83.

70. *GWAPS: Summary Report*, 88; and Waller, 346–48.

71. *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 321–23.

72. *GWAPS: Summary Report*, 32.

73. AFHRA, Gulf War Collection, File CHSH-5, INSTANT THUNDER briefing to president.

74. *GWAPS: Summary Report*, 79.

75. AFHRA, Gulf War Collection, DIA message to USCINCCENT responding to CENTCOM’s request for information (RFI) concerning Iraqi Scud capabilities and operations, 7 December 1990.

76. According to Iranian sources, 71 percent of the modified Scuds launched by Iraq during the “War of the Cities” fell on Tehran. *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 319.

77. Black Hole planners claimed they began to recognize the threat presented by mobile launchers, but considered the resource implications for utilizing Scud CAPs at the start of the air campaign as too high in comparison with anticipated results. Author’s interview with Black Hole planners, 15 May 1996; and *GWAPS: Summary Report*, 43.

78. *Maskirovka* is the Soviet-developed practice of using the aggregate measures of camouflage, concealment, masking, and deception to mislead and complicate adversary efforts to understand and counter friendly plans and capabilities. The Iraqis adopted a series of active and passive protection efforts, combined with an aggressive security program, to complicate the adversary’s efforts to effectively target Iraqi military capabilities. Planners did not expect decoys to exist in such large numbers, nor did they expect the level of fidelity the Iraqis created. *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 54–55; *GWAPS: Summary Report*, 79; and author’s interviews with Checkmate and Black Hole planners, 25–29 March 1996 and 15 May 1996.

79. A prewar test, code-named Touted Gleem, demonstrated conclusively that F-111F, F-15E, and LANTIRN-equipped F-16 fighters had less than a 50 percent chance of acquiring the Scud TEL even when the aircrews had precise target coordinates. TELs proved “virtually impossible to find” if the missile was not erect. This trend continued during the war when on 42 separate occasions, pilots visually observed a launch, yet in only eight cases were aircrews able to maintain visual to allow them to employ weapons. *GWAPS*, vol. 2, pt. 2, *Effects and Effectiveness*, 335.

80. *GWAPS*, vol. 1, pt. 2, *Command and Control*, 190.

81. *Conduct of the Persian Gulf War*, 188.

82. Roving Sands is an annual Joint Staff-directed exercise focused on theater ballistic missile defense operations, including operations designed to offensively explore ways to neutralize enemy ballistic capabilities.

83. As late as February 1944, General Spaatz was convinced the V-weapons associated construction was a German hoax designed to cause panic and drain resources. Richard Davis, *Carl A. Spaatz and the Air War in Europe* (Washington, D.C.: Smithsonian Institution Press, 1992), 426–32.

84. Ronald R. Fogleman, “Theater Ballistic Missile Defense,” *Joint Forces Quarterly*, Autumn 1995, 75–79.

85. This is one of John Warden’s central themes in *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988). To disprove this theory, my faculty advisor was fond of saying, “Gee, I wish they would have told that to Ho Chi Minh.”

86. AFDD-1, 12.

87. *Ibid.*, 321–22.

88. Joint Pub 3-01.5 is composed of four integrated operations: passive missile defense, friendly efforts to minimize the effects of enemy missiles; active missile defense, intercept operations; attack operations, offensive efforts to neutralize enemy launch capabilities; and command, control, communications: computers, and intelligence capabilities to coordinate all friendly JTMD efforts. Joint Pub 3-01.5, *Doctrine for Joint Theater Missile Defense* (Washington, D.C.: Government Printing Office, 30 March 1994).

89. Both Hitler and Hussein used ballistic missiles in an attempt to achieve their strategic aims; however, each executed poor employment strategy. Hitler failed because he focused on the wrong targets; had he attacked the English ports supporting the invasion instead of London, he could have disrupted the invasion. Hussein never attempted to launch a mass attack to maximize the shock effect of missiles. Had he struck Tel Aviv with a massed Scud attack, Israel probably would have had to respond militarily.

90. Peter Paret, *Clausewitz and the State* (Oxford: Clarendon Press, 1976), 371.

91. *Ibid.*

*Prejudice against innovation is a typical characteristic of an Officer Corps which has grown up in a well-trying and proven system.*

—Field Marshal Erwin Rommel





# SICOFAA

## Building Trust and Confidence throughout the Western Hemisphere

GEN RONALD R. FOGLEMAN  
CHIEF OF STAFF, USAF

**A**S A CAREER aviator, my flying experience has fundamentally shaped the way I view the world. I call it an "airman's perspective." Aviation has made the world a smaller place. You can have breakfast at home and eat dinner on another continent. From aloft, the land below seems a singular place, a single entity, a system made up of subsystems. Gone unnoticed are the boundaries that separate states and the tensions that divide mankind. When aviators gather—regardless of language, political, or cultural differences—they are united by this shared perspective. This commonality helps transcend historical differences and current political climates to address issues of mutual interest. It is this perspective which underlies the organization known as the System of Cooperation among the American Air Forces (SICOFAA).

In the early 1960s, SICOFAA was simply a forum for air force leaders from the nations of the Western Hemisphere to establish an ongoing dialogue. During these early years, the shared airmen's perspective quickly led to the development of close personal relationships among these senior aviators. Air chiefs from member countries gathered without any formal agenda to discuss mutual interests in military aviation and associated issues. Their holistic perspective became the foundation of the organization

they later formalized. They recognized that simple fellowship, devoid of all pretensions of power, could be a catalyst for future progress. This relaxed, no-pressure environment encouraged mutual confidence and trust among the senior airmen of countries throughout the Americas. For more than three decades, the resulting organization has contributed enormously to regional security and stability.

Today, SICOFAA is a dynamic, vigorous, and growing multinational organization. It has proven to be a resilient, enduring, and productive fixture of hemispheric relations for over 35 years. Currently, SICOFAA includes 18 member nations, including the US and Canada, plus six observer countries. This is not a US-run organization, but an American continental organization that provides an opportunity for airmen to engage in a dialogue among equals to explore methods of fostering cooperation and trust. The official language is Spanish, and member nations participate on equal terms. This forum has produced significant benefits for the Americas for over three decades.

### Regional Shift towards Democracy

It is not too bold to conclude that the relationships, the trust, the openness, and the

confidence that SICOFAA has engendered among its neighbors has created a new era of peace, stability, and security in the Americas. Much of the progress is due to the maturation of relations between nations based on mutual respect. Contributing to the positive trend in the region is the fact that militaries, which in the past held sway over many governments, have shown greater commitment to democratic norms and a willingness to serve their nations in a truly professional manner. The concept of "cooperative security" is emerging, with greater emphasis on integrated approaches to shared problems. Effective military instruments need not always be used for war.

In the case of airpower, air force professionals from all countries make an impact when they share their knowledge of defense organization and civilian control with their counterparts from other nations. This may include using air force assets to extend a helping hand for humanitarian relief in support of international objectives.

Since the establishment of SICOFAA, nearly every nation in the region has adopted a democratic form of government. Though the development of democratic institutions is not uniform across the region, cooperative organizations such as SICOFAA help democracy to flourish. Nations in the region are engaging in meaningful combined exercises, and real-world operations. This level of cooperation between air forces could not have been predicted three decades ago. SICOFAA has contributed immeasurably to this shift towards mutual trust in the Western Hemisphere.

## History of SICOFAA

The history of SICOFAA can be viewed from four basic stages of growth. Each of these stages of organizational growth and maturation are marked with examples of increasing trust and cooperation. A look back to the beginning of the organization 35 years ago serves as a reminder of just how far the Americas have progressed. A view of the hemisphere in the early 1960s presents an

ambiguous picture. In 1961, democracy was scarce in Latin America. Isolationist policies among nations in the region preempted establishment of programmatic dialogue between nations, thus allowing governments meager opportunity for addressing interstate tensions. Additionally, many countries were ruled by authoritarian governments and were burdened with unresolved border disputes, heavy international debts, and human rights problems, all within a world that viewed international relations through a bipolar lens.

In this atmosphere of tension and uncertainty, Gen Thomas D. White, the US Air Force chief of staff, conceived the idea of gathering the air chiefs from nations across the Western Hemisphere for discussion on topics of mutual interest. The intent was to strengthen inter-institutional relationships and to develop a system of effective professional cooperation. The first meeting of these air chiefs took place at Randolph Air Force Base, Texas, in 1961 under the name of Conference of the Chiefs of the American Air Forces—the first CONJEFAMER. The air chiefs saw great promise in their gathering so they agreed to meet annually thereafter. In 1964, the Peruvian air force proposed forming a formal, yet voluntary, organization representing all of the air forces of the Americas. This formal organization evolved into what is now SICOFAA.

The next stage of organizational development began in the 1970s. By this time many personal relationships had matured. As a result, member nations widely agreed on the need for a more structured organization. It was during this period that SICOFAA's basic charter was defined and its infrastructure was designed. As time progressed and the organization matured, intermediate levels of operation were developed, thus gradually producing a coherent and functioning multinational organization.

It was during this period that this organization began to demonstrate its worth. In 1972, after an earthquake in Managua, Nicaragua, nations in the region were initially notified through a communications network

established by SICOFAA. This same network greatly facilitated a quick disaster relief effort. It also helped establish an air bridge to deliver much needed medical supplies, food, equipment, reconstruction materials, and air evacuation aid. A similar situation occurred in 1975 when an earthquake in Guatemala left 25,000 dead and over one million homeless. Once again, member nations quickly responded with airborne aid and assistance.

By the 1980s, with personal relationships and communications channels long established, senior air force officers from nations throughout the region were working on issues of mutual interest or even finding themselves on opposing sides of an impending crisis. It is in crisis situations that the efforts of an organization like SICOFAA pays its biggest dividends. Such mature relationships were certainly tested in 1982, when British warships were heading towards the Falklands/Malvinas and Argentina was scheduled to host CONJEFAMER for 10 days beginning on 6 April 1982. This CONJEFAMER was held as scheduled without any attempt to politically exploit the conference by Argentinian air force leadership. In fact, the impending crisis with Great Britain was not even mentioned. This behavior validated the true apolitical nature of SICOFAA in that the relationships endured despite political tensions. In fact, a scheduled CONJEFAMER has never been postponed or canceled for political reasons.

This period also witnessed an increase in the efficiency of SICOFAA as an organization. Members sought more substantive organizational results. This proved to be a catalyst for action and increased the emphasis on producing results within the various committees. Officer exchanges between member services opened the door for shared exchange of information. This eventually led to member nations sharing with each other their operational and organizational philosophies; weather forecasting techniques; regional epidemiological information focusing on cause, prognosis, and treatment of disease; and other topics of interest to air forces. The

creation of a training database consisting of the various courses taught by member air forces, which enhanced the curriculum of the Inter-American Air Forces Academy (IAAFA) provides yet more opportunities for shared information and military-to-military contacts. Today IAAFA offers over 70 training courses for enlisted members and officers in areas such as support operations, aircraft maintenance, and engine repair. Moreover, this period witnessed a vast improvement in the coordination, cooperation, and operational capability of search and rescue (SAR) units of member nations.

During the current stage, we are emphasizing process. In fact, we are witnessing a sense of accomplishment and unprecedented commitment to the processes under SICOFAA. In the last several years, SICOFAA has kept pace with the transition of the Americas from a region grappling with political conflicts and economic setbacks to one of the most democratic and economically vibrant in the world.

For instance, at the 1996 Aviation Law Symposium, a symposium organized by the Control of Illegal Flights Committee and hosted by the Chilean air force, member nations studied the various legal interpretations of the Chicago Convention. This analysis focused on the legal ramifications associated with an article of the convention, which captures the legal issues associated with efforts to control narcotics trafficking. Each country's representative explained their nation's laws and how they are being implemented. Through this process, it was realized that all member nations had similar needs, concerns, and governing laws. In addition, both the Aviation Law Symposium and the Control of Illegal Flights Committee recommended the establishment of a legal committee to study and develop new legislative proposals to address common aviation law issues.

Other examples abound in areas such as search and rescue where combined operations, combined training programs, and personnel exchange programs are establishing a network of SAR capability that is greater

than the sum of its parts. Nations with satellites are preempting potential tensions by revealing the purpose of satellites used for deforestation, erosion detection, weather, and global positioning (GPS). Additionally, several nations have agreed to share in the expense of pilot simulator training. This is resulting in increased simulator usage, improved cost benefit, and shared expense. The sharing of weather software and technology between nations is leading to standardized meteorological reporting and forecasting throughout the region. Furthermore, exchange programs across a multitude of disciplines are resulting in shared knowledge and expense in training, and they foster the growth of new personal relationships.

## Structure of SICOFAA

The purpose of SICOFAA is to promote cooperation among American air forces through the cultivation of valued personal relationships. Member nations of SICOFAA place great pride in the organization's ability to continuously provide an apolitical forum regardless of the often tumultuous international climate. Personal contacts and the exchange of information and ideas among militaries promote mutual trust and understanding. Advancing these areas has contributed to increased stability across the Americas. A quick look at SICOFAA's organization and history will help illustrate its contribution to increased security and stability in the Western Hemisphere.

SICOFAA operates on a 12-month cycle beginning each year with the closure of the annual CONJEFAMER and runs through the following year's conference. SICOFAA is divided into seven different elements which provide everything from oversight to administrative support. CONJEFAMER consists of the air chiefs from each member air force and constitutes the decision-making body of SICOFAA. The scope of CONJEFAMER covers a wide range of topics regarding military air operations in the Americas. These topics range from organizational structure, exercise

opportunities, the entire spectrum of aerospace medicine, to logistics support and other topics of common interest to the member air forces. CONJEFAMER establishes committees as necessary to study activities or specific areas of interest to member air forces and to make recommendations on those activities to the air chiefs. Currently there are nine standing committees that cover a wide range of topics: logistics, meteorology, aerospace science and technology, control of illegal flights, training, medicine, accident prevention, search and rescue, and information systems.

Other elements of SICOFAA include the Supervisory Council, which is a constituted body comprised of the air attachés of each member air force assigned in Washington, D.C., and one representative from the US Air Force. This council provides the organizational and financial oversight of SICOFAA. SICOFAA stages symposiums periodically to address specific issues or concepts, then either dissolves them following their completion or, if warranted, they stand up as a constituted committee. Finally, the Permanent Secretariat is an administrative and executive organization that provides continuity to SICOFAA. The Secretariat is a focal point for verifying, regulating, coordinating, and compiling the data generated by the various components of SICOFAA. The position of secretary general is filled by a US Air Force colonel who is nominated by the US Air Force chief of staff and confirmed by member air chiefs at CONJEFAMER.

## Reaping the Benefits

A testament to how far relationships in the American air forces have matured can be seen in just one example. At the 1994 Chilean Airshow (FIDAE '94), aviators from three countries demonstrated their combined aerial prowess. The combined seven-ship aerial demonstration awed spectators. Even more impressive was the composition of the formation. In the lead was a Chilean Mirage Pantera, on its wings were two Peruvian Mirage 2000s,

and in the slots were four Argentine Pampas! Obviously an incredible amount of coordination and cooperation went into orchestrating this demonstration. More importantly, however, is the degree of trust it reflected between the participating nations, their air forces, and their pilots. Those pilots had to completely trust every other pilot in that formation. For the duration of the demonstration, they were as one in the air. They were all airmen.

The maturation of SICOFAA as an organization has brought with it many valuable lessons in learning to deal with the individual nation's sensitivities. This has helped open the doors for greater cooperation and trust and has illuminated the organization's utility. The proven multilateral, apolitical nature of SICOFAA has earned the confidence of the air chiefs, allowing for a more open exchange of information. Though information exchange has improved greatly, it is still a challenging issue.

Due to both cultural and security sensitivities throughout the region, sharing operational information can be difficult. For example, it is not a common practice in many of the cultures of the region to disclose pilot or maintenance errors that result in fatalities. Additionally, member nations harbor concerns in sharing information that may be operationally revealing. In these cases, SICOFAA helps perform a balancing act of sorts. On one hand, it protects a nation's operational concerns while helping to share information that may be critical in nature. Through its apolitical forum and the mature relationships fostered by SICOFAA, a procedural solution has been arranged. In these cases, the information is sent to the Permanent Secretariat, sanitized down to the essential details, then retransmitted to all members under SICOFAA authority—thus maintaining discretion for the source nation while providing valuable information to member nations.

A recent example of this delicate situation involved a nation that was having a recurring maintenance problem common to a type of aircraft operated by other members' air forces.

Investigations revealed a procedural deficiency that frequently resulted in an improperly installed part. Realizing that this was probably not unique to just their air force, yet prudently protective of their internal operations, they disclosed their findings to the SICOFAA Permanent Secretariat, which in turn distributed a sanitized version of this critical information to member nations. In this manner, other member countries that operated the same aircraft were alerted to conduct their own inspections, resulting in the discovery of multiple cases of the same problem.

Another example lies in depot-level maintenance such as engine overhauls. This extensive maintenance procedure typically must be performed by the manufacturing nation. Since many nations in the Americas operate aircraft purchased from nations outside the region, the aircraft have to be flown or shipped back to the originating nation for the maintenance to be performed. This is obviously a very expensive and lengthy process. With the increased aircraft maintenance capabilities in the region, and the sharing of this information, some overhauls are now accomplished in Latin America at much greater savings and substantially shorter turnaround.

## Future of SICOFAA

What will the next phase of SICOFAA witness? What new levels of cooperation, trust, and accomplishment will be realized in the next millennium? The answer lies in ever-closer cooperation between member nations. That cooperation will manifest itself in initiatives such as the Combined Air Operations Center (CAOC).

The CAOC has the potential to be the primary conduit for facilitating multinational responses to illegal flight activities associated with drug trafficking. The idea of the CAOC has been agreed to in concept by the SICOFAA air chiefs and is now awaiting ratification by member governments. This unprecedented multilateral initiative will provide real-time

coordination of efforts to pursue narcotics traffickers. This is important for the war on drugs because aircraft operated by traffickers often have more loiter time than most intercept aircraft. Thus, all they have to do is fly low, maneuver, and head straight for the nearest border. Intercept aircraft cannot pursue them into neighboring countries due to border sensitivities in relation to military overflight. Therefore, many traffickers are able to traverse the region in this manner.

The CAOC will have in place representatives from member nations who will monitor the pursuit of narcotraffickers throughout the region and facilitate rapid coordination of border overflights or hand-offs between the forces of different countries. Colombia, Ecuador, Panama, Peru, and Venezuela are the initial participants in this unprecedented cooperative effort. This type of endeavor was virtually unthinkable just six or seven years ago. It represents the major shift in thinking to which SICOFAA has contributed. Nations are beginning to change their entire perspective on this issue: the enemy is not the pursuit aircraft; instead, it is the pursued aircraft.

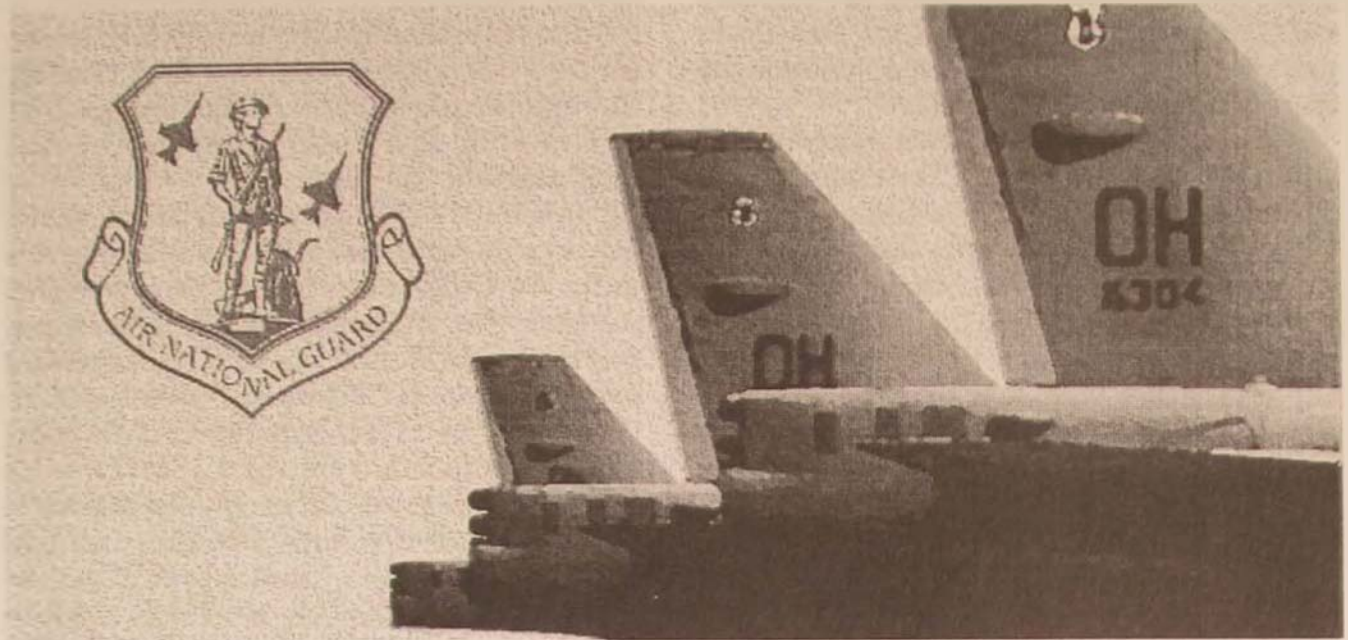
Another initiative that offers insight into the next phase includes the efforts under way to install emergency locator transmitters (ELT) on all member-nation aircraft. These devices enable search and recovery teams to locate downed aircraft. In June 1995, a conceptual agreement was reached by member nations to place ELTs on all commercial and military aircraft and ships. Chile currently has the ability to detect ELTs anywhere in the country and can even determine if a signal is real or just a test. Yet another initiative is the effort to establish communications redundancy through high-frequency radio, E-mail, fax, and voice phones. This will greatly increase the timeliness and reliability of communications during emergency responses throughout the region.

Yet another example of future benefits can be reflected in the adaptation of a SICOFAA initiative for global implementation. The conceptual development of a worldwide air-

craft parts warehouse recognizes the need, as did SICOFAA air chiefs, to provide a catalogued record of aircraft parts availability from around the world. This system, conceptually borrowed from a SICOFAA initiative, will allow nations from across the globe to list overstocked or underutilized parts and equipment for other member nations to purchase. This access to needed parts will provide spare parts at a significantly lower price than previously available. This arrangement will also allow nations with overages to turn idle assets into productive incomes. SICOFAA contributed to this global initiative by demonstrating that cooperation among nations can yield benefits greater than the sum of the individual contributions.

From its humble beginnings, SICOFAA has grown into a vibrant organization with great potential for future growth. All member nations have a vital stake in this future. Regardless of the undertaking, corollary benefits will certainly include confidence building and increased trust. The value of this is immeasurable, for what price can be placed on regional stability? How much is it worth to minimize the risk of crisis for a nascent democracy?

US Secretary of Defense William Perry proposed that nations have three lines of defense: the first and most effective is to prevent threats from emerging; the second is to deter threats that do emerge; and the third is direct military intervention. I would suggest that in the Americas we have been pursuing the first line of defense for more than 30 years. As if to validate Secretary Perry's construct, our peacetime engagement initiatives under SICOFAA have contributed to peace, prosperity, and democracy throughout the Americas. I would also contend that the most basic mission of a professional soldier is to maintain the peace. Providing a defensive front line that focuses on multinational cooperation epitomizes that mission. It is this philosophy that is embodied within SICOFAA. □



# The Air National Guard Past, Present, and Future Prospects

DR CHARLES J. GROSS

**S**MSGT ROBERT MYCO crawls under the A-10 at the end of the foreign runway, carefully performing a last-minute inspection. He looks for cuts in the tires, gas or oil leaks, and exterior panels that have not been properly secured. Weapons personnel remove safety devices from the aircraft's missiles, and the pilot is ready to launch. Myco signals thumbs up and salutes as the A-10 taxis to the runway.

A very long day later and 6,000 miles to the west, Myco wanders through the familiar base hangar where he has worked for 40 years. Glancing at his watch—it is 3:30 A.M. local time—Myco realizes that he only has a few hours before he has to be ready for work. The Westfield, Massachusetts, school system is introducing its new superinten-

dent. As a high school guidance counselor, Myco cannot afford to be late.

Like other members of the 104th Fighter Wing of the Massachusetts Air National Guard (ANG), Bob Myco had just spent part of his summer vacation launching aircraft from Aviano Air Base, Italy, on peacekeeping and combat missions over Bosnia during Operations Deny Flight and Deliberate Force. His unit had deployed to Italy between 8 August and 14 October 1995. Myco's experience is becoming increasingly common for the men and women of the ANG. Throughout most of its history, America has relied on its citizen-soldiers. Due to large military cutbacks following the cold war's end and continuing responsibilities as a global superpower, the US is once again placing greater reliance on citizen-soldiers like Myco. His recent experi-

ence provides an opportunity to examine the Guard's current roles, history, and future plans as the Air Force and the ANG celebrate their 50th anniversary together.<sup>1</sup>

Guardsmen have a unique dual state-federal status grounded in the Constitution and America's system of divided political power between the states and the federal government. In peacetime, their commander in chief is the governor of their state or territory. The primary state missions of Guard members are to help deal with natural disasters and to restore law and order when civil authorities are unable to do so. If they volunteer or are mobilized for federal service, the president becomes their commander in chief. Air Guard members provide the federal government with a large, well-trained force equipped with modern weapons held in a high state of readiness for global military operations. Guard members can be maintained at a substantially reduced cost when not on active duty for several reasons. Historically, 75 percent are part-time airmen. Their units are mainly supplied with surplus Air Force weapons systems and are usually based at civilian airports and other relatively austere locations outside active-force bases. ANG units normally operate at a lower tempo than USAF units.

During peacetime, governors delegate the day-to-day responsibilities of operating Guard organizations to their adjutants general. The majority of them are Army National Guard major generals appointed by the governors. The federal role of the Guard is administered by the National Guard Bureau (NGB) in the Pentagon, a joint organization of the Departments of the Army and Air Force. The NGB formulates and administers programs for the maintenance of Army and Air Guard units. It also serves as a channel of communications for the 54 states, territories, and the District of Columbia and the Army and the Air Force. The chief of the NGB is a lieutenant general appointed by the president. He supervises the ANG director, an Air Guard major general, who is also a member of the Air Staff and works directly with the Air Force chief

of staff. Although the ANG director does not have command authority over ANG units, he controls Air Guard programs and funding through the governors and adjutants general.

The ANG is a large, community-based organization. In June 1996, it had over 108,600 military personnel assigned to 91 flying organizations and 1,550 mission support units. Air Guard units belong to every state, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands. The Air Guard operated approximately 1,180 primary authorized aircraft (PAA) as of 30 September 1996—a significant reduction from the 1,505 PAA in its inventory five years earlier. During that same period, the ANG's force structure changed dramatically, shifting from a predominantly fighter-attack-reconnaissance (FAR) force to one that was almost evenly balanced between FAR and large aircraft units. From 1991 to 1996, the Air Guard's tanker force grew from 128 to 204. Tactical air support aircraft dropped from 54 to 28. Heavy bombers entered the inventory for the first time in 1994, with 12 B-1Bs programmed by the end of fiscal year (FY) 1996. Air defense interceptors dropped from 234 to 166. General-purpose fighters declined from 730 to 487, while dedicated reconnaissance aircraft left the inventory altogether. Rescue aircraft increased from 24 to 25, while special operations aircraft remained unchanged at six. Strategic airlifters grew from 19 to 29, while tactical airlifters increased from 184 to 204.<sup>2</sup>

The ANG contributes a growing portion of the Air Force's total flying capabilities in 1996 as the active duty establishment continues to shrink. It has 32.6 percent of the fighters, 100 percent of the interceptors, 22.6 percent of the tactical air support, 43.9 percent of tactical airlift, 43.2 percent of the KC-135 air refueling, 27.5 percent of the rescue, and 8.3 percent of the strategic airlift—as measured by PAA. In nonflying mission support, Air Guard contributions include 100 percent of the aircraft control and warning and 49 percent of the civil engineering capabilities.<sup>3</sup>



Americans have relied primarily on citizen-soldiers of the militia (later National Guard), wartime volunteers, and, in the twentieth century, the reserve components of the active forces to defend them during most of their history. Prior to the twentieth century, active duty military forces have been very small except during major conflicts such as the American Revolution and the Civil War. Citizen-soldiers did most of the nation's fighting and dying. With that basic military system intact, America won its independence, acquired a vast continental domain, survived the horrible Civil War, and acquired an overseas empire. Although this military arrangement was hardly characterized by military effectiveness at the onset of this nation's military conflicts, Americans believed the arrangement was cost-effective, supportive of their political institutions, and consistent with their cultural values. Large standing forces were considered unnecessary, overly expensive, and a threat to liberty by most Americans before World War II. It took a global crusade against the Axis powers and the cold war to change public opinion about the necessity of relying on large peacetime standing forces.

The ANG celebrates 18 September 1947 as its birthday. On that date, the National Security Act of 1947 created it as a separate reserve component of the new US Air Force. But National Guard aviation was already well established. It began informally in April 1908 when a group of aeronautical enthusiasts in the New York National Guard organized an "aeronautical corps" to learn ballooning. On 1 November 1915, Capt Raynal Cawthorne Bolling organized what became the First Aero Company. It was the Guard's first real aviation unit. It was called into federal service on 13 July 1916 during the Mexican border crisis. Instead of active service in the southwest, it stayed at Mineola, N.Y., to train.<sup>4</sup>

Little was accomplished at Mineola, convincing Bolling that aviation would never be practical in the National Guard.<sup>5</sup> The War Department agreed and decided Guard aviation units would not be mobilized during World

War I. Instead, individual guardsmen were encouraged to volunteer as individuals for aviation duty.<sup>6</sup> During the war, many guardsmen served as aviators. At least four of them became aces, and one, 2d Lt Erwin R. Bleckley, a Kansas guardsman, was awarded the Congressional Medal of Honor posthumously.<sup>7</sup>

Initially, the War Department and the Army Air Service did not plan to organize National Guard aviation units after World War I. However, the Guard had developed an intense interest in flying. Political lobbying on its behalf in Washington, D.C., plus the availability of large stocks of surplus World War I aircraft caused the War Department to change its position. Early in 1920, the Militia Bureau and the Air Service agreed on a plan for organizing National Guard air units. That action placed Guard aviation on a permanent footing.

During the interwar period, 29 observation squadrons were established. Those units were either integral elements of National Guard infantry divisions or assigned to corps aviation. They attracted skilled pilots like Charles A. Lindbergh of Missouri's 110th Observation Squadron. But the observation mission was relegated to the margins of Air Corps thinking and resource allocations in the 1930s as the latter's emphasis shifted toward independent air missions, especially strategic bombing.

In 1940, National Guard observation squadrons were mobilized as nondivisional formations and absorbed into the Army Air Forces (AAF). Approximately 4,800 trained National Guard aviation personnel were mobilized. While those units retained their numerical designations, all but a few that deployed overseas in 1942 lost their character as Guard organizations. Units exchanged their obsolete equipment for modern fighters, bombers, and reconnaissance planes. The rapidly expanding AAF used most of its key people to help organize and train new units. Guard units and individual Guard aviators served in combat in every major combat theater during the war. Their operational leadership

role was epitomized by Lt Col Addison E. Baker, an Ohio guardsman. He was posthumously awarded the Medal of Honor for leading his B-24 unit during the ill-fated attack upon Ploesti, Rumania, on 1 August 1943.<sup>8</sup>

The ANG as we know it today—as a separate reserve component of the USAF—was primarily a product of politics during World War II. The men who fought for an independent postwar Air Force during that conflict did not place much faith in the Reserves, especially the state-dominated National Guard. They were determined to build the largest and most modern standing force possible. AAF leaders were convinced that citizen-airmen could not operate complex modern weapons without extensive postmobilization training. But domestic politics forced them to change their plans. Determined not to be excluded from the postwar US military establishment, the National Guard Association of the United States (NGAUS) flexed its considerable political influence during World War II. It compelled the War Department to retain it as the nation's primary reserve force once the war was over. Gen George C. Marshall, the Army chief of staff, believed that citizen-soldiers, not a large professional force, would be the basis of the postwar military establishment. To support Marshall and avoid a political fight with the NGAUS that might weaken their case for a separate postwar Air Force, AAF leaders agreed to the creation of the ANG largely as a matter of political expediency.<sup>9</sup>

Consequently, despite its professional judgment, the Air Force found itself responsible for a dual-component reserve system that included the ANG and the Air Force Reserve (AFRES). The ANG would be manned by some 58,000 personnel. Its primary units would be 84 flying units (72 fighter and 12 light bomber squadrons). There was little trust and understanding between the active duty USAF and the ANG. Although the ANG looked good on paper, one Air Force general referred to it as "flyable storage." The USAF and the NGB spent the late 1940s fighting

over who was in charge when units were not mobilized for federal service.<sup>10</sup>

The Korean War was a turning point for the Air Guard. Some 45,000 air guardsmen, 80 percent of the force, were mobilized. That call-up exposed the glaring weaknesses of the ANG. Before the war, it had been a glorified flying club for World War II combat veterans. Once mobilized, they proved to be almost totally unprepared for combat. Guard units were assigned almost at random to active duty, regardless of their previous training and equipment. Many key air guardsmen were stripped away from their units and used as fillers elsewhere in the Air Force. It took months for them to become combat-ready. Eventually, the recalled guardsmen contributed substantially to the air war in Korea and to the USAF's global buildup for the expected military confrontation with the Soviet Union. Four air guardsmen became jet aces and six ANG fighter squadrons flew combat missions in the Far East. However, the initial fiasco forced the Air Force to achieve an accommodation with the Air Guard and to thoroughly revamp its entire reserve system.<sup>11</sup>

Congress also played a key role in placing reserve programs on a sound footing. Capitol Hill was much more willing than either the Department of Defense or the military services to fund the reserves properly. Moreover, beginning with the passage of the Armed Forces Reserve Act of 1952, a series of key laws eliminated most of the old inequities and fostered the development of more effective reserve components. An obscure provision of the 1952 legislation permitted guardsmen and reservists to volunteer for active service. "Volunteerism" enabled individuals and segments of units to integrate into active Air Force peacetime missions such as air defense runway alert and airlift. It also enabled the Air Force to employ a "silent call-up option" without forcing the president to resort to a politically risky mobilization.<sup>12</sup>

The ANG led the way in developing new approaches to reserve training and manage-

ment. Blessed with innovative leaders like Maj Gen Winston P. ("Wimpy") Wilson and with a strong political base in the states, the ANG traded some of its autonomy as a state-federal force for closer integration with the active duty Air Force. Wilson was the single most important officer in the ANG's history. Mobilized from Arkansas in 1950 for the Korean War, he expected to be in Washington, D.C., for 21 months. Instead, he remained for 21 years. Wilson headed the ANG from 1954 to 1962 and then became the first air guardsman to be NGB chief on a permanent basis from 1963 to 1971. He recognized that the Air Guard faced a dim future unless it acquired definite wartime missions, was integrated into Air Force missions on a daily basis, and met the same tough training standards as the active force. The Air Guard also needed more full-time manning. It had to be ready for combat the moment it was called into federal service. Finally, Wilson fought hard to acquire modern aircraft and facilities.<sup>13</sup>

During Wilson's watch, the Air Guard also began to change from a predominantly fighter-oriented organization to one that included some airlifters and tankers. In the mid-1950s, the Guard began lobbying to enter the strategic airlift arena because it feared that the days of some of its fighter interceptor units were numbered. Starting in 1955, it obtained several units equipped for special operations and then aeromedical airlift. In the early 1960s, strategic airlifters and tankers replaced additional fighters despite Air Force skepticism that air guardsmen could not properly operate large aircraft.<sup>14</sup>

Pushed by its reserve components and their political supporters, the Air Force adopted several management and training innovations after the Korean War that promoted the evolution of combat-ready reserve forces. The four most significant policy innovations were (1) including the air reserve components in war plans, (2) the ANG's participation in the air defense runway alert program, (3) the gaining command concept of reserve forces

management, and (4) the selected reserve force program.

Beginning in 1951, the Air Force established specific mobilization requirements for the Air Guard in its war plans for the first time. The ANG would train against those requirements and plans for the first time. ANG leaders proposed the air defense runway alert program as a way to combine realistic training and support of a significant combat mission in peacetime. Beginning on an experimental basis in 1953, it involved two fighter squadrons standing alert during daylight hours only. Despite initial Air Staff resistance, the experiment was successful. The runway alert program was the first broad effort to integrate Reserve units into the regular peacetime operating structure of the American armed forces on a continuing basis. It established a firm precedent for the total force policy by integrating the ANG into the daily operations of the active force.

The third major innovation—the gaining-command concept of reserve forces management—meant that the major air command responsible for using a Guard or Reserve unit in wartime would actually train it during peacetime. ANG leaders had pressed for that arrangement for years. However, the active duty Air Force had strongly resisted the change. The concept was grudgingly adopted in 1960 because of budget cuts and public criticism of the air reserve programs by Gen Curtis E. LeMay. It improved the effectiveness of ANG units by giving Air Force commanders direct personal incentives for improving the performance of those organizations.

The fourth major policy innovation—the selected reserve force program—reflected Secretary of Defense Robert S. McNamara's determination to build an elite force of highly capable Reserve units ready for rapid global deployment to replace the existing massive World War II-style mobilization force that required additional equipment, manpower, and training before becoming combat-ready. McNamara attempted to shrink America's large reserve establishment and merge the

National Guard with the purely federal reserve components. An effort to merge them after World War II had been blocked by the Congress. It failed again in the early 1960s. McNamara then created a selected reserve force in each of the military services. They had priority access to equipment, could recruit to full wartime strength, and were allowed to conduct additional training each year.

During the 1960s, the air reserve components began to demonstrate the fruits of those policy innovations. In 1961, President Kennedy activated a limited number of Reserve and Guard units during the Berlin crisis. In a show of American resolve, the president dispatched 11 ANG fighter squadrons to Europe. Although they required significant additional training after they were called into federal service, all of those Guard units were in place overseas within one month of mobilization. By contrast, mobilization and overseas deployment during the Korean War had taken ANG units at least seven months. Some 21,000 air guardsmen were mobilized during the Berlin crisis. During the Berlin call-ups, reliance on second-rate equipment continued to plague the ANG, and, privately, senior Air Force officers doubted whether it had been worth the effort to prepare the mobilized ANG units for combat.

In January 1968, President Lyndon Johnson mobilized naval and air reservists following the North Korean seizure of the USS *Pueblo*. More reservists were called into federal service following the February 1968 Tet offensive in Vietnam. Although most of the reservists were used to strengthen America's depleted strategic reserve force, five ANG fighter squadrons were dispatched to Vietnam and performed extremely well. They had benefited from Secretary McNamara's selected reserve force program. But two ANG units deployed to South Korea in 1968 had a spotty record. Their own support organizations had been stripped from them in the US, and there was no logistical structure in place to support their F-100s when they arrived in South Korea. Approximately 10,600

air guardsmen were called into federal service in 1968. Meanwhile, unnoticed by the public and the media, Air Guard volunteers had flown airlift missions to Southeast Asia from 1965 until 1972. Between July 1970 and January 1971, Guard volunteers from Pennsylvania's 193d Tactical Electronic Warfare Squadron flew airborne warning and control missions from Thailand.

Vietnam also revealed a negative aspect of relying on reservists. For largely domestic political reasons, President Johnson chose not to mobilize most of the nation's reserve forces. The 1968 call-ups were only token affairs. Johnson's decision to avoid a major reserve mobilization had been opposed by the senior leadership of both the active duty military establishment and the reserve forces. The Reserves and the Guard acquired reputations as draft havens for relatively affluent young white men. Military leaders questioned the wisdom of depending on reserve forces that might not be available except in dire emergencies.

Today, reserve forces planning and policy-making within the Defense Department is governed by the total force policy. Based largely on the Air Force's experience with its own reserve components, the total force concept was adopted by Secretary of Defense Melvin Laird in 1970. It sought to strengthen and rebuild public confidence in the Reserves while saving money by reducing the size of the active force. Those objectives emerged from America's disenchantment with the Vietnam War. In practical terms, the total force policy sought to ensure that all policy-making, planning, programming, and budgetary activities within the DOD considered active and reserve forces concurrently. Its ambitious objective was to determine the most efficient mix of those forces in terms of costs versus contributions to national security. The policy also committed the nation to use reservists and guardsmen as the first and primary source of manpower to augment the active duty forces in any future crisis. The total force concept was developed by Dr

Theodore Marrs, an avid former air guardsman and reservist, who served as a high-ranking civilian official in the Air Force and the Defense Department in the early 1970s.

During the 1980s, changes in the Air Guard were driven by President Ronald Reagan's military buildup and the need to prepare for a possible war between NATO and the Warsaw Pact in central Europe. The ANG focused on modernization, increased readiness, and personnel growth primarily in nonflying, mission-support units.

The Air Guard showed the benefits of the total force policy and the generous defense budgets of the Reagan era during Operation Just Cause, the invasion of Panama in December 1989. Air guardsmen were ready for immediate duty when called upon. They flew close-air-support, airlift, and special operations missions. Avoiding formal partial mobilizations, the ANG relied on volunteers and members already on active duty to support the Air Force during that contingency.

At the outset of Operation Desert Shield, the US military response to Iraq's invasion of Kuwait in August 1990, the Air Force was swamped when it turned to its reserve components for volunteers. Before President George Bush mobilized reservists and guardsmen on 22 August 1990, nearly 1,300 air guardsmen had actually entered active duty as volunteers. Initially, most of them concentrated on airlift and tanker operations. The early surge of volunteers helped the Air Force meet its operational commitments without forcing President Bush to announce a premature reserve mobilization.

Approximately 10,300 air guardsmen were mobilized with their units during the Persian Gulf crisis. They were rapidly integrated into most of the Air Force's operational missions. They flew airlift and aerial refueling sorties and manned aerial ports. Guardsmen flew attack, aerial reconnaissance, and tactical airlift missions. But the mobilization process also revealed some problems. Volunteerism stripped some units of badly needed personnel when those units were mobilized later.

Relatively few outfits were mobilized as units. Instead, the gaining commands called up either individuals or tailored packages. The latter generally stripped away critical support personnel. It disrupted the mobilization and deployment process, causing units to complain that many people who had trained together in peacetime were now being left behind when the crunch came.<sup>15</sup>

The ANG's historic day-to-day federal mission has been to train for contingencies or war. Beginning with the runway alert program in 1953, expanding to airlift later in that decade, and then with Operation Creek Party (the tanker rotation in Germany from 1967 to 1977), it provided operational support to the Air Force as a by-product of training. But the downsizing of the active force along with its increased peacetime operational requirements since the cold war's end is "de-facto altering the peacetime mission of the Air Guard, and training is becoming a by-product of operations."<sup>16</sup> According to Maj Gen Donald W. Shepperd, ANG director, the lives of Guard members have changed dramatically. He emphasizes that

we used to stay home and train. We still do, but we have taken on new roles. In addition to homestation training, we deploy overseas for training. In the old days, five overseas training deployments was a heavy year. This year we did twenty. In addition we take regular rotations to hot spots all over the world in support of our Active duty Air Force. In the old days our Active Air Force was big enough to handle all but the largest of contingencies. Now, we are immediately called upon to supply major portions of our strategic airlift and tankers for even small contingencies. Our average aircrew participates 110-120 days per year with the Guard, our average support personnel 60-80.<sup>17</sup>

Since the Gulf War, the Air Guard has been heavily involved in "real world" operations overseas. ANG volunteers have provided continuing theater airlift for US Southern Command; helped protect Kurds in northern Iraq and Shiites in the southern part of that nation; participated in humanitarian relief for Rwanda,

Somalia, and Bosnia; helped to restore a democratically elected president in Haiti; enforced the Bosnia no-fly zone; and participated in NATO's Bosnian peacekeeping operations. In addition, air guardsmen are playing a major role in the US drug interdiction program in the Caribbean, manning several ground radar sites in the region and conducting airborne intercepts of suspected drug-smuggling aircraft. The essential organizing pattern for these operations has been for the ANG to respond to active force requests for assistance by tailoring packages of personnel and equipment that provide the required capabilities. The Guard organized and managed its own resources. The NGB and the Air National Guard Readiness Center (ANGRC), working with the states and units, designated which ones would develop packages for an operation and how they rotated their people on deployments. For example, during its stint at Aviano Air Base from 8 August to 14 October 1995, SMSgt Myco's 104th Fighter Wing deployed a total of 509 guardsmen and 12 A-10 aircraft. But only approximately 200 personnel were there at any given time. By rotating personnel every 15 to 18 days, traditional guardsmen were able to get time off from their civilian employers.

In the early 1990s, the ANG's senior Pentagon leadership began reshaping their reserve component for the post-cold-war era. In a series of give-and-take discussions with senior Air Force leaders, ANG long-range planners, and the states, they developed a strategic vision for the future. While reducing active-force flying units, the Air Force wanted to retain as many combat-ready ANG and AFRES flying squadrons as possible as a cost-effective way to maintain force structure. The ANG's core fighter force was bound to shrink dramatically as the USAF reduced to 22 or less tactical fighter wing equivalents. To preserve its flying units, the ANG would aggressively seek alternative missions for some, reduce their number of assigned aircraft, combine similar units at the same location, and, as a last resort, close down units.

Airlift, tankers, and bombers appeared to offer some opportunities for growth in the Air Guard. Furthermore, the senior leadership would aggressively seek out new missions like space for some of the Air Guard's nonflying units. During this process, the Air Guard expected to maintain a high level of readiness.

The decision to maintain the ANG's flying units had an especially dramatic impact on their size, especially in the fighter community. Fighter unit PAA declined dramatically, first from 24 and 18 to 15 PAA. The Clinton administration's FY 1996 budget would have reduced it to 12 PAA, but Congress added enough funds to keep it at 15 and save the jobs tied to the proposed cuts. In the spring of 1997, General Shepperd told Congress that he planned to reduce fighter units to 12 aircraft each because there was not enough money in the administration's FY 1997 budget to support 15. He decided to reduce the size of each squadron rather than eliminate some squadrons to save money. According to a press account, General Shepperd was "betting that a major review of U.S. military force structure and budgets next year will prompt the Defense Department to shift planes and dollars from the active-duty Air Force to the Air Guard."<sup>18</sup>

The sweeping political, military, and technological changes of the post-cold-war era have produced their share of problems for the Air Guard. It has become more difficult for ANG units to maintain their programmed end strengths. Unit commanders worry that the increased demands placed on their predominately part-time force will discourage potential recruits and undermine retention. Some smaller employers were increasingly reluctant to release Guard members for active duty beyond their normal annual training requirements. As the active force grew smaller, there were fewer and fewer trained personnel available for ANG units to recruit. General Shepperd stressed that

recruiting and retaining people is increasingly difficult. Although we have an adequate recruiting population, uncertainty about future

military cuts, coupled with the effects of previously announced force structure initiatives, have combined to produce a conservative, cautious recruiting environment in many Guard communities.<sup>19</sup>

Diversity is another challenge. Women and minorities have made impressive statistical gains in the ANG since the end of active US military involvement in the Vietnam War in 1973. Prior to that, the organization had been basically a white males' club. By 30 September 1994, 13.8 percent of the Air Guard's assigned personnel were females. At the same time, about 17 percent of the force were minorities. Demographers project that by the year 2025 some 40 percent of the US civilian workforce will be women and minorities. The ANG will have to recruit heavily from that workforce to remain viable. Except for significant numbers of enlisted females in aircraft maintenance, women and minorities continued to enjoy limited representation in key operational and engineering specialties that provide the greatest opportunities for promotion and assignment to senior Air Guard leadership positions.

The Air Guard's continued ability to provide properly equipped units depends heavily on equipment modernization. Congressional support through the separately funded Guard and Reserve equipment account and equipment transfers from the active force help maintain interoperability with modern Air Force systems. With its airlift fleet increasingly called upon to operate regularly in dangerous areas around the world, the ANG supports Air Force efforts to equip those aircraft with defensive systems. Congressional initiatives have also allowed the ANG to complete the replacement of 1950s-vintage C-130B models with modern C-130H aircraft. For night operations, the ANG is working with Air Combat Command to test low-cost, off-the-shelf equipment that will allow its A-10s, F-15s, and F-16s to be more effective night fighters. The first step was to upgrade its A-10 fleet. In 1995, Sergeant Myco's 104th Fighter Wing became the first ANG unit to use

night-vision goggles in combat. In March 1995, the Air Guard also began developing a manned tactical reconnaissance capability to replace RF-4Cs that were being retired from its aircraft inventory. The 192d Fighter Wing at Richmond, Virginia, developed the concept and established an initial operational capability. In May 1996, the unit deployed aircraft, pods, and personnel to Italy to support NATO troops in Bosnia.<sup>20</sup>

With the twenty-first century fast approaching, the ANG is also acquiring new missions. B-1B bombers equipped for conventional missions have entered the ANG inventory in Kansas and Georgia. After several years of struggle to obtain a toehold in the increasingly critical space mission, the ANG activated a mobile ground station at Greeley, Colorado, in January 1996.

By the end of FY 1997, the ANG will assume total responsibility for all of First Air Force including its regional operational control centers and its sector operations control center. First Air Force is responsible for maintaining the air sovereignty of the continental United States and providing for its air defense. Since FY 1991, all of First Air Force's manned interceptor aircraft have been provided by ANG units. Over recent decades, that force has been dramatically reduced. It now consists of 20 ANG fighters at 10 alert locations. But dedicated air sovereignty/air defense interceptor units have been attacked as unnecessary and too expensive because of the absence of a highly visible threat to US security with the demise of the Soviet Union. Critics suggest that the mission could be performed by elements of general-purpose fighter units of the active duty services and the ANG. Defenders counter that every nation must maintain air sovereignty, controlling who enters its airspace. They maintain that dedicated units are the most cost-effective way to do that.<sup>21</sup>

Peering 15 to 20 years ahead, the ANG's long-range planners suggest that it "must move away from cold war posturing and paradigms if it is to continue to play a major role in national defense. . . . [And] funds available for

defense will remain low as compared to the cold war era. Consequently, it is likely that the US will have a small active military force and a comparatively large but reduced reserve force."<sup>22</sup> They assume that the Air Guard of the next century will be involved in most, if not all, Air Force mission areas. Only the smallest contingencies will be executed without reserve forces. Both active and reserve forces will be high tech, well equipped, well trained, and ready to meet threats to our interests wherever they occur. The planners have concluded that such current mission areas as continental air defense, general-purpose fighters, and combat communications may decline. On the other hand, they are convinced that the requirement for aerial tankers and airlift will increase. Such emerging missions as space operations, information warfare, and unmanned aerial vehicles will present significant new opportunities for the Air Guard. They also predict that the state missions of the Air Guard will probably increase in importance.

The planners are aware of the potential pitfalls that the Air Guard faces in the long term. They caution that "participation in nontraditional missions, such as counter-drug and youth opportunity programs will likely continue to demand a significant portion of members' time and units' resources, thus challenging their ability to balance readiness requirements with community concerns."<sup>23</sup> Demographic changes in the US population will pose a major recruiting challenge. Consequently, training requirements will increase. A smaller active force will provide a reduced pool of prior-service personnel, further intensifying the ANG's training burden. As the number of active duty military installations in the US declines, citizens may lose touch with the armed forces and have less appreciation of the need to maintain a strong defense posture. The Guard also expects that "increased environmental concern is likely to complicate this issue by restricting airspace and inhibiting

basing of Air Guard flying units in urban and other environmentally sensitive areas."<sup>24</sup>

*Cyberguard* is the term General Shepperd coined to embrace all actions that the Air Guard is taking to prepare for the twenty-first century. It means more than just greater reliance on computers. He has stressed that "almost everything that we have learned to do for the 20th century will require us to change about 180 degrees for the 21st century. For instance, we are a functional organization. . . . That will be gone in the 21st century. We will have flat organizations made up mainly of teams. . . . So it is mainly changing from a functional to a teaming organization."<sup>25</sup> It includes the way the ANG is organized, the way it functions, the people it recruits, the equipment it uses, a fiber-optic network linking units, and distance learning. The ANG's headquarters organization was reorganized and streamlined beginning in 1995 by combining the NGB's Air Directorate and the ANGRC into one organization. In addition, the process of streamlining state headquarters' organizations was begun. General Shepperd also plans to cut 14,000 positions, about 12 percent of the Air Guard, between 1993 and 2001.<sup>26</sup> He stressed that those organizational and technological changes would position us for "rapid decision-making, communication, training, and education [in the twenty-first century]."<sup>27</sup>

As the Air Force and the ANG celebrate their 50th anniversary together, the relationship has changed fundamentally. It is no longer a shotgun marriage of political expediency. The ANG has evolved from a poorly prepared and unwanted "flying club" after World War II into a valued reserve component of the active force. Today, its volunteers are heavily involved in "real world" operations around the globe virtually every day of the year. During July 1996 alone, nearly 8,000 air guardsmen and 426 ANG aircraft were deployed away from their home stations. Driven by the need to achieve substantial additional cuts in defense spending because of the necessity to balance the federal budget



while supporting a strong post-cold-war global role for the US, the Air Force will probably place greater responsibility for its missions in the Air Guard. To accomplish that, the ANG must continue to receive modern equipment, significant peacetime missions, and realistic training as well as integration in active force plans and budgets. The ANG is posturing itself for the twenty-first century through Cyberguard and long-range planning initiatives.

Just as militiamen answered the call to duty at Lexington and Concord, so did Sgt Bob Myco in 1995. Since the beginnings of the

English colonies in North America in the seventeenth century, we have relied on patriotic citizen-soldiers like him. With the cold war's end and military downsizing, it appears that the US will be placing much more responsibility on the shoulders of its part-time warriors. As Myco prepared to meet the Westfield, Massachusetts, school superintendent, he had to change gears. "Instead of dealing with maintenance inspections and watching pilots fly off into combat, he must prepare himself for counseling students. . . . This is the life [of] a typical citizen-soldier."<sup>28</sup> □

#### Notes

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5. Henry Greenleaf Pearson, *A Business Man In Uniform: Raynal Cawthorne Bolling* (New York: Duffield & Co., 1923), 76-77, 78, 80, 82-84.
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14. Charles J. Gross, "A History of Air National Guard Air Mobility Missions," undated, 4-9.
15. Gross, *American Military Tradition*, 84-100, 113-33, 141-61.
16. Gross, *American Military Tradition*, 87-117; ANG Long Range Planners, paper, subject: "Traditional Character of the Air National Guard," 9 January 1995.
17. "FY 1997 Air National Guard Program," statement of Maj Gen Donald W. Shepperd, USAF, ANG director, to the Subcommittee on Readiness, Senate Committee on Armed Forces, 104th Cong., 2d sess., March 1996, 1-2.
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19. Maj Gen Donald W. Shepperd, ANG director, interview with author, 12 June 1996, at the Air National Guard Readiness Center (ANGRC), Andrews AFB, Maryland; Shepperd, "FY 97 ANG Program," 10; Charles J. Gross, notes taken at the ANG Long Range Planning Steering Committee Meeting, 30 May 1996, at NSA, Alexandria, Virginia, 6.
20. Shepperd, "FY 97 ANG Program," 2-4, 7; ANG/XO, "ANG Director's Weekly Update Briefing, 12 June 1996," 10; Cangemi, 24.
21. Shepperd, "FY 97 ANG Program," 6-7; Shepperd interview, 3-4; Maj Chris Pope, NGB-XO, interview with author concerning the ANG role in space, 2 June 1995; news clips from the *Greeley (Colo.) Tribune*, 21 January 1996; history, *Air National Guard, 1992-1994*, 59-69.
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# Origins of Airpower

## Hap Arnold's Early Career in Aviation Technology, 1903–1935

MAJ DIK DASO, USAF



HENRY HARLEY ("Hap") Arnold was not supposed to enter the Army.<sup>1</sup> His older brother, Thomas, was to attend West Point and continue the Arnold family

tradition of American military service that began during the War for Independence. Henry Harley, Hap's namesake and great-great-

grandfather, had been a private in the Pennsylvania militia. Another relative, Peter Arnold, fought with Gen George Washington's army. Thomas G. Arnold, his grandfather, had been a nail maker who fought at the Battle of Gettysburg during the Civil War. Herbert, Henry's father, had been a physician during the Spanish-American War, serving in Puerto Rico in 1898. Despite the military

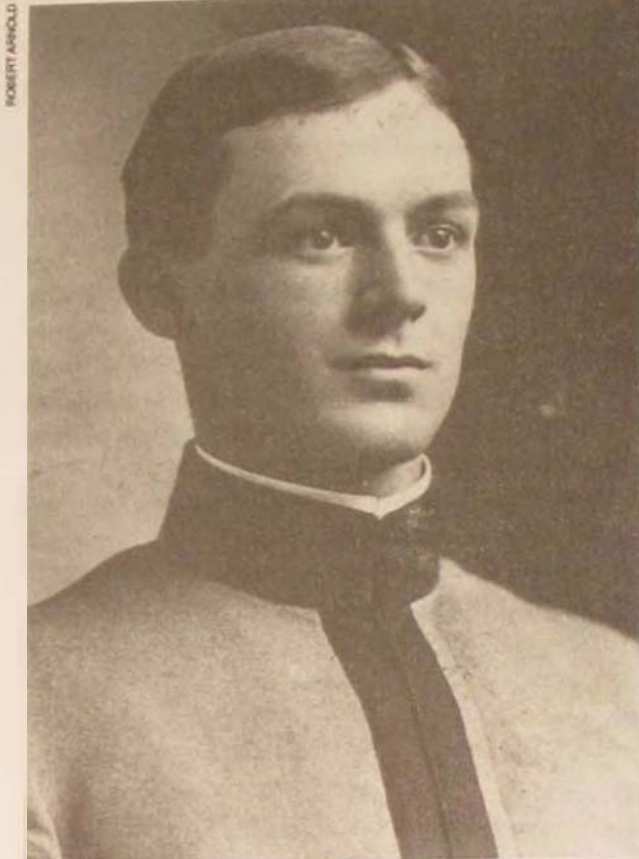
legacy, and after attending Penn State during the year prior to the West Point admission tests, Thomas rejected his parents' persistent urging to attend West Point. So Henry Arnold, then called Harley, inherited the opportunity to carry on the family's military heritage, which he did with great distinction.<sup>2</sup>

Cadet Arnold entered the Military Academy in 1903, the same year the Wright Brothers flew at Kitty Hawk, North Carolina. However, horses, not airplanes, were his first love. He, along with many West Pointers in the class of 1907, yearned for a cavalry assignment. The dashing uniforms, the thunder of the charge, and the perceived class distinction between cavalry and every other branch of the Army, except the Engineering Corps, did not escape observation by members of the Corps of Cadets.<sup>3</sup> One of the youngest ever admitted to West Point at 17 years and one month, Arnold found a niche at the tradition-laden institution. He became a founding member, and eventually the leader, of the "Black Hand." This covert spirit squad was responsible for many of the most spectacular student pranks ever accomplished in West Point's history. Harley, called "Pewt" and "Benny" by his friends, had a fiery tongue and was frequently late for class. He earned far fewer demerits, however, than most classmates during his first three years at the Point (table 1). While leading the legendary Black Hand during his first class year, he amassed over one hundred "ticks" (demerits), nearly double his previous high for a class year, but still less than many of his friends. His future wife, Eleanor ("Bee") Pool, recalled that her first visit with Harley at the Point was through the window of his room. He had been confined to quarters for a disciplinary infraction.<sup>4</sup>

Arnold also channeled his spirit into sports. He saw frequent playing time as a second-string varsity football running back, put the shot for his class track and field team, and excelled at polo. Academically, Harley had an uncanny memory. He "specked" (memorized) several pages of logarithmic tables, which, although impressive, did not raise his

final class standing any higher than 66 out of 111. His standing would have been much higher had it not been for a generally high number of military discipline marks. Cadet Arnold's last weeks at the Military Academy were perhaps typical for the soon-to-be lieutenant. During cavalry drill (cadets still rode horses regularly in those days), Arnold was given demerits for chewing tobacco during formation, an act strictly forbidden. Not only did this infraction keep him from many of the graduation festivities, but some believed that it provided the necessary leverage for the authorities in charge of graduation assignments to issue Arnold a ticket straight into the infantry. The cavalry, Arnold wrote, was "the last romantic thing left on earth."<sup>5</sup> His graduation standing was too low for engineering school and after a brief but high-powered struggle, arranged by his father and fought by the new lieutenant against his congressman, his senator, and the adjutant general of the Army, he accepted his commission and assignment as an infantryman. In later reflection, his wife, Bee, summarized the situation: "Those with brains got the engineers, but I don't think that Hap was the engineering type at all."<sup>6</sup>

Lieutenant Arnold "volunteered" for an assignment in the Philippine Islands. For the next two years, he worked hand in hand with engineering corpsmen mapping various islands. In 1909, his unit was transferred to Fort Jay on Governors Island, New York. There Arnold became aware of the airplane as more than just a curiosity. Although he had seen the Bleriot airplane briefly while in France on his round-about return from the Philippines, both the Wright Flyer, purchased in 1908 by the Army, and a Glenn Curtiss machine landed at Governors Island during his tour. Still trying to escape the infantry, Lieutenant Arnold took the entrance tests for the Ordnance Department, which held the most promise for early promotion (the lowest rank allowed in this department was first lieutenant). While waiting for the results of the exams, Arnold received a letter from the War Department which offered him the op-



Pewt Arnold, West Point sophomore, 1905

portunity of a lifetime—the chance to learn how to fly.<sup>7</sup>

Against the advice of his commander, but recognizing an opportunity to free himself from infantry ties, he accepted orders for flight instruction. Arnold recalled his commanding officer's warning, "Young man, I know of no better way for a person to commit suicide!"<sup>8</sup> The young second lieutenant considered those words a challenge. By April 1911, Arnold was in Dayton, Ohio, to begin flying lessons at Simms Station, the home of the Wright Brothers' flying school. Arnold joined Lt Thomas DeWitt ("Tommy") Milling for an introduction given by the Wrights to the flying machine. Arnold and Milling together spent hours learning how the delicate machine was assembled, disassembled, greased, tightened, and repaired. Sharing the experience of becoming new aviators, the two

young lieutenants developed a fast friendship. Arnold was grateful for the time spent in the factory because, although the Army had decided to train pilots, it had not begun training mechanics or crew chiefs. In 1911, every pilot was also a mechanic of sorts.

Orville and Wilbur Wright normally taught these ground lessons personally, but Lieutenant Arnold's flight instructor was a Wright employee named Al Welsh. In fact, it does not appear that Arnold ever took a flying lesson with Orville or Wilbur Wright. Between 3 May and 13 May, Arnold flew every one of his first 28 lessons with Welsh. An average flight lasted eight minutes. In practical terms, Arnold became a "pilot" on the day of his first solo, 13 May, a Saturday. Technically, his civilian airplane pilot certificate (*Fédération Aéronautique Internationale*—FAI) was awarded on 6 July 1911 and he did not receive his "official" Military Aviator rating until 22 July 1912, reflected in War Department General Order No. 40.<sup>9</sup>

Following initial flight qualification, Arnold and Milling crated up the Army's two newest Wright Flyers and followed them by train to College Park, Maryland, the home of the first Signal Corps flight school. The hours spent on the Wright factory floor began to pay off. Arnold and Milling assembled the craft themselves in preparation for the opening of the flight school. The Army's only two pilots were now its only flight instructors as well. Not only did they become skilled pilots, but skilled airplane mechanics and dedicated crew chiefs as well. They even created the first "Dash-1," the airplane technical manual, which included a picture of the craft with each of the parts meticulously labeled by hand.

Flight then was still a fair-weather game. As winter approached the Washington area, the aviators boxed up their planes and moved to Barnes Farm, near Augusta, Georgia, hoping for more temperate weather. Although the flyers endured the only blizzard to hit Augusta in 15 years, much flying and training, including wireless radio work, photography,

and even bomb dropping were accomplished before returning to College Park in May 1912.<sup>10</sup>

For the rest of that year, tragedy seemed to stalk the flying community. Wilbur Wright died of typhoid fever on 30 May. Al Welsh died in a plane crash in June. In July, Arnold crashed off the coast of Massachusetts in a new Burgess/Wright "tractor" airplane. It was in that crash that Arnold received the scar on his chin which showed distinctively for the rest of his life. Two more Army aviators were killed in September, Lewis C. Rockwell and Corp Frank Scott (Scott was the first enlisted man to perish in an aircraft accident). In November, it was Arnold who would once again face the hazards of early flight.<sup>11</sup>

The month of October was one of achievement rather than disaster. Arnold was awarded the first Mackay Trophy for the most outstanding military flight of the year. Arnold and Milling had been challenged to fly a triangular route between Fort Myer, Virginia, College Park, Maryland; and Washington, D.C., and pinpoint a "troop concentration." In winning the award, Arnold had completed the reconnaissance course and reported the strength and location of the simulated enemy troop concentrations to the event judges. In one respect, the "contest" was really not a contest at all. Milling, the only other participant, had aircraft problems that kept him on the ground. The flight did, however, demonstrate an actual mission for Army aviation, something the Army air arm was still struggling to define (as demonstrated by the variety of missions practiced while bivouacked in Georgia). Perhaps because of these circumstances, Arnold did not take himself or his accomplishment too seriously. The young lieutenant wrote Bee that "it [the trophy] certainly is handsome. I figure that it will hold about four gallons, so I cannot see how you can fill it with anything but beer."<sup>12</sup>

At the end of the month, Arnold, Milling, and the rest of the College Park airmen traveled to Fort Riley, Kansas, to participate in

Army ground force exercises. Arnold's enthusiasm for flying was temporarily doused by a near-fatal airplane flight on 5 November 1912. Lieutenant Arnold and an observer, Lt A. L. P. Sands, were inexplicably thrown into a spin toward the ground. Arnold righted the craft and missed a violent crash by only a few seconds and tens of feet. The on-board altitude measuring device, a barograph, clearly recorded a drop of 300 feet in ten seconds, ending up just above the ground-zero line. It was too close a call for Arnold. He was so rattled that he immediately requested three weeks' leave and temporarily removed himself from flying status. "From the way I feel now," he explained, "I do not see how I can get in a machine with safety for the next month or two." By then, Arnold had earned several aviation firsts: winning the first Mackay Trophy, setting several altitude records, and accomplishing the first successful spin recovery in an airplane.<sup>13</sup>

Those few weeks of "grounding" grew into a few months, and then a year as a desk-bound Arnold served as the assistant to the officer in charge of aviation in the Office of the Chief Signal Officer, Brig Gen George P. Scriven. When the young lieutenant married Eleanor Pool in September 1913, he was effectively removed from the active flying roster. At that time, Army flyers were not permitted to marry and remain on flying status. Although this requirement would be softened by World War I, Arnold was relegated to ground duties until November 1916.<sup>14</sup>

Back in the infantry, Arnold never wavered in his belief in the importance of airpower. He recalled that in 1913 flyers fought a constant uphill battle for acceptance as well as for modern equipment. "At that time," Arnold said, "we in the Air Service looked to foreign countries for engines that might give us better performance."<sup>15</sup> Even as a lieutenant, Arnold looked for the best technology available, regardless of its origin.

Not only did the lieutenant look for the best new technology, he constantly sought improvements for the machines the Army al-



with aircraft safety began after his spin and never wavered during his career.

Before long, Arnold was back to inquiries about performance and design directed at the Wrights. "As it is desired by this office to incorporate a stress test of some kind in our specifications for machines," he wrote, "we would greatly appreciate it if you would send to us . . . the chart showing the travel of the center of pressure for various speeds and weights." Or, "Will you kindly tell me what, if any, are the objections to having the propellers turn in the opposite direction to what they turn now in your machines?" And "The light scout machines have caused more or less controversy but I think the Signal Corps is at last persuaded as to the necessity of having them even though there is no one capable of flying them but Milling."<sup>19</sup> The Wrights always answered his letters in detail, but it seemed each response generated two more questions.

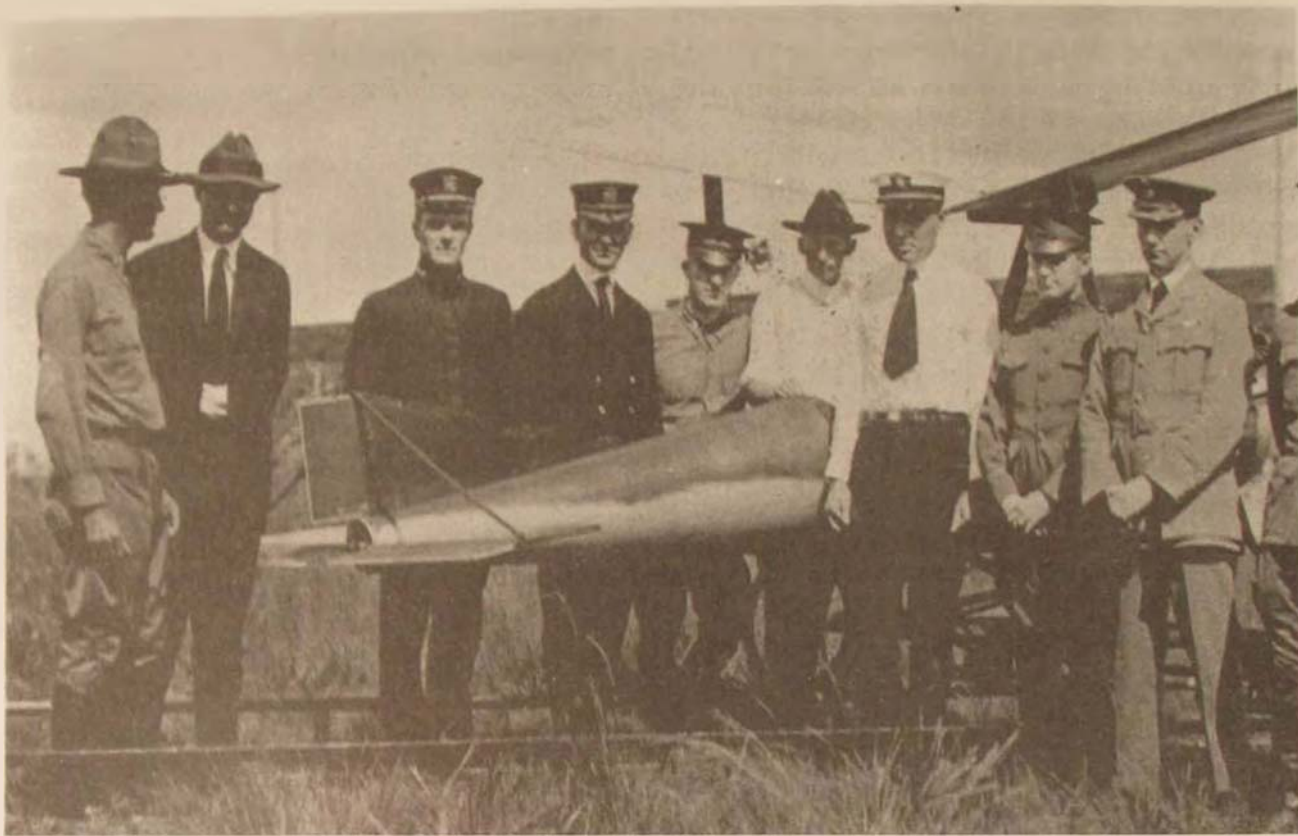
Arnold's constant inquisitive attitude about aircraft was a result of his pilot training and mechanical skills. He was not an aeronautical expert, however, and did not always understand the science behind or the engineering problems associated with his queries. Changing prop direction, for example, would have required the Wrights to reverse nearly everything internal to the machine. Yet he was never fully satisfied with a machine as it stood. As a pilot, he wanted safer aircraft capable of higher altitude, better load capability, greater range, and faster speed. As a mechanic, he wanted interchangeable parts, peak engine performance, and substantial margins of safety in construction. Lieutenant Arnold wanted the best available equipment for the Air Service, and he did what he could to get it.

From December 1913 through 1915, Lieutenant Arnold participated in practicing ground attacks on different Philippine islands. During one of these exercises, Arnold watched a young lieutenant plan and execute a flawless attack at Bataan. He was so impressed that he told Bee upon his return that he had

met a future Army chief of staff. This young man would become Arnold's friend, commander, and staunch supporter nearly a quarter century later. His name was George Catlett Marshall. Lieutenant Arnold was gaining experience and contacts that no other Army officer could match over a 50-year career. His experiences outside of the flying world became as valuable to future air forces as his personal aviation experiences. Then, as unexpected as his orders to join the Wrights in Dayton had been, he received orders to requalify into the Aviation Section of the Signal Corps.

Although joint Army-Navy aeronautical committees had existed before the National Advisory Committee for Aeronautics (NACA), they had no official status and even less authority over the progress of aeronautical science. The need for a committee with legitimate power to direct research and offer advice became apparent the following year while the Army was providing air support for Brig Gen John J. Pershing's punitive expedition into Mexico. One plane was lost before the operation even began, while another crashed a few days later, leaving only six of the original eight for operations. The craft in use, the Curtiss JN-3, had insufficient power to climb over the mountains and insufficient strength to withstand unpredictable winds and storms. Replacements were not immediately available.<sup>20</sup>

Arnold was adjusting to his new assignment as the supply officer at the newly established Aviation School at Rockwell Field near San Diego. He held the new Junior Military Aviator rating and wore a fresh set of captain's bars. Arnold arrived in May, but his requalification training did not begin until 18 November 1916 and was completed in six days when he soloed again for the first time in over four years.<sup>21</sup> Soon he was off to Panama as commander of a squadron there. In Panama, he was supposed to find an acceptable location for an air base before bringing his squadron to assist in the defense of the Canal Zone. No consensus could be reached on a location between the Americans—both Army and



The "Flying Bug" was America's first guided missile. During the development of the weapon, Arnold met such notables as "Boss" Kettering, (the Bug's inventor), Elmer Sperry, Henry Ford, and Dr Robert Millikan. The team was composed of civilians and members of the other services as well. Arnold is at the far left.

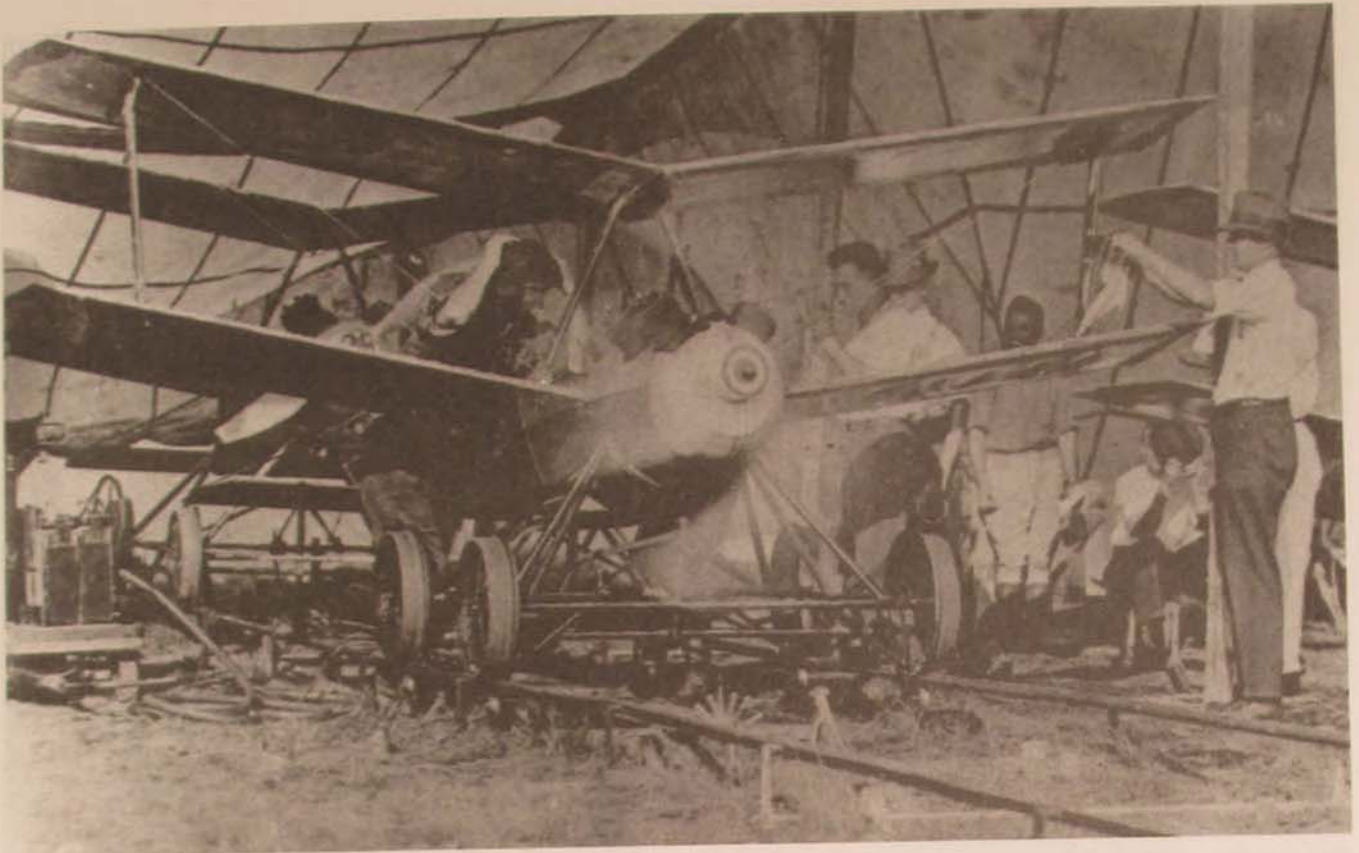
Navy—and the Panamanians, and he was sent back to Washington to take up the matter directly with Gen Leonard Wood, commanding general of the Atlantic Department. Arnold heard the news of America's entry into the Great War on the ship to Washington on 6 April 1917. He knew he would not be back to Panama any time soon.<sup>22</sup>

By August, Col (temporary) Henry Arnold was permanently assigned to his wartime post in Washington, D.C., as executive officer of the Air Division (the furthest up the chain of his "dozen jobs in one"). He had pressed for an assignment to Europe but was denied a transfer to the combat zone. Again, his assignment offered experience in the administration and, more importantly, the buildup of American air forces, which would pay off two decades later. Arnold rapidly became an

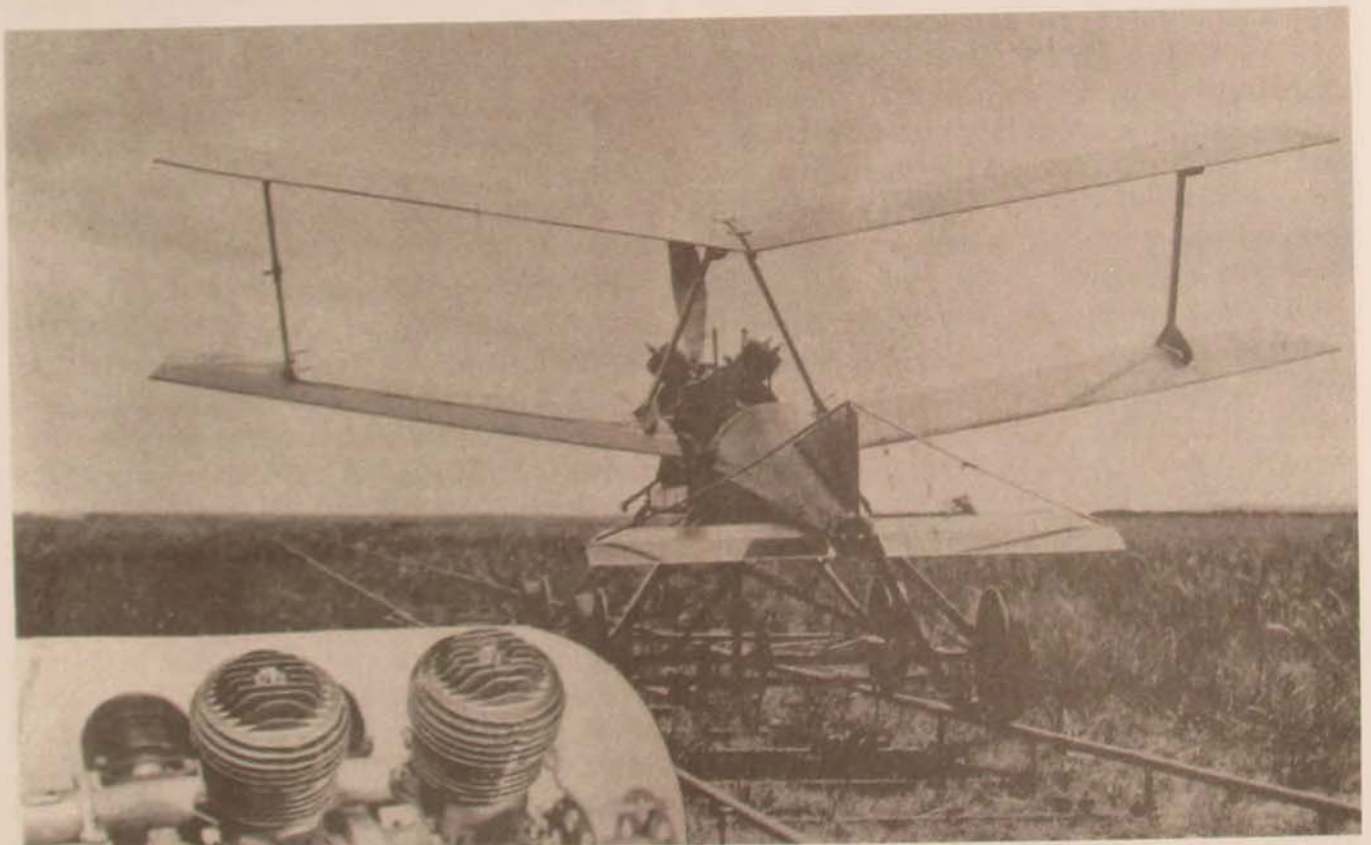
indispensable aid to his superiors, who had little knowledge of air matters. While stuck in Washington, Arnold saw firsthand the immense problems facing the air division: lack of trained mechanics, lack of pilots, lack of funding, and lack of an aircraft production system (which Arnold considered the biggest headache of the war). Arnold spent most of his time traveling around the United States checking on aircraft production and development and keeping his superiors informed of the slow progress being made in these areas.<sup>23</sup>

All of these problems resulted from America's policy of neutrality, which until February 1917 was publicly supported by President Woodrow Wilson. To build the American military in any form was to abandon neutrality as a policy. Not until German unrestricted U-boat warfare threatened American





*The Bug*



overseas trade with continental Europe had public opinion shifted dramatically to one of active intervention. The interception of the Zimmermann telegram, a memo from Berlin to Mexico City seeking a military alliance against the US, added insult to injury, but interventionist politics had already ensured funding for the military. Still, this funding came too late to build a fully functional Air Service.<sup>24</sup>

Arnold continued searching for improvements in planes and weapons. He teamed up with a task force of civilian scientists and produced the first "guided missile," dubbed the "Flying Bug," which was a beautiful wood-crafted, minibiplane. Early versions were simply made of papier-mâché. It housed a two-stroke, Ford engine and carried a "warhead" of 200-300 pounds of explosives. The Bug had no wheels and was launched from a wagon-like contraption that ran on a long section of portable track. The "missile" engine was started at one side of the track. When the engine was fully revved, the mechanical counter was engaged and the Bug was released. When it reached flying speed, it lifted off and flew straight ahead, climbing to a preset altitude controlled by a supersensitive aneroid barometer. When the Bug reached its altitude, the barometer sent signals to small flight controls, which were moved by a system of cranks and a bellows (from a player piano) for altitude control. A gyroscope helped maintain the stability of the craft, the barometer helped maintain altitude, but only the design of the wings assured directional stability. The Bug flew straight ahead until the mechanical counter had sensed the calculated number of engine rotations required to carry the weapon the intended target distance. A cam fell into place and the wings folded, looking much like a diving falcon swooping down on its prey. The Bug was rarely as deadly, and certainly not as fast, as a falcon.<sup>25</sup>

On the Bug team were Elmer Sperry, who had spearheaded the Navy's "aerial torpedo" project a few months earlier, Orville Wright,

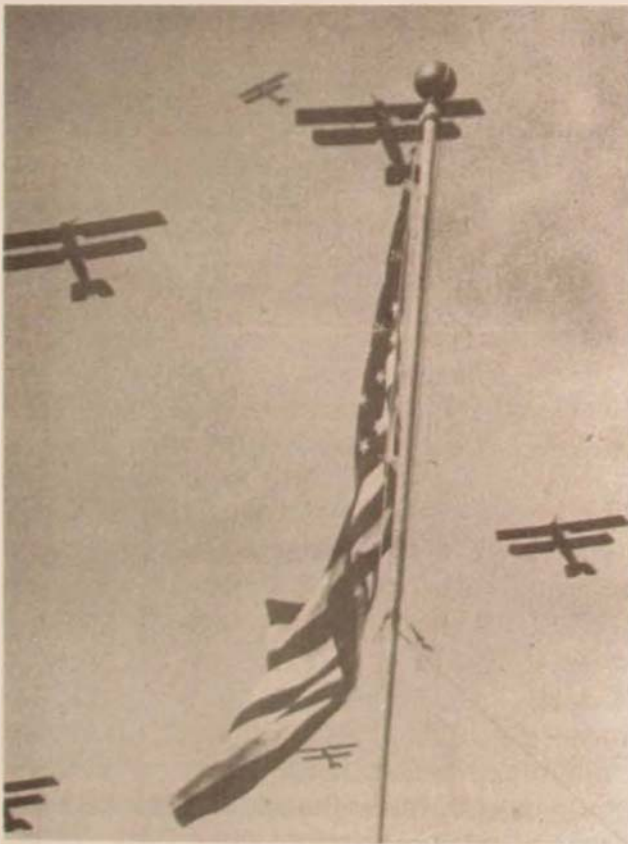
Robert Millikan, and the primary engineer, Charles Kettering. Most test flights were accomplished at Eglin Field, Florida, on the wide-open sand dunes that existed in that day. A first test, however, was attempted at Wright Field, Ohio, one that nearly ended in disaster as the errant missile narrowly missed crashing into the reviewing stands. After witnessing the initial test of the Bug, Arnold recalled that the gadget flew "like a thing possessed of the devil."<sup>26</sup> Lateral controls added shortly after these tests rectified the control problem that was the result of overdependence on the dihedral of the wings for lateral stability. More important than the gadget itself were the members of the team, particularly Millikan, who would play a vital scientific role in the 1930s and during the Second World War. Arnold never forgot his experiences in production, administration, scientific experimentation, or testing. Nor did he forget the men who had helped create the fledgling force.

Arnold did, finally, make it over to Europe. He was convinced that General Pershing would want to bring the Bug into combat as soon as possible and was sent to convince him. Officially his orders were to sail by mid-October and become familiar with training organization methods in France and combat operations at the front.<sup>27</sup> His trip was not a success, however. He immediately fell victim to Spanish Flu, which was rampant on the East Coast. After recovery, he made it to the western front during November, shortly before the armistice went into effect. Because the weather was so terrible, however, he flew no combat missions. The Bug project died shortly thereafter.<sup>28</sup>

Arnold later recalled the importance of many advances that occurred in aviation during the war years. Some of the most significant were oxygen masks with communications devices all in one, air-to-ground radio communication sets, automatic cameras, armored pilot seats, increased firepower for strafing, the Bug, and improved aeronautical medical research equipment. Additionally, the estab-



The Rockwell Field Low Flying Team included a young Lieutenant Doolittle (second from right). The team frequently performed for stars like Mary Pickford, "Honorary Ace" of the day. Its formations thrilled the California crowds.



lishment of the NACA held promise for the future of airplane research and development. Aircraft production, however, never reached acceptable levels. For example, even though Liberty engines were produced in great quantity, the United States never figured out how to build enough aircraft for the engines. By the end of the war, 1,213 American-built DH-4 aircraft had made it overseas but only about 600 had been sent to the front.<sup>29</sup> Arnold had witnessed the production bottlenecks firsthand and would remember the consequences of a failed production arrangement when he was in a position to do something about it.

After returning from Europe, and no longer being needed in D.C., Arnold received orders back to Rockwell Field. There he assumed the post of district supervisor, Western District of the Air Service. From January to June 1919, Arnold supervised the postwar demobilization of the Western District. Even while dealing with massive reductions in the size of the Army, Arnold promoted aviation as best he could. He held air shows and ordered his "Low Flying Team" to perform for California crowds. At one of these events, Arnold "decorated" movie star Mary Pickford with a banner making her an "Honorary Ace." The positive publicity generated by events such as these was desperately needed in the immediate postwar years.<sup>30</sup>

Arnold was well aware that public opinion was a powerful tool in maintaining support for the Air Service. When Rockwell Field closed temporarily, Arnold was transferred to San Francisco as air liaison officer for the Ninth Corps Area. A witness to the rapid drawdown, Arnold was determined to do what he could to bolster support for airpower. On his own initiative, Arnold established "fire patrols" over the western region. That not only saved thousands of acres of timber, but millions of dollars as well. His activities caught the public's attention. A peacetime use for military airplanes kept the shrinking service in the air, at least for a

while.<sup>31</sup> Arnold the "politician" was developing during these early days in San Francisco.

It was during the years 1919 to 1924 that Arnold's working relationship with other Army officers began taking shape. William ("Billy") Mitchell's zealous approach to creating an independent air force taught Arnold how not to tackle a political hot potato. Arnold recalled that Mitchell himself had warned him away from the outspoken methods that he had been using. Mitchell realized that he was financially able to survive expulsion from the Army while most of his followers did not come from wealthy backgrounds. Carl A. ("Tooe") Spaatz and Ira C. Eaker served under Arnold during his next tour, again at Rockwell Field. These men became Arnold's right-hand and left-hand men over the next two decades. Eaker coauthored three books with Arnold, and Spaatz succeeded Arnold's command and become the first chief of staff of the independent Air Force in 1947. The amazing James H. ("Jimmy") Doolittle caught Arnold's attention after pulling off a dangerous flying stunt for a gathered crowd of onlookers. Arnold grounded the young second lieutenant for one month but later called on him to command the famous raid on Tokyo.<sup>32</sup>

While Arnold successfully pressed for publicity out west, Billy Mitchell held most of the headlines everywhere else. On 21 and 22 July 1921, Mitchell's bombers sank the ex-German battleship *Ostfriesland*, considered unsinkable by most naval officers. The wild publicity that followed marked the event as the Air Service's first major victory over the Navy in terms of service roles and missions. The seeds of strategic bombing had been sown. Another one of Mitchell's ideas was the Barling bomber, a six-engined behemoth capable of carrying a 10,000-pound payload. Although it seemed logical to build this monster in support of a "strategic" bombing mission, its performance was so poor that it could not fly over the mountains between Dayton and Washington while fully fueled.



*Brig Gen Billy Mitchell (center) stands under the Barling Bomber with the development team. Mitchell was instrumental in getting Arnold back into the flying game in 1916.*



*Arnold and Spaatz in November 1919. Arnold often reminded Spaatz of the importance of civilian scientists to the air forces.*

The Appalachians exceeded the bomber's service ceiling.

But the Barling was not a total loss. Valuable wind-tunnel data, parts design, and other aeronautical engineering problems were addressed and solved during the Barling's development. In that way, the Barling influenced the design of the B-17 and B-29, which were the American backbone of true strategic bombing in World War II. Although Arnold found the Barling operationally worthless, he realized that sometimes "the full-scale article must be built to get the pattern for the future."<sup>33</sup>

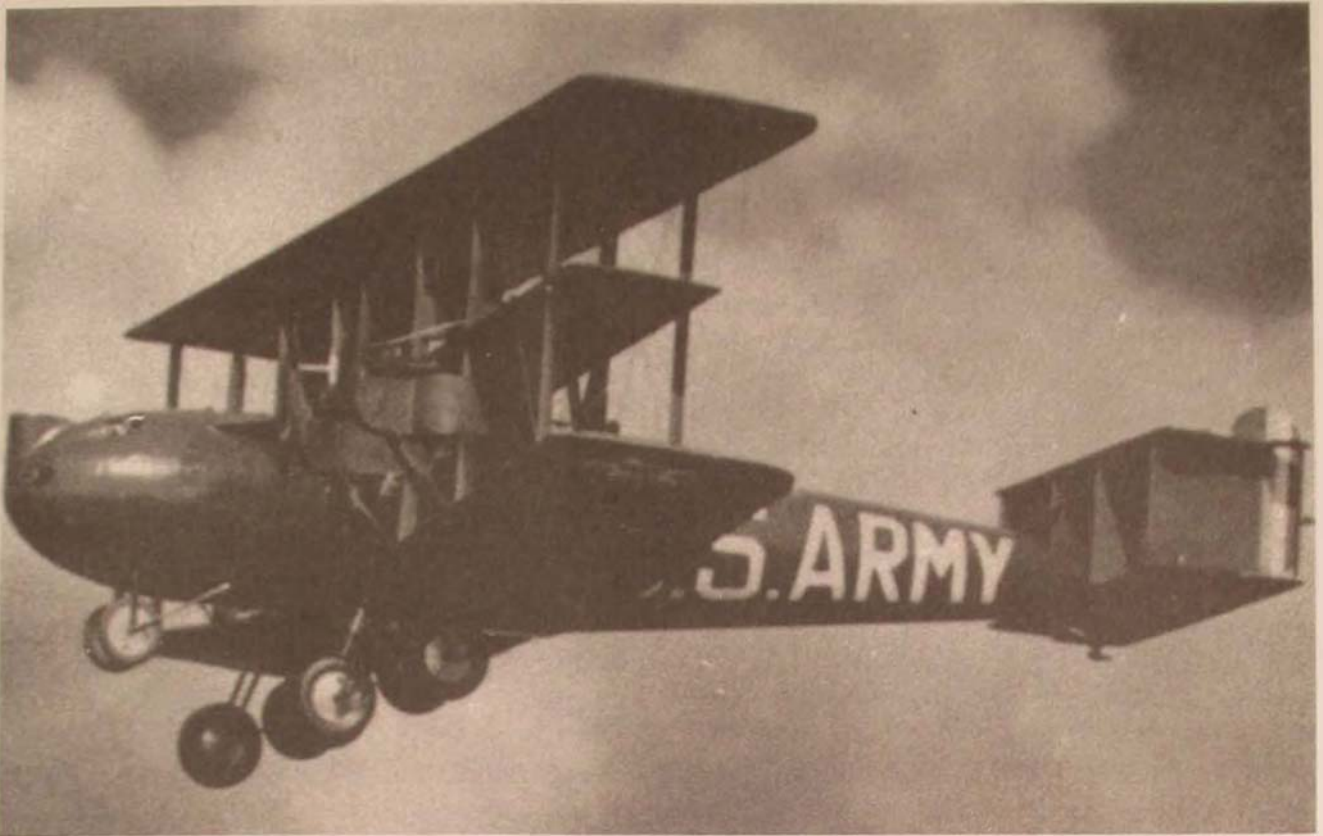
In the fall of 1924, Arnold was recalled to Washington by Gen Mason Patrick, then chief of the Air Service. Patrick, a classmate of Blackjack Pershing, had been so impressed with Arnold's California performance that he had added a commendation to Arnold's military record (201 file). Before joining Patrick's staff, however, Arnold attended the Army Industrial College in Washington. His World War I experience with aircraft production had been less than satisfying and now Major Arnold knew why. The Army planners were determined to utilize the American auto industry as the primary contractor to manufacture airplanes in time of crisis. Arnold lobbied for a different approach. He argued that the aircraft industry should remain the major contractor while using the auto industry for small parts and other subcontracting jobs. This short "college" assignment was one of the most valuable of his career, one which he said was to stand him in good stead in later years.<sup>34</sup> Not only did Major Arnold have a plan for future buildups in his mind, but he realized that his civilian industry contacts from earlier tours would be essential if a sizable production scheme had any hope of success. Glenn Curtiss, Elmer Sperry, Donald Douglas, and Larry Bell were only a few of those contacts.

During 1925 and much of 1926, Arnold served as Patrick's chief of information. In this function he was able to keep his eyes and ears open to new developments in foreign

and domestic aviation in both the civil and military arenas. In a failed effort, he attempted to keep Billy Mitchell out of trouble by urging him to temper his language and writings while campaigning for an independent air force. Mitchell caused too much trouble and was "exiled" to Fort Sam Houston in San Antonio, Texas, in February 1925. Colonel Mitchell was not gone long. When he returned to face a military court-martial, Arnold was his Washington liaison officer. By Christmas 1926, with Mitchell "martyred," Arnold considered resigning but gained the resolve needed to endure his own punishment.<sup>35</sup> In the turbulence of Billy Mitchell's trial, Arnold was under the threat of a court-martial of his own. The official charge, made by Mason Patrick, was violation of the Articles of War for misappropriation of government supplies in an effort to sway legislators in support of Mitchell's viewpoint. Arnold himself was "exiled" to Fort Riley, Kansas, the Army's largest cavalry post.<sup>36</sup>

It was at Fort Riley in 1927 that Arnold made his choice to remain a military officer. Beyond the malice of his superiors, both personally and toward aviation, Arnold believed that he had suffered numerous career setbacks. He had never been assigned to the cavalry, even after repeated requests. He had been denied any opportunity to participate in the American war effort in Europe. He had testified on Mitchell's behalf despite warnings from his superiors that by siding with Mitchell he was jeopardizing his career. The national economic picture was very good. The New York Stock Exchange was higher than it had been on the same date for the previous five years. Cotton and coffee hit all-time highs on the market, and General Motors reported record profits during the week of 23-30 July 1927.<sup>37</sup> Additionally, Arnold had reached his 20th year of military service, which entitled him to half pay and full benefits if he were to retire.

John K. Montgomery, then president of American International Airways (a branch of Pan American Airways), had offered the



*The Barling Bomber in flight. This six-engine behemoth did not even have enough power to fly over the Appalachian Mountains.*



*The DH-4 was used well after the First World War. Arnold never forgot the lesson of obsolete surplus after the war. Shown here is Mason Patrick's personal DH-4B (note the stars on the tail).*







his airplanes. Military funding continued at forecast levels into 1934 but faded somewhat with the advent of President Franklin D. Roosevelt's reforms. Air shows at March Field were major public events in Southern California as they had been at Rockwell Field a decade before. Movie stars and celebrities of all sorts visited the field on show days. The inevitable result was a page of favorable publicity in several Southern California newspapers the following day. But perhaps Arnold's most impressive accomplishment during this tour of duty was not accomplished at March Field or even with his own airplanes.

Lieutenant Colonel Arnold won his second Mackay Trophy as commander of a flight of 10 new B-10 bombers conducting a round-trip flight from Washington, D.C., to Fairbanks, Alaska. The first all-metal low-wing monoplane, the Martin B-10 bomber, was the most technologically advanced airplane in the US inventory. After a solid month's preparation, Arnold took his planes on the 18,000-mile round-trip flight with only one major foul-up and no aircraft losses along the way. Planning was meticulous. A poor showing would have been a catastrophic embarrassment, particularly since the Air Corps was still stinging from its lackluster performance while carrying the US Mail in the spring of 1934.<sup>46</sup> The success of the mission brought Arnold a well-earned decoration, a trophy, and proof that long-range bombers could threaten once impenetrable and isolated territorial boundaries, both those of potential enemies and those of the United States.

But Arnold always pushed for improvement. His airplanes made the trip to Fairbanks, but now the route would have to be flown faster or higher. One of his favorite places to search for improvements in aeronautics was Caltech. There "Admiral" Millikan had gone a long way in fulfilling his dreams for American aviation. Caltech had the best wind-tunnel facilities in the western United States, and it had one of the finest academic faculties. The civil aviation industry was beginning to locate nearby in Southern California. Caltech had

definitely aroused the interest of the commanding officer at March Field.<sup>47</sup>

By March 1935, Millikan, Brigadier General Arnold, and Professor Theodore von Kármán, director of the Guggenheim Aeronautical Laboratory, California Institute of Technology (GALCIT) wind tunnels had become well acquainted. Kármán recalled that he had first seen Arnold as a major, perhaps on one of Arnold's inspection tours to the Los Angeles area while still assigned to Wright Field. "Maj. Arnold," Kármán remembered, "came 'alvays in the vind toonel' and asked me questions."<sup>48</sup> By 1930, Kármán, second in the field of aeronautics only to his former professor, Ludwig Prandtl, had come permanently to Caltech from Aachen, Germany, enticed by a Guggenheim Fund stipend. Arnold's association with the Hungarian professor provided him with a lifelong, personal tutor in theoretical aeronautical science and its application to airpower. During the first half of the 1930s, both Arnold and Kármán developed a similar vision for military aviation: the United States needed a cooperative aeronautics establishment that coupled civilian scientific and industrial expertise with the practical needs of the Army Air Corps.<sup>49</sup> To Arnold, this collaboration meant better Air Corps airplanes. To Kármán, it meant great possibilities for Caltech and the West Coast aviation industry. A decade later, with a five-star Arnold commanding the Army Air Forces (AAF), their vision would become a reality.

It was with the experience gained during his early career that General Arnold began to transform the AAF into a technology-minded service. His task was daunting but with the help of scientists like Kármán and Millikan, and associates like Marshall, Spaatz, and Eaker, he would influence the thinking of an entire generation of AAF leadership. That process had begun in earnest when Maj Gen Oscar Westover's plane crashed in September 1938. (Editor's note: *To be continued in Fall 1997.*) □



*The B-10 was a major advance in aircraft technology. Arnold took 10 of the first all-metal monoplanes from Washington to Alaska and back. The positive publicity helped salve the wounds of delivering the mail but also opened the eyes of America to the long-distance capabilities of airpower.*

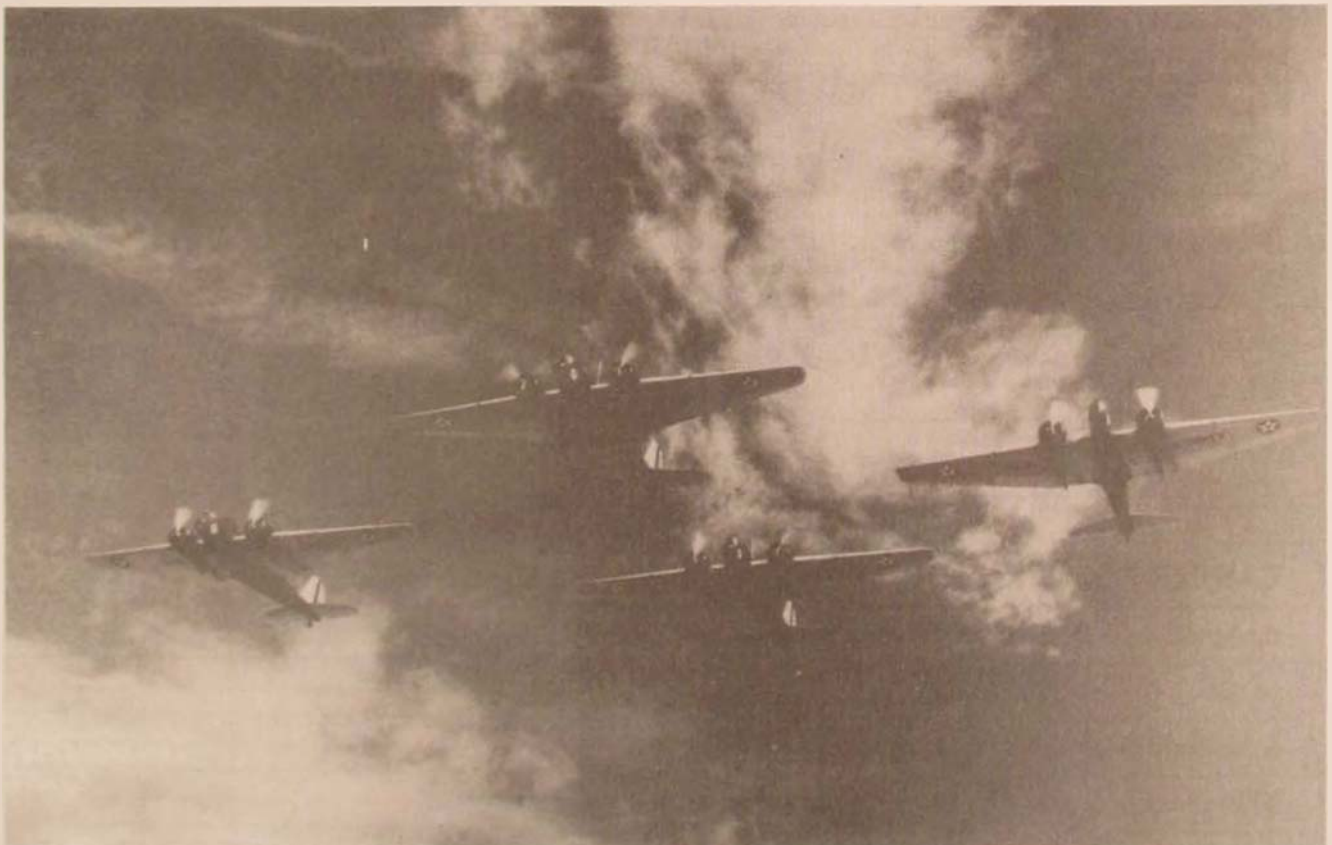


Table 1

**The Military Career of Henry Harley Arnold (Cadet No. 4596)**

Born: 25 June 1886, Gladwyne, Pa.

Died: 15 January 1950, Sonoma, Calif., age 63.

<b>CADET RECORD</b> (all numbers refer to class standing rather than a % grade)				
<b>SUBJECT</b>	<b>1903/04</b>	<b>1904/05</b>	<b>1905/06</b>	<b>1906/07</b>
Overall Ranking	82/136	63/119	61/113	66/111
Conduct	25	27	21	52
Demerits (actual)	45	66	36	105
Military/Drill	97	X	70	78
Engineering	X	73	X	47/62
Math	74	49	X	X
English	103	94	X	X
French	98	89	X	X
Spanish	X	94	X	X
Drawing	X	70	51	X
Philosophy	X	X	66	X
Chemistry	X	X	53	X
Hygiene	X	X	94	X
Law	X	X	X	100
History	X	X	X	89
Gunnery	X	X	X	54
Military Efficiency	X	X	X	76
Deporment and Discipline	X	X	X	60

**CAREER ASSIGNMENTS**

1 Aug 1903	Entered West Point, the Military Academy
14 Jun 1907	Graduated
5 Dec 1907	Fort William McKinley, P. I.
9 Apr 1908	San Mateo, P. I., and various other temporary locations
18 Jun 1909	En route to US through Asia and Europe

<b>CAREER ASSIGNMENTS</b>	
1 Oct 1909	Governors Island, New York
20 Apr 1911	Aviation School, Dayton, Ohio, Simms Station
15 Jun 1911	College Park, Md. Aviation duty as instructor/supply officer
25 Nov 1911	Augusta, Ga. Same duty
15 Apr 1912	Fort Leavenworth, Kans.
1 May 1912	College Park, Md.
1 Jul 1912	Connecticut Maneuvers
5 Aug 1912	College Park, Md.
1 Oct 1912	Fort Riley, Kans. (near-fatal spin)
15 Nov 1912	Washington, D.C. Duty in Office of the Chief Signal Officer
1 Sep 1913	Fort Thomas, Ky. Infantry
25 Nov 1913	En route to Philippine Islands
5 Jan 1914	Fort William McKinley, P. I.
5 Jan 1916	En route to Madison Barracks, N.Y.
15 Mar 1916	Madison Barracks, N.Y.
20 May 1916	Aviation School at North Island, San Diego, Calif.
5 Feb 1917	Panama Canal Zone
20 Mar 1917	Washington, D.C. Asst. Executive and Executive Officer, Air Division, Signal Corps; Board Control Member; Asst. Director Military Aeronautics; Director of Military Aeronautics
10 Jan 1919	Rockwell Field, Coronado, Calif. District Supervisor, Western District, Air Service.
30 May 1919	Crissy Field, San Francisco, Calif. Air Officer, 9th Air Corps Area
17 Oct 1922	Rockwell Field, Calif. Commanding Officer, Air Depot
15 Aug 1924	Washington, D.C. Student, Army industrial College
Mar 1925	Graduated AIC, then assigned to the Office, Chief Air Corps
Mar 1926	Marshal Field, Fort Riley, Kans. ("Exile." Wrote Bill Bruce books)
Aug 1928	Fort Leavenworth, Kans. Student, General Service School
12 Jun 1929	Graduated, then to Fairfield Air Depot, Ohio. Commanding Officer; Chief, Field Service Section, Materiel Division, Air Corps; Executive Officer, Materiel Division
29 Oct 1931	En route to March Field, Calif.
26 Nov 1931	March Field, Calif. Commanding Officer
17 Jan 1936	Washington, D.C. Assistant Chief of the Air Corps

<b>CAREER ASSIGNMENTS</b>	
21 Sep 1938	Chief of the Air Corps
20 Jun 1941	Chief, Army Air Forces
9 Mar 1942	Commanding General, Army Air Forces; Member Joint Chiefs of Staff; Member Combined Chiefs of Staff
21 Dec 1944	General of the Army (5-star rank)
9 Feb 1946	Office of the Chief of Staff
3 Mar 1946	End tour
30 Jun 1946	Retired with disability (heart problems), 43 years service
7 May 1949	General of the Air Force

<b>MILITARY RANK PROGRESSION</b>	
1 Aug 1903	Cadet
14 Jun 1907	Second Lieutenant, 29th Infantry
10 Apr 1913	First Lieutenant of Infantry
20 May 1916	Captain, Aviation Section, Signal Corps
23 Sep 1916	Captain of Infantry
27 Jun 1917	Major, Aviation Section, Signal Corps
5 Aug 1917	Colonel, temporary, Signal Corps
15 Jan 1918	Major, temporary, Infantry
30 Jun 1920	Captain, permanent grade
1 Jul 1920	Major of Infantry (transferred to Air Service 11 August 1920)
1 Feb 1931	Lieutenant Colonel, Air Corps
2 Mar 1935	Brigadier General, temporary, Air Corps (one source: 11 Feb)
22 Sep 1938	Major General, Chief of Air Corps (30 October, Deputy Chief of Staff, Army, for Air Matters)
15 Dec 1941	Lieutenant General
19 Mar 1943	General
21 Dec 1944	General of the Army
30 Jun 1946	General of the Army (ret.)
7 May 1949	General of the Air Force

## Notes

1. The origin of the name "Hap" is still a matter of dispute. Arnold's original West Point tag was "Pewt." Arnold's West Point diary, located at the USAF Academy Library, carries that name proudly across the front cover. *The Howitzer*, West Point's yearbook, also noted the nickname "Benny." One of these two tags is a reference to a cartoon character of the day. In his youth, Arnold was called "Harley," his middle name, by family members. One account claimed that his "perpetual smile" while flying as a stunt double on an early motion picture led a Hollywood producer, who probably could not remember his name, to call him "Happy." This was then shortened. Another suggested that Hap, when angry, would involuntarily tighten his lips in an insidious smile. This famous "smile" deceptively portrayed Arnold as "happy" when he was, in reality, quite the opposite. It is most likely that Hap is short for "Happy," the name which Bee, his wife, used for him in many of their personal letters. Hap's mother called him "Sunny," (not s-o-n-n-y) most of her life which indicated a cheerful appearance or sunny disposition. The name Hap did not catch on in his military/personal correspondence until about 1930. Until then, many classmates still addressed correspondence to Pewt, his West Point nickname.
2. Address by Brig. Gen. H. H. Arnold, Gladwyne, Pa., 30 May 1938. Papers of Ira C. Eaker, Library of Congress, Washington, D.C., box 38, Arnold speeches, 2; Mrs Barbara Arnold, interview with author, 6 April 1995, Washington, D.C. Mrs Arnold is the daughter of Donald Douglas and widow of the late William Bruce Arnold, General Arnold's son.
3. Maj Gen John W. Huston, USAF, Retired, to author, 22 February 1996. General Huston is currently editing Arnold's wartime diaries and is an authority on General Arnold and his military career.
4. Gen H. H. Arnold, *Reminiscences of Friends and Acquaintances*, Mrs. H. H. Arnold section, Special Collections, USAF Academy, Colorado (hereafter, *Friends of Arnold*); also see the *Biographical Register of the Officers and Graduates of the USMA at West Point, New York*, supp. vol. 5, 1900-1910; and *Official Register of the Officers and Cadets of the USMA*, June 1904; and *The Howitzer*, 1907, the student yearbook. All of these are available at the West Point Archives.
5. The Henry H. Arnold Collection, box 262A, Library of Congress, Washington, D.C. (hereafter Arnold Collection); also *The Howitzer*, 1907; also see Murray Green Collection (hereafter MGC), notes from the Columbia University Oral History Review (hereafter CUOHR); Henry H. Arnold, *Global Mission* (New York: Harper and Brothers, 1949), 7-8; a generally accurate but hard-to-find book by Flint O. Dupre, *Hap Arnold: Architect of American Air Power* (New York: Macmillan Co., 1972), 1-14, is a shorter version of *Global Mission*. Henry H. Arnold and Ira C. Eaker, *Army Flyer* (New York: Harper and Brothers, 1942), 40-41.
6. *New York Daily Tribune*, 13 June 1907. The article also displayed a marvelous, informal class picture of the graduates; also see Mrs H. H. Arnold, interviewed by Murray Green, n.d., transcript, MGC, USAF Academy, Colorado. Mrs Arnold was known by all as "Bee." Arnold titled his letters to "Beadle," a pet name. In the early 1900s, "B-e-a" was the short form of "Bertha," a name that Mrs Arnold would have likely found unacceptable.
7. Arnold Collection, box 3, folder 9; a copy of the flight log is also available at the National Air and Space Museum Archives, H. H. Arnold folder; also see *Global Mission*, 1-21. Arnold just barely failed the ordnance exam.
8. *Global Mission*, 15. Draft manuscripts of *Global Mission* are available in the Library of Congress, but book page references are used here as a convention.
9. Arnold's ratings were: FAI, airplane pilot certificate no. 29, July 1911; Military Aviator, War Department 1912-1914, July 1912; Expert Aviator, Aero Club of America no. 4, September 1912; and Junior Military Aviator, May 1916; see also Memorandum for Special Assistant to the JCS for Arms Control, 21 September 1970, USAF Historical Research Agency (hereafter USAFHRA), 168.7265-8. This document contains a study by the Office of Air Force History listing the first 22 military pilots and their license dates, verified in published War Department GO files at the Pentagon.
10. Arnold Collection, box 3; and *Global Mission*, 3038.
11. *Global Mission*, 35-41.
12. Arnold to Bee, 20 June 1913, MGC. Arnold loved to have fun, and a drink was never out of the question in his early career. His father had been rather strict about the use of alcohol and did not even permit it at Henry and Bee's wedding, a decision he later wished he had modified to allow champagne. Tommy Milling, Arnold's best man for the affair and a fellow pilot, smuggled some liquor up from the Arnold cellar during the reception anyway. It was interesting that after World War II, Arnold and Bee were both subjects of a Pabst Beer ad that showed them at their ranch in the Sonoma Valley. Robert Arnold, interview with author, 14-16 July 1995, Sonoma, Calif.
13. 2d Lt H. H. Arnold to commanding officer, Signal Corps Aviation School, 6 November 1912, Fort Riley, Kansas, USAFHRA, 168.65-38. The first portion of the letter describes the progress being made with the various airplanes at Fort Riley. Observation techniques were discussed in addition to mention of a number of engine problems. Arnold's disclosure of the near accident is added at the end of the report in a straightforward paragraph explaining the event. Letters from this period are also located in the Arnold Collection, box 3. The collection is now available on microfilm.
14. *Global Mission*, 41-43; Arnold Collection, box 222; also see Arnold 201, 94, National Archives, stack W-3; and CUOHR, B. Foulois. The safety statistics during the 1990-91 flying year for the US Air Force showed that less than two major accidents (not necessarily even a fatality) occurred every 100,000 flying hours. This included combat operations in the Persian Gulf War. In 1913, the safety rate equivalent would have been 950 deaths per 100,000 flying hours, not including major accidents where planes could not be repaired.
15. General of the Air Force Henry H. Arnold, USAF, Retired, interviewed by T. A. Boyd, 19 October 1949, El Rancho Feliz, Sonoma, Calif. Transcript in MGC.
16. Arnold to O. Wright, 6 November 1911 and W. Wright to Arnold, H. H. Arnold folder, 10 November 1911, Wright Brothers Papers (hereafter Wright Papers), box 9, Library of Congress, Washington, D.C.
17. Arnold to W. Wright, 18 November 1911, Wright Papers, box 9, H. H. Arnold folder.
18. Arnold to Mr Wright, 27 January 1913, H. H. Arnold folder, Wright Papers, box 9. The "sand test" was accomplished by flipping the aircraft over and loading the wings with sand until the wing spars began to crack. Thus, aircraft strength was determined by inverted sand weight, which simulated the forces of lift on the wings themselves. This test is still used today in modified form, most recently to test the wing strength of the C-17.
19. Arnold to Mr Wright, 1 February 1913, Arnold to O. Wright, 23 February 1913, and Arnold to Mr Wright, 15 March 1913. Orville tried to reassure Arnold that the scout ship was the "easiest machine that we build. Its high speed in landing is its only drawback. It is a very strong machine and has a larger factor of safety than any of the other models." Wright to Arnold, 22 March 1913, Arnold folder, Wright Papers, box 9.
20. Frank Walter Anderson, *Orders of Magnitude: A History of the NACA and NASA, 1915-1980* (Washington, D.C.: National

Aeronautics and Space Administration, 1981), 1-15; Howard S. Wolko, *In the Cause of Flight: Technologists of Aeronautics and Astronautics* (Washington, D.C.: Smithsonian Institution Press, 1981), 18; and Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force*, vol. 1, 1907-1960 (Maxwell AFB, Alabama: Air University Press, 1989), 19; and Wesley Frank Craven and James Lea Cate, *The Army Air Forces in World War II*, vol. 1, *Plans and Early Operations, January 1939 to August 1942* (Chicago: The University of Chicago Press, 1948), 7; and Maurer Maurer, *The U.S. Air Service in World War I*, vol. 1, *The Final Report and a Tactical History* (Washington, D.C.: Office of Air Force History, 1978), 75-89. The Air Service sent a few ill-prepared planes with Pershing as aerial observation platforms. Before long, many of them were destroyed, and several pilots killed due to crashes.

21. Arnold Papers, box 3, folder 13.

22. *Global Mission*, 46-47.

23. Arnold Papers, box 3, folder 13, Washington Service Diary, 1917-1918.

24. Dik Daso, "Events in Foreign Policy: The End of American Neutrality, 1917," (manuscript, University of South Carolina, 1993), 1-12. Copy in author's possession, Burke, Virginia.

25. USAF Museum, "Kettering Bug" folder. Many photos are included as well as many of the original documents describing the weapon and its construction. Interestingly, Elmer Sperry claimed that he had invented the Bug and quit the project in 1919, thoroughly disgusted with Kettering.

26. *Global Mission*, 74-76; Thomas P. Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm* (New York: Penguin Books, 1989), 130-34; and Glenn Infield, "Hap Arnold's WW I Buzz Bomb," *Air Force Magazine* (May 1974).

27. General Huston to author, 22 February 1996.

28. Arnold Papers, World War I Diary.

29. Maurer, 88; also *Global Mission*, 63-64.

30. Arnold Papers, Photo Albums.

31. *Global Mission*, 92-93.

32. *Ibid.*, 91-98. For an excellent tribute to "Jimmy" Doolittle, one should review the Winter 1993 issue of *Air Power History*, which was dedicated to the life of the aviation pioneer.

33. Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power* (Bloomington, Ind.: Indiana University Press, 1975), 64-70. For a highly detailed account of the trial, see Michael L. Grumelli, "Trial of Faith: The Dissent and Court Martial of Billy Mitchell" (Ph.D. diss., Rutgers, The State University of New Jersey, 1991); and *Global Mission*, 109-12.

34. Arnold Papers, box 3, folder 17; *Global Mission*, 113.

35. *Global Mission*, 113-23; and Hurley, 100-105.

36. General Huston to author, 22 February 1996. General Huston was kind enough to clear up the circumstances of Arnold's "exile" in this correspondence.

37. *New York Times*, 23-30 July 1927, various pages.

38. Maj H. H. Arnold to John K. Montgomery, 15 and 24 July 1927, John K. Montgomery Papers, Carolinian Library, University of South Carolina, Columbia (hereafter Montgomery Papers); *Global Mission*, 123-28.

39. Arnold to Montgomery, 24 July 1927, Montgomery Papers.

40. Montgomery to Arnold, 27 July 1927, Montgomery Papers. Included in this letter are the specifics of the salary and "perks" offer to Arnold: (1) The presidency of Pan Am; (2) \$8,000 per year salary; and (3) 300 shares of B stock (voting shares) and 1,200 more if he stayed on with the company. I cannot verify that the 300 shares offered were intended to be delivered had Arnold decided *not* to stay on, but he never went.

41. *Global Mission*, 122.

42. Thomas M. Coffey, *Hap: The Story of the U.S. Air Force and the Man Who Built It, General Henry H. "Hap" Arnold* (New York: Viking Press, 1982), 126.

43. Lois E. Walker and Shelby E. Wickman, *From Huffman Prairie to the Moon: The History of Wright Patterson Air Force Base* (Washington, D.C.: Air Force Logistics Command, 1986), 59-61, 149. Arnold had commanded the Rockwell Air Depot in California from 1922 to 1924. He also wrote the history of Rockwell Field while he was there. A copy of the manuscript is located in the USAFHRA.

44. Gen H. H. Arnold, Jr., USAF, Retired, interviewed by Murray Green, Sheridan, Wyoming, 29-30 August 1972, MGC. *Huffman Prairie*, 218-19. Arnold appeared to be getting used to the system during these two years. He directed projects on flame suppression from engine exhausts and contrail dissipation. The intent of both was to make American aircraft less visible to enemy gunners. Maj Gen Donald J. Keim, USAF, Retired, interviewed by Murray Green, Delaplane, Virginia, 25 September 1970, MGC.

45. Brig Gen H. W. Bowman, USAF, Retired, interviewed by Murray Green, 23 August 1969. Transcript in MGC. Bowman flew several of Millikan's experimental missions. His task was to orbit a particular area with a 500-pound lead ball at various altitudes up to 21,000 feet. Bowman felt certain that Millikan introduced Arnold to Kármán at Caltech; also *Global Mission*, 139; and Robert H. Kargon, *The Rise of Robert Millikan* (New York: Cornell University Press, 1982) for a fair description of the Karl Compton challenge.

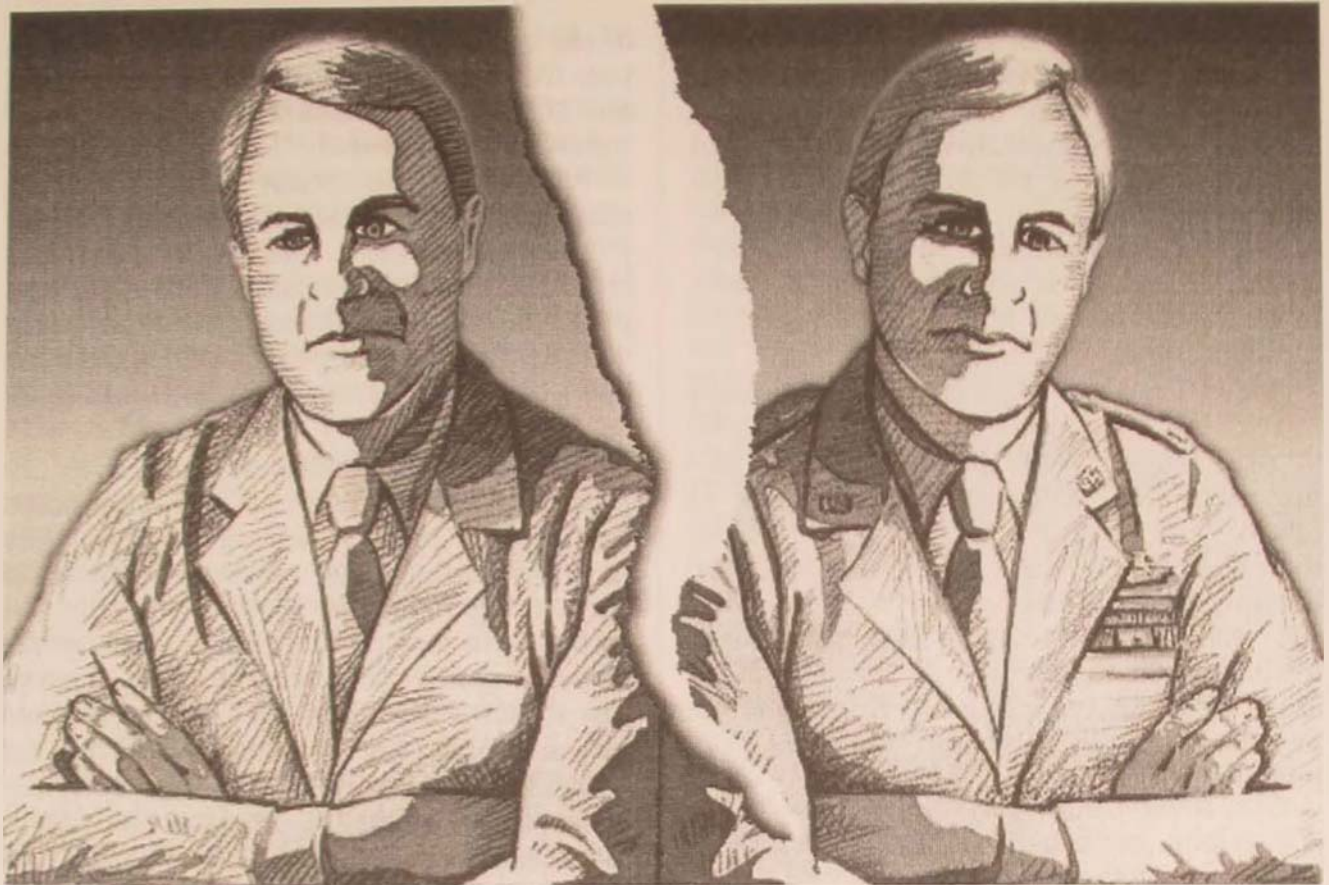
46. *Global Mission*, 133-47; For some unknown reason, Arnold allowed an inexperienced B-10 pilot to take one of the birds out on a flight. The pilot ended up in Cook's Bay, and the B-10 was swamped in 20-40 feet of icy water. Remarkably, the other crews were able to save the plane and drain the water from the fuselage. It cranked up on the first try and flew the rest of the way to Washington, much to Arnold's relief.

47. William Rees Sears, interview with author, Tucson, Arizona, 8 July 1995. Since Clark Millikan, Robert Millikan's son, had joined the faculty at Caltech, Kármán used to differentiate the two by calling Robert "Old Millikan" to everyone but Old Millikan himself. Dr Sears is a former student, colleague, and friend of Theodore von Kármán, one of only a few who called him by his informal name, Todor; for an excellent summary of the Guggenheim influence, see Richard P. Hallion, *Legacy of Flight: The Guggenheim Contribution to American Aviation* (Seattle: University of Washington Press, 1977).

48. Theodore von Kármán, oral interview, 27 January 1960, USAF Academy Oral History Interviews, USAF Academy, Colorado; and Michael H. Gorn, *Universal Man: Theodore von Kármán's Life in Aeronautics* (Washington: Smithsonian Institution Press, 1992), 81; also, in the NBC newsreel that covered the Rose Garden ceremony (January 1963) in which Kármán was given the first Medal of Science by President John F. Kennedy, Kármán remembered Arnold and his inquisitive nature back in the early days; Arnold's flight logs carefully document his trips to California while he was at Fairfield Depot. On one trip, he spent nearly one month in the Los Angeles area during which he might have visited Caltech, Old Millikan, and, later, Kármán. A copy of these logs is located in both the Arnold Collection, Library of Congress, and the Arnold file at the USAF Museum, Wright-Patterson AFB, Dayton, Ohio. The fact that Kármán ranks Arnold as a major would date their initial meetings to sometime before 1 February 1931, when he was promoted to lieutenant colonel.

49. Gorn, 116, 158.





# MELANCHOLY REUNION

A REPORT FROM THE FUTURE ON THE  
COLLAPSE OF CIVIL-MILITARY RELATIONS IN THE  
UNITED STATES

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I'D LIKE TO START by thanking the authorities for allowing me to address this 20th reunion of the Air University classes of 1997. As you may know, last year's Military Control Act makes assemblages of officers, even retired ones, illegal without special permission. Since the counter-coup of 2015, the civilians want to keep a close eye on us.

Frankly, I don't blame them. After we lost the High-Tech War of 2007 and the Second Gulf War just three years later,<sup>1</sup> the coup plotters cleverly laid the groundwork for their takeover by blaming these bloody defeats on "incompetent" civilians. When General Brutus occupied the White House after the president's mysterious death in 2012, the people welcomed the change at first. But

after only a couple of years of military rule, everyone realized how wrong they had been.

Many of you may be familiar with "The Origins of the American Military Coup of 2012," an essay by the Prisoner.<sup>2</sup> The Prisoner's letter to a war college classmate recalled US civil-military relations as they existed in 1992.<sup>3</sup> It also described the military's evolution into a highly politicized organization that, ironically, couldn't fight.

Today, I want to focus on US civil-military relations as they appeared later—in the 1996–97 time frame. With the benefit of 20/20—no, make that 2012—hindsight, I'd like to talk to you about the lessons learned from the coup. All of these lessons are based on circumstances as they were over 20 years ago, when you were sitting in this very auditorium about to begin your studies. What kinds of issues regarding the military's role in American society should you have been thinking about back then?

## The Civil-Military Environment in the Late 1990s

First of all, the fact that no one was planning a coup in 1996 didn't justify the complacency encouraged by too many analysts back then.<sup>4</sup> They simplistically concluded that the military's acceptance of shrinking defense budgets and the imposition of social policies on the armed forces "proved" that civilian control was secure.<sup>5</sup>

Instead, they should have examined the unique implications of a large peacetime military during the late 1990s. Historically, the United States organized large forces to fight specific wars and quickly demobilized those forces at the end of a conflict.<sup>6</sup> After World War II, the exigencies of the cold war required maintaining a sizable peacetime defense establishment,<sup>7</sup> which probably gave birth to a highly politicized military.<sup>8</sup> However, because the overarching threat of a nuclear-armed Soviet Union absorbed so much

of the armed forces' energy during the cold war, the military's politicization didn't present the pernicious threat then that it did in the twenty-first century.<sup>9</sup>

When the Soviet Union collapsed, the US military's principal *raison d'être* for over 40 years disappeared.<sup>10</sup> Although the world clearly remained a violent and dangerous place, the absence of a superpower adversary disconcerted a defense establishment that still possessed enormous resources and intellectual vigor.

The armed forces also changed in an unprecedented way: they now were composed primarily of people wanting to stay in the military, rather than draftees wanting to leave at the first opportunity. Not only was the all-volunteer military undiluted by the liberalizing effect of conscription, it also was the direct descendant of the traumatized forces that lost the Vietnam War. True, the US military brilliantly rebuilt itself and magnificently triumphed in the First Gulf War,<sup>11</sup> but there is no question that the cycle of failure and redemption deeply affected the outlook of people in uniform.

## Vietnam and the Politicization of the Military

It is difficult to overstate the influence the Vietnam War had on civil-military relations during the last decade of the twentieth century. Robert McNamara's duplicity, revealed in his memoir of 1995,<sup>12</sup> rekindled deeply held beliefs that much of the blame for the defeat of the United States in Vietnam lay at the feet of inept and mendacious civilians. Officers at every level, therefore, believed it was necessary to become far more assertive in the political process than ever before in order to avoid "another Vietnam."<sup>13</sup> Accordingly, our war colleges gave increased emphasis to domestic politics, economics, and international relations.<sup>14</sup> Of particular

interest was the emphasis they placed on Clausewitzian theory.<sup>15</sup>

Although historian John Keegan disagrees,<sup>16</sup> Clausewitz's assertion that war is a continuation of politics by other means still resonated in US military thinking.<sup>17</sup> When taken out of context, Clausewitz's dictum became another rationale for officers to insinuate themselves into the political process.<sup>18</sup> After all, if war is so intimately connected with politics, shouldn't military officers be involved? Wasn't that the lesson of Vietnam? Georges Clemenceau's adage was turned on its head: to the generals, war and the political decisions that surround it were too serious to be left to politicians.<sup>19</sup>

Consequently, the military placed hundreds of midlevel officers in congressional offices to study political techniques.<sup>20</sup> As we should have expected, they inevitably became entangled in partisan activities, reportedly as early as 1996.<sup>21</sup> In another politicizing move, Congress turned the promotion process into a political football. Back in 1996, for example, the Senate delayed the confirmation of thousands of officers' promotions to exact cooperation from the Defense Department for a plan to reorganize the intelligence community.<sup>22</sup> Predictably, this kind of activity encouraged uniformed officers to become partisans in political battles.

Politicization occurred in other ways as well. For instance, it was widely reported that the protests of gay-rights activists scuttled the nomination of Gen Joseph Hoar to be chairman of the Joint Chiefs of Staff (CJCS).<sup>23</sup> What was his alleged offense? As the commander of Marine Corps Depot Parris Island, he enforced the homosexual exclusion policy put in place *not* by military officers but by the *civilian* leadership. This action sent a message that the nation would later regret: military officers should circumvent or ignore the directives of civilian superiors if they think a different course of action might be politically expedient in the future. As Col Harry Summers observed with respect to Vietnam-era protests, targeting the mili-

tary—the *executors* rather than the *makers* of policy—politicizes the armed forces and thereby weakens civilian control.<sup>24</sup>

Gay-rights activists also unwittingly facilitated the coup by undermining the Reserve Officer Training Corps (ROTC). For decades, ROTC had been an important source of progressivism in the armed forces. Unfortunately, protesters succeeded in driving it from many top universities—often the very ones needed to preserve the balance of views so necessary for a professional military in a free society. By the mid-1990s, many officers privately expressed delight that there were fewer officers from the more liberal campuses to challenge their increasingly right-wing philosophy.<sup>25</sup>

In addition, a new set of qualifications for promotion arose. Skill at political infighting, *not* traditional war fighting, became the mark of up-and-coming officers. Indeed, as far back as 1993, Adm William Crowe, former CJCS, declared that few officers reached senior rank “without a firm grasp of international relations, congressional politics, and public affairs.”<sup>26</sup> Eventually, our leaders became skilled politicians but, as we saw in the Second Gulf War, poor war fighters.

## Nontraditional Missions and Civil-Military Relations

Another key source of politicization was the explosive growth of nontraditional missions in the 1990s. These ranged from drug interdiction, disaster relief, and youth programs at home to nation building and humanitarian and peacekeeping missions abroad.

The Prisoner critiqued this drift into nontraditional missions in his letter. What changed from 1992 to 1996, however, was the *institutionalization* of these missions. Armed with catchy acronyms like MOOTW (military operations other than war),<sup>27</sup> a powerful constituency arose within the ranks. Make no mistake about it, this was a basic change in orientation. Gen John Shalikashvili, former

CJCS, admitted that “while we have historically focused on warfighting, our military profession is increasingly *changing its focus* to a complex array of military operations other than war” (emphasis added).<sup>28</sup>

Overlooked was the fact that military officers who concentrate on activities other than war eventually become something other than warriors. An ever-increasing percentage of the shrinking officer corps “came of age” focusing not on the military arts but on decidedly nonmilitary enterprises. All of this would prove disastrous.

We learned the hard way that assigning missions like domestic drug interdiction to military personnel inevitably entangles them in *policy making*, a political task best left to civilian authorities. Could we have seen this coming in 1996? Recall that back then, a four-star Army general—along with a cadre of active duty officers—was retired to help make domestic drug-control policy.

Just as disappointment about law enforcement’s inability to stem the flow of drugs led to the military’s involvement in counter-drug efforts, so did a series of terror attacks result in a similar role in counterterrorism just a few years later. Public frustration and fear led to the Suppression of Terrorism Act of 1998.<sup>29</sup> This act gave the armed forces significant internal security powers,<sup>30</sup> something for which the shadowy Special Operations Command had been preparing for years.<sup>31</sup>

As we now well know, the trend toward nontraditional missions ultimately undermined civilian control of the military. In his classic book *The Soldier and the State*, Samuel Huntington argued for “objective” civilian control.<sup>32</sup> That condition, I contend, is best realized when the armed forces concentrate on professionalizing themselves through truly *military* endeavors. Apologists for nontraditional diversions gushed, rather naively in my view, about the “training” such missions were supposed to provide, as if chauffeuring Olympic athletes for a couple of months equated to a visit to the National Training Center or Nellis Air Force Base.<sup>33</sup>

Even more significantly, involvement in these activities perversely created a generation of military personnel much more attuned to and interested in almost anything other than the dirty but necessary business of war.<sup>34</sup> We paid a terrible price for this in twenty-first-century conflicts.

One can trace the origin of this strange disinclination toward war fighting to the military’s peculiar form of post-Vietnam syndrome. Determined to avoid another quagmire, the defense establishment embraced a set of prerequisites to the use of armed force. Military leaders interpreted these mushy standards—known as “[Caspar] Weinberger’s rules”<sup>35</sup>—to, as one commentator put it, “subvert civilian controls” by effectively exercising a “veto” over virtually any operation they wanted to avoid.<sup>36</sup> Despite studies to the contrary,<sup>37</sup> the US military became a prisoner of the notion that public support for the use of armed force inevitably erodes (à la Vietnam and later Somalia), even when the number of casualties is relatively small.<sup>38</sup>

Nevertheless, Gen Colin Powell, former CJCS, created a major controversy regarding the politicization of the military when he successfully used Weinberger’s rules to oppose early intervention in the Balkans. Though roundly criticized for exceeding the proper role of a serving officer,<sup>39</sup> Powell set a precedent for unabashed assertiveness in the political process. Of course, military officers, aware of the horror and destructiveness of war, *should* approach combat operations warily. Still, a fundamental tenet of the military profession demands, as General Shalikashvili said back in 1996, “extraordinary dedication and sacrifice under the most adverse conditions” (emphasis added).<sup>40</sup>

But the chairman was appealing to an ethos that was under attack on many flanks. Especially insidious was the assault of a new ideology known as total quality management (TQM).<sup>41</sup> No one back then truly objected to teaching better management skills. But TQM and, more accurately, the corruption of its beneficial aspects became much more

than that. With cultish frenzy, its devotees attempted to reduce to metrics the ultimately unquantifiable nature of combat readiness and war fighting. Somehow, the performance of military functions was equated with "products."

TQM's effect on the military's self-concept was just as pernicious. Traditional superior-subordinate and comrade-in-arms relationships were replaced by faddish customer-supplier associations. This change eventually undermined discipline, as military personnel began to believe they were "empowered" to ignore orders that didn't suit them.<sup>42</sup> Furthermore, TQM's obsession with unit self-assessments encouraged commanders to focus too much on subordinate-customer "satisfaction" and so-called quality-of-life issues. Interestingly, one expert charged that an overemphasis on quality-of-life issues led to the failure to take appropriate but unpopular security measures prior to the Khobar Towers bombing of 1996.<sup>43</sup> Plenty of officers in the 1990s recognized the lunacy of TQM, but few were willing to confront its powerful zealots.

TQM was yet another reflection of the nefarious commercialization of the profession of arms. An altruistic calling rapidly turned into a job marked by self-seeking opportunism. As William Pfaff wrote in January 1996, "You do not join the American army or navy today to be a warrior. You do it to learn a trade, or earn money for college, or to have a well paid retirement after 20 or 30 years. War—even a deployment like Bosnia—interferes with that. The troops resent it."<sup>44</sup>

When the new military "executives" analyzed proposals for risky deployments, they quickly voiced their disapproval. Clearly, combat would be too costly in terms of "customers" and "products." It just made no sense; any MBA could see that.

Edward Luttwak argued back in 1996 that, given the military's reluctance to risk casualties, the nation needed to redirect defense spending toward unmanned weapons systems.<sup>45</sup> Similar arguments directly led to cancellation of the Air Force's F-22 fighter in

1998. Once the "man-in-the-loop" premise was broken, the rationale for a separate air service collapsed. Thus, the Air Force became the first of the military services to be disestablished and combined into the Unified Armed Forces in 2007.

Even in the twenty-first century, however, circumstances at times required sending people into harm's way.<sup>46</sup> Eventually, the Pentagon's aversion to fighting compelled the ultimate form of outsourcing: hazardous, unpopular operations were contracted out to the newly formed Violence Applications International Corporation (VAIC).<sup>47</sup> For years, VAIC and its stable of retirees did the military's dirty work, thereby allowing the armed forces the opportunity to deepen their involvement in popular domestic activities and trendy overseas enterprises. But when the Second Gulf War broke out in 2003 and the Iranian X Armored Corps began crushing everything in its path, VAIC defaulted on its contract as its employees scattered. Corporate loyalty, it seems, has its limits.

## The Rise of Postmodern Militarism

At the same time the military's post-cold-war politicization was on the rise, the public's understanding of and resistance to military influence was declining radically. Traditionally, the American people had been wary of a professional military. The Founding Fathers, for instance, were well aware that it could be a source of tyranny.<sup>48</sup> Eschewing standing armies, they framed a constitution that contemplated a national defense that principally relied on militias of citizen-soldiers.<sup>49</sup>

Benevolent antimilitarism became a time-honored American virtue.<sup>50</sup> When conflicts called millions into uniform and peacetime conscription gave millions more firsthand experience with service life, the American people had few illusions about the military. With the end of the draft, however, memo-

ries of the less attractive aspects of military service faded into nostalgia.

The youthful civilian elites who assumed power in the 1990s were wholly innocent of any genuine understanding of the powerful imperatives intrinsic to the armed forces. Moreover, these elites were *not* antimilitary, despite what many people in uniform believed at the time.<sup>51</sup> Of course, few of them considered military people their social or intellectual equals; rather, they viewed the armed forces with the kind of pretentious cordiality usually reserved for faithful servants. What they *did* appreciate was the military's extraordinary competence, and they reveled in the notion that it could do their bidding.

In actuality, both the elites *and* the public were in the embrace of "postmodern militarism."<sup>52</sup> One writer back in 1994 described this phenomenon as follows:

Postmodern militarism is not marked by overt military dominance or even a societal embrace of martial values. Rather, it is characterized by a growing willingness of an increasingly militarily-naïve society to charge those in uniform with responsibilities that a democracy ought to leave to civilians. It is a product of America's deep frustration and disgust with elected government's inability to work effectively, or to even labor honestly. The reason the military's approval rating far exceeds that of every other institution in American society—including, significantly, the ones expected to exercise civilian control—is quite simple: it gets good things done.

Embattled politicians are ever more frequently turning to the military for quick-fixes: Can't stop drugs? Call in the Navy. FEMA [Federal Emergency Management Agency] overwhelmed? Deploy the Airborne. Crime out of control? Put Guardsmen on the streets. Troubled youths? Marine role models and military boot camps. Need health care? Military medics to the rescue. Diplomats stumble again? Another Air Force mercy mission on the way. The unapologetically authoritarian military can "make the trains run on time," *but at what price?*<sup>53</sup> (Emphasis added)

That question was never answered; the national discussion we needed in the 1990s never took place. This was especially unfortunate because the civilian institutions that were supposed to control the military were weakening. Congress's partisanship made it vulnerable to manipulation by politically astute military operatives who became expert at playing congressional factions against each other. The executive branch didn't fare much better. At the beginning of the Clinton administration, for example, there were numerous reports of open contempt by military personnel for their commander in chief.<sup>54</sup> Although many observers believed that the initial hostility later dissipated, the uproar that followed an attempt by President Clinton's lawyers to delay a lawsuit by characterizing him as a member of the armed forces illustrated his continued vulnerability.<sup>55</sup> Moreover, analysts still asserted in 1996 that Clinton had not yet been able to "command" the Pentagon.<sup>56</sup>

Instead, the military had become, as one commentator put it, "the most powerful individual actor in Washington politics."<sup>57</sup> Part of the reason lay with the fact that the executive and legislative branches both labored under the shadow of Vietnam. Writing in May 1996, A. J. Bacevich of Johns Hopkins University observed that

thirty years later, now elected to positions of prominence, those who evaded service now truckle and fawn to demonstrate the depth of their regard for men in uniform. . . . The military itself is only too happy to play along. The moral leverage embedded in "the troops" . . . provides the Pentagon with enormous political clout. Senior military leaders do not hesitate to exploit that clout for their own purposes.<sup>58</sup>

Among military leaders, the CJCS is most senior. By the mid-1990s it was clear, as *Defense News* contended, that the chairman's "rising clout threaten[ed] civilian leaders."<sup>59</sup> After the Goldwater-Nichols Defense Reorganization Act<sup>60</sup> dramatically increased the power of the CJCS, the charge of politiciza-

tion was levied at every chairman. Admiral Crowe was a self-described "political animal," and General Powell was similarly characterized.<sup>61</sup> Further, General Shalikashvili was accused of partisanship when he challenged the views of then-Republican presidential candidate Pat Buchanan and later voiced opposition to the Defend America Act, a cornerstone of Republican Robert Dole's presidential campaign.<sup>62</sup>

The highly politicized office of the CJCS wasn't converted into the all-powerful Military Plenipotentiary until 2005, but we were already slipping toward that change in the 1990s. Although prohibited by law from acting as a commander, the chairman engaged in the command-like function of *directing* adherence to joint doctrine.<sup>63</sup> Likewise, the Joint Staff behaved as if it were the military's senior headquarters, even though US law denied it executive power and prohibited it from functioning as a general staff.<sup>64</sup> This consolidation of enormous authority would prove catastrophic in 2012.

All of this constituted the first inkling of a tendency within the armed forces to consider themselves above the law.<sup>65</sup> Allegedly, frustration with the "restrictions of American democracy" led some officers to break the law during the Iran-Contra affair.<sup>66</sup> Later, troubling reports circulated of marines ignoring laws that interfered with what they viewed as their "domestic peacekeeping mission" during the Los Angeles riots of 1992.<sup>67</sup> The investigation of a crash of a CT-43 in April 1996 revealed a similar lack of discipline. It found that senior Air Force commanders were ignoring orders.<sup>68</sup>

Officers, however, had little to fear from the military justice system. By 1996 it was broken.<sup>69</sup> To be sure, part of the fault lay with vainglorious lawyers who continually tinkered with it until it became one of the most bureaucratic and defendant-oriented criminal justice systems in the world. We were left with a system incapable of handling the kinds of complex, high-profile cases that can affect civil-military relations.

Consider, for example, that despite literally hundreds of witnesses, the Tailhook scandal of 1991 resulted in not a single conviction. Likewise, military courts held no one accountable for the "friendly-fire" shootdown in April 1994 of two US Army helicopters in Northern Iraq, which cost 26 lives.

Worst of all was the handling of the case of an Air Force major general who in 1993 publicly denounced President Clinton as a "gay loving, pot smoking, draft dodging womanizer."<sup>70</sup> This egregious violation of Article 88 of the Uniform Code of Military Justice's proscription against the use of contemptuous language toward the commander in chief merely resulted in *nonjudicial* punishment,<sup>71</sup> an administrative action reserved by law for "minor offenses."<sup>72</sup> Given that precedent, little wonder that a malignancy I call "neopraetorianism" arose.<sup>73</sup>

## The Emergence of Neopraetorianism

One of the greatest paradoxes of civil-military relations in the 1990s was that a disdain for American society grew within the ranks despite the military's popularity and political "clout." That alienation created a gap between the armed forces and the society they served. Of course, the military had always been a "separate society" with unique customs and organization.<sup>74</sup> Its war-fighting mission required that. This gap emerged because the military regarded itself as a higher caste, fundamentally at odds with civil society.<sup>75</sup>

As early as 1991, journalist David Wood reported that military personnel tended to "view the chaotic civilian world with suspicion and sometimes hostility."<sup>76</sup> A *Los Angeles Times* article of 1996 noted a similar trend, quoting one service member's description of civilians as "thieves, bureaucrats, no self-reliance, no integrity . . . substandard."<sup>77</sup> A Harvard study of May 1996, as well as one by a Naval War College student that same month,

warned that civil-military relations were threatened by the military's increasingly jaundiced view of civilians and its narcissistic assessment of itself.<sup>78</sup>

Emerging from this growing antipathy within the military was neopraetorianism, which arises when the armed forces perceive themselves not only as the protectors of what is right in civil society but also as the self-appointed, *unelected* makers and implementers of the same. It is abetted by officers infatuated with the idea that they are national ombudsmen with unlimited portfolios, rather than military leaders with finite responsibilities. Paralleling the public's corporate ignorance of military affairs, neopraetorianism is marked by the military's flawed notion of its own cultural superiority and its seeming inability to grasp the merits of civil society.

Like so many problems we faced in the twenty-first century, one manifestation of neopraetorianism evolved from a bona fide patriot's well-meaning idea. In 1996, the commandant of the Marine Corps, appalled by what he perceived as a disintegration of values, "made morality a major theme in his first year in the top post."<sup>79</sup> In doing so, he embraced a then-popular thesis of the political right that sought the "restoration" of an idealistically "moral" America<sup>80</sup>—an America that, in the opinion of one expert, "never existed and never will."<sup>81</sup>

Commenting on Marine Corps recruits, the commandant insisted that "there has got to be a *transformation* of [a] young man or woman from what they are in society" (emphasis added).<sup>82</sup> Of course, this was a cruel insult to the parents who raised these men and women, especially at a time when the other services were bragging about enlisting the highest quality recruits ever.<sup>83</sup> Nevertheless, it is imperative that the armed forces inculcate new troops with military skills as well as an acceptance of the authoritarianism, bellicosity, and anti-individualism necessary for survival in combat. But the commandant's agenda wasn't that limited. He sought to instill recruits with the values *he decided* were

"important *for the Nation*" (emphasis added).<sup>84</sup> His goal was not just a better marine; rather, the general declared that he wanted his "legacy for the Corps to be literally a transformed American."<sup>85</sup> He added that he was "going to go to unbelievable lengths to do that."<sup>86</sup>

Where did we go wrong? Unfortunately, subsequent generals corrupted the commandant's concept for their own purposes. We learned that regardless of the propriety of setting values for its members, a professional military is *not* charged to do so for society at large. We found that when active duty generals arrogate the prerogative to tell the country *which* values it should embrace and use their vast resources to *impose* them upon the nation, then something is deeply askew in the country's civil-military relations.

In fact, we learned at last year's coup trials that most of the plotters wanted to remake the nation in the armed forces' image. History can teach us something here. In his book *Modern Tyrants* (1994), Daniel Chirot argued that "Hitler's appeal to a disoriented German population, beset not only by financial and political chaos, but also by open manifestations of new cultural tastes and sexual mores, was that he would bring back traditional order, a simple comprehensible culture, and a clear public morality."<sup>87</sup> Chirot also noted that "military men in particular are prone to [the] delusion" that their nation's problems can be solved by the imposition of martial values.<sup>88</sup> The lesson is that generals should not be commanders in the nation's culture wars. The military should not attempt to remake society in its own image.

The military's self-concept also fostered neopraetorianism. Inexplicably, people in uniform seemed oblivious to their own world. Sure, the military enjoyed low crime rates, but why shouldn't it? Unlike civil society, it had the luxury of both selecting its members and casting out even minor offenders. Moreover, it could relentlessly scrutinize its members' personal lives and subject them to urinalysis testing, DNA examinations, and sometimes the pseudoscience of polygraphs.



Life on America's secluded military bases was idyllic, thanks, ironically, to the society we criticized so much. Many installations resembled the ultimate Marxist paradise: neat, rent-free homes; free utilities; subsidized shopping and day care; extensive, cost-free recreational facilities; and even government-furnished preachers. The health-care system, for all its faults, still outstripped the system available to most civilians at a similar price. Important aspects of the compensation system were a welfare queen's dream. Need a bigger house? Just have another child. Want more money? Find a mate. All of this was supported by a huge panoply of government-funded social services that helped control problems like alcohol and child abuse.<sup>89</sup>

The military looked at civil society and saw only chaos, crime, and moral decay. True, these are the unfortunate by-products of personal freedom and aggressive individualism. But freedom and individualism produced the economic boom that fueled the nation's resurgent military machine.<sup>90</sup> The genius of American capitalism is its recognition that the pursuit of individual self-interest in an atmosphere of free competition ultimately can lead to the common good. A fiercely entrepreneurial spirit may be disastrous on the battlefield, where a premium is placed on unity of purpose, but it is an enormously important source of innovation and progress amid the Darwinian complexities of most other human undertakings.

Before we looked too askance at civil society, we should have understood the basically undemocratic and authoritarian nature of military life.<sup>91</sup> Officers find comfort in a hierarchical organization in which military rank unambiguously defines their privileged place and the chain of command gives clear definition, authority, and finality to decision making. They are perplexed by the egalitarianism of civil society and uncomfortable with the uncertainty and deliberate chaos of the democratic process. They view intellectual pluralism as divisive and debilitating instead of creative and stimulating, and political

consensus-building as either chicanery or nefarious compromise rather than a productively inclusive technique. "Democracy is not," as General Powell accurately observed, "an easy form of government for military professionals."<sup>92</sup>

The neopraetorians never understood that their society was a Potemkin village that depended upon the largess of civil society—the society upon which they heaped contempt and which they presumed to lecture about values. The despotic, albeit kindly, socialism of the armed forces may suit the peculiar needs of a professional military, but it is hardly a model for a free society. Instead of following the path of neopraetorianism, we should have built a new framework for civil-military relations, one I call the "New American Model."

## The New American Model of Civil-Military Relations

The New American Model appreciates the fact that effective civilian control of the military, as Dr Richard Kohn concluded,<sup>93</sup> emphasizes process, and that process can and should evolve over time. That said, the model nevertheless recognizes the utility of clearly delineated rules. Accordingly, it attempts to complement its theoretical architecture with practical, specific guidance whenever possible.

The New American Model honors Huntington's concept of objective military control<sup>94</sup> and insists that the military's energy and resources be focused on *external* war-fighting functions. The model also finds persuasive the research of Dr Michael Desch, which suggests that civil-military relations prosper under these circumstances.<sup>95</sup> Civilian government agencies or commercial enterprises should perform nontraditional missions that really need to be accomplished.

The centerpiece of the New American Model is the principle that effective civilian

control of a large, professional military in a democracy requires pervasive transparency—especially during peacetime. Necessary oversight can occur only when the military's thought and action are made plain to the society it serves.<sup>96</sup> The model has faith in the people's wisdom and, therefore, completely rejects the idea that "military and national security issues are just too complex [for the general public], and can be understood only by a select few."<sup>97</sup>

Unfortunately, opaqueness—not transparency—was the paradigm in the 1990s. As yet another legacy of the Vietnam War, the politicized US military of the late twentieth and early twenty-first centuries became ever more deeply engaged in "perception management." Convinced that hostile reporters harmed the war effort in Southeast Asia,<sup>98</sup> buoyed by favorable public reaction to its domination of the press during the First Gulf War,<sup>99</sup> and determined to capitalize on the media's negative public image;<sup>100</sup> the armed forces came to regard the media and information more generally as something to be manipulated for the military's own purposes.

The military devoted enormous energy to learning how to manipulate the media. As a measure of how far the armed forces were willing to go, consider the following statement by a military instructor in 1993: "Learning to deal with reporters is *just as important* as learning to kill the enemy" (emphasis added).<sup>101</sup> "Spin control" was critical as well. An Army instructor, for instance, insisted that soldiers tell not just any story, but a "*positive* Army story" (emphasis added).<sup>102</sup> The New American Model, however, rejects "spin doctoring." It contends that "in a democracy the military should be controlled by public opinion, not the other way around."<sup>103</sup>

The Army, in particular, aggressively sought to maintain spin control. It imposed, for example, the so-called Ricks rule in 1996 to counter frank, but politically incorrect, comments by its troops in Bosnia.<sup>104</sup> Ultimately, discouraging candor proved to be counterproductive. A participant in an Army survey

of 1996 glumly reported that "telling the truth ends careers quicker than making stupid mistakes or getting caught doing something wrong."<sup>105</sup> Ironically, the Army's success at suppressing the media during the First Gulf War planted the seed of its own demise.<sup>106</sup> With the public uneducated about the Army's capabilities, the Army was reduced to only four active divisions and followed the Air Force into disestablishment in early 2007.

In any event, the transparency the model calls for cannot exist when security classifications are overused.<sup>107</sup> Secrecy, as the *New York Times* noted on the 25th anniversary of its publication of the Pentagon Papers, can be used to hide "bloat, error and corruption in the military."<sup>108</sup> In the mid-1990s, the overclassification problem arose with respect to the military's burgeoning involvement in information warfare, particularly the offensive variety. Military leaders coyly declined to discuss the topic, citing high security classifications. Indeed, the subject was so grotesquely overclassified that even within the armed forces and the civilian defense establishment, few people knew any of the particulars.

In the beginning, we all knew the reason for much of this overclassification: "rice bowls."<sup>109</sup> Information warfare was one of the few areas in which military budgets were increasing,<sup>110</sup> and by controlling access to these programs, organizations could control the associated funding. Furthermore, by restricting traditional "operators" from this information, members of lower-status intelligence and communications career fields could engage in Walter Mitty-like delusions and call themselves "warriors," albeit *information* warriors.

No one disputed the need to classify some technical aspects of information warfare. However, given its openly stated aim—to "convince, confuse, or deceive enemy *decision makers*" (emphasis added)<sup>111</sup>—it should have been clear that the armed forces were acquiring a capability with tremendous potential to influence the domestic political process. When our military schools began discussing the use of advanced information

technology to "morph" false images of enemy political leaders to mislead their publics,<sup>112</sup> for instance, we should have realized the dangerous potential of this and similar technologies. The New American Model asserts that the public needs to know and approve the "who" and "what" of information warfare, leaving only the "how" secret.

The New American Model also maintains that a vibrant, knowledgeable, and inquisitive press is a vital safeguard of civilian control. Indeed, with the power of formal government structures diminished, the media became *the* most effective means of civilian control by the late 1990s. Thus, national leaders did not help matters when they placed part of the blame for Adm Jeremy Boorda's suicide on "the relentless glare of the media."<sup>113</sup> In truth, military leaders *must* be subject to this relentless glare, since it is virtually the only restraint they really fear.<sup>114</sup>

Addressing the perils of opaqueness does not complete the New American Model's architecture for the military's involvement in political discourse. One can find the template for that construct in Yehuda Ben-Meir's *Civil-Military Relations in Israel* (1995).<sup>115</sup> In this book, Ben-Meir conceived of five possible roles for military officers in political affairs:

- (1) *Advisory*: making their professional expertise available to civilians.
- (2) *Representative*: advocating the military's interests in intergovernmental councils.
- (3) *Executive*: implementing government decisions.
- (4) *Advocacy*: publicly explaining and defending government policies.
- (5) *Substantive*: attempting to overturn the government's military or national security policy by engaging in overt political activity.<sup>116</sup>

Ben-Meir believed that the first three roles are commensurate with the principles of civilian control, while the fifth is a direct challenge to it. He considered the advocacy role a "gray area," however, since it may lead to attempts to convince the public of the wisdom of military policies that conflict with

those of the government. The trick, he wrote, is not to undermine the military's representative role but constrain it enough so that it does not lead to exaggerated advocacy.<sup>117</sup>

The New American Model agrees with much of Ben-Meir's proposal. It further agrees that the military has no role to play in the electoral process beyond voting.<sup>118</sup> Indeed, I recommend that flag officers be prohibited from holding *any* public office for at least five years after retirement. This requirement would reduce the temptation to engage in partisan activities to curry political favor. The model also recognizes, however, that even "advisory" discussions of national security matters can be viewed as partisan.

Indeed, military personnel who speak out on any issue probably could not avoid charges of partisanship. Nevertheless, the New American Model values transparency enough to tolerate such allegations and urges apolitical candor as the best mitigation. The model believes that the military has information, expertise, and unique insights that should be made available to the public. "Generals must be free," Tom Donnelly asserts, "to explain what military means may reasonably accomplish."<sup>119</sup> That requires candor. Of course, as another writer put it, "candor must be used in unison with common sense, sound judgment, self-discipline, loyalty and other traits."<sup>120</sup>

Candor is *always* appropriate in the *private* councils of government. The model explicitly rejects the kind of "political correctness," for example, that reportedly led Admiral Boorda to abandon the nomination of Adm Stanley Arthur as commander in chief of US Pacific Command simply because Arthur agreed that a female pilot was no longer qualified to fly.<sup>121</sup> Political correctness can greatly undermine civil-military relations because it replaces sound, apolitical judgment with opportunistic and often self-serving pandering to popular fashion.

Candor also requires a keen sense of accountability on the part of military officers. Too often, as Bacevich noted, military offi-

cers use their political popularity to "pass off to others the responsibility for failure."<sup>122</sup> This occurred, according to Bacevich, when former secretary of defense Les Aspin—unpopular among senior military leaders—was fired following the Ranger raid in Somalia in 1993, which claimed the lives of 18 US soldiers.<sup>123</sup> The military allowed the public to think that Aspin's refusal to deploy additional armor caused the disaster, when actually it was much more a failure of doctrine and planning by an arrogantly overconfident special operations community.<sup>124</sup>

We nearly saw a repeat of this scenario following the Khobar Towers bombing. Demands arose for the resignation of Secretary of Defense William Perry when an Air Force general implied that failing to obtain Saudi approval to move the perimeter fence caused the tragedy.<sup>125</sup> Like the Ranger raid, however, the tragedy was much more attributable to a failure of *military* judgment concerning the nature of the threat than any ineptitude by civilian leaders.<sup>126</sup>

To ensure accountability, the New American Model calls for a reinvigorated military justice system. Administrative actions,<sup>127</sup> with their propensity toward politicization and the stench of backroom deals, are no substitute for a public judicial process. In the context of civil-military relations, the system needs to be reformed to reserve its most severe punishments *not* for people who try their best and fail,<sup>128</sup> but for those who seek to avoid responsibility for their actions.

The model recognizes that the most difficult issue is determining when candor should be expressed *publicly*. Several key factors are involved:

1. Candor can never be used to defy or *subvert* direct orders. Obedience to lawful orders must be instantaneous. Parenthetically, *unlawful* orders must be ruthlessly exposed.
2. Candor can never be an excuse for disrespectful behavior.

3. Candor must never be used to replace the strength of an idea with the power of an officer's rank or position.
4. There is a fundamental and critical difference between candidly expressing one's views and using government resources to try to implement them. The order to implement a decision must be properly authorized in accordance with approved policy. Thus, public candor is often best expressed *prior* to a decision being made.

All this having been said, the model starts with a *strong presumption* that civil-military relations are best served by transparency, and that frequently means *public candor*. Against this backdrop, the model urges consideration of two inverse relationships for weighing the appropriateness of *public candor* in a given situation.

The first is largely common sense. It generally holds that an inverse relationship exists between the presumption that public discourse is appropriate on the one hand and the rank and position of the speaker on the other. Thus, fewer restrictions should be placed on the First Amendment activities of junior personnel. Conversely, a four-star commander is obliged to be more circumspect. These relationships go back to the fundamental tenet of the New American Model: military officers must not employ the power of their rank or position to lend undeserved strength to their views.

The second holds that an inverse relationship usually exists between the presumption that public candor is appropriate and the proximity to and effect on ongoing operations, especially those involving combat. This would mean, for instance, that public criticism of a battle plan immediately before its execution would be inappropriate.

Of course, the two relationships can overlap. Senior field commanders, for example, must not debate the orders of their commander in chief during combat—the very rea-

son that General MacArthur ran afoul of President Truman.<sup>129</sup>

As a further illustration, consider the case of an Army colonel who was disciplined during the early stages of the Bosnia deployment of 1995—a *noncombat* situation—for allowing a reporter to quote him concerning his views that Croats were racist and that the deployment's political objectives could not be achieved within the one-year time frame set by the Clinton administration.<sup>130</sup> Applying the New American Model to that incident, the colonel's public remark about the Croats was inappropriate, given the time and place it was made. His views on the one-year time frame, however, were appropriate because they represent the kind of candid judgment the American public needs from its military leaders.

Accordingly, the New American Model does not maintain that the military should be *public* cheerleaders for the politics of the president or the president's party. This notion is wholly distinct from the question of following lawful orders. With respect to such orders, obedience must be, as already noted, instantaneous and complete. That clearly understood, we must appreciate the Constitution's contemplation that civilian control be a *shared* responsibility of the executive and legislative branches.<sup>131</sup> The loyalty the armed forces owe their commander in chief does not extend to using the military's prestige—not to mention its physical power—to support *any* political party.

The New American Model embodies other important aspects. It recognizes the need to address the public's increasing naïveté about military affairs. It does not, however, argue for a return to the draft. Militarily, it would not make sense. Prof John Keegan noted, for instance, that the performance of Iraq's conscripts during the First Gulf War demonstrated that draftees merely "clutter up" the modern battlefield.<sup>132</sup> Thus, any increase in the public's awareness of military affairs would be outweighed by the costs involved.

What might be helpful, however, is a comprehensive high-school-level or college-level

program on the armed forces in general and civil-military relations more specifically.<sup>133</sup> We also need to teach civil-military relations as part of our professional military education, which could be supplemented by the publication of books and articles by military officers for the general public.<sup>134</sup>

The model also does not see increased reliance on the Guard and Reserve as *the* solution to the problems of civil-military relations. Although the Guard and Reserve sometimes *can* support greater civilian control (turning most aspects of information warfare over to part-time soldiers, for example), the fact remains that modern war fighting—especially ground-maneuver warfare—is too difficult for anyone other than a full-time soldier to master.<sup>135</sup> Consequently, military needs will dictate that most combat power remain in the active duty force. Moreover, further integration of the Guard's—and, to a lesser extent, the Reserve's—unabashed politicization into the regular military would not serve the cause of civil-military relations.<sup>136</sup>

The model does, however, support limiting those so-called quality-of-life initiatives that encourage military personnel to remain ensconced on their bases. Translating those benefits into pay increases will encourage greater utilization of civilian facilities, with the concomitant benefit of reducing the military's growing alienation from the society it is supposed to serve.

## Conclusion

As I hope you've come to understand, the role of the military in American society was at a crossroads in 1996. If we could go back in time, we could spend our school year discussing how we might address these issues. Despite what happened in 2012, the profession of arms is still a most noble calling. But for us, we lost our honor. If only we had another chance. If only we could go back in time. If only.

## Notes

1. On the former, see Charles J. Dunlap, Jr., "How We Lost the High-Tech War of 2007," *The Weekly Standard*, 29 January 1996, 22.
2. Charles J. Dunlap, Jr., "The Origins of the American Military Coup of 2012," *Parameters*, Winter 1992-1993, 2.
3. According to Rear Adm Henry E. Eccles, "civil-military relations can be seen as the interaction of a group of related systems and subsystems—social, economic, political, military, and information. . . . The relations between these systems are dynamic: each system strives to maintain its equilibrium and to control its destiny as it adapts to the actions and changes of the associated system." Henry E. Eccles, *Military Power in a Free Society* (Newport, R.I.: Naval War College Press, 1979), 125.
4. See, for example, Douglas Johnson and Steven Metz, "Civil-Military Relations in the United States: The State of the Debate," *Washington Quarterly*, Winter 1995, 197; Mackubin Thomas Owens, "Civilian Control: A National Crisis?" *Joint Force Quarterly*, Autumn/Winter 1994-1995, 80; and Capt Edward B. Westermann, "Contemporary Civil-Military Relations: Is the Republic in Danger?" *Airpower Journal*, Summer 1995, 74. See also Senate Committee on Armed Forces, *Defense Organization: The Need for Change*, 99th Cong., 1st sess., 1985, Committee Print, 45 (warning against complacency "about the apparent balance in civil-military relations").
5. No universally accepted definition of civilian control of the military exists, but it is generally thought to include the notion that the ends of government policy are set by civilians with the means (if even that) determined by the military. The purpose of civilian control is to ensure that military interests are subordinated to those determined by civilian authority. See Charles J. Dunlap, Jr., "Welcome to the Junta: The Erosion of Civilian Control of the U.S. Military," *Wake Forest Law Review* 29 (1994): 341, 343-44.
6. See generally, James F. Dunnigan and Raymond M. Macedonia, *Getting It Right: American Military Reforms after Vietnam to the Persian Gulf and Beyond* (New York: W. Morrow and Co., 1993), 24-26.
7. See Herbert Emmerich's introduction to *Civil-Military Relationships in American Life*, ed. Jerome G. Kerwin (Chicago: University of Chicago Press, 1948), viii-lx.
8. A. J. Bacevich, "Civilian Control: A Useful Fiction?" *Joint Force Quarterly*, Autumn/Winter 1994-1995, 76, 78. Cf. John M. Swowley, Jr., *The Military Establishment* (Boston: Beacon Press, 1964).
9. See Michael C. Desch, *Soldiers, States, and Structure: Civilian Control of the Military in a Changing Security Environment* (forthcoming, 1997), 67, 69 (arguing that civilian control is enhanced when the military faces a challenging international security environment).
10. Cf. Rowland Evans and Robert Novak, "To Keep the Peace," *Reader's Digest*, January 1996, 92-93. ("The lack of a superpower enemy, after the fall of Soviet Communism, has reduced justification of military spending in the public mind.")
11. On the former, see Dunnigan and Macedonia. See also Al Santoli, *Leading the Way: How Vietnam Veterans Rebuilt the U.S. Military: An Oral History* (New York: Ballantine Books, 1993).
12. Robert S. McNamara with Brian VanDeMark, *In Retrospect: The Tragedy and Lessons of Vietnam* (New York: Times Books, 1995).
13. See Bruce Palmer, *The 25 Year War: America's Military Role in Vietnam* (Maxwell AFB, Ala.: Air University, April 1988), 45-46, 201-2.
14. Owens, 83.
15. Much of this is the result of Col Harry Summers' brilliant Clausewitzian analysis of the Vietnam conflict. See Harry G. Summers, *On Strategy: A Critical Analysis of the Vietnam War* (Novato, Calif.: Presidio Press, 1982).
16. John Keegan, *A History of Warfare* (New York: Knopf, 1993).
17. "It is clear, consequently, that war is not a mere act of policy but a true political instrument, a continuation of political activity by other means." Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 87.
18. Properly applied, Clausewitzian theory "underlines the need and justification for civilian control of the armed forces." See Yehuda Ben-Meir, *Civil-Military Relations in Israel* (New York: Columbia University Press, 1995), 187.
19. "War is too serious to be entrusted to generals." Georges Clemenceau, as cited in *The Macmillan Dictionary of Political Quotations*, ed. Lewis D. Eigen and Jonathan P. Siegel (New York: Macmillan, 1993), 689.
20. See Rick Maze, "Do Military Officers and Politics Mix?" *Navy Times*, 8 July 1996, 10. According to Maze, "Hundreds of military officers [are] participating in a loose-knit fellowship program."
21. Newt Gingrich, Speaker of the House, directed four military officers serving in a congressional fellowship program to produce a military-style report to "show why the Republicans nearly lost a June vote on their balanced budget plan." Rep Patricia Schroeder (D-Colo.) complained that "the use of military officers for partisan political activity is, in my view, totally improper." *Ibid.* See also "Were Military Aides Used Politically?" *New York Times*, 23 June 1996, 17.
22. "Miffed Specter Holds Promotions Hostage," *Washington Times*, 12 May 1996, 5.
23. See generally, David Martin, "Landing the Eagle," *Vanity Fair*, November 1993, 150.
24. See Summers, 170.
25. Thomas E. Ricks, *On American Soil: The Widening Gap between the U.S. Military and U.S. Society*, Working Paper no. 3, Project on US Post-Cold-War Civil-Military Relations (Boston: John M. Olin Institute for Strategic Studies, Harvard University, May 1996), 11-13. Cf. Daniel Voll, "A Few Good Nazis," *Esquire*, April 1996, 102 (discussing extremism in the ranks).
26. Adm William J. Crowe, Jr., and David Chanoff, *The Line of Fire: From Washington to the Gulf: The Politics and Battles of the New Military* (New York: Simon & Schuster, 1993), 23.
27. See Joint Publication 3-07, *Joint Doctrine for Military Operations Other than War*, 16 June 1995.
28. As quoted by John T. Correll, "The Murky Edges of Mootwah," *Air Force Magazine*, July 1996, 2.
29. See, for example, Carla Anne Robbins and John Fialka, "Despite Tough Words, Antiterrorism Effort in U.S. Is Still Flawed," *Wall Street Journal*, 22 July 1996, 1.
30. Cf. Paul H. Appleby, "Civilian Control of a Department of National Defense," in *Civil-Military Relationships in American Life*, 63. ("When the country comes to any severe internal crisis, it is not uncommon for some conscientious citizens to give thought—even to make plans—about a military takeover of the country to preserve order, to avert revolution, and to serve other like purposes.")
31. See, for example, Joyce Price, "Black Copters over Pittsburgh? It's Just an Exercise," *Washington Times*, 6 June 1996, 1 (describing US Army Special Forces "urban warfare training" conducted in a number of US cities, including Pittsburgh, Detroit, Los Angeles, Dallas, and Miami).
32. Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, Mass.:

Belknap Press of Harvard University Press, 1957), 80-97. See also note 94.

33. Sen Sam Nunn (D-Ga.) argued that using military personnel to chauffeur athletes would deter terrorists. See Rick Maze, "Senator Criticizes the Use of Troops," *Air Force Times*, 24 June 1996, 17. Cf. Robert F. Dorr, "Troops Have No Business Working at the Olympics," *Air Force Times*, 24 June 1996, 54.

34. Cf. Samuel P. Huntington, "New Contingencies, Old Roles," *Joint Force Quarterly*, Autumn 1993, 38. "A military force is fundamentally antihumanitarian: its purpose is to kill people in the most efficient way possible" (page 43).

35. Secretary of Defense Caspar Weinberger announced the following rules at a luncheon in 1984:

1. Commit only if our or our allies' vital interests are at stake.
2. If we commit, do so with all the resources necessary to win.
3. Go in only with clear political and military objectives.
4. Be ready to change the commitment if the objectives change, since wars rarely stand still.
5. Only take on commitments that can gain the support of the American people and Congress.
6. Commit U.S. forces only as a last resort.

Colin Powell with Joseph E. Persico, *My American Journey* (New York: Random House, 1995), 303. Cf. Richard K. Betts, *Soldiers, Statesmen, and Cold War Crises* (Cambridge, Mass.: Harvard University Press, 1977), 221-36; and Martin Sieff, "Policy on U.S. Force Is Clarified," *Washington Times*, 7 March 1996, 1, 3.

36. See Charles Lane, "A Soldier's Story: National Insecurity," *New Republic*, 16 October 1995, 20.

37. Eric V. Larson, *Casualties and Consensus: The Historical Role of Casualties in Domestic Support for U.S. Military Operations* (Santa Monica, Calif.: RAND, 1996). See also Charles Moskows, "When Americans Accept Casualties" (unpublished paper, November 1995).

38. See, for example, Chris Black, "US Options Seen Fewer as Military Avoids Risk," *Boston Globe*, 23 July 1995, 12.

39. See, for example, Edward Luttwak, "Washington's Biggest Scandal," *Commentary*, May 1994, 29; and Richard H. Kohn, "Out of Control: The Crisis in Civil-Military Relations," *The National Interest*, Spring 1994, 3.

40. Gen John M. Shalikashvili, *Joint Vision 2010* (Washington, D.C.: Joint Chiefs of Staff, 1996), 28.

41. See, for example, Bruce Brocka and M. Suzanne Brocka, *Quality Management: Implementing the Best Ideas of the Masters* (Homewood, Ill.: Business One Irwin, 1992).

42. Cf. Headquarters USAF/CC letter, subject: Key Issue Update, 15 July 1996, 4. ("The CT-43 mishap starkly pointed out the critical importance of complying with higher headquarters directives. Unfortunately, the change from Air Force regulations to instructions combined with quality initiatives may have given some people the wrong impression about compliance with AFIs" [emphasis added].)

43. Rick Maze, "The Blame Game," *Air Force Times*, 22 July 1996, 6. (Quoting Lt Gen Bernard Trainor, USMC, Retired: "There is a tendency in the military today to put too much emphasis on quality of life and comfort. This is putting troops at risk.") See also Don G. D. Boom, "The Price of Quality," *Air Force Times*, 12 August 1996, 26 (letter).

44. William Pfaff, "Civilian Militarism, Military Civilians," *Baltimore Sun*, 4 January 1996, 15.

45. Edward Luttwak, "Post-Heroic Armies," *Foreign Affairs*, July/August 1996, 33.

46. See Bevin Alexander, *The Future of Warfare* (New York: W. W. Norton, 1995), 41.

47. See John Mintz, "'Outsourcing' Goes Right to the

Front," *Washington Post*, 21 December 1995, B13 (discussing the growth of outsourcing in the military).

48. The framers were influenced by the excesses of Oliver Cromwell's new model army as well as firsthand experiences with British regulars who were used to suppress growing dissatisfaction with English rule prior to the Revolution. See generally, Charles J. Dunlap, Jr., "Revolt of the Masses: Armed Civilians and the Insurrectionary Theory of the Second Amendment," *Tennessee Law Review* 62 (1995): 643, 646-53.

49. See, for example, Allan R. Millett, "The Constitution and the Citizen-Soldier," in *The United States Military under the Constitution of the United States, 1789-1989*, ed. Richard H. Kohn (New York: New York University Press, 1991), 97-115; and Dave R. Palmer, *1794: America, Its Army, and the Birth of the Nation* (Novato, Calif.: Presidio Press, 1994), 263-77.

50. Harry G. Summers, Jr., "A Tale of 2 Presidents: Call It Poetic Justice," *Air Force Times*, 8 November 1993, 62. ("Suspicion of the military is no sin. Americans have a long and proud history of antimilitarism, and civilian control of the military is one of the foundations of American democracy.")

51. See Richard G. Miles, "Those Who Fight, Those Who Decide," *Newsweek*, 22 November 1993, 12.

52. See Dunlap, "Welcome to the Junta," 387-90; idem, "A Fallow Challenge to Civilian Control?" *Joint Force Quarterly*, Spring 1995, 103-4; and Col Harry G. Summers, Jr., USA, Retired, *The New World Strategy: A Military Policy for America's Future* (New York: Simon & Schuster, 1995), 198-202.

53. Charles J. Dunlap, Jr., "Postmodern Militarism," *The National Interest*, Fall 1994, 104-5 (letter).

54. See, for example, A. J. Bacevich, "Clinton's Military Problem—And Ours," *National Review*, 13 December 1993, 36.

55. See, for example, "Bill Clinton, Military Man?" *Washington Times*, 23 May 1996, 16; and "Clinton's Legal Claim and Reaction," *Air Force Magazine*, July 1996, 11.

56. See, for example, Mary McGrory, "Clinton's Duty to Command the Pentagon," *Washington Post*, 21 April 1996.

57. Pfaff, 15.

58. A. J. Bacevich, "What Are Soldiers For?" *Chronicles*, May 1996, 118.

59. See Robert Holzer and Stephen C. LeSeur, "JCS Chairman's Rising Clout Threatens Civilian Leaders," *Defense News*, 13-19 June 1994, 29.

60. Public Law no. 99-433, 100 Statute 992 (1986) (codified as amended in scattered sections of 10 US Code).

61. See, for example, Kohn, "Out of Control," 3.

62. On the former, see Bryan Bender, "Shalikashvili Blasts Isolationist Rhetoric of Primaries," *Defense Daily*, 21 March 1996, 434. On the latter, see Bill Gertz, "Shalikashvili Warns Republicans Not to Undermine Arms Reductions," *Washington Times*, 23 May 1996, 13.

63. See 10 US Code 155(c); Cf. Lt Gen John H. Cushman, USA, Retired, "Joint Doctrine: The Chairman's Authority," US Naval Institute *Proceedings*, April 1995, 48.

64. See 10 US Code 155(e). ("The Joint Staff shall not operate or be organized as an overall Armed Forces General Staff and shall have no executive authority.")

65. See also Kenneth W. Kemp and Charles Huslin, "Civil Supremacy over the Military: Its Nature and Limits," *Armed Forces and Society*, Fall 1992, 7, 16-19 (discussing "politically motivated disobedience" in the case of Air Force general John D. Lavelle's secret bombing of North Vietnam).

66. Lt Col James Callard, "The Changing Nature of American Democracy: Consequences for the Military" (master's thesis, Naval War College, 21 May 1996), 16.

67. See Ricks, 21-22.

68. "Are Commanders Ignoring Orders?" *Air Force Times*, 24 June 1996, 1.

69. See, for example, Keith Hutcheson, "The Discipline Crisis," *Armed Forces Journal*, March 1996, 40.

70. See David Hackworth, "Rancor in the Ranks: The Troops vs. the President," *Newsweek*, 28 June 1993.

71. 10 US Code 888 (1988).

72. 10 US Code 815 (1988). See also Michael R. Gordon, "General Ousted for Derisive Remarks about President," *New York Times*, 19 June 1993, 19.

73. According to Ben-Meir, the traditional concept of praetorianism "refers to the military's tendency to intervene in the affairs of state. The term is borrowed from the Roman guard that made and unmade emperors" (page 192). It was initially discussed by Amos Perlmutter in *The Military and Politics in Modern Times: On Professionals, Praetorians, and Revolutionary Soldiers* (New Haven, Conn.: Yale University Press, 1977). Perlmutter contends that

the client of the professional soldier is clearly the state and, hence, the nation. Praetorian symptoms may occur in the professional soldier, but only when leaders of the military establishment "discover" that there is a "contradiction" between the "state" to which they have pledged loyalty, and the "regime" that has taken over.

As quoted in Ben-Meir, 13. A cardinal feature of neopraetorianism is that the contradiction is not so much in reference to any regime; rather, it is between the military's assessment of appropriate societal values and organization and that which it perceives as existing in society as a whole.

74. See *Parker v. Levy*, 417 US 733, 743 (1974). (The military is a "separate specialized society separate from civilian society.") Arthur Hadley labeled the separation the "Great Divorce" in *The Straw Giant: Triumph and Failure, America's Armed Forces: A Report from the Field* (New York: Random House, 1986), 22.

75. See generally, Ricks, 11-13.

76. David Wood, "Duty, Honor, Isolation: Military More and More a Force unto Itself," *Star Ledger* (Newark, N.J.), 21 April 1991, 1.

77. Art Pine, "U.S. Military Highly Rated, but Strains Begin to Show," *Los Angeles Times*, 19 March 1996, 1, Washington edition.

78. See, for example, Ricks, 11-13; and Callard, 46.

79. See "Marines Plan Values Training," *Omaha World Herald*, 6 July 1996, 6 (citing Associated Press report).

80. See, for example, Patricia Edmonds and Ann Oldenberg, "Chasing the Values Vote," *USA Today*, 5A (discussing "why Americans are more upset about values than at any [other] time in modern history").

81. See Vince Passaro, "Dragon Fiction," *Harper's Magazine*, September 1996, 64, 68. In reviewing the emerging genre of "Christian Thrillers," Passaro says,

It doesn't take you long to figure out, reading . . . evangelical Christian writers, that the obsession with public order, public morality, codes, rules, consensus, and sin are American political ideas, religious in origin but not in current application. The Christianity of the evangelical right is deeply rooted in a political nostalgia, a drive to restore an America seemingly lost. Of course, what this America has been lost to is reality; it never existed and never will, but since the combined landslide votes cast for Richard Nixon and George Wallace in 1968, this never-America has been the central idea driving our political life. (Pages 64, 68)

Cf. David T. Courtwright, "Violence in America," *American Heritage*, September 1996, 36 (noting the similarities between nineteenth-century crime on the frontier and current crime in the inner city).

82. "General Krulak Warns of 'Lack of Values' in Society," *National Security Law Report*, April 1996, 9, 10.

83. See, for example, "Smarter than Ever," *Air Force Times*, 22 July 1996, 12 (discussing the rising education level of enlisted personnel). Additionally, a recent national survey revealed that teenagers' attitudes toward moral and social values are much more conventional than widely believed. See Dianne Hales, "How Teenagers See Things," *Parade Magazine*, 18 August 1996, 4.

84. "General Krulak Warns," 10.

85. *Ibid.*

86. See "Marines Plan Values Training," 6.

87. Daniel Chirot, *Modern Tyrants: The Power and Prevalence of Evil in Our Age* (New York: Free Press, 1994), 417.

88. *Ibid.*

89. Heavy drinkers in the military outnumber civilians by more than 50 percent, a ratio that has remained unchanged for over 15 years despite extensive substance-abuse programs. See Nolan Walters, "Today, a Good Soldier Is a Sober Soldier, in the Military's Eyes," *Philadelphia Inquirer*, 26 June 1996, B1.

90. James Q. Wilson, "A Rhythm to the Madness," *Time*, 23 August 1993, 31.

91. Charles E. Merriam explains that

the military principle and the democratic principle stand in direct opposition to each other. The military hierarchy involves authority from the top down, while the democratic systems are based on the consent of the governed from the grass roots up. The military principle develops the idea of discipline and unquestioning obedience. Democratic political society is based upon the consent of the governed, freely given.

Citing Quincy Wright in "Security without Militarism: Preserving Civilian Control in American Political Institutions," in *Civil-Military Relationships in American Life*, 148.

92. Secretary of the Air Force Policy Letter, *Dealing with Democracy* (1991), 4.

93. See Kohn, "Out of Control," 3.

94. Professor Huntington restated his concept of objective civilian control in the February 1996 issue of *Current*. Specifically, he said that objective civilian control involves

1) a high level of military professionalism and recognition by military officers of the limits of their professional competence; 2) the effective subordination of the military to the civilian political leaders who make the basic decisions on foreign and military policy; 3) the recognition and acceptance by that leadership of an area of professional competence and autonomy for the military; and 4) as a result, the minimization of military intervention in politics and of political intervention in the military.

Samuel P. Huntington, "Democracy and Armed Forces," *Current*, February 1996, 17.

95. Desch, 67, 69.

96. Cf. Prof. Eliot A. Cohen. "Civilian control also means making sure that in an age of rapid technological change, the services remain intellectually open, that thinkers do not suffer for taking time out to reflect on their profession and *speak out about it*" (emphasis added). Eliot A. Cohen, "Beyond 'Bottom Up,'" *National Review*, 15 November 1993, 40, 43.

97. See Roger Charles, "It's a War for Soul of U.S. Military," *Baltimore Sun*, 2 June 1996, 1F.

98. William P. Lawrence and Frank A. Aukofer, *America's Team: The Odd Couple—A Report on the Relationship between the Media and the Military* (Nashville: Freedom Forum First Amendment Center, 1995), viii.

99. See Charles C. Moskos with Thomas E. Ricks, *Reporting*



*War When There Is No War*, Cantigny Conference Series Special Report (Chicago: Northwestern University, 1996), 8.

100. See, for example, James Fallows, "Why Americans Hate the Media," *Atlantic*, February 1996, 45.

101. As quoted by Chris Murray in "Troops Learn How to Deal with Shelling from Reporters," *Air Force Times*, 7 June 1993, 28.

102. See Callard, 120.

103. *Ibid.*

104. See Bill Gertz, "Pentagon Tells Reporters in Bosnia Soldiers' OK Needed before Quotes," *Washington Times*, 9 May 1996, 4.

105. See "Report Shows Distrust Prevalent within the Army," *Washington Times*, 30 May 1996, 4.

106. "The Army effectively gave up an opportunity to publicize its operations during the Gulf War when it effectively blacked out coverage of its biggest triumph since World War II." See Moskos, *Reporting War*, 41 (citing John J. Fialka, *Hotel Warriors: Covering the Gulf War* [Washington, D.C.: Woodrow Wilson Center Press, 1992]).

107. Despite an executive order aimed at reducing the amount of classified material, the US government's \$2 billion secrecy system was, by 1996, classifying over 6 million documents annually. See "Martin Faga Describes Work of Government Secrecy Commission," *National Security Law Newsletter*, April 1996, 7, 11.

108. Max Frankel, "Top Secret," *New York Times Magazine*, 16 June 1996, 20.

109. "Rice bowl" is a military colloquialism that indicates inflexible allegiance to a project motivated by personal interest.

110. See "U.S. Military Foresees Increase in Spending," *Defense News*, 4-10 December 1995, 16. ("U.S. military spending on information warfare [IW] technologies is projected to increase over the next decade.")

111. See Shalikhshvili, 28.

112. See Peter Grier, "Information Warfare," *Air Force Magazine*, March 1995, 34, 35 (quoting Prof Thomas Czerwinski of the School of Information Warfare at the National Defense University).

113. Daniel Schorr, "Too Many Rushed to Judgment on Navy Leader's Suicide," *Christian Science Monitor*, 31 May 1996, 19 (quoting Hillary Rodham Clinton). The reporter who broke the story on Admiral Boorda was later fired. See Howard Kurtz, "Reporter Who Broke Story on Adm. Boorda Is Fired," *Washington Post*, 25 July 1996, 11.

114. Cf. Moskos, *Reporting War*, 11. ("Dan Rather, located in Bosnia, asked an Army commander, 'What is your greatest fear?' The commander replied, 'Saying the wrong thing to the media.'").

115. See Ben-Meir, 25.

116. *Ibid.*

117. *Ibid.*

118. See, for example, "Navy Personnel in San Diego Barred from Partisan Events," *Baltimore Sun*, 8 August 1996, 10 (reporting how military rules prohibiting participation in partisan political activities will severely limit activities by naval personnel at the Republican National Convention in San Diego).

119. The context is as follows:

Most importantly, the long-term health of the American civil-military relationship will depend on a recognition of

the dual nature of war. Battle field means give war its grammar, said Clausewitz, but politics supplies the logic, the ends. Thus, *generals must be free to explain what military means may reasonably accomplish.* (Emphasis added)

Thomas Donnelly, "Post-Modern Statesmen, Post-Modern Soldiers" (unpublished paper, 1995), 7-8.

120. Mike Galloucis, "Can You Be Candid in the Military?" *Air Force Times*, 1 April 1996, 33.

121. See generally Rowan Scarborough, "Webb Keelhauls Navy for Abandoning Its Men," *Washington Times*, 26 April 1996, 1.

122. Bacevich, "What Are Soldiers For?" 118.

123. *Ibid.*

124. See generally David H. Hackworth, "'Naked' Mission," *Newsweek*, 12 August 1996, 68; and "What Went Wrong in Somalia?" *U.S. News & World Report*, 18 October 1993, 33.

125. See Joyce Price, "Specter Demands Change at Pentagon," *Washington Times*, 1 July 1996, 1. Cf. Douglas Mackinnon, "Clinton Enshrined in the Pentagon," *Washington Times*, 23 March 1996, C1 (alleging that even before the Khobar bombing, the military "had lost all respect" for Secretary Perry). See also John Fialka, "Defense Chief Perry Faces a Grilling as Congress Looks for Answers in Saudi Arabia Bomb Attack," *Wall Street Journal*, 9 July 1996, 1, 20.

126. See John Mintz and R. Jeffrey Smith, "Military Underestimated Terrorists, Perry Says," *Washington Post*, 10 July 1996, 1. See also David H. Hackworth, "Saudi Blast Shows What's Wrong," *Air Force Times*, 12 August 1996, 54 (arguing that "military leaders are again circling the wagons as they go into an it-wasn't-my-fault-mode and pass the buck").

127. "Seven Careers Damaged in Black Hawk Review Action," *Air Force Magazine*, October 1995, 16.

128. See generally Charles J. Dunlap, Jr., "The Military Justice System and Command Accountability," *Military Review*, October 1995, 16.

129. See generally Roy K. Flint, "The Truman-MacArthur Conflict: Dilemmas of Civil-Military Relations in the Nuclear Age," in *The United States Military under the Constitution of the United States, 1789-1989*, 223.

130. See Effie Bathen, "U.S. Colonel under Probe for Alleged Remarks," *European Stars and Stripes*, 29 December 1995, 1. Cf. "Hello, General? War Isn't Heck," *Chicago Tribune*, 30 December 1995, 22 (criticizing the recommended disciplinary action).

131. See Kohn, "Out of Control," 7.

132. John Keegan, "The Warrior's Code of No Surrender," *U.S. News & World Report*, 23 January 1995, 47.

133. See Callard, 120.

134. See Lloyd J. Matthews, "Censorship and Professional Writing in the Army Today," *Army*, November 1995, 11.

135. See, for example, Jonathan S. Landay, "Pentagon Debated Role of US Citizen Soldiers in Combat Overseas," *Christian Science Monitor*, 26 July 1996, 3 (citing Michael O'Hanlon of the Brookings Institution contending that Guard ground units cannot be made combat-ready quickly).

136. *Ibid.* (discussing Guard's "massive political clout").

### Ricochets and Replies

*Continued from page 3*

comments hearken back to the great majority of this country's history when absolute truth and the ethics that flowed from that truth were the norm.

Gen [Malham M.] Wakin hits strongly upon the theme of integrity as the entire moral character of a person ["Professional Integrity"]. We, as an Air Force, need to focus strongly upon the idea that what we do all the time, in and out of uniform, relates directly to the kind of person we truly are (e.g., if you'll cheat on your wife, you'll cheat on your government).

Gen [Jerry E.] White carries through the theme of the indivisibility of ethics ["Personal Ethics versus Professional Ethics"]. I find it unfortunate, especially with our civilian employees, that we are not allowed, as commanders, to judge the fitness of a person for a job because of something they do at home but not at work. We are left in the position of hiring an employee we don't trust and waiting for the consequences of private indiscretions to spill over into the workplace and our professional lives. It will happen, and it does every day, from postal employees shooting up the post office to having to let a guy off to take care of a paternity suit. The idea that you can separate personal and private ethics, although having a foothold in our culture, is truly intellectually bankrupt. The Air Force must hit hard on this theme as the Air Force Academy does with its Center for Character Development.

The [Maj Brian F.] Hall and [Col David A.] Wagie article, "Character Development Program," which discusses the Air Force Academy's Center for Character Development, begins with something I find particularly unsettling: "Integrity first, service before self, and excellence in all we do . . . are lofty aspirations that represent our Air Force core values." Making the year 2000 Olympic team is a "lofty aspiration." Integrity, selflessness, and excellence in all we do should

be "common" character traits. I appreciated knowing the Air Force Academy is doing something toward making these traits more common. But I didn't see enough about the consequences for one's actions. For instance, when someone violates the honor code at the Academy, he or she should be quickly ushered out. Maybe that person can be a student at the University of Colorado, but I don't want them in my Air Force. Examples should be made and standards set and enforced even when lives are not on the line and the stakes are not high. It's an all the time thing.

Maj Bob Fant, USAF  
Maxwell AFB, Alabama

### OF VALUES AND VIRTUES

I am writing to pass on some of my personal reflections after reading the Summer 1996 edition of *Airpower Journal*. Let me first congratulate the staff on an exceptionally great issue. I subscribe to *APJ* at home and always enjoy reading the many opinions offered on a range of topics but especially on military ethics and morality. Therefore, the Summer edition really caught my eye.

My primary purpose in writing is this: I am deeply troubled by the tendency in today's society to use the words *values* and *virtues* interchangeably. In my opinion, these words couldn't have more diverse meanings. Values are personal. They are derived from the virtues of our society. When the editor writes in "Flight Lines" that "there's nothing wrong with our core values," I think he really means our core virtues. Is there such a thing as a core value? Maybe personally, but not throughout the military or society as a whole. Some examples will hopefully illustrate my point.

In the US military, the virtues of courage, integrity, and taking responsibility for one's actions are not negotiable. We may or may not be able to live up to them but they never change. Using the word *values* to describe

these virtues leads one to think they can pick and choose which ones they will use to guide their lives. This is ethical relativism at its ugliest. On the contrary, Mr Colson points out that we have collectively agreed, as a military society, that these virtues should reign supreme in our armed forces. What makes our personal values mirror the larger virtues of military service is our character. The fabric of one's character is created and reinforced long before anyone enters the military. Recently, many scholars have written on this subject and the roots of this subject all focus on Aristotle. Aristotle believed that the most telling sign of a person's character is his or her decision to act, not the act itself. For the decision to act is accompanied by discerning the particulars of a given situation.

I agree that our core virtues are certainly worth relying on, but the problem in the USAF today, as I see it, is that service members don't know what these core virtues are. That isn't the failing of the USAF. The roots of this problem go much deeper.

Capt Scott F. Murray, USAF  
Nellis AFB, Nevada

### SOME PLURAL DECISIVE POINTS

I am pleased by the intellectual growth suggested by the use in your Summer 1996 edition of the expression "plural strategic centers of gravity," more than once showing that a Clausewitzian intellectual abstraction, "center of gravity," as a military concept has been modified and qualified after confronting wartime reality. It's reassuring that our military analysts are capable of flexibility instead of bullheadedly insisting, as Clausewitz did, that the enemy must have but one center of gravity.

Of course, a physical object can only have one center of gravity and cannot have "plural" centers of gravity. So the expression "plural centers of gravity" must be incongruous and meaningless when applied to mechanics and physics, from whence Clausewitz derived his

military "center of gravity" concept. Many military analysts have accepted this concept virtually as a matter of faith. They believe that because Clausewitz said the enemy has a center of gravity, he must have *one*.

I would prefer using an expression such as "plural decisive points" or "areas" or "factors," but I also realize in discussions of war, that most uncertain and chaotic of human activities, the ready acceptance of a term gilded with Clausewitz's reassuring prestige, even if it is modified and qualified so far beyond his meaning as to be incompatible with his original intent.

Moving on to the discussion of the value of strategic airpower, which took up a large fraction of your Summer 1996 edition, I must disagree with the assertions on page 62 in Gene Myers's "Commentary" attempting to rebut Col Richard Szafranski's article on interservice rivalry, that strategic bombardment was responsible for destroying the German tactical air force as it attacked British and American strategic bombers escorted by Allied fighters and "allowed the Normandy invasion to proceed" by destroying the Luftwaffe and mauling the Reich's oil industry and transportation.

It is unreasonable for the defenders of strategic bombing to claim that the German tactical air force could not have been worn down and destroyed if Allied strategic bombers had not been used as expensive, human-filled bait to lure the German aircraft to exposure to attack by escorting fighters. Are we really supposed to believe that the German aircraft could've avoided Allied fighters if they hadn't been sent against Allied bombers?

Suppose the resources and personnel used by the British and Americans to build and maintain their fleets of strategic bombers had been used for more tactical aircraft. Those planes plus the planes used to escort the strategic bombers could have been used to provide more support to Allied ground forces—and to wipe out the German air force.

It was Allied tactical—not strategic—airpower that dominated the sky over the Normandy beachhead, protecting the invading forces from German airpower and frustrating enemy reinforcement and counterattacks. As Allied forces progressed across Western Europe, tactical airpower kept the German army from moving reinforcements, fuel, and material supplies that German in-

dustry did in fact continue to produce in spite of strategic bombing.

The enemy's productive capacity is not a significant factor as long as its movement can be interdicted and the battle areas isolated by tactical airpower.

Joseph Forbes  
Pittsburgh, Pennsylvania

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*If you once forfeit the confidence of your fellow citizens, you can never regain their respect and esteem. You may fool all of the people some of the time; you can even fool some of the people all the time but you can't fool all of the people all of the time.*

—Abraham Lincoln

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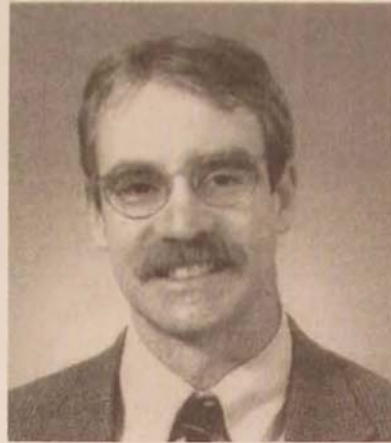


**Gen Ronald R. Fogleman** (USAFA; MA, Duke University) is chief of staff of the United States Air Force. A command pilot with more than 6,300 hours, General Fogleman has commanded an Air Force wing and air division, directed Air Force programs on the Air Staff, and served as commander of the Seventh Air Force of Pacific Air Forces with the added responsibility as deputy commander of US Forces Korea and commander of Korean and US air components assigned under the Combined Forces Command. Prior to becoming chief of staff, he was commander in chief of the US Transportation Command and commander of the Air Force's Air Mobility Command. General Fogleman is a graduate of the Army War College.



**Brig Gen William R. Looney III** (USAFA; MA, Central Michigan University) is commandant of the Armed Forces Staff College. He is a command pilot with more than 3,900 flying hours, 2,400 in the F-15 Eagle. Previously he served at Bitburg Air Base, Germany, as chief of wing plans, 36th Tactical Fighter Wing, and as commander of the 22d Tactical Fighter Squadron. General Looney also served as vice commander, 35th Wing in Iceland; and as commander of the 33d Fighter Wing at Eglin AFB,

Florida, and the 1st Fighter Wing, Langley AFB, Virginia. During his wing commander tours, he commanded a joint task force air unit during Uphold Democracy and Air Expeditionary Force II, Azraq, Jordan, in support of Operation Southern Watch. General Looney is a graduate of Squadron Officer School, Armed Forces Staff College, and National War College.



**Dr James S. Corum** (MA, Brown University; MLitt, Oxford University; PhD, Queen's University [Canada]) is professor of comparative military studies at the US Air Force School of Advanced Airpower Studies, Maxwell AFB, Alabama. A major in the US Army Reserve, he has also taught at Queen's University, Canada. Dr Corum is the author of *The Roots of Blitzkrieg: Hans von Seeckt and the German Military Reform* (1992), *The Luftwaffe: Creating the Operational Air War, 1918-1940* (forthcoming), and numerous articles about military history and low-intensity conflict.



**John H. Morrow, Jr.** (BA, Swarthmore College; PhD, University of Pennsylvania), is the Franklin Professor of History at the University of Georgia. Professor Morrow taught for 17 years at the University of Tennessee, where he became Distinguished Service Professor and head of the history department. In 1988-89 he was the Charles A. Lindbergh Visiting Professor at the National Air and Space Museum. He

has chaired the History Advisory Committee to the secretary of the Air Force and has served on the editorial advisory boards of the Smithsonian Institution Press, the *Journal of Military History*, and *Airpower History*. Professor Morrow is the author of the books *German Airpower in World War I* and *Building German Airpower*; and his latest book, *The Great War in the Air*, is considered the definitive study of airpower in World War I. He is frequently invited to lecture at the National War College, the Air War College, and the National Air and Space Museum. Presently, he is a consultant to the US Air Force Academy on a multimedia project on airpower in World War I.



**Lt Col Mark E. Jüpphut** (BA, The Citadel; MA, Embry-Riddle University), commander of the 30th Intelligence Squadron, Langley AFB, Virginia, is a career intelligence officer who has served at the strategic, operational, and tactical levels of warfare. He served as wing intelligence officer, 405th Tactical Training Wing, Luke AFB, Arizona; and intelligence officer and analyst, Headquarters TAC, where he wrote the first adversary tactics chapter for MCM 3-1. At Headquarters USAFE, he directed the command's intelligence program before becoming a command presentations officer, oversaw the air and missile order of battle for the Defense Intelligence Agency, and directed the database for verifying the Conventional Forces in Europe Treaty. After his reassignment to the Pentagon, he served as a staff officer in Checkmate's Instant Thunder planning cell, as J-2 representative to the Joint Staff, and as J-2 planner for Joint Staff action planning in operations in Bosnia, Haiti, Kuwait, Somalia, and Iraq. Colonel Jüpphut was the top graduate in the Air War College class of 1996. He also attended the Armed Forces Staff College and the Marine Corps Command and Staff College.





Dr Charles J. Gross (PhD, Ohio State University) has been assigned to the National Guard Bureau as Air National Guard historian since January 1992. He previously served as historian in the Office of Air Force History, Headquarters USAF; in Headquarters, Air Force Logistics Command; and in Headquarters, Air Force Systems Command. In 1986 he was awarded the Henry Adams Prize by the Society for History in the Federal Government for his *Prelude to the Total Force: The Air National Guard, 1943-1969*. In 1996 he received the USAF Award for Excellence in Historical Publications for *The Air National Guard and the American Military Tradition*.



Maj Dik Daso (USAF; MA, PhD, University of South Carolina) is currently assigned to the Air Staff Doctrine Division at Headquarters USAF. Previous assignments include flying tours in F-15, RF-4C, and T-38 aircraft and one tour as an instructor in military and world history at the USAF Academy. Most recently, he served as the historian for the 1995 Air Force study *New World Vistas: Air and Space Power for the 21st Century*. He is a distinguished graduate of the Squadron Officer School.



Col Charles J. Dunlap, Jr. (BA, Saint Joseph's University; JD, Villanova University), is staff judge advocate, US Strategic Command, Offutt Air Force Base, Nebraska. He is the author of numerous articles on legal and national security affairs, which have appeared in such periodicals as *Parameters*, *Military Review*, *Joint Force Quarterly*, and *The National Interest*. Colonel Dunlap is a graduate of the Armed Forces Staff College and a distinguished graduate of the National War College.



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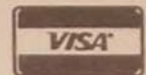
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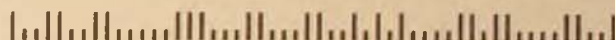


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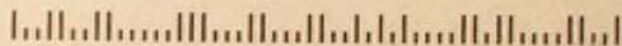


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